Ex post evaluation – Kyrgyzstan

Sector: Infectious disease control (CRS code: 12250)
Programme: Tuberculosis (TB) Control Programme III and IV in Kyrgyzstan (BMZ Nos. 2005 66 224* and 2006 66 339)
Implementing agency: Ministry of Health of the Kyrgyz Republic

Ex post evaluation report: 2020

All figures in EUR million	Total (Planned)	Total (Actual)	Phase III (Planned)	Phase III (Actual)	Phase IV (Planned)	Phase IV (Actual)
Investment costs (total)	5.80	4.39	3.50	3.15	2.30	1.24
Counterpart contribution	0.80	0.15	0.50	0.15	0.30	0.00
Funding	5.00	4.24	3.00	3.00	2.00	1.24
of which BMZ budget funds	5.00	4.24	3.00	3.00	2.00	1.24

*) Random sample 2019

Summary: As part of German-Kyrgyz Financial Cooperation (FC), a series of TB control programmes have been planned or implemented since 1998. To date, these have spanned five phases (I to V). The FC projects under review were related to phases III and IV, running from January 2009 until July 2016. The key measures undertaken were aimed at building and equipping a national reference laboratory (NRL) for TB in Bishkek. Quality assurance is conducted through a partnership agreement with the Supra-National Reference Laboratory in Germany. Other measures included drug deliveries and training for medical personnel at the NRL and other laboratories in the country. The construction of a new TB facility and supply of equipment to stations for multi-drug-resistant tuberculosis (MDR-TB) are now to be covered by the subsequent phase (TB-V; 2008 66 772).

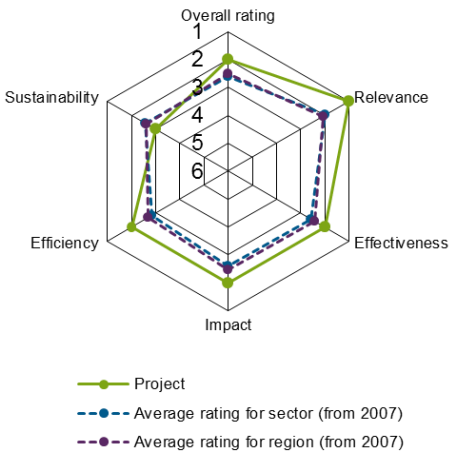
Development objectives: The projects' objective (outcome) was to improve the diagnosis and treatment of the various forms of TB. This, in turn, was intended to achieve an improved health status of the population in Kyrgyzstan (MDG 6; now SDG 3), in particular by breaking the TB transmission chain (impact).

Target group: The target group includes the entire population living in the programme region (around 6 million people). The whole population of the wider geo-strategic region (around 55 million) is also affected due to the dynamic movement of people within Central Asia. Since the danger of an individual contracting tuberculosis depends to a large extent on their respective social living conditions, it was presumed that the poor stood to gain the most from this programme.

Overall rating: 2 (phases III–IV)

Rationale: An important contribution was made to improving the diagnosis, case detection rate and treatment of various forms of TB, while active support was provided to the government's national strategy for combating TB. This was achieved through (i) planning, construction work and equipment for the national reference laboratory in Bishkek (a bio-safety level 3 facility) and (ii) financing and procurement of TB drugs to ensure an uninterrupted treatment regimen.

Highlights: At present the Kyrgyz government can only finance the official TB programme up to 50 % from the state budget and will continue to depend on external donors in the coming years.



Rating according to DAC criteria

Overall rating: 2 (phases III–IV)

Ratings:

Relevance	1
Effectiveness	2
Efficiency	2
Impact	2
Sustainability	3

General conditions and classification of the project

This project "Programme to Combat Tuberculosis, Phases III–IV", builds on the previous phases (TB I and II: financing of TB drugs according to the DOTS strategy, TB diagnostic devices and laboratory equipment). Since both phases (III and IV) were implemented in tandem, they will not be assessed separately and assigned individual ratings. Phases I and II of the Programme to Combat Tuberculosis (1997 65 520 and 1999 65 849) were already evaluated in 2008 and rated "good".

In the course of the report, a comparison is made in part with a similar project in Kazakhstan (BMZ No. 2000 65 821) that was evaluated in parallel. Both the project in Kazakhstan and this project received “good” overall ratings. When interpreting this, it should be borne in mind that both projects faced different sets of circumstances. In the last 20 years, Kazakhstan has experienced very positive economic development, so that the state budget for TB control, among other things, has risen continuously over the years.. This has resulted in a good level of basic health provision and an efficient TB control strategy. The successes in Kyrgyzstan have been achieved in the face of more difficult economic circumstances and a wider array of challenges. The efforts to combat TB in Kyrgyzstan are undertaken in a turbulent atmosphere of high labour-driven migration, a deficient health care system and a low standard of living in rural areas. Thanks to its positive economic development in the last two decades, Kazakhstan is at a much more advanced level than Kyrgyzstan as far as these challenges are concerned. This is also illustrated by the respective standing of the two countries on the Human Development Index, with Kazakhstan in 50th place (HDI value: 0.817) and Kyrgyzstan in 122nd (0.674) as of 2019.

Relevance

The fall of the Soviet Union in 1991 was accompanied by an economic downturn in the newly independent country. This led to Kyrgyzstan’s previous health system collapsing in the early 1990s and, in turn, caused health care in the country to worsen significantly. The centrally and vertically organised TB control programmes of the Soviet era also came to a halt as a consequence of these events. As a result, the number of TB cases increased from around 60 to 128 per 100,000 people between the mid-1990s and 2001. At the time of the programme appraisal (PA) for TB phase III in 2005, the World Health Organization (WHO) estimated the TB incidence rate at 125 per 100,000 people and the TB mortality rate at 11 per 100,000. Another critical factor at the time of the project appraisal was the increasing resistance to common TB drugs due to many patients receiving incorrect and inadequate treatment, caused in part by uncontrolled labour-driven migration occurring in the region and within Kyrgyzstan. The Kyrgyz government recognised the problem of increasing TB cases at an early stage, beginning to respond to this challenge in the mid-1990s as part of a series of far-reaching health and financing reforms. A variety of sectoral programmes were instituted from 1996 onwards, with TB control given top priority.[1] Based on the latest WHO recommendations at the time, TB programmes have been developed and implemented every four or five years

[1] Manas (1996-2005), Manas Taalami (2006-2011) and Den Sooluk (2012-2018) sectoral programmes and the government’s Programme on Public Health Protection and Health Care System Development (2019-2030).

since 1996 to ensure effective TB control. For instance, this approach was used between 1996 and the late 2000s to consistently implement the DOTS strategy.[2] The DOTS strategy implemented as part of the Manas (1996-2005) and Manas Taalimi (2006-2011) sectoral reform programmes helped to increase the number of TB cases detected and documented, as well as improving data reporting. In addition, the DOTS programmes played a role in reducing the cost of treatment per TB patient by providing simpler and more efficient diagnostic tools (sputum diagnosis instead of regular X-ray examinations) and treatment options (standard drugs). Shorter hospitalisation periods in accordance with the DOTS standards resulted in a reduction in the number of hospital beds and staff.

The increase in multi-drug-resistant (MDR) and extensively drug-resistant (XDR) TB cases required a series of efforts to disrupt the chain of infection and consolidate results. Efficient MDR-TB treatment requires resource-intensive laboratory diagnostics that can be used to identify and individually treat the MDR patients. At the time of the appraisal, Kyrgyzstan theoretically already had a central national reference laboratory (NRL) for TB in Bishkek. However, this rudimentary building did not have sufficient laboratory capacities to support drug susceptibility testing diagnoses or culture testing for TB bacteria, nor did it have sufficient funds to use first and second-line anti-tuberculosis drugs. Likewise, the laboratory was unable to offer protection to its staff, which led to frequent infections contracted of testing materials.

The NRL financed during project phases III–IV was intended to provide state-of-the-art equipment for TB testing and diagnosis, which would improve the quality and scope of the TB testing (including MDR-TB and XDR-TB) through molecular biological tests (Hain Lifescience, GeneXpert MTB/RIF) for drug susceptibility. The importance of this susceptibility testing, which was promoted as part of the project, is still highly relevant due to the growing MDR/XDR-TB problem.

Overall, there is a clear relationship between the project objectives (outcome level) and the overarching developmental impact (impact level). The improvements in diagnosing and treating the various forms of TB was and still is a key part of achieving Millennium Development Goal 6 (“combat HIV/AIDS, malaria and other diseases”) and today’s Sustainable Development Goal 3 (“good health and well-being”), especially 3.3 (end the epidemic of tuberculosis among others). The logical framework remains coherent and plausible, as the NRL promoted by the project is helping to improve TB diagnosis and treatment – especially in the case of MDR-TB – and, in turn, supports achievement of the development objective.

Furthermore, the projects built on the predecessor projects Phase TB-I-II, which focused primarily on the supply of drugs, the procurement of laboratory equipment and consulting services, and complemented them in a meaningful way (e.g. by developing a quality management system at the NRL).

On the whole, these activities had the potential to support the government’s national TB control strategy. In addition, the efforts are coordinated with projects carried out by other donors, such as those of the Global Fund/UNDP (GFATM) and USAID, which themselves are complementary. It was also closely related to the Federal Government's objective for the DC programme 'Health Projects in Central Asia', which was aimed at contributing to improving the health status of the population.

The Kyrgyz government’s fifth TB programme (2017–2021) and the 2026 TB roadmap have been in effect since 2017. These steps are intended to reduce the incidence of MDR, XDR and other forms of TB, as well as reducing TB mortality.

This shows clearly that TB has always been and remains a high priority for the government.. These efforts are consistent in a number of ways with the Kyrgyz health reform plans, which focus on developing modern health facilities and generally improving the quality of health care.

In summary, these efforts were highly relevant during the appraisal and remain highly relevant to this day. According to WHO data, 26% of all newly reported cases and 61% (2017) of all re-treatment cases are MDR-TB.

Relevance rating: 1

[2] DOTS strategy (directly observed treatment, short course): a strategy recommended by the WHO (World Health Organization) to treat and control the spread of TB.

Effectiveness

The project's objective (outcome) was to improve the diagnosis and treatment of the various forms of TB. As of this evaluation, the following indicators can be used to measure target achievement at outcome level:

Indicator	Status PA, target PA	Ex post evaluation
(1) Improve the DOTS detection rate for TB, defined as the ratio of new smear-positive cases to the total number of expected cases, from 45% (2004) to 70%.	Status PA: 45% Target: 70%	2018[3]: 87% (Potential range: 75-100%)
(2) Improve the DOTS treatment success rate (the ratio of successful treatments through recommended short-term therapy for new smear-positive cases) to at least 85%.	Status PA: 84% Target: 85%	2018: 82%
(2b) Improve the treatment success rate for MDR/RR-TB cases. (2c) Improve the treatment success rate for XDR-TB cases.	Status PA:* – Target: – b) Treatment success rate for MDR/RR-TB cases (cases started on second-line treatment in 2006): 48% c) Treatment success rate for XDR-TB cases (cases started on second-line treatment in 2009): 11%.	b) Treatment success rate for MDR/RR-TB cases (cases started on second line-treatment in 2016"): 53%. c) Treatment success rate for XDR-TB cases (cases started on second-line treatment in 2016): 15%.
(3) Decrease in notification of total new and relapse TB cases.	Status PA: – Target: – 2004: 6,329	2018: 6,338
(4) Percentage of all new smear-positive TB cases submitted to DST (drug susceptibility testing).	Status PA: – Target: – 2013: 44%	2018: 90%
(5) Laboratory-confirmed cases of MDR/RR-TB/XDR-TB.	Status PA: – Target: – MDR/RR-TB: 2010: 528 XDR-TB: 2010: 32	2018: 1,685 2018: 137

*) There are no initial and target values for indicators 2b to 5, as these are new indicators that were added during the evaluation.

[3] Source for 2018 data: WHO TB Country Profile 2018.

The measures to strengthen the NRL led to improved diagnostics and, in turn, to better case detection. Capacity was also expanded at the NRL, allowing a larger number of more extensive and higher-quality TB tests to be carried out. This, in turn, played a role in delivering improved, more accurate identification of TB cases – especially MDR-TB and XDR-TB (see also Efficiency section). These efforts also included financing for drugs in 2006 – a sensible move due to a shortage of first-line TB medications at the time.

Indicator 1: The detection rate has risen continuously (to 87% in 2018), putting it above the target value. However, this figure is surrounded by considerable uncertainty. Discrepancies between the estimated number of new cases and actual figures reported are due to a combination of under-reporting of detected cases and under-diagnosis (lack of access to health care or undiagnosed TB).[4] The WHO has now replaced the case detection indicator with an updated indicator (new case notification). Due to the limited information value of the case detection rate, this indicator is taken into consideration, but it is only included in the assessment to a limited extent.

Indicator 2: The recovery rate demonstrates systematic advancements in TB treatment – especially in terms of consistent DOTS strategy implementation. It is important to recognise that this reflects efforts at several levels of the health system and can therefore not beattributed exclusively to the FC measure. The target value for this indicator was close to being reached. On the other hand, it was possible to achieve a slight improvement in the recovery rate for resistant forms of TB. The MDR/RR-TB recovery rate (2b) improved from 48% in 2006 to around 53%, while the XDR-TB rate (2c) improved from 11% in 2009 to 15% in 2016. This indicator has continued to improve since the project planning stage, although it remains at a relatively low level for the region.

It is worth noting that the percentage of patients not continuing with their TB treatment increased from 6.2% in 2010 to 10.4% in 2017, which poses a challenge for the recovery rate and creates a risk of MDR-TB spreading. This is a worrying trend, but other donors are already addressing this issue. For instance, the Defeat TB and Challenge TB projects financed by USAID have delivered psychological support during the course of treatment, shorter treatment times thanks to new individual treatments and faster treatment options, as well as innovative methods such as video-supported medication adherence monitoring.[5] The treatment drop-out rate even stands at around 24% for MDR-TB, despite the activities in this area – especially those financed by USAID – explicitly focusing on patients with MDR and XDR. Despite these efforts, the reality is different in the government primary health care (PHC) system in rural areas. Due to capacity constraints, insufficient funds and a lack of expertise, general TB patient monitoring and support falls in the inadequate to deficient range, characterised by incorrect pharmacotherapy and interruptions to longer treatment regimens for economic reasons (seasonal labour migration to Russia). One of the reasons for the much larger number of treatment interruptions in Kyrgyzstan than in Kazakhstan is that Kyrgyz patients do not receive financial support from the government as a reward for successful treatment. In Kyrgyzstan, it is laboratory and hospital staff who receive pay-for-performance bonuses, whereas only some patients receive material support from the government. In addition, TB treatment in Kazakhstan now includes elements of telemedicine, for instance.

Indicator 3: The number of newly reported and relapsed TB cases remained close to constant between 2006 and 2018.

Indicator 4: According to the WHO's Global TB Report 2018, 90% of all smear-positive cases in Kyrgyzstan undergo drug susceptibility testing (DST). By comparison, the figure is around 100% in Kazakhstan and Uzbekistan, while Tajikistan stands at the 89% mark. At the NRL, the number of DSTs for first-line drugs rose from 824 in 2013 to 3,757 in 2017.[6] Early DST testing is an important indicator for early detection of MDR/RR and XDR-TB. This development shows that the efforts under review helped to improve and accelerate the diagnosis of MDR/RR-TB and XDR-TB by expanding capacity and promoting innovative technology. This can then be used as a foundation for creating individual patient-centred treatment regimens.

Indicator 5: The numbers of laboratory-confirmed cases were 528 (MDR/RR-TB) and 32 (XDR-TB) in 2010. These figures increased over the period – including after the NRL opened in 2013 – to 1,685 and

[4] WHO (2018): Global Tuberculosis Report.

[5] USAID Challenge TB and Defeat TB: usaid.gov/kyrgyz-republic

[6] NRL statistics (2017).

137 cases in 2018, respectively. While this trend may seem alarming, it also demonstrates that the programme is making a significant contribution to improving diagnosis and case detection for MDR-TB and XDR-TB by providing state-of-the-art technology and equipment.

Even though a direct link with the FC project cannot be proven, it is important to note that these efforts also helped to improve the diagnosis of MDR-TB and XDR-TB by expanding the NRL, as well as playing a role in introducing the standardised diagnostic algorithm under the national TB programme. As a result, the laboratory's capacity improved, both in terms of the number of TB tests it conducted and the range of different drug-resistant cases it was able to detect. This provides an explanation for the increase in the total number of MDR-TB cases. The Kyrgyz government was able to use this opportunity for more accurate TB case detection to address the growing MDR-TB burden, as well as developing an adequate TB strategy for the country. This, in turn, made it possible to procure drugs to treat MDR-TB and XDR-TB in cooperation with the Global Fund.

In summary, we would note that the support provided to the Kyrgyz government as part of the programmes under review made an important contribution to improving the diagnosis of various forms of TB, in addition to ensuring more accurate and efficient treatment of these cases. This support came in the form of assistance with planning, construction work and equipment for the national reference laboratory in Bishkek (a bio-safety level 3 facility), as well as financing and the rapid procurement of TB medications to ensure an uninterrupted treatment regimen for first-line drugs. This is particularly important for containing MDR/RR/XDR-TB and plays a significant role in preventing more serious consequences from ensuing.

Effectiveness rating: 2

Efficiency

Originally, the project was allocated a budget of EUR 3.5 million for phase III and EUR 2.3 million for phase IV, though this was not enough to finance all the planned measures. There were two reasons for this. First, there was the flawed assumption that a shipping container design could be built more quickly than a conventional design. Second, the costs for container construction were significantly underestimated at just EUR 0.6 million, which became apparent as early as 2009. Specifically, this increase stems from a three-year-long delay in the construction of the NRL (issues with tendering and supply of building components) and the decision to import all the building components and equipment (for quality assurance purposes). This cost increase prevented other project measures planned for phases III and IV from being implemented, such as construction work and equipment for the urban TB hospital, additional equipment for TB services in the penal system, equipment for three MDR-TB stations, and procurement of medical equipment for TB hospitals at *oblast* level. This also led to a smaller counterpart contribution from the partner (3.4% instead of 13%), which was spent on demolishing old buildings on the NRL's premises and preparing a groundwater report. This targeted focus on the NRL makes perfect sense for allocation efficiency reasons and because there are plans to incorporate these measures into the subsequent phase of the programme (phase V).

Despite the increase in costs, the expenditures on the NRL are still considered appropriate from a production efficiency perspective (see final review from June 2017), especially when the specific technical requirements of this type of specialised laboratory facility are taken into account. In terms of construction costs (not including equipment),[7] the average price per square metre of the NRL is EUR 3,632, which is at the upper end of the price spectrum but is still within reasonable limits. Drug procurement activities only accounted for 4% of the total costs, with consulting costs making up 15% of the total. This can be regarded as appropriate.

A visit to the NRL revealed that the equipment financed by the FC is being used properly. Bacterial culture diagnostic techniques are routinely used in addition to subsidised molecular biological tests (Xpert MTB/RIF and Hain Lifescience diagnostic tests) for all newly diagnosed cases. This method continues to be seen as useful and efficient due to the existing MDR-TB and XDR-TB problem in Kyrgyzstan, as bacterial culture-based diagnoses are particularly suitable for detecting a wider range of drug-resistant cases. The total number of different types of TB tests carried out each year has increased from 6,000 tests in

[7] Does not include transport costs (around 13%).

2012 (before the new NRL opened) to more than 40,000 tests. Overall, the NRL has the technical capacity to perform up to 200 tests per day and up to 1,400 tests per week. The number of samples sent to the NRL also rose from 17,000 (2014) to 22,460 (2018). Thanks to the new and innovative laboratory equipment, more TB cases (especially MDR/XDR-TB) can be identified and treated accordingly. In addition, the number of TB analysis methods was successfully raised from four to nine, allowing the average diagnosis and testing periods to be reduced from 6 weeks to 10–12 days. The expanded capacity has not been fully utilised to date, though this could be ramped up through staffing increases, along with better and more efficient cooperation with the local health facilities.

The NRL is also efficiently organised at an administrative and operational level. Medications and medical equipment are competently stored and safety regulations are effectively complied with. In addition, the working conditions at the NRL have improved significantly over the previous, rudimentary lab facility. According to the laboratory, there have been no more infections among laboratory staff in recent years.

Despite the positive aspects mentioned, an even higher level of efficiency could have been achieved from an allocation efficiency perspective with a broader-based approach where appropriate (e.g. additional support and equipment for the TB network in the country). This was evident in Kazakhstan, where both the local TB network and the NRL received support at the same time – an approach that was even more essential due to the country's size.

Efficiency rating: 2

Impact

The overarching developmental objective (impact) was to contribute to improving the health status of the population (MDG 6, now SDG 3), especially by breaking the chain of TB infection.

The following indicators were used in the evaluation to assess developmental impact:

Indicator	Status PA, target PA	Ex post evaluation
(1a) Decline in the TB incidence rate from 210 (2005) to 91 (2010) cases per 100,000 people.	WHO data: Status PA: 210 2010: 145 NCP[8] data: Status PA: 125.3 2010: 101.1	WHO data: 2018: 116 (Potential range: 99–134) NCP data: 2017: 90.6
(1b) Decline in MDR/RR-TB incidence rate (cases per 100,000 people).	2016: 84	2018: 47 (Potential range: 39–57)
(2) Decline in TB mortality rate from 11 (2005) to 9 (2010) cases per 100,000 people.	WHO data: Status PA: 11 2010: 12 NCP data: Status PA: 17 2010: 9.2	WHO data: 2018: 6.2 (Potential range: 5.8–6.7) NCP data: 2017: 5.2

The indicators show an improvement in the TB incidence and mortality rates according to both WHO estimates and national NCP data. The TB incidence rate fell continuously from 210/100,000 people in 2005 (WHO) to 116/100,000 in 2018. However, it is not possible to demonstrate a direct influence of the NRL

[8] **National Center of Phthisiology:** central unit for managing and coordinating TB the TB response in Kyrgyzstan.

on the reduction of the TB incidence rate in the country. The mortality rate has also decreased on a consistent basis from 17 cases per 100,000 people in 2005 to 6.2/100,000 in 2018. There was a downward trend in the MDR/RR-TB incidence rate between 2016 and 2018, with cases dropping from 84 to 47.

The new NRL, a bio-safety level 3 facility, also played an important role in improving the disposal of contaminated materials and the in-lab ventilation system. After it is treated, the waste is no longer infectious and can be disposed of using normal refuse disposal methods. In addition, the air is decontaminated using the new ventilation system.

In summary, it is important to note that the entire TB diagnostic system in the country was dysfunctional, due in part to the failure of the original NRL. The original laboratory was unable to perform TB diagnoses successfully or to provide sufficient protection for its staff, a large number of whom contracted TB via infected testing materials. The TB system only started functioning properly with assistance from the new NRL.

Impact rating: 2

Sustainability

In general, we note that there is strong political will to control TB in Kyrgyzstan, as reflected in plans and programmes to improve the fight against the disease. However, a considerable risk is posed by the seriously inadequate government budget and staff shortages, coupled with heavy donor dependency.

By following its TB roadmap, Kyrgyzstan primarily hopes to restructure its network of TB facilities to ensure earlier TB detection and higher-quality diagnostic processes. This is to be implemented by improving the integration of TB services at the primary health care level, further reducing the numbers of TB beds in hospitals in favour of more outpatient care and optimisation of the work of TB facilities.

But the biggest challenge in Kyrgyzstan remains the personnel and budgetary capacity of the Ministry of Health (MoH) in the battle against TB. With around 75 employees, a high turnover rate and around 25 jobs generally lying vacant, the ministry is chronically under-staffed when it comes to effective management of the sector and additional donor coordination. The National Tuberculosis Centre (NCP) is currently in a relatively good position as far as staffing is concerned. However, the existing age structure shows that many employees will retire in the near future and it is open whether those vacancies can be filled in the same way. In addition, the NCP's financing (especially for salaries and materials) will continue to depend on external donors in the future. Although the government budget for TB has slightly increased in recent years according to the NCP (around EUR 10.5 million in 2019 versus EUR 9 million in 2014), this is clearly too low and insufficient for significantly containing TB in the country. Although government spending on the health sector in Kyrgyzstan is around 6% (2014) and thus higher by regional standards (Uzbekistan, 5.5%, Kazakhstan 4%, Tajikistan 6%), the absolute amounts available for TB per capita of the population in Kyrgyzstan (around EUR 40-45) are much lower than in Kazakhstan, for example (EUR 260) [9]. In addition, the MoH could face budget cuts as soon as 2020 due to general national budget constraints. As a result, Kyrgyzstan is currently heavily dependent on financing from external donors, with 40% of TB control spending financed by donors in 2019. The Global Fund (GFATM), USAID and Germany finance a large part of the existing TB programmes.. The GFATM's current funding cycle is due to run until the end of 2020. After this, an additional funding cycle is planned, albeit with a reduced volume. USAID will be injecting an extra USD 18 million between 2019 and 2024 under its new effort to end MDR-TB in Kyrgyzstan.

Another important external factor contributing to the spread of TB is the immigration into and emigration from Kyrgyzstan. In particular, rural men often work as seasonal workers in Russia. TB is transmitted outside Kyrgyzstan or contracted abroad before being spread among the returning worker's family and friends. Migrants dropping out of their treatment early also jeopardises the prospects for successful treatment, as TB treatment is still a fairly lengthy process. Migration remains a challenge for the sustainable effort to control TB.

World Bank: Kyrgyz Republic – Public Expenditure Review Policy Notes: Health (May 2014).

Turning to the NRL and its sustainability, it is worth noting that the facility was not only built with donor financing, but has also benefited to date from its partnership with the supra-national reference laboratory and receives operating funds for maintenance. The NRL's staff retention, workforce skills development and quality assurance processes depend on donor financing, putting them at risk over the long term.

Under a partnership with the supra-national reference laboratory in Germany (IML Red, Gauting), external quality control, certification and training courses were incorporated into the programme, which was carried out annually and certified in accordance with international bio-safety standards. The costs of these activities were financed by the FC project until the end of 2018[10], with the GFATM taking over for 2019. The positive impacts of the partnership were clearly visible during the visit to the NRL: The equipment and storage facilities were in good condition, the employees are technically skilled, committed and aware of their responsibilities. As part of the human resources development between the supranational laboratory and the NRL, training plans and courses for laboratory staff, quality assurance measures for laboratory services (internal quality control, external quality assessment and quality improvement), quality management systems and maintenance as well as budget plans were developed. From 2020 onwards, the NRL is no longer due to be certified by the supra-national reference laboratory. Instead, this certification process is to be carried out locally with GFATM funding. For this purpose, two employees from the NRL also received training from IML Red (Gauting, Germany) in recent years – one of whom is due to carry out this activity from 2020 onwards as an external expert independent from the laboratory.

The laboratory has a sufficient number of employees who are well trained thanks to the above-mentioned partnership. The division of labour ensures that the facility is appropriately run. However, due to the low base salaries at the NRL, employee turnover has been high in recent years and remains a major risk. The salaries are currently topped up by external donors, which has reduced turnover, but is still concerning from a sustainability standpoint. The NCP recently issued an official request for the Ministry of Health to increase staff salaries but the ministry has not yet responded. The current professional capacity building at the NRL is primarily being implemented by external experts, who are mainly financed by external donors (USAID, GFATM). A sustainable strategy and planning for the continuous training of the NRL staff, which is financed from national budget funds, does not yet exist.

An external specialist regularly maintains the equipment based on an existing maintenance plan. These devices are in very good condition. The maintenance work is performed to a high quality standard, meaning that all the equipment is still in operation to this day. The costs for maintenance are expected to be financed by the GFATM until 2021 (around EUR 750,000, not including salaries). In this case too, no mechanism has been developed to ensure sustainable financing from the national budget or the NRL budget.

The crucial need for a stable electricity supply is met by a high-power generator (88kVA), meaning that the NRL can operate without restriction.

Since 2016, most of the non-durable goods at the NRL (including first-line drugs) have been financed through the national budget. This is a positive development, as the first-line TB drugs still had to be financed by the project in 2006 due to a shortage of these first-line TB medications at the time. The financing for the drugs was perfectly sensible at that time. Only the expensive second-line drugs continue to be mainly financed by the GFATM. Since 2018, however, these have also been financed through the national budget (10% of the national budget from 2018 onwards, increasing by 5% annually).

The laboratory information system (LIS) financed by USAID is available at the NRL, where it works effectively. However, the connectivity between the nationwide TB laboratory network is low (only 24 of 95 laboratories are connected).The NCP plans to work together with USAID to expand the system to every TB lab by the end of 2020. In the future, significant funding will be required to keep the system running across the board. At this time, it is not clear where these funds will come from. The nationwide transportation of TB samples also needs to be improved and financed. A new, sustainable transportation system is currently being tested in two regions with support from the GFATM, although its prospects for future financing are also unclear. The transportation system has increased sample transportation, especially from the southern provinces, raising the operational utilisation of the NRL. Yet at the same time, the quality of the sam-

[10] Technical Support to the National Reference Laboratory of Tuberculosis in Kyrgyzstan, 2016-2018 (final report by IML; Gauting, Germany; July 2019).

ples largely fails to meet the necessary requirements. Increasing the connectivity rate would significantly improve the NRL's effectiveness and efficiency – and, in turn, the fight against TB.

The NRL is also in the process of obtaining ISO accreditation for regional supra-national reference laboratory (SNRL) status. As a result of this new status, the NRL will face a whole host of challenges and demands regarding the quality of its work and its financing. Accreditation as such is expensive (EUR 70,000) and it is still unclear how financing will be obtained. The risks that SNRL status poses – in terms of future financing and the higher international requirements the laboratory will face as a result – remain for the time being. This next step must be viewed critically in light of the existing challenges.

The project created effective and important structures to combat TB in Kyrgyzstan, which helped to improve diagnosis, treatment and the case detection rate. Yet as things stand, the Kyrgyz government is only able to fund up to 50% of its official TB programme from the budget available. It will therefore have to keep relying on external donors (such as the GFATM, USAID, the WHO and German FC) in the years ahead to implement important streamlining programmes. The TB-related streamlining measures that have been envisaged will ease pressure on the budget in the medium to long term. These include reducing the number of TB beds, efficient sputum transportation, laboratory digitalisation, and efforts to strengthen and reorganise primary health care. Although future financing exclusively from the government budget is uncertain, the development of a highly specialised NRL is an important milestone in the battle against TB. In Kazakhstan, the national TB programme has been financed from the government budget for several years. As part of efforts to boost efficiency, the national laboratory network in Kazakhstan was restructured and electronic data collection was introduced. This has allowed the NRL to obtain high-quality data from the laboratories for political decisions, as well as making it easier to register and further treat patients.

In summary, we can confirm that there is political will to combat TB, as reflected in the government programmes. The role of external donors will remain important in financing TB control efforts in the short to medium term, as the country will continue to experience budgetary constraints. However, this does not mean that the sustainability of the NRL and the fight against TB are under threat in the foreseeable future. Overall, taking the above-mentioned risks into account, the sustainability of the NRL's important contribution and the facility's successes with TB control can still be considered satisfactory.

Sustainability rating: 3

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

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

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

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

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

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

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

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

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

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