

# EXTERNAL EVALUATION – SHORT REPORT

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## Evaluation of the PTB's technical cooperation with the Philippines 2006-2017

Country | Region: Philippines, Asia

Projects: Advisory services for the development of service offers in the field of quality infrastructure in the Philippines (PN 2006.2039.3 – PN 95203, November 2006 – April 2011)  
Consultation for the development of services in the field of quality infrastructure (PN 2006.2039.3 – 95235, May 2011 – November 2014)  
Strengthening of the National Quality Infrastructure in the Philippines (PN 2012.2296.7 – 95262, November 2014 – October 2017)

Implementation period: November 2006 – October 2017 (extended until February 2018)

Executing agency: Physikalisch-Technische Bundesanstalt (PTB)

Implementing partners: National Metrology Laboratory (NML-ITDI, DOST), Standards und Testing Division (STD-ITDI, DOST), Philippine Accreditation Bureau (PAB, DTI), Bureau of Agriculture and Fisheries Standards (BAFS, DA), Philippine Metrology, Standards, Testing and Quality Inc. (PhilMSTQ)

PTB | Working Group: Div. 9.32 Asia

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This is an independent evaluation. The contents represent the view of the evaluator and cannot be taken to reflect the views of PTB.

## List of abbreviations

APLAC	Asia Pacific Laboratory Accreditation Cooperation
ASEAN	Association of Southeast Asian Nations
BAFS	Bureau of Agriculture and Fisheries Standards
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung / Federal Ministry of Economic Cooperation and Development, Germany
BOI	Board of Investments
CIPM	Comité International des Poids et Mesures
CMC	Calibration and Measurement Capabilities
CW	CapacityWORKS
DAC	Development Assistance Committee
DAkKS	Deutsche Akkreditierungsstelle GmbH / National Accreditation Body of the Federal Republic of Germany)
DeGEval	Gesellschaft für Evaluation e.V. / Evaluation Society
DTI	Department of Trade and Industry
EUR	Euro
ILAC	International Laboratory Accreditation Cooperation
iSTE	International short-term expert
MiC	Metrology in Chemistry
NML	National Metrology Laboratory
OECD	Organisation for Economic Co-operation and Development
PAB	Philippine Accreditation Bureau
PAC	Pacific Accreditation Cooperation
PHILFOODEX	Food Processors and Exporters Corporation
PhilMSTQ Inc.	Philippine Metrology, Standards, Testing, and Quality Incorporated
PTB	Physikalisch-Technische Bundesanstalt

QI	Quality Infrastructure
SME	Small and Medium-Sized Enterprises
STD	Standards und Testing Division

## 1. Project Description

In the past years, the Philippines has exhibited an average growth rate of 6 %. With a gross domestic product amounting to 3,300 USD per capita, the Philippines rank sixth among the ten countries belonging to the Association of Southeast Asian Nations (ASEAN). The country's industrialization, however, is progressing slowly and the poverty rate amounts to more than 20 %, according to the World Bank. With introduction of the ASEAN Economic Community (AEC) in 2015, the potentials of a growing and integrated market open up for the Philippine economy. To be able to exploit these potentials, certain preconditions have to be fulfilled.

In order to be able to export products, operational national structures for measurements, standards, testing and conformity assessment – also called "Quality Infrastructure" (QI), consisting of a metrology institute, an accreditation body, a standardization institute, certification bodies, calibration and testing laboratories – are necessary. A Quality Infrastructure serves to prove the conformity of products with standards and technical regulations. Deficient Quality Infrastructure services strike, in particular, small and medium-sized enterprises (SMEs) which do not have the financial possibilities to use services that are offered abroad and therefore need local access to acknowledged conformity assessment bodies. An operational QI is also important for consumer protection as it ensures that requirements with regard to the safety of products and foodstuffs can be checked and met.

The Quality Infrastructure in the Philippines has developed over the past few years and the extent of the services provided has improved, but there are still deficits. The core problem was described as follows: Besides insufficient specialized capacities and services that are too little customer and demand-oriented, the QI institutions are poorly interconnected with each other as well as with important stakeholders. Furthermore, the political and economic stakeholders are not sufficiently aware of what the ASEAN single market will mean for the National Quality Infrastructure. Knowledge of the topic of Quality Infrastructure and the awareness for its importance for trade, consumer and environmental protection is insufficient, whether it is on the part of the political decision-makers or on the part of the entrepreneurs or the consumers. Numerous SMEs are only just beginning to realize what challenges the AEC brings along; they therefore need orientation with regard to quality-relevant services. The QI institutions, in turn, must increasingly seek dialogue with the private sector and gear their services offered to the (potential) needs of their customers.

The objective of the project therefore reads: "The national quality infrastructure offers, in the fields of metrology and accreditation, demand-oriented services in accordance with international requirements and is being strategically further developed with the participation of the private sector, political stakeholders and civil society".

In its Development Plan 2010-2016, the Philippine government has acknowledged the necessity of setting up a Quality Infrastructure. The project was aligned with the Philippine Development Plan as well as with the strategic objectives of ASEAN. At the operative level, it addressed itself to the (mostly public) suppliers of QI services.

The term of the project was 3 years (11/2014 – 10/2017). The commission value amounted to 800,000 EUR.

## 2. Assessment of the project

The evaluation considers PTB's (Physikalisch-Technische Bundesanstalt, Germany) technical cooperation with the Philippines as it was mandated by the German Federal Ministry for Economic Cooperation and Development (BMZ) during the timeframe from November 2006 until October 2017, consisting of the projects "Advisory services for the development of service offers in the field of quality infrastructure in the Philippines", PN 2006.2039.3 - PN 95203 (11/2006 – 04/2011 at 600,000 EUR), "Consultation for the development of services in the field of quality infrastructure", PN 2006.2039.3 - 95235 (5/2011- 11/2014 at 800,000 EUR) and "Strengthening of the National Quality Infrastructure in the Philippines" PN 2006.2039.3 - 95262 (11/2014-10/2017 at 800,000 EUR) The evaluation takes into account the results of a short "follow-up period" until 02/2018, which was arranged by PTB to safeguard the finalization of selected outputs like Metrology in Chemistry (MiC) and accreditation of organic certification bodies. The key focus of the evaluation is on the most recent project (2014-2017/18).

The analysis based on the Organisation for Economic Co-operation and Development – Development Assistance Committee (OECD-DAC) criteria shows that the project achieved positive ratings across all criteria. Relevance and efficiency are rated with highest marks. Owing to this number of points (1.6), the project is given an overall rating of "successful".

Criterion	Rating for criterion
1. Relevance	1
2. Effectiveness	2
3. Impact	2
4. Efficiency	1
5. Sustainability	2
<b>Overall rating</b>	<b>1,6</b>

The preceding projects (until 2014) were already subject to an evaluation and rated 'good' (2.5).

## 2.1 Status of the change process

This chapter applies the five OECD DAC criteria: relevance, effectiveness, impact, efficiency and sustainability. The ratings apply to the most recent project (2014-2017/18).

When the evaluation reconstructed the Theory of Change by analyzing the most relevant change processes that have been addressed by the project, it became clear that the project operated in causal paths. The evaluation identified the ‘why, what, who, when, and how’ that links each activity to the results on output and outcome level. Regarding the assumptions, the results and the established linkages as well as the anticipated or broken linkages, the chapters on the OECD DAC and the success factors contain the details. For the reconstructed Theory of Change of the project, see figure 1:

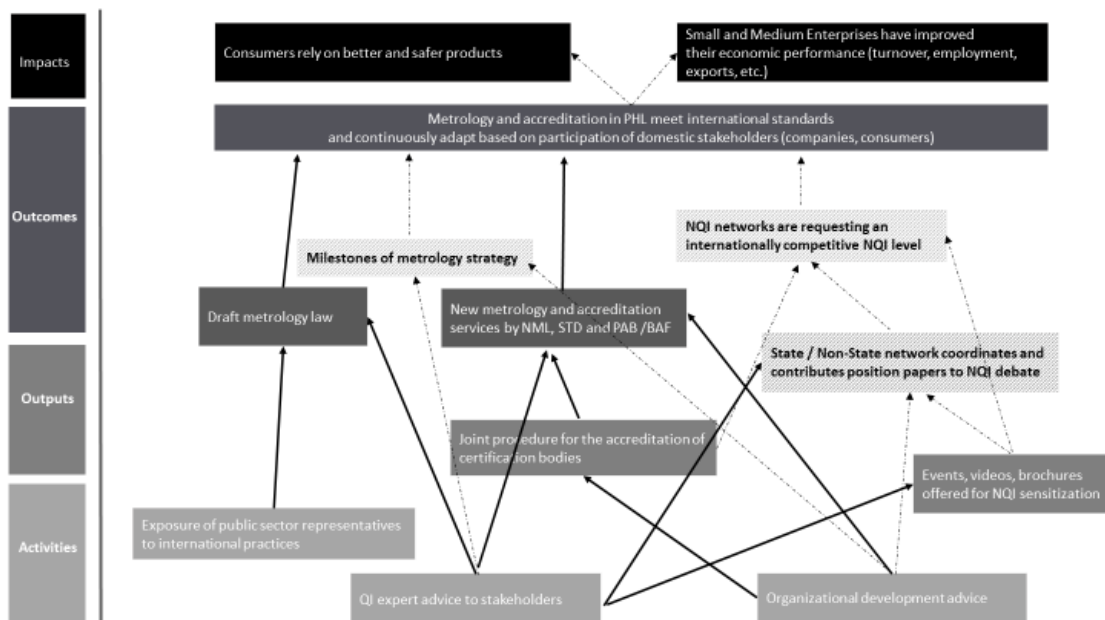


Figure 1: Reconstructed Theory of Change of the project.

Established link: 

Anticipated or broken link: 

Grey-striped boxes: partially achieved result

### Relevance

The objectives of all projects since 2006 were highly relevant for the Philippine development of a National Quality Infrastructure (NQI), the objective of the last project (2014-2017/18) matched the Philippines Development Plan and was defined as: “The national quality infrastructure offers, in the fields of metrology and accreditation, demand-oriented services in accordance with international requirements and is being strategically further developed with the participation of the private sector, political stakeholders and civil society.” The field of activities (2014-2017/18) built on previous work lines and covered:

Output 1, NML-ITDI is enabled to participate in the designing and in the conception of strategies and legal bills, taking international requirements into account.

Output 2, NML, STD und PAB (in collaboration with BAFS) are enabled to develop services that are geared to the needs of industry and meet international standards.

Output 3, The ability of the project partners to implement NQI awareness-raising activities for political and economic stakeholders is enhanced.

Output 4, Networking among NQI institutions is durably strengthened.

Interviewees ranked the relevance of the project outputs for their work with highest marks. Across the board, the practical knowledge and external opinions brought in by PTB experts were much appreciated.

Project partners on the side of the government included the National Metrology Laboratory (NML), the Standards and Testing Division (STD), the Philippine Accreditation Bureau (PAB) and the Bureau of Agriculture and Fisheries Standards (BAFS) for the accreditation of certification bodies for organic produce so that organic produce can be certified by local bodies.

The project applied various formats of human capacity development. A multi-level approach was applied. At the meso level, promotion focuses on metrology and – to a smaller extent – accreditation. The focus topic of accreditation of organic certification bodies was selected based on stakeholder consultation. With the civil society organization Philippine Metrology, Standards, Testing and Quality Inc. (PhilMSTQ), the project selected a partner to support the awareness-raising of the economic and political stakeholders. The networking part of the project floated innovations but was not exploited fully due to organizational development issues and lack of mutual acceptance of mandates. At the macro level, the project had a consultation function for the further development of legal framework conditions and for the elaboration of a national metrological strategy and its implementation.

The target groups encompassed all stakeholders from the economy which benefit from the improved services provided by the Quality Infrastructure. Among those were industry and trade, in particular SMEs, as well as the consumers and the public sector. The intermediaries were the experts and executives of the government and the administration involved in the quality infrastructure, organizations of the corporate economy and civil society, as well as technical and scientific networks.

The relevance criterion is given the rating “very successful”.

Effectiveness

Three indicators are achieved (#1, #3) or overachieved (#2). Indicator #4 is partially achieved (67%). Apart from the quantitative performance, the evaluation team found that the intention of indicator #2 and #4 are not entirely met (e.g. relevance of the factors that led to fulfillment), and that the indicator #1 signals readiness for future change but does not provide evidence of actual change of the systemic uplifting of the sector. It is up to other stakeholders to pick-up the output, e.g. the draft metrology law requires ratification and institutional implementation takes place subsequently).

Indicator	Fulfillment	Comment
1) NML-ITDI has submitted a draft of a revised metrology law to the political decision-making entities. Initial value (2013): 0 Target value (2017): 1 Actual value: 1	100%	Draft law submitted to congress in 2017. Observers consider the latest version as high-quality according to international standards and domestically non-controversial, however

		expect ratification not before 2020.
<p>2) NML has implemented 20% (8 of 40 milestones) of the roadmap for implementation of the metrology strategy with the participation of stakeholders.</p> <p>Initial value (2013): 0%</p> <p>Target value (2017): 20 %</p> <p>Actual value: 44 %</p>	200%	<p>The indicator is numerical overachieved, however the intention of this indicator was not entirely met, since meaningful indicators (related e.g. to the metrology law, co-operational aspects customer relations) were not achieved. See detailed list of milestones and comments below.</p>
<p>3) NML, STD and PAB (together with BAFS) offer 17 new services for the private sector and for laboratories.</p> <p>Initial value (2013): 19 services (NML 13, PAB 6)</p> <p>Target value (2017): 17 new services</p> <p>Actual value: 17 new services</p>	100%	<p>It is not clear for an external observer in the evaluation, which of the reported 17 new services on websites of NML, STD, PAB and BAFS are matching the demand of the private sector and laboratories to what extent.</p>
<p>4) A network of NQI institutions has been established and participates in the political debate by means of joint position and discussion papers</p> <p>Initial value (2013): 0</p> <p>Target value (2017): 3</p> <p>Actual value: 2</p>	67%	<p>Organizational issues of PhilMSTQ have let to stalling the quarterly network meetings in the last year of the project. PhilMSTQ reported for this indicator: 1. Presentation at NQI Forum (September 22, 2017). 2. NQI presentation at Chemical Engineers Convention (December 2017). A NQI position paper presentation at the Senate (April 7, 2014) was noted, but outside the reporting period.</p> <p>Both output indicators were not met. The first measured network meetings (which ceased</p>



		after 2015) and the second was geared towards a business plan intended for PhilMSTQ as the network platform.
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The relevance criterion is given the rating “successful”.

### Impact

To achieve an increasing and self-reinforcing system of NQI awareness in the Philippines is the biggest change as perceived by interviewees. At the beginning of the PTB projects, the NQI concept was introduced as an innovation to national strategy.

The NML has developed an orientation towards providing services for customers, which has initiated that huge manufacturers now seek traceability to Manila (not abroad any more). Two further QI institutions, PAB and BAFS, have started to cooperate in a pilot and aim at a common goal, which is to provide accreditation to organic certifying bodies rendering certification to producers for international recognition to meet demands of export markets – an intervention that has been supported by the project.

All of the above took place in the framework of international cooperation in APMP, APLMF and further bodies.

A draft metrology law for institutional and sectoral transformation was submitted by ITDI to Congress in 2016 and sponsored by several Congressmen from late 2016 to early 2017. In 2017, several meetings and deliberations have taken place at the House of Representatives, and the version had been revised. Observers consider the latest version as high-quality according to international standards and domestically non-controversial, however expect ratification not before 2020.

The continuous budget increase for metrology since 2006 can be taken as an indicator for public appreciation, culminating to the biggest leap in 2017 vis-à-vis the foreseeable termination of funding from Germany. Currently, 51% of ITDI budget is allocated to NML.

In the view of the private sector interviewees, in one case study which was highlighted by NML in the national strategy, the improvements at NML strengthened the operational capability, e.g. reducing the company’s calibration lead time from 7 weeks (shipments abroad) to 2 weeks (domestically). NML has invested to improve their equipment and staff capacities to cater an adequate range of quantities. In essence, the developments in Quality Infrastructure reduced cost on calibration, and enhanced profitability.

For those reasons, the evaluation team attributes higher marks compared to 2013 evaluation.

Thus, the impact criterion is given the rating „successful“.

The following six specific evaluation questions were posed by PTB:

PTB question	Response by evaluators
1. How has the National Metrology Institute (NML) developed over the course of the projects and	Founded in 1998, the NML was recognized in 2009 as Division of the Industrial Technology Development Institute (ITDI) of the Department of Science and Technology (DOST). NML prepared to meet the international standard of ISO/IEC 17025. Eventually in 2010, DAkKS

<p>what were the major milestones?</p>	<p>accreditation for mass, temperature and pressure was achieved, in 2012 electricity added and in 2015 renewed and expanded. Internationally, NML became an increasingly active member of the Pacific Metrology Programme (APMP) and the Asia Pacific Legal Metrology Forum (APLMF), and an Associate State of the General Conference on Weights and Measures (Conférence Générale des Poids et Mesures, CGPM). After the accreditation was granted in October 2010, and following a peer review process, in 2013 the CMCs were published at the KCDB with the Bureau International des Poids et Mesures (BIPM).</p> <p>In 2015, NML published a strategy for the national metrology infrastructure, which covers 10 strategic elements and 40 milestones. On government side, NML-ITDI and STD-ITDI have been driving this process.</p> <p>In 2017, the domestic metrology program received a meaningful increase of budget by the Philippine government (The approved total budget for the 5-year program amounts to PhP 998 mio. / EUR 17 mio., of which 51 percent are allocated for NML). In 2016 a draft NQI bill and in 2017 a draft metrology bill (which is coined to supersede the outdated National Metrology Act of 2003) were submitted to parliament, that can safeguard the path towards international standards and to allow for greater budgetary and administrative autonomy of NML. Both laws were assessed by interviewees as non-controversial, but it might take a couple of years to put them into effect.</p>
<p>2. To what extent have the developments in metrology that were supported by the projects had a positive effect on users in calibration and testing laboratories, and in industry and/or the consumers?</p>	<p>In principle, it is perceived by interviewees that improvements of metrology had multiple effects on a broad range of stakeholders. The monitoring of outputs and outcomes with regards to users in industry is robust in single cases (manufacturers and calibration and testing laboratories), where the traceability chain was established to NML (previously to NMI's abroad). There was no organization or networking of institutions found during the evaluation that could provide data about the effects for consumers or about scaling-up and diffusion effects in the industry.</p>
<p>3. Which recommendations can be made for the future development of NML with the aim of ensuring the best possible metrological support for economic development and consumer protection?</p>	<p>The evaluation team issues the recommendations i-vii below. Out of which, currently, it is of key importance to plan for the continuity of processes in case key personnel leaves the organization (e.g. as it can be foreseen in 2019 for retirements and studies) with regards to the DAkkS reaccreditation of NML</p> <p>Overall in the Philippines, as previously in other emerging countries in the region (e.g. Malaysia, Thailand), the strategy for the national metrology infrastructure proved to be important especially for the orientation towards economic development and consumer protection. It will be key for the development of NML to work closely with other organizations related to health, safety, security and consumer</p>

	<p>protection as well as regulators by introducing metrology into their activities and raising awareness on the importance of precise measurement.</p>
<p>4. What lessons can be learned from the cooperation with the non-governmental organization PhilMSTQ? Is the approach of cooperating with an NGO (for awareness raising and networking) recommendable for other projects?</p>	<p>The public QI institutions depend on other actors in order to sensitize, handle transfer processes and boost leverage. PhilMSTQ has been highly dependent on PTB support and had to face disruptions when the support could not be renewed, but the organization was in the position to continue operations on a basic level. Positive results, however, were noticed during the evaluation, that a core team of the active board members engaged intensively, provided missing data and were open to discuss lessons learned.</p> <p>The approach to cooperate with an NGO can be applied by other PTB projects in similar situations, if the following aspects are observed:</p> <ul style="list-style-type: none"> <li>▪ the core group should consist of sound mix of active and retired professionals in state and private sector organizations which provide the political and financial leverage to the NGO. The financial prospects of organizational sustainability should be given from the start or sustained efforts need to be made to an extent, which in case of the Philippines might have exceeded the total PTB project budget at hand;</li> <li>▪ identifying and building on existing partner institutions like associations and chambers should be given priority before and an implementing NGOs merely for the QI topic is established. At the beginning this approach can demand more effort by PTB, but at the end should yield higher prospects of sustainability.</li> <li>▪ success factors of the management model of CapacityWORKS or any other recognized methodology need to be applied consistently over the course of several years. Probably not by PTB alone, but in cooperation with a third partner, whose core competencies are about building NGOs and networks.</li> </ul>
<p>5. Which are the results of the support provided in the field of accreditation of organic certification bodies?</p>	<p>The objective to implement a joint accreditation procedure between BAFS and PAB for organic certification bodies in alignment with ISO 17065 and the 'Revised guidelines for the official accreditation of organic certifying bodies' (Department circular no. 6, 2015) is achieved.</p> <p>The project helped to establish and train a pool of six technical assessors in BAFS and PAB, which can be considered to safeguard process continuation after the end of the project. In the domestic market, the project contributed meaningfully to the accreditation of the first organic certification body (OCCP), which was granted by PAB on 9 May 2018. The first surveillance assessment is scheduled for February 2019. Recognition by the EU is not yet achieved but anticipated by project experts and partners in the near future.</p>

	<p>No evidence has come to the attention of the evaluation team that producers and traders of organic products have gained a better market position – at the point in time of the evaluation – by building on domestic organic certification bodies. There is yet no indication of better market penetration, target market diversification, higher quality of products, higher premiums or higher export quantities.</p>
<p>6. To what extent has the CALIDENA process contributed to raising awareness on QI in the dried mango sector and on the side of the project partners on the QI needs of the sector?</p>	<p>The CALIDENA project partners regarding the dried mango value chain have been the Philippine Metrology, Standards, Testing and Quality (PhilMSTQ) and the Food Processors and Exporters Corporation (PHILFOODEX) – coordination took place, e.g. in the kick-off workshop with the governmental partner institutions of the project under the jurisdictions of DOST and DTI.</p> <p>The increase of awareness on QI needs cannot be assessed quantitatively nor be evaluated. With regards to measuring this awareness aspect, there was no methodology applied during the intervention. At the time of the evaluation mission no baseline could be identified which would have allowed to apply any methodology to measure change of the level of awareness. Notwithstanding, according to files and interviews with selected stakeholders from the two CALIDENA project partners, this measure from June 2015 until August 2016 created interest among stakeholders and was well perceived.</p> <p>The activity appears to have been designed somehow in a stand-alone manner – which could have been avoided given the multitude of players and support measures that aim at strengthening competitiveness of Philippine producers and exporters. However, the CALIDENA led to accepted outputs, e.g. detailed discussion (documented in activity plans), involvement of a Steering Committee and Forum on Standards and Technical Regulations, training of 500 mango farmers on Good Agricultural Practices (GAP), and a guidebook “Quality Assurance in Dried Mango Processing” (no public online access). Subsequently, the STD invested in reference material and proficiency testing for sulphites determination in dried mango.</p> <p>There is no evidence to state that those outputs have led to awareness in the wider value chain nor to outcomes. To the detriment, less than a year later in April 2017 in a separate study about the Mango value chain supported by a third party and conducted under the Department of Trade and Industry (DTI) Board of Investment (BOI) Roadmap Initiative for the revitalization of the manufacturing industry in the Philippines, aspects of QI and the project partners selected for the PTB work stream were not even mentioned. This might support the view</p>

	<p>that little outreach was achieved by the previous awareness building efforts of CALIDENA under PhilMSTQ and PHILFOODEX, but certainly indicates that work streams – even with involvement of international partners – have not yet been coordinated sufficiently between the two most relevant “QI departments“ DTI and DOST.</p>
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Efficiency

The project is perceived by interviewees is highly efficient - the view that is supported by project documents. The monitoring documentation is good.

In terms of the mode of delivery the project invested the funds mostly in human capacity development, which included advisory services to partners, such as short-term technical expert visits, technical trainings, seminars, inter-laboratory comparisons, awareness-raising measures, development of planning and monitoring instruments.

According to files, 40% of funds can be attributed directly for metrology geared to the needs of industry and to meet international standards and 18% of funds for measures of awareness and networking (PhilMSTQ fund).

The project did not have permanent staff located in the Philippines. It operated with intermittent short-term experts (iSTE), and regional and international trainers.

The efficiency criterion is given the rating “very successful”.

Sustainability

To a considerable extent the statements regarding the impact criterion apply to the sustainability criterion as well, because they partially refer to the prospects of future impact of the project funds after the termination of the project.

The project focused on reaching selected thresholds, certain triggers and change markers that manifest the transformation of the sector. First, all interviewees agree that if the draft metrology law is implemented, systemic NQI transformation will take place. Second, if NML can maintain calibration and measurement capabilities (CMC) and accreditation like DAkkS, the project results will be durable. Those are the two big change factors that are both important for the transformation of the sector and can be attributed to the PTB project.

The monitoring of the indicators did not take sustainability questions into account. For instance, if the indicator #3 measures that “NML, STD and PAB (together with BAFS) offer 17 new services for the private sector and for laboratories, it is not monitored if the investment into equipment and staff qualification is matching the priorities of the private sector and what effects this offer of the government might have on the economy that would make this service sustainable. However, the interviewees have been trained in the use of their own equipment which has or will lead to maintaining calibration and measurement capabilities (CMC), and have developed a mindset of customer-orientation.

Previously donated equipment from third parties was put to use, and thus leveraged the funds provided by German Government.

The non-measurable key change toward sustainability is based on different attitudes towards customer orientation, e.g. customer survey and customer visits were introduced and supported by the project. NML responds to customer demands, e.g. extension to E2 weights. Customers indicate that they use metrology services not just because of mandatory requirements, but to seek innovation and increase competitiveness. The number of services rendered by NML increased from 858 items in 2012 to 3914

items in 2016. The portfolio of NML customers could be assessed in more details for the calendar year 2016: the structure of large and SME customers as well as the sectors of the economy, is balanced, however they are located predominantly in two geographical regions. Customers in two regions of the Philippines (i.e. National Capital Region, NCR, with 1,374 services and Calabarzon, IV-A, with 1,822 services) received more than 80 percent of all services rendered, whereas one fifth of the services went to the rest of the country's 14 regions. 89 percent of services were provided in the area of mass (3,471 services). Followed by electricity (224 services), thermometry (166 services) and pressure (53 services). In terms of customer type, the highest number of services was rendered to SMEs (1,470 services) almost equaled by large companies (1,412 services) and followed by governmental bodies (853 services) and inhouse NML (179 services). The manufacturing sector had the highest demand concerning computer, electronic and optical products, food products and pharmaceutical products.

Though the key stakeholders agree that knowledge management and qualification of key staff is essential, the evaluation team notes concerns, that inhouse challenges to sustainability emerge, when key staff will shortly go into retirement and others are continuing training and education elsewhere. This will put accreditation at-risk. No palpable management response was presented to the evaluation team. It seems that 2019 will be watershed year, where the key partner NML can prove, whether they are ready to maintain the level of metrology that has been reached.

Furthermore, overriding of partially political interests and partially inertia to maintain the status quo have limited the sectoral QI effects of the project for a long time, and still, the partners will have to deal with limited leverage of quality-oriented pressure groups (consumers and companies) for the foreseeable future.

PhilMSTQ has been stabilized on a level, where the NGO can serve as a sectoral and networking platform driven by the individual honorary efforts of a core group. The typical steps of organizational development that have been supported throughout the course of the three projects, including specific and measurable goals that are financed either by external contributions or membership fees did not yet come to fruition.

PTB has sought to harmonize activities and realize synergies with PTB programs and those of third parties in the metrology and broader QI systems.

It was not quantifiable but observed by interviewees that QI has reached a level of awareness, funding and political support that could hypothetically not be just turned back to the level of the start of the project. The speed of development might slow down after the end of the project, but with the Philippine membership role in international bodies for instance in ASEAN, requirements from trade and industry, the political support emanates from beyond the technical sphere of metrology and accreditation bodies.

With regards to sustainability defined as long-lasting impacts after the end of interventions, the new law in combination with inter-institutional cooperation according to national needs allows for the possibility of systemic sustainability.

By emphasizing the results in metrology, the sustainability criterion is given the rating "successful".

## 2.2 Success factors for the observed results and change processes

This chapter deals with the analysis of project management factors, i.e. the five CapacityWORKS (CW) success factors. With regards to all five project management factors, it should be stated that PTB did not apply CW in this project, and in the documentation of the partner activities or expert assignments there is no evidence that partners or experts applied CW tools independently. Thus, the following chapters are focused on key issues.

## Strategy

The project was in line with the Philippine Development Plan. Previous projects by PTB helped to introduce the concept of National Quality Infrastructure (NQI) to the Philippines. Since 2010, systemic NQI was promoted in a chapter of the Philippine Development Plan. The metrology strategy was issued with the support of the project in 2015. The project objective and indicators fit to this strategy.

The project applied an adequate mix of methods to build capacities and produced parts of a capacity development strategy, such as an annual work plan (with the exception of the final year). However, no explicit capacity development strategy was defined on the three levels of human, institutional and sectoral capacities.

It was assessed as noteworthy by some interviewees that PTB was ready in crucial points of the cooperation to address critical issues with the political counterparts at DOST, which led to positive effects within the government system (e.g. budgeting for capital investments and staff).

## Cooperation

Joint planning was conducted at the beginning of the project and twice annually.

After the introduction of NQI with the help of previous projects, PTB operated quite demand-driven and by and large adapted successfully to the different levels of readiness and speed of QI institutions. The project made sustained efforts to support the improvement of the relationships between all the QI organizations, though standardization was beyond scope. The role of the project was clear to all relevant stakeholders.

In the international sphere, NML's cooperation within APMP and APLMF in Asia and globally with OIML and Metre Convention and PAB's cooperation with APLAC, ILAC and PAC was promoted. This was done by the selection of regional experts and topics, taking into consideration work streams and organizational milestones. In the observation of the evaluation team, the mutual understanding of what the project should change with regards to QI in the Philippines was however narrowed to a few actors on mid-management and working level, not least manifested in the fact that the political counterpart DOST did not enter into the official cooperation agreement, which is, however, not unusual in the Philippines. NML and other stakeholders seemed to have rather little political leverage to implement the broader objective of the project. DOST took a conducive position to let NML implement activities, like trainings for staff in the laboratories, but did not assign representatives to take part in key project activities, such as preparation of the strategy for the national metrology infrastructure or the evaluation.

## Steering structure

The decisions for the design of the project involved all key stakeholders of the Philippine QI sector and emanated from the first and second project. For the planning of operations of the initial year (November 2014 to October 2015) 16 representatives plus the PTB project coordinator and experts came together in a one-day workshop (27 November 2014). Roughly the same group met one year later (18 November 2015) to make decisions for the subsequent year (November 2015 to October 2016). A meaningful impulse for the steering of the project was given from the structuring of the 2015 Philippine Metrology Strategy in mostly operational milestones during a two-day workshop (22-23 February 2016). An English version of the results matrix was drafted and shared by PTB in September 2014 and updated in January 2016.

Apart from the list of invitees for the format of the workshops, the steering structure was not formalized. It was envisaged at the beginning to build on a core network group at PhilMSTQ, but for organizational and

personal issues this was not met in reality. The steering took place mainly activity related around annual planning workshops. A single operational plan was in use until 2016, then split into three monitoring groups: NML-STD, PAB-BAFS, PhilMSTQ.

The evaluation team would critically note, that those factors plus leaving out the CW tools might have been the reasons why the project had little leverage to reach broader QI change. Furthermore, in the collection of monitoring data to take steering decisions little ownership was displayed to use the data for domestic purposes. Monitoring was perceived to serve an external purpose for the funding agency. There were no responses by Philippine partners to the questions as to which joint steering decisions of the project were based on this data. However, to judge from the experiences of conducting the evaluation in this setting, the interest and engagement of the stakeholders of the non-formalized steering structure to support and inform the evaluation could possibly not have been higher if there had been a formalized steering structure.

### Processes

The priority core process was about developing and implementing the metrology strategy and its milestones. This was supported by change management measures towards customer-orientation and service-orientation.

Two further core processes were about testing new modes of operation of PAB and BAFS and organic certification bodies, and about developing an adequate arena for awareness raising and safeguarding NQI transformation (PhilMSTQ).

The project did not derive or make explicit those processes by CW instruments, and it did not map consistently the management from strategic planning to operational planning to budget planning.

### Learning and innovation

The project activities are well documented. In principle, experts mission reports and products have been shared with the partners. No partner complaints were noted during the evaluation mission about the CW shortcomings.

### Key innovations:

- The metrology strategy of 2015 serves as best practice and has been properly layouted, printed and disseminated to national and international partners. In the strategy a first case study of the effects of international recognition of NML services on a manufacturing company in the Philippines helped to make improvements of the national metrology system palpable to other companies, policymakers and the public. This case study could be verified during the evaluation, however since 2015 no further case studies were developed.
- Two organic certification bodies were identified and trained to promote the sector transformation, and to use the cooperation between PAB and BAFS for international accreditation purposes.
- The process involving an NGO (PhilMSTQ) has been new to PTB and NML. PhilMSTQ was used for networking and awareness raising, e.g. meetings, promotional video.
- The achievement to get the DAkkS accreditation was a new experience and a booster of morale at NML.

Some interviewees made the point that the NML can call itself a truly “national” metrology laboratory only when there is much more knowledge dissemination to the local level and the outreach of quality in measurements will be countrywide.



### 3. Learning processes and learning experience

- i. Small funds (e.g. 200,000 EUR p/a) can trigger and support systemic NQI change, if the time is ripe.
- ii. Systemic NQI change cannot be achieved in 3 years, but in 12 years and more.
- iii. Commitment by the political level had not been formalized in an agreement. Commitment for the project objective emerged and manifested itself in form of funding for the metrology program, which came at a late stage of the project. Commitment early on from each level is key for accomplishing meaningful change.
- iv. Monitoring should serve purposes on both sides, of funding and implementing agencies. There is potential to be explored how monitoring data can actually inform management decisions of the implementing government beyond providing accountability towards foreign funding.

### 4. Recommendations

Recommendations for National Metrology Laboratory (NML) individually and for collective actions with Standards und Testing Division (STD), Philippine Accreditation Bureau (PAB), Bureau of Agriculture and Fisheries Standards (BAFS), Philippine Metrology, Standards, Testing and Quality Inc. (PhilMSTQ):

- i. Safeguard the investments that are being made by the national metrology program into NQI by
  - o providing case studies and robust evidence to the policy makers.
  - o Making use of networks like PhilMSTQ (e.g. awareness raising with policymakers and the public), research institutes (e.g. independent statements about the role of QI for innovation, productivity and trade), chambers and business associations.
- ii. Promote NML cooperation and share technical capabilities with other interested parties:
  - o With PAB to organize inter-laboratory comparisons for calibration laboratories, to be technical assessors in the accreditation process and to develop guidelines for calibration of measuring instruments.
  - o With universities and research institutes.
- iii. Establishing traceability arrangements with other NMIs for those units which there are no primary standards
- iv. Provide training and consultation services for customers to increasingly build up their inhouse laboratory services in company cases where high demand of laboratory services would give an indication (e.g. large manufacturers).
- v. Continue milestone implementation of NML, seek commitments from QI stakeholders beyond metrology, which can be supported by NML by including regular reporting and monitoring for the benefit of policymakers and businesses.
- vi. Apply the tool of cost-benefit analysis, before introducing services and to inform senior levels of government (and the public where applicable) about viability of services and private sector demand.
- vii. Finally, and currently most critically, assess and monitor capacities to ensure that the level of human resource and knowledge that has been achieved so far is maintained, and to be developed according to the national and international competitive needs of Philippine NQI. Plan for the continuity of processes in case key personnel leaves the organization (e.g. as it can be

foreseen in 2019 for retirements and studies). This is predominantly important for the DAkkS reaccreditation of NML.

#### Recommendations for PTB

- viii. Use the regional program of MEDEA and regular international QI forums to encourage self-improving processes of the Philippines, e.g. orientation towards customers and measuring and showcasing impact (addressed at MEDEA project).
- ix. Apply the management model of CapacityWORKS, or if disregarded, develop and apply substitute instruments in order to adequately address project management items (addressed at PTB 9.3).
- x. Monitoring the sustainability aspects of the project 3 – 5 years after end of the project. This means in 2021 – 2023, PTB could seek a peer learning effort with NML, possibly in cooperation with an Asian NMI or MEDEA (addressed at PTB 9.3 and MEDEA project).