

EXTERNAL EVALUATION – SHORT REPORT

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Quality assurance in environmental and food analysis in Indonesia II



Country | Region: Indonesia

Project No.: BMZ PN 2015.2066.7, PTB PN 95272
Period: 01.01.2017 – 30.01.2021

Executing Agency: From Indonesian Institute of Sciences (LIPI) shifted to
Badan Standardisasi Nasional (BSN)

Implementing Partner: From Research Centre for Metrology (RCM-LIPI) shifted
to National Measurement Standards Institute (SNSU-BSN)

PTB | Working Group: PTB/9.32
PTB | Project Coordinator: Elena Ammel

Date : 15th of septembre 2020

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

ASEAN	Association of Southeast Asian Nations
BMZ	German Federal Ministry for Economic Cooperation and Development Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung
BSN	Indonesian National Standardization Agency Badan Standardisasi Nasional
iSTE	Intermittent short-term expert
LIPI	Indonesian Institute of Sciences Lembaga Ilmu Pengetahuan Indonesian
MiC	Metrology in Chemistry
NIMT	National Institute of Metrology Thailand
NMI	National Metrology Institute
NQI	National Quality Infrastructure
OECD-DAC	Organization for Economic Co-operation and Development Development Assistance Committee
PT	Proficiency Test
PTB	National Metrology Institute of Germany Physikalisch-Technische Bundesanstalt
QI	Quality Infrastructure
RCM LIPI	Research Center for Metrology
RM	Reference Material
SNSU-BSN	National Measurement Standards Institute BSN Standard Nasional Satuan Ukuran
WG	Working Group
WP	Working Package

1. Project Description

The project of the National Metrology Institute (NMI) of Germany (*Physikalisch-Technische Bundesanstalt*, PTB) “Quality Assurance in Environmental and Food Analysis in Indonesia II” has been implemented since January 2017. The project’s official end was scheduled for December 2020 (including one year of cost-neutral extension) with an estimated funding of 600,000 EUR, provided by the German Federal Ministry for Economic Cooperation and Development (*Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung*, BMZ). On 1st September 2020, a second cost-neutral extension was granted until 30 June, 2021.

The outcome / objective of the project reads as follows “*The accessibility and use of internationally recognized Metrology in Chemistry (MiC) services in the environmental and food sectors have increased.*” Defined Working Packages (WPs) strengthen the technical competencies of the Metrology in Chemistry group (MiC Group) as part of the Indonesian NMI. The project provides technical capacity building measures as well as support on strategic, conceptual and organizational tasks and strengthens the demand-orientation of MiC-related services for the environmental and food sector and aims to raise awareness on the importance of MiC. During the phase of the project, the political as well as the main implementation partner have changed: From the Indonesian Institute of Sciences (*Lembaga Ilmu Pengetahuan Indonesia*, LIPI) to the Indonesian National Standardization Agency (*Badan Standardisasi Nasional*, BSN) and from the Research Center for Metrology – LIPI (RCM-LIPI) to the National Measurement Standards Institute -BSN (*Standard Nasional Satuan Ukuran*, SNSU-BSN).

2. Assessment of the project

The evaluation process was originally planned with a mission of the evaluators to Indonesia. However, the current situation with the COVID-19 pandemic has brought about a change in the regular process of the evaluations carried out on behalf of the PTB. All interviews were conducted online. The project was evaluated against the Quality Standards for Development Evaluation criteria of the OECD-DAC and success factors of the Capacity WORKS management model. The evaluation covers project design and planning, a critical analysis of the project's results logic and the monitoring system with the indicators. It considers achievements and challenges, as well as the project management, the communication processes and the coordination with the organizations involved. The overall assessment with the final mark of 1.8 (between 1= very successful and 2= successful) results from the average of the marks of the five evaluation criteria of the Development Assistance Committee (DAC) of the OECD. Also, the success factors of the Capacity WORKS management model have been analyzed that is meant to support management in achieving the desired results.

2.1 Status of the change process

Five OECD/DAC criteria serve as basis for assessing the status of the change process:

- Relevance: Is the project doing the right things?
- Effectiveness: Is the project achieving its objectives?
- Efficiency: How well are resources being used?
- Impact: What difference does the project make?
- Sustainability: Will the benefits last?

The following grading scheme is applied:

1	2	3	4	5	6
very successful	successful	moderately successful	moderately unsuccessful	unsuccessful	highly unsuccessful

Relevance

Justification: The relevance of metrology in Indonesia grew during the last years from having a minor role as part of LIPI towards having national importance, with the growing NMI SNSU-BSN being an integral part of the National Quality Infrastructure (NQI). The focus of metrology and MiC in particular has been changing from research to service provision for stakeholders, with value added for the country. The project contributes to the National Long-Term Development Plan (RPJPN 2005-2025) and the third Medium-Term Development Plan (RPJMN 2015-2020). The planning for reference materials (RM) and for trainings is also increasingly integrated into a regional approach with envisaged cooperation in the framework of the Association of Southeast Asian Nations (ASEAN). Moreover, the project's focus is in line with the objectives of the strategic framework of the German development policy in Asia and in Indonesia.

Mark: 1

Effectiveness

The outcome as well as output objectives and indicators form a logical project concept with realistic numbers. The attainment of the project's objectives has been severely hampered by two big organizational changes and by the COVID-19 pandemic with the MiC Group suffering from a substantial lack of and access to operational laboratory infrastructure. The effectiveness of the overall project, measured with outcome indicators 1-4, is nevertheless given. The indicators are likely to be achieved within the next 12 months and thus by the end of the project, given that on 1st September 2020 a cost-neutral extension was granted by BMZ until 30 June, 2021. The field of MiC has been integrated into the quality management system (QMS) of the RCM-LIPI / SNSU-BSN (currently about 80 % achievement of Outcome Indicator 1). 1 out of the 3 RM relevant to environmental and food analysis had been produced by RCM-LIPI/ SNSU-BSN and 1 more will most likely be produced until mid of 2021 (then 66% achievement of

Outcome Indicator 2). Indonesian laboratories participated in 4 proficiency testing (PT) programs of RCM-LIPI/ SNSU-BSN in the field of organic/inorganic chemistry, electrochemistry or gas (100 %, Outcome Indicator 3). Local institutions requested more than 2 training and consulting services per year from the RCM-LIPI/ SNSU-BSN (100 %, Outcome Indicator 4).

Mark: 2

Efficiency

Efficiency was reached through the assignment of intermittent and technical short-term experts with former experience with LIPI and the overall context of the project as well as through precise training measures and regional exchange visits to other NMIs. It was not possible to fully bridge the time without access to the MiC laboratories with alternative solutions for the production of RM due to insecurities felt about costs and quality of products and matrixes that could have been produced at other NMIs or at private laboratories, including the option of purchasing RM from the National Metrology Institute of Thailand (NIMT). This hampered the progress in the laboratory work.

Mark: 2

Impact

The project highly impacted on skills development and the selection of equipment by advising on appropriate technology and its application. The project's intended impact to improve the reliability of services in the field of MiC was limited due to the lack of access to laboratories. The establishment and strengthening of personnel and institutional capacities for air analysis will in the long term severely improve the climate monitoring system. Positive unintended impact was achieved in the framework of the re-structuring process by support of strategy development processes, e.g. development of an NQI road map and a metrology strategy as well as by different further measures (meetings, workshops, MoU etc.) that raised the awareness of the importance of Quality Infrastructure (QI) services for the overall socio-economic development of Indonesia at the political level.

Mark: 2

Sustainability

The new structure of the QI system supports the sustainability of the integration of MiC within the NQI. The WPs defined in the project are compatible with the working groups (WG) of the MiC laboratories at SNSU-BSN and the additional support on strategic planning has been embedded in the process of the NQI road map elaboration, monitoring and evaluation of existing strategies at BSN. First steps towards stakeholder engagement have been made. Coordination weaknesses between different divisions at BSN and SNSU-BSN, limited access of the MiC Group and SNSU-BSN to the political level, and the lack of harmonization of the road map

development between BSN and other sector ministries relevant to NQI are risk factors for sustainability to further focus on.

Mark: 2

2.2 Success factors for the observed results and change processes

Strategy

The project strategy is coherent and comprehensible. As the WPs are based on the existing laboratory WGs at RCM-LIPI (and later SNSU-BSN), the planning for the project and WPs was realistic and based on demands of the partners. Due to the merging processes and the COVID-19 pandemic the strategy could only partially be implemented. With the transfer to BSN it became even more necessary to ensure a sustainable strategic approach for the area of MiC. A revision of the regulatory framework for QI was planned from 2019 onwards by the Indonesian government and the project used the time in 2019, when it was not possible to focus on laboratory-based capacity building measures, to support strategic processes of SNSU-BSN and BSN as part of WP 1 and 7.

Level of achievement: 80%

Cooperation

The project partners had been clearly defined at the beginning of the project. Although their institutional affiliation changed during the project time, the project structure with its WPs and the correspondent contact persons could be kept. RCM-LIPI asked PTB quite early in the project to help them with the development of a more structured approach of stakeholder engagement in the field of MiC. Next to several workshops and consultancy sessions on strategy development, a big SNSU-BSN stakeholder event was organized with support of PTB in July 2019 in which companies and associations from food, energy and environmental sector participated and formulated their needs with regard to MiC services. Overall, the stakeholder engagement process has developed quite slowly, as the MiC Group especially after the transfer to BSN rather avoided contact to future clients, feeling insecure before having developed RM in their own laboratories.

Level of achievement: 83%

Steering structure

The project coordinator, the intermittent Short-Term Expert (iSTE) and the three key international experts have been coordinating activities with the partners during visits to Indonesia, as well as online. The head of the MiC Group assumed de-facto the role of a project coordinator from the partner side. Moreover, for each WP, a key person from the partner organization and a technical key expert were defined at the beginning of the project. In addition to regular meetings within this steering group at working level, approx. twice a year, meetings with the management level (esp. department heads) were organized. This steering structure was seen as sufficient and well organized. However, an official Steering Committee could have

supported the link from the project to the decision-making level, especially during the merging process.

Level of achievement: 83%

Processes

Processes had not been entirely analyzed, planned and monitored as a joint management task. Monitoring was mostly done within the WPs. The overall monitoring of the project stayed with the PTB coordinator and the iSTE who transferred the collected data of the WPs to the PTB results-based monitoring format and operational plan and discussed these documents with the MiC Group.

Level of achievement: 75%

Learning and innovation

The project defined particular learning objectives at WP level. Changes in the training needs of the project, counterpart and stakeholder staff have been discussed with the partners with regard to the achievement of the goals set for the individual WPs. Accordingly, capacity development measures were proposed and developed with the aim that the trained staff could directly implement the new competencies at the work place. The biggest challenge for providing trainings on the ground in Indonesia was the insufficient condition or accessibility of the equipment in the laboratories.

Level of achievement: 80%

3. Learning processes and learning experience

The first-hand information provided by regional researchers of other NMIs and especially by NIMT was a highly appreciated learning experience for partners and the PTB project team. For example, a bilateral comparison between Indonesia and Thailand in electrolytic conductivity was carried out with NIMT, which was a successful new approach of cooperation between the countries. Moreover, the MiC Group demonstrated the spirit of providing own knowledge and experience for the benefit and development of the region which shows for example in the organization of a PT and a training in the framework of the PTB project in Myanmar as well as in the support of a study tour organized to the ASEAN secretariat in Jakarta and to a secondary laboratory during a workshop organized in the framework of the PTB ASEAN regional project.

4. Recommendations

It is recommended that the MiC Group shall be committed to the development of certified RMs as much as possible (e.g. pure substances) and the calibration laboratories designated by SNSU-BSN (or Indonesian Measurement Law) shall prepare secondary RMs (e.g. mixed standard solution) based on these certified RMs. It is more effective that the MiC Group develops only the essential RMs and extends the traceability chain using secondary calibration laboratories producing additional RMs as to international good practice. As such, the traceability

chain will be linked to the user properly. The stakeholder engagement and services in the environmental and climate sector could be further developed and regional cooperation and systematic capacity development fostered, which could be supported by the future PTB/BSN project which is planned to begin in fall 2021. The (steering) structure of the future project should be based on a local coordinator; an officially nominated project coordinator from BSN and a Project Steering Committee comprising the key implementation partners, to connect the project with the BSN coordination structure, stakeholders as well as with the higher political level. Recommendations for the project team of the current project embrace regular online planning and monitoring meetings, based on a communication plan as well as (virtual) consultancies, web-based trainings and workshops based on a capacity development plan.



Imprint

Published by

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