Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

INTERNATIONAL COOPERATION

External evaluation

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Project title: Increasing the use of quality-related services in Kyrgyzstan

Country | Region:	Kyrgyzstan, Central Asia
Project number:	2019.2129.5
Project term:	01 April 2022 until 31 March 2025
Lead executing agency:	Ministry of Economy and Commerce, Kyrgyzstan
Executing agency(ies):	National Metrology Institute | National Accreditation Body
PTB | Section:	Q.31 (former 9.31)
PTB | Project Coordinator:	Larysa Schijen
Date:	20 February 2025

This evaluation is an independent assessment. Its contents reflect the assessor's opinion which is not necessarily equivalent to PTB's view.

Table of contents

List of abbreviations

BICSM	Bishkek Centre for Testing, Certification and Metrology
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung
Calidena	PTB value chain approach. Combination from the Spanish words for chain (of value), ‘cadena’, and quality, ‘calidad’.
DAkkS	Deutsche Akkreditierungsstelle GmbH
DC	Development Cooperation
CSM	Centre for Standardization and Metrology
EAEU	Eurasian Economic Union
EQM	Export quality management
EU	European Union
GIZ	Gesellschaft für Internationale Zusammenarbeit GmbH
GCI	Global Competitiveness Index
HACCP	Hazard analysis and critical control points
ILC	Interlaboratory comparison
JICA	Japan International Cooperation Agency
KCA	Kyrgyz Centre of Accreditation
MoEC	Ministry of Economy and Commerce
MoH	Ministry of Health
MoA	Ministry of Agriculture, Water Resources, Regional Development
OCSM	Osh Centre for Testing, Certification and Metrology
PT	Proficiency testing
PTB	Physikalisch-Technische Bundesanstalt
SDG	Sustainable Development Goals
SMART	Specific, measurable, achievable, relevant and timebound
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organisation

1. Summary

Assessment according to the OECD DAC criteria

The evaluation object is the project 'Increasing the use of quality-related services in Kyrgyzstan' with an overall budget of 2,2 million EUR and with a project duration from 04/2022 to 03/2025. The evaluation took place from 07/2024 to 2/2025; findings are based on document analysis and interviews. The following table summarizes the assessment of each of the OECD DAC criteria and the global assessment of the project.

Criterion	Evaluation of the criterion
1. Relevance	2
2. Coherence	2.5
3. Effectiveness	2
4. Efficiency	2.5
5. Impact	2.8
6. Sustainability	2.7
Global assessment[1]	**2.4 (successful)**

Note: The grading procedure is elaborated in Section 5.

☐ Since effectiveness, impact or sustainability were rated "4" or worse, the global assessment is downgraded to "4" although the mean would actually be better than "4".

☒ No downgrading of the global assessment.

[1] For the total assessment of the project, all criteria are equally weighted

Relevance	**Justification:** The project is well aligned with BMZ and partner priorities and generally responded to the needs of partners and the target group: In-depth capacity assessments of training needs and testing capabilities of the supported laboratories have been done. The project design is assessed as satisfactory. Most indicators comply with the SMART criteria but are rather measuring activities than results (e.g. indicator 3.2 relates only to the number of annual exchanges). Given the fact that the project builds on experiences with partners during the first implementation phase the level of ambition has been set too moderately (e.g. outcome indicator 3). The project has successfully adapted to challenges in the course of the 2nd phase. **Mark: 2 (successful)**
Coherence	**Justification:** Within German development cooperation (internal coherence), the project is designed and implemented in a complementary manner on the basis of a division of labour. There is sufficient coordination and cooperation with GIZ at the operational country level. Coordination at the international level (external coherence) is also satisfactory. In both cases, it is recommended to establish a more regular exchange - also at management level - in order to keep track of support from other development partners. This will enable the project team to identify potential synergies, for example with the EU's Team Europe Initiative project, which started in 2024 and will run beyond the current project term. Opportunities in this regard have not yet been sufficiently explored. **Mark: 2.5 (successful)**
Effectiveness	**Justification:** The project is very likely to achieve its objective (at outcome level) by the end of the project period in March 2025 according to the agreed indicators. The project's contributions to the outcome indicators have been largely confirmed. The achievement of outcome indicator 1 (increase in calibration and testing services) is due to the more accurate and valid services of the QI institutions supported by the project (outputs 1 and 2). However, external factors strongly influence this contribution (e.g. support from other development partners, market dynamics, etc.). Trained laboratory staff have the knowledge of new testing methods, but whether they apply their newly acquired knowledge depends on their individual skill levels and daily routines, as well as the regular demand for the new services. Awareness raising activities have also contributed. Evidence of uptake by enterprises ('systematic use' of services) is moderate. A more sophisticated monitoring system (see chapter 4.2) would have provided better evidence of the attribution of results to project interventions. **Mark**: **2 (successful)**
Efficiency	**Justification:** The total budget amounts to EUR 2.2 million, including EUR 800,000 remaining from the first implementation phase, which was not spent due to, among other things, the mobility restrictions of Covid-19. Thus, the project is significantly better funded compared to the average bilateral three-year PTB project. As would be expected for a technical cooperation project, a significant proportion of the funds is allocated to project management staff and the provision of international knowledge to partners through short-term

	expertise (74%), as well as to training activities (human capacity development budget line: 13 %). The results of the project (at output level) could have been increased (maximum principle) by increasing the number of supported companies and using a more multiplier approach in cooperating with sector associations or by deploying more technical experts from South-East Europe or Caucasus countries. The use of resources by the intervention deemed reasonable with regard to the outputs achieved (production efficiency). Allocation efficiency is appraised as appropriate but could have been increased by defining more ambitious targets. **Mark: 2.5 (successful)**
Impact	**Justification:** The intended higher-level development changes – competitiveness, higher product quality and the reduction of technical barriers to trade are plausible. However, the project's contribution is rather punctual. Changes in product quality are taking place in some individual enterprises (monitoring data), but scaling up results remains a challenge. In addition, a broad impact in the long term can only be achieved under certain conditions (economic dynamics, harmonisation of QI responsibilities of food testing laboratories, legal framework, public funding of primary laboratories, etc.). No negative unintended changes have been observed; on the contrary, QI reinforces positive changes in all dimensions of sustainable development. **Mark: 2.8 (successful with some limitations)**
Sustainability	**Justification:** In summary, the financial and human capacity at the national level (CSM and KCA) appears to be sufficient to sustain the results achieved. A detailed assessment of the financial sustainability of the supported food testing laboratories is not possible due to a lack of data on the income situation. Financial and human resources are most scarce in the regional branches of CSM, which do not receive support from the national budget; BICSM and OCSM seem to be in a privileged position and are trying to find funding for their work (e.g. other donors, government funds). All laboratories lack funds for reference materials, consumables, test kits, reagents and resources to participate in ILCs or PTs. Thus, even in those partner organisations that receive government funding, the situation is far from robust and resilience in terms of ability to respond to unforeseen events is limited. **Mark: 2.7 (successful with some limitations)**

2. Introduction

Subject of the evaluation

Project title	Increasing the use of quality-related services in Kyrgyzstan (2019.2129.5)
Programme	Sustainable Economic Development (SED)
Project objective	Private and state companies and institutions in selected regions of Kyrgyzstan use quality infrastructure services.
Term	April 2022 until March 2025 (3-year term)
Volume	EUR 2.2 million
Evaluation period	July 2024 until February 2025
Evaluation team	Renate Müller (Master Social Science; Master Economics), Germany Nino Manvelidze (Ph.D. in Biological Sciences), Georgia
Goals of the evaluation	The project was part of PTB's random sample in 2024. Findings and recommendations are relevant for the remaining term of the project and for PTB internal learning. The German Development Cooperation with Kyrgyzstan will end in 2025.
Methods	Secondary analysis, primary data collection October 2024 (on-site and virtual interviews, focus groups), contribution analysis, data triangulation. No specific evaluation questions defined.

3. Framework conditions and strategic approach of the project

3.1. Framework conditions

Kyrgyzstan is a land-locked, lower-middle-income country in Central Asia that has abundant natural resources and potential for the expansion of its hydroelectricity production, agriculture sector, and tourism industry. The Kyrgyz economy grew at an estimated 6.2% in 2023, following a 9% expansion in 2022. This growth was driven by the services sector, particularly services related to transit trade from China and Russia. On the expenditure side, exports and consumption supported growth. Average consumer price inflation declined from 13.8% in 2022 to 10.8% in 2023 due to easing global food and fuel prices and a tight monetary policy. In the first six month of the year 2023 the current account deficit amounted to 66.2% of GDP ($3.4 billion). This large deficit is attributable to a 38% increase in imports (mainly in food, fuel, machinery, textiles and consumer goods) and a 6.5% decline in remittances despite strong exports growth of 52%, driven by gold exports, tourism, and transit trade services. The economic outlook is favourable. GDP growth in 2024 will moderate to 4.5% as the services sector growth slows down. Investment and exports will drive growth, while consumption growth may ease despite a slight rise in remittances. The GDP growth rate will stabilise at 4% in the medium term without structural reforms. Inflation will decrease within the target range of 5%-7% by the end of 2024 and remain stable in the medium term.

The economy is heavily reliant on agriculture and remittances from Kyrgyz workers abroad. Cotton, tobacco, wool and meat are the country's most important agricultural products. Another significant issue is the high unemployment and poverty rates. About 33.1% of the population lives below the poverty line. Kyrgyzstan has great potential for growth. What it needs are reforms to attract private investment and boost international trade. A significant portion of economic activities occur in the

informal sector, and the number of registered companies is relatively limited. There are approximately 500,000 micro, small, and medium-sized enterprises (MSMEs). Exports, primarily agricultural products, lack diversification, and products frequently fail to meet the requirements of target markets, particularly in terms of quality and adherence to food and safety standards. Building a quality infrastructure system that matches the needs of Kyrgyzstan is essential for promoting sustainable economic development. International recognition of measurements, tests, and certificates removes technical barriers to trade and enables Kyrgyz producers to engage in export, regional, and international value chains. Furthermore, access to quality-related services allows companies to develop efficient production processes, greater reliability, and innovation.

Kyrgyzstan competently navigates the spheres of influence between China, Russia and the EU. As a member of the Eurasian Economic Union (EAEU), Kyrgyzstan has become deeply integrated into this economic community, which offers potential for regional trade. Kyrgyzstan also benefits from the European Union's (EU) Generalised Scheme of Preferences Plus (GSP+), allowing Kyrgyz exporters to supply numerous product categories to the EU at a zero-tariff rate. In June 2024 the Enhanced Partnership and Cooperation Agreement between the EU and the Kyrgyz Republic was signed. This agreement marks a significant milestone in strengthening bilateral relations and cooperation in various mutually beneficial areas.

Kyrgyz MSMEs must be able to demonstrate the conformity of their products with EAEU and EU respectively international requirements to tap the full potential of these trade agreements. Kyrgyz producers must meet the EAEU and EU's stringent quality, safety, and phytosanitary standards for exports. This is particularly challenging for those in the agricultural sector. Increasing the use of quality-related services will make Kyrgyz products more competitive in national and international markets.

Even though compliance with international standards has become a key factor for the competitiveness of Kyrgyz exports, the national QI system is not yet sufficiently prepared. The system suffers from under-financing and lack of qualified staff. This is even more pronounced in the Kyrgyz regions, where for instance the branches of the national metrology authority have to be financially self-sustained. They lack however equipment and staff to offer relevant services. The core problem relates to matching the supply and demand side of the QI system. In the TC module offer it is defined as following: *'There is a clear need to establish a sustainable link between demand from private and public sector institutions and the range of services provided by calibration and food testing laboratories'.*

3.2. Strategic approach of the intervention

The project 'Increasing the use of quality-related services in Kyrgyzstan' (referred to as 'the project') is funded by the German Federal Ministry for Economic Development and Cooperation (BMZ). For the second phase of the project running from April 2022 until March 2025 the project has a total budget of EUR 2.2 million. It is an integral part of the German development cooperation (DC) programme, 'Sustainable Economic Development' (SED) aiming to facilitate sustainable employment and enhance income opportunities in Kyrgyzstan. The project contributes to the SED programme objective indicator 2 'Competitiveness of the Kyrgyz economy'.[2] The **project objective** is:

[2] For measuring 'competitiveness' it was intended to consider a range of sub-indices from the *Global Competitiveness Index* (GCI), published by the World Economic Forum. Given that the comparative country rankings in the GCI have been paused since 2020, it is regrettable that there is currently no data available on Kyrgyzstan's ranking in the sub-indices.

Private and state companies and institutions in selected regions of Kyrgyzstan use quality infrastructure services.

Selected **project regions** are, besides the capital Bishkek, Osh and Jalal-Abad region in the south and Karakol region in the north of the country.[3] The project activities will end in March 2025 due to the fact that the German DC with Kyrgyzstan officially ends in 2026. In order to achieve the objective, the project works in three **intervention areas** (outputs):

Output 1 ‚Strengthened capacities for QI services'	Output 2 ‚Access to QI services'	Output 3 ‚Relevance of QI services (demand side)'
Capacity building of public and private sector institutions in quality infrastructure to improve their service delivery.	Improving access to reliable quality infrastructure services in Bishkek and selected regions (e.g. Osh, Karakol, Jalal-Abad).	Raising awareness among relevant stakeholders of the importance of quality infrastructure services as a tool for developing the private sector.

The project uses a **range of effective capacity development techniques**, including technical training and coaching, policy advice, organisational development and benchmarking. It also includes networking and awareness-raising events with companies and ministries. The core of the project is to support selected laboratories in the use of internationally validated testing methods. It also aims to help laboratories understand customer requirements, particularly those related to the export of products from selected food and agricultural value chains (dairy products, honey, dried fruits and nuts), and to achieve common acceptance of test results. The project activities are designed to improve the testing capacity and competence of laboratories throughout the country. They use international testing methods and good laboratory practices.

The **policy partner** is the Ministry of Economy and Trade (MoEC) and its Department of Technical Regulation and Metrology. The project is mainly targeting key partners of the QI system - the national metrology institute, namely the Centre for Standardization and Metrology (CSM) in Bishkek (including selected regional branches e.g. Osh, Karakol) and the national accreditation body, namely the Kyrgyz Centre of Accreditation (KCA). The core of the project is to support the selected 11 public laboratories (calibration laboratories of the CSM at national and regional level; 7 food testing laboratories). The public laboratories are under the authority of the MoEC, the Ministry of Health (MoH) and the Ministry of Agriculture (MoA). The MoH is the designated authority for government monitoring of food safety risks. To a lesser degree was also provided to 6 private and/or in-company laboratories (see Annex 9.3). The beneficiaries are all users of quality-related services, such as enterprises in the selected value chains of honey, dried fruits and nuts, milk, secondary laboratories and consumers. For an illustration of the results model of the project, see Annex 9.2.

4. Evaluation methodology

4.1. Evaluation design

As specified in the Terms of Reference, the purpose of this evaluation is to assess the project's performance, including the relevance, coherence, effectiveness, efficiency of related interventions, the sustainability of positive results, and the likelihood of overall impact in the near to long term future. The

[3] Kyrgyzstan has by definition 7 administrative regions or 'oblasts': Chui, Talas, Issyk-Kul and Naryn in the northern region of the country, and Batken, Osh, Jalal-Abad in the southern region. The capital Bishkek and Osh in the south of the country are independent administrative units.

evaluation follows the guiding evaluation principles of the BMZ[4] and the standards of the German Society for Evaluation: utility, feasibility, fairness, accuracy, independence and integrity. These principles ensure that evaluations are conducted ethically, transparently, and effectively. PTB evaluations are usually carried out before the end of a project term. The project was selected for the evaluation in 2024 based on defined PTB internal rules for an independent sampling procedure.

The project was evaluated using a **theory-based evaluation design** that used the project's theory of change as the basis for analysis. The theory of change was constructed on the basis of relevant planning and implementation documents and visualised as an outcome model (impact logic) showing the if-then logic of the project design (see Annex 9.2). Given the limited resources available in terms of budget and time, alternative evaluation approaches were rejected. For example, the quasi-experimental approach of analysing cause and effect relationships using control groups was ruled out. Instead, a contribution analysis was carried out. This consists of analysing the contribution of a project and investigating the extent to which observed outcomes (positive or negative) can be attributed to the project. In assessing efficiency, a follow-the-money approach was used to assess production efficiency and overall allocation efficiency.

Interviews with partners, stakeholders and selected representatives of the target group were conducted, using semi-structured interviews. The evaluation combined using virtual conference platforms and in-person interviews and/or focus groups with partners and stakeholders in Bishkek (field mission from 21 until 25 October 2024). A key set of guiding questions was used in a conversational format to collect insights from involved partners (see Annex 9.1). The guiding questions were adjusted according to the background and context of the respective interviewee. A key element of data analysis is triangulation of results, i. e. comparing information from different sources, such as documentation and interviews, or interviews on the same subject with different stakeholders, were used to corroborate or check the reliability of evidence.

4.2. Data sources; data quality

The evaluation is based on a range of data sources. This includes a variety of **secondary data**, such as relevant documents covering project design (project proposal), implementation (report by technical experts), monitoring data, operational planning, work plans, supported policy papers, regional guidelines and progress reports. Many project documents were available in German and English. However, some technical documents (e.g. work plans, minutes of the ‘Steering Committee’) were only available in Russian language.

The **monitoring system** covered well project activities and was last updated in April 2024, mainly for reporting purposes. The PTB standard excel template is used for monitoring. Data on training (e.g. number of participants, training days) were provided for the evaluation. Data on the progress of laboratory capacity is collected annually by the Project Coordinator. Each laboratory provides an update on the outcome indicator 1 (calibration and testing services), output indicator 1.1 (expansion of scope of accreditation[5]) and 1.2 (new areas of accreditation) and 2.1 (new services). There appears to be no joint plausibility check of the data by the project team.

[4] BMZ, 2021. Grundsätze der Evaluierung. Evaluierungskriterien der bilateralen Entwicklungszusammenarbeit – Orientierungslinien des BMZ. Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung, Bonn. August 2021. 14 Seiten. www.bmz.de/resource/blob/92894/evaluierungskriterien.pdf

[5] ISO Definition: Scope of accreditation: The scope of accreditation details the specific tests and methods a laboratory is authorized to conduct, ensuring they meet the necessary standards and competencies.

A functioning **monitoring system** requires clear definitions of what are the intended changes (results) and how to measure them. It is evident that no definition has been provided for the selectivity of the output indicators (see the 'Monitoring Definition Sheet'). For example, the standard GOST 31659:2012 ISO 6579:2002 is counted under three output indicators 1.1, 1.2 and 2.1 indicators. As an illustration, output indicator 1.1 sets out the initial value for measuring the expansion of the 'scope of accreditation' as being '29 services'. The term 'services' is misleading as here the 'scope of accreditation' should be measured. And for a robust monitoring it would have been beneficial to have a before/after comparison for each supported laboratory to trace changes made over time in relation to new services at the beginning of the second project term. Furthermore, when measuring the increase in 'use of services' (outcome indicator 1), the comparison does not appear to be entirely accurate, as the baseline value refers to only two laboratories (according to the 'Monitoring Definition Sheet'), whereas the figures taken into account refer to a total of nine laboratories (see monitoring data). An updated detailed overview of the implemented testing methods (accredited and/or non-accredited) was provided by the short-term expert on food testing laboratories (10/2024). For an assessment of the quality of the indicators see also chapter 5.1.3).

Furthermore, **primary data** sources were used for the evaluation by collecting first-hand information from partners and involved stakeholders. Also, observations were made during the visits of the supported laboratories. In total 37 partners and stakeholders (public sector, QI institutions, companies, business associations, universities at national and regional level) were involved in the evaluation (see for more details Annex 9.1). Most interviews and focus groups with project partners in Kyrgyzstan required translation from Russian to English. This may have led to a loss of accuracy in some cases and also constrained the spontaneity of the conversation. Kyrgyz partners openly discussed and shared their views on the project implementation. Most of the intended virtual and/or face-to-face interviews were conducted successfully. Interview findings appear to confirm the described weaknesses of the monitoring systems, as it was in some cases quite difficult for interviewees to differentiate between the first and second phase of the project. The evaluation findings were validated with partners in a virtual conference meeting at the end of November. Overall, data quality of the interviews was sufficient.

5. Evaluation results

5.1 Status of the transformation process (OECD/DAC)

The status of the transformation process is assessed using the 6-point scale of the PTB.

Marking scale for the evaluation of the OECD/DAC criteria		
Evaluation	**Grade**	**Description**
very successful	1	very good result, far above expectations
successful	2	good result, entirely meets expectations
successful to a limited extent	3	satisfactory; results are below expectations, but mainly positive
rather unsuccessful	4	unsatisfactory; below expectations; negative results prevail despite several positive results
mainly unsuccessful	5	negative results clearly prevail despite several positive partial results
entirely unsuccessful	6	the project has failed completely; situation has rather deteriorated

5.1.1 Relevance[6]

Dimension 1: To what extent is the intervention's design geared to country-specific, regional, and global policies and priorities of the partners and the BMZ?

The objectives of the intervention are well geared to priorities of both partners. From Kyrgyz side the project supports the objectives of the national programme 'Made in Kyrgyzstan for 2024-2027' with its aim to enhance the country's export potential and competitiveness in the global market and within the EAEU. The programme also includes to enhance national infrastructure to improve product quality. The 'Concept for the National QI of the Kyrgyz Republic' (2016 to 2020) developed by MoEC underlines also the importance of a functioning QI for consumer protection and export. This strategic document has been supported by the project in the first phase but has not yet been updated. The selected agricultural value chains aligned well to the economic potential, as agriculture ranks second after extractive metal industries. Commercial agriculture is mainly focused on the fertile Fergana valley in the south and Chui and Talas valleys in the north. Major processing centres are located close to these production areas. The collaboration with the milk processing companies from Karakol took place mainly within the activities of the Laboratory Club. Concerning the BMZ priorities the project complements the German DC SED programme aiming to facilitate sustainable employment and enhance income opportunities in Kyrgyzstan (see also chapter 5.1.5 on the contribution to the programme objective Dimension 1 is rated with 1.).

Dimension 2: To what extent is the intervention's design geared to the needs and capacities of the target groups?

According to the project offer the target groups are technical experts and decision makers of the CSM, KCA, private and state-owned laboratories (primary and secondary level). An in-depth analysis of needs and capacities of partner laboratories was done (gap assessment of each laboratory) and a tailor-made capacity development plan with activities for each laboratory ('Road Map') was developed. The customers of quality-related services, namely export-oriented companies are not explicitly mentioned as target group in the project offer. However, with the CALIDENA process (output 2) the project also supports directly a selected group of producers of the selected value chains. As elaborated in chapter 3, companies need access to affordable testing and calibration services to meet market requirements; this was confirmed by the focus group with companies. The insights from discussions with companies show that companies generally understand the need for adhering to international and/or EAEU standards. But there is still much room for a better understanding of the QI system as a whole and what export readiness for the EU market means. For the CALIDENA Process half-yearly workplans were done. A detailed plan for the pilot companies has not been done.

At partner level, a key constraint to an improved national QI system concerning the regulatory system stems from the limited interagency cooperation and clearly defined mandates. Although working with laboratories being subordinated to three different line ministries (economy, agriculture and health) the project design has not addressed this issue.

All relevant BMZ markers were appropriately set to 'zero', meaning that the project is not making a significant contribution to the specific objective being measured (e.g. gender equality, poverty

[6] The 'relevance' criterion focuses on the intervention's design at the point in time when the offer was approved or modified and assesses the extent to which the intervention is in agreement with the needs, policies and priorities of the partners involved, of the BMZ, and of the target groups as well as the extent to which the intervention's design is adequately geared towards reaching the goal.

reduction, etc.). The intervention's objectives and design are not geared to the needs and capacities of particularly disadvantaged and vulnerable beneficiaries and stakeholders. Dimension 2 is rated with 2.

Dimension 3: To what extent is the intervention's design appropriately, realistically and plausibly geared towards achieving the intervention's objective?

The various intervention areas (outputs 1-3) for achieving the objective are considered appropriate and feasible. The activities of CALIDENA (Output 2) are plausibly aimed at achieving the intervention objective of stimulating demand (Output indicator 2.2), but with a limited reach into the sector. The underlying outcome hypotheses are partly plausible. Improved QI services and greater awareness of the importance of a well-functioning QI system do not automatically stimulate demand. Economic factors strongly influence the demand for quality related services by enterprises. At the outcome level, the defined project indicators provide sufficient guidance for implementation. However, support for KCA is not reflected in the indicators (as was the case in the first phase of the project).

The level of ambition of the project indicator targets is moderate, in particular outcome indicator 1 with a target value of an increase of 3%. This is striking as PTB has been working with QI partners in Kyrgyzstan since 2007. However, the challenges of the COVID-19 pandemic conditions may have influenced the planning process. According to the progress reports, outcome indicator 1 "Calibration and testing services" has already been exceeded ("overachieved") in 2023, one year after the start of the second phase. The breakdown by type of service shows that the development of the number of calibration services is below expectations. However, this is more than compensated by the development of testing services. In terms of testing services, the project has achieved almost five times more than planned (target: 1,086 - achieved: 5,656 as of 09/2024). Similarly, the target for outcome indicator 3 of '8 companies and institutions confirming the usefulness of the services' is modest in absolute terms, given the extensive support provided to 7 pilot companies. For more details about the quality of indicators[7] see chapter 4.2 (monitoring system) and chapter 5.1.3.

The output-level indicators are specific. However, the initial value of output indicators 3.1 and 3.2 is not plausible, as there were already activities to raise awareness in the private sector in the first phase of the project. Providing these figures would demonstrate the continuity of the collaboration with partners and document what the project has already achieved more effectively. With regard to transparency and the level of ambition, it would be beneficial to include more detailed information in the project design and results matrix (e.g. number of institutions, number of enterprises). Also, it would have been beneficial for the quality of the intervention logic to put more planning effort into defining the source of verification for measurement purposes. Dimension 3 is rated with 3.

Dimension 4: To what extent has the intervention's design responded to changes in the environment and adapted to the needs?

The project responded adequately to changes in the second term. It took the opportunity to address the MoEC's priority on the export potential of 'bottled water' and to assist laboratories with relevant testing methods in this area. Despite good progress on the outcome and output indicators (as described above under Dimension 3), the opportunity to adjust the targets of the indicators (e.g. more realistic targets) was not taken. And regarding the restructuring of the MoA in 2023, the project faced challenges in working with partners at the political level (e.g. management of the veterinary service). Dimension 4 is rated with 2.

[7] Whether they are suitably chosen to quantify the level of achievement according to the SMART criteria.

Summarized evaluation: Overall, relevance of the project at the time of planning the 2nd phase (May 2022) and from today's perspective is assessed as high – for private and public partners. The criterion 'relevance' is rated with 2 (successful).

Criterion	Evaluation dimension	Weighting	Appraisal
Relevance	The intervention's design is geared to country-specific, regional and global policies and priorities of the partners and the BMZ.	25 %	1
	The intervention's design is geared towards the needs and capacities of the target groups	25 %	2
	The intervention's design is realistically and plausibly geared towards achieving the intervention's objective	25 %	3
	The intervention's design has responded to changes in the environment and adapted to the needs.	25 %	2
		Global assessment of the relevance	**2**

5.1.2 Coherence[8]

Dimension 1: Internal coherence: Within German DC, to what extent was the intervention designed and implemented in a complementary manner, based on a division of tasks?

At **SED programme level**, regular exchanges organised by the GIZ country office were discontinued in 2022 (due to the phasing out of bilateral cooperation). The level of cooperation seems to have decreased in the second phase, which may be due to GIZ consolidating its engagement. At the operational level, there is still an exchange of information between the local coordinator and GIZ staff. Synergies were leveraged with the **GIZ project ,*Studien- und Fachkräftefonds'*** (PN 2017.3503.4) which supported to establish a local certification body for food safety management systems (progress report no 2). Complementary training was conducted for personnel. To this end, the project covered the costs of consultancy services provided among others by Turkish Standards Institution.[9]

The project also built on and promoted synergies with the **PTB multi-country project 'Strengthening Quality Infrastructure in the Countries of Central Asia'** (PN 2018.2084.4). Annually, joint events for networking and exchange of best practices among QI institutions were conducted. This has raised interest in cooperation and also improved knowledge of internal audits in accordance with international requirements. The added value of these regional networking events was confirmed in the interviews.

Furthermore, the evaluation team also identified a hitherto unmentioned project from the exchange with the GIZ colleagues. In May 2023 an **EU Team Europe Initiative project 'Value Chain Agro Finance Project'**[10] was launched (current term May 2023 until April 2027) funded by the EU and

[8] The 'coherence' criterion refers to the intervention's compatibility with other development interventions in the sector of the respective country/region.

[9] In May 2023 a training course on international requirements for bodies providing audit and certification of management systems (TS EN ISO/IEC 17021-1:2015; TS EN ISO 19011:2018) and specifically on food safety management systems (TS ISO 22003-1:2022) was held for 41 participants (29 of whom were women). Furthermore, the implementation status of the certification body's quality management system, which focuses on compliance with the ISO/IEC 17021 requirements, was analysed.

[10] The project is funded by the EU, the European Investment Bank and the KfW Development Bank. For more detail see the project website: https://vcagrofinance.kg/project-partners/.

Germany. The objective is to improve the food safety and QI through financing investments to mainly three public agri-food testing laboratories[11]. All three partners are also key partners of the PTB project. The level of information by the project team is moderate. Thus, potential synergies have not yet been fully explored. The evaluation team observes no shortcoming with regard to international and national norms and standards. Dimension 1 is rated with 2.

Dimension 2: External coherence: To what extent does the intervention's design and implementation complement the partner's own efforts and is coordinated with other donors' activities?

The project has complemented the **partners' own efforts** and thus, has followed the principle of subsidiarity. Where needed it has stepped in with funds, for instance to purchase equipment or providing reference material for laboratories. This is required to achieve the intended change at laboratory level and thus considered adequate.

The intervention's design mentioned three **other donors' activities**: i) by the Japanese International Cooperation Agency (**JICA**)[12], by ii) the State Secretariat for Economic Affairs in Switzerland (SECO)[13] and implemented by UNIDO and iii) by the 'Russian Kyrgyz Fund.[14] The JICA project ended in February 2024. It addressed the needs of the dairy sector focusing on improvements at laboratory level and followed a systematic approach to food safety (e.g. HACCP[15] training). According to project documents (e.g. offer, progress report, 'Laboratory Road Map') the JICA project focused on methods to check quality and safety parameters in accordance with the trade requirements of the EAEU (improvement of existing methods). Thus, it seems that the JICA project worked complementary.

Regarding the **'Russian Kyrgyz Fund'** complementary support for the manufacturing industry and the agro-industrial sector led to strengthened expertise of the employees in testing laboratories of the milk processing companies and in companies of the fruit sector e.g. through the purchase of equipment (progress report no 1). The project provided complementary training for staff of the testing laboratories of the dairy processing companies in microbiology (understanding and application of application of international requirements, including ISO 11133).

Finally, no further information is available on the SECO project mentioned, as the project has already ended in November 2022.

Another relevant project is the 'Aid for Trade in Central Asia' which is implemented by the **UNDP** in its 5th phase (current term 10/2022 until 12/2025).[16] The project focuses on supporting Central Asian countries in promoting inclusive and sustainable growth through promoting green value chains and increasing the competitiveness of economies. In Kyrgyzstan they also work on the same agricultural value chain and thus, partly with the same producers. A regular information exchange has taken place. Synergies were achieved in the implementation of standards for food safety management systems and Global GAP, leading to improvements in the cultivation of agricultural products. As the project support also serves to promote the honey value chain and improve Kyrgyzstan's competitiveness, exchanges also took place on this matter. UNDP has run also information campaigns

[11] The laboratories are: i) the Centre for Veterinary Diagnostics and Expertise in Bishkek and Osh, ii) the Department of Disease Prevention and State Sanitary and Epidemiological Control, and iii) the Bishkek Centre for Testing, Certification and Metrology.

[12] Improvement of Human Resources in Food Laboratories to Improve the Quality of Milk and Dairy products (FLAQUM).

[13] Strengthening quality and standards compliance capacity of the fruits value chain to facilitate market access.

[14] Financial support for adaptation measures to the EAEU providing physical investments in laboratories.

[15] Hazard Analysis and Critical Control Points.

[16] Funded by Finnland.

in Kyrgyzstan ‘Export Caravan’ to strengthen the capacity of local businesses in export practices. CSM experts have been active contributors to these events. Closer cooperation would have made it possible to leverage synergies for output 3 ‚Relevance of QI services’. Dimension 2 is rated with 3.

Summarized evaluation: The criterion ‘coherence’ is rated with 2.5 (successful).

Criterion	Evaluation dimension	Weighting	Appraisal
Coherence	Internal coherence: Within German development cooperation, the intervention was designed and implemented in a complementary manner, based on the division of tasks.	50 %	2
	External coherence: The intervention’s design and implementation complement the partner’s own efforts and are coordinated with other donors’ activities.	50 %	3
		Global assessment of the coherence	2.5

5.1.3 Effectiveness[17]

Dimension 1: To what extent has the intervention achieved its objective (at outcome level) according to the indicators agreed upon?

Outcome indicator	Degree of fulfilment (in %)	Appraisal (A-C)*	Justification: Based on monitoring data 04/2024 and the progress report for 2023
1. The use of accredited internationally recognized **calibration and testing services** at national level increases by 3%. Initial value: 6.931 Target value: 7.186 Current value (10/2024): 10.656 (project report 2023-2024)	100 % (actually over-achieved)	B No proper reference	**5,000 calibration certificates by three laboratories** **5,656 testing services by 6 laboratories**
2. 14 companies and institutions, 10 of them in the regions, **use the new services** of the calibration **laboratories** and food testing laboratories in the value chains (dairy products, honey, dried fruit). Initial value: 4 Target value: 14 Current value (10/2024): 16 (project report 2023-2024)	100 % (actually over-achieved)	B Unclear how new services are measured	**16 companies; of whom 10 in the regions** 1. Ak-Bulak Plus (Issyk-Kul) 2. Kant Sut (Issyk-Kul) 3. Bishkek SUT 4. Talas Sut 5. Emilia (Toktogul), 6. Kochkor Product (Naryn) 7. Aksy Sun Planet Organic (Zhadal-Abad) 8. Aksai forestry (Zhadal-Abad) 9. Ag Ku 10. C 11. Al 12. Zl 13. M 14. Fa (S 15. Al 16. Ku 13 pr ar m
3. 8 companies and institutions each give an **example** of how they have systematically **used new quality infrastructure services**. Initial value: 0 Target value: 8 Current value (10/2024): 5 (project report 2023)	60 % (will be achieved by end of project term)	B Unclear how new services are measured; ‘systematic	**5 companies, for 3 of them examples are documented** 1. Ak-Zhalga 2. Ak-Bulak (Issy-Kul) 3. Kant Sut (Issy-Kul) 4. Kulikovsky 5. Osko

[17] The ‘effectiveness’ criterion evaluates the extent to which the intervention has achieved its objective (at outcome level) – or is expected to achieve it by the end of its term.

		usage' not defined	

*: Appraisal: A = adequate indicator; B = slight objections; C = poor indicator, to be revised if applicable

Assessing **indicator 1** was difficult as for the different types of services there were no specific targets. In general, developing testing services might be easier due to their flexibility and the variety of tests that can be performed. Thus, specific targets for each type would have been more appropriate. Moreover, it is not clear whether the indicator measures 'services offered' or the 'number of customers' using different services. As already elaborated (see chapter 4.2 for more details) there are also weaknesses in in the monitoring system for measuring this indicator. For **indicator 2** there are similar challenges concerning what has been measured related to the project support ('new services'). The Osh Centre also provides calibration services for liquid glass and digital thermometers not only to the selected value chains, but also to companies in other sectors, such as oil companies (project report 2022, 2023). As to **indicator 3**: According to the project reports (2022, 2023) three (dairy) companies have provided an example of how testing services of the Bishkek Centre's food testing laboratory have improved their production processes to detect salmonella in milk and dairy products in accordance with ISO 6785. Another company stated that it regularly turns to the centre in Bishkek to calibrate its measuring devices (including refractometers) in order to use the measurement data for decision-making. They are aware that inaccurate measurements can lead to costly and incorrect decisions. A definition of how 'systematic usage' is defined and measured is missing. It is highly likely that indicator 3 will be achieved until the end of the term in March 2025. According to expert reports there is evidence of companies that already use the services on an annual basis and others that are just starting. This has been partly confirmed in the focus group discussion with companies. In sum, it is expected that the project objective will be fully achieved by the end of the project. Dimension 1 is rated with 2.

Dimension 2: To what extent have the intervention's activities, inputs and outputs considerably contributed to achieving the intervention's objective (at outcome level)?

The majority of output indicators is assumed as achieved, even though verification was at times difficult due to uncertainties of what to count (indicator 1.1, 1.2 and 2.1 – see analysis of the monitoring system in chapter 4.2) and weak documentation of advice provided (indicator 3.2). Despite of these challenges, there is anecdotal evidence of how the project has contributed to progress made at laboratory level through interview's and/or focus group's findings. The support of the project contained international expert advice and training, study and exposure tours, financing of translations for the audits and the purchase of equipment and material (e.g. laboratory devise, reference material, communication equipment).

Output 1 'Strengthened capacities for QI services': The national metrology body **CSM** operates currently 10 regional calibration laboratories. They focus on providing services to the food, healthcare and construction sectors. Interview partners stated that the 2nd phase of the project is based on the 1st phase, and it is quite difficult to separate and discuss them individually. In 2017, the CSM received DAkkS accreditation in six parameters: gravimetry, electricity, humidity, temperature, pressure, and small volumes. Following this, the CSM began conducting training sessions for representatives from secondary calibration laboratories. After the five-year cycle of DAkkS accreditation, in 2022, with the support of PTB, the accreditation was renewed, and additional category II calibration laboratories (mass, temperature, pH, refractometry, viscosity, density) were added to the same organization.

As part of PTB projects, the activity associated with gravimetric measurements has developed to the point that similar services are now being offered in other countries, including training on the calibration and validation/verification of scales and balances in Turkmenistan, Uzbekistan, and Kazakhstan. Support included also the provision of laboratory equipment (special pressure measurement device to measure negative pressure; thermostat for the OCSM). To ensure traceability for the calibration of weights and magnetometers in the CSM's reference laboratories, PTB assists in certifying (calibration) relevant reference materials in Germany. Training on ISO/IEC 17043 was conducted relating to the organization of PT/ILC (ILC on thermometers in the range of 0 to 50°C across all five Central Asian countries).

According to monitoring data two laboratories have increased their scope of accreditation by 7 (water quality – micro-organism using membrane filtration method; food products analysis – genetically modified organism (sanitary surveillance); sodium tripolyphosphate (dairy), vitamin group B (dairy, nutritional value), vitamin group B (liquid chromatography). Even though the expansion of the scope could not be fully traced, substantial progress is made on increasing the competencies of the laboratories. In total 231 metrology experts have been trained (of whom 86 are women). A comparison of the status of the DAkkS certificate of the CSMs (using the data from the evaluation report 2022) confirms progress made on the scope of accreditation. The figures show an increase in the number of calibration items from 6 to 9 (mass standards, pressure, weighing instruments, volume of liquids, temperature (4 quantities) and humidity) in four different fields of measurement quantities (mechanical, chemical, and medical, thermodynamic, humidity).

Data provided by the short-term experts supporting the **food testing laboratories** (10/2024) show that the 7 state laboratories have achieved in total 43 methods of analysis to be implemented and accredited and one privately-run laboratory has achieved 4 methods (e.g. testing parameters nitrate, ammonia, salmonella, heavy metals, and others). According to the short-term expert's team emphasis was not only on introducing new methods but on helping the laboratories to effectively using the methods they were supposed to perform based on their scope of accreditation before the project support (e.g., sugar content in dried fruits, free acidity of honey, etc.). The methods of analysis used are important for the selected value chains because they are in line with the regulatory requirements for quality control, which in turn are crucial for meeting export requirements. Furthermore, a newly introduced technique was the method for analysis of organic solvents in water by GC-HR-MS technique.[18] This meets the water import requirements of Arab countries. The ICP-MS (heavy metals) elementary analysis method was implemented in the country which is a unique technique and the best analytical approach for water analysis.

The support for the national **accreditation body KCA** is not reflected in any of the indicators. KCA was supported with preparatory steps taken to become a PT provider (ISO 17043). The accreditation is to be expected in 2025. The UNDP project funded by Finland also provided training on this matter (half-day training course on ISO 17043/PT and ISO 13528/Statistical Evaluation). Moreover, main achievements are as interview findings show an increase in the number of customers and that they have now a trainer pool for quality assurance (ISO 17011; 17020; 17025). KCA is in the process of preparing for APAC peer review, by February 2025. KCA has already been recognized by ILAC/IAF in ISO 17025 since 2013 and for ISO 17065 and ISO 17020 MRA in 2022. KCA is fully operational again. The support of the project contained expert advice and training (e.g. 30-milestones analysis done with new management in 2021, online training course on risk management in 2022) participation in PTs including results evaluation seminars, provision of video conference equipment.

[18] Gas Chromatography-High Resolution Mass Spectrometry.

Already in the first phase (2019), the project established the '**Laboratory Club**'. The Club has currently 12 public and private water and food testing laboratories as members. The internal and external quality control, internal quality control measures, ensuring the validity of testing results, risk assessment and risk-based approach in laboratory environment were introduced and discussed with members. The internal audits and vertical audits, SWOT analysis, introduction of main aspects of quality control and quality assurance in testing laboratories were performed. Interview findings confirm the usefulness of the Laboratory Club: Laboratory representatives formed closer ties, eliminating unhealthy competition, and fostering collegial relationships, knowledge sharing, and mutual support, which have become essential to their progress and development. But there is still a high dependency on external support to run the network (see chapter 5.16).

Output 2 'Access to reliable QI services': The **CALIDENA activities** have appropriately been planned based on a feasibility study of the selected value chains (dried fruit and nuts) conducted in the 1st phase and a kick-off workshop to develop an 'Action Plan' in 2022 (operational planning). In total 8 capacity development measures where conducted (2022: 2; 2023: 4; 2024: 2) and in total 185 people participated (of whom 85 are women). Through the CALIDENA activities 11 cooperatives and 14 companies participated on a regular basis of whom 7 are pilot companies who received tailor-made support (individual technical support; planned: 5 of them are participation in an international trade fair: Food Logistica, February 2025). The companies are exporting mainly to the EAEU and have not been able to export on a regular basis to the EU. Some of them have already received support from other development partners (e.g. GIZ, UNDP, JICA, FAO, World Bank). The training content covered a broad variety of topics such as Global GAP, HACCP, phytosanitary standards, legal requirements for labelling and packaging, hygiene and food safety. The project supported a systematic exchange of the CALIDENA participants with relevant calibration and food testing laboratories (e.g. the CSM calibration laboratories mass and temperature and BCISM testing laboratory in 2024). It even managed to support product innovations by matching the manufacturer TSK 'Ishker KG' (Jalal-Abad region) with the Osh Technical University (OSHTU). They are jointly working on developing walnut flour. Preliminary results were already demonstrated on the production of bakery products.

Output 3 'Relevance of QI services (demand side)': Indicator 3.1 on policy level advice on three topics for creating a sustainable environment for QI was achieved. The policy advice was not strategically orientated, but rather focused on individual cases. Consultations with political decision makers of all three involved ministries (MoEC, MoA, MoH) were conducted (monitoring data, 04/2024). A more comprehensive advisory service was set up for the MoA to support a feasibility study on honey exports to the EU. However, the intended follow-up consultation process based on the developed 'Action Plan Honey Export EU' (October 2023) on legislation, registration and preparation has been delayed. It also appears that the quality of the plan in terms of EU technical requirements was not sufficient.[19] Interview findings from laboratories show that despite many challenges related to honey, project's support helped at least to better understand the complexity of the problem and to discuss potential solutions (e.g. veterinary drug testing for honey quality control). Stakeholders know now how to approach the MoA to improve the situation.

Moreover, the project provided advice for the development of the export strategy[20] of the MoEC (topics: a) promoting economic clusters and b) the interaction between the state, business, universities as an element of innovation policy). Moreover, international experts provided consultations on improving the quality of bottled water for staff of the MoA and on the cultural collection bank for staff of

[19] Technical comments by the short-term expert, January 2024.

[20] Export Program of the Kyrgyz Republic for 2023-2026.

the MoH. The policy advice was partly validated through documents, mainly short-term expert reports and some technical documents (e.g. for the cultural collection).

The project successfully supported three events per year in accordance with indicator 3.2 'QI exchange events'. Each year, the 'Round Table on International Accreditation Day' and the meeting of the ‘Scientific and Entrepreneurial Platform and the National QI' took place. In addition, a study tour for QI representatives from Kyrgyzstan to Germany was organised in 2023. Interviews underlined the positive results of the project's support for cooperation. The project helped to bring together various stakeholders, including businesses, ministries, educational institutions, universities, and laboratories. As a result, students and young professionals now come to CSM for internships, knowledge enhancement, scientific research, etc. In addition, the joint efforts will lead to the publication of the guideline 'Metrological Guidance at the Industry' by the end of the project term.

The project contributions of outputs 1-3 to the outcome indicators were largely confirmed. The achievement of outcome indicator 1 (increase in calibration and testing services) is due to the more accurate and valid services of the QI institutions supported by the project (outputs 1 and 2). However, external factors strongly influence this contribution (e.g. support from other development partners, market dynamics, etc.). Trained laboratory staff have the knowledge of new testing methods, but whether they apply their newly acquired knowledge depends on their individual skill levels and daily routines, as well as the regular demand for the new services. The awareness-raising activities and the direct interaction between the different QI stakeholders (public, private sector, universities) in Output 3 have also contributed, as have factors such as trade requirements and political will. Outcome indicator 3 is a result of outputs 2 and 3. The CALIDENA contributed to disseminate mutual understanding of requirements of a QI system by enterprises and QI institutions. Evidence of uptake by companies ('systematic use' of services) is moderate. The achievements of the outputs have successfully contributed to the project objective. A more sophisticated monitoring system (see chapter 4.2) would have provided better evidence of the attribution of results to project interventions. Dimension 2 is rated with 2.

Dimension 3: To what extent has the quality of the intervention’s implementation considerably contributed to achieving the intervention’s objective (at outcome level)?

This chapter analyses the quality of the implementation of the intervention using the Capacity WORKS (CW) management model. It intends to identify factors that particularly contributed to the success of the project, or which, if applied, could have improved the success of the project. The chapter presents the self-assessment of the project team (project coordinator at PTB headquarters and in Bishkek, key short-term experts), but also the evaluators' assessment, which may differ. Mandatory CW tools were used in the 1st and 2nd phases, e.g. mandatory tools result-based monitoring and operational planning. The evaluators found no update of the stakeholder map or an explicit capacity development strategy. Based on the CW analysis, the dimension 3 is rated with 2.**CW – Strategy:** Partners at policy level and those that participate in the ‘Steering Committee’ or the ‘Laboratory Club’ group were well aware of the project strategy and its implementation, even though indicators seem not to be well known. The strategy is coherent and adequate targeting the meso level of the QI system (key players in the field of metrology, accreditation, and testing). However, some of the intended changes at output level are overly ambitious (e.g. expanding the scope of accreditation) compared to the outcome targets. Less attention was given to policy and regulatory issues of the QI system. In addition, the policy advice was too ambitious and broad, targeting three different line ministries. Key issues for the development of the QI system were not identified (e.g. interplay of the different line ministries responsibilities for food safety). Important recommendation from the evaluation of the first phase have been taken into account for the project design. Except the recommendation for the KCA to substantially reduce support hat not been taken up. The strategy, action plans and operational plan

have been developed in close consultation with each partner (see chapter 5.1.1, dimension 2). In 2022 the project team appropriately adjusted it strategy to respond to requirements by partners (MoEC, companies) for exporting bottled water to Arabic countries.

CW – Cooperation: The PTB had supported Kyrgyz QI institutions since 2013 in the context of a regional project and thus, has a good understanding of the QI 'landscape' in Kyrgyzstan. The partners and relevant stakeholders know their role in the project and make to their level best contributions to achieve the project's results. Some partners at the policy are not as strongly committed as expected due to among other factors institutional restructuring (e.g. the MoA). Based on available data, it is not sufficiently clear which business associations were mobilised for the CALIDENA process. It seems that the involved association and some companies have already been supported in the past by other donor projects. According to reports the CALIDENA activities the project team always strived to balance representatives of all the actors. The project has well shaped the communication and cooperation relations between PTB headquarter and partners. Internal communication and strategic guidance with and among the short-term experts and a stronger coordination would have been useful, as the project's outputs are interlinked.

CW - Steering: The steering structure reflects the relevant partners and interests. The flexible bilateral exchange with the PTB headquarter and the annual 'Steering Committee' were efficient for project steering. The type of exchange and communication was assessed by the interviewees as positive to very responsive (e.g. *'we have developed a common language for implementation'; 'we are working as one team'*). In the 'Steering Committee', operational issues were discussed and monitoring data that tracks the degree of achievement of project objectives are shared. More in-depth bilateral consultations with the line ministries involved (MoEC, MoA, MoH) and technical support would have been beneficial. This would have provided the appropriate impetus to achieve the project objective and the necessary political support. This would have ensured that the changes necessary to achieve the results could take place in the partner system. According to the results of the self-assessment current political priorities of Kyrgyzstan do not match the project approach, which makes steering more difficult.

CW – Processes: There is no process analysis (process map) to identify processes that occur independently of the project in its context (sector, e.g. accreditation cycles; institutional setting) and that identifies links with project processes (e.g. contributions of the project). The core processes are defined along the three intervention areas (outputs) and their respective work packages (e.g. support for CSM, KCA, Laboratory Club, etc.). Appropriate processes are established within the project for cooperation and steering. Cooperation partners partly contribute to interfaces between relevant processes and stakeholders to increase the overall performance.

CW – Learning and Innovation: The project promotes technical and institutional innovations within the partner system. Learning objectives were defined appropriately in the project offer. At individual level, technical skills and abilities in the field of measurement, accreditation and testing were to be transmitted. The dimension of institutional strengthening is not directly addressed in the project offer (e.g. changes at management level, organisational restructuring issues, etc.). But management capacities are strengthened indirectly in the context of ISO 17025. Clear targets in this regard were not defined and agreed upon with the respective management level. Emphasis is given to strengthen the cooperative culture between QI institutions, academia and business. It was also intended to provide policy advice to spur reforming the QI system (e.g. the 'Honey Action Plan for Export') but according to the Project Coordinator, such advice was offered, however not taken up. The Laboratory Club significantly contributed to knowledge sharing and peer learning.

Dimension 4: To what extent has the intervention leveraged potentials of unintended positive results and reacted to risks and/or the occurrence of (unintended) negative results?

The evaluation team has not observed unintended positive or negative effects during the evaluation. However, this does not mean that there did not occur unintended effects. Moreover, the project has done a rather general risk analysis as part of their monitoring system. A more detailed reflection on risks broken down by partner institution and risk influencing the overall QI system would have been beneficial (e.g. influence of increasing exports to Russia and Kazakhstan on the trade-related requirements for companies). In terms of direct support to enterprises, there is a risk of deadweight loss and selection bias (e.g. to some extent, the same companies that have already received support from other donors appear to have benefitted from the project). Dimension 4 is rated as 2

Summarized evaluation: The criterion 'effectiveness' is rated with 2 (successful).

Criterion	Evaluation dimension	Weighting	Appraisal
Effectiveness	The intervention has achieved its objective (at outcome level) according to the indicators agreed upon.	25 %	2
	The intervention's activities, inputs and outputs have considerably contributed to achieving the project's objective (at outcome level).	25 %	2
	The quality of the intervention's implementation has considerably contributed to achieving the intervention's objective (at outcome level).	25 %	2
	The intervention has leveraged potentials of unintended positive results and reacted to risks and/or the occurrence of (unintended) negative results.	25 %	2
		Global assessment of the effectiveness	**2**

5.1.4 Efficiency[21]

Dimension 1: To what extent can the use of resources by the intervention be deemed reasonable with regard to the outputs achieved (production efficiency)?[22]

The total budget amounts to EUR 2.2 million, including EUR 800,000 remaining from the 1st implementation phase, which was not spent due to, among other things, the mobility restrictions of Covid-19. Thus, the project is significantly better funded compared to the average bilateral 3-year PTB project. As would be expected for a technical cooperation project, a significant proportion of the funds is allocated to project management staff and the provision of international knowledge through short-term expertise (74%), as well as to training activities (human capacity development budget line: 13 %). Equipment costs account for 11 % of the total budget and are allocated solely for achieving output 1. No budget has been distributed for the budget category 'financing'. According to the financial data provided, 53 % of the budget has been spent (financial monitoring data, October 2024) and 80 % is

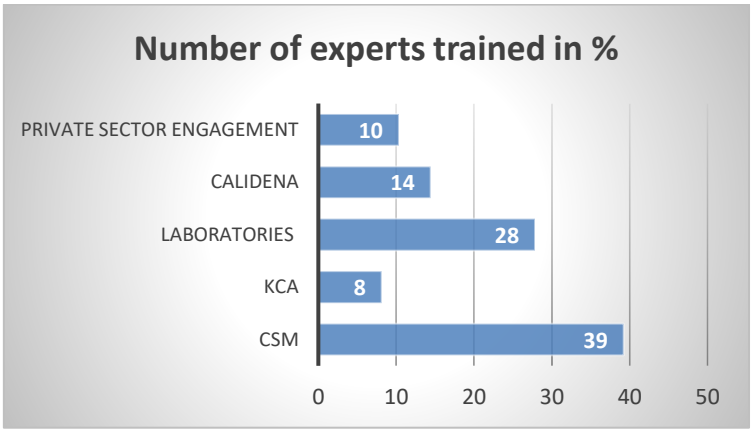
[21] The 'efficiency' criterion describes the extent to which the intervention uses resources economically. The assessment of the efficiency criterion has been based on expenditure tracking (follow-the-money approach) and the financial monitoring tool provided by the PTB

[22] The evaluation dimension 'production efficiency' refers to the appropriateness of the relationship between inputs and outputs. The evaluation dimension 'allocation efficiency' refers to the appropriateness of the relationship between the inputs and the results achieved by the intervention. The "efficiency" criterion relates both to the intervention's design and implementation and to the results it achieves.

firmly committed (‘*obligo’* data of SAP, August 2024). It is therefore likely that the project budget will be fully spent by the end of the term in March 2025. A comparison of ex-ante and actual cost data shows that expenditure for outputs 2 and 3 is around 40% and for output 1 around 60%. Regarding the purchase of equipment, only 37% of the available budget for equipment has been spent by October 2024 (five months before the end of the project). The reason is that there was an overload in the procurement department due to staff changes (according to monitoring data).

Cost allocation by output were as following: Output 1 ‘Strengthened capacities for QI services’ received by far the highest share with 47 % followed by output 2 ‘Access to reliable QI services’ with 20 % and output 3 ‘Relevance of QI services (demand side)’ with 15 %. Overarching cost (head quarter long-term staff) amounted to 18 % of the total project budget. The project successfully applied virtual formats for capacity development (e.g. theoretical training for laboratory staff). The project had also integrated cost-efficient elements as international experts were deployed jointly with the Central Asia QI project of the PTB. In total 589 people got trained. Most of them (39 %) were CSM staff (see Figure 1).

Figure 1: Number of technical experts trained by intervention area



Partner contributions were quantified at EUR 80,000, consisting of technical and political support for steering by the MoEC, the CSM, KCA and the supported laboratories (8 %) and for the provision of national expertise (92 %) by public and private stakeholders (e.g. laboratory staff, companies). More information on tangible contributions by partners was not available (e.g. number of training courses conducted *pro bono* by national experts, in-kind contributions, etc.).

The results of the project (at output level) could have been increased (maximum principle) by increasing the number of supported companies and using a more multiplier approach in cooperating with sector associations or by deploying more technical experts from South-East Europe or Caucasus countries. A timelier provision of equipment at the beginning of the second phase would have improved implementation. Dimension 1 is rated with 2.

Dimension 2: To what extent can the use of resources by the intervention be deemed reasonable regarding the achievement of the intervention’s objective/outcome (allocation efficiency)?

The project achieved two of the three objective indicators (outcome indicator 1 and 2) at an early stage of the project term (March 2024), and this with less budget than originally planned. In principle one could conclude that, according to the minimum principle, fewer financial resources (than budgeted) would have sufficed for the given results. The outcome-resource ratio was carefully considered. Alternative implementation modalities have not been considered in the planning and implementation phase. The intervention’s results (outcome) could have been increased by using the

financial resources differently by setting more ambitious targets e.g. for the policy advice on the QI system (maximum principle). Overall, the use of resources by the intervention deemed reasonable with regard to the achievement of the intervention's objective/outcome. The dimension 2 is rated with 3.

Summarized evaluation: The criterion 'efficiency' is rated with 2.5 (successful).

Criterion	Evaluation dimension	Weighting	Appraisal
Efficiency	The use of resources by the intervention is deemed reasonable regarding the outputs achieved (production efficiency).	50 %	2
	The use of resources by the intervention is deemed reasonable regarding the achievement of the objective/outcome (allocation efficiency).	50 %	3
		Global assessment of the efficiency	**2.5**

5.1.5 Higher-level development results[23]

Dimension 1: To what extent have the intended higher-level development changes taken place or are expected to take place in the near future?

According to the BMZ offer, the intended higher-development change is to strengthen the competitiveness of the Kyrgyz economy.[24] Monitoring data as planned under the SED programme (see chapter 3.2) is not available due to the lack of data and changes in the assessment basis.[25] The underlying impact hypothesis is that the development of the QI system will have a positive impact on the economic development by an increase in the product quality of Kyrgyz companies. It will also stimulate innovation capacities through interaction between the private sector and laboratories. This hypothesis is plausible within a long-term perspective. In addition, modern QI serves the needs of both businesses and consumers. Better quality assurance services will provide evidence that products and services comply with mandatory technical regulations and voluntary standards. In the long term, therefore, a well-functioning QI system also serves the consumer protection of the entire population (e.g. it ensures compliance with safety and health requirements). The dimension 1 is rated with 3.

Dimension 2: To what extent have the results achieved by the intervention (at outcome level) contributed to the intended or implemented higher-level changes?

The results of the intervention (at the outcome level), that private and state enterprises and institutions in selected regions of Kyrgyzstan use QI services, contribute to the impact described above. The project helps public and private stakeholders to better understand the quality requirements of their different trading partners (e.g. EU market, EAEC, China) and to take steps to adjust to these trade requirements. This will reduce technical barriers to trade. It reduces costs for companies, as obtaining

[23] This criterion shows the extent to which the intervention has contributed or is expected to contribute to overarching and relevant positive as well as negative development changes which are not part of its direct sphere of responsibilities (intervention's objective).

[24] According to the SED programme indicator 2 (improvement and competitiveness as measured by the Global Competitiveness Index (GCI), subindices 11.02 local supplier quality and 12.01, capacity for innovation. The GCI which is published by the World Economic Forum. The GCI categories were comprehensively revised in 2018 and the dimensions 11.02 and 12.01 do not exist anymore.

[25] Comparative country rankings by the Global Competitiveness Index have been suspended since 2020.

the required calibrations and certificates abroad is more expensive and time-consuming. This will stimulate local companies in upgrading the quality of their products.

However, the contribution of the project to the impact described depends strongly on market dynamics. Ultimately, QI services need to be demanded by companies and used in the production process in order to achieve this impact. As the project has targeted a small number of pilot companies, the results at this level are rather limited and will have only some spill-over effects. The exemplary introduction of QI methods needs to be scaled up to bring about significant change. Moreover, the number of companies able to export is limited (e.g. only 4-5 of the 50 members of the involved 'Fruit and Vegetable Association' already exporting to the EU market). Finally, the needs and dynamics of the domestic market shape the development of a QI system. A small market also sets the framework for the scale of QI - the demand for many services is currently considered too small to make the corresponding laboratory infrastructure sustainable (see section 5.1.6). Given the geographic topography of Kyrgyzstan (e.g. better transport to neighbouring countries than to the capital Bishkek) in some cases, it may be more economically efficient to purchase certain tests abroad rather than domestically. The dimension 2 is rated with 3.

Dimension 3: To what extent has the intervention contributed to positive and not to negative unintended higher-level development changes?

The evaluators have not observed any substantial positive nor negative unintended higher-level development changes nor negative trade-offs between the impacts of the economic, social and environmental dimensions. As for the way forward several project partners still expect that the cooperation with the PTB continues after the end of the project term in March 2025. The dimension 3 is rated with 2.

Summarized evaluation: The criterion 'Higher-level Development Results' is rated with 2,8 (successful with some limitations).

Criterion	Evaluation dimension	Weighting	Appraisal
Higher-level development results	The intended higher-level development results have taken place or are expected to take place.	25 %	3
	The results achieved by the intervention (at outcome level) have contributed to the intended or implemented higher-level results.	50 %	3
	The intervention has contributed to positive and not to negative unintended higher-level development changes.	25 %	2
		Total assessment of the higher-level development results	**2.8**

5.1.6 Sustainability[26]

The analysis of the criterion 'sustainability' focuses on the supported QI organisations (target group), as the sustainability of the partner institutions is a prerequisite for success or sustainability at the enterprise level (final beneficaries).

[26] The 'sustainability' criterion evaluates whether the intervention's benefits at outcome level and the higher-level development changes are long term and will perdure even after assistance has ended.

Dimension 1: To what extent do the partners, target groups and organizations involved have the capacities required to ensure that positive results are continued?

The main partners - CSM (national and regional branches), KCA and the food testing laboratories - have significantly improved the competencies and skills of their technical staff to apply the new calibration and/or testing methods. In principle, there is a strong willingness (ownership) to sustain the positive results of the intervention over time (after the assistance has ended). But the resource situation of the partners varies widely. **CSM** at national level is partly funded by the national budget (e.g. salaries, building maintenance) and can retain some of its income from services. The number of services has increased during the project term. CSM is well aware of their capacities but also of their limitations and has sufficient and well qualified staff. CSM is able to train other laboratories, but resources for travel expenses are rather limited. The regional CSM branches depend on generating income through their services. Only the BICSM and the OCSM are in a better position, as they have a relatively large number of clients due to their location and availability of laboratory equipment (e.g. received new equipment from the Russian Kyrgyz fund; BICSM gets support from the EU TEI project). Therefore, laboratories in the region are having more challenges to continue with the testing methods that require high-tech, expensive equipment (e.g. for residue analysis of toxic compounds, pesticides, heavy metals. etc.) because of not having the same level of state-of-the-art equipment as national laboratories.

The accreditation body **KCA** receives a public budget for staff and international membership fees. There is no budget for international audits. Part of the income generated through services is managed by KCA. Based on project reports the current number of KCA accreditations is considerable: 70 laboratories (55 test laboratories, 9 calibration laboratories and 5 medical laboratories), 12 product certification and 62 inspection bodies. [27] Almost 200 technical experts and 30 trained technical assessors as well as 11 senior assessors are listed, but only 5 senior assessors are currently active according to reporting documents. Thus, qualified human resources are in principle available the number of senior level staff (lead assessors) is not yet sufficient. KCA plans to have additional 7 lead assessors but whether resources are available is not clear. KCA stated that the fees for the ILAC membership comes from KCA's own resources. In terms of supporting KCA in preparing to become a service provider for PTs the submission of the application for assessment and scope extension for the recognition of KCA in APAC is planned to take place in the first quarter of 2025. Furthermore, the incentive structure to motivate labs to participate in international PTs (e.g. cooperating with FAPAS[28]) is not in place as only ILC organised by Russia are funded by the Kyrgyz ministries. However, a positive step concerning income generation has been made by the MoEC to permit KCA to offer fee-based trainings.

A similar combination of funding sources can be observed for **public food testing laboratories**, such as government funding, income generation through services and support from international development partners.[29] The training focused mainly on technical requirements and thus increased the technical competence of the staff. Emphasis is placed on the professionalisation of laboratory testing services from a scientific and regulatory point of view. A more market-oriented approach to the

[27] Report Manfred Kindler, 01/2023: Included in the inspection bodies are 33 that could probably function as '*poverkas'* under ISO 17020. The regional EAEU register lists 22 test laboratories, 32 certification and 13 inspection bodies (presumably non-destructive testing).

[28] Food Analysis Performance Assessment Scheme: https://fapas.com/

[29] Over the years many donors' projects on QI have been implemented, as already elaborated in the previous chapters, e.g. SECO, WHO, FAO, UNDP, GIZ, EU, USAID, JICA, the International Atomic Energy Agency, etc.

laboratory's service portfolio would have increased sustainability. For example, an in-depth market analysis to understand what laboratory services clients need was not carried out. This could have provided a better overview of what could be an appropriate service portfolio for each lab focusing on their core tasks and competencies. Interview findings also show that some of the newly developed services is deemed unprofitable due to low client demand (e.g., services for negative temperatures). Moreover, it remains unclear whether the supported food testing laboratories have the capabilities in future to develop new testing methods with their own resources.

Although the work of the **Laboratory Club** was highly appreciated in many interviews, there does not yet seem to be a clearly defined sustainability concept for how the Club could sustain its activities. The dependency on project support is still very high (e.g. no follow-up of meetings, decisions and planned activities; own training activities never took place). [30] The strong dependence on the project's leading role in running the laboratory club was also confirmed by the interview results. Finally, with regard to the CALIDENA interventions, no key institution was identified to which the training and/or services developed could be transferred. The laboratories are very satisfied with the CALIDENA seminars as they have helped to attract potential clients. The dimension 1 is rated with 2.

Dimension 2: To what extent has the intervention considerably contributed to the capacity of partners, target groups and other organizations involved to continue the positive results?

The project has contributed to professionalizing technical QI experts at national and regional levels through comprehensive capacity development measures (e.g. training, coaching, peer learning) in theory and practice. Calibration and/or testing methods which partly only existed on paper are now effectively applied and/or new services complying with international standards are offered by the supported partners (see chapter 5.1.3). In the case of the food testing laboratories, the contribution is clearly visible through the detailed 'Road Map', the equipment and materials provided, and the documented new testing methods. The contribution of the project to the work of the laboratories was also confirmed by the results of the interviews. However, some of them, such as the laboratories under the MoA have also obtained substantial support from other donors over the last couple of years (see chapter 5.1.4). The combined efforts of the project and other external factors helped to ensure that calibration laboratories and food testing laboratories better comply with international standards and thus, contribute to food safety and quality. The dimension 2 is rated with 3.

Dimension 3: To what extent are the results of the intervention durable?

Positive project achievements regarding **professional expertise (individual level)** are likely to be durable. Also, there is a strong interest by CSM, KCA and the laboratories to continue with the new methods of analysis as they are aligned to their interests and strategic goals. But there are institutional risks of staff fluctuation and instability of resources (budget, personnel). All laboratories lack the funds for consumables, test kits, reagents and travel costs. Even in those partner organisations that receive government funding, the situation is far from robust. Resilience, in terms of the ability to respond to unforeseen events, is limited. This might jeopardize the success of accomplished changes (e. g. laboratories need to conduct PT at least once every four years and perform ILC annually for each accredited parameter).

From a **QI system perspective**, quality-related services are influenced equally by supply and demand side factors. Apart from the availability of skilled labour and adequate infrastructure (equipment, resources for running costs, etc.), strict regulations can either increase the need for quality services or make them more difficult to provide, thus affecting supply. The allocation of public funds to essential

[30] Report Dr Froese, July 2024.

services is therefore important. If the government wants to promote economic growth and exports, it should create the necessary framework conditions. However, as we have seen, even the most advanced and capacitated QI institutions struggle to finance the purchase of reagents or the maintenance of equipment. To retain the knowledge generated (and needed in future), salaries must also be competitive. If funding is not provided, this will reduce the capacity to maintain the QI system in the long term. In addition, the issue of overlapping responsibilities between the line ministries (agriculture, health and economics), and therefore different laboratories performing the same tests, does not necessarily promote sustainability. This situation calls for comprehensive analysis and political will for inter-ministerial co-ordination, which is beyond the scope and influence of the project.

It is clear that market demand is one of the most important drivers of sustainability. Demand for quality services is driven by market needs, including consumer expectations for high quality products and services. It is encouraging to see that demand is growing because of market needs. The country's economic growth rate in recent years has also contributed to increasing demand. When economic conditions are favourable, companies are more likely to invest in quality-related services. However, given the relatively small domestic market size of Kyrgyzstan and the relatively small number of organisations that require this type of service activity, the level of demand is rather limited. In the medium to long term, the different shares of export markets also play a crucial role. If the share of exports to the EAEU and China increases relative to the share of the EU market, the incentive to comply with internationally required standards may weaken. As a result, demand for the quality services developed - an important factor for the sustainability of the positive results achieved - could decline. Overall, the focus on the EAEU and Chinese market may shift some priorities, but the trend towards internationally recognised standards is likely to remain important to ensure quality, competitiveness and consumer confidence (e.g. laboratories aim to move to the EU Codex Alimentarius standard). Based on these findings dimension 3 is rated with 3.

Summarized evaluation: The criterion ‘sustainability’ is rated with 2.7 (successful with some limitations).

Criterion	Evaluation dimension	Weighting	Appraisal
Sustainability	The partners, target groups and organizations involved have the capacities required to ensure that positive results are continued.	33.33 %	2
	The intervention has considerably contributed to the capacity of partners, target groups and other organizations involved to continue the positive results.	33.33 %	3
	The results of the intervention are durable.	33.33 %	3
		Total assessment of the sustainability	**2.7**

5.1.7 Summary of the intervention’s contributions to the 2030 Agenda for Sustainable Development

Universality, shared responsibility and accountability: The project indirectly contributes to SDG 8 (decent work and economic growth). However, positive changes (e.g. higher turnover, reduction of non-tariff barriers, access to the EU market) will materialize only slowly and in a medium- to long-term perspective. As regards SDG 9 (industry, innovation and infrastructure) a plausible contribution can be deducted, as improvements in the QI infrastructure contribute to quality assurance and industry development and it can stimulate innovation (e.g. development of new products). Higher-level development changes (impact) could be expected in the long term, provided that the use of QI services is scaled up (and provided that these services are sustainable, see chapter 5.1.6). Regarding

SDG 17 (Partnerships to achieve the goals) the project contributes to involving Kyrgyz QI institutions in regional and international QI networks (e.g. exchange with 'Eurachem')[31]. The project aligned to the principle of shared responsibility and accountability through setting up a 'Project Steering Committee' where project data, e.g. on the status of indicators, is shared with the main implementing partners.

Interplay of economic, environmental and social development: The project design is based on a holistic approach to sustainable development at the impact level, encompassing the social, environmental and economic dimensions. The interplay of the three dimension is elaborated in the project design. The economic dimension is the key focus, as improved economic conditions will also lead to positive social effects in the long term. A functioning and internationally recognised QI system will also have indirect effects on the environment, for example through resource efficiency and reliable measurements.

Inclusiveness/Leave no one behind: The project does not address building resilience of particularly disadvantaged or vulnerable groups of beneficiaries and stakeholders. The project outcome ensures a more favourable business environment from which particular small and medium sized enterprises are benefitting as they are in general faced with disproportionally higher impediments to operate their business. And through a longer results chain the project contributes to consumer protection. The level of confidence regarding unintended impacts is very moderate given the limited data of how the project dealt with this topic and evaluation findings. The evaluation team has not found any indications that the project builds resilience of particularly disadvantaged groups.

6. Assessment of specific evaluation questions

There were no specific evaluation questions defined for the evaluation.

7. Learning processes and experiences

Learning processes (in the sense of systematic processes that were planned and initiated throughout the intervention and through which new knowledge was acquired or shared within the intervention) were documented in the monitoring file, such as starting procurement as early as possible.

With regard to the **training for the calibration and food testing laboratories**, one lesson learnt raised by the interviewees was to have longer sessions for practical training and to adopt a more train-the-trainer (TOT) approach. To ensure sustainability, TOT activities should be integrated into project initiatives whenever possible, e.g. developing a pool of certified trainers within the organisation who can provide ongoing training; promoting knowledge transfer by equipping staff with the skills to train their peers to ensure continuity of expertise. This will strengthen the institution's ability to independently deliver high demand training on topics such as e.g. measurement uncertainty, method validation for GC and HPLC, implementation of ISO/IEC 17043 standards, service engineering for laboratory equipment. In addition, the involvement of technical experts from countries with similar transition experience is highly welcomed by the partners and facilitates the learning process (e.g. Russian language skills, knowledge of the *'poverka'* system).

Policy advice for line ministries needs time and effort (resources) by the project team. Working relationships have to be build up and a mutual understanding of the scope of work is needed. This

[31] Eurachem is a network of organizations in Europe that focuses on establishing a system for the international traceability of chemical measurements and promoting good quality practices in analytical chemistry.

requires a clear responsibility of a technical expert with profound knowledge in working with line ministries and a clear strategy (goals, interventions, clearly aligned to policy processes of the partner).

Experiences, (in the sense of findings that took place within the scope of the intervention but were not planned) are that clearly defining the **responsibilities of the project team** (e.g. the local expert, the short-term experts and the project coordinator) is crucial. The local coordinator (with a professional background in QI) sometimes interfered with the tasks of other technical experts or made assessments of the work of QI partners that were seen as beyond the mandate of the local coordinator, leading to some dissatisfaction on the part of the experts and some Kyrgyz partners. A qualified local expert is a key asset for project implementation. Better definition of responsibilities and communication within the project team (e.g. joint planning of expert missions) would be beneficial.

8. Recommendations

Recommendations to partners:

(1) MoEC

- **Form a national QI platform**: Strengthen the work of the introduced 'Scientific and Entrepreneurial Platform and the National Quality Infrastructure' to have a multi-stakeholder engagement mechanism to facilitate coordinated policy development and implementation in quality infrastructure.
- **Include a 'Terminology Committee (TC)'** under the new standardization law (among the other 24 TCs) to harmonize technical language, ensuring uniformity in the application of ISO standards.

(2) KCA

- Strengthen recognition: Promote accreditation benefits through success stories, social media, and the internet. Build MRAs with other accreditation bodies for easier market access.
- Enhance expertise: Invest in training for assessors and experts in emerging areas, and develop new accreditation services, such as ISO/IEC 17043 and standards in food safety (ISO 22000) and quality management (ISO 9001).
- Sustain PTB momentum: Use PTB knowledge to create post-project plans, expand ToT programs, and evaluate GOST to ISO transitions. Collaborate with stakeholders and committees to ensure alignment with their needs.

(3) CSM

- Strengthen recognition: Promote CSM services via social media and websites to educate stakeholders. Engage in multi-stakeholder dialogues to address metrology needs and gaps and use platforms like the Laboratory Club and MoEC Technical Committees to attract clients and share best practices.
- Expand services: Obtain ISO 17020 accreditation for pressure gauges, dispensers, and meters, and maintain ISO 17025 for existing services. Explore local and regional supply of reference materials and develop PT/ILC schemes with ISO/IEC 17043 procedures. Ensure calibration traceability through certified reference materials from international labs.

(4) **Food testing laboratories:**

- **Knowledge transfer and stay updated on international guidelines:** Share knowledge and experiences with colleagues from other departments, especially regarding ISO/IEC 17025 requirements. Continuously learn about technical topics such as measurement uncertainty,

PT/ILC, and calibration intervals using resources like Eurolab, Eurachem, and OIML. Upgrade methods for meeting requirements of the international market: Transition from GOST to ISO methods gradually, prioritizing high-demand tests.

- **LIMS Implementation (mid- to long-term perspective):** Adopt a centralized 'Laboratory Information Management System (LIMS)' for improved efficiency.
- **Expand services to meet market demand:** Diversify testing parameters, especially for pesticides and microbiological analyses, and explore organic certification testing.
- **Continuing engagement in Lab-Club activities:** Support the institutional strengthening of the Lab-Club in future for the joint benefit of the QI system.

Recommendations to the project team:

(5) **Set-up a procedure for a joint plausibility check of monitoring data** between the project coordinator and the key short-term experts working with the QI-partner (e.g. laboratories). Such an exercise is an essential part of data quality assurance to ensure the accuracy and reliability of data. At least once a year a plausibility check concerning measuring progress made should be done (e.g. check range, consistency, logical check). from a technical and economically point of view).

(6) **CALIDENA activities - monitor impact of the Food Logistica fair:** Track the outcomes of the participation in Fruit Logistica 2025 to measure and amplify its impact on exports and KCA's reputation.

(7) **Develop sustainability concept for the Laboratory Club:**

- **Develop/update the charter** focusing on statute to allow membership for all types and sectors of laboratories, including private and public organizations. This should encompass industrial (in-house labs), scientific research, educational, and other types of laboratories.
- **Define benefits to members:** Promote the club among various potential member organizations. Clarify member contributions: fees and/or in-kind contributions (e.g. collegial visits between labs, exchange meetings, identification of common challenges, and collaborative problem-solving.
- **Try to build collaboration with international and regional organizations:** exchange experiences with their member national associations, e.g. Georgian Laboratory Association (GeLab). Long term: establish partnerships with similar organizations/networks like Eurolab and Eurachem. Explore future collaboration with other donor projects (e.g. EU)
- **Develop a Feedback Loop:** Create a platform for accredited bodies to provide feedback on KCA's processes, fostering a culture of continuous improvement.

Recommendations to the International Cooperation Department (Group Q.3):

(8) **Project design:** For projects where there will be no extension, it is important that the project design clearly specifies the phase-out and sustainability path.

(9) **Policy level interventions:** A more targeted approach to advising on policy and developing QI systems is recommended.

(10) **Training Programs:** Alongside theoretical training, greater emphasis should be placed on practical training sessions, allocating sufficient time to ensure the mastery of analytical methods up to accreditation standards. Planning training programs in consultation with potential participants to ensure their relevance and effectiveness. Training materials should be provided to participants

in advance (e.g., at least 10 days before a 1-day training) to allow adequate preparation for the sessions.

(11) **Procurement:** Procurement of equipment should take place earlier in the project implementation period (e.g. within the first year). There is a need to speed up the procurement process. A challenge arose regarding the customs clearance process, as the contract between the government and PTB/GIZ did not specify which laboratories the shipments would be sent to (it generally mentioned "support for labs"). This issue should be addressed in future projects.

Recommendations to the evaluation unit of Working Group Q.01:

(12) **Organizing the on-site evaluation mission** back-to back with a project activity (e.g. training, working group meetings, etc.) is a good way to reach out to many project partners. As a standard procedure the evaluation team should be introduced at the beginning of the event with the partners and should be given a time slot to present the purpose of the evaluation. This ensures that all participants do have the same level of knowledge about the evaluation mission.

9. Annexes to the evaluation report

9.1 Involved stakeholders

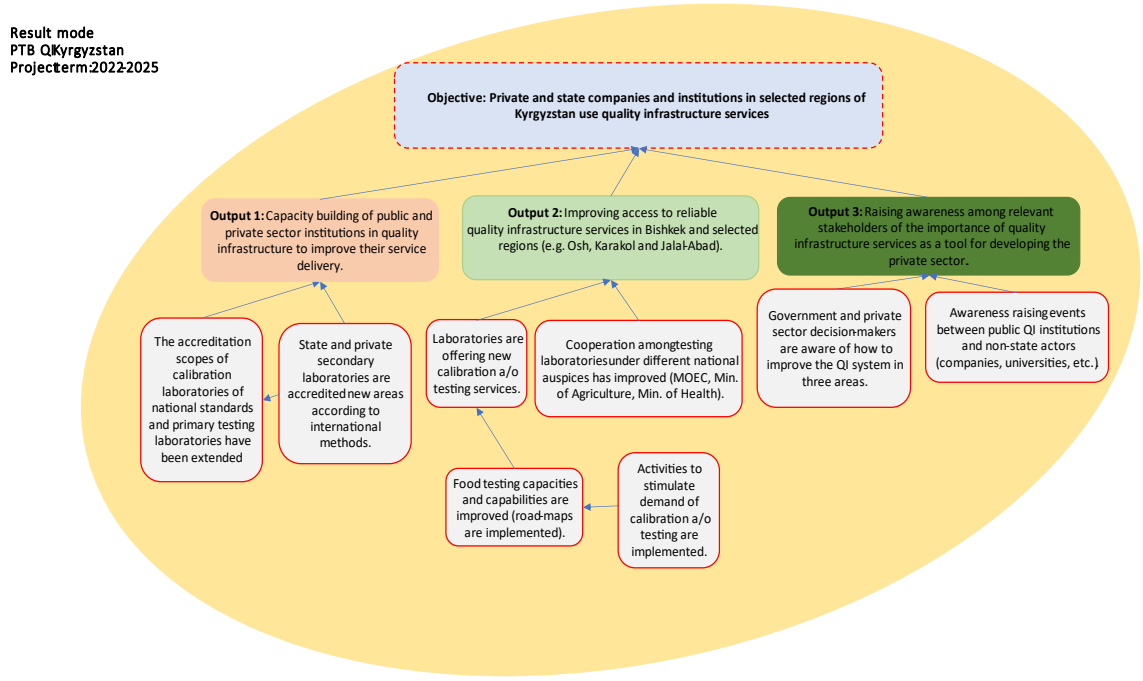
Project Partner and Stakeholders		
Organisation	**Name of interviewee**	**Position/ function**
Ministry of Economy and Commerce (MoEC)	Shabdanov B.	Head of the Technical Regulation and Metrology Department
	Zholdosheva S.	Head of the Sector for Ensuring the Uniformity of Measurement
	Abdymomunova G.	Head of the Depart. for Regulation of Conformity Assessment
▪ Centre for Standardization and Metrology (CSM), Bishkek	Nurmatov Bolot	Director of CSM
	Bayaliev Almaz	Head of Metrology Department
	Marina Denisova	Head of temperature lab
▪ Bishkek Centre for Testing, Certification and Metrology (BICSM) of the CSM	Botoev Nurgazy	Deputy Director
	Aksupova Aigul	Head of laboratory Chairperson of laboratory club
▪ Osh Centre of the CSM (OCSM)	Kazybaev Kubat	Head of Metrology Department
▪ Kyrgyz Accreditation Body (KCA), Bishkek	Ainura Akhmedzhanova	Director
	Taranchieva, M.	Deputy director
	Kotova Ekaterina	Department head for laboratory accreditation
	Dushenalieva Cholpon	Head of the Department for the Organization of Accreditation Work
Ministry of Water Resources, Agriculture and Processing Industry		
▪ State Institution Center for Veterinary Diagnostic and Expertise Veterinary Service	Kurmankulov Ermek	Head of the laboratory
▪ Representative Office for the Southern Region of the State Institution Center for Veterinary Diagnostics and Expertise Veterinary Service	Bepiev Ernis	Head of Food Safety Department
Ministry of Health		
▪ Sanitary and hygienic laboratory of the Bishkek Center for State Sanitary and Epidemiological Surveillance under the	Zamaletdinova Elite	Head of the laboratory
▪ Sanitary and hygienic laboratory of the Bishkek Center for State Sanitary and Epidemiological Surveillance	Zamaletdinova Elite	Head of the laboratory
▪ Department for Prevention of Diseases and State Sanitary and Epidemiologic Supervision	Dzumakanova Aigul	Head of the laboratory
▪ Osh City Center for Disease Prevention and State Sanitary and Epidemiological Surveillance	Adahamov Bahodir	Head of the laboratory
▪ Kadamzhai Regional Center for Disease Prevention and State Sanitary and Epidemiological Surveillance	Isiraiilov Makhmud	Head of the sanitary and hygienic laboratory
▪ KaraKol Center for Disease Prevention and State sanitary and epidemiological supervision	Toktorbaeva Bermet	Head of the Sanitary and Bacteriological Laboratory
Private Sector Partners		
▪ Testing laboratory 'Certificate Plus' (privately-operated lab)	S. Mukhammadiusuf	Head of the laboratory
▪ Association of fruit and vegetable companies	Alimzhanova D.	Chairperson
▪ Aksy Sun Planet Organic (dried fruit and nuts)	Nurlan Yusupov	Director
▪ Ishker KG (dried fruit and nuts)	Zairbek Torobekov	Director
▪ Alysh-dan (dried fruit and nuts)	Tolomushev Tursunali	Director
▪ OSKO (dried fruit and nuts)	Kashveev A.Kharunovich	Director
▪ Batken Fruits Company (dried fruit and nuts)	Abylgazy Kalbaev	Director
▪ Trade and Logistics Center Global Agro (dried fruit and nuts)	Bunisa Mamadalieva	Director
▪ Interfruit (dried fruit and nuts)	Sardor Madazimov	Director
▪ Kulikovsy (dried fruit and nuts, dairy)	Klepatskaya Alina	Technologist
▪ Farmers Organic Garden	Abdykapar Kajypov	Director
▪ Trade and Logistic Centre Global Agro	Bunisa Mamadalieva	Director

Other relevant German and International DC partners		
Organisation	**Name of interviewee**	**Position/ function**
PTB regional project	Christophr Colell	Project coordinator
GIZ Green Economy project	Hanna Sabass	Head of project
	Denis Krasnozhenov	Senior project expert
	Salmor Asanaliev	Project expert

PTB staff and technical experts		
PTB project staff and selected	**Name of interviewee**	**Position/ function**
	Corinna Weigelt	Head of Section

short-term experts (STE)	Larysa Schijen	Project coordinator
	Benazir Ismailova	Project assistant
	Sissy Schatt	Project assistant since April 2024
	Larisa Kozlova	Local representative
	Dr Clemens Sanetra	STE, PTB Uzbekistan; Germany, Strategic advisor, QI Consultant
	Beatriz Paniagua	STE (iKZE) based in Costa Rica, Accreditation body (KCA), CALIDENA
	Tawat Changpan (Mr)	STE based in Thailand, Pressure and time / frequency laboratories
	Dr Irene Flouda	STE, based in Greece, Trainer for National Metrology Institutes (NMIs)
	Dr Christine Froese	STE, Germany, food testing laboratories; LAB
	Karen Darbinyan	STE, based in Armenia, ISO food testing methods implementation

9.2 Reconstructed results model ('Wirkungsmodell')



9.3 List of supported laboratories

		Name of the QI institution / laboratory
MoEC	1	Centre for Standardization and Metrology (CSM), Bishkek
	2	Bishkek Centre for Testing, Certification and Metrology (BCISM) of the CSM
	3	Osh Centre of the CSM
	4	Kyrgyz Accreditation Body, Bishkek
MoA	5	Representative Office for the Northern Region of the State Institution Center for Veterinary and Phytosanitary Diagnostics and Expertise Veterinary Service
	6	Representative Office for the Southern Region of the State Institution Center for Veterinary and Phytosanitary Diagnostics and Expertise Veterinary Service
MoH	7	Sanitary and hygienic laboratory of the Bishkek Center for State Sanitary and Epidemiological Surveillance under the
	8	Department for Prevention of Diseases and State Sanitary and Epidemiologic Supervision
	9	Osh City Center for Disease Prevention and State Sanitary and Epidemiological Surveillance
	10	Kadamzhai Regional Center for Disease Prevention and State Sanitary and Epidemiological Surveillance
	11	Kara-Kol Center for Disease Prevention and State sanitary and epidemiological supervision
Privately-owned laboratories (secondary level)	12	Testing laboratory ‘Certificate Plus’ (privately-operated laboratory)
	13	Farmers Organic Garden LLC (dried fruits, fruits and vegetables
	14	LLC «Kyrgyz Konyagy» (production of alcoholic beverages)
	15	Sazanovsky Juice production
	16	CJSC "Sut Bulak" (dairy products)
	17	JSC "Ak-Bulak plus" (milk, cheese, cottage cheese)

9.4 Guiding questions

Relevance *The extent to which the objectives of the project are consistent with the target groups' requirements, country needs, institutional priorities and partner and donor policies.*	▪ In which way has the project contributed to the ongoing process of professionalization of the QI system? ▪ What are benefits of the project for the responsible a) QI institutions (system level; capacities of national/regional level) and b) companies (target group)? ▪ How relevant is the project for the industry/MSMEs and why? To which degree has the project contributed to reducing trade barriers and making Kyrgyz product more competitive? ▪ In which way does the project align to the priorities and targets set in the 'Made in Kyrgyzstan' export strategy for 2023-2026 related to improving quality standards or how the project contributes to overcome regulatory and procedural barriers to trade?
Coherence *How well does the intervention fit within German Development cooperation (internal coherence) and with other international development partners (external coherence?*	▪ Internal coherence within German DC: To what extent is the intervention designed and implemented (in the country/region) in a complementary manner, based on the division of tasks? What kind of synergies have been used in collaborating with other relevant projects of the German DC (PTB, GIZ?) and as part of the overall German DC Programme? To what extent is the intervention consistent with international and national norms and standards to which German development cooperation is committed (e.g. human rights)? ▪ External coherence within international DC: To what extents have synergies been leveraged? What kind of synergies have been used in collaborating with other international development partners (e.g. JICA, UNDP)? ▪ Is the intervention's design and implementation complementing the partner's own efforts and is it coordinated with other donors' activities? ▪ To what extent does the intervention complement and support the partner's own effort (principle of subsidiarity)? ▪ To what extent has the intervention's design been geared to the use of existing systems and structures (of partners/other donors/international organisations) for implementing the activities? To what extent are these systems and structures used? ▪ To what extent are common systems (together with partners/other donors/international organisations) used for M&E, learning and accountability?
Effectiveness *The extent to which the intended direct results (objectives) of the project are being achieved (comparison of actual situation with targets).*	▪ How did the project activities correspond to the work priorities of the involved partners and stakeholders? ▪ What changes are perceived by partners (political partner, main implementation partners, target group) due to the cooperation with the project regarding the main intervention areas: o Output 1: Improving service delivery of (public/private) QI institutions o Output 2: Improving access to reliable QI services in Bishkek and selected regions o Output 3: Raising awareness of the importance of QI services for economic development. What do you/ does your institution do differently from before? In which way are trained experts applying their new skills and knowledge in their work? ▪ Which services were developed or improved with the help of the project (e.g. QI institutions are better marketing their services, etc.)? Did you introduce any innovations due to the project? ▪ Who are your clients, and how has demand developed in recent years? ▪ Regarding the CALIDENA activities, has the project established work plans with clear responsibilities and due dates (evaluation recommendation for up-scaling)? ▪ Which elements of the project do you appreciate most? (e.g. elements of the strategy, ▪ cooperation, results, communication, involvement of other partners, etc.) ▪ What did not work so well? Did you observe any negative results from the project activities? For instance, that the environment did harm. ▪ What would be the situation today if you had obtained no support from the project? ▪ (counterfactual) ▪ How has the selection of staff for the training taken place? Who selected the staff? Have the conducted trainings matched the actual training needs of the selected participants? ▪ What have been supporting or hindering factors of project implementation? ▪ What could PTB learn from other projects (e.g. of the Ministry, of other organisations)? ▪ Quality of implementation: o Any adjustments regarding project design and approach made? o How did you participate in the project design/ when the project was developed? o How were you integrated in steering or monitoring of the project? o Did you have a say in decision making (e.g. in planning)? o How effective was the steering structure from your point of view? (e.g. number/ frequency of meetings, kind of information exchange, kind of decisions, etc.) o Has there been an annual operational planning? Has the evaluation recommendation to establish for each partner or output, road maps, e.g. for the implementation of analytical methods for selected products been implemented?

	○ How response was the project? How good is the quantity and quality of communication between the relevant stakeholders of the project? Can you give some examples and consequences?
Impact *Contribution of the project to overarching results.*	▪ Looking at higher level results such as competitiveness or economic growth, where do you think the project made a visible contribution? ▪ What contributions can the project realistically make to overarching development results like competitiveness, diversification, better market access, consumer protection, and economic development – among others? ▪ In which way has the project dealt with social and ecological safeguards regarding their interventions and/or improvements of the QI structure (e.g. work of the laboratories)? ▪ Do you see already some impacts (effects of project results) of the project? If yes, which ones? ▪ Could you observe whether other companies are using QI services (not necessarily of your organisation), without being promoted by the project? (uptake) ▪ How do you assess the up scaling of the results? (e.g. replication in other regions, or anchoring something in a government guideline or law)? What would need to be done to up-scale and who would be responsible?
Efficiency *To which degree resources invested by the project are appropriate compared to the outputs and results achieved.*	▪ What resources has the project been using for implementing activities and steering the project (e. g. resources for project coordination, technical support, equipment, operating and administrative costs, etc.)? ▪ To which extent has the project coordinated with or been complementary to other donor projects for task-sharing (e.g. other PTB projects, other bi- and regional projects of the German and/or international DC)? ▪ Have the outputs been produced cost-efficiently (cost-benefit ratio)? ▪ What could have been done differently in terms of allocating funds, providing experts, etc. to achieve even better results?
Sustainability *The likeliness that the positive results of the project will continue beyond the end of the project support.*	▪ What approaches, instruments, methods or concepts are likely to be lastingly used, institutionalized or further developed by the involved implementation partners? ▪ Which CSM branches are already operating sustainably or are likely to do so in future? ▪ To what extent are organizational, personnel, financial, economic resources and capacities available at national / regional QI institutions? ▪ How do you see the future of your institution/ laboratory etc. in the short to medium term? ▪ What are your plans to improve your operations? ▪ Which instruments or methods that were developed with the project can you continue by yourself without further support? ▪ Do you have the personal and financial resources to continue this without any external support? ▪ Food testing laboratories: ○ Has the issue of overlapping responsibilities between different laboratories under the auspices of different ministries (performing the same tests) been overcome? ○ Is there a better division of labour among labs on their core tasks and competencies? ○ Has a market analysis been done each time the project has supported a laboratory to develop a new service? ▪ Laboratory club: ○ Have the cooperation a/o communication structures improved in the project's II phase (e.g. preparation of agendas, minutes, regular meetings)? Are private labs involved? ○ What are the benefits of the club? ○ How can it exist without project support? What are the major risks to sustainability from your point of view? ▪ Target group/companies: ○ Can you keep the achievements without any further support? If not, what would be required? ○ What are the services that you will need from QI institutions/ food laboratories in the future (also in terms of price, distance, quality etc.)? ○ What are your company plans for the future? Are you optimistic/ pessimistic?

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