

EXTERNAL EVALUATION – SHORT REPORT

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Promoting regional cooperation in metrology in the Asia-Pacific region - MEDEA 2.0
Metrology-Enabling Developing Economies in Asia

Country | Region: Asia-Pacific region

Project No.: 2017.2199.2

Period: May 2018 - April 2021

Executing Agency: PTB

Implementing Partner: Asia-Pacific Legal Metrology Forum (APLMF)

Asia-Pacific Metrology Programme (APMP)

PTB | Section: Dep. 9.3, Working Group Asia

PTB | Project Coordinator: Corinna Weigelt

Date : September 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

APLMF	Asia-Pacific Legal Metrology Forum
APMP	Asia Pacific Metrology Programme
BIPM	Bureau International des Poids et Mesures
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung German Federal Ministry for Economic Cooperation and Development
CABUREK	Capacity Building Using Regional Experience and Knowledge
CC	Coordination Committee
CD	Capacity Development
COVID	Corona Virus Disease
CW	Capacity WORKS
CIPM	Comité International des Poids et Mesures
CIPM MRA	CIPM Mutual Recognition Arrangement
CMC	Calibration and Measurement Capability
CW	Capacity WORKS
DAC	Development Assistance Committee
DE	Developing Economies
DEC	Developing Economies' Committee (entity of APMP)
DeGEval	Gesellschaft für Evaluation e.V. Society for Evaluation
DI	Designated Institute
EU	European Union

KMS	Knowledge Management System
LMA	Legal Metrology Authority
MEDEA	Metrology-Enabling Developing Economies in Asia
MiC	Metrology in Chemistry
NMI	National Metrology Institute
OECD	Organization for Economic Co-operation and Development
OIML	International Organization of Legal Metrology
PTB	Physikalisch-Technische Bundesanstalt
QI	Quality Infrastructure
SDG	Sustainable Development Goal
SI	Système International d'Unités
SME	Small and Medium-Sized Enterprises
ToT	Training-of-Trainers
WTO	World Trade Organization

1. Project Description

In accordance with the project evaluation procedure of PTB Department 9.3 for International Cooperation, the evaluation of the project "MEDEA 2.0 Metrology-Enabling Developing Economies in Asia" was carried out between May and July 2020 as a regular internal instrument of the BMZ (Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung, German Federal Ministry for Economic Cooperation and Development) project cycle. This evaluation was agreed on by Project Partners to assess the impacts and results achieved during the implementation so far (project period 05/2018-05/2020, budget 1.3 Mio EUR) and to formulate recommendations for the remaining time of the project as well as for a future follow-on project.

The MEDEA 2.0 project promotes regional cooperation in metrology in the Asia-Pacific region. It is implemented by PTB on behalf of the BMZ jointly with the Asia-Pacific Legal Metrology forum (APLMF) and Asia Pacific Metrology Programme (APMP). The target group consists of National Metrology Institutes (NMI) and Legal Metrology Authorities (LMA) of the developing economies of the Asia-Pacific region.

The Asia policy of BMZ (BMZ Position Paper 5, 2015) identifies an internationally recognized quality infrastructure as pre-condition for a sustainable and large-scale economic growth. This project aims at strengthening metrology as being one of the central pillars of quality infrastructure in the economies of the region, at further promoting its international recognition and to support its use.

Economic development in Asia is characterized by a fast growth of several economies and the emerging of new economic areas. At the same time the region is characterized by a great heterogeneity. This is reflected as well in the capacity gap between the developed and emerging NMIs/LMAs (both for scientific-industrial and the legal metrology) across the region.

The objective (outcome) of the project "The ability of the regional metrology networks in Asia to support metrology in developing economies has been further improved" is further described by three indicators addressing the Sustainability Strategy, Regional Cooperation and Technical Training.

There are three outputs formulated:

1. "APMP and APLMF are strategically well positioned for the future and integrate developing economies in relevant topics for a sustainable development"
2. "The networks have been set up more suitably for promoting regional cooperation and using regional competences"
3. "The technical support of the networks for the NMIs / LMAs from developing economies to apply criteria of international Good Practices has been improved"

Due to the ongoing COVID 19 pandemic the entire evaluation was carried out by online communication means.

2. Assessment of the project

It can be summarized that the project has been a positive experience for the partners and beneficiaries. PTB has well prepared for that and delivered a lot with good expectations for an impact for the improvement of metrology and QI systems in the region with a remarkable small amount of funds.

Essential for further impact in the region would be the establishment of a functional web-platform as well as regular reporting on motivating impacts via this platform.

The envisaged follow-on project MEDEA 3.0 will be of special relevance for attaining sustainability within the further development of the metrology system in the whole region.

The project is rated "successful".

Criterion	Criterion assessment
1. Relevance	2
2. Effectiveness	2
3. Efficiency	1
4. Impact	2
5. Sustainability	3
Global assessment	2

2.1 Status of the change process

Relevance

It can be assessed that MEDEA 2.0 is of high relevance. Needs of partners and beneficiaries are addressed based on the experiences and results from MEDEA 1.0 project. The strategy and activities of the project follow the OIML international standards (Organisation of International Legal Metrology) and the CIPM MRA processes. They are basically aligned with the Sustainable Development Goals (SDGs). And they are aligned with the political agenda of the BMZ.

Mark: *Successful*

Effectiveness

The formulation of the objective (= outcome) and the attribution of the outputs (cause-effect relation) is assessed logical. The indicators of the outcome are assessed being ok ("SMART") except module objective indicator 3. The concept of assumptions/risks within the system of the results matrix was not fully exploited.

Summarised by monitoring data and by evidence from partner interviews and responses to questionnaires it can be assessed that the project has already reached very far according to the planned strategy.

Project objective/indicators will mostly be reached but impacts and sustainability are still a challenge for the remaining time of the project and for an upcoming follow-on project.

Mark: *Successful*

Outcome indicator	Degree of fulfilment (in %)	Appraisal (A-C)	Justification
1.) APMP and APLMF have respectively set up a sustainability concept for demand-oriented support and integration of developing economies and have submitted these concepts to the relevant decision-making committees	200%	A	The formulation of the objective (= outcome) and the attribution of the outputs (cause-effect relation) is assessed logical. The indicators of the outcome are assessed being ok ("SMART") except module objective indicator 3, which is subject to further discussion
Outcome indicator	Degree of fulfilment (in %)	Appraisal (A-C)	Justification
2.) National metrology institutes and organizations of Legal Metrology of at least 5 developing economies indicate that they have extended their competences in two fields respectively by using regional knowledge and experience	80%	A	s.a.
3.) 80% of the institutions participating in the measures arranged by APMP and/or APLMF indicate that the technical support provided by the networks has improved	100%	B	Reports on training measures do not follow up the application/transfer of knowledge of the trainees (no specific monitoring)

Efficiency

Much was done and planned results are already reached by MEDEA 2.0 with a relatively small amount of money thus performing with high efficiency. It can be clearly stated by the evidence

from this evaluation, that the use of the resources of the project is deemed very reasonable in respect of reaching the results at partner and beneficiary level.

Mark: *Very successful*

Impact

Impacts expected within APLMF and APMP network will spread awareness and good practices in the whole QI system by focusing on metrology structures in the economy. Especially with CABUREK there has been introduced an innovative and promising concept from another region.

In future training courses more attention will be given towards input encouraging transfer of knowledge, how to cooperate fruitfully on the long run, how to establish networking and organize exchange of experiences on metrology matters.

Essential for further impact in the region would be the establishment of a functional web-platform as well as regular reporting on motivating impacts via this platform.

Mark: *Successful*

Sustainability

Although it is yet too early to entirely assess the sustainability of MEDEA 2.0, several ideas how to assure it in the future are already present among the network's members. The envisaged follow-on project MEDEA 3.0 will be of special relevance for attaining sustainability within the further development of the metrology system in the whole region.

A lot of support and weight was given to further strategic planning of APMP DEC (Developing Economies Committee). This also is a prerequisite for attaining sustainability within the members of developing economies. Through the web portal there will be the chance of motivating participating institutions to offer and share own training programmes and training materials. And another important aspect towards sustainability is the chance to also focus through the envisaged MEDEA 3.0 project on non-technical issues (e.g. management, stakeholder focus, communication), and support access to foster conversation with government infrastructure for catalyzing the establishment of the QI.

Mark: *Moderately successful*

2.2 Success factors for the observed results and change processes

Strategy

There is no other similar project existing in the region. So strategic concepts and development are essential. The regional networks are operating within the development strategies of their members and within the Asia strategy of the BMZ.

There is not yet a systematic follow-up on transfer of knowledge. The overall Capacity Development (CD) strategy should be enhanced by focusing on conceptual issues like Capacity Needs Assessment and CD on organisational level and societal level, not only on individual level.

Level of achievement: 75%

Cooperation

MEDEA 2.0 has seen an effective operation of its Coordination Committee and project oversight by PTB. A clear understanding of roles and cooperation is established between APLMF and APMP. This fruitful cooperation has led to successful development and delivery of a set of trainings and workshops.

Enhanced cooperation would allow to support (more) actors from middle and least developed economies by cooperation, sharing, exchange of experiences and success stories, more support among NMIs.

Level of achievement: 80%

Steering structure

A strong Coordination Committee is set up already since the previous project. Regular meetings are held, previously face-to-face, at present online video conferences. The strong and regular communication with PTB allows for joint steering, which is executed on the base of joint planning and monitoring.

Level of achievement: 80%

Processes

Internationally recognized processes in metrology/QI are established. Generally, process thinking is well established in the metrology community.

Among the desired trainings on non-technical issues for NMI leadership a great deal would have to address process thinking and appropriate use of respective tools and instruments, so that this could be shared, and experiences exchanged also among newly participating developing economies/ NMIs.

Level of achievement: 90%

Learning and innovation

Partners and beneficiaries were willing and motivated to learn systematically and to further develop the cooperation on metrology in the region. The project has facilitated the introduction of Monitoring and Evaluation (based on the system developed and implemented by APLMF), and the partners show interest in its set-up and utilization. M+E has not yet been fully utilized as learning instrument to further develop and adjust the overall strategy and especially the Capacity Development elements.

The still planned setting-up of a web-platform would allow for a constant and immediate exchange of experiences and best practices, adjustment of trainings, offering new trainings even including non-technical issues thus providing for improved learning in the whole metrology system of the region.

A guide with a set of training courses should be developed concerning Management and

Leadership training for NMIs.

And last but not least: M+E should address quality aspects.

Level of achievement: 65%

3. Learning processes and learning experience

Additionally, to the standard evaluation specific questions by PTB were asked to be evaluated and answered. This can be seen as a result of a learning process and experiences during the course of the project and carries some information and recommendations especially for the follow-on project.

Sustainability aspects:

Main results of the learning process is that Leadership and Management development, Monitoring and Evaluation and the Knowledge Management System have to be prioritized. As a very helpful tool the envisaged establishment of a joint web-portal is of great importance.

A main experience is that a “full chain” training for NMIs aligned with national strategies and a guideline on development of national regulations to foster the role of metrology would be of great value.

Monitoring and Evaluation (M+E) aspects:

A main experience is to follow a systematic alignment of project objectives with national strategies.

Furthermore the following points are of importance:

- Application of CW tools for improving strategy issues (e.g. Results Model as a base for M+E, Capacity Development, Strategy, Debriefing)
- To promote a broader understanding on the monitoring process/several levels

Aspects of interaction between APMP and APLMF:

Learning processes have been included in the DEC strategy development and especially during the whole exercise of this evaluation.

Experiences have been collected and discussed, especially during the Partner workshop at the end of the evaluation process.

It can be summarized that there is a strong collaborative relationship in place which needs to be maintained and further developed to reach to a sustainable ground.

4. Recommendations

Selected recommendations to the partners and the project team:

- It is important to establish an interlinked web-portal based on APLMFs good website and integrating APMP website, which so far only contains technical matter. The aim should be to attract not only metrologists, but to ensure the non-metrology community so they understand the importance of metrology to our world
- CABUREK: As a model to learn from each other, learning in small groups, it should be further improved and spread. It is still key, should be real focus of MEDEA 3.0, 2 years

were not enough, more years needed, adequate time frame in comparison to the example from South America

- COVID 19 effects and consequences: Concentrate on eLearning, online trainings but combine with face-to-face events whenever possible and applicable
- Management and leadership trainings for NMIs, including communication/cooperation with Government + networking

Selected recommendations to partners:

- Support (more) actors from middle and least developed economies by cooperation, sharing, exchange of experiences and success stories
- NMIs to take more initiative, key incentive is alignment with national strategies

Selected recommendations to the project team:

- CABUREK: "Wonderful philosophy" - not yet to be judged as a failure, to carry on until 04/2021 to save results, within MEDEA 3.0 there is a chance to continue and support a longer implementation process development also demanding more support from governments
- More capacity building is needed, Capacity Development on organizational and societal level/not only on individual level
- Application of CW tools for improving strategy issues (e.g. Results Model, Capacity Development, Strategy, Debriefing)
- To promote a broader understanding of M+E and on the monitoring process/several levels

Selected recommendations to the "International Cooperation" department:

- All partners should have a clear understanding of the role of M+E to develop the metrology system. Important is to provide them with a good orientation according to Capacity WORKS especially referring to the Results Model (results orientation, view on impacts/SDGs, alignment with main developments in the whole sector, management aspects)
- Implementation of e-learning for all economies, especially enforced due to COVID 19 situation, should be considered well balanced with face-to-face events, which are still needed for motivation, convincing, direct exchange of experiences especially when it comes to learning from failures and seeking for solutions to challenges



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