KfW Development Bank

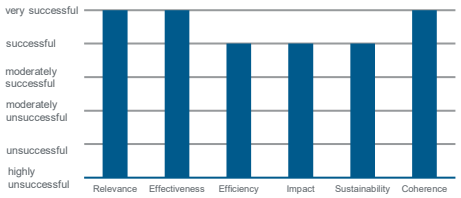
Ex post evaluation
TBC programme/phase IV, Tajikistan

Title	Focus programme on health; TBC programme component, phase IV		
Sector and CRS code	Health, CRS code: 12263		
Project number	2010 65 580 (investment), 2010 70 127 (complementary measure)		
Commissioned by	Federal Ministry for Economic Cooperation and Development (BMZ)		
Recipient/Project-executing agency	Tajikistan/Ministry of Health and Social Protection, Tajikistan (MoHSPP)		
Project volume/ Financing instrument	FC grant EUR 7.7 million, complementary measure EUR 0.4 million		
Project duration	August 2011– August 2019		
Year of report	2022	**Year of random sample**	2015

Objectives and project outline

The projects' objective at outcome level was to improve the diagnosis and treatment of the various forms of TB. This should help to "end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, waterborne diseases and other communicable diseases" (SDG 3.3). The project's target indicators were achieved or exceeded. The rehabilitation and equipment of the hospital in Digmoj was implemented from phase IV of the project, which is why the associated complementary measure is also the subject of evaluation here.

Overall rating:
successful



Key findings

The project achieved a high level of development effectiveness. The project has been rated "successful" for the following reasons:

- The Digmoj TB hospital rehabilitated as part of the project is perceived as a positive example of structural change in TB care and hospital management. It was used to implement the streamlining concept in the oblast Sughd, which – in accordance with WHO strategy – changed the structure of TB treatment to a cost-effective decentralised approach.
- The project was implemented by the Ministry of Health with a committed executing agency, which fulfilled all implementation agreements on time.
- The regular review of the laboratory and the continual transfer of knowledge within the laboratory network made a significant contribution to the quality assurance of the services. The knowledge about hospital management and infection control acquired as part of the complementary measure contributed to staff retention at the Digmoj hospital. The hospital's attractiveness has effectively counteracted the TB stigma in the region.

Conclusions

- The impact hypothesis of minimising the number of TB-infected and deseased persons through improved diagnosis and treatment was confirmed.
- WHO's DOTS strategy focused on decentralised supply (and the associated streamlining concepts) can free up funds in the national budget for the establishment of a sustainably functioning TB care system.
- The success of the project was largely dependent on the Tajik government's high level of commitment to combating TB and the donors' prioritisation in this regard.

Ex post evaluation – rating according to OECD-DAC criteria

List of abbreviations

AK	Final inspection
BM	Complementary measure
DOTS	Directly observed treatment
Ex post evaluation	Ex post evaluation
FC	Financial Cooperation
GFATM	The Global Fund to Fight AIDS, Tuberculosis and Malaria
GIZ	Gesellschaft für internationale Zusammenarbeit (German development agency for international cooperation)
KfW	Kreditanstalt für Wiederaufbau
MDG	Millennium Development Goals
MDR	Multidrug-resistant tuberculosis rate
MoHSPP	Minister of Health and Social Protection of the Population
M&E	Monitoring and evaluation
NCC	National Coordination Committee
NRL	National reference laboratory
NTP	National Tuberculosis Programme
PA	Project appraisal
RCPPT	Republican Centre for Protection of Population from TB
SDG	Sustainable Development Goals
SRL	Supranational reference laboratory
TB	Tuberculosis
USAID	United States Agency for International Development.
WHO	World Health Organization

General conditions and classification of the project

With the rehabilitation and equipping of the Digmoj Tuberculosis Hospital, the subject of the evaluation comprised a large part of the fourth phase of a total of five FC-financed phases to combat tuberculosis in Tajikistan. The ex post evaluation of phases I–III from 23 August 2016 had already evaluated the effects of the remaining work at Macheton Hospital, which was co-financed to a share of EUR 1.6 million from this phase IV. This is no longer the subject of investigation here. At the time of the evaluation of phases I–III in 2016, the component for the rehabilitation of the hospital in Digmoj was in the final phase of implementation. This ex post evaluation (EPE) therefore specifically assesses the impacts of the project measures implemented at the “Digmoj” tuberculosis hospital.

At the time of the evaluation, the start of the COVID-19 pandemic, which was accompanied by extensive limitations in the daily lives of the population worldwide, capacity bottlenecks in the healthcare sector and negative economic effects, was already two years in the past. The pandemic’s influence on the impact of the project is explained in the report.

Brief description of the project

In order to improve the diagnosis and treatment of the various forms of tuberculosis (TB) in Tajikistan, particularly in the oblast of Sughd, the existing TB hospital in Digmoj in the immediate vicinity of the regional capital Khujand was rehabilitated and equipped and its laboratory was renovated. As part of the complementary measure, training and advisory measures were implemented in the areas of laboratory network development, hospital operation,

maintenance management and personnel development. The target group of the programme was the total population of Tajikistan (around 7 million), but mainly the inhabitants of the Sughd oblast (2.3 million at the time of the appraisal). Provinces in Tajikistan are called oblasts.

Map/satellite image of the project country including project areas/locations

The project evaluated here was carried out at the TB hospital in Digmoj (marked with a star) near the regional capital Khujand in the province of Sughd, approx. five hours' driving time (300km) from Tajikistan's capital city, Dushanbe.

Figure 1: Map of Tajikistan with the project location marked.
Source (German only): https://www.freeworldmaps.net/de/tadschikistan/tadschikistan.jpg

Breakdown of total costs

The breakdown of total costs for the fourth phase of the TB project is presented in Table 1.

Table 1: Breakdown of total costs of investment and complementary measure (planned and actual):

		Inv. (planned)	Inv. (actual)	Complementary measure (planned)	Complementary measure (actual)
Investment costs (total)	**EUR million**	**7.8**	**8.1**	**0.4**	**0.4**
Counterpart contribution	EUR million	0.8	0.2	./.	./.
Debt financing	EUR million	7.0	7.9	./.	./.
Of which BMZ funds	*EUR million*	**6.5**	**7.7**	**0.4**	**0.4**

However, the complementary measure (CM) for phase IV (2010 70 127) relates to both the Macheton TB hospital and the Digmoj TB hospital. It is difficult to create precise distinctions here, as employees from the Macheton hospital laboratory were involved in training their colleagues in Digmoj. Therefore, the impacts of the complementary measure for both hospitals (Digmoj and Macheton) are summarised in this evaluation.

Rating according to OECD-DAC criteria

Relevance

Policy and priority focus

Due to the collapse of health systems, the existing tuberculosis control programmes could no longer be pursued following the disintegration of the former Soviet Union in 1991, with the result that tuberculosis (TB) was widespread in Central Asia. Tajikistan, as the poorest country in the post-Soviet region, fell into a devastating civil war from 1992–1997 following its declaration of independence. The consequences were enormous infrastructure damage, a number of victims between 60,000 and 150,000 and massive migration of the Tajik population. The Tajik budget was unable to provide sufficient financing to maintain its health system.

At the time of the project appraisal, statistics on TB in Tajikistan were worrying. In 2009, the World Health Organisation (WHO) estimated the incidence of TB at 231 per 100,000 inhabitants and TB mortality at 46 per 100,000 inhabitants. This was contrasted by data from the Ministry of Health and Social Protection of the Population (MoHSPP), which were far below WHO estimates with a TB incidence of 80 and a TB mortality of 5.4 per 100,000 inhabitants. The data on case detection rates yielded similar results.[1] WHO estimated in 2009 that only 30% of all TB cases were detected, while the ministry assumed 50%. Despite these discrepancies, national data also clearly indicated a TB epidemic in the country. The multidrug-resistant forms of TB proven in resistance tests were also a significant problem for the country (including the multidrug-resistant tuberculosis rate, MDR).

In 2002, Tajikistan committed itself to implementing the WHO's Directly Observed Treatment (DOTS) strategy. The DOTS strategy is to treat TB patients as outpatients whenever as possible. This is significantly more cost-effective than hospital treatment. Nevertheless, according to the strategy, it is inevitable that hospital beds need to be reserved for complicated TB cases that meet the WHO criteria for inpatient treatment.[2] However, inpatient treatment should be as short as necessary and, above all, serve to stabilise the patient's condition and enable therapy. Isolation is necessary at the start of therapy and in highly infectious pulmonary cases (known as open tuberculosis), in particular, in order to prevent further spread and protect the general public. Severe cases requiring surgical intervention also require inpatient care.

Due to the lack of qualified staff combined with funding gaps, the nationwide implementation of WHO's DOTS strategy was delayed. In 2014/2015, all WHO member states, including Tajikistan, committed to controlling the TB epidemic using WHO's "End TB Strategy". The strategy envisages a world free of TB with zero deaths, illnesses and suffering due to the disease.

The objectives of this project took into account the relevant political and institutional framework conditions. In terms of its impact, the project is integrated into the national programme for combating TB. The first Tuberculosis control programme in the Republic of Tajikistan was established for the period 2003–2010. Adjustments and expansions to the strategy were made on an ongoing basis. The fourth national programme for combating TB is now in place. It covers the period from 2020 to 2025 and was drawn up in consultation with WHO and international donors. The Ministry of Health and Social Protection of the Population has an overarching responsibility for all health issues, including TB. A national coordination committee (NCC), consisting of government representatives, third-party development organisations and civil society representatives for TB and HIV/AIDS, acts as a high-level body for the participatory management of disease control in the country. The Republican Centre for Protection of Population from TB (RCPPT) is the central unit of the national tuberculosis programme and is responsible for planning and practical aspects with regard to programme implementation and its monitoring (M&E).

The project's objectives are aligned with the priorities of the Federal Ministry for Economic Cooperation and Development (BMZ) via its "Regionales Sektorschwerpunktpapier Gesundheit Zentralasien" (English: Regional Sector Focus Paper on Health in Central Asia) dated January 2010 and the country strategy for bilateral development cooperation with the Republic of Tajikistan dated May 2016. The aim of alleviating poverty is particularly relevant here, as tuberculosis is a highly socially determined disease affecting men of working age in particular, who are usually families' main breadwinners. Although men generally suffer more from TB than women, women are

[1] Proportion of diagnosed smear-positive cases in the total number of expected cases.
[2] Source: WHO (2017). A PEOPLE-CENTRED MODEL OF TB CARE Available at: https://www.euro.who.int/__data/assets/pdf_file/0004/342373/TB_Content_WHO_PRO_eng_final.pdf.

increasingly burdened with caring for sick family members. Effective infection control also has a gender component; it enables affected women to participate more strongly in social and economic life again.

Focus on needs and capacities of participants and stakeholders

Over the last decade, Tajikistan has made steady progress in reducing poverty and growing its economy. Between 2000 and 2021, as measured by the national poverty line of $1.90/day, the poverty rate fell from 83% to an estimated 26.5%, while the economy grew at an average rate of 7% per year. However, job creation has not kept pace with population growth, leaving the economy vulnerable to external shocks.

Decisive factors that support the spread of tuberculosis are unemployment, malnutrition, drug addiction and alcoholism. These factors are also reflected in what is known as the "key population" for TB, which generally includes those with HIV, diabetics, drug addicts and alcoholics, migrants, homeless people and prisoners.[3] Since the risk of contracting tuberculosis depends to a large extent on the respective social living conditions, it was assumed at the time of the appraisal (2010) that primarily poor people, at that time 41% of the target group, would benefit most from this programme.

At the time of the appraisal, there were no functional TB hospitals or other TB projects in the oblast of Sughd. The existing TB hospital in Digmoj was in a desolate structural condition. Although the province had a large number of TB hospital beds (595), these were in seven predominantly dilapidated and poorly equipped hospitals, which did not enable compliance with infection control. The risk of infection was therefore correspondingly high for employees and patients. Transferring patients from Oblast-Sughd to the central TB hospital in Macheton, near the capital, was associated with high transport costs for the patients, as the latter could only be reached via a long mountain pass or by air.

Appropriateness of design

The design of the project was generally appropriate to enhance the diagnosis and treatment of TB and thus contribute to a long-term reduction in TB incidence and mortality. As with the rehabilitation of the Macheton National Reference Hospital (as part of the previous phases I–III), the conversion of the Digmoj TB hospital was accompanied by a streamlining concept. The number of inefficiently operated TB hospitals in the oblast Sughd has been reduced from seven to three, and the bed capacity at the hospital Digmoj has been reduced from 305 to 200 beds. The funds released by the streamlining measure were used in accordance with the implementation agreement to cover the maintenance and operating costs and to feed the patients at the Digmoj hospital.

The outcome objective of the project was to improve the diagnosis and treatment of the various forms of tuberculosis, measured by an improved treatment success rate. This was intended to contribute to achieving Sustainable Development Goal (SDG) no. 3.3 (formerly Millennium Development Goal no. 6), which aims to "end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases" (impact objective).

The complementary measure to improve hospital management, to set up the laboratory network and to develop and implement the maintenance concept addressed the deficits existing at the time of the project appraisal in a targeted manner.

The project's first impact chain was: "The rehabilitation and equipping of the hospital, including the laboratory, as well as the extensive training of medical staff create better conditions for the rapid detection of sick and infectious persons as well as a fast-acting, efficient therapy. Due to the increased case detection and treatment success rate, the TB incidence and TB mortality rate will gradually decrease and the chain of infection will be interrupted.". Direct causality is given because a strengthened reference mechanism and improved diagnosis in the reference laboratory can contribute to an improved case detection rate and thus lead to a reduction in TB incidence and mortality. However, case detection depends on other factors and mainly takes place at the level of the peripheral health stations during the patients' first consultations. The project does not directly serve this level.

The second impact chain of the project was: "Improved diagnosis (case detection) and treatment (recovery) will reduce the number of TB-infected people and those who die from TB (reduced TB incidence and mortality rate)."

[3] Source: Tilloeva Z: Tuberculosis in key populations in Tajikistan – a snapshot in 2017 J Infect Dev Ctries 2020; 14(11.1): 94S-100S.

The intent of this chain is to contribute to achieving SDG no. 3.3. Successful treatment gives patients a new chance on the labour market. Disruption of the employment relationship can also be completely avoided if it is detected and there is intervention in good time. This lowers the risk of falling into poverty as a result of contracting TB. The project can thus contribute to the social and economic development of the country. This impact chain is plausible.

Response to changes/adaptability

The framework conditions did not change during the course of project implementation, so no adjustment was necessary.

Summary of the rating:

From today's perspective, the project is also highly relevant. The findings of the evaluation show that neither the government nor other international donors were able to finance the rehabilitation of the TB hospital and laboratory in Digmoj at the time of the project appraisal. In this respect, the FC measure covered a key demand in the oblast Sughd. At the time of the appraisal, there was no functional TB hospital or other TB projects in the oblast of Sughd, but this was essential for the national implementation of the DOTS strategy. The relevance of the project will remain high for further TB control in the country, as TB and multidrug-resistant TB in particular continue to pose a health problem in Tajikistan.

Relevance: 1

Coherence

Internal coherence

The strategic reference framework in German development cooperation is the "Regionale Sektorschwerpunktpapier Gesundheit Zentralasien" (English: Regional Sector Focus Paper on Health in Central Asia) from January 2010 and the Federal Ministry for Economic Cooperation and Development's (BMZ) country strategy for bilateral development cooperation with the Republic of Tajikistan from May 2016. The three precursor phases "Tuberculosis Control in Tajikistan I–III" contributed to improved case detection and treatment of tuberculosis in Tajikistan by rehabilitating and equipping the Macheton National Tuberculosis and Lung Centre in the capital Dushanbe and establishing the corresponding national reference laboratory (NRL). The rehabilitation of the TB hospital Digmoj in the fourth phase complements the previous programme phases, as it provided another region in Tajikistan (oblast Sughd) with a functioning, state-of-the-art TB hospital.

Inspired by the complementary measure, there is now a regular transfer of knowledge in the form of joint meetings and discussions between the employees of the two hospitals and laboratories in Macheton and Digmoj (virtually or on site). Training of regional laboratory staff is provided by the national reference laboratory staff three to four times a year. In addition, the NRL, supported by the supranational reference laboratory (SRL) in Gauting, Germany, conducts regular quality checks of the regional laboratory in Digmoj as part of an annual certification.

The Gesellschaft für internationale Zusammenarbeit (GIZ) has not yet implemented any TB projects in Tajikistan. EU co-financing in the area of maternal and child health is now to be implemented and focuses on primary health care. General practitioners should also be trained in the detection and treatment of TB.

The national programme for combating TB was developed by Tajikistan in close cooperation with WHO and international donors. The projects of all donors should be aligned with this strategy. The project being evaluated here is integrated into the national programme for combating TB in Tajikistan (2015–2025) to the effect that, in addition to implementing the DOTS strategy recommended by WHO and the corresponding streamlining measures (reducing the number of TB beds), the diagnosis and treatment of resistant forms of TB was also implemented. The main objectives were to reduce the transmission of TB, TB-associated mortality, the number of multidrug-resistant TB cases and the burden on the economy and health system from tuberculosis.

The donor landscape is coordinated centrally by the National Coordination Committee (NCC). This institution coordinates the National Tuberculosis Programme (NTP), maintains long-standing relationships with donors and therefore knows their goals and strengths. Initially, 13 donors were active in the area of TB control in Tajikistan,

but this number has since fallen to three to four main donors. This improved donor coordination. The most significant donors are the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), German FC and the United States Agency for International Development (USAID).

The funds provided by GFATM to combat TB in Tajikistan have gradually decreased in recent years. GFATM initiated a transition programme with the aim of gradually increasing the government's financial contribution. The government is already fully financing first-generation TB drugs (first-line drugs).[4] This was still provided by GFATM a few years ago. The Tajik government prepared a sustainability transition analysis, the recommendations of which have already been incorporated into the new TB strategy.

KfW is the second largest donor, followed by USAID, which focuses primarily on capacity building as well as training and education. At the TB hospital in Digmoj, USAID financed a teletraining facility, among other things, in order to be able to hold meetings and training courses online. This ensured a continuous exchange between the clinics, especially at the time of the COVID-19 pandemic. The FC project evaluated here focused on improving the infrastructure (rehabilitating the hospital and equipment) in a collaborative coordination with the GFATM, which focused primarily on financing TB drugs and equipping the laboratory.

USAID financed the ongoing training and education of staff and thus also contributed to the adequate use of the FC-financed equipment, especially in the laboratory sector. Both the activities of the Global Fund (laboratory equipment, financing of second-line drugs) and the USAID training measures are complementary to this FC project.

Summary of the rating:

The coherence of the project is convincing. The cooperation between TB hospitals and laboratories in Macheton and Digmoj and the targeted division of tasks between the various donors is efficient and effective.
The project is well embedded in the chain of existing structures in the country.

Coherence: 1

Effectiveness

Achievement of (intended) targets

The outcome objective defined as part of the project appraisal was to improve the diagnosis and treatment of the various forms of tuberculosis, measured by an improved case detection rate and an improved treatment success rate in accordance with the international standards of WHO (Directly Observed Treatment (DOTS) strategy). The indicator for the complementary measure related to the proper operation of the building and equipment: at least 90% of the equipment should be in a fully functional condition at the end of the project.

While the treatment success rate is appropriate to measure the effectiveness of the hospital, the case detection rate is only suitable to a limited extent to measure the impact of the project. Although a strengthened reference mechanism and improved diagnosis in the reference laboratory can contribute to an improved case detection rate – and thus lead to a reduction in TB incidence and mortality – the case detection rate depends on additional factors and is mainly affected at the primary treatment level. WHO also no longer recommends the case detection rate as an indicator, as it is based on inaccurate estimates of the expected TB infections. In addition, new genetic diagnostic methods (GenXpert) have made much more accurate case detection possible. For this reason, this indicator is no longer considered during the EPE.

4 First-line drugs are used for the initial treatment of non-resistant TB cases; second-line drugs are used for the treatment of patients with resistant forms of TB.

The target achievement at outcome level is summarised in the table below:

Indicator	Status during PA	Target value according to PA/EPE	Actual value at final inspection (optional)	Actual value at EPE
(1) Improvement of the treatment success rate ("DOTS Treatment Success")	2009: 85% (WHO) 2008: 82% (MoHSPP)	min. 80	89% (2019) 92% (2020)	Value achieved: 91%[5] 91.60 (MoHSPP data) Comparable countries in accordance with DAC list: Uzbekistan: 90% [5] Kyrgyz Republic: 81% [5]
(2) At least 90% of the equipment should be in fully functional condition at the end of the project			Achieved.	Achieved.

As part of the final inspection in 2021, recommendations were made for the operation of three medical devices. It was found that all but one autoclave and one ventilator were in operation and fully functional, and that the ventilation system was not being serviced to the recommended extent. In the meantime, it is now possible to operate the autoclave with a new water softener, and the ventilator has been repaired with the support of the supplier. The ventilation system is now serviced to the recommended extent.

In addition, the following indicators may be considered to assess hospital-specific effectiveness at Digmoj Hospital:

Indicator	2019	2020	2021
National MDR rate (multidrug-resistant tuberculosis of all registered cases)	11.9	12.7	12.4
MDR rate at Digmoj Hospital (national MDR rate)	9.2 (11.9)	8.5 (12.7)	7.3 (12.4)
Digmoj Hospital Mortality (%)	1.5	1.6	1.1
Number of TB patients registered at Digmoj Hospital	1140	899	861
Bed utilisation rate (%)	71.6	53.2	62.5
Average length of stay of a TB patient in Digmoj Hospital (days)	50.5	59.1	54.6
Average length of stay of an MDR-TB patient (days)	86.4	79.3	81.3
Smear positive rate (GeneXpert)	6.15	8.82	11.46

5 2020 data from the Global Tuberculosis Report 2021, World Health Organization

The objectives at outcome level (improvement of the treatment success rate and functionality of the equipment) were achieved. Compared to the ex post evaluation of phases I–III from 23 August 2016, the national recovery rate for TB increased from 79% to 91%. With regard to the additional indicators of hospital-specific effectiveness, there is a reduction in the multidrug-resistant TB rate (MDR) and mortality rate at Digmoj Hospital. In addition, smear positive rates have almost doubled in the past three years, indicating a significant improvement in diagnostics at Digmoj Hospital.

The average length of stay at the TB hospital in Digmoj has remained stable in the last two reporting years, with an average of 55 days (for TB) and 82 days (for multidrug-resistant TB) overall. Lengths of stay are within international norms (20–60 days for TB and 50–180 days for multidrug-resistant forms). Under the influence of the COVID-19 pandemic, the number of TB cases treated worldwide has decreased over the last two years. At national level, as well, there was a decline in the number of cases during the pandemic (registered TB cases from 6279 to 4304) and a decrease in TB incidence (from 59.2 to 40.3/100,000 inhabitants). The latter can generally be attributed to a decrease in the number of diagnosed cases during pandemic times and should not be specifically attributed to this project. In principle, a downturn in TB figures was observed up to the start of the pandemic. However, the impact of the coronavirus pandemic on global TB development will only become apparent in the medium term.

Contribution to achieving targets

As planned, the construction measures included the renovation of the regional TB reference hospital Digmoj with a total area of 8,779.95m² (a three-storey main building, a two-storey outbuilding with 50 beds for multidrug-resistant TB and 20 children's beds, a BSL2 laboratory including installation of a ventilation system as well as supporting facilities such as central sterilisation, laundry, kitchen, morgue, waste facilities as well as workshop and machine building for the heating system). In addition, the supply at the regional Digmoj TB reference hospital was renewed (electricity, water and wastewater, sewage treatment plant, heating and ventilation).

The equipment included the installation of medical and non-medical equipment for the TB hospital in Digmoj, as well as training measures for sustainable use of the supplied medical equipment (introduction of quality standards, training of laboratory specialists). As part of the complementary measure, the Digmoj Hospital staff were given support in hospital management, laboratory diagnostics and in the diagnosis and treatment of TB patients.

All in all, the TB hospital in Digmoj is in very good condition. All equipment is functional and in use. Despite the reduction in the number of cases during the COVID-19 pandemic, bed utilisation indicates continued use of the hospital solely for TB cases. During the pandemic, no COVID-19 patients were treated at the TB hospital in Digmoj (except for TB-COVID-19 co-infections), nor was the laboratory used for widespread COVID-19 PCR diagnostics.

WHO assumes that the reporting of TB cases at a global level has decreased between 2019 and 2020 due to the COVID-19 pandemic. Possible reasons for this include reduced capacity of the healthcare system during the pandemic, restricted access to medical services by the population due to lockdowns, concerns about possible coronavirus infection risks when visiting healthcare facilities, and fear of stigma due to the symptomatic similarity of TB and coronavirus infections. Even though there were no bottlenecks in the delivery of TB drugs and laboratory reagents during the pandemic, the COVID-19 pandemic has led to reduced contact with health stations and hospitals and thus to a decrease in the number of treatments at Digmoj Hospital as well. This corresponds to the trend in other TB hospitals and is not specific to Digmoj Hospital.

In Tajikistan, TB treatment is available to everyone free of charge, regardless of gender, age and origin. This also applies to immigrants from other countries. However, in relation to diagnosis, there are direct and indirect costs that continue to be barriers to TB treatment. This also includes out-of-pocket co-payments, which continue to be common practice. So far, only TB screening for those who have been in direct contact with sick people is free of charge. The government decree is also intended to finance X-rays for suspected TB cases via the health budget, but this is not yet being implemented in all regions.

Quality of implementation

The quality of implementation is rated as good about the executing agency, the Tajik Ministry of Health and Social Protection of the Population (MoHSPP). It is worth noting that the executing agency fulfilled all implementation agreements, in particular the agreed reduction of the capacities of the "Digmoj" hospital as part of the DOTS

strategy and the reallocation of the funds released as a result for the operation and maintenance of this hospital. Both the Ministry of Health and the Building Authority of the Sughd oblast proved to be reliable, responsible and supportive partners in the implementation of the project. The consultant consortium EPOS/GOPA supported the project right from the start. There were no major issues during its implementation.

Summary of the rating:

The effectiveness of the project is rated very good. The target values of the indicators for effectiveness were even exceeded. In order to contribute to these impacts, streamlining was carried out at oblast and hospital level, an old TB hospital was rehabilitated and equipped with a modern, fully functional TB hospital including laboratory.

Effectiveness: 1

Efficiency

Production efficiency

The efficiency of Digmoj Hospital has been increased by reducing the number of beds from the original 305 (2009) to 200 (2022). As planned at the time of the project appraisal, the funds released as a result were primarily used to cover maintenance and operating costs as well as to feed patients at the Digmoj hospital. These measures made it possible to use workers more economically and make more efficient use of existing premises – also through improved equipment and energy supply.

The average construction and rehabilitation cost per square metre of Digmoj TB Hospital was EUR 524/sqm. Compared to the construction costs of Macheton Hospital totalling EUR 370/sqm, the costs were higher in Digmoj. The difference in construction costs between Macheton and Digmoj hospitals is attributed to differences in the total number of square metres with the same equipment: As the equipment costs in Macheton pertain to more square meters, the specific costs per square meter in Digmoj were higher. However, the general increase in construction prices also had a certain amount of influence.

The condition of all the premises visited and the equipment inspected is good; there is an applied maintenance concept. The complementary measure contributed to this. It was cost-effective insofar as the effects of the received training measures will continue in the future. The teletraining system introduced saves the hospital and its employees possible travel costs for training courses. Staff turnover among the hospital staff in Digmoj is comparatively low. The laboratory works more efficiently by improving laboratory equipment and the associated increase in laboratory capacities. According to the laboratory staff surveyed, it saves time when carrying out the individual tests, which increased the number of annual laboratory tests from 2010 to 2019 (but declining test numbers due to the influence of the COVID-19 pandemic).

Initially, the project was allocated a FC contribution of EUR 6.5 million for the investments, but this was not sufficient to finance all planned phase IV measures. The increased funding requirement of EUR 1.2 million was due to unforeseen infrastructure damage to the structural fabric of the building at the hospital in Digmoj, which resulted in subsequent improvements to the building statics, the roof construction and the installation of new windows and doors. This resulted in two increases totalling EUR 1.2 million. Due to administrative delays, the delivery and installation of the equipment could only be completed in August 2018, resulting in a total delay of 49 months for the project. Nevertheless, the consulting costs of EUR 591,331.00 (7% of the total costs) are reasonable. They were also significantly cheaper compared to the TB hospital in Macheton (15%).

Allocation efficiency

Tuberculosis mainly affects the main wage earners and breadwinners of families, namely men aged between 24 and 35. Those affected are usually restricted in terms of their performance on the labour market over a longer period of time. This made investing in effective diagnostics and therapy to combat TB all the more valuable in order to prevent productivity losses and the impoverishment of entire families.

The streamlining process, which was driven decisively by the previous phases, has significantly improved the allocation efficiency in TB control overall. Prior to streamlining, Tajikistan had 2,630 TB beds, mostly in outdated buildings that did not meet either modern standards or a minimum of infection control. By the end of 2015, the

number of beds had been reduced to 1,800. Today, there are 1,500 TB beds in Tajikistan, which accounts for just under half of the original number. It has been shown that cost-effective treatment could be achieved by implementing the DOTS strategy with a focus on outpatient treatment and high-quality hospitals with fewer beds, as all patients still received care. This made a decisive contribution to reducing costs in the hospital sector, which enabled a reallocation of tight budgets to the less expensive outpatient department. Training on hospital management as part of the complementary measure also led to a more efficient use of scarce financial resources.

Summary of the rating:

The reform processes described in the TB programme and optimisation of the TB laboratory have contributed to achieving the objectives with an appropriate use of funds, although implementation of the project resulted in a delay of several years. The efficiency of the project can therefore still be described as good.

Efficiency: 2

Impact

Overarching developmental changes (intended)

The target adjusted as part of the EPE was to contribute to achieving SDG no. 3.3 “end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases by 2030”.
Target achievement at the impact level can be summarised as follows:

Indicator	Status PA	Target value at PA	(Optional) actual value at final inspection	Actual value at EPE
(1) No further increase in the incidence of tuberculosis (per 100,000 inhabitants)	2009: 231 (WHO) 80 (MoHSPP)	N/A	According to WHO statistics, significant decrease from 206 to 84 cases between 2010 and 2018	2021: 84 (WHO) 40.3 (MoHSPP) Value achieved
(2) No further increase in tuberculosis mortality in Tajikistan (cases/100,000 inhabitants/year)	2009: 46 (WHO) 5.4 (MoHSPP)	N/A		2021: 9.6[6] (WHO) 1.3 (MoHSPP) Value achieved

Note on the development of TB mortality in Tajikistan: TB mortality steadily decreased since 2005; there was a renewed increase in 2020 (see Figure 2), but this was below the mortality rate at the time of the project appraisal. This increase should be seen in conjunction with the effects of the COVID-19 pandemic on TB treatment (downturn in treatment and hospital stays).

[6] HIV-negative TB mortality Tajikistan Global Tuberculosis Report 2021, World Health Organisation

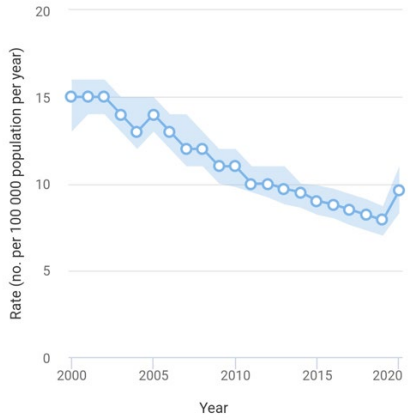


Figure 2: Development of TB mortality in Tajikistan; source: Global Tuberculosis Report 2021, World Health Organization

Contribution to overarching developmental changes (intended)

The project contributed to reducing TB-related incidence and mortality and appropriate TB treatment in Tajikistan. The guarantee of high-quality inpatient TB services at regional level for the target population at oblast level was achieved. The targets were exceeded for both indicators. This has a direct impact on the economic productivity of the population, as TB primarily affects men of working age.

According to WHO, the incidence of TB has decreased globally due to the impact of the COVID-19 pandemic as a result of reduced access to TB screening and early detection. People interviewed in Tajikistan cited the effects of protective measures (masks) and reduced migration from Russia during the pandemic as the main causes of the decreasing incidence of TB. A possible reassignment of existing TB laboratory capacities for the benefit of COVID-19 diagnostics (as a further cause of decreasing testing) was not confirmed to us by Tajik interviews. According to WHO, the incidence of TB was not affected to the same extent by the COVID-19 pandemic as TB mortality. One reason for this is that limited access to TB services initially means an interruption in the treatment of patients with TB, with the subsequent consequence of an increase in deaths.

Further positive effects were identified during the on-site evaluation at the hospital in Digmoj. The improved treatment conditions in the hospital have helped to change the perception of tuberculosis, reduce stigmatisation and present tuberculosis as a curable and not necessarily fatal disease. TB patients who were housed in a dilapidated and hygienically questionable hospital before the rehabilitation are now receiving efficient treatment in a modern, friendly building complex with regular meals. Consistent compliance with infection prevention and control – stimulated by the complementary measure – reduces the risk of TB infection among staff and contributes to making work at this TB hospital more attractive for health staff. The streamlining measures at the TB hospital in Digmoj while simultaneously increasing the hospital budget are perceived as a good example of the structural change in TB care and hospital management. With the implemented energy efficiency measures, such as solar-powered water heating in sanitary facilities, the hospital also serves as an example of a climate-friendly building in the region.

Summary of the rating:

The rehabilitation of the hospital in Digmoj into a fully functional modern and hygienically safe TB hospital in the Sughd oblast made an important contribution to reducing TB incidence and TB-related mortality by means of TB diagnostics and treatment in the Sughd oblast region in accordance with international standards.

Impact: 2

Sustainability

Capacities of participants and stakeholders

The fourth national TB programme set out the objectives and budget planning for TB control for the years 2021–2025. Budget planning assumes a financial gap of almost EUR 25 million (44%). External funds have already been included in the design. The national TB programme assumes that the Tajik state will provide around 12% of the required financing, GFATM around 19%, USAID around 21%, Médecins Sans Frontières around 3% and WHO around 1%. As it is anticipated that fewer external funds than before will be available in the coming years, a multi-sectoral working party consisting of representatives from the NTP, TB partners, the national AIDS programme, the United Nations Development Programme and the Ministry of Finance has developed a multi-year transition and sustainability plan for TB monitoring. In addition, it is planned that 30% of drugs to combat the multidrug-resistant form of TB, which are currently still fully financed by GFATM, will be financed by the Tajik government from 2023. Existing national financing requirements will therefore remain high.

In view of the future financial gap, there are local approaches to generating own funds. For example, the TB hospital in Macheton generates its own income by performing diagnostic examinations (e.g. CT, bronchoscopy) for non-TB patients, offering them for a fee. However, this is an exception. There is currently no possibility of self-financing for the TB hospital in Digmoj. Although it manages its surrounding green areas (400 fruit trees) to supply patients and employees, this is not yet used to generate income. As an option, the on-site evaluation identified expanded equipment with a CT and bronchoscope as well as a possible conversion of an empty building complex for the treatment of lung diseases. At the time of the evaluation, however, there was still no secure financing. Although the hospital budget has increased continuously over the last ten years, it has also increased due to the execution of the implementation agreement in 2015 (reassignment of saved DOTS streamlining funds to cover running costs). From 2015–2020 alone, the budget allocations to the hospital in Digmoj more than tripled from EUR 263 thousand to EUR 856 thousand.

At the hospital in Digmoj, the maintenance, management and waste management plans introduced as part of the complementary measure continue to be applied and adjusted if necessary, and two maintenance technicians have been hired. In the meantime, general guidelines for the maintenance of medical devices in Tajik and Russian have been drawn up at national level by GIZ and CIM experts. In addition, the establishment of an electronic inventory system has been advised, which will enable preventive maintenance in selected hospitals in the future. For example, the country wants to promote the digitalisation of TB reporting. The Ministry of Health uses a standardised TB recording and reporting system based on an Open MRS platform and is able to generate standardised reports using the e-TB registry. Digital solutions contribute to sustainability by supplying the TB monitoring programme with all the necessary information and thus improving the long-term monitoring and implementation of the national TB programme.

To date, the NRL conducts annual quality reviews of the laboratory in Digmoj, supported by a twinning arrangement with a German laboratory in Gauting, Germany. The latter will continue to be funded by UNDP/GFATM to support the quality assurance of TB laboratories in the future. Furthermore, there are plans to expand the BSL-2 laboratory at the TB hospital in Digmoj to a BSL-3 laboratory with a higher safety level. A total of three BSL-3 laboratories for Tajikistan are in the planning stage. In the context of digitalisation, Digmoj also serves as one of the pilot hospitals for the introduction of the Laboratory Information Management System for TB. All these activities are aimed at sustainably strengthening the quality of the laboratory in Digmoj, but will also require debt financing in the future.

Contribution to supporting sustainable capacities

The project in Sughd oblast was embedded in the DOTS streamlining concept. The accompanying move away from the bed-based financing principle for TB hospitals was decided by decree at the end of 2015 and reduced inefficient incentives in the system. The number of TB beds in the oblast of Sughd was reduced from 595 (2009) to 200 (2022) thanks to the DOTS streamlining concept. Cost savings were achieved by eliminating inefficiently operated capacity.

The NRL's annual review of the laboratory at the Digmoj hospital – supported by the supranational partner laboratory in Gauting, Germany – ensures the quality assurance of the laboratory according to WHO criteria and the ongoing further training of staff according to the latest standards. In addition, the teletraining system introduced at the hospital in Digmoj enables online meetings and training – and thus the remote knowledge transfer between

the two hospitals in Digmoj and Macheton. This is beneficial in times of restrictive travel and saves the hospital potential costs for training.

The Ministry of Health has succeeded in continuously raising the government allocations for the operating costs of the Digmoj hospital in recent years, and the wages of hospital staff have also been increased appropriately. These factors have made the hospital significantly more attractive after its rehabilitation, which has an impact on long-term employee retention. Due to the excellent medical technology equipment and the renovated premises, the regional TB hospital and laboratory have also become more attractive for medical and laboratory technicians and have thus been able to retain trained specialists on a long-term basis. In recent years, it has even been possible to slightly increase staffing levels based on need. Equipping the hospital with medical equipment resulted in an additional need for qualified specialist personnel, which was met within the scope of the project.

Durability of impacts over time

In principle, the state health care system in Tajikistan has been partly financed by donors in recent years. This will continue in the future. The MoHSPP is very committed to cost-covering financing, but depends on government allocations. As Tajikistan is no longer a partner country for German development cooperation, there is an increased dependence on other donors. The sustainability of the impacts is also only foreseeable to a limited extent in 2022 due to the volatile economic situation in Tajikistan, the ongoing COVID-19 pandemic and the Russian war of aggression against Ukraine. Possible impacts include the rising cost of living, which could adversely affect the healthcare habits of the population, in particular if transport costs or other private payments are incurred for TB diagnosis and treatment. Since wages for specialist personnel in Russia are many times higher than in Tajikistan, trained specialist personnel from all disciplines often migrate to Russia. The migration of labour to Russia and the dependence of many Tajik families on remittances of migrant workers are destabilising factors for the country and can have a significant impact on the sustainability of the project. In addition, the war and the associated deterioration in Russia's economic situation could lead to lower remittances from Tajik migrants already living in Russia to their families in their home country. The latter are an important source of income for many households and account for a substantial proportion of Tajikistan's gross domestic product. As a result, ongoing war activities are likely to have a negative impact on the health sector and the poverty rate.

However, a different trend can currently be observed. According to the European Bank for Reconstruction and Development's regional economic outlook from September 2022, Central Asia is more resilient to geopolitical shocks in 2022 than originally expected. According to the EBRD, the upward revisions for Central Asia reflect "a surge in consumption driven by wage increases in the public sector, high transfer flows and a sharp rise in shadow trading with Russia, as well as earnings from commodity exporters". Tajikistan recorded an 85 per cent increase in imports from China in the first seven months of 2022, suggesting that the country serves as a channel for shadow imports to Russia. Russian President Vladimir Putin's announcement of a "partial mobilisation" on 21 September also triggered a new wave of Russian refugees to Tajikistan. This creates more employment opportunities in Russia – both on the regular labour market and in the Russian military. Tajikistan refrains from answering questions about the Russian war of aggression on Ukraine. The country pursues a foreign policy oriented towards Russia, China and the West in order to meet the desire for autonomy.

Summary of the rating:

Due to the high prioritisation of TB control in the country, the positive impacts of the project are very likely to continue. We therefore rate sustainability as successful.

Nevertheless, the high donor dependency and the overall economic situation are likely to pose challenges to the further functioning and sustainability of the hospital in Digmoj in the future, even though the national strategy is unfazed in its continued fight against TB.

Sustainability: 2

Overall rating: 2

Three of the six individual OECD DAC criteria to be assessed – "relevance", "coherence" and "effectiveness" – were rated "1". The criteria of "efficiency", "impact" and "sustainability" received a rating of "2".

The functioning, modern TB hospital in Sughd oblast not only contributes to the functionality of regional TB control, but also to sustainably improving the diagnosis and treatment of the various forms of tuberculosis in Tajikistan. The long-term financing for the operation and maintenance of the hospital in Digmoj is not yet foreseeable at this point in time – due to the Ukraine war and the likely reduction in donor interventions in the future. Therefore, the sustainability criterion is weighted slightly more strongly than the other criteria. The overall rating is therefore not "1", but a "2". This means that the overall assessment is that the project is successful.

Contributions to the 2030 Agenda

The project contributes to achieving SDG No. 3.3 "By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases". WHO also considers six other SDGs in the context of TB:

- SDG 1 "End poverty in all its forms everywhere", as poverty is a major risk factor for TB and prevents visits to healthcare facilities;
- SDG 2 "End hunger, achieve food security and improved nutrition and promote sustainable agriculture", as undernutrition weakens the body's defences and thus increases the risk of TB infection;
- SDG 7 "Ensure access to affordable, reliable, sustainable and modern energy for all", as indoor air pollution is a risk factor for TB infections;
- SDG 8 "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all", as there is a correlation between a country's per capita income and TB incidence;
- SDG 10 "Reduce inequality within and among countries", as TB is a poverty disease
- and SDG 11 "Make cities and human settlements inclusive, safe, resilient and sustainable", as living in a slum poses a risk factor for TB transmission due to its density of inhabitants.

The partner country and donors are guided by WHO recommendations in the fight against tuberculosis in Tajikistan. In addition, there is a continuous exchange between the named parties, which are organised in technical working parties. Activities are implemented on a collaborative basis. WHO monitors various TB developments in Tajikistan, and its expert opinion is available on site when new M&E standards are introduced. For example, WHO is also working with various donors to establish an in-house quality management system for laboratories in Tajikistan and ensures that the system for WHO monitoring and evaluation is used by all institutions involved in combating TB.

Project-specific strengths and weaknesses as well as cross-project conclusions and lessons learned

The project had the following strengths and weaknesses in particular:

- The project was used to implement the streamlining concept in Sughd oblast. It took a holistic approach by changing the structure of TB treatment in Tajikistan to a more cost-effective, decentralised approach, with costly hospital treatment left to the really severe cases.
- The Digmoj hospital is perceived as a positive example of structural change in TB care and hospital management. It also serves as an example of a climate-friendly public building.
- The regular quality review of the Digmoj hospital's laboratory by the NRL and the continual transfer of knowledge within the laboratory network help to secure the quality of the services.
- Thanks to the hospital's increased attractiveness, the TB stigma in the region was significantly counteracted.
- The project's implementation agreements effectively support the partner's own responsibility. They were all implemented.
- The complementary measures were able to minimise the risks assumed at the time of the project appraisal.

- The operation and maintenance of the hospital in Digmoj is mainly dependent on the Tajik government's health budget and the funds of other donors.

Conclusions and lessons learned:

By following WHO's DOTS strategy and the related streamlining concept in Tajikistan, it was possible to cut down on cost-intensive inpatient capacities and channel the limited financing opportunities for the country into establishing a functioning TB care system.

Evaluation approach and methods

Methodology of the ex post evaluation

The ex post evaluation follows the methodology of a rapid appraisal, which is a data-supported qualitative contribution analysis and constitutes an expert judgement. This approach ascribes impacts to the project through plausibility considerations which are based on a careful analysis of documents, data, facts and impressions. This also includes – when possible – the use of digital data sources and the use of modern technologies (e.g. satellite data, online surveys, geocoding). The reasons for any contradicting information are investigated and attempts are made to clarify such issues and base the evaluation on statements that can be confirmed by several sources of information wherever possible (triangulation).

Documents:
Internal project documents, secondary specialist literature, context, country and sector analyses, comparable evaluations, media reports

Data sources and analysis tools:
Data collection on site, partner's follow-up data

Interview partners:
Project-executing agency, target group, other donors

The analysis of impacts is based on assumed causal relationships, documented in the results matrix developed during the project appraisal and, if necessary, updated during the ex post evaluation. The evaluation report sets out arguments as to why the influencing factors in question were identified for the experienced effects and why the project under investigation was likely to make the contribution that it did (contribution analysis). The context of the development measure and its influence on results is taken into account. The conclusions are reported in relation to the availability and quality of the data. An evaluation concept is the frame of reference for the evaluation.

On average, the methods offer a balanced cost-benefit ratio for project evaluations that maintains a balance between the knowledge gained and the evaluation costs, and allows an assessment of the effectiveness of FC projects across all project evaluations. The individual ex post evaluation therefore does not meet the requirements of a scientific assessment in line with a clear causal analysis.

The following aspects limit the evaluation:
At a global level, the data on TB are insufficient due to the coronavirus pandemic and its impact on diagnosis and treatment, which has seen little research to date, but also due to the clinical picture of TB. WHO expects that the coronavirus pandemic will influence the estimates of incidence and mortality for 2021 in many countries, and that dynamic models must be used to measure these two indicators. It is also planning to investigate the impact of the COVID-19 pandemic on multidrug-resistant TB.

Methods used to evaluate project success

A six-point scale is used to evaluate the project according to OECD DAC criteria. The scale is as follows:

Level 1 very successful: result that clearly exceeds expectations

Level 2 successful: fully in line with expectations and without any significant shortcomings

Level 3 moderately successful: project falls short of expectations but the positive results dominate

Level 4 moderately unsuccessful: significantly below expectations, with negative results dominating despite discernible positive results

Level 5 unsuccessful: despite some positive partial results, the negative results clearly dominate

Level 6 highly unsuccessful: the project has no impact or the situation has actually deteriorated

The overall rating on the six-point scale is compiled from a weighting of all six 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 (“impact”) and the sustainability are rated at least “moderately successful” (level 3).

Publication details

Responsible:
FC E
Evaluation Department of KfW Development Bank
FZ-Evaluierung@kfw.de

KfW Group
Palmengartenstraße 5-9
60325 Frankfurt am Main, Germany

List of annexes:

Annex 1 – Target system and indicators

Project objective at outcome level	Rating of appropriateness (former and current view)
During project appraisal: To improve the diagnosis and treatment of the various forms of tuberculosis, measured by improved case detection and treatment success rates. The indicator for the complementary measure related to the proper operation of the building and equipment (at least 90% of the equipment should be in a fully functional condition at the end of the project).	Appropriate, as this objective focused on the need to improve the health situation with regard to TB in Tajikistan (see Relevance section)
During EPE (if target modified). The objective remained the same, the case detection rate was dropped due to the lack of impact logic and further indicators were raised added the course of project implementation in accordance with the PP	

Indicator	Rating of appropriateness (for example, regarding impact level, accuracy of fit, target level, smart criteria)	PA target level Optional: EPE target level	PA status (2010)	Status at final inspection (2021)	Optional: Status at EPE (2022)
Improvement of the treatment success rate ("DOTS Treatment Success")	The treatment success rate is appropriate to measure the effectiveness of a hospital. It is a meaningful indicator of systemic progress in the treatment of tuberculosis, in particular the consistent implementation of the DOTS strategy. However, it reflects efforts at several levels of the healthcare system and cannot be attributed exclusively to the project to be evaluated (complex results chain). Remarks: A high treatment success rate can also make a significant contribution to reducing MDR-TB[1] cases.	min. 80%	2009: 85% (WHO) 2008: 82% (MoHSPP)	89% (2019) 92% (2020)	Value achieved: 91% 91.60 (MoHSPP data) Comparable countries in accordance with DAC list: Uzbekistan: 90%5

[1] MDR-TB is when the patient is resistant to the medications of first-line rifampicin and isoniazid.

					Kyrgyz Republic: 81%5
At least 90% of the equipment should be in fully functional condition at the end of the project	The indicator for the complementary measure relates to the proper operation of the building and equipment			achieved	achieved
National MDR rate (all registered cases)	The MDR rates (national versus local) can only be compared to a limited extent, as national data include all treatment levels as well as larger case numbers.				12.4 (2021)
MDR rate (all registered cases at Digmoj Hospital)					7.3 (2021)
Digmoj Hospital Mortality (%)	This indicator of TB mortality at hospital level can only be evaluated during the course of the study in order to also obtain indirect evidence of the quality of treatment at hospital level in this context. Comparisons with national mortality data can only be used to a limited extent, as national data include all treatment levels as well as larger case numbers.				1.1 (2021)
Number of TB patients registered at Digmoj Hospital	The number of registered TB patients as well as bed occupancy over time reflects the use of TB Hospital Digmoj.				861 (2021)
Bed occupancy rate (%)					62.5 (2021)
Average length of stay of an MDR-TB patient (days)	These indicators on the inpatient treatment duration of patients with TB/multidrug-resistant				54.6 (2021)

Average length of stay of an MDR-TB patient (days)	TB indicate in the context of increasingly shorter treatment regimens and the aim of enabling patient-centred (outpatient) care – where feasible – whether shorter average treatment periods are achieved over time (national comparison data were not available to us at the EPE).				81.3 (2021)
Smear positive rate (gene expert)					11.46 (2021)

Project objective at impact level	**Rating of appropriateness (former and current view)**
During project appraisal: Contribution to the achievement of MDG 6 "Combat HIV/AIDS, malaria and other diseases"	The formulation of the project objective at impact level is also appropriate from today's perspective, with the exception of the replacement of MDG 6 with SDG 3.3. There is a certain allocation gap between FC-financed measures and objectives/indicators at national level due to the limited influence of the Digmoj Hospital and the associated laboratories.
During EPE (if target modified): The objective at impact level was to contribute to achieving SDG 3.3 "By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases, and combat hepatitis, waterborne diseases and other communicable diseases".	

Indicator	**Rating of appropriateness** (for example, regarding impact level, accuracy of fit, target level, smart criteria)	**Target level PA / EPE (new)**	**PA status (2010)**	**Status at final inspection (2021)**	**Status at EPE (2022)**
No further increase in the incidence of tuberculosis (per 100,000 inhabitants)	Even from today's perspective, the TB incidence and TB mortality indicators are appropriate to record the impacts of the project and its target achievement, but with a delay. Worldwide experience with the DOTS strategy shows that, in the first three to five years after implementation begins, the number of cases initially increases because improved diagnostics lead to correct identification of patients.		231 (WHO-2009), 80 (MoHSPP 2009)	According to WHO statistics, significant decrease from 206 to 84 cases between 2010 and 2018	2021: 84 (WHO)/40.3 (MoHSPP) Value achieved Comparable countries in accordance

	Remarks: According to a WHO Report in 2021, TB incidence fell globally due to the impact of the coronavirus pandemic (due to reduced access to TB screening and early detection). In addition, existing TB laboratory capacities may have been reassigned to help diagnose COVID-19. This must be taken into account in the evaluation. It is also clear that the incidence of TB is not affected by the coronavirus pandemic to the same extent as TB mortality. One reason for this is that disruptions to diagnosis and treatment services first affect those who are already ill with TB, which results in an increase in deaths. In addition, there is a long period of time between infection and the development of TB symptoms, meaning that the effects of the pandemic on the incidence will be rather long-term.				with DAC list: Uzbekistan: -17% Kyrgyz Republic: -22%
No further increase in tuberculosis mortality in Tajikistan (cases/100,000 inhabitants/year)			46 (WHO-2009), 5.4 (MoHSPP 2008)		2021: 9.62 (WHO)/1.3 (MoHSPP) Value achieved

[2] HIV-negative TB mortality Tajikistan Global Tuberculosis Report 2021, World Health Organisation

Annex 2 – Risk analysis

Risk	Relevant OECD-DAC criterion
Inadequate professional qualifications of medical staff, including laboratory staff, as well as the Ministry of Health's capacity for performance and reform in implementing the programmes - did not materialise	Effectiveness, efficiency, sustainability
Inadequate implementation of the rationalisation concept - did not materialise	Coherence, effectiveness, efficiency, overarching developmental impact, sustainability
Staff shortages - did not materialise	Effectiveness, efficiency, sustainability
Introduction of a modern hospital management system - did not materialise	Effectiveness, sustainability
Insufficient budget allocations for the operation, maintenance and servicing of supplied equipment - occurred to some extent	Sustainability

Annex 3: Project measures and their results

The project included the following measures:

Components	Activities
Construction works	1. Renovation of the regional TB reference hospital “Digmoj” with a total area of 8,779.95m² (a three-storey main building, a two-storey outbuilding with 50 beds for MDR patients, 20 children’s beds, a BSL-2 laboratory incl. installation of a technical ventilation system as well as supporting facilities such as central sterilisation, laundry, kitchen, morgue, waste facilities as well as workshop and machine building for the heating system). 2. Renewal of the required infrastructure supply at the regional TB reference hospital in Digmoj (electricity, water and waste water, waste water treatment plant, heating and ventilation).
Machinery and equipment	1. Procurement and installation of medical and non-medical equipment for the TB reference hospital in the oblast of Digmoj. 2. Technical and clinical training measures for the long-term use of the supplied medical equipment.
Management and consulting	1. Consulting services to support the executing agency in the project implementation of the TB IV programme (especially in the design, implementation of tenders for construction measures and equipment, supervision of works, reporting). 2. Capacity development (medical training, training of laboratory professionals in modern laboratory diagnostics, introduction of quality standards for the BSL-2 laboratory in Digmoj, training in hospital and maintenance management, introduction of a hospital information system, introduction of a hospital waste management system).

Annex 4: Recommendations for operation

We recommend continuing the measures started during the complementary measure at the Digmoj hospital, i.e.

- maintenance of continuous quality assurance by the NRL in cooperation with the German laboratory in Gauting
- continuation of successful training measures for personnel
- compliance with maintenance intervals for regular maintenance of medical equipment
- maintaining regular audits of hospital and waste management.

Annex 5: Evaluation questions in line with OECD-DAC criteria / ex post evaluation matrix

Relevance

Evaluation dimension Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Policy and priority focus			1	o	
Are the objectives of the programme aligned with the (global, regional and country-specific) policies and priorities, in particular those of the (development policy) partners involved and affected and the BMZ?	Overall, how significant is tuberculosis as a health problem in Tajikistan? What other diseases with similar effects on health were and are there in Tajikistan? Was fighting TB a priority of the partners? Was it an urgent problem for them? Was the decision to invest in a TB hospital at the time of the appraisal (2010) a priority for the partners, or was this a German idea? Were there bottlenecks in the fight against tuberculosis in Tajikistan? Which elements for curbing tuberculosis received less support than necessary and desired? How did the project fit into the overall strategy for domestic TB control in Tajikistan? Is there a strategic reference framework in German DC?	- Project appraisal - Final report 2010 65 580 / 2010 70 127 - Country strategy for bilateral development cooperation with the Republic of Tajikistan (Last updated: 18 May 2016) - National tuberculosis control programme for protection of the population of the Republic of Tajikistan for 2021–2025 - WHO Global Tuberculosis Report 2021 - MoHSPP/WHO questionnaire			
Do the objectives of the programme take into account the relevant political and institutional framework	Are the objectives of the measures institutionally anchored in Tajikistan? If yes, what laws and	- Project appraisal - National tuberculosis control programme for protection of the			

conditions (e.g. legislation, administrative capacity, actual power structures)?	frameworks govern combating TB in Tajikistan?	population of the Republic of Tajikistan for 2021–2025 - MoHSPP/WHO questionnaire			
Focus on needs and capacities of participants and stakeholders			1	o	
Are the programme objectives focused on the developmental needs and capacities of the target group? Was the core problem identified correctly?	Are the programme objectives focused on the developmental needs and capacities of the target group in Tajikistan (around 7 million), but primarily the inhabitants of the oblast of Sughd (2.3 million)? Was the core problem identified correctly? What are the most urgent needs for combating TB? What is the importance of avoiding MDR-TB? Why was the project aimed at expanding hospital and laboratory capacities, in contrast to supporting other components of national TB control, such as strengthening outpatient treatment structures, expanding and anchoring DOTS, vaccinations of children with bacillus Calmette-Guérin (BCG) and/or strengthening peripheral structures?	- UNDP 2020 Human Development Report - National tuberculosis control programme for protection of the population of the Republic of Tajikistan for 2021–2025 - World Bank data - MoHSPP/WHO questionnaire			
Were the needs and capacities of particularly disadvantaged or vulnerable parts of the target group taken into account (possible differentiation	Were the measures suitable for reaching disadvantaged population groups (poor) in particular?	- Project appraisal - World Bank data - National tuberculosis control programme for protection of the			

according to age, income, gender, ethnicity, etc.)? How was the target group selected?	How was the target group selected?	population of the Republic of Tajikistan for 2021–2025 - Tilloeva Z., Aghabekyan S., Davtyan K., Goncharova O., Kabirov O., Pirmahmadzoda B., Rajabov A., Mirzoev A., Aslanyan G. Tuberculosis in key populations in Tajikistan – a snapshot in 2017. Journal of Infection in Developing Countries. 2020 Nov 16;14(11.1):94S-100S. doi: 10.3855/jidc.11952. PMID: 33226966.			
Appropriateness of design			1	o	
Was the design of the programme appropriate and realistic (technically, organisationally and financially) and in principle suitable for contributing to solving the core problem?	Was the project appropriate to improve the quality of the diagnosis and treatment of TB in Tajikistan and to contribute to reducing TB figures, the number of MDR-TB cases and mortality in the long term? What specific needs were there to strengthen TB control in Tajikistan at the time of the project appraisal? And was the project suitable for contributing to solving the problems?	- Project appraisal - MoHSPP questionnaire			
Is the programme design sufficiently precise and plausible (transparency and verifiability of the target system and the underlying impact assumptions)?	Are the target system and the underlying impact assumptions comprehensible and verifiable? To what extent are the measures suitable for addressing/contributing to the solution of the core problem?	See comments on the target system and the results chain			

Please describe the impact chain, incl. accompanying measures. Is this plausible?	Results chain 1: The rehabilitation and equipping of the hospital, as well as the extensive training of medical staff create better conditions for the rapid detection of sick and infectious persons as well as a fast-acting, efficient therapy. Due to the increased case detection and treatment success rate, the TB incidence and TB mortality rate will gradually decrease, and the chain of infection will be interrupted. In addition to methodological problems in the calculation bases, there is no direct causal results chain from the rehabilitation and equipping of a hospital at the highest treatment level to an improved case detection rate. This depends on other factors and mainly takes place at the level of the peripheral health stations during the patients' first consultations. Results chain 2: Improved diagnosis (case detection) and treatment (recovery) will reduce the number of TB-infected people and those who die from TB (reduced TB incidence and mortality rate). The intent of this chain is to contribute to achieving SDG 3.3. (previously MDG 6). Successful treatment gives patients a new chance on the labour market. Disruption of the employment relationship can also be completely avoided if it is detected and there is intervention in good time. This lowers the risk of falling into poverty as	- Project appraisal - Final report 2010 65 580 / 2010 70 127 - TE expertise

	a result of contracting TB. The project can thus contribute to the social and economic development of the country. Plausible.				
To what extent is the design of the programme based on a holistic approach to sustainable development (interplay of the social, environmental and economic dimensions of sustainability)?		The question was excluded from the design because it is very theoretical.			
For projects within the scope of DC programmes: is the programme, based on its design, suitable for achieving the objectives of the DC programme?		Not relevant, as it is not a DC programme project			
Response to changes/adaptability			1	o	
Has the programme been adapted in the course of its implementation due to changed framework conditions (risks and potential)?	Has the renovation of the hospital in Digmoj and the procurement and installation of medical and non-medical equipment been adapted in the course of its implementation due to changed framework conditions (risks and potential)? Did the health system have reduced capacity to continue providing general health services and health services to combat TB due to the COVID-19 pandemic in Tajikistan? Were there any lockdowns or concerns with regard to the risk of visiting healthcare facilities during the	- Final report 2010 65 580 / 2010 70 127 - Information from LFK - Interview with project-executing agency - Interviews with various discussion partners in control, management and coordination functions			

	pandemic? Were there instances of stigmatisation due to TB having symptoms similar to a coronavirus infection? How was an attempt made to mitigate the consequences of these limitations? Were there restrictions on access to TB screening and treatment due to the COVID-19 pandemic (reduced screening offers, restricted access to/use of healthcare facilities, supply bottlenecks in delivery of medical Reagents for TB testing / medicines for TB treatment[1])? How was an attempt made to mitigate the consequences of these restrictions? Was there an opportunity to resume clinical training despite the ongoing pandemic?	

Coherence

Evaluation dimension Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Internal coherence (division of tasks and synergies within German development cooperation):			1	o	

[1] Isoniazid and rifampicin are the two most effective first-line medications according to WHO.

To what extent is the programme designed in a complementary and collaborative manner within the German development cooperation (e.g. integration into DC programme, country/sector strategy)?		- Final report 2010 65 580 / 2010 70 127 - Tajikistan country strategy 2016 - Overall TB strategy 2015 – 2020 - Question to KfW experts (project manager, office in Dushanbe, Country Manager) - TC programme?
Do the instruments of German development cooperation dovetail in a conceptually meaningful way as part of the programme?	Do the projects to combat tuberculosis in phases I–IV in Tajikistan work well together? Are synergies used? To what extent can the renovation and equipping of the National TB and Lung Centre in Macheton and the establishment of the associated national reference laboratory be seen as a complementary measure? What role did TC have and what role does it still play? Were consultancy services carried out during the project and also after the end of the project?	- Final report 2010 65 580 / 2010 70 127 - Question to KfW experts (project manager, office in Dushanbe, Country Manager) - Interview with partner - GFATM: https://www.bmz.de/de/entwicklungspolitik/gfatm - MoHSPP/WHO/GFATM questionnaire - Telephone meeting with GIZ: To what extent do they provide support and have they already provided support in TB consulting in Tajikistan?
Is the programme consistent with international norms and standards to which the German development cooperation is committed (e.g. human rights, Paris Climate Agreement, etc.)?	Were human rights complied with as part of the implementation of the measures? Is the hospital in Digmoj more climate-friendly after its renovation than before the rehabilitation measures? Has climate-efficient construction been carried out?	- Interviews with staff from laboratories and healthcare facilities who were involved in the practical implementation of the measures of the project - WHO Global Tuberculosis Report 2021 - Final report 2010 65 580 / 2010 70 127 - Consultant questionnaire

External coherence (complementarity and coordination with actors external to German DC):			1	o	
To what extent does the programme complement and support the partner's own efforts (subsidiarity principle)?	What efforts did the partner make on its own (in the form of counterpart contributions, demolition of existing buildings, the design of the outdoor facility, the establishment of an agricultural area with irrigation system to supply the hospital, renovation of the storage buildings and the guard building, the construction of the hospital access road, the installation of the paths on the hospital premises and the fencing of the wastewater treatment plant, the assumption of additional operating costs and costs for the organisation of training courses)? Have the measures contributed to a gradual increase in the budget allocation for hospitals in Tajikistan?	- On-site inspections/visits - Financial report of executing agency - Final report 2010 65 580 / 2010 70 127 - Hospital Management / MoHSPP questionnaire			
Is the design of the programme and its implementation coordinated with the activities of other donors?	Has the design of the measure and its implementation been coordinated with the activities of the other major donor GFATM in the area of TB? Are there other stakeholders (UN e.g. WHO, NGOs, int. donors) in the area of TB in Tajikistan?	- Project appraisal - Final report 2010 65 580 / 2010 70 127 - GFATM questionnaire - National tuberculosis control programme for protection of the population of the Republic of Tajikistan for 2021–2025			

	Is there an exchange of information (and coordination if necessary) between the stakeholders? Are there synergy potentials, have they been used?	
Was the programme designed to use the existing systems and structures (of partners/other donors/international organisations) for the implementation of its activities and to what extent are these used?	Was the programme designed to use the existing systems and structures for partners, GFATM, and WHO to combat tuberculosis, for the implementation of their activities, and to what extent are these used?	- Final report 2010 65 580 / 2010 70 127 - https://www.bmz.de/de/entwicklungspolitik/gfatm - Questionnaire - National tuberculosis control programme for protection of the population of the Republic of Tajikistan for 2021–2025 - Discussion with the executing agency about the respective roles of the other donors
Are common systems (of partners/other donors/international organisations) used for monitoring/evaluation, learning and accountability?	Tajikistan was known for its DOTS strategy in 2002.	- Project appraisal - Question to KfW experts (project manager, former Technical Expert) - Question to partner

Effectiveness

Evaluation dimension Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Achievement of (intended) targets			1	o	
Table of indicators: Comparison of actual/target	--				
Contribution to achieving objectives:			1	o	

To what extent were the outputs of the programme delivered as planned (or adapted to new developments)? (Learning/help question)	**Output 1 Rehabilitation of Digmoj:** **1a)** Renovation of the regional TB reference hospital "Digmoj" with a total area of 8,779.95m² (a three-storey main building, a two-storey outbuilding with 50 beds for MDR patients, 20 children's beds, a Bio Safety Level 2 laboratory incl. installation of a technical ventilation system as well as supporting facilities such as central sterilisation, laundry, kitchen, mortuary, waste facilities as well as workshop and machine building for the heating system). **1b)** Renewal of the required provided infrastructure at the regional TB reference hospital in Digmoj (electricity, water and waste water, waste water treatment plant, heating and ventilation) **Output 2 Equipment of Digmoj**: Procurement and installation of medical and non-medical equipment for the TB reference hospital in the oblast of Digmoj. **Output 3 Enabling the medical staff of the regional culture laboratory to always ensure high-quality testing (complementary measure):** The partnership arrangement with the supranational reference laboratory in Gauting will continue, the intent is to ensure SRL supervision of Digmoj. Technical and clinical training measures for the sustained use of the supplied medical equipment (training of trainers), proper operation of the laboratory: introduction of a reporting system, establishment of	- Project appraisal 2010 65 580 / 2010 70 127 Final reporting 2010 65 580 / 2010 70 127 - Programme to Combat Tuberculosis Phase IV final report, EPOS Health Management in cooperation with: GOPA Consultants, IrfatC **Output 1a), b), 2:** On-site inspections/visits: - Digmoj Hospital (autoclave and ventilator now functional?) - Bio Safety Level 2 Laboratory (ventilation system maintenance?) - Other hospitals, e.g. the tuberculosis hospital in Macheton, and those built with the support of other donors (used to compare and assess the extent of harmonised promotion of the quality of hospital treatment and coordination between donors) - Spot check of selected equipment using the equipment list: access/functionality, inventory number/registration **Output 3:** - Review of completed training measures, including clinical/DOTS training (participants, content) - Validity of the National Reference Laboratory Certificate, check reporting / QM system; obtain information on the laboratory information system/network/operation

	WHO-recommended safety standards, implementation of a quality management system, regular external quality controls by SRL **<u>Output 4 Improvement of the level of knowledge of the medical personnel in TB diagnosis/treatment (complementary measure):</u>** medical training, training of laboratory specialists in modern laboratory diagnostics, establishment of "Training of Trainers" with Macheton personnel, introduction and compliance with standards (DOTS strategy), regular review of literature and communication to various co-workers. **<u>Output 5 Enabling the medical personnel to implement the basics of hospital management and the maintenance concept (complementary measure)</u>** Establishment of administrative, financial and HR departments, establishment of industrial engineering department, training in hospital management, launch of a hospital information system, creation of the maintenance concept, planning, implementation of the maintenance concept, introduction of a hospital waste management system	(number of cultures & sensitivity tests/month) - Questionnaire (interviews with staff from laboratories and healthcare facilities, various discussion partners in control, management and coordination functions (hospital management, laboratory management)) **<u>Output 4:</u>** - Review of completed training measures, including clinical/DOTS training (participants, content) **<u>Output 5:</u>** - Questions about the implementation of the hospital system/training - Details of hospital management training (number of training sessions, trained personnel, content, results of knowledge assessment, etc.) - View maintenance contracts/protocols - Waste disposal facility: waste management concept, checklists, handling of infectious waste - On-site inspections/visits of the established systems
Are the outputs provided and the capacities created used?		- Visual inspection on site
To what extent is equal access to the provided output and created capacities (e.g. physical, non-	Does every potential TB patient receive free treatment at the Digmoj	- Interviews with various discussion partners in control,

discriminatory, financially affordable) guaranteed?	hospital, regardless of gender, age and origin? How is the financing of transport to treatment ensured? How can people living in remote regions get treatment?	management and coordination functions - Interviews with experts in tuberculosis treatment and people with country expertise about Tajikistan - Interviews with patients and relatives as end users and "beneficiaries" of the project - Patient statistics - If applicable, representation of TB patients' interests
To what extent did the programme contribute to achieving the objectives?	To what extent has the renovation of Digmoj Hospital, the renewal of the required infrastructural supply at Digmoj Hospital and the procurement and installation of medical and non-medical equipment, as well as the training measures contributed to improving the diagnosis and treatment of the different forms of tuberculosis? To what extent has the programme improved the case detection rate, improving the treatment success rate ("DOTS treatment success"), reducing TB mortality and mortality in Digmoj Hospital, increasing the number of patients treated compared to the number of beds, increasing the treatment success rate for MDR-TB cases, and increasing the proportion of all new smear-positive TB cases?	- Indicator survey: 2021 WHO Report - Digmoj Hospital Statistics - Discussion in advance with GOPA/EPOS

To what extent did the programme contribute to achieving the objectives at the level of the intended beneficiaries?	To what extent has the measure improved the diagnosis and treatment of the different forms of tuberculosis for the total population of Tajikistan, but above all, for the inhabitants in the oblast of Sughd (2.3 million)? What is the total DOTS coverage in the oblast of Sughd? Are there any parts of the region with less coverage? If yes, why and what are the implementation difficulties? How is the quality of services for TB patients and the provision of DOTS monitored?	- Indicator survey (regional and national data on TB incidence required): WHO Global Tuberculosis Report 2021 - Questionnaire
Did the programme contribute to the achievement of objectives at the level of the particularly disadvantaged or vulnerable groups involved and affected?	Has the measure led to an improvement in the diagnosis and treatment of the different forms of tuberculosis for the poor population of the oblast of Sughd (2.3 million)? Does every TB patient receive free treatment at Digmoj Hospital? How is the financing of transport to treatment ensured?	- Indicator survey (regional and national data on TB incidence required): WHO Global Tuberculosis Report 2021 - Questionnaire
Which project-internal factors (technical, organisational or financial) were decisive for the achievement or non-achievement of the intended objectives of the programme? (Learning/help question)	Organisational question: Implementation agreements PP section 3.19–24 and in the Separate Agreement, which of these were complied with?	- Final report 2010 65 580 / 2010 70 127
Which external factors were decisive for the achievement or non-achievement of the intended objective of the	To what extent can operating and maintenance costs be covered? To what extent are there trade-offs	- Final report 2010 65 580 / 2010 70 127

programme? (Learning/help question)	between cost coverage vs removing financial barriers to access for poor patients? What form of (social and) financial support is there for TB patients (and relatives, if applicable)? Are benefits part of health insurance (…)?	- National tuberculosis control programme for protection of the population of the Republic of Tajikistan for 2021–2025			
Quality of implementation			1	0	
How is the quality of the management and implementation of the programme (e.g. project-executing agency, consultant) evaluated with regard to the achievement of objectives?		- Final report 2010 65 580 / 2010 70 127 - Interview with the project manager - All relevant reports from the implementation consultant (in Tajikistan) on the project (appraisal and interim reports, final reports, final report on the result of all training courses (by individual topics) from the consultant) - Questionnaire (interviews with various discussion partners in control, management and coordination functions, interviews with staff from laboratories and healthcare facilities who were involved in the practical implementation of the measures of the project)			
How is the quality of the management, implementation and participation in the programme by the partners/sponsors evaluated?		Not relevant, as redundant to the above question.			
Unintended consequences (positive or negative)			1	0	

Are unintended positive/negative direct effects (social, economic, environmental) identifiable (or foreseeable)?	None can be determined based on the documentation. (Has the expansion of the hospital in Digmoj helped to counteract the stigma of TB in the oblast of Sughd in Tajikistan?)	
What potential/risks arise from the positive/negative unintended effects and how should they be evaluated?		Not relevant.
How did the programme respond to the potential/risks of the positive/negative unintended effects?		Not relevant.

Efficiency

Evaluation dimension Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Production efficiency			2	o	
To what extent were the inputs of the programme used sparingly in relation to the outputs produced (if possible in a comparison with data from other evaluations of a region, sector, etc.)? For example, comparison of specific costs.	To what extent were the inputs of the measure used sparingly in relation to the outputs provided compared to other TB control programmes in Central Asia in relation to construction costs? Why were the construction costs for Digmoj higher than those for Macheton?	<u>Other health sector evaluations in Central Asia:</u> - (1) Tuberculosis (TB) Control Programme III and IV in Kyrgyzstan (BMZ nos. 2005 66 224* and 2006 66 339) - (2) Tuberculosis Control in Tajikistan Phases I, II, III (incl. complementary measure): 2004 66 151 (I), 2007 66 006 (II), 2008 66 467 (III)* and 2008 70 253 (complementary measure) - (3) Final reporting 2010 65 580 / 2010 70 127			

If necessary, as a complementary perspective: To what extent could the outputs of the programme have been increased by an alternative use of inputs (if possible in a comparison with data from other evaluations of a region, sector, etc.)?					
Were the outputs produced on time and within the planned period?	Were the renovation of the hospital in Digmoj, the renewal of the required provided infrastructure at the hospital in Digmoj and the procurement and installation of medical and non-medical equipment as well as the training measures for achieving the improvement of the diagnosis and treatment of the different forms of tuberculosis prepared in good time and within the planned period?	Final report 2010 65 580 / 2010 70 127			
Were the coordination and management costs reasonable (e.g. implementation consultant's cost component)?	Were the coordination and management costs of EUR 591,331.00 (7% of the total costs) appropriate?	<u>Other health sector evaluations in Central Asia:</u> - (1) Tuberculosis (TB) Control Programme III and IV in Kyrgyzstan (BMZ nos. 2005 66 224* and 2006 66 339) - (2) Final inspection reports for Tuberculosis (TB) Control Programme I, BMZ no.: 1999 66 508 (Kazakhstan)			
Allocation efficiency			2	o	
In what other ways and at what costs could the effects achieved (outcome/impact) have been attained? (Learning/help question)	In what other ways and at what costs could the effects of a reduction in TB incidence and mortality have been achieved?	Comparison with other tuberculosis projects: EPE of National Tuberculosis Control Programme I and II in Kazakhstan (BMZ no. 1999 6650 8 and 2000 6582 1*)			

To what extent could the effects achieved have been attained in a more cost-effective manner, compared with an alternatively designed programme?	To what extent could the construction costs for the hospital in Digmoj have been cheaper compared to the construction costs of Macheton Hospital? Which therapy measures are considered to be the most cost-efficient? What are the average treatment costs for drug-sensitive TB cases and drug-resistant TB cases?	Questionnaire (interview with former TE, question to consultant (he had made the cost estimate for the building)) The last two questions are not relevant, as the costs depend on the duration of treatment and medication, among other things, and do not allow for direct comparison.
If necessary, as a complementary perspective: To what extent could the positive effects have been increased with the resources available, compared to an alternatively designed programme?		

Impact

Evaluation dimension Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Overarching developmental changes (intended)			2	o	
Is it possible to identify overarching developmental changes to which the programme should contribute? (Or if foreseeable, please be as specific as possible in terms of time.)	Are social, economic and ecological changes and their interaction noticeable for the population of Tajikistan? Has productivity in Tajikistan improved compared to when the project was designed? Has the poverty rate in Tajikistan fallen compared to the time of the	- WHO Global Tuberculosis Report 2021 - Project appraisal - World Bank (“Stopping TB in Central Asia: Priorities for Action, March 2005”) - World Bank data on poverty, GDP - Statista data on unemployment - Questionnaire			

	project appraisal (reciprocal links between poverty and health)? Have the costs of illness in Tajikistan decreased compared to the time of the project appraisal? Has the unemployment rate in Tajikistan fallen compared to the time of the project appraisal? Have new jobs been created by the project in the meantime? Do the measures help to retain qualified medical and nursing staff in the country and open up prospects for them in the future? Were the costs of TB treatment in Tajikistan reduced by rationalisation? Have the measures contributed to the initiation of further activities leading to a strengthening of the national tuberculosis programme?	- Question to TE: How can the cost of illness be measured?
Is it possible to identify overarching developmental changes (social, economic, environmental and their interactions) at the level of the intended beneficiaries? (Or if foreseeable, please be as specific as possible in terms of time).	Have the measures contributed to improving access to high-quality health services for all population groups, especially the poor?	MoH questionnaire, target group survey
To what extent can overarching developmental changes be identified at the level of particularly disadvantaged or vulnerable parts of the		Not relevant, as redundant.

target group to which the programme should contribute? (Or, if foreseeable, please be as specific as possible in terms of time).					
Contribution to overarching developmental changes (intended)			2	o	
To what extent did the programme actually contribute to the identified or foreseeable overarching developmental changes (also taking into account the political stability) to which the programme should contribute?		MoH questionnaire			
To what extent did the programme achieve its intended (possibly adjusted) developmental objectives? In other words, are the project impacts sufficiently tangible not only at outcome level, but also at impact level? (e.g. drinking water supply/health effects)	During the project appraisal of TB III and IV, it was defined that the overarching development objective was achieved if there was no further increase in TB incidence and mortality rate. The selected indicators are also retrospectively suitable for recording the overarching developmental impact.	Indicator survey			
Did the programme contribute to achieving its (possibly adjusted) developmental objectives at the level of the intended beneficiaries?	Has the reduction in TB incidence led to an economic and socio-economic effect in terms of productivity? Did the direct contribution to the rapid discovery of sick and infectious persons as well as rapid and effective TB therapy contribute to reducing poverty in Tajikistan?	Questionnaire			

	Has the measure reduced the costs of illness and the resulting containment of infections in Tajikistan?	
Has the programme contributed to overarching developmental changes or changes in life situations at the level of particularly disadvantaged or vulnerable parts of the target group to which the programme was intended to contribute?	Did the programme contribute to overarching developmental changes or changes in living conditions for poor, female or peripheral parts of the target group to which the programme was intended to contribute? Has the project led to an improvement in the living conditions of both genders and opened up potential to enable women to participate more strongly in social and economic life?	Questionnaire Tilloeva Z., Aghabekyan S., Davtyan K., Goncharova O., Kabirov O., Pirmahmadzoda B., Rajabov A., Mirzoev A., Aslanyan G. Tuberculosis in key populations in Tajikistan – a snapshot in 2017. Journal of Infection in Developing Countries. 2020 Nov 16;14(11.1):94S-100S. doi: 10.3855/jidc.11952. PMID: 33226966.
Which project-internal factors (technical, organisational or financial) were decisive for the achievement or non-achievement of the intended developmental objectives of the programme? (Learning/help question)	Technical: Selection of a suitable consultant / construction company (provision of technical solutions for non-operation of equipment), orientation in line with DOTS strategy Organisation: Implementation agreements on the financial and personnel capacities of the hospital in Digmoj were adhered to (counter check section 3.19–3.24) Financial: Rapid provision of funds in the event of a shortage of funds on the part of the Federal Ministry for Economic Cooperation and Development (BMZ) in the form of two increases	Final report 2010 65 580 / 2010 70 127
Which external factors were decisive for the achievement or non-achievement of the intended developmental objectives of the programme? (Learning/help question)	Which external factors were decisive for the achievement or non-achievement of the intended developmental objectives of the programme?	

	Has government spending on the health sector in Tajikistan risen compared to when the project was designed?				
Does the project have a broad-based impact? - To what extent has the programme led to structural or institutional changes (e.g.in organisations, systems and regulations)? (Structure formation) - Was the programme exemplary and/or broadly effective and is it reproducible? (Model character)	What is the current status in the supply of medicine for regular TB cases and MDR cases in Tajikistan and the oblast of Sughd? Did the measure contribute to knowledge transfer between TB doctors and specialists in the country? Was it possible to strengthen the country's laboratory network with the help of the measure?	Interviews with various discussion partners in control, management and coordination functions, staff from laboratories and healthcare facilities, with patients and relatives as end users and "beneficiaries" of the project, with experts in tuberculosis treatment and people with country expertise about Tajikistan			
How would the development have gone without the programme?		Interviews with various discussion partners in control, management and coordination functions, staff from laboratories and healthcare facilities, with patients and relatives as end users and "beneficiaries" of the project, with experts in tuberculosis treatment and people with country expertise about Tajikistan			
Contribution to (unintended) overarching developmental changes			2	o	
To what extent can unintended overarching developmental changes (also taking into account political stability) be identified (or, if foreseeable, please be as specific as possible in terms of time)?	None can be determined based on the documentation.				

Did the programme noticeably or foreseeably contribute to unintended (positive and/or negative) overarching developmental impacts?	e.g. patients by-passing the referral system, pulling qualified workers from peripheral structures, etc.	Questionnaire
Did the programme noticeably (or foreseeably) contribute to unintended (positive or negative) overarching developmental changes at the level of particularly disadvantaged or vulnerable groups (within or outside the target group)?	Have the measures contributed, for example, to increased confidence in tuberculosis treatment or to reducing the stigmatisation of tuberculosis sufferers?	Questionnaire Family member DOTS and community DOTS for tuberculosis control in Nepal: cluster-randomised controlled trial – The Lancet

Sustainability

Evaluation dimension Evaluation question	Specification of the question for the present project	Data source (or rationale if the question is not relevant/applicable)	Rating	Weighting (- / o / +)	Reason for weighting
Capacities of participants and stakeholders			2	+	High dependence on external factors (donor financing, economic situation, war in Ukraine)
Are the target group, executing agencies and partners institutionally, personally and financially able and willing (ownership) to maintain the positive effects of the programme over time (after the end of the promotion)?	How is the economic situation in Tajikistan assessed, as well as the institutional conditions (e.g. is there an independent National Tuberculosis Programme) and how will these affect the health sector in the country? What does the budget planning look like for the coming years? Which donors plan to invest how much in TB control? Will the Tajik government and the National TB Programme be able to provide	- National Tuberculosis Control Program for Protection of the Population of the Republic of Tajikistan for 2021–2025 - Questionnaire - WHO 2021 Global Tuberculosis Report			

	adequate funds and support in the next five years? How high will the share of the national budget be in the coming years? Have financial gaps been identified? Remarks: WHO is talking about a high demand for further financing worldwide to counteract the consequences of the coronavirus pandemic on TB control. Does Digmoj Hospital have the prerequisites/capacities to continue to improve/maintain performance in the coming years? Are the operating costs of the hospital secured? Does the hospital have its own budget, proportional to the income in the treatment of non-TB cases (for example CT examinations) or other?	
To what extent do the target group, executing agencies and partners demonstrate resilience to future risks that could jeopardise the impact of the programme?	What is the utilisation of the hospital in Digmoj? How much of the equipment supplied still works? Is critical equipment currently out of service? If yes, since when? Is the hospital staff able to use equipment and interpret diagnostic data? Are necessary reagents and testing materials for the laboratory equipment regularly available and in sufficient quantities? Is the ventilation system of the Bio Safety Level 2 TB laboratory currently being maintained to the recommended extent?	

	Is it now possible to operate the autoclave with the new water softener? Is the repaired ventilator in operation? Does the Supranational Reference Laboratory (SRL) in Gauting, Germany continue to perform the monitoring function for the regional culture laboratory in Digmoj? Are there regular quality controls? Are the implemented reporting/quality management system and WHO safety standards still in use in the regional culture laboratory in Digmoj? How much is the laboratory used (number of cultures/month; number of sensitivity tests/month)? How does the regional hospital in Digmoj contribute to solving the problem of multidrug-resistant (MDR) TB in Tajikistan? What is the availability of second-line medication for MDR-TB cases? What is the main reason for the unavailability of second-line drugs? Financing or procurement problems or other reasons? Will sensitivity and resistance tests continue to be carried out in the Bio Safety Level 3 laboratory in Macheton in the event of positive tests? If yes, were/are there problems with transferring the tests?	

	Have further clinical, laboratory and DOTS training sessions been conducted? What was the content of the training? Who were the participants? Has the learned material been implemented (DOTS strategy)? Was the training-of-trainers concept implemented appropriately and used regularly? Do regular doctors' meetings on scientific updates/literature take place? Is there a knowledge transfer between the hospital in Macheton and the hospital in Digmoj? If yes, between whom and how often (continuous vs on an ad hoc basis)? How many of the trained medical and laboratory staff are still working for the hospital in Digmoj? What is the staff turnover rate in general? Has a hospital management plan been developed and implemented? If yes, is it still in use? Is there a preventive and corrective maintenance concept for equipment and infrastructure? If yes, is a preventive maintenance system used for both equipment and infrastructure? Have maintenance contracts been concluded for the medical equipment? If yes, how long do they cover the maintenance of the equipment? Is it possible to extend it? Are the manufacturers' maintenance plans adequately followed? Are checklists for building/plant maintenance and corresponding job cards still in use?	

	Is there a waste management concept incl. a waste management monitoring checklist, training courses, different containers for all waste classes that are in place and followed? Does the hospital have proper disposal of infectious waste in compliance with environmental standards? Are relevant rooms still equipped with coloured bags in rubbish bins and marked with an infectious agent symbol? To what extent do the target group, executing agencies and partners demonstrate resilience to future risks, like a further global pandemic, that could jeopardise the impact of the programme? Are specific bottlenecks for the control of tuberculosis, in particular MDR-TB, foreseeable? What measures must be taken to contain the MDR-TB? Is the long-term supply of TB medication secured? What role does the Global Fund play?				
Contribution to supporting sustainable capacities:			2	+	High dependence on external factors (donor financing, economic situation, war in Ukraine)
Did the programme contribute to the target group, executing agencies and partners being institutionally, personally and financially able and willing	Have energy efficiency measures been implemented? Are they still in operation? Who finances potential maintenance?	- Final Report Tuberculosis Control Program Phase IV, EPOS Health Management in Cooperation with GOPA Consultants, IrfatC - Questionnaire			

(ownership) to maintain the positive effects of the programme over time and, where necessary, to curb negative effects?	Are existing buildings on the hospital premises that were not renovated as part of the measure used? If yes, in what way? Who financed any further renovations/maintenance measures?				
Did the programme contribute to strengthening the resilience of the target group, executing agencies and partners to risks that could jeopardise the effects of the programme?	Did the measure contribute to strengthening the resilience of the population in Tajikistan and MoHSPP with regard to the risks of the lack of coverage of current operating and maintenance costs, staff shortages, progress in implementing the rationalisation concept?	Final report 2010 65 580 / 2010 70 127			
Did the programme contribute to strengthening the resilience of particularly disadvantaged groups to risks that could jeopardise the effects of the programme?		Not relevant, as redundant with regard to the above question.			
Durability of impacts over time			2	+	High dependence on external factors (donor financing, economic situation, war in Ukraine)
How stable is the context of the programme (e.g. social justice, economic performance, political stability, environmental balance)? (Learning/help question)	How stable is the context of the measure in view of the coronavirus pandemic? Have the WHO guidelines on the COVID-19 pandemic and tuberculosis been and are they being implemented?	MoHSPP, WHO questionnaire			
To what extent is the durability of the positive effects of the programme influenced by the		Not relevant, as it is a very theoretical question			

context? (Learning/help question)		
To what extent are the positive and, where applicable, the negative effects of the programme likely to be long-lasting?		Not relevant, as it is a very theoretical question