

OFFICIAL DEVELOPMENT ASSISTANCE IN METROLOGY IN SUPPORT OF SUSTAINABLE GROWTH OF DEVELOPING ECONOMIES

*Sangwook Seo, Doyoung Lee, Kangyoung Sung, Ouseph Padickakudi **

Korea Research Institute of Standards and Science, Daejeon, Korea
267 Gajeong-ro, Yuseong-gu, Daejeon, Korea
* United Nations Industrial Development Organization
Vienna International Centre, Wagramerstrasse 5, A-1400 Vienna, Austria

Abstract: KRISS, the national metrology institute (NMI) of Korea, is expanding its official development assistance (ODA) in metrology for developing economies, in harmony with the Korean Government's policy. KRISS's programme puts emphasis on developing the human resources, strengthening the measurement facilities, and advancing the quality management systems of its partner NMIs. The UNIDO-KRISS project is one of several recent human resources development (HRD) programs. The ultimate goal of the KRISS ODA is to promote the capabilities of its partner NMIs so that they are ready to participate in the International Committee of Weights and Measures mutual recognition arrangement (CIPM MRA), which will in turn play a key role in underpinning the sustainable growth of the developing economies.

Keywords: Official Development Assistance (ODA), CIPM MRA, Sustainable Growth, National Metrology Institute, Global Metrology Academy (GMA), Economic Impact of Metrology

1. INTRODUCTION

In today's global economy, every country should be ready to have its national standards recognized as compatible with international standards. The CIPM MRA was adopted in 1999 in response to the need for such an international equivalency of national measurement standards. More than eighty signatories, including 84 economies and 3 international organizations, participate in the CIPM MRA. However, most developing economies are not ready to take part in the MRA. This remains a very significant barrier for developing economies to overcome if they are to achieve sustainable growth. KRISS is expanding its ODA activities to meet the need for cooperation of NMIs in developing economies.

2. CIPM MRA, PREREQUISITE FOR TRADE CAPACITY BUILDING

In 1999 the International Committee of Weights and Measures (CIPM) adopted a mutual recognition arrangement (MRA). The MRA has three objectives: to establish the degree of equivalence of the national

measurement standards maintained by NMIs; to provide for the mutual recognition of calibration and measurement certificates issued by NMIs; and, thereby, to provide governments and other parties with a secure technical foundation for wider agreements related to international trade, commerce and regulatory affairs. This implies that joining the CIPM MRA is the prerequisite for any country to have their national standards recognized by the global community. The CIPM MRA serves as the most fundamental technical foundation on which countries can build up their trade capacity based on internationally accepted measurement capabilities.

Signatories to the CIPM MRA are required to participate in a series of key comparisons (KCs) identified by the CIPM consultative committees, the International Bureau of Weights and Measures (BIPM), and the regional metrology organizations. In addition, signatories are required to have their quality systems validated to the international standards, ISO/IEC 17025, ISO 34, etc., and to have their calibration and measurement capabilities (CMCs) validated to be registered in the Key Comparison Data Base (KCDB) operated by the BIPM. Almost all of the developed economy NMIs have been meeting such requirements. However, only a few from developing economies are able to take part in a small number of key comparisons, and only a few have their CMCs registered in the KCDB.

The CIPM MRA was initiated to provide the technical basis on which a freer, faster, and clearer flow of international trade can be conducted. However, it has become a sort of technical barrier to trade for the developing countries, as their NMIs lack the metrological capabilities to participate in the activities of the CIPM MRA, such as the key comparisons. The lack of competent technical manpower in metrology and a shortage of advanced measurement facilities are a major hurdle for them to clear.

With the above facts in mind, KRISS has been refining its ODA programs to better meet the needs of NMIs of developing economies by bringing a greater focus on developing human resources in metrology, strengthening measurement facilities in laboratories, and advancing quality management systems.

3. PORTFOLIO OF ODA ACTIVITIES OF KRISS

In terms of performance with the CIPM MRA, KRISS might rank in the world's top seven NMIs. As of February 2012, it has 327 key comparison items and 1009 CMC items registered in the KCDB. Making the best use of its technical capabilities in measurement standards, KRISS has been operating its ODA activities through four main portfolios:

- Technical study programs at KRISS: These include group and individual, and short-term and long-term programs. Long term programs include graduate courses jointly conducted by the local and foreign universities. In close cooperation with UNIDO (United Nations Industrial Development Organization), KRISS has also been carrying out a two-year (2011-2013) training program in metrology, and has been searching for more effective ways to better serve the global metrology community in terms of HRD. KRISS is also pursuing the immediate strategic goal of setting up a global metrology academy (GMA) in order to make the best use of its world-leading technical capability in metrology and of its experts' rich experiences in ODA.
- Technical consultation program on site: Metrologists from KRISS visit the NMIs in developing economies, mainly to offer consultation on technical and managerial problems. Many of them also serve as experts for peer reviews of the NMIs.
- Calibration and CRM services: NMIs in developing economies are not able to provide traceability of their national measurement standards for themselves. They depend on services offered by advanced NMIs such as calibration and CRMs. KRISS offers high quality calibration services and CRMs to its partner NMIs.
- Donation of measuring facilities: All but a few measurement and analytical facilities used in the NMIs are expensive. Insufficient investment in metrology in developing economies has meant that their capacities do not meet the needs of their customers for internationally recognized measurement services. In close cooperation with the Korean Government, KRISS has recently been donating key metrology facilities for those selected partner NMIs. It is envisaged that investment in this new portfolio will be increased as the Korean Government puts stress on increasing its ODA investments to more than twice their current level by the year 2015.

4. ECONOMIC IMPACT OF METROLOGY – INVESTMENT IN METROLOGY NEVER FAILS

It is difficult to analyze the economic impact of investment in metrology. Studies have been done to see how much economic impact has been made by investment in specific areas of metrology. According to the report of Bearing Point Incorporation, the BCR (benefit-to-cost ratio)

of KRISS is around 1.5 over the 10 years from 1994 to 2003. In addition, KRISS's own history bears witness to the fact that investment in metrology never fails. With less than four decades of operation, KRISS is now on a par with advanced NMIs who have been operating for more than hundred years. This is thanks to the Korean Government's continued investment in metrology and in KRISS. In turn, KRISS has been making a great contribution to underpinning Korea's sustained economic growth over several decades.

5. CONCLUSION

In today's economic circumstances, the most topical issue in global metrology is the CIPM MRA. Unlike advanced countries, the developing economies lack a fundamental capability in metrology. This is the most significant problem that almost all their NMIs face. KRISS, in close cooperation with the Korean Government and international organizations such as UNIDO and APMP, has been expanding its ODA in metrology with the aim of assisting the developing economy NMIs to successfully join the CIPM MRA as the pathway to sustainable growth. Policy makers in developing economies and potential donors, not only within Korea but also internationally, are encouraged to make more investment in metrology and NMIs. Investment in metrology never fails.

6. REFERENCES

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