"Needs Survey" under the Governmental Commission on the Projects for ODA Overseas Economic Cooperation in FY2012

Summary Report

Vietnam, the Philippines, Laos, India, Bangladesh and Mexico

Introduction of Technology and Products of Japanese Small and Medium Enterprises in the Area of Vocational Training and Industrial Development

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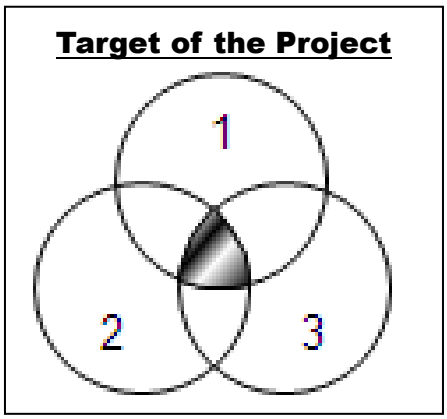
Overview of the Study



The goal of this study is to discover possible business domains for Japanese SMEs in developing countries that can be tapped by utilizing various ODA schemes, in the area of industrial development and/or human resource development (vocational training). In order to identify the business domains, the study considered three factors;

1 Whether the Japanese government is willing to support the domain;
2 Whether the local government has interest in the domain; and
3 Whether there are Japanese SMEs that has the will and ability to expand into the country and operate in that domain.

The domains that fulfil all three factors are identified as promising domains. The study looked at six countries, namely Vietnam, Laos, the Philippines, India, Bangladesh, and Mexico, as the target of the study.

Chapter 1 Overview of the Countries and Hypothesis for possible domains

The chapter presents the overview of the six target countries, including their economy, issues for development, various development plans and policies.

Also, the study identified some generic hypothesis about the domain and the business schemes that are likely in many countries, focusing on several industries and several project typology. The Industries are; 1) Agriculture, forestry and fishery, 2) Construction and Manufacturing, 3) Food Processing, 4) textile, 5) traditional industries, 6) Machine and metal tooling, 7) Electric machineries, 8) ICT, and 9) Environment. As for the project typology, they include 1) Technical Centers, 2) On-Site Training, 3) Certification, 4) High-level education (college etc.), 5) Vocational training schools.

Chapter 2 Needs of the Countries (Field Survey)

This chapter aims to clarify the first two factors, namely "Whether the Japanese government is willing to support the domain" and "Whether the local government has interest in the domain." Extensive interviews were carried in each respective country. The following domains were identified in each country as a potential area of investigation:

Vietnam: Die/Mould Center, and CAD/CAM Center
The Philippines: No projects (although there were needs, potential competitiveness of Japanese SMEs cannot be established in those business domains).
Laos: No projects (although there were needs, potential competitiveness of Japanese SMEs cannot be established in those business domains).
India: Die/Mould Center, and CAD/CAM Center
Bangladesh: Die/Mould Center, and CAD/CAM Center
Mexico: Die/Mould Center, Coolant Recycling Center

Chapter 3 Potential for Japanese SMEs and their Willingness

In this chapter, Japanese SMEs that match the business domains identified in Chapter 2 were identified, and their ability and willingness to expand into each country was confirmed.

Die Mould center

In order to assess the possibility of Die Mould centers, cooperation from the Japan Machine Tool Builders' Association was essential. Through their help, Sodick Co. and Waida MFG Co. showed interest. The actual products that they can offer are as follows;

- CNC Sinker Electrical Discharge Machine: AG40L (Sodick, JPY 20 million)
- Wire Cutting Machine: SL400G (Sodick, JPY 20 million)

- Profile Grinder: SPG-W (Waida, JPY 20 million)
- CNC Jig Grinder: UJG-35 (Waida, JPY 150 million)

The manufacturers are willing to provide training for the use and maintenance of the equipments. The actual design and fabrication of the die moulds, however, would require cooperation and training from dedicated experts.

CAD/CAM Center

Of the various CAD/CAM related SMEs, Kodama Corporation has shown interest. They specialize in CAD for die mould design. Their CAD costs JPY 1.2 million, and add-ons for die mould design (TopMold for plastic injection moulds, and TopProgress for progressive press moulds) cost JPY1.2 million each, and the CAM component will differ from the equipment to be utilized. The total cost would depend on the number of machines in the classroom, but 10 sets should cost around JPY 30 million (excluding CAM).

The software can be introduced as an addition to the Die Mould centers. In this case, 10 sets of CAD, 3 sets of CAM would make a total of JPY 50 million, although the cost would naturally depend on the size of the center.

Coolant Recycling Center

Coolant collector itself is a relatively simple machine. A simple innovation would lead to significant improvement in their performance, which allows many entries of SMEs in the market. For automobile coolants, Nakajima Auto Denso and Asada maintain a large share of the market. By establishing a center equipped with products of these Japanese SMEs, recycling of CFC, HCFC, HFC can be trained, along with the end-of-life vehicle recycling program. By demonstrating the higher performance of the Japanese products at these centers, the firms and maintenance factories in that country would be inclined to purchase the Japanese products, thus expanding the market.

Chapter 4 Analyzing the Potential for utilizing SME products and technology in ODA projects

With potential business domains and potential SMEs identified, this chapter deals with their ties with the local counterparts and existing ODA projects.

The prospective counterpart organizations were contacted about the potential of this scheme. By the introduction of technology and products of Japanese SMEs, level of local technology would improve, leading to better product manufacturing in the area. The centers would also serve as show rooms for the SMEs, by providing a place where potential customers can see the products in action.

Vietnam

Die Mould Center: The third phase of the vocational training project will commence in 2013, and some schools are already putting a priority on die mould production. Counterparts for this project, Ministry of Labour, Invalids and Social Affairs, Hanoi University of Industry, and TTC would be a candidate for the SME project, too. Hanoi University of Industry in particular already aims to become a national hub for die mould human resource.

CAD/CAM Center: Same as above. CAD courses are already provided in the vocational training project.

India

Die Mould Center: The potential counterparts would be tool rooms under Ministry of Micro, Small and Medium Enterprises (ex. Delhi Institute of Tool Engineering), and/or Central Institute of Plastic Engineering Technology under Ministry of chemicals and fertilizers.

CAD/CAM Center: Same as above.

Bangladesh

Die Mould Center: As the counterpart, Bangladesh Institute of Technical Assistance Center (BITAC) seems promising. Several senior volunteers from JICA are working there already, and BITAC provides training as well as technical consultation to local firms.

CAD/CAM Center: As the counterpart, Bangladesh Computer Council (BCC) seems promising. Several senior volunteers from JICA are working there already, and BCC provides training as well as IT policy

advisory.

Mexico

Die Mould Center: As the counterpart, The Center for Engineering and Industrial Development（CIDESI） seems promising. CIDESI is located near Japanese auto manufacturers, and JICA has been working with them on the Automobile Industry infrastructure enhancement project.

Coolant Recycling Center: As the counterpart, The Ministry of Environment and Natural Resources (SEMARNAT) seems promising. SEMARNAT has acted as the counterpart for end-of-life vehicle (ELV) project. They also have a department that has worked on the issue of HFC recovery under the Montreal Protocol.. Expanding those activity to include other coolants should be feasible.

Chapter 5 Potential Business using Technology and Products of Japanese SMEs

Through this study, it became apparent that there are other efforts that can be effective in promoting Japanese SMEs in foreign countries utilizing ODA. Several schemes may be promising:

Name of the Scheme:

For Japan: Show Room Demonstration Assistance Project for Japanese SMEs

For the Counterpart Country: Mini Technical Assistance Scheme

Contents:

- A scheme to assist the counterpart country's socio economical development utilizing technology and products of Japanese SMEs. The scheme will subsidize the cost for technical feasibility study and other studies to assess the level of socio-economic benefits.
- Technology transfer necessary to utilize the products and technology would also be supported.
- If the results of the study prove to be favourable, the counterpart country

would provide some assistance in the dissemination of those technology and products.

Scale of the Project

- The size should be outside the current ODA schemes (JPY 50-100 million)
- Cost of the feasibility study for the introduction of the technology and product, including the cost of the product and their transportation, costs for the technology transfer training would be supported.
- The counterpart government would provide some assistance for local costs (ex. Venue, facility, installation, etc.)

Die/Mould Centers, CAD/CAM Centers, Automobile Coolant Recycling Centers (Vietnam, India, Bangladesh, Mexico)

Enterprise

- Name of Enterprise : Japanese Manufacturers
- Location of Enterprise : various

Concerned Development Issues

- The need to evolve into a higher stage of manufacturing in order to
- The need to improve human resource to acquire necessary skills for the development of manufacturing sector
- The need to augment their existing efforts in improving their manufacturing capabilities, as well as upgrade their training facilities and training schemes

Products and Technologies of SMEs

- Machining tools (machining centers, CNC machines, wire cutters etc.)
- CAD/CAM software
- Automobile coolant recovery equipment
- Training programs that are associated with their products

Proposed ODA Projects and Expected Impact

- There have been ODA projects that aim at the creation of Die/Mould Centers in various forms. These projects can incorporate products and services from Japanese enterprises.
- By creating packaged schemes to make it easier for Japanese enterprises that are unfamiliar with ODA schemes, more enterprises would be willing to participate.
- The centers will provide training necessary to create basic manufacturing skill base for the countries
- By allowing the centers to be used as sales and demonstration sites for the enterprises, O&M cost for the centers will be partly borne by the enterprises

Future Business Development of Enterprises

- Expand sales to the respective countries by utilizing the centers as their showroom and sales resource.
- Expand sales through increased familiarity and brand recognition of their products