Malaysia

Standards and Conformity Assessment of PFP

Project Site Shah Alam

1. Background of Project

At the Asia Pacific Economic Cooperation (APEC) Conference in 1994, the Government of Japan proposed the Partners for Progress (PFP) plan for economic cooperation. The PFP aims at a more effective promotion of economic and technical cooperation based upon mutual assistance and independence, and thus, it was officially adopted in the APEC high-level meetings and accordingly in the Cabinet Member Conference of the APEC held in Osaka in 1995. At the APEC High Level Meetings held in Manila in February of 1996, the Government of Japan proposed training plans for human resources development in the three areas of Industrial Property Rights, Competition Policy, and Standards and Conformity Assessment, as a PFP project to contribute to liberalization and facilitation of trade and investment.

In response to this, joint cooperation with Thailand and Malaysia was proposed, and accordingly, JICA's Third-country Training Programs for Standards and Conformity were planned to be held in Malaysia.

2. Project Overview

(1) Cooperation Period

FY 1996-FY 2000

(2) Type of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organization

Standards and Industrial Research Institute of Malaysia (SIRIM Berhad)

(4) Narrative Summary

1) Overall Goal

Participants in the training programs play a key role in the work of improvement and systematization of standards and certification in their home countries.

2) Project Purpose

Trainees' knowledge of standards and certification is enhanced.

3) Outputs

a) Participants in the training programs recognize the present situation and issues regarding standards and certification in the APEC member countries.

b) Participants in the training programs understand the present conditions of facilities of the organizations for certification.

c) Participants in the training programs have deep understanding of how to improve the systems of standards and certification.

4) Inputs

Japanese Side

Short-term experts	17
Training expenses	approx. 0.95 million ringgit (approx. 30 million yen)

Malaysian Side

Lecturers and administrative staff
Training/Accommodation facilities and equipment
Training expense

3. Members of Evaluation Team

Team Leader:

Iwao TATSUMI, Senior Advisor to the Managing Director, Partnership Promotion Department, JICA

Co-operation Policy:

Keiichi YOKOTA, Assistant Director, Technical Co-operation Division, Economic Co-operation Bureau, Ministry of Foreign Affairs

Standard/Conformity Assessment:

Kazuma YOKOTA, Assistant Chief of General Coordination Section, Technical Co-operation Division, International Trade and Industry

Co-operation Planning:
Kazuya OUSUKA, Southeast Asia Division, Regional Department I, JICA

4. Period of Evaluation

12 December 1999-16 December 1999

5. Results of Evaluation

(1) Efficiency

Although the staff in SIRIM who became the training secretariat made efforts for efficient training implementation, the participants in the training programs repeatedly pointed out weaknesses in time management of lectures and curriculum development in accordance with needs. The same problems were raised every year, so these points were not reflected in later training programs.

(2) Effectiveness

For four years from fiscal year 1996 to 1999, a total of 116 persons (21 from Malaysia) participated in the training. At the initial stage of the training course, it seemed that the participants lacked understanding in some of the training areas due to the shortage of preparation time, overlapping of some lectures, lack of arrangement for all programs, and short lecture time since extra time was used for discussion. But the participants responded in the questionnaires that they could know the other countries' situation of standards and conformity which was the original purpose of the training, and the training courses were useful for work in their home countries. Seventy-eight percent of the participants in the third (1998) and fourth (1999) training period responded that the training purpose was achieved; thus, it is perceived that the project purpose was mostly achieved.

(3) Impact

According to the questionnaires, the participants who returned to their countries already used training materials and documents in their work and lent them out to their colleagues or circulated them in the office. They also gave lectures on what they learned, thereby further disseminating the knowledge and information learned through the training. After their return, there were cases where participants exchanged information and there were comments from participants that they were eager to learn more on the subject.

(4) Relevance

The training purpose matches the ultimate goal of APEC activity "All members in APEC achieve liberalized and open trade and investment in the regions by 2020" (Bogor Declaration), so the project had relevancy.

Interview at Standards and Industrial Research Institute

(5) Sustainability

Although there were problems explained in(1), the capacities for training implementation and lecturer arrangements in SIRIM were generally high. Financially speaking, the SIRIM became a public corporation in 1996 and, furthermore, the training section became independent so that it has a self-supporting accounting system in all training conducted in SIRIM.

As this training course, the framework of APEC is non-profit making, in order to continue similar types of training in the future, and it is necessary for an outside source to pay the costs of implementation, travel and hotel/daily allowances for participants.

6. Lessons Learned and Recommendations

(1) Lessons Learned

In order to realize impacts efficiently in accordance with the requests of trainees, follow-up investigations following training are important.

When the training evaluation is developed, one of the indicators to identify is to make sure there is a system whereby feedback is reflected in subsequent training.[1)]

(2) Recommendations

It was judged that the initial training purpose was achieved. Therefore, there was an agreement with the Government of Malaysia that the Third-country Training Program for "Standards and Conformity Assessment" would end at the completion of the fourth training in 2000.

However, the skills of Standards and Conformity did not reach the international standards level, and there were many countries at the same technical level in the APEC regions. Therefore, it was considered important to conduct similar training for these countries.

1) Note: This Evaluation Study was conducted at the same time as that of "third-country training program in Thailand, PFP Industrial Property Rights". So readers are referred to the lessons learned and recommendations from that evaluation study for further information.

Malaysia

ASEAN Course on Specialized Diagnostic Techniques on Poultry Diseases

Project Site Ipoh

1. Background of Project

As the need was growing for the latest technical knowledge and techniques in the field of poultry diseases in ASEAN countries, the Government of Malaysia established the ASEAN Poultry Diseases Research and Training Center (APDRTC) within the compounds of the Veterinary Research Institute (VRI) of the Ministry of Agriculture. Japan assisted APDRTC through the Grant Aid project "Construction of the ASEAN Poultry Diseases Research and Training Center" (1986/1987), Project-type Technical Cooperation, "ASEAN Poultry Diseases Research and Training Project" (April 1986-April 1993, and after-care cooperation in August 1996-August 1998). Furthermore, Japan supported a Third-country Training Program from FY1991 to FY1995 for the purpose of disseminating the research results and technology of APDRTC to other ASEAN countries. Through such cooperation, APDRTC came to play an important role in the improvement of poultry diseases research, training and dissemination in ASEAN countries. Thus, with the aim of further disseminating knowledge and technology related to poultry diseases control, Malaysia requested that the Third-country Training Program be extended another five years.

2. Project Overview

(1) Period of Cooperation

FY1996-FY 2000

(2) Type of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organizations

Veterinary Research Institute (VRI), Ministry of Agriculture
ASEAN Poultry Diseases Research and Training Center (APDRTC)

(4) Narrative Summary

1) Overall Goal

Knowledge and techniques in the field of specialized diagnosis of poultry diseases are upgraded in ASEAN countries.

2) Project Purpose

Trainees acquire knowledge and techniques in the field of specialized diagnosis of poultry diseases.

3) Outputs

a) Trainees acquire specialized diagnostic techniques and research methodology of major poultry diseases.

b) Trainees acquire specialized knowledge such as vaccine making.

4) Inputs

Japanese Side

Short-term experts	4
Training equipment	
Training expenses	approx. 0.42 million ringgit (approx. 12 million yen)

Malaysian Side

Instructors and management staff
Training facilities and equipment

(5) Participant Countries

Brunei, Cambodia Indonesia, Malaysia, Philippines, Thailand, Viet Nam

3. Members of Evaluation Team

JICA Malaysia Office
(Commissioned to IC Network Malaysia)

4. Period of Evaluation

March 2000

5. Results of Evaluation

(1) Efficiency

The inputs were implemented as planned and the management-system of training program was appropriate. Although the financial management could have been improved in some points such as the inclusion of the purchase of audio and visual equipment which could be used for years, in recurring costs, it was judged that the overall efficiency of the training program was high.

(2) Effectiveness

A total of 47 persons participated in the training courses for four years from 1996 to 1997. Since the instructors constantly monitored the training process and addressed problems immediately, most of the participant understood the subjects taught. According to the survey conducted at the end of each course, an average of over 90 percent of ex-participants answered that they were satisfied with the course contents. From this and the analysis of the course reports, it was judged that the objective of each course was achieved.

However, in order to assess its effectiveness more accurately, there should have been an indicator to objectively verify the participant's acquisition of the knowledge and techniques, e.g., an achievement test to be conducted at the conclusion of the course.

(3) Impact

There was no visible impact of the training program confirmed at the time of evaluation. However, since the knowledge and relevant techniques of poultry diseases diagnosis and research that the trainees acquired from the courses were the ones that would be applicable to most of them in their countries, it was expected that the outcomes of the training program would contribute to the upgrading of technology in this field in the participating countries.

(4) Relevance

The course contents designed at the initial stages contained techniques that were deemed too advanced for use in some countries mainly due to the lack of facilities and equipment to adopt them. However, most of the techniques taught were in conformity with the situation of the livestock industry in the participating countries and were, thus, relevant.

(5) Sustainability

After the withdrawal of the cooperation from Japan, the Malaysian side would likely continue training activities utilizing the existing VRI facilities. However, additional funds would be needed to conduct training using advanced equipment and biologics.

Experimentation in the laboratory

6. Lessons Learned and Recommendations

(1) Lessons Learned

Certain techniques taught were too advanced for use in some of the participant countries. Hence, it was advisable that the implementing institution use a more thorough selection process to ensure that participants from certain countries have access to adequate facilities. The implementing institution should initiate research into the type of facilities available in the participating countries, categorize them in terms of technological sophistication and tailor the course to suit the countries needs accordingly.

(2) Recommendations

It was considered desirable that APDRTC training be continued. For that, the Government of Malaysia should continuously support and promote training in this field. An extension of this training program or acquisition of other external assistance was also recommended.

7. Follow-up Situation

The cooperation to training activities was terminated as planned. In order to further enhance the outcome of the cooperation, Research Cooperation entitled "Nipah Virus" is being planned for three years from October 2001 to September 2004 for the purpose of improving diagnostic techniques and epidemiological surveys of Nipah virus.

Malaysia

Training on Enhancing Women's Economic Participation through Scaling-up of Micro Enterprises to Small-scale Enterprises

Project Site Kuala Lumpur

1. Background of Project

The Government of Malaysia emphasized enterprise development for rural women as part of the measures to achieve poverty eradication, an important national development issue. In practice, the Government implemented a variety of income generation projects for rural women through the Ministry of Agriculture, Farmers Associations, higher education institutions and other organizations within the framework of the entrepreneurship development plan for poverty alleviation and alternative income sources that started in the early 1980s. The University Putra Malaysia (UPM), the implementing organization of this training program, had experience in providing advice and training related to Women in Development (WID) for the Government of Malaysia. With the aim of disseminating this experience to other Asian and Pacific countries, the Government of Malaysia requested Japan to implement this training program.

2. Project Overview

(1) Period of Cooperation

FY1997-FY1999

(2) Type of Cooperation

Third-country Training Program

(3) Partner Country's Implementing Organization

University Putra Malaysia (UPM)

(4) Narrative Summary

1) Overall Goal

Participation of women in economic activities is enhanced in countries in the Asia-Pacific region.

2) Project Purpose

Capabilities of trainees to prepare and offer training programs targeting small-scale women entrepreneurs are strengthened.

3) Outputs

a) Trainees learn development theories on the economic role and empowerment of women.

b) Trainees acquire business skills for upscaling enterprises.

4) Inputs

Japanese Side

Short-term experts	5
Training expenses	0.52 million ringgit (approx. 15 million yen)

Malaysian Side

Instructors and management staff
Training facilities and materials

(5) Participant Countries

Indonesia, Laos, Philippines, Sri Lanka, Thailand, China, Bangladesh, Viet Nam, Maldives, Nepal, Iran, Myanmar, Pakistan, Bhutan, Fiji, Mongolia, Papua New Guinea, Tonga

3. Members of Evaluation Team

JICA Malaysia Office
(Commissioned to IC Network Malaysia)

4. Period of Evaluation

February 1999-March 1999

5. Results of Evaluation

(1) Efficiency

Due to the lack of funding by the Malaysian side, most of the Malaysian instructors were nominated from faculty of UPM and they engaged in training as volunteers. However, as the regional characteristics of Malaysia are similar to those of the participating countries, a combination of local and regional knowledge provided by Malaysian instructors and methods introduced by Japanese experts was more than adequate to provide the necessary knowledge and skills to trainees. Also, the training facilities of UPM were fully utilized. Therefore, the implementation of this training program was considered to be efficient.

(2) Effectiveness

It was difficult to objectively verify the extent of the improvement of capabilities of trainees in planning training programs. Nevertheless, effectiveness was evaluated to be high from indirect evidence that trainees developed various action plans to be implemented after returning to their respective countries.

(3) Impact

Although trainees developed a variety of action plans as mentioned above, it would take time for these plans to be implemented and lead to improved economic activities for women. Therefore, impact could not be thoroughly assessed at the time of this evaluation.

(4) Relevance

Considering the expected impact and sustainability, the initial training plan could be evaluated as being relevant.

(5) Sustainability

The management system of the training was well organized and firmly in place as the quality of human resources of the implementing organization was high and the organization had been established long before the training program started. Therefore, the program was deemed fully sustainable.

6. Lessons Learned and Recommendations

(1) Lessons Learned

When implementing a Third-country Training Program, the preparation period must be long enough to allowed for communication and coordination with foreign participants.

The course evaluation filled in by trainees at the conclusion of each training course tended to focus on questions about logistics of management such as whether the course proceeded smoothly. However, in order to obtain more useful feedback from trainees, the evaluation questionnaire should have more questions concerning relevance of training objectives and teaching methods.

Site visit to a small-scale enterprise (ketchup factory)

Lecture in the classroom.

(2) Recommendations

It was considered desirable to extend the training program in response to strong requests from neighboring countries. Holding a follow-up symposium or issuing newsletters would be effective as well. Also, visits of instructors of the implementing organization to participating countries would contribute to better identification of training needs.

7. Follow-up Situation

Based on the above recommendation, the training program was extended for a period of three years until 2002.

Malaysia AI System Development Laboratory

Project Site Kuala Lumpur

1. Background of Project

The Government of Malaysia announced its intention in "Vision 2020" to become an industrialized country by the year 2020, and launched "The Second Outline Perspective Plan 1991-2000 (OPP2)." OPP2 emphasizes the importance of science and technology, particularly strategic knowledge-based technology and research and development. In line with the above move, the Government is aiming to create an advanced information society. IT is recognized as one of the most important strategic technologies for national development.

Based on these goals, the Malaysian Government requested technical cooperation from the Japanese Government to implement the "AI System Development Laboratory (AISDEL) Project". The Project was designed to establish the AISDEL to develop and promote an Expert System using AI (Artificial Intelligence) technology which is the core of IT. The Expert System is a total program with technical knowledge and judgment methods, which enables a computer to reason and deduce appropriate answers to given issues.

2. Project Overview

(1) Period of Cooperation

1 March 1995-29 February 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

SIRIM Berhad

(4) Narrative Summary

1) Overall Goal
AI technology is promoted in Malaysia.

2) Project Purpose
The AISDEL is able to develop an AI system and promote AI technology.

3) Outputs
a) The AISDEL's personnel are trained for AI system development.
b) The prototype of AI system (the Expert System) is developed.
c) The AI technology of Malaysian industry is promoted.

4) Inputs

Japanese Side

Long-term experts	12
Short-term experts	36
Trainees received	21
Equipment	390 million yen
Local cost	21 million yen

Malaysian Side

Counterparts	approx. 41
Buildings and facilities	
Local cost	8.80 million ringgit (approx. 259 million yen)

3. Members of Evaluation Team

Team Leader:
Masahiko KANEKO, Deputy Managing Director, Mining and Industrial Development Cooperation Department, JICA

Technical Cooperation Program:
Osamu SANO, Researcher, Industrial Electronic Division, Machinery and Information Industries Bureau, Ministry of International Trade and Industry

Expert System:
Atsuo MIYAZAKI, General Manager of Computer Education Division, Center of the International Cooperation for Computerization (CICC)

Evaluation Management:
Kenji TOBITA, Deputy Director, First Technical Cooperation Division, Mining and Industrial Development Cooperation Department, JICA

Training Course Evaluation Analysis:
Mayumi MUROTA Special Advisor, First Technical Cooperation Division, Mining and Industrial Development Cooperation Department, JICA

Evaluation Analysis:
Shinichiro TSUJI, Researcher, Social Development Department, Global Link Management, Inc.

4. Period of Evaluation

1 November 1999-18 November 1999

5. Results of Evaluation

(1) Efficiency

The quality, quantity and timing of Japanese inputs were appropriate. The Malaysian inputs such as facilities, machinery and equipment, and budget were also appropriate. During the first three and a half years, the number of Malaysian counterparts was about half the target number mainly due to the great demand for IT engineers in the Malaysian labor market. A total of fifteen (15) out of forty-one (41) counterparts resigned, thus the technology transferred through the project was not retained at the research institute. In order to mitigate the negative impact of staff shortages, numerous efforts were made such as information sharing among counterparts and compilation of technical documents and textbooks. As a result of these efforts, the rate of resignation among counterparts decreased.

(2) Effectiveness

With regard to the technical transfer, the Malaysian staff has upgraded technical competency in the field of AI technology, although some items were not fully transferred at the time of evaluation, especially in the upper stream of AI system development such as planning and designing new projects, and proposing prototype development for clients. Twenty-two (22) AI prototype systems were developed by the project participants, and these prototype systems received a good response from clients in their trial use. Therefore, it can be said that AI technology was transferred on the whole.

In addition, the dissemination activities such as AI training courses and seminars were actively implemented with a good response from participants. Through these, the project purpose was considered to be almost achieved.

(3) Impact

While foreign companies appear to lead information technology in Malaysia, the AISDEL demonstrates the competency of Malaysian engineers to develop AI systems inside and outside of the country. Moreover, the AISDEL has the potential to become a national focal point for AI system development to stimulate Malaysian IT industries towards the achievement of "Vision 2020".

(4) Relevance

Human resources development in the field of IT is an absolute imperative in Malaysia. And this is accelerated by the Multimedia Super Corridor (MSC)[1)] initiated during the project period. In view of this, the timing and objectives of the project were considered to be highly relevant.

(5) Sustainability

The SIRIM is promoting the functional enhancement of the AI Center with the high-level technology of the AISDEL. The SIRIM will apply the transferred technology to new income generation activities such as the development of Smart Card[2)] applications, while continuing original strategic activities of AI R&D. Under these circumstances, the sustainability of the AISDEL is expected to be maintained with financial support from the Malaysian Government and IT projects.

An expert giving a lecture on system development

Regarding the AI-related technologies that were not fully transferred, the Malaysian counterparts continue self-help efforts to develop AI systems with the help of manuals compiled by the project. Thus, the improvement of technology was predicted to be sustainable.

6. Lessons Learned and Recommendations

(1) Lessons Learned

In many IT related projects, it is difficult to allocate a sufficient number of qualified counterparts due to a high demand for IT engineers in the labor market. For a project that requires extensive group work such as system development, it is necessary to secure an initial training period for improving the technical capability of counterparts. And, in order to minimize any negative impact caused by the resignation of counterparts, it is necessary to share information and technology and to develop textbooks and manuals in collaboration with all counterparts concerned.

(2) Recommendations

It was recommended that the SIRIM continues improving its technical expertise in IT through 1) accumulating experience in system development, 2) encouraging self-education of counterparts, and 3) sharing knowledge among the staff. Thus, the SRIM will become a focal point for development of IT systems and AI technologies in Malaysia.

1) Urban development plan coupled with multimedia technology for the area of 15km × 50km in Kuala Lumpur.
2) Card mounted with CPU or memory chip, called an "IC Card" in Japan.

Malaysia

Measurement Center of SIRIM (Phase II)

Project Site Kuala Lumpur

1. Background of Project

The National Metrology Center (NMC) of the Standard and Industrial Research Institute of Malaysia (SIRIM)[1] was established by the JICA-SIRIM Metrology Project implemented for four years from 1981. Because production technology of medium and small-sized businesses advanced rapidly with the fast pace of industrialization of Malaysia, the existing facilities and technologies of the NMC quickly became obsolete and could not cope with the requirements of examination, measurement and calibration from industries. Therefore, the Malaysian Government requested the Government of Japan to implement Project-type Technical Cooperation aiming at enhancement of functions of the NMC.

2. Project Overview

(1) Period of Cooperation

1 March 1996-29 February 2000

(2) Type of Cooperation

Project-type Technical Cooperation

(3) Partner Country's Implementing Organization

National Metrology Center (NMC)
SIRIM Berhad

(4) Narrative Summary

1) Overall Goal
The National Measurement Standards System is established both technologically and legally.

2) Project Purpose
Measurement standards of length, pressure, electricity and vibration with higher accuracy are maintained by the National Metrology Center (NMC) of SIRIM Berhad.

3) Outputs
a) Project operation unit will be established.
b) Machinery and equipment are provided, installed, operated and maintained.
c) Technical capability of counterparts is upgraded.
d) Accuracy of measurement standards is improved.
e) Calibration system and technique are improved.

4) Inputs

Japanese Side

Long-term experts	7
Short-term experts	24
Trainees received	14
Equipment	350 million yen
Local cost	11 million yen

Malaysian Side

Counterparts	27
Buildings and facilities	
Local cost	10.01 million ringgit (approx. 300 million yen)

3. Members of Evaluation Team

Team Leader:
Mitsuru HAGINO, Development Specialist, JICA
Technical Cooperation Planning:
Takashi USUDA, Measurements Standards & Technology Infrastructure Division, Agency of Industrial Science & Technology, Ministry of International Trade and Industry (MITI)
Measurement Standards:
Yoshiaki AKIMOTO, Senior Officer of International Relations, National Research Laboratory of Metrology, MITI
Evaluation Management:
Hironori KIMURA, First Technical Cooperation Division, Mining and Industrial Development Cooperation Department, JICA
Evaluation Analysis:
Akira MATSUMOTO, IC Net Limited

4. Period of Evaluation

13 October 1999-30 October 1999

5. Results of Evaluation

(1) Efficiency

The timing, quality and quantity of inputs from the Japanese side were satisfactory. Although there was a delay in delivery of some equipment, by extending the dispatch period of experts and increasing the number dispatched, the expected technology transfer was successfully carried out. The Malaysian side inputs were also largely appropriate. However, relocation and the resignation of some counterparts caused a shortage of personnel. Also, environmental conditions for measurement, such as air-conditioning, did not meet the

requirements for highly accurate measurement in some laboratories. But, as a whole, the equipment provided from Japan was effectively utilized and the project was efficiently implemented.

(2) Effectiveness

With the appropriate inputs from Japan, the types and range of measurement standards were widened in each field of length, pressure, electricity and vibration. Accuracy of measurement standards is maintained at a high level. With these results, it was concluded that the project purpose would be achieved by the end of the cooperation period.

(3) Impact

The NMC improved its technical competency with the help of the project, and was able to provide higher-level calibration services for customers. In addition, through participation in international comparisons[2], the NMC confirmed its own technical capability and realized the equivalence and transparency of measurement standards. This progress of the NMC contributed to the realization of the overall goal of the project, i.e. technological and legal establishment of the national measurement standards system in Malaysia.

(4) Relevance

It was internationally recognized that in order to remove trade barriers, equivalence and transparency of measurement standards should be promoted, and mutual recognition arrangements in the field of measurement standards should be concluded between the countries concerned. The Government of Malaysia also recognized the importance of the above and set up the 7th Malaysia Plan (1996-2000), stressing the importance of measurement standards. Consequently, the overall goal of this project was highly consistent with the national policy.

It was a global trend to establish a quality assurance and management system of institutions based on ISO9000 series and ISO/IEC17025. However, at the preliminary study stage of this project, the management system of the NMC as a measurement standard institution was not fully understood by the study team; thus, measurement control was not clearly stated under the scope of cooperation. For this reason, although there was a high necessity from the beginning, an expert on measurement control was dispatched only in the final year of the project. This indicated that the relevance of the original plan of the project could have been further improved.

(5) Sustainability

The NMC's annual budget had been allocated by the government. Considering the government's recognition of the importance of measurement standards, this situation was expected to continue under the 8th Malaysia Plan (2001-2005).

Judging from the results of activities, it was believed that the NMC would continue playing an important role in the field of measurement standards in Malaysia. Thus, institutional sustainability was considered high.

6. Lessons Learned and Recommendations

(1) Lessons Learned

Because the number of Japanese experts in the field of measurement is relatively limited, when a project in this field is planned, it is desirable 1) to assess the availability of human resources in Japan, 2) to identify the needs of the recipient country, 3) to determine an appropriate scope and duration of cooperation with due consideration of the above. Particularly, when cooperation is to be provided for a national measurement standard institution, it is necessary to assign management system experts in the preliminary study stage, understand the management structure of the institution, and to clarify the scope of cooperation.

An expert arranging measuring equipment

(2) Recommendations

For sustainable development of the MNC, it must continue taking part in international comparisons. Through participation, the NMC will not only be able to identify its own technical level among the participating countries, but also, by securing the equivalence and transparency of measurement standards, be recognized as one of the international measurement standards institutions in the world.

The SIRIM Berhad is constructing a new building and the NMC will transfer there in April 2002. When the NMC relocates, the measurement equipment must be disassembled, transferred and reassembled, which could affect the accuracy of the equipment. In view of this, the Malaysian side requested additional technical assistance for handling the highly accurate measurement equipment. The Japanese Evaluation Team shared their concern and confirmed the necessity of Japanese assistance.

7. Follow-up Situation

Dispatch of an expert for follow-up in the project to transfer technology relating to installation of the equipment is planned when the construction of the new building is completed.

---

1) SIRIM altered its name to SIRIM Berhad from September 1996

2) International comparison : Comparison of measurement standards among several countries. There are two types of international comparison. One is the Key Comparison stipulated by the international organizations as the Consultative Committees of the International Committee of Weights and Measures or regional organizations such as the Asia-Pacific Metrology Programme (APMP). The other is the Supplementary Comparison that covers the individual comparisons not covered by the key comparison.