

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

Summary Report

Socialist Republic of Viet Nam

The Study for Die & Mold Industry and
Human Resource Development in Vietnam

March, 2013

Ohmi Co., Ltd & Japan Development Service Co., Ltd

Executive Summary

I. Background of the Survey, Objective of the Survey, Outline and Schedule of the Survey

The Survey was intended to enable the proposing enterprise - Ohmi Co., Ltd, which has advanced into Viet Nam (Hanoi) and conducts a pressing die business, to realize the following objectives with a view to expanding its business in future: 1) Conduct investigation of the business environment and customers, etc. and identify the direction of future business deployment, 2) Clarify the issues faced by its local corporation in Viet Nam and other Japanese affiliated die & mold enterprises and local die & mold enterprises from the viewpoint of promoting die & mold enterprises as a supporting industry, and 3) Examine the feasibility of an ODA project to help Ohmi and these other enterprises resolve the said issues.

In the Survey, the following investigations were implemented in Hanoi and Ho Chi Minh on two occasions (first investigation: December 1 ~ December 25, 2012, second investigation: January 5 ~ January 19, 2013).

(Main Survey Items)

- a. Investigation concerning the business deployment of Ohmi (market analysis and future direction)
- b. Current conditions and issues of die machining enterprises (press and plastic die machining)
- c. Current conditions and issues of human resources development institutions (universities, vocational training colleges, etc.)

II. Current Conditions (Development Issues) and Support Needs in Viet Nam

1. Development issues in Viet Nam

Development of supporting industries, in particular the die & mold industry, is raised as one of development goals by the Government of Viet Nam. This desire is shared not only by the governments of Japan and Viet Nam but also by the many enterprises that handle dies and are based in Viet Nam. In particular, the Survey has revealed there to be a shortage of die-related human resources in enterprises, and concerning this the following issues can be pointed to.

- a. The government has indicated various policies (supporting industries master plan, etc.) and stipulated the target sectors and product lines for the supporting industries that need to be developed; however, the Government of Viet Nam has not yet presented a concrete action plan of development.
- b. Viet Nam is obliged to cut tariffs for ASEAN by 2018, so unless the Japanese affiliated and local enterprises that have so far received tariff protection improve international competitiveness, they may suddenly find themselves unable to compete at this time.

- c. Human resources development institutions (universities, vocational training colleges, etc.) have an obligation to train and provide human resources to society; however, concerning the development of human resources who can handle dies, there are no institutions that specialize in the training of such human resources. Moreover, instructors in the existing institutions lack the capacity to train human resources.

2. Support needs

In these circumstances, all of the enterprises that were interviewed here regard the development of die-related human resources as an issue that requires urgent attention. In particular, there is clearly a high need for support of die-related human resources development in enterprises. Implementing the development of die-related human resources will resolve the die-related human resources development issues faced by Japanese affiliated and local enterprises and be directly beneficial in developing the supporting industries targeted by the Government of Viet Nam, and thereby increasing local content rates for Japanese affiliated enterprises.

For Ohmi, which has only recently advanced into Viet Nam and has not yet fully trained local employees, there is a limit to the technology transfer for die-related human resources development that it can conduct internally. If human resources development (technology transfer) utilizing the various resources that exist in Viet Nam can be realized, it understands that this would be highly beneficial not only for Ohmi but also for other Japanese affiliated and local enterprises. Therefore, it understands the importance of support for the development of ODA projects in this field.

Moreover, Japanese affiliated and local enterprises have clearly voiced needs regarding establishment of a die industrial association to facilitate information exchange, lobbying of the government and implementation of training. Concerning this point, JETRO and other agencies have played a central role, however, from the viewpoint of promoting supporting industries and increasing the local content rate of Japanese affiliated enterprises, the feasibility of initiatives for contributing to these activities should also be examined here.

III. Applicability of the Proposing Enterprise's Technology to Viet Nam and Future Business

Ohmi, which is a die manufacturing and pressing corporation, has its main plant in Iwata, and it also opened a plant in Quang Minh Industrial Zone in the north of Hanoi, Viet Nam in November 2011. Moreover, it has acquired 15,000 square meters of land in Binh Xuyen Industrial Park in Vinh Phuc province and plans to expand its business further in future. Specifically, it intends to branch out from its primary business of manufacturing and machining with press parts dies and to manufacture and retail press materials for use in construction or plastic parts and so on.

Ohmi only commenced business in Viet Nam in 2011 but it has already established local operations in the field of manufacturing and retailing press parts and is making a contribution to the promotion of supporting industries in Viet Nam. Moreover, because Ohmi possesses sophisticated pressing technology for molding difficult parts that have not yet been mastered by other local enterprises, Ohmi is in a position to greatly aid the resolution of development issues (supporting industry development) in Viet Nam through conducting training as a private sector resource (see the next section for details).

IV. Business development effect of support for Japanese affiliated and local enterprises utilizing the JICA technical cooperation project scheme

In this report, “development of die-related human resources” utilizing the JICA technical cooperation project scheme is proposed. This is a distinctive model in that it aims to utilize both the resources of existing human resources development institutions such as universities and JICA projects and the resources of private sector enterprises.

The site investigations have revealed that, under conditions where die-related human resources development is implemented as OJT within individual enterprises, development primarily consists of only superficial OJT lacking theoretical explanation of why such know-how is used in own enterprises. Meanwhile, it was found that activities in human resources development institutions (universities and vocational training colleges, etc.) are theory-centered but do not provide sufficient curriculum for practical learning. Accordingly, in order to develop practical human resources for die & mold enterprises, it is necessary to develop a model of human resources development that is based on cooperation (industry-academia) between private sector entities that possess technical know-how and human resources development institutions that possess education know-how while utilizing ODA support. (Detailed description of the model is given in the next section).

ODA project formation and implementation is likely to impart the following business development effects on Viet Nam.

- a. The ODA model presented here specifically aims to resolve the issues (lack of human resources development) that confront local enterprises. This ODA model will impart direct benefits for Japanese affiliated and Vietnamese enterprises in terms of developing SME human resources.
- b. The proposed ODA model is founded on collaboration between C/P agencies and private sector enterprises and allows for numerous enterprises to participate in training. Therefore, in terms of enabling the development of numerous SME human resources, the model has a high human resources development dissemination effect.
- c. The proposal also includes support for the establishment and activities of a “Die & Mold Industry Human Resources WG (Working Group)” (provisional title) as an optional body related to development of SME human resources. Rather than targeting activities in individual enterprises, this entails an overall approach that will enable an environment to be established where various

activities can be implemented. Also, in the event where a “Viet Nam Die & Mold Industry Association” is established in future, this WG could function as a human resources development section meeting in charge of planning and implementing training programs for developing SME human resources, and it would be possible to transfer activities directly to the Viet Nam Die & Mold Industry Association. In other words, establishing and utilizing the “Die & Mold Industry Human Resources WG (Working Group)” would help the establishment of the Viet Nam Die & Mold Industry Association, and the organization and collaboration of such a group would enable enterprises to more effectively lobby for the promotion of supporting industries and improvement of local content rates for Japanese enterprises based on development of the management environment.

- d. It should be possible to further enhance the impact in terms of promoting supporting industries through collaborating with resources or senior volunteers (SV) who are already involved in existing JICA projects. For example, in the event where support for construction of a die skill examination system is implemented by JICA in future, cooperation in the shape of offering support via provision of equipment, preparation of examination countermeasure curriculums and implementation of tests, etc. would be possible.

V. Concrete proposals utilizing the ODA scheme

As was mentioned above, as a technical cooperation project, it is proposed that die enterprise human resources development be conducted utilizing both the resources (training lecturers) of both human resources development institutions such as universities and JICA projects and the resources (human resources) of enterprises, etc. For this purpose, it will be necessary for a C/P agency to be nominated and supported, and according to investigations so far, the CNC Technology Center of Hanoi University of Science and Technology is deemed appropriate in terms of its equipment environment and quality of its human resources.

Secretariat functions will be set up in the C/P agency, and the abovementioned Viet Nam Die & Mold Industry Human Resources WG will be established as a receptacle for the private sector resources needed to implement training, or as a receptacle for grasping and analyzing the issues and support needs that confront die-related human resources and supporting the preparation of appropriate curriculums. The following kinds of supports will be required in order to implement this ODA model.

(Required support)

- i) Capacity development support for C/P agency

While promoting collaboration between the industry and academia sectors, it will be necessary to provide support for grasping and analyzing the issues and support needs that confront die-related human resources, preparing appropriate curriculums and structuring the implementation of guidance (theoretical and practical) based on curriculums. In particular, it

will be necessary to conduct system building for the C/P agency and capacity building of employees.

- ii) Support for establishment of the Viet Nam Die & Mold Industry Human Resources WG and for iii) collaboration between the industry and academia sectors

In building the system, the way in which industry-academia collaboration is built between private sector resources (SME human resources) and human resources training institutions (universities and vocational training colleges, etc.) will be extremely important for enhancing the beneficial effects, and suitable support will be needed for this purpose. This will include support for establishment of the “Die & Mold Industry Human Resources WG (Working Group)” as well as collaboration between the industry and academia sectors.

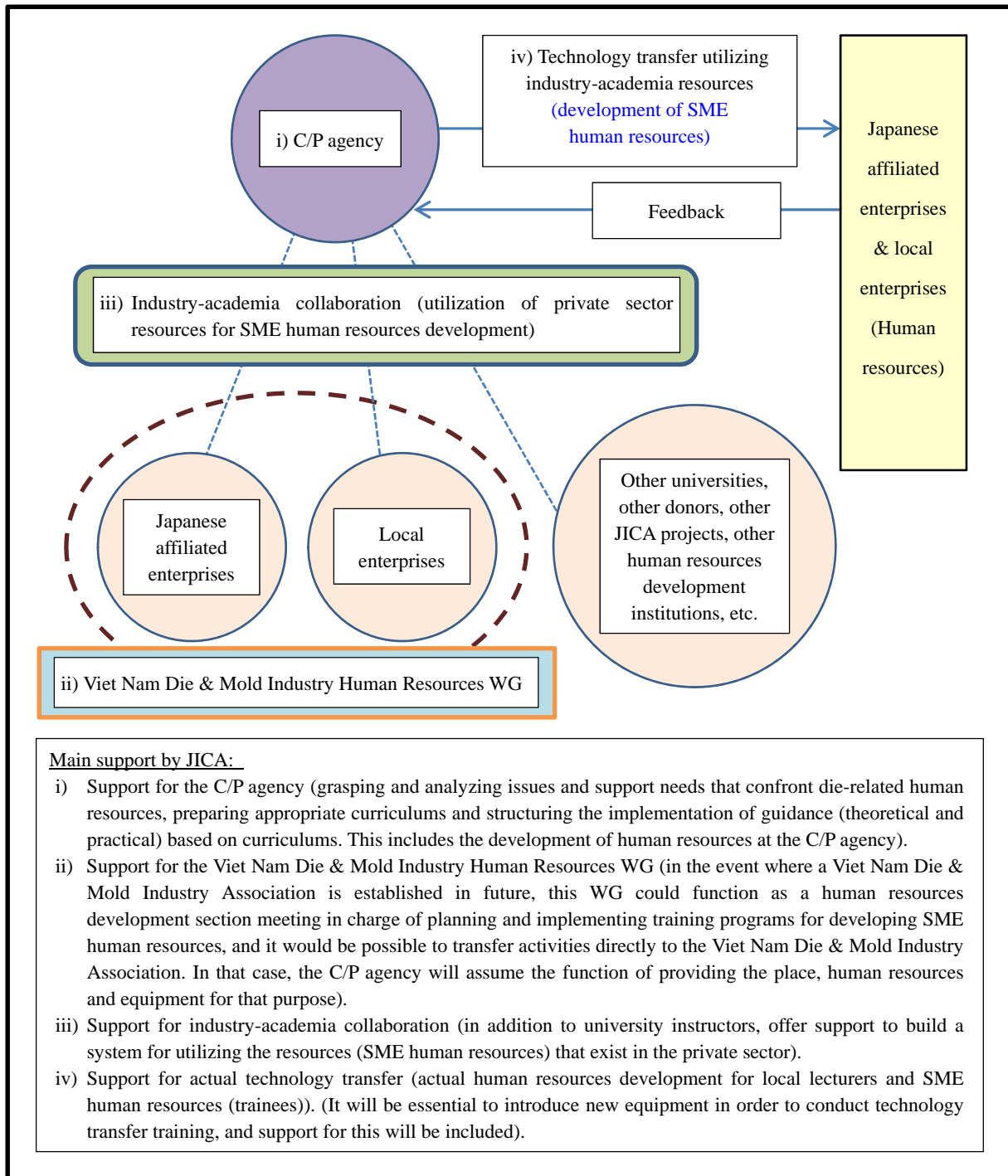
- iii) Support for actual technology transfer (actual human resources development for local lecturers and SME human resources (trainees))

In addition to utilizing industry-academia resources for developing SME human resources, from the viewpoint of promoting the autonomous development of the C/P agency itself too, it will be necessary to support the capacity building of instructors at the C/P agency. This can be achieved through dispatching Japanese experts in order to facilitate the efficient capacity building of instructors.

In this way, in order to develop practical die-related human resources, it will be essential to conduct i) support for the C/P agency, ii) support for the Viet Nam Die & Mold Industry Human Resources WG, iii) support for industry-academia collaboration, and iv) support for actual technology transfer (actual human resources development for local lecturers and SME human resources (trainees)). (See the project schematic diagram (draft) for the technical cooperation project based on industry-academia collaboration on the next page).

Through carrying out such support, the C/P agency will be able to prepare curriculums, appropriately assign training lecturers using industry and academia resources, and implement guidance based on the issues and needs (for support) facing human resources development in enterprises, and the environment for development of autonomous die-related human resources will be established.

Project schematic diagram (draft) for the technical cooperation project based on industry-academia collaboration



Project Formulation Survey
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SMEs and Counterpart Organization

- Name of SME: OHMI CO., LTD. (partner enterprise: Japan Development Service Co., Ltd.)
- Location of SME: Iwata City, Shizuoka Prefecture
- Survey Site - C/P Organization: CNC Technology Center, Hanoi University of Science and Technology, Viet Nam

Concerned Development Issues

- **Low local procurement rates:** Compared with other countries in ASEAN, the local content rate for Japanese manufacturing companies is markedly low.
- **Poor development of supporting industries:** Apart from motorcycle parts, supporting industry enterprises that are capable of manufacturing parts for automobiles and domestic electrical appliances are lacking in terms of both quality and quantity. Issues also exist regarding the investment environment comprising tax systems, etc.
- **Lack of human resources:** In particular there is a shortage of engineers for die & mold manufacturing which constitute the foundation for supporting industries.

Products and Technologies of SMEs

- Compared to other local companies, OHMI has the high level technology to manufacture dies for pressing difficult parts.
- Promoting process simplification through press manufacture.
 - Press manufacture of "High Tensile Strength Steel Sheets".
 - Proposing new products of construction materials such as grating, guardrail, etc., through press manufacture.
 - Mold manufacture and processing for plastic and other materials.

Proposed ODA Projects and Expected Impact

- In regards to a high need for support of die & mold related human resources development in enterprises, the proposed ODA model will improve in technical level of enterprise employees (short-term) and promote capacity development of the C/P agency involved in the development of die & mold human resources (long-term).
- In regards to a high need for establishment of a die & mold industrial association to facilitate information exchange, lobbying of the government and facility development, the proposed ODA model promote the horizontal linkage and grouping of die & mold enterprises. Through this model, a setup for conducting human resources development and joint equipment utilization will be constructed, thereby mitigating the investment load placed on SMEs. Appeals to the public sector for improvement of the investment environment will also be strengthened if enterprises are grouped.
- Strengthening of local supporting industries particularly in the die & mold sector will benefit the management of Japanese manufacturing companies overall.

Future Business Development of SMEs

- The investment burden on Japanese die & mold enterprises, which comprise numerous small, medium and micro enterprises, will be mitigated, thereby encouraging more direct investment into Viet Nam and development of new markets.



Outline of the Survey

1 Background and Objective of the Survey

(1) Background of the Survey

A feature of manufacturing in Viet Nam is the low local procurement rate of parts, etc., reflecting the poor development of supporting industries. Overseas companies that move into Viet Nam also have to procure major parts from overseas, and it is essential for them to raise local procurement rates from the viewpoints of cost reduction and faster delivery. However, local enterprises (suppliers) in Viet Nam are insufficient in terms of both absolute numbers and quality of technology. In particular, die-related SMEs are especially insufficiently developed. Moreover, development of human resources such as manufacturing engineers and technicians who can help supporting industries is inadequate. In these circumstances, in the five-year socioeconomic development plan (2011-2015), which is the national plan for Viet Nam, “Development of skilled workers” is raised as a social indicator, while the Government of Japan’s country-wise aid program for Viet Nam regards “institutional establishment and human resources development geared to promotion of the private sector including nurturing of supporting industries” as an important pillar.

(2) Objective of the Survey

The Survey was intended to enable Ohmi Co., Ltd (herein after ‘Ohmi’), which has advanced into Viet Nam (Hanoi) and conducts a pressing die business, to realize the following objectives with a view to expanding its business in future: 1) Conduct investigation of the business environment and customers, etc. and identify the direction of future business deployment, 2) Clarify the issues faced by its local corporation in Viet Nam and other Japanese affiliated die & mold enterprises and local die & mold enterprises from the viewpoint of promoting die and mold enterprises as a supporting industry, and 3) Examine the feasibility of an ODA project to help Ohmi and these other enterprises resolve the said issues.

2 Outline of the Survey

(1) Main Survey Items

In addition to general investigation of socioeconomic and investment conditions in Viet Nam, the Survey targeted the general business situation and issues facing Japanese affiliated enterprises with particular emphasis on the following points.

1. Investigation concerning the business deployment of Ohmi (market analysis and future direction)
2. Current conditions and issues of die machining enterprises (press and plastic die machining)
3. Current conditions and issues of human resources development institutions (universities, vocational training colleges, etc.)

(2) Composition of the Survey Team

The Survey was implemented by the joint enterprise comprising Ohmi Corporation and Japan Development Service Co., Ltd.

Ohmi Corporation, a die manufacturing and pressing enterprise established in June 1966, has its main plant in Iwata, and it also opened a plant in Quang Minh Industrial Park in the north of Hanoi, Vietnam in November 2011.

Japan Development Service Co., Ltd. was primarily engaged in the overseas survey and expert dispatch business, and it has numerous experiences of survey work and human resources development in the target field throughout Asia and Africa. For example, it has been involved in an IT project in Vietnam and a project for development of plastic molding technology human resources in Mexico, and it has dispatched experts for a materials processing industry survey in Indonesia, a die technology improvement project in Pakistan and metal processing in Ghana.

Corporation	Ohmi Co., Ltd	Japan Development Service Co., Ltd.
Business sector	Manufacturing (Design, manufacture and prototype fabrication of dies for auto parts, etc.)	- Survey and consulting concerning international cooperation - Technical guidance for overseas private sector enterprises - Translator and interpreter dispatch service, etc.
Survey team members	Shuichi Odaira (Project leader), Akihiro Odaira, Katutoshi Horiuchi and Satoyasu Nakamura	Masahiro Chiji, Motomu Nishikawa, Kunihiro Konishi, Akira Doi and Takanori Yasuda

(3) Schedule of the Survey

This Survey were implemented in Hanoi and Ho Chi Minh on two occasions (first investigation: December 1 ~ December 25, 2012, second investigation: January 5~January 19, 2013).

The main destinations in the site investigations were as follows. We would like to take this opportunity to express our gratitude to all the officials who cooperated with the Survey.

Major Destinations Visited in the Site Investigations

Visited destination	Destinations in December (December 1~25, 2012)	Destinations in January (January 5~19, 2013)
① JICA officials	<ul style="list-style-type: none"> - JICA Vietnam Office - Project for Human Resource Development of Technicians at Hanoi University of Industry - Project for Strengthening Public Functions for Supporting Small and Medium Enterprises 	<ul style="list-style-type: none"> - JICA Senior Volunteer - Advisor for organizing national skill testing system in Vietnam
② Enterprises	<p><u>Japanese affiliates (Hanoi) :</u> OHMI VIETNAM, TOHO, DAIWA PLASTICS, STANLEY, TOYODA GIKEN, MUTO, EXEDY, HIROTA, MEISEI, Hokuriku Machinery, Yamazen Vietnam, TOYOTA, HONDA, Tokyu Construction, SAYEN, BBSV, MIKASA, Zenitaka Corporation, OKS, TANAKA</p> <p><u>Local (Hanoi) :</u> HTMP, FOLIN, VINAXUKI (Nagara), FC Hoalac, Ha Noi Mould, Kim Long, VPMS, TKG Mould, Viet Chuan,</p>	<p><u>Japanese affiliates (Hanoi) :</u> SAYEN, MUTO, MEISEI, OKS, Dragon, Fuji Furukawa E&C, AMADA, TENMA, TOHO, YH SEIKO</p> <p><u>Local (Hanoi) :</u> VPIC-1, VPMS, Dezen, Nguyen Linh, Cosmos</p> <p><u>Local (Ho Chi Minh) :</u> HAI HA, Duy Khanh</p>
③ Education institutions	<p>Hanoi University of Industry, Hanoi University of Science and Technology (Department of Automotive Engineering), Hanoi Technique Technology College, Phucyen College of Industry, The Vocation College of Agricultural Mechanics</p>	<p><u>Hanoi :</u> Hanoi University of Science and Technology (Department of Automotive Engineering, CNC Technology Center), Hanoi Technique Technology College, Phucyen College of Industry, The Vocation College of Agricultural Mechanics</p> <p><u>Ho Chi Minh :</u> Ho Chi Minh City University of Industry, Ho Chi Minh City University of Technology</p>
④ Government offices	MOIT, MOLISA	
⑤ Donors	KOICA, UNIDO, GIZ	AfD
⑥ Others	Embassy of Japan in Vietnam, JETRO Hanoi Office , I.B.C Vietnam, Nakano Corporation	Former Vina-Shiroki / RCPM officials, IM Japan, HIRAYAMA, TOMITA, VBP