Findings on Industrial Human Resource Development by Data Collection Survey and Way Forward

- 1st Round Table Conference of Human Resource Development -

Japan International Cooperation Agency (JICA) Thailand
March 22. 2016
Contribution to Industrial Human Resource Development through JICA’s Cooperation

Fact (Technical Cooperation):
Total Cumulative Amount: 224.24 Billion Yen = 71.31 Billion Baht
1. At least **18 Billion Baht** has spent on related Industrial HRD.
2. **7,070** trainees out of 30,831 trainees (all Training programs) have received trainings on Industrial HRD.

Fact (ODA Loan):
Total Cumulative Amount: 2,164.4 Billion Yen = 681 Billion Baht
1. **53 Billion Baht** has spent for Industrial HRD (Spending on infrastructure is not included).
JICA’s Representative Cases for Industrial HRD in Thailand

King Mongkut’s Institute of Technology Lakrabang (KMITL)

Cooperation since 1960
Training Center ⇒ A Leading university in ASEAN at the field of ICT

Bureau of Supporting Industries Development (BSID), MOI

Formerly called “metalworking and machinery industries development institute” (MIDI) Industrial Technical and HRD hub in Mekong after 3 decade's cooperation

National Institute of Metrology (Thailand) (NIMT)

ODA Loan and T/C since 1999, now ASEAN's leading hub of Quality Infrastructure
JICA's Data Collection Survey on Industrial Human Resource Development

The survey is conducted from the beginning of February to the end of March

Objective
To Propose prospective new cooperation program in Industrial Human Resource Development in Thailand

Activities
To review policies of industrial human resources development in Thailand
To collect data on the current situation, issues and challenges of major technology universities/institutes, major technical colleges and vocational colleges
To collect present situation and needs for human resources of the industries in the Super Clusters
Purpose of Technical schools: To produce skilled workers and technicians

Issues/Problems

1. Technical schools don’t satisfy needs of the industry in quantity and quality

Finding of Higher Vocational New Grads VS Market Demand on 2016

Graduates of TC: 68,667
Additional Demand for technicians in manufacturing industry: 43,228
Newly Enter to the manufacturing industry: 31,490 (Fill-Rate: 73%)
2. Capacities of TC teachers need to be strengthened to achieve the expected educational outputs for upgrading industry.

- **Only 35%** of technical college teachers have a master degree.
- Most of teachers in Japan’s KOSEN have PhD.
- Most of teachers don’t have working experience at industry.
- Many teachers of KOSEN have working experience and pro-active to collaborate with industry.

3. Equipment and facility are not sufficient to implement practical technological education.
The practical engineers are mainly fostered not in traditional university but in RMUTs and engineering universities.

**Ratio of Lecturer: Student (University of Technology)**
1:20 (Thailand) ⇔ 1:10 (Japan)

**Qualifications (Academic Staffs with PhD Degree)**
RMUTs: Only 25%
Traditional and Engineering universities: 70-80%

**Practical subjects on educational program**
RMUTs and PIT: More than 40%
Traditional and Engineering universities: 20-25%

It will be necessary to introduce PBL education for Thai universities to find and solve practical problems in Industry.

Basic research facilities should be updated.
Voices from Industry to Engineering Education
(9 Japanese and Thai Companies)

Comments from Industry

Students should have basic knowledge/skill of engineering

Not enough for practical application

Not satisfy engineering knowledge of a bachelor level while satisfy them of a master level

The joint researches between company and university not so active

Difficult to solve technological problems by technician own

Have motivation with working with enthusiasm if employed as an engineer
What JICA Propose is
Thai-Japan Cooperation Program on HRD for Thai Industry

Background

In order to avoid the middle-income trap, and change the current labor-intensive structure to a knowledge-intensive structure, as in advanced countries, it is essential that industries should have sufficient capabilities to create their own original and innovative products.

Two main purposes

1. To Strengthen education and training for practical engineers of Thai manufacturing
2. To Establish HRD Bases for innovative engineers who would lead excellence in Thai Industry

Basic strategy

1. To implement practical education and training by adopting Japanese know-how and knowledge for manufacturing - “Monozukuri”
2. To effectively approach human resources development for upgrading and sophisticating Thai Industry in consistency with Thai government new industrial policy “Super Cluster”

Two Cooperation Projects

Project 1: Project for Strengthening Education and Training for Monozukuri / Practical Engineers
Project 2: Project for Establishment of HRD Bases for Leading Practical Engineers <Master Courses for Monozukuri Experts; MME>
Approach towards Technology-oriented Education in Thai-Japan Cooperation Program on HRD for Thai Industry

- Cooperative/Joint Master Degree Program for top-level “Monozukuri” Expert <MME>
- Center of Excellence of Technology-oriented Education for Monozukuri
- Strengthen education and training of Monozukuri / Practical engineers with Kaizen mind

Universities of Technology Consortium

- A
- KMITL
- RMUTs

Technical Colleges

Consortium Model School

Course for Diploma graduates

Project 1

Project 2

Upper Secondary School

Vocational School
Concept of Thai-Japan Cooperation Program on HRD

Automotive and Parts Cluster

- Cooperative/Joint Master Course for Monozukuri Expert
  - Supply of ready-to-adapt engineers, Joint Research
  - Join at 2nd G.

Eco-friendly Petrochemicals and Chemicals Cluster

Cooperative/Joint Master Course for Monozukuri Expert

- Practical Technology-oriented Education
  - Know-how of Japanese Monozukuri (e.g., 5S and Just-in-time production, active mind for Kaizen)
  - Project Based Learning; PBL as a main methodology of education
  - High rate of experimental and training subjects
  - Course management in collaboration with Japanese companies (Internship program as a compulsory subject and lecturers from Japanese companies)

Supporting Universities

MODEL School

Technical Colleges

Electrical Appliances, Electronics and Telecommunication Equipment Cluster

Digital-based Cluster

Cooperative/Joint Master Course for Monozukuri Expert

Supporting Universities

MODEL School

Technical Colleges

KMITL

RMUTs

A
Japan’s Cooperation Framework

Comprehensive Program in effective combination of Various ODA Schemes

- Capacity Development of Teaching Staff of TCs and Universities
  - Academic Fellowship Studying in Japan or Thailand for Master or Doctor Degree
  - Training Program PBL Education

- Upgrading Laboratories and Equipment of TCs and Universities
  - Renovation of laboratories
  - Procurement of laboratory equipment

- More Opportunities for students to proceed higher education and to strengthen the relationship with industry
  - Scholarship for the students
  - Internship Programs in Japanese companies

- Enhancement of Practical Monozukuri Education in the TCs and Universities
  - Introducing Japanese business language and Japanese know-how for Monozukuri and PBL education in model schools
  - Dispatching Japanese professors or senior engineers as lectures

- Establishment of Master Degree Program
  - Development of the curriculum and teaching materials
  - Dispatching Japanese professors or senior engineers

Supporting Japanese Universities

Supporting Japanese Companies

- Acceptance of Academic fellows & students
- Dispatching advisors/experts/lectures
- Acceptance of Intern Trainees
- Dispatching lectures
THANK YOU