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Ministry of Education and Training
Ministry of Labour – Invalids and Social Affairs

Basic Study on Human Resources Development in Viet Nam

Final Report

September 2012

JAPAN INTERNATIONAL COOPERATION AGENCY

PADECO Co., Ltd.
Japan International Cooperation Center

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Abbreviations and Acronyms

ADB	Asian Development Bank
AFD	Agence Française de Développement
ASEAN	Association of South-East Asian Nations
DOET	Department of Education and Training
DOLISA	Department of Labor, Invalids and Social Affairs
E-JUST	Egypt-Japan University of Science and Technology
EPA	Economic Partnership Agreement
ESDP	Education Strategic Development Plan
FDI	Foreign Direct Investment
GDVT	General Department of Vocational Training
GIZ	Deutschen Gesellschaft für Internationale Zusammenarbeit
HEEAP	Higher Engineering Education Alliance Program
HEP2	The Second Higher Education Project
HERA	Higher Education Reform Agenda
HRDMP	Human Resources Development Master Plan
HRDS	Human Resources Development Strategy
ICT (IT)	Information and Communication Technology (Information Technology)
ILO	International Labour Organization
INSET	In-Service Education and Training
ISO	Interenational Standard Organization
JBAD	Japan Business Association in Da Nang
JBAH	Japan Business Association in Ho Chi Minh
JBAV	Japan Business Association in Vietnam
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
JOCV	Japan Overseas Cooperation Volunteer
KfW	KfW Development Bank
KOICA	Korea International Cooperation Agency
MARD	Ministry of Agriculture and Rural Development
MDGs	Millennium Development Goals
MEXT	Ministry of Education, Culture, Sports, Science and Technology Japan
MHLW	Ministry of Health, Labor and Welfare
MJIIT	Malaysia-Japan International Institute of Technology
MOET	Ministry of Education and Training
MOJ	Ministry of Justice
MOLISA	Ministry of Labor, Invalids and Social Affairs
MONRE	Ministry of Natural Rescources and Environment
MOST	Ministry of Science and Technology
MPI	Ministry of Planning and Investment
ODA	Official Development Assistance

OJT	On-the-Job Training
PhD (Ph.D.)	Philosophiae Doctor/Doctor of Philosophy
R&D	Research and Development
SATREPS	Science and Technology Research Partnership for Sustainable Development
SEDP	Socio- Economic Development Plan
SEDS	Socio- Economic Development Strategy
SEP	Skills Enhancement Project
SESMP	Secondary Education Sector Master Plan
SME	Small and Medium Enterprises
TOT	Trainings of Teachers
TVET	Technical and Vocational Education and Training
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VC (VCs)	Vocational Colleges
VDGs	Vietnamese Development Goals
VJCC	Vietnam-Japan Human Resources Cooperation Center
VND	Vietnamese dong
VS (VSs)	Vocational Schools
VSS (VSSs)	Vocational Secondary Schools
VTC (VTCs)	Vocational Training Centers
VTDS	Vocational Training Development Strategy
WTO	World Trade Organization

1. Introduction to the Study

1.1 Study Background

Viet Nam has achieved rapid economic growth since Doi Moi starting in 1986 and has maintained more than 7% of GDP growth per year since 2002. With the stable and rapid economic growth, the Government of Viet Nam (hereinafter referred to as "the Government") has set a national goal to become an industrialized country by 2020. This goal is specified in 10-year Social-Economic Development Strategy (2011-2020) (SEDS) as well as 5-year Social-Economic Development Plan (2011-2015) (SEDP). The labor force makes up approximately 60% of the total national population, and affluent younger labor force has attracted foreign direct investments (FDI). However, trained labor force accounts for approximately 30% of the total labor force which points out the shortage of middle management, technical managers, and skilled workers.

Considering the situation, Japan International Cooperation Agency (JICA) has enhanced capacity of higher education and vocational training institutions, which play an importance role of producing high quality human resources through improved curriculum and capacity development. The focus has been on Human Resources Development (HRD) in engineering and IT related fields in addition to management and technicians in small and medium industries and supporting industries, considering needs of the Japanese industries.

In order to realize the industrialization of the country by 2020 and maintain a sustainable economic growth, it is an urgent issue to develop the industry and human resources for the industry. The government drew up the Higher Education Reform Agenda (2006-2020) (HERA) in 2005 and aimed to increase the number of higher educational institutions and enhance the quality of education and research capacity and management in universities. In line with the HERA, the Ministry of Education and Training (MOET) announced ideas of establishing international model universities and prepared a plan for establishing 4 international model universities with international standards in Viet Nam.

In addition, the Human Resources Development Strategy (2011-2020) (HRDS) and Human Resources Development Master Plan (2011-2020) (HRDMP) were approved by the Prime Minister in April 2011 and July 2011, respectively. The government has focused on developing industrial human resources who have global competitiveness, strengthening ability of science and technology, and enhancing HRD paying attention to the international standards. In the HRDS, the target number of human resources to be developed are set in the fields of i) State management, policy making and international law, ii) university and college lecturers, iii) science-technology, iv) medicine, health care, v) finance- banking, and vi) information technology.

With a joint statement signed between the Vietnamese government and the Japanese government in October 31, 2011, the government also emphasized the importance of HRD for their industrialization and modernization by 2020. The government expressed their expectations that universities in both countries would exchange programs in science and technology fields and promote research activities. The government also requested for Japan's continuous support to develop high quality human resources, including support for upgrading Can Tho University to the international level.

Given the background, the government submitted the ODA request list to the Embassy of Japan in Viet Nam in September 2011. The request list was prepared by MOET and the Ministry of Labor, Invalid, and Social Affairs (MOLISA) to enhance and strengthen higher education and vocational training institutions for HRD. However, as the request list was based on the existing

needs in education and vocational training sectors, it is necessary to analyze directions of Vietnamese industrialization strategy, Japan's advantages in providing support, and possibilities of private and public partnerships and decide priority among the listed projects.

1.2 Study Description

The JICA Basic Study on Human Resources Development in Viet Nam (hereinafter referred to as "the Study") aims to prioritize the requested ODA projects from the government, prepare a draft of the Roadmap for Mid-term and Long-term Human Resources Development in Viet Nam (hereinafter referred to as "the Roadmap") and propose possible support through JICA development assistance schemes. The objectives are achieved through the tasks: i) analysis of Vietnamese strategies and plans related to HRD, ii) assessment of Japanese industrial needs of required human resources in Viet Nam and advantages of Japanese universities, iii) review of the Vietnamese mid- and long term human development needs; and iv) analysis of relevancy of the requested projects and alignment of the requested projects with Japan's ODA policies. The tasks were conducted and outputs were produced based on the study flow shown in Figure 1-1. The Study started from the beginning of April, 2012 and ended at the end of September, 2012.

Through the study period, the JICA study team prepared the reports and addressed the concern shown in Table 1-1.

Table 1-1 Reporting and Consultation Schedule

Reports/Consultation Meeting	Contents/Agenda	Timing of Submission/ Organization
Inception Report	i)study objectives, ii)study items and expected outputs, iii)methodology, iv)consultation and reports, v)study schedule, vi) study team composition	April 2012
Inception Meeting	Explanations on Inception Report	April 2012
Mid-term Consultation meeting	i) study method, results and issues, ii) prioritization of requested ODA projects (draft), iii) Road Map for Human Resources Development (draft)	June 2012
Draft Final Report	Overall study results (Draft)	August 2012
Draft Final Meeting	Present Draft Final Report to stakeholders	August 2012
Final Report		September 2012

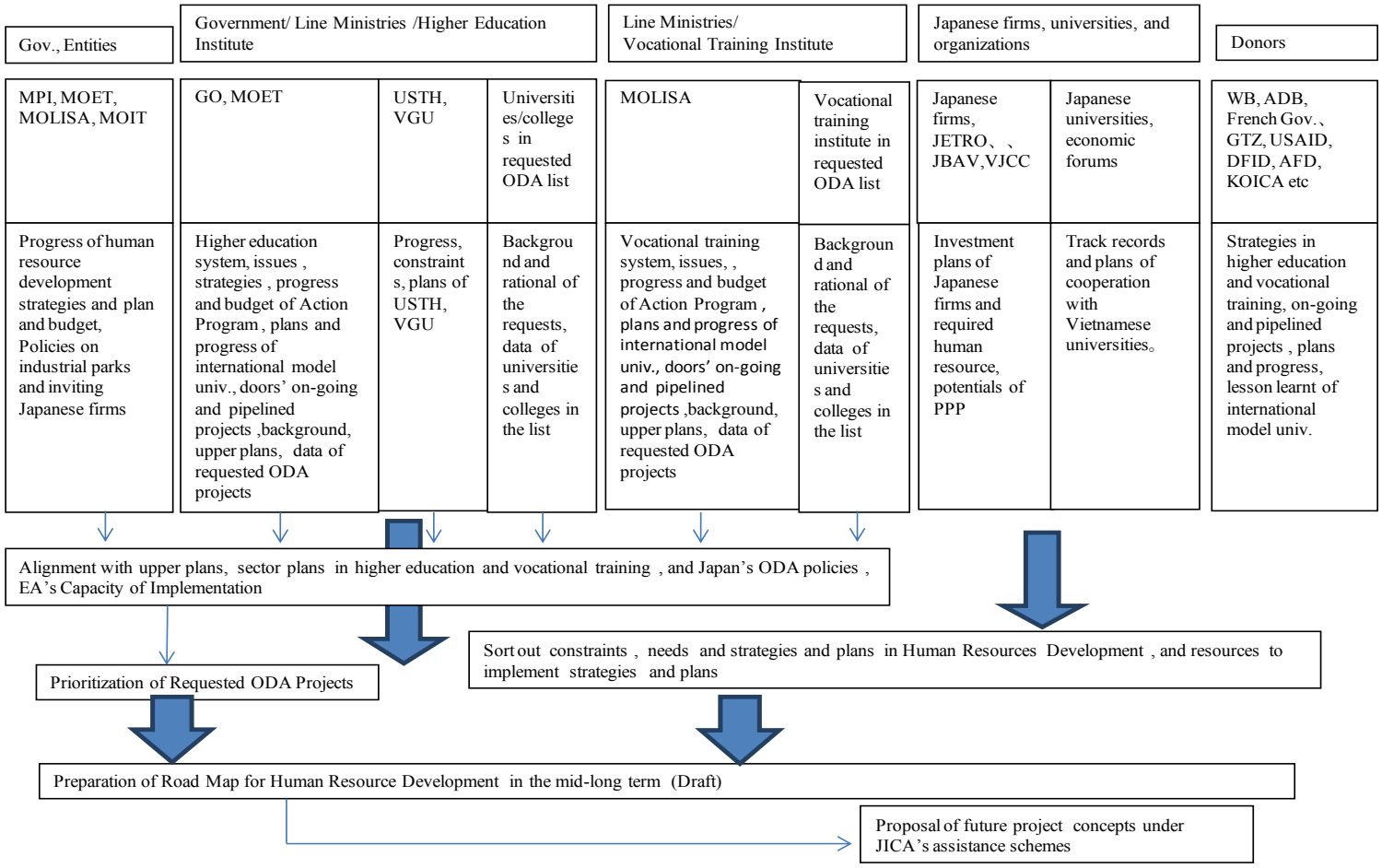


Figure 1-1 Study Flow

The Study was conducted by eight international consultants and four national staff and coordinators. Name and position title of the members are shown Table 1-2.

Table 1-2 Name and Position Title of Team Members

Name	Position Title
Mr. Hiroyuki Kanzaki	Team Leader/ HRD Policy
Ms. Hiromi Takagi	Higher Education 1
Ms. Masako Kishimoto	Higher Education 2
Ms. Midori Ozawa	Higher Education 3
Mr. Tatsuya Nagumo	Vocational Training
Mr. Yuji Ozaki	Industrial Human Needs Analysis
Mr. Chuji Akiyama	Academic-Industry Collaboration 1
Mr. Ryo Saito	Academic-Industry Collaboration 2
Ms. Hoang Thi Hoang Van	Secretary/Translator
Ms. Nguyen Thi Ngan Ha	Human Resources Policies
Dr. Nguyen Huu Chau	Higher Education Policies
Dr. Phan Chinh Thuc	Vocational Training Policies

1.3 Mid-term Consultation Meetings

The Mid-term Consultation Meetings for Higher Education and Vocational Training were held on June 14 and June 18 2012 at Daewoo Hotel, Hanoi. At the meetings, the JICA Study team presented a draft of the Roadmap and prioritization of the ODA requested projects. After the presentations, discussions were carried out.

At the meeting for higher education, all participants agreed and confirmed that three university projects: projects of Can Tho University, Danang University of Technology and National University in Hanoi should be prioritized. In addition, participants shared the following matters to be considered in the next steps.

- Japanese partner universities should be identified before/once project formulation starts.
- Target academic fields should be selected among the academic fields in the prioritized projects, actually confirming Japanese partner universities' interests, advantages and availabilities.
- Considering the universities are aiming to be international standard research universities, the projects should focus on enhancement of research capacity of universities, mainly on graduate level.
- Project components and cooperation schemes should be designed, considering advantages and disadvantage of each scheme.

Participants also shared the difficulties in implementing university projects which many universities are involved in during the course of introduction of JICA ODA projects in higher education and comments by a participant from the Ministry of Education, Culture, Sports, Science and Technology in Japan (MEXT). Appendix 1-1 shows the summary of discussions at the meeting along with the meeting program, presentations and list of participants.

At the meeting for vocational training, the Vietnamese and the Japanese sides clarified and agreed on the following subsequent actions.

- The JICA study team will revise the Roadmap on receiving additional information from MOLISA-GDVT.
- The JICA study team will clearly indicate reasons and rationale behind the proposed revisions of the requested ODA projects from the Government.

In response to the second comment, the JICA study team prepared the Appendix 7-2-1 which shows a comprehensive summary of each vocational training institution which was subject to review, including its basic information and training fields and detailed results of review. The summary of discussions at the meeting is given in Appendix 1-2 with the meetings program, presentations and list of participants.

1.4 Report Composition

After the introduction, the report deals with policy framework, strategy and goals to develop quality human resources needed for industrialization at national level along with Japan's ODA policies and support for Vietnamese industrialization. Then, with a brief glance at education and vocational training system in Viet Nam, the report progresses to HRD through higher education and vocational training, which are key domains for high quality HRD. Through both domains, government objectives and targets, solutions and actions are defined and various stakeholders' actions are illustrated. The report also deals with human resource needs of Japanese industries in Viet Nam through interview survey and desk reviews. Based on the information on supply and demand sides of human resource development, the Roadmap is prepared and illustrated, which shows directions, mid-term and long-term targets and possible solutions for challenges in HRD through higher education and vocational training. Finally, the report presents the results of review of the requested ODA projects, order of priority and cooperation through JICA development assistance schemes.

The report is composed of 7 chapters: i) introduction, ii) HRD policies and strategies in Viet Nam and Japan's ODA polices; iii) education and vocational training system in Viet Nam; iv) current situation and prospects of developing high quality human resources in Viet Nam; v) human resources needs in Japanese industry in Viet Nam; vi) draft of the Roadmap; and vii) prioritized requested ODA projects.

2. Government Policies and Strategies on HRD in Viet Nam and Japan's ODA Policies

2.1 Policy Framework for HRD

As shown in Figure 2-1, the policy framework for long-term HRD is defined and guided by the key Government strategies and plans, including the Socio-economic Development Strategy 2011-2020 (SEDS), Socio-economic Development Plan 2011-2015 (SEDP), Human Resources Development Strategy 2011-2020 (HRDS) and Human Resources Development Master Plan 2011-2020 (HRDMP).[1]

The SEDS sets national goals for Viet Nam to become an industrialized country by 2020 and points out a rapid development of high quality human resources as one of the key orientations to achieve the goals. Reflecting visions set in the SEDS, the SEDP describes some specific targets as well as directions for producing high quality human resource in more detail. In addition, the SEDP mentions that the HRDS and HRDMP should be efficiently implemented.

In line with these national socio-economic strategy and plan, the government established a strategy and a plan exclusively for HRD: HRDS and HRDMP. According to action programs or demand forecasts specified in the HRDS and the HRDMP, each ministry, province, and organization has just started developing long term development strategies and human resource development master plans under their own responsibilities. For instance, MOET and MOLISA just completed their own development strategies 2011-2020, reflecting national requirements of developing high quality human resources.

In the policy framework, the Ministry of Planning and Investment (MPI) plays a role of annually reviewing and evaluating the progress of action programs and targets of HRD.

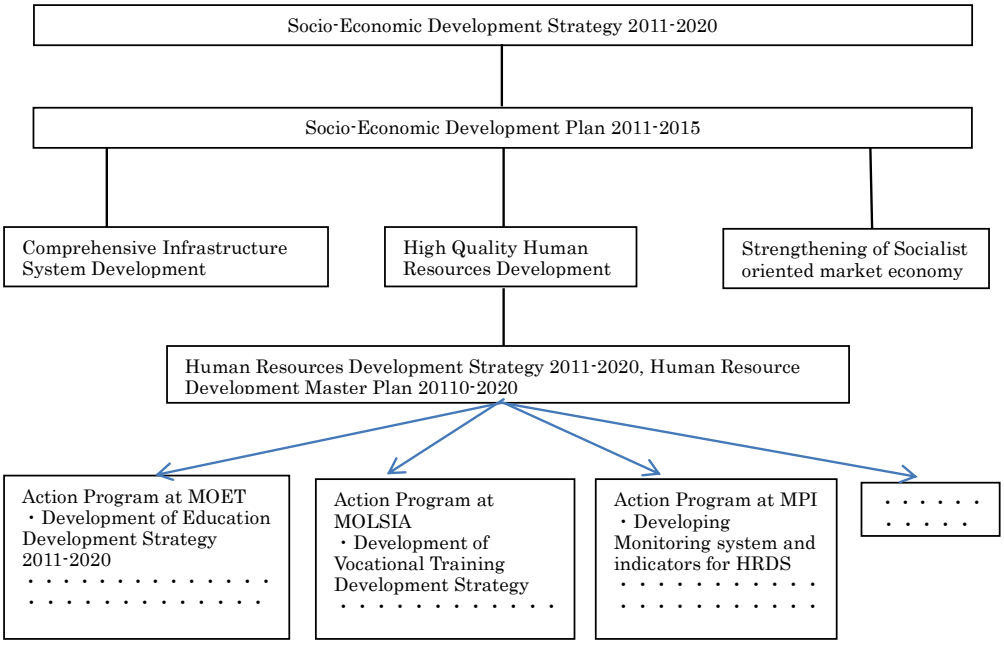


Figure 2-1 Policy Framework for HRD in Viet Nam

[1] The HRDS means the document approved by Prime Minister's Decision No.579/QD-TTg dated April 19, 2011 (Decision Approving the Strategy on Development of Vietnamese Human Resources During 2011-2020). The HRDMS means the document approved by Prime Minister's Decision No.1216/QD-TTg dated July 22, 2011 (Decision Approving the Master Plan on Development of Vietnam's Human Resources During 2011-2020).

The next section illustrates the summary and key features of the SEDS, SEDP, HRDS and HRDMP. Chapter 4 illustrates initiatives of HRD by MOET and MOLSIA in detail.

2.2 Government Strategy for HRD

(1) Socio-Economic Development Strategy 2011-2020

The Socio-Economic Development Strategy 2011-2020 (SEDS) approved by the Communist Party in January 2011, sets a vision (overall objectives) along with main objectives and orientations to achieve the vision. It acknowledges the need to move beyond the current economic model which is based on the low labor cost and intensive capital investment, and move towards higher efficiency, productivity, and competitiveness as the core of growth.

The SEDS envisions that the country will become a modern industrialized nation and sets "Education and training, and science and technology are to meet the requirements of the country's industrialization and modernization" as one of the main objectives. The SEDS also specifies economic and social development indicators to be achieved by 2020. With the economic performance indicators, such as an average annual Gross Domestic Product (GDP) growth, the percentage of trained workforce over total labor force aims to be increased to 55% as one of the indicators related to HRD. Table 2-1 shows numerical indications set in the SEDS.

Table 2-1 Numerical Indications Set in the Socio-Economic Development Strategy 2011-2020

Numerical Indicators	Targets by 2020
GDP share of industry and services (percentage)	85%
GDP share of high-tech products and products involving scientific and technological applications	45%
Average annual GDP growth (percentage)	7-8%
Per capita GDP (USD)	USD 3,000
Urbanization Rate (percentage)	More than 45%
Percentage of communes qualified to New Rural Program standard	50%
Annual population growth rate (percentage)	1.1%
Life expectancy (year old)	75 year old
Percentage of trained worker over total work force (percentage)	55%
Average annual reduction of poverty rate (percentage)	2%
Forest coverage (percentage)	45%
Access to safe water	Almost 100%
Percentage of newly established business entities which apply clean technologies or have anti-pollution and waste treatment equipment	100%
Percentage of existing business entities which meet environmental standards	80%

Source: Socio-Economic Development Strategy 2011-2020

To achieve the objectives, the SEDS provides orientations to promote development, renovation of growth model, and economic restructuring and selects three key directions for actions: (i) improvement of the socialist oriented market economy institution, (ii) a rapid development of high quality human resources, and (iii) development of a synchronous and modern infrastructure system. The detailed guidance is provided through the SEDP.

(2) Socio-Economic Development Plan 2011-2015

The Socio-Economic Development Plan 2011-2015 (SEDP) was approved by the Government in 2011. It sets key targets of socio-economic development and environment over the span of

five years up to 2015 and provides the detailed guidance to implement the three orientations which the SEDS provides.

Among the targets set in the SEDP, some of them are related to HRD as shown in Table 2-2.

Table 2-2 Indicators Related to HRD in the Socio-Economic Development Plan 2011-2015

Numerical Indicators	Targets by 2015
Percentage of trained workers over total work force	55%
Average rate of annual increase in new enrolment in university and college	7%
Average rate of annual increase in new enrolment in vocational colleges/vocational secondary schools	8%
Number of college/University students over 10,000 of people	300

Source: Socio-Economic Development Plan 2011-2015

To achieve targets and to implement SEDS's three orientations, the SEDP specifies several tasks and directions. For a rapid development of high quality human resources, the SEDP emphasizes to enhance the quality of education and training and the development of scientific, technological and intellectual economy. Regarding education and training, it focuses on the needs of restructuring and reforming the education and training system while addressing the following challenges.

- The national education management needs to be improved by decentralizing the system, strengthening cooperation between line ministries, sections and provinces, and strengthening management capacity;
- Improve teaching methods and assessments for teachers; revising curriculum, textbooks and educational activities to make it more practical and less theoretical in order to enhance the creativity of students;
- Train teachers with a sustainable basic scientific knowledge as well as teaching skills;
- Develop the capacity of students concerning updated knowledge, foreign language and information communication technology skills to be competitive in a global environment;
- Diversify vocational training methods to be coherent and to meet the demands of the local labor market; and
- Renovate the poor physical condition of school infrastructure to meet the national standards and equip basic materials for improving teaching and learning processes.

Regarding the development of scientific, technological and intellectual economy, it points out the following challenges.

- To enhance investment in science-technology to raise labor productivities
- To continue to invest in basic research in natural science and practical research
- To increase scientific level and position of Viet Nam in sectors the country is strong in
- To enhance research capacity
- To strengthen technology application and renovation in industry
- To develop in choosing industrial and service sector with high technology level.

The SEDP also mentions that the HRDS and HRDMP should be efficiently implemented to rapidly produce high quality human resources.

(3) Human Resources Development Strategy 2011-2020

The Human Resources Development Strategy 2011-2020 (HRDS) was approved in April 2011 by the Prime Minister. It is to make Vietnamese human resources a foundation and the most advantageous factor for the country's sustainable development, international integration and social stability and to raise the competitiveness of Vietnamese human resources to the level similar to that in advanced countries. In this context, the HRDS identifies the challenges and bottlenecks in HRD, and proposes remedial actions to tackle these constraints along with more detailed qualitative and quantitative targets for HRD to be achieved.

The HRDS sets nine time-bound targets up to 2015 and 2020: six targets under "Raising of intellectual power and working skills" and three targets under "Raising of physical strength of human resources" as shown in Table 2-3.

Table 2-3 Specific Targets in the Human Resources Development Strategy 2011-2020

Targets	2010	2015	2020
I. Raising of intellectual power and working skills			
1. Rate of trained laborers (%)	40.0	55.0	70.0
2. Rate of vocationally trained laborers (%)	25.0	40.0	55.0
3. Number of university and college students per 10,000 people (number of students)	200	300	400
4. Number of international-standard vocational schools (number of schools)	-	5	More than 10
5. Number of international-standard excellent universities (number of universities)	-	-	More than 4
6. Highly qualified human resources in breakthrough fields (number of persons)			
- State management, policy making and international law	15,000	18,000	20,000
- University and college lecturers	77,500	100,000	160,000
- Science-technology	40,000	60,000	100,000
- Medicine, health care	60,000	70,000	80,000
- Finance-banking	70,000	100,000	120,000
- Information technology	180,000	350,000	550,000
II. Raising of physical strength of human resources			
1. Average life expectancy (years)	73	74	75
2. Young people's average height (m)	More than 1.61	More than 1.63	More than 1.65
3. Malnutrition rate among under 5 children (%)	17.5	Less than 10.0	Less than 5.0

Source: the Human Resources Development Strategy 2011-2020

With supplementary explanations for each challenge, the HRDS also identifies nine challenges: three challenges under "Breakthrough solutions", and six challenges under "Other solutions". Under "Breakthrough solutions", the challenges include: i) changing awareness regarding HRD and utilization; ii) fundamentally renovating the State administration of human resource development and utilization; and iii) focusing on the formulation and implementation of key programs and projects.

Under "Other solutions", the challenges include: i) formulating and deploying the education development strategy and the vocational training development strategy during 2011-2020; ii)

training human resources for disadvantageous regions, areas and specific groups; iii) developing and promoting the national cultural values of Vietnamese people; iv) renewing human resources utilization policies; v) mobilizing resources for investment in HRD through 2020; and vi) promoting and expanding international cooperation.

In addition to setting specific targets and identifying challenges, the HRDS has features to promote the implementation of visions and orientations set in the SEDS and SEDP. First, it creates a time-bound action program with responsible agencies. Second, it nominates MPI to periodically evaluate and annually review the HRDS. The results will be reported to the Prime Minister. As a result, the achievement of the HRDS will be enhanced.

The HRDS specifies 30 action programs (16 actions under "Building, Supplementing and Developing the General Legal Framework and Policies on HRD" and 14 actions under "Human Resource Forecast, Formulation and Implementation of Human Resource Master Plans, Programs and Projects "), which help achieve the goals and targets set out in the HRDS.

The progress of the action programs varies. For instance, MPI completed the HRDMP in July 2011 and MOET and MOLISA completed their own long term strategies in March 2012 by reflecting national requirements for rapid development of high quality human resources: Education Strategic Development Plan 2011-2020 (ESDP) in MOET and Vocational Training Development Strategies 2011-2020 (VTDS) in MOLISA. Establishing the HRD master plans of each ministry, province and organization is expected to progress because these entities prepare their master plans based on the SEDS, their own long term development strategies, the HRDS and HRDMP, supported by MOET and/or MOLISA. Appendix 2-1 shows the status of action programs set in the HRDS the JICA study team could recognize.

(4) Human Resources Development Master Plan 2011-2020

Developing the Human Resources Development Master Plan 2011-2020 (HRDMP) is one of the actions which MPI is responsible for under the HRDS. The HRDMP was approved in July 2011 by the Prime Minister. Under the overall objectives, it presents an overall outline of human resource needs and training requirements to promote a significant increase in the number of workers and the percentage of those workers who are trained in their field for a range of key sectors of the economy. It includes (i) statistics on the 2011 complement in each sector and the percentage of those trained in their respective field, (ii) estimated requirements of labors in each sector by 2015 and 2020, (iii) percentage targets of individuals to be trained for each sector by 2015 and 2020, and (iv) estimated investment in human resource development by 2015 and 2020.

It sets three specific objectives: i) a rapid increase in the rate of trained human resources in the economy; ii) comprehensive development of human resources with increasing quality and strength in all sectors; and iii) development of a contingent of quality teachers. For the increase in rate of trained human resources, it specifies numerical targets in the economic sectors, having targets in whole economy set in the HRDS as shown in Table 2-4.

Table 2-4 Shares of Trained Labor Force over Total Labor Force by Economic Sector in 2010, 2015 and 2020

Economic Sector	2010	2015	2020
Whole Economic Sector	40%	55%	70%
Agriculture, Forestry and Fishery Sector	15.5%	28%	50%
Industry Sector	78%	82%	92%
Construction Sector	41%	60%	65%
Service Sector	67%	80%	88%

Source: Human Resources Development Master Plan 2011-2020 except for shares of whole economic sector which comes from Human Resources Development Strategy 2011-2020
Note: Figures in 2015 and 2020 are estimates in the HRDMP

For comprehensive development of human resources, it presents estimated number of laborers and trained laborers in economic sectors, public employment and socio-economic regions by 2015 and 2020. However, no priority sectors are designated, even though it says "giving priority to sectors in which Viet Nam has the competitive edge".

Table 2-5 shows the need of human resources in socio-economic regions by economic sectors in 2015 and 2020.

Table 2-5 Needs of Estimated Trained Laborers in Socio-Economic Regions by Economic Sectors in 2015 and 2020

Socio-Economic Regions	Agriculture, forestry and Fishery Sector		Industrial and Construction Sector		Service Sector	
	2015	2020	2015	2020	2015	2020
Northern midland and mountainous	1,200,000	1,900,000	850,00	1,400,000	1,100,000	1,200,000
Red river delta r	2,000,000	3,800,000	3,600,000	4,700,000	3,700,000	4,500,000
Northern and coastal central	2,000,000	3,000,000	2,000,000	3,000,000	2,000,000	2,500,000
Central highlands	580,000	780,000	340,000	520,000	390,000	452,000
Eastern South Viet Nam	500,000	1,000,000	3,200,000	4,500,000	3,100,000	4,300,000
Mekong river delta	1,000,000	2,500,000	1,000,000	2,000,000	2,000,000	2,000,000
Total	7,280,000	12,980,000	10,990,000	16,120,000	12,290,000	14,952,000

Source: Human Resources Development Master Plan 2011-2020

For development of a contingent of quality teachers, the HRDMP estimates the necessary number of teachers, lecturers and job teachers and trainers as shown in Table 2-6 and Table 2-7.

Table 2-6 Number of Teachers and Lecturers and Percentage of Holding Higher Degree by Education Level in 2015 and 2020

Education Level	2015		2020	
	Number of teachers (person)	Percentage of holding higher degrees (%)	Number of teachers (person)	Percentage of holding higher degrees (%)
Professional Secondary Schools	38,000	30	48,000	38.5
Colleges	33,500	6	44,200	8.0
Universities	62,100	23	75,800	30.0

Source: Human Resources Development Master Plan 2011-2020
Note: Figures in 2015 and 2020 are estimates in the HRDMP.
Note: "Higher Degree" means master's degree and higher degrees in teachers at professional secondary schools and doctoral degree in teachers at colleges and universities.

Table 2-7 Number of Job Teachers and Trainers in 2015 and 2020

Training Level	2015	2020
College level (person)	13,000	28,000
Intermediate level (person)	24,000	31,000
Elementary level (person)	14,000	28,000

Source: Human Resources Development Master Plan 2011-2020
Note: Figures in 2015 and 2020 are estimates in the HRDMP.

Other features of the HRDMP are to propose developing human resources based on training grades. For instance, the number of laborers is estimated by training providers and level of training received as shown in Table 2-8 and Table 2-9.

Table 2-8 Needs of Laborers by Training Providers in 2015 and 2020

Laborers by a Kind of Training		2015	2020
Number of laborers	(million people)	55	63
Trained laborers	Number (million people)	30.5	44
	Percentage over total laborers (%)	55	70
Laborers receiving vocational training	Number (million people)	23.5	34.4
	Percentage over total trained laborers (%)	77	78.5
Laborers receiving training through education and training system	Number (million people)	7	9.4
Laborers receiving vocation	Percentage over total trained laborers (%)	23	21.5

Source: Human Resources Development Master Plan 2011-2020
Note: Figures in 2015 and 2020 are estimates in the HRDMP.

Table 2-9 Needs of Trained Laborers by Training Level in 2015 and 2020

Training Level	2015		2020	
	Number of Laborers (million person)	Percentage over trained laborers (%)	Number of Laborers (million person)	Percentage over trained laborers (%)
Elementary Vocational training	18	59	24	54
Intermediate Vocational training	7	23	12	27
Collegial Vocational Training	2	6	3	7
Tertiary Vocational Training	3.3	11.0	5	11
Postgraduate Vocational Training	0.2	0.7	0.3	0.7

Source: Human Resources Development Master Plan 2011-2020

The HRDMP estimates total investments in HRD during 2011-2020 to be VND 2,135 trillion, including VND 800 trillion during 2011-2015 and VND 1,355 trillion during 2016 and 2020. Table 2-10 shows breakdown of the total estimates by financial sources.

Table 2-10 Investment Needs for HRD during 2011-2020

Financial Sources	2011-2015	2016-2020	Total
Total amount of investment (1,000 billion VND)	800	1,335	2,135
From State Budget (1,000 billion VND)	600	935	1535
Percentage over total investment need (%)	75	70	72
From Society (People) (1,000 billion VND)	88	180	268
Percentage over total investment need (%)	11.0	13.5	12.6
From enterprises (Enterprises participating in training) (1,000 billion VND)	112	220	332
Percentage over total investment need (%)	14.0	15.5	15.4

Source: MPI

Within a total of VND 2,135 trillion, 1,225-1300 trillion VND are estimated to be used for education and vocational training as shown in Table 2-11.

Table 2-11 Investment Need for HRD by Sector

Sectors	2011-2015	2016-2020	Total
Education and Training (VND 1,000 billion)	475-500	750-800	1,225-1,300
Other areas (VND 1,000 billion)	300-325	535-585	835-910

Source: MPI
Note: Other areas include health, health case, sports and so on.

2.3 Japan's ODA Policy for Viet Nam and Support for HRD

2.3.1 Country Assistance Program for Viet Nam

Japan has contributed to the development of Viet Nam. Japan has operated its ODA in Viet Nam based on the current version of the Country Assistance Program for Viet Nam since July 2009. According to recommendations by the final review result on Japan's ODA reform published in June 2010, the Government of Japan has decided to reform the Country Assistance Program to the Country Assistance Policy which is simpler, but shows policies in a more strategic way. With the recommendations, the Government of Japan has been preparing the Country Assistance Policy for Viet Nam in line with the newly issued Five-Year Socio-Economic Development Plan 2011-2015 (SEDP) in Viet Nam in 2011. Prior to developing the Country Assistance Policy for Viet Nam, the Government of Japan issued the Rolling Plan of Japan's ODA for Viet Nam in November 30, 2011.[2]

The Country Assistance Program aims to support Viet Nam's goal (i) to emerge from the status of low-income country and become an industrialized nation by 2020, (ii) to improve the living conditions of the Vietnamese people and realize a fair and just society, and (iii) to promote sustainable development. To achieve these objectives, the Country Assistance Program specifies four priority areas for Japan's ODA support: (i) promotion of economic growth and strengthening of international competitiveness; (ii) improvement in the living and social conditions of the people of Viet Nam along with correction of disparities; (iii) environmental conservation; and (iv) strengthening of governance. The forth area will form the foundation of the other three areas.

Moreover, the Country Assistance Program pays attention to six points to be considered: (i) promotion of development strategy sharing and policy dialogue with the Vietnamese

[2] The Country Assistance Program dated July 2009 and the Rolling Plan of Japan's ODA for Viet Nam dated November 30, 2011are the subjects for this study when the JICA study team reviews Japan's ODA policy.

Government; (ii) greater efficiency and improvements in Japan's assistance methods; (iii) promotion of development partners, (iv) coordination with the Viet Nam-Japan Economic Partnership Agreement (EPA); (v) climate change countermeasures; and (vi) improved quality/safety control capacity.

Under the four priority areas, a total of eight development issues with specific directions for support are set in the Country Assistance Program. According to the Rolling Plan of Japan's ODA for Viet Nam, a total of 21 cooperation programs under the development issues are designed. Each project has been categorized into programs and has been implemented. Table 2-12 shows relationships between priority areas, development issues and programs in the Japan's ODA policies.

Table 2-12 Priority Areas, Development Issues and Cooperation Programs for Japan's ODA Support for Viet Nam

Priority Areas for Support	Development Issues	Cooperation Programs
Promotion of Economic Growth and Strengthening of International Competitiveness	Business Environment Improvement and Private Sector Development	Establishing and Operating Economic Systems
		Financial Sector Reform
		Small and Medium Enterprise Development
		Human Resource Development for Industries
	Stable Supplies for Resources and Energy	Sustainable Energy Supply
	Urban Development, Network Development for Transportation and Communications	Urban Planning
		Strengthening Urban Transportation
		Traffic Safety
Improvements in Living and Social Conditions and Corrections of Disparities	Improving Basic Social Services	Functional Enhancement of Healthcare Institution
		Infectious Diseases and others
		Education/Assistance for Socially Vulnerable
	Rural Development and Improvements in Livelihood	Development of the Northwest Mountainous Region
		Development of the Mekong Delta Region
		Disaster-resilient Regional Development in Central Viet Nam
		Agriculture, Rural Infrastructure, etc.
Environmental Conservation	Urban Environmental Management	Urban Water Environment Management
		Water supply Solid waste management and Others
	Natural Environment Conservation	Sustainable Forest Management and nature conservation cooperation program
Strengthening of Governance	Administrative and Public Financial Reforms, Development of Legal Systems and Judicial Reforms	Improvement of Administrative Capacities

Source: The JICA study team prepared it based on the Rolling Plan of Japan's ODA for Viet Nam

In the Rolling Plan of Japan's ODA for Viet Nam, the situation and issues, and actions to be taken are illustrated for each development issue.

Developing high quality human resources is a critical issue for Viet Nam to become an industrialized nation by 2020. To tackle the issues, the Government has requested Japan for its continued support in the field of HRD. In particular, the Government submitted the list of requested ODA projects, including 10 projects in higher education and 5 projects in vocational training. Through projects in higher education and vocational training, the Government aims to upgrade existing education and vocational institutes to the international level. Eventually, such education and vocational institutes are expected to contribute in producing skilled workers, engineers, management, researchers to support Viet Nam's industrialization as a result of Japan's ODA support.

Considering the background issues and orientations of the request, the requested ODA projects have alignments with Japan's ODA policies and are closely linked with "Development of Small and Medium Enterprises" (Program) and "Development Industrial Human Resources" (Program) of "Business Environment Improvement and Private Sector Development" (Development Issue) in "Promotion of Economic Growth and Strengthening of International Competitiveness" (Priority Area) . "Development of Small and Medium Enterprises" Program aims to support promotion of small and medium enterprises (SME) and private sector development for the strong and sustainable economic growth of Viet Nam, including support for developing HRD, such as engineers, technicians and managers. "Development Industrial Human Resources" Program aims to support the development of core human resources, such as at higher education level, contributing to economic growth.

When the requested ODA projects in higher education sector target academic fields related to climate change, security of food products and farm and marine products, the requested ODA are said to be indirectly linked with Natural Environment Conservation (Development Issues) in Environmental Conservation (Priority Areas), Urban Environmental Management (Development Issues) in Improvements in Living and Social Conditions and Corrections of Disparities (Priority Areas). Furthermore considering impacts of the projects, some of the requested ODA projects are said to be linked with Rural Development and Improvements in Livelihood (Development Issues) in Improvements in Living and Social Conditions and Corrections of Disparities (Priority Areas), such as a requested ODA project at Can Tho University.

2.3.2 Japan's Support for Vietnamese industrialization

It is difficult to identify and count all the ODA projects of Japan which are related to HRD in Viet Nam, which would eventually contribute to Viet Nam's goals of becoming an industrialized country because HRD is a cross cutting issue. For instance, Japan supported small and medium enterprise development through 10 projects and supported HRD of industries through 6 projects since JFY 2010 according to the Rolling Plan of Japan's ODA for Viet Nam.

Besides supporting Viet Nam's HRD for the industrialization through individual projects, Japan has directly supported Vietnamese industrialization policies. On October 31, 2011, a top-level meeting between both governments was held and a joint announcement stated that "the Vietnamese side highly appreciated Japan's cooperation and assistance in the formulation and implementation of Viet Nam's industrialization strategy and its action towards 2020" and affirmed that it would "establish the high level committee for that cooperation chaired by a Deputy Prime Minister of Viet Nam" At the same time the Vietnamese side expressed their expectations that industrial parks would be developed in Hai Phong and Ba Ria Vung Tau with

Japan's support in order to promote Japanese investments and develop Vietnamese supporting industries.

Japan has been supporting the development of strategies for Vietnamese industrialization, aiming to draw up concrete plans, extending existing bilateral industrial cooperation. More specifically, Japan's support aims to i) prepare a plan of strategically developing industries towards industrialization by 2020, ii) prepare an action plan to implement the plan, and iii) implement the plan after receiving approval from the government and Prime Minister.

The support is implemented through an industrialization strategy committee and an industrialization strategy taskforce. The industrialization strategy committee consists of Prime Minister and Deputy Prime Minister as chairperson, and MPI, Minister of Industry and Trade, Minister of Finance, Chief of Office of Government, officers from Embassy of Japan in Viet Nam, and so on. The industrialization strategy committee will approve proposals and plans which are prepared by the industrialization strategy taskforce and it will instruct related ministries to implement them. The industrialization strategy taskforce is in charge of selecting prioritized industries and implementing action plans. The taskforce is co-chaired by Mr. Ba at Central Institute of Economic Management (CIEM) from the Vietnamese side and Dr. Professor Kenichi Ohno at the National Graduate Institute for Policy Studies from the Japanese side. Members are MPI, Ministry of Industry and Trade, Ministry of Finance, representatives of Office of Government, Embassy of Japan, Japan External Trade Organization (JETRO), and JICA.

After holding six meetings, the taskforce agreed to make i) electric / electronics, ii) food processing, iii) environment / energy saving iv) shipbuilding, and v) agricultural machinery, the five most promising sectors of the country, and i) textile, ii) steel, iii) motor cycle and iv) automobile, the 4 potential sectors with specific conditions. Table 2-13 shows most promising sectors and prospects.

Table 2-13 Most Promising Sectors and their Prospects for Industrialization by 2020

Sectors	Development Prospects
Electric/Electronics	- Many of the firms with final assembly line have been in operations in Viet Nam. In 2011, mobile phones are top 3 for the exports in price base.
Food Processing	- One of the top shares of industrial products is foods and drinks. Main export products are fishery products and rice. - Taking particular note of affluent agricultural and fishery products, food processing, and exporting have increased. It is also expected that there will be increased value added products for domestic market.
Environment / Energy Saving	- One of the potential damage that Viet Nam will face is that surface elevation and interest in introducing environmental technology is high. Japanese environmental technology, such as water processing and energy generator, is highly evaluated but the cost is also high. If policy support is provided appropriately, more business expansion will be expected.
Shipbuilding	- With long coastal lines, Viet Nam ranked 5th in terms of receiving ship buildings orders over the world. - If the issue of non-performing loan of VINASHIN is solved, there is high potential in contributing to domestic production which resultantly has strong impact on the steel industry

Sectors	Development Prospects
Agricultural Machinery	- Agricultural machinery as industry does not impact much quantitatively; however, if agricultural machineries are widely diffused to the famers, who are 70 % of total population, it will greatly contribute to the improvement of agricultural productivity. - If agricultural productivity is increased, more workers are expected to shift from agriculture to industrial areas.

Source: Materials provided by JICA Viet Nam Office

Many of the most promising sectors rely on parts which are composed of metals, plastics, and rubbers and the quality of final products are highly dependent on the quality of those parts. To support the development of these promising sectors, the development of supporting industries which supply molds, heavy plates, malleable cast irons, printed boards, plastic casts, and so on, are essential through high quality human resources.

MPI plans to report these 5 promising and 4 potential sectors to the Prime Minister and get Prime Minister's approval within 2012. Upon the approval, action plans for the 5 promising sectors will be initially prepared.

3. Education and Vocational Training System in Viet Nam

3.1 Education System in Viet Nam

Two ministries play a major role in providing and overseeing education nationally in Viet Nam. The first is MOET, which is responsible for pre-school, primary, secondary and higher education. The second is MOLISA which focuses on training students to enter the workforce. Figure 3-1 shows the structure of the education system in Viet Nam.

MOET is responsible for (i) pre-primary programs catering to students from age 3 to 5 years, (ii) primary education which provides for students of age 6 and those who undertaken a five year primary program, and lastly, (iii) secondary education. Secondary education is provided at three levels. The first is the lower secondary level covering grades 6 to 9 and catering to students in the 12 to 15 age group. The second level is upper secondary for grades 10 to 12 which focuses on higher education and the third level is professional secondary for grades 10 to 12 or 13 which focuses on Technical and Vocational Education and Training (TVET). Higher education consists of colleges providing three to three-and-a-half year programs, and universities that offer undergraduate and post-undergraduate degrees[3].

The second major provider of education is MOLISA whose mandate includes elementary vocational training, intermediate vocational training, and higher (collegial) vocational training. Appendix 3-1 shows definitions of these three levels of the vocational training. In principal, Vocational Colleges (VCs), Vocational Secondary Schools (VSSs) and Vocational Training Centers (VTCs) are responsible for providing higher vocational training, intermediate vocational training, and elementary training, respectively. Vocational training institutions are able to provide not only their specific levels of the training, but also any courses below the levels of their responsibilities if registered in advance. For example, VCs are able to provide intermediate and elementary vocational training in addition to higher (collegial) vocational training. Other than those schools dedicated to vocational training, universities, professional colleges, professional secondary schools, and enterprises are also able to provide vocational training courses. Table 3-1 shows the levels of training that each institution can offer.

TVET is administered principally by MOLISA, but other line ministries, state owned enterprises and provincial, city and district governments also manage vocational training institutions (VCs, VSSs and VTCs) as shown in Figure 3-2.

[3] The Vietnamese universities are categorized into 8 types as follows: i) National Universities ii) Regional Universities, iii) Military Universities iv) Policy Universities, v) Civil Universities vi) Institutes, vii) Local Universities, and viii) Private Universities.

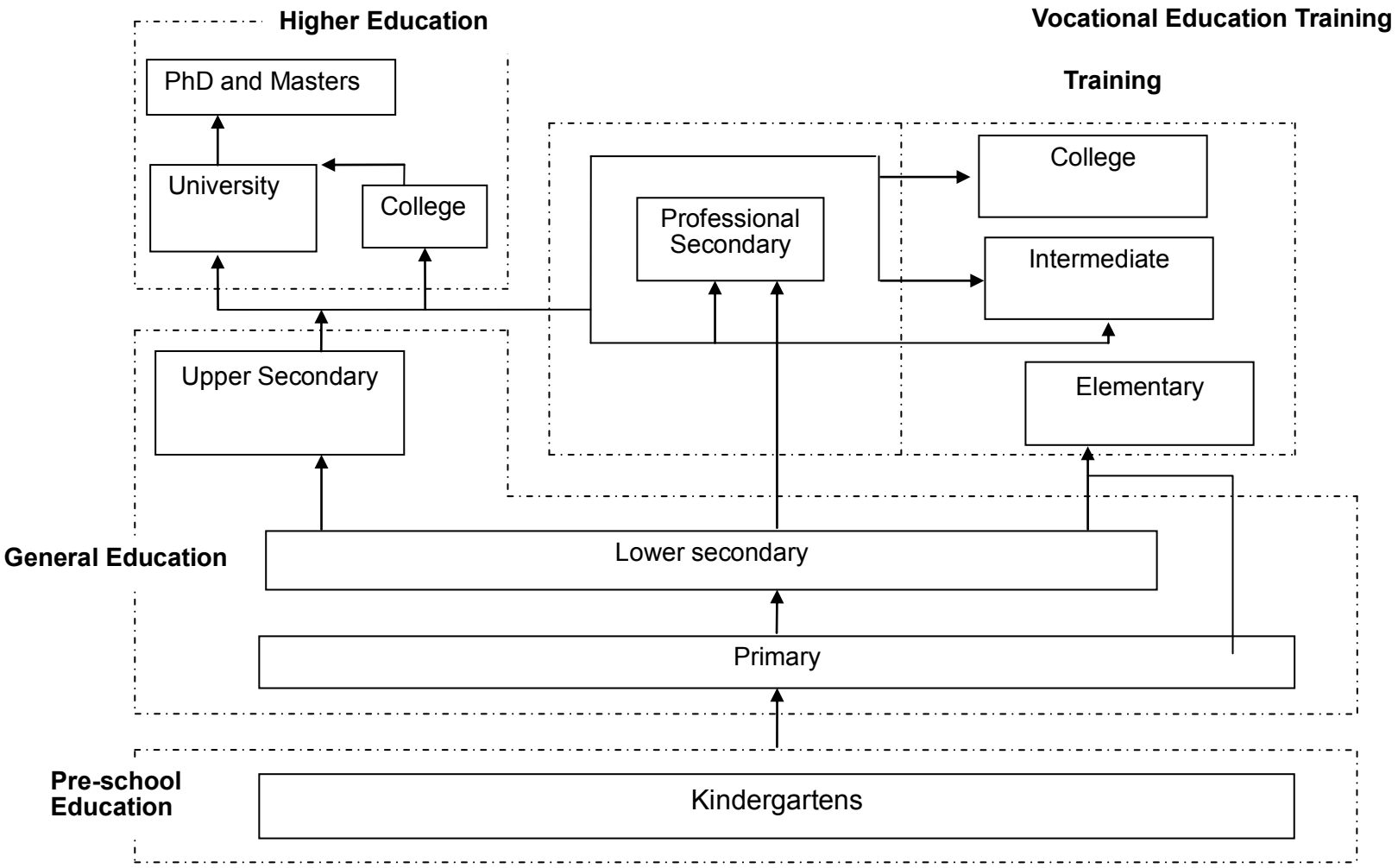


Figure 3-1 Structure of Education System in Viet Nam

Table 3-1 Levels of Vocational Training Offered by Education and Training Institutions and Enterprises

Institution	Elementary Vocational Training	Intermediate Vocational Training	Higher Vocational Training
University	x	x	X
Professional College	x	x	X
Professional Secondary Schools	x	x	
Vocational College	x	x	Xx
Vocational Secondary School	x	xx	
Vocational Training Center	xx		
Enterprise	x		

Source: Law on Vocational Training in Viet Nam (Law No.76 /2006/QH11)
Note: "xx" shows mandatory level of vocational training offered by institutions and "x" shows the level of training education and training institutes and enterprises can offer.

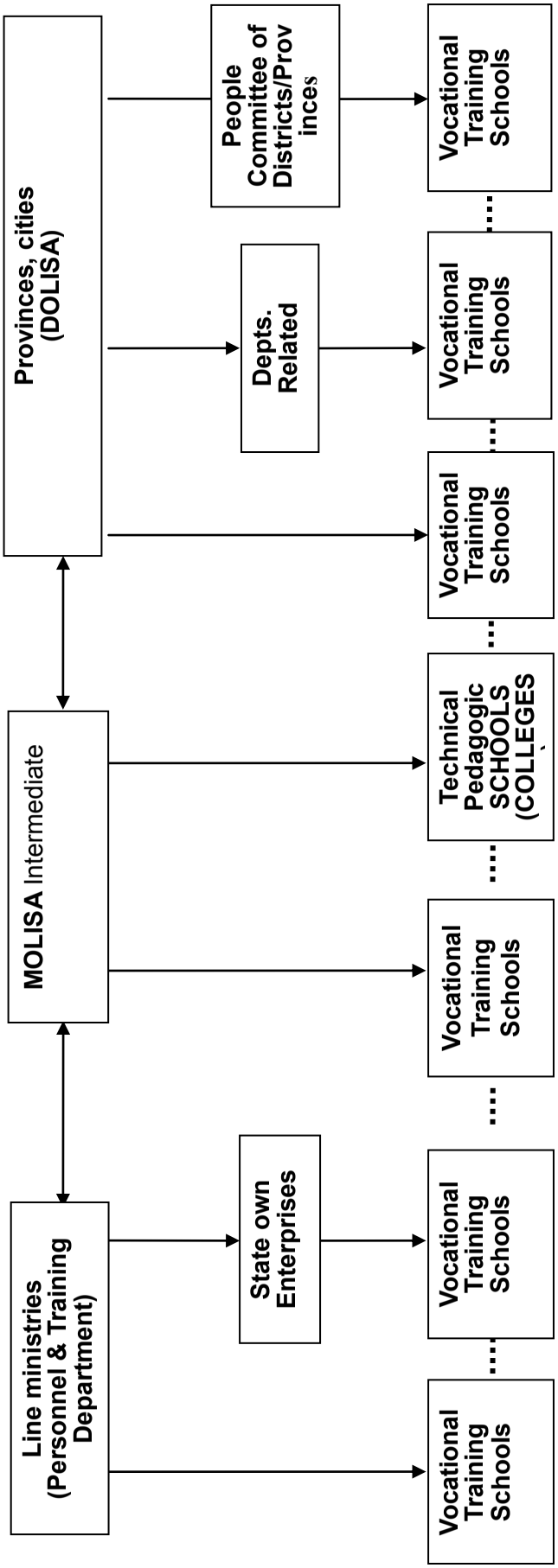


Figure 3-2 Management Structure of Vocational Training Institutions

3.2 Primary and Secondary Education

Many studies have proven that literacy and basic education are foundations of human resource development (HRD) in many counties. In Viet Nam, even before the transition from the planned economy to the market economy, the Government had allocated a high proportion of the state budget to basic education/literacy. This was also partly because Viet Nam is a socialist state and equitable delivery of basic social services is one of the Government's key priorities. As a result, considerable progress has been made over the past decade in increasing access to education as shown in Table 3-2. At present, high literacy rate and enrolment rate of basic education form the basis of a competitive labour force in Viet Nam, enabling the country to sustain high economic growth.

Table 3-2 Enrolments by Education Level

Level of Education	2000	2005	2010
Kindergarten children	588,678	662,311	761,132
Pre-school children	2,338,017	2,738,882	3,086,972
Primary students	9,750,881	8,845,828	8,353,700
Lower secondary students	5,966,660	6,524,365	6,534,205
Upper secondary students	2,197,034	2,956,322	3,204,452

Source: MOET/ADB

As mentioned above, basic education reached to a near-universal level in mid-2000. The Government set the Vietnamese Development Goals (VDGs) instead of the Millennium Development Goals (MDGs) because the Government considered that Viet Nam would be able to over-achieve many of the goals set out in the MDGs. As for the goals for education, VDGs targeted universalization of lower secondary education in addition to universalization of primary education as primary education was already close to universal level with focused and intensive investment from the central government, local government and development partners.

According to the Secondary Education Sector Master Plan (SESMP) 2006-2010 which was jointly developed by MOET, ADB, JICA, UNICEF, and UNESCO, universal lower secondary education would be progressed in phases with urban areas first and then rural areas. Gross enrolment rate in lower secondary education reached about 97% in the School Year 2010/2011. Most children who are unable to enter lower secondary education have been ethnic minorities (especially females), the urban poor who are mostly domestic migrants from rural/mountainous areas to urban areas, and disabled children with special needs. Given the situation, the Government has considered that universal lower secondary education is almost achieved except for the disadvantaged groups who need targeted support and has gradually shifted the priority from the expansion of access to schooling to improvement of the quality of learning and teaching.

In comparison to primary and lower secondary education, upper secondary education plays an even more important role both in terms of quality of labour force and supply of human resources to the labour market. In Viet Nam, gross enrolment rate in upper secondary education is about 57% and net enrolment rate is about 50%. The enrolment rate in upper secondary education varies according to average incomes by households, regions and ethnicities. In urban areas, some cities have almost achieved universal upper secondary education, but in rural areas, especially ethnic minority regions, the enrollment rate is very low at less than 20% of the concerned age group.

Upper secondary education is important especially from the viewpoints of HRD. Whether universities and vocational training institutions can produce high quality human resources partly depends on the quality and performance of the upper secondary school (USS) graduates. Average enrollment rate of tertiary education was about 16% in SY 2010. This means that the majority of the young labour force in Viet Nam is a USS graduate and their average qualification is upper secondary education and/or that of vocational training institutions after USS graduation.

In Viet Nam, parents are eager to make their children enter universities because academic backgrounds are emphasized so much by the Vietnamese society. In response to parents' eagerness, private universities have had a rapid growth, but there is concern about the poor quality of such universities. The Government is aiming to improve the quality of higher education institutions and to induce the society to increase the rate of students attending universities.

The Government has made various efforts to upgrade skills of graduates from upper secondary education and those who advance to vocational training institutions. For instance, the Government has promoted each school to organize vocational orientations for students to acquire high professional awareness and basic professional skills. The Government also drew up policies so that students at vocational training colleges can easily transfer to universities.

ADB is a major donor in upper secondary education. Receiving the request from MOET, ADB will start the Second Upper Secondary Education Development Project. The project aims to strengthen competitiveness of graduates from upper secondary education and students who enter universities. The project will support the Government policy that upper secondary education should be drastically reformed so that it will become the foundation of HRD.

3.3 Higher Education

As shown in Table 3-3, Vietnamese higher education has developed rapidly. The number of colleges, universities, and institutes in higher education has increased since 1987. The speed of the growth decreased after 2009, however, the number is still increasing up to around 400 higher education institutions, which is around 4 times more than that in 1987. According to MOET, 414 higher education institutions (college, university and institutes) existed in Viet Nam in 2010, consisting of 334 public and 80 private colleges and universities.[4]

[4] MOET, Power Point Presentation "Higher Education in Vietnam" on June 14, 2012 at the Mid-term Consultation Meeting in Hanoi, Vietnam

Table 3-3 Vietnamese Higher Education Development (1987-2010)

	1987	1997	2000	2005	2009	2010
1. No. of university and colleges[5]	101	110	178	277	403	414
2. No. of university/ college students	133,136	662,800	918,228	1,319,754	1,935,739	2,162,106
2-1 Including no. of postgraduate students	n/a	n/a	15,234	39,060	58,375	67,388
2-2 Including no. of private students	n/a	n/a	104,265	137,760	178,080	193,400
3. No. of academic staff	20,172	20,112	30,309	47,646	70,5580	74,573
4. No. of graduated students	133,136	715,231	163,110	195,633	257,476	318,345

Source: JICA study team: referring to the Statistical yearbook 1997, 2000, 2005, 2009, 2010-General Statistics Office (GSO)-MPI, The statistics data from Education training Statistical yearbook 2000-2001; 2005-2006; 2009-2010; 2010-2011, MOET, The statistics data of 1987 from Education training Statistical yearbook 1945-1995; MOET, and ADB, "Technical Assistance Consultant's Report for Viet Nam: Preparing the Higher Education Sector Development Project (HESDP)", SMEC International Pty.

The total number of students in 2010 was 2,162,106 including 333,921 students in private schools, which accounted for 15.44% of the total students. The number is around 16 times more than that in 1987. The number of postgraduate students increased to 67,388 in 2010, which is around 4 times more than that in 2000.

As for academic staff, the number of teaching staff in 2010 was 74,573. Among them, the number of Ph.D. holders was 7,924, which accounted for 10.62% of teaching staff. The number of Master's Degree holders was 30,374, which made up 40.73% of teaching staff in Viet Nam. The ratio of Ph.D. holders to the total teaching staff was 14.4%, while the ratio of Master's Degree holders to total teaching staff was 44.88%.[6]

The number of teaching staff increased 3.5 times and the total number of students increased significantly. While, the total number of students increased significantly, the number of post graduate students did not increase as much. Similarly, the number of teaching staff also increased only slightly by 3.5 times the original number. As a result, the average rate of student/ lecturers at university in 2010 was about 30, and one is abut 24 at colleges in 2010 according to MOET.

More than half of the higher education students major in Education, Law, and Economics. On the other hand, the students from natural science and engineering fields, which the labor market needs, are low, only accounting for 4% and 16%, respectively, of the total student body.[7] MOET has not conducted any annual study on employed graduates, however, private sector institutions, such as foreign companies, pointed out that the university graduates are lacking problem solving skills, creativity, and logical analysis.

Table 3-4 shows the budget for education in Viet Nam for the period of 2001-2008. As seen in the table, during the period, the education budget stayed at around 4-6 percent of the state budget and around 10% of that education budget was allocated to the higher education sector.

[5] The statistical data of 1987 from Education training Statistical yearbook 1945-1995; 2000-2001; 2005-2006; 2009-2010; 2010-2011- MOET, Statistical yearbook 1997, 2000, 2005, 2009, 2010-General Statistics Office (GSO)-MPI.
[6] Ditto.
[7] Technical Assistance Consultant's Report for Viet Nam: Preparing the Higher Education Sector Development Project(HESDP), SMEC International Pty. Ltd, June 2010

Compared to the amount in 2001, the ratio remained the same but the amount for the education budget increased by around 4 times and by around 5 times for the higher education sector.

Table 3-4 Vietnamese Higher Education Budget (2001-2008)

Item	2001	2003	2004	2005	2006	2007	2008
GDP (current price)	481,295	613,443	715,307(*)	839,211	973,791	1,269,127	1,453,911
Total expenditure from state budget	127,675	181,183	-	239,470	297,232	367,379	407,095
Funding for Education & Training (total expenditure of society)	23,344	34,789	-	52,691	64,305	79,683	95,197
percentage of GDP (%)	*4.9*	*5.7*	-	*6.3*	*6.6*	*6.3*	*6.5*
State budget for Education & Training	19,747	28,951	34,872	42,943	54,798	69,802	81,419
Percentage of GDP (%)	*4.1*	*4.7*	*4.9*	*5.1*	*5.6*	*5.5*	*5.6*
Expenditure for Higher Education	1,798	-	3,294	-	4,881	-	8,752
Percentage of state budget forHigher Education (%) to Education budgte	9.1	-	9.4	-	8.9	-	10.7

Source: MOET, Project on Financial Mechanism Reform in Education and Training, 2009-2014, Hanoi, 2009, (*): GSO, Statistical Yearbook of Vietnam 2005.

3.4 Vocational Training

With the increased need for highly skilled labor because of the economic growth in recent years, the vocational training sector in Viet Nam has been expanding. Table 3-5 shows changes in the number of vocational training institutions from 2001 to 2010. The number of VCs increased from 62 schools in 2007 to 123 schools in 2010, after the establishment of VCs was allowed by Law on Vocational Training in 2006. The number of VSSs was doubled from 2001 to 2010 and the number of VTCs was 150 schools in 2001, which increased 8 times to 1,225 schools in 2010. The number of private vocational training institutions increased to 436 schools in 2010 from 70 schools in 2001, occupying about 36% of the total number of vocational training institutes.

Table 3-5 Changes in the Number of Vocational Training Institutions (2001-2010)

Training Institutions	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
VCs							62	92	107	123
- Public							55	70	81	92
- Private							7	22	26	31
VSSs/VSs*	156	206	219	230	236	262	232	241	295	314
- Public	146	191	200	201	200	204	170	171	198	205
- Private	10	15	19	29	36	58	62	70	97	109
VTCs	150	190	250	335	404	599	656	684	777	788
- Public	90	120	170	235	249	398	417	434	497	492
- Private	60	70	80	100	155	201	239	250	280	296
Total	306	396	469	565	640	861	950	1,017	1,179	1,225
- Public	236	311	370	436	449	602	642	675	776	789
- Private	70	85	99	129	191	259	308	342	403	436

Source: Department of Planning and Finance, MOLISA-GDVT
Note*: The name of VSSs was Vocational Schools (VSs) until 2006.

As shown in Table 3-6, the enrolment at long-term courses which VCs and VSSs provide has augmented more than 3 times from 126,000 students in 2001 to 420,000 students in 2010. Enrolment for short-term courses also increased to 1,440,000 students in 2010 from 761, 200 students in 2001. The share of private vocational training institutions has increased to 36.0 % in 2001 from 19.3 % in 2010 in all the programs.

Table 3-6 Changes in the Number of Enrolment at Vocational Training Programs from 2001 to 2010

Training Level	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Long-term vocational training programs/ collegial and intermediate level										
Sub Total	**126,100**	**146,500**	**176,400**	**202,700**	**230,000**	**260,000**	**305,500**	**258,000**	**287,000**	**420,000**
- Public	**123,578**	**143,570**	**172,872**	**196,619**	**222,380**	**247,000**	**288,697**	**243,810**	**271,215**	**379,500**
- Private	**2,522**	**2,930**	**3,528**	**6,081**	**7,620**	**13,000**	**16,803**	**14,190**	**15,785**	**40,500**
Short-term vocational training programs/elementary training level										
Sub-Total	**761,200**	**858,500**	**897,700**	**950,300**	**977,000**	**1,080,000**	**1,131,000**	**1,280,000**	**1,420,000**	**1,440,000**
- Public	**592,870**	**686,800**	**673,275**	**665,210**	**622,349**	**648,000**	**633,360**	**716,800**	**795,200**	**806,340**
- Private	**168,330**	**171,700**	**224,425**	**285,090**	**354,651**	**432,000**	**497,640**	**563,200**	**624,800**	**633,660**
Total	**887,300**	**1,005,000**	**1,074,100**	**1,153,000**	**1,207,000**	**1,340,000**	**1,436,500**	**1,538,000**	**1,707,000**	**1,860,000**
- Public	**716,448**	**830,370**	**846,147**	**861,829**	**844,729**	**895,000**	**922,057**	**960,610**	**1,066,415**	**1,185,840**
- Private	**170,858**	**174,630**	**227,953**	**291,171**	**362,271**	**445,000**	**514,443**	**550,792**	**611,315**	**670,254**

Source: Department of Planning and Finance, MOLISA- GDVT

The number of teachers/trainers in vocational training institutions has tripled in 2010 from that in 2007, the year of enactment of Law on Vocational Training, as shown in Table 3-7. In particular, the teachers in VCs marked a sharp increase.

Table 3-7 Changes in the Number of Vocational Teachers/Trainers from 2007 to 2010

Training Institutes	2007	2008	2009	2010
Vocational Colleges	4,678	5,697	10,881	12,444
Vocational Secondary Schools	9,583	7,769	9,729	11,524
Vocational Training Centers	5,934	12083	8492	9,312
Total	20,195	25,549	29,102	33,280

Source: Department of Planning and Finance, MOLISA-GDVT

As shown in Table 3-8, the ratio of education and training budget in the national budget and the ratio of vocational training budget in education and training budget shows a steady increase over the period of 2001-2010.

Table 3-8 Changes in Ratio of Education and Training Budget in the National Budget and Ratio of Vocational Training Budget in Education and Training Budget from 2001 to 2010

Items	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2008**	**2009**	**2010**
Ratio of Education and Training Budget in the National Budget	15.5%	15.7%	15.9%	16.7%	17.9%	18.4%	20.0%	20.0%	20.0%
Ratio of Vocations Training Budget in Education and Training Budget	4.9%	5.5%	5.7%	6.2%	6.5%	6.7%	7.5%	8.0%	9.2%

Source: Department of Planning and Finance, MOLISA-GDVT

The ratio of graduates who find a job after graduation is increasing year by year. On average, 60% to 70% of graduates find jobs. 90% of graduates of enterprise-based training institutions are employed after graduation[8]. The JICA study team found the same trends through interviews at VCs. Most of VCs replied to the JICA study team that 80% to 95% graduates got jobs. On the other hand, quality of graduates varies. Some Japanese industries mentioned that it was difficult to measure the candidate's ability before recruitment.

Vocational teachers need teaching qualifications, for both theory and practice. Table 3-9 shows qualifications of teachers for elementary vocational training, intermediate vocational training and collegial vocational training.

Table 3-9 Qualifications of Vocational Teachers

Training Level	Theory	Practice
Elementary	Vocational teachers must possess intermediate vocational training diplomas or higher degrees.	Vocational teachers must possess intermediate vocational training diplomas or higher degrees or be artisans or persons with high professional skills.
Intermediate	Vocational teachers must possess diplomas of technical teachers' training universities or specialized universities or higher levels	Vocational teachers must possess professional college diplomas or be artisans or persons with high professional skills.
Collegial	Vocational teachers must possess diplomas of technical teachers' training universities or specialized universities or higher degrees.	Vocational teachers must possess diplomas of vocational training colleges or be artisans or persons with high professional skills.

Source: Law on Vocational Training in Viet Nam, 2006

There are 5 academic paths to become vocational teachers as shown below. Those who follow the 4th and 5th paths will become teachers of practice. At present, the first and second paths are popular.

- Graduates from the higher education will obtain certificate of pedagogy trainings of skills at VCs.
- Graduates from upper secondary schools will obtain certificate of both skills and pedagogy at University of Technology Education[9].
- Graduates from university of engineering will obtain certificate of pedagogy at Vocational VCs.
- Graduates from VCs will obtain certificate of pedagogy at higher education.
- Workers will obtain certificate of pedagogy at VCs.

Teachers of vocational training have responsibility and right to upgrade knowledge and skills by In-Service Education and Training (INSET).[10] The nominated teachers to attend INSET will receive salary and subsidies as regulated. The vocational training institutions have to ensure upgrade of the teachers' skills and knowledge through periodic INSET according to the respective schedules: INSET for professions and qualification every five years; INSET for new technology every two years; and INSET for advanced skills and knowledge upon

[8] Technical Assistance Consultant's Report for Skills Enhancement Project in Viet Nam, Association of Canadian Colleges in association with socioeconomic research incorporated and Strategic Consultancy Company Limited, 18 January 2010

[9] There are five University of Technology Education which includes Nam Dinh University of Technology Education, Vinh University of Technology Education, Hung Yen University of Technology Education, Ho Chi Minh City University of Technology Education and Vĩnh Long University of Technology Education. A department at Hanoi University of Industry will provide the same course as these 5 Universities of Technology Education provide.

[10] Article 59, Law on Vocational Training in Viet Nam, 2006, Article 72 and 73, Education Law. 2005

requirements.[11] However, based on interviews with vocational training institutions INSET has been organized to be conducted on an irregular basis, depending on budgets in VCs, training providers, and availability of programs and teachers attended, to mention a few.

Teachers have received INSET through various channels. In some cases, VCs request the University of Technology Education to send their teachers to VCs for training and/ or VCs send their teachers to training programs in University of Technology Education. In other cases, VCs send their teachers to training programs in Viet Nam or abroad organized by MOLISA-GDVT. The JICA study team also observed that VCs organized training programs in Viet Nam or abroad in cooperation with enterprises.

For instance, Ho Chi Minh City University of Technology Education (HCM UTE) provides INSET for 400 teachers every year.[12] They set three kinds of INSET: teacher standards in-service training, regular in-service training and advanced in-service training. However, as mentioned earlier, it conducts training only when the budget is available, which makes trainings happen irregularly and the number of occupations which are subject to training is limited. Figure 3-3 shows the teacher training system including Pre-Service training and INSET at Ho Chi Minh City University of Technology Education.

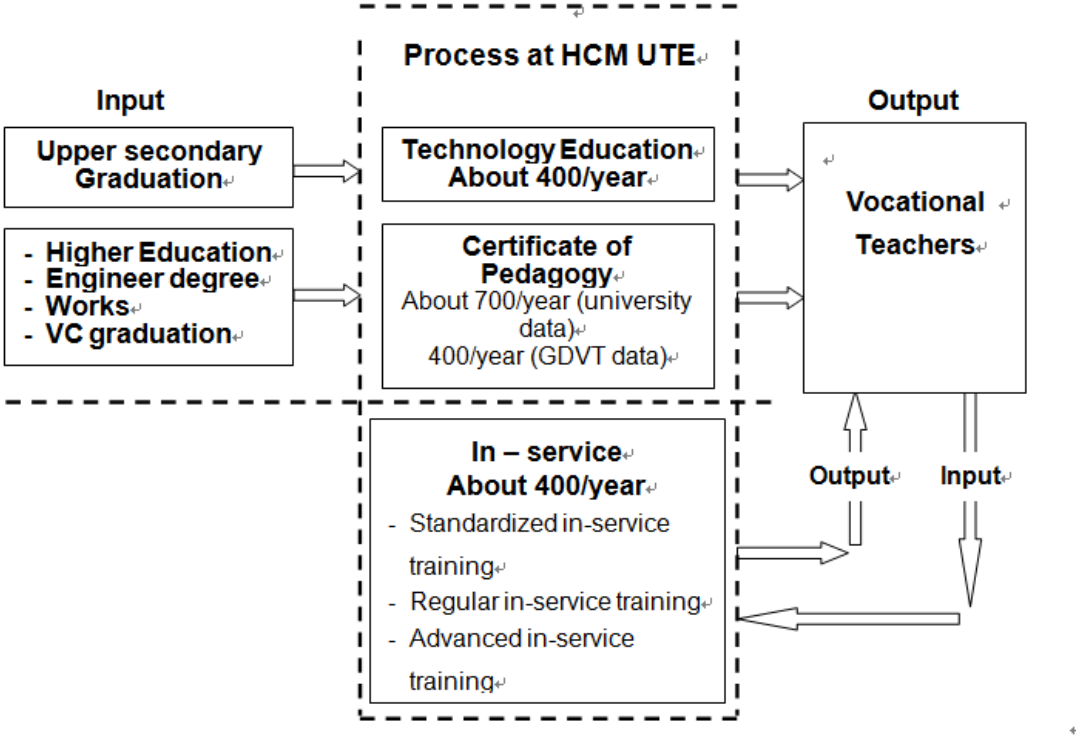


Figure 3-3 Teacher Training System at Ho Chi Minh City University of Technology Education

Standards of vocational teachers and lecturers are specified in the circular as shown in Figure 3-4.[13] They are characterized by its focus on skill and pedagogy. They do not include needs analysis and necessary employability skills.[14]

[11] Regulation on Use, In-Service Training for Vocational Teachers (issued together with Decision No.57/2008/QD-BLDTBXH dated May 26, 2008 by MOLISA)
[12] Hanoi Technique Technology College (Hanoi TTC) also provides in-service training on 1 occupation once a year.
[13] Circular No.30/2010/TT-BLĐTBXH dated 29/9/2010

Criteria 1: Political Virtue, Professional Morality, Lifestyle (3 Standards) · Standard 1-1: Political virtue · Standard 1-2: Professional morality · Standard 1-3: Lifestyle and behavior	Criteria 2: Professional Qualification · Standard 2-1: Professional knowledge · Standard 2-2: Vocational skills
Criteria 3: Vocational Pedagogic Qualification · Standard 3-1: Vocational professional pedagogy and teaching experience · Standard 3-2: Preparation for teaching · Standard 3-3: Implementation of teaching · Standard 3-4: Testing and evaluation of learning outcomes of learners · Standard 3-5: Management of teaching records · Standard 3-6: Develop programs, curriculum, and teaching materials · Standard 3-7: Make a plan, and implement education activities · Standard 3-8: Manage learners, build up the education and learning environment · Standard 3-9: Social activities	Criteria 4: Capacity of Career Development, Science research · Standard 4-1: Share experience and learning, practice · Standard 4-2: Science research

Figure 3-4 Standards of Vocational Teacher and Lecturers

At present, there are 140 occupational standards completed in Viet Nam while VCs and VSSs have approximately 400 occupations. The Government is responsible for developing vocational skill standards and coordinating with the agencies and professional associations[15]. In practice, MOLISA-GDVT develops the guidelines and nominates line ministry for every job. The nominated line ministry establishes a committee for development of occupational standards which consists of 9-10 members. Half of the members in the committee are from ministries while the other half consists of teachers and skilled workers of companies. For example, 3 out of 11 members are from private companies in the committee for development of occupational standards for mechanical equipment manufacturing which was established under Decision No. 4785 dated 20.09.2011 of the Ministry of Industry and Trade.

[14] In Viet Nam, it is usual that staff (not teachers) at career support center at vocational schools assess the needs of industry.
[15] Article 80, Law on Vocational Training in Viet Nam, 2006

4. Current Situation and Prospects of Developing High Quality Human Resources

4.1 Higher Education

4.1.1 Basic Policies and Strategies on HRD through Higher Education

(1) Higher Education Law

Viet Nam's National Assembly approved the new Higher Education Law on 18th June, 2012.[16] This is the first Vietnamese law dedicated to the higher education sector. The Law has four objectives to: i) improve quality and effectiveness of higher education; ii) develop reasonable scale of higher education; iii) link training with labor use and society's demand; and iv) strengthen social equality.

The Law consists of 12 chapters and 67 sections and provides guidance for the following important issues.

- "Non-profit "characteristics of higher education
- Autonomy and accountability of each higher education unit
- Classification (taxonomy) of universities into the 3 levels: (i) research universities, (ii) universities with multi-fields of the studies for applied technology, and (iii) colleges under universities to train technical workers.
- Accreditation for each university which may choose a good, well known accrediting agency to conduct evaluation and accreditation. Every university must be accredited and must inform the result of accreditation through mass media.
- Encouraging the socialization of education by having strong policies to encourage social sectors to invest or establish new universities based on the "non-profit" principle.
- Introducing school council[17].
- Entrance examination, which is very competitive in Viet Nam, can be conducted by one of the following: i) testing; ii) evaluating the learning results of three school years of upper secondary; or iii) by both testing and learning result evaluation.

(2) Education Strategic Development Plan 2011-2020 (ESDP)

The 28th draft of the Plan was discussed in February 2012 by the National Board of Education headed by the Prime Minister. After that, the draft was revised and finalized. The final version was submitted to the Prime Minister in March 2012, and approved on June 13, 2012.

The Plan was prepared to implement the nation's objectives of developing and improving the quality of human resource, especially skillful and talented staff set in the SEDS. Essentially, the Plan was finalized in line with Government's upper policies, strategies and plans: the Resolution of 11th National Congress, SEDS, SEDP, HRDS and HRDMP.

It covers issues related to education at all levels from pre-school to higher education and continuing education with the purpose to reform the Vietnamese education system fundamentally and comprehensively by 2020, through standardization, modernization, socialization and international integration. The essence of the Plan is to curb the weakness and shortcomings of Vietnamese education which were not overcome through the Education Development Strategy 2001-2010.

[16] Hiep Pham, "New higher education law approved, but sparks criticism" University World News 2007-2012, June 19, 2012, (http://www.universityworldnews.com/article.php?story=20120619111558817, accessed on June 27, 2012)

[17] There have been so far 10 universities out of 400 universities, which have school council.

The issues are mainly related to the quality of education and education management along with the lack of educational equity for marginalized people. The eight solutions (or actions) are mentioned in the Plan. The solutions are to: i) innovate education management; ii) improve teaching and education management staff; iii) reform context and methodology of teaching, examination and quality assessment; iv) increase investment resource and innovate financial mechanism for education; v) enhance the connection between training with usage, scientific research and technology transfer to meet the society's demands; vi) enhance support for disadvantaged regions, ethnic minorities and social beneficiary students; vii) develop education science; and (viii) extend and enhance international cooperation in education.

In addition to the solutions (or actions), the Plan specifies a time-bound action program with responsible ministries and departments. It has an action under "Formulation, Supplementation and Development of General Framework and Education Policies" and nineteen actions under "Formulation and Implementation of Plans, Programs, Projects in Education Development." Among the total of the twenty actions, ten actions deal with issues for all education levels, seven actions for higher education, one for tertiary education and one for general educations. The status and summary of actions are attached in Appendix 4-1-1.

Regarding implementation arrangements, a two-phased approach is mentioned in the Plan. Phase I will be implemented for the period of 2011-2015 and aims to implement higher education reform and prepare necessary conditions for the reform of general education after 2015. The activities include development of model universities and advanced curricula and new textbooks along with capacity development for education managers. Phase II will be implemented for the period of 2016-2020 and aims to implement general education reform, continued renovation at higher education level and some adjusted tasks of the Phase I, focusing on improving quality of education.

(3) Higher Education Reform Agenda 2006-2020 (HERA)

The Higher Education Reform Agenda (HERA) was issued in November 2, 2005[18], but it is widely recognized and functioned as sub sector policy document and represents an important commitment by the Government to the higher education sector.

The main objectives of the HERA are to: i) bring about a dramatic increase in capacity to allow an increase of the participation rate in higher education (or tertiary) institutions, which implies huge investments in infrastructure and in training of new lecturers and faculty; ii) bring about simultaneous increase in quality and/or efficiency of the system; iii) initiate the introduction or reinforcement of research in universities in order to train prospective teachers, to enrich and upgrading present teachers' teaching, and to upgrading the quality level and international visibility of Vietnamese universities; and iv) introduce improved government of the higher education and research system at both national and regional levels, as well as for universities. These goals imply greater autonomy for individual institutions and establish measures that create a climate of competition between and within institutions.

In the HERA, the Government has set the following targets for the higher education sector: i) revenue from science and technology activities increased to 15 percent of total university revenue by 2010, and to 25 percent by 2020; ii) the proportion of university teaching staff with masters level degrees increased to 40 percent by 2010, and to 60 percent by 2020; iii) the proportion of university teaching staff with doctoral level degrees increased to 25 percent by 2010, and to 35 percent by 2020; and iv) the ratio of university students to teaching staff reduced to 20:1 by 2020.

[18] Government Resolution on Sustainable and Comprehensive Renewal of Vietnam's Tertiary Education in the 2006-2020 Period (Government Resolution No.14/2005/NQ-CP)

To achieve the objectives, the HERA sets 7 areas of issues under which actions should be taken and provides guidance for each area which promotes concrete actions. The areas of issues include: i) renewal of training structure and improvement of the network of tertiary education institutions; ii) renewal of training contents, methods and processes; iii) renewal of the planning, training, fostering and employment of lecturers and administrators; iv) renewal of organization of scientific and technological activities; v) renewal of mobilization of resources and financial mechanism; vi) renewal of the management mechanism; and vii) regarding international integration.

4.1.2 On-going Initiatives of the Government for Higher Education Reform

The Government has implemented 8 main activities under HERA: i) training of 20,000 PhD for colleges and universities; ii) development of international standard universities (Model University, or Universities of Excellence); iii) development of some "major" universities in Viet Nam; iv) import of advanced international curricula; v) improvement of research capacity of Vietnamese universities; vi) development of strategy for teaching and learning foreign languages in the education system; vii) accreditation for all universities in Viet Nam; and viii) development of the Higher Education Law. Their outlines are summarized below.

Training of 20, 000 PhD for colleges and universities. Project 911, effective from 2011 to 2020, aims that by the year 2020, Viet Nam will have 20,000 new lecturers of colleges and universities who hold a Ph.D. degree. It is planned that half of them study in Viet Nam and half in foreign countries. Additionally, this project will be supplemented by another previously initiated project aimed at promoting overseas education. Project 322, effective from 2000 to 2014, provides overseas programs, not only for Ph.D. degrees, but also for other degrees, such as bachelor's or master's degrees. The targeted applicants are all public officials, including university staff.

Development of international standard universities (Model University, or Universities of Excellence). Two universities have been operating by support from Germany and French while other two are still under discussion. The VietNam-Germany University was established in 2008. The university plans to accept 1,000 students by 2014, 5,000 students by 2020, and 12,000 students by 2030. The Hanoi University of Science and Technology was founded in 2010 and started in the school year 2010-2011. The Government plans to provide the university with land of 65 ha in Hoa Lac, 28 km far from the Hanoi center to build its campus. The university plans to accept 5,000 students by 2025.

The two remaining plans for university of excellence are those for Da Nang University and Can Tho University. MOET has discussed with international partners, but the implementation has not yet started. In March 2010, United Kingdom signed an agreement with the Government of Viet Nam to support Da Nang University. The British Council conducted a feasibility study, and may start assistance by Aston University in UK. Some other British universities will join in the future. The assistance may start with some courses of University of Technology and University of Economics in Da Nang University.[19]

In addition to the four international standard universities above, the Government now is in the process of developing VietNam-Russia University of Technology (VRUT) with the partnership of a Russian army university and Le Quy Don Technical University of Technology, one of Vietnamese army universities. The Memorandum was signed between Viet Nam and Russia in 24 October 2011.The students of this University will be taught in Russian language by visiting Russian lecturers in areas such as i) management and ICT in construction of underground cellars,

[19] Based on interview with British Council

ii) electronic technology, and iii) telecommunication technology. The University is in development and may start its first school year in 2012-2013.

Development of some "major" universities in Viet Nam. The "major universities" are the national and regional universities, some other leading universities, and institutions. Those universities are given strong autonomy by providing rights to make decisions regarding: i) printing and giving diplomas; ii) dispatch of their lecturers for overseas studies; iii) inviting international lecturers to work in their universities; iv) receiving international students to study at their universities; v) setting up and implementing training on new fields that are not in the list of study fields approved by MOET. Rectors of such universities can make decisions by themselves using the universities' fund for operating universities' activities and do not have to ask for permission from MOET. These universities will play a leading role in training, research and provide high quality human resources for the regions and country. The 16 higher education units have already been approved to be major universities.[20] Out of these, 14 were officially declared as "major universities" based on the No. 1269/ CP-KG completing the network of universities and colleges and other two were added in 2008 by 177/TTg-KG and in 2011 by 1136/TTg-KGVX.

These major universities are also assigned to train PhD students to meet the target of "Training 20,000 PhD by 2020".

Import of advanced international curricula. By October 2010, twenty three (23) universities in Viet Nam in collaboration with twenty two (22) international universities implemented thirty five (35) advanced curricula. Out of this, there are 20 curricula on Technology, 5 curricula on Economics, 1 curriculum on Health Education, 6 curricula on Natural Sciences and Environment, and 3 curricula on Agriculture. These curricula are from universities belonging to the World's Top 200 Universities ranked in the US News. The major supporters are US universities. Other countries' cooperation is as follows: two curriculums are supported by a French university, two by Australian universities, and one by a British university. Those are found in 28 curriculums identified by the JICA study team.

These 23 Vietnamese universities have signed an Agreement of Collaboration with 22 partner international universities on i) co-development of curriculum; ii) use of partner's original curricula with permission for teaching by Vietnamese lecturers; and iii) dispatch of the partner universities' professors to Viet Nam for teaching. They also support research at Vietnamese universities, monitor training processes and give diplomas.

These 23 Vietnamese universities have provided preparing courses of ICT and English for Vietnamese students to help them follow these curricula in English. There are 2,130 Vietnamese students participating in these advanced international curricula at present.

At the National Workshop on The Advanced International Curriculum on October 19, 2011, MOET[21] evaluated that the quality of training courses based on these international curricula are appreciated. However, there are big challenges as follows:

[20] 16 university units include Hanoi National University, National University in Ho Chi Minh City, Thai Ngyen University, Da Nang university, Hue university (in the Middle of VN), Can Tho University, Hanoi National University of Economics, University of Economics in Ho Chi Minh City, Hanoi University of Teacher Training, Ho Chi Minh University of Teacher Training, Hanoi University of Medicine, University of Medicine and Pharmacy in Ho Chi Minh City, Hanoi University of Agriculture, Hanoi University of Polytechnics, Institution of Military Technology and Vinh University (in the North- Middle of Viet Nam).

[21] www.gddt.vn/chanel/2741/201010/chuong-trinh-tien-tien-la-giai-phap-dac-thu-doi-moi-gddh-1935169/

- Lack of fund provided by the Government for universities to maintain the training processes, especially for curricula on technology and for inviting international professors since the compensation is high.
- Lack of skillful Vietnamese lecturers who can give lectures effectively in English.
- Lack of teaching-learning facilities suitable to the modern curriculum imported.
- Lack of students who can meet the requirements to learn the modern curriculum. Approximately there are only 30-40 students for each course; there are only 20-30 students for one course in Physics.

To improve the effectiveness of the advanced international curriculum, MOET identified the following policies.

- Investing more funds from State Fund for universities to implement advanced international curriculum, and providing financial assistance to 5% of students who can complete these curricula and follow their post graduate studies for master's and PhD degrees at the partner universities, and providing fund for the personal exchange programs.
- Proposing to the Ministry of Finance to not take income tax from foreign professors who receive salary for giving lectures at Vietnamese universities.
- Assessing the real quality and effectiveness of advanced international curricula and using the curricula for more universities.

Improvement of research capacity of Viet Nam universities. The specific activities initiated by MOET could not be found but the policy was identified by the JICA study team. Related to the activities, Decision No 418QD-TTg to approve the Science-Technology Development Strategy 2011-2020 was issued by Prime Minister.[22] The general strategic objective is that *by the year 2020 Viet Nam will have some areas of science and technology reaching the advanced, modern level of the ASEAN and the world that can contribute to the development of the country's economy and the value of high technology products reach approximately 45% of GDP.*

The Science-Technology Development Strategy 2011-2020 also indicates the following specific objectives.

- To invest 1.5% of GDP in 2015 and 2% of GDP in 2020 for science and technology development every year
- To invest not less than 2% of Government fund for science-technology every year
- To speed up changing technologies and related equipments by 10-15% per year in period 2011-2015 and 20% in period 2016-2020
- To increase portion of research staff and technology development staff to 9-10 persons/10,000 people by 2015, who are trained and assessed with international standards
- To increase the number of engineers who can handle and manage high technology producing processes to 5,000.
- To increase the number of basic (theoretical) and applied research organizations with high competency to solve crucial problems of the country to 60 by 2020

It indicates that the suggested ideas for science-technology development and ideas directly related to higher education include i) improvement of research capacity of Vietnamese universities, ii) set up of one "strong" science -technology organization in links with strengths and potentials of the region and in collaboration with universities for training human resources in each economic region in the country, iii) encouragement to develop Science-Technology enterprises in universities and in research institutes, and iv) implementation of model of

[22] Source: - Decision of VN Government No 418/QD-TTg 11April 2012 to approve the Science-Technology Development Strategy period 2011-2020

collaboration between State and private science-technology units in areas such as renewing research, training, and technology.

It also mentions the prioritized areas of science-technology in Viet Nam in the decade which include i) IT technology, ii) Bio-technology, iii) Technology of new materials and iv) Environment technology.

Development of strategy for teaching and learning foreign languages in the education system. This activity is not only for higher education level, but also for all levels of education. This activity is related to the activities of Advanced International Curricula mentioned above. At present, Vietnamese teachers and students' ability to use foreign languages is still low compared to those in other countries in the region. To improve the situation, the Government has implemented a project of teaching and learning foreign languages in the national education system, focusing on English language since 2008.

Some major solutions mentioned in the project are to i) develop and implement curriculum of English as a school subject from grade 3 to grade 12 in general education with international standard, ii) develop and implement bilingual curriculum and textbooks for some selected school subject (e.g Mathematics, Physics, Chemistry, Geography), iii) innovate and implement curriculum and course books for foreign languages, including English, with international standard and introduce new methods of teaching in vocational schools, colleges and universities, iv) provide lectures of some subjects in English for students in vocational schools, colleges and universities, v) develop teaching staff (teachers, lecturers) with high competence of foreign languages.

Under the Project, MOET has conducted i) assessment of the ability of teachers of English and selected subject teachers for bilingual teaching, ii) development of curriculum of bilingual learning for some school subjects and iii) training of teachers for teaching in English. The Project will be officially implemented nationwide in school year 2013-2014.

Accreditation for all universities in Viet Nam. In order to enhance the teaching and learning quality of Vietnamese universities, on December 2, 2004, MOET issued Decision and Guidance for Quality assessment and accreditation for universities. The Guidance included 10 standards, 53 criteria, and a number of indicators / evidences. In 2007, MOET issued a Revised Guidance for accreditation, based on the idea that university can be accredited by meeting the standard education quality.

Development of Viet Nam Higher Education Law. As mentioned in Section 4.1.1, Viet Nam's National Assembly approved the new Higher Education Law on June 18, 2012.

4.1.3 Donors' Support for Higher Education Reform

(1) List of On-going Programs/Projects in Higher Education

The number of development partners which have worked in higher education is relatively small compared with the number of donors in primary education. The World Bank (WB) has been the main donor for higher education, starting with the Higher Education Project in 1998. Table 4-1 shows basic profiles of on-going programs and projects in higher education the JICA study team could identify during the study period. Appendix 4-1-2 shows areas of inputs each project has provided support for.

Table 4-1 Basic Profiles of On-going Programs and Projects in Higher Education

Development Partner	Project Name	Duration	Amount
Asian Development Bank	University of Science and Technology of Hanoi Development (New Model University) Project	2011-2017	$ 210 million
World Bank	Second Higher Education Project	2007-2012	$ 70.5 million
World Bank	Higher Education Development Policy	2009-2013	$ 150 million
World Bank	New Model University Project	2011-2017	$ 200 million
Government of France	Development and operational assistance to the University of Science and Technology of Hanoi	2010-2020	€ 100 million
Government of France	Training of High Quality Engineers: Vietnamese-French Training Program of Excellent Engineers (PFIEV)	2002-2012	$ 11.3 million
Government of Germany	Development and operational assistance to Vietnamese–German University	2008-2018	€3.3 million/year
Government of the Netherlands	Netherlands Initiative for Capacity Development in Higher Education	2010-2014	€ 18 million
JICA	Higher Education Development Support Project on ICT	2006-2014	$ 63.3 million
JICA	Capacity Building of Ho Chi Minh City University of Technology to Strengthen University-Community Linkage (Phase 2)	2009-2012	$ 3.5 million
USAID	Higher Engineering Education Alliance Program (HEEAP)	2010-2013	$ 5 million

Source: MOET and JICA study team

(2) Summary Descriptions of Key Projects

The Second Higher Education Project (HEP2) will be completed at the end of June 2012, according to WB staff. It aims to increase the quality of teaching and research in universities in ways that improve the employability of graduates and enhance the relevance of research in Viet Nam. The project has three components: i) capacity building and policy development (Component 1); ii) training research innovation grants (Component 2); and iii) project management and monitoring (Component 3). The project has 22 beneficiary universities.

According to WB, the project met most of target indicators as of August 2011.[23] For instance, in Component 1, most of the beneficiary universities completed self-evaluation and a draft higher education master plan was developed. In Component 2, overseas training of Ph.D. and Master's has already exceeded the original targets and research projects have been launched representing 99% of the original target and the number of articles published in international journals exceeded the original target. In Component 3, The PMU and beneficiary universities maintain very good data on the project activities and results.

The Higher Education Development Policy Program is to support the sustained implementation of selected elements of the reform agenda of the Government through policy loan. It aims to strengthen governance, rationalize financing, improve the quality of teaching and research, improve accountability for performance, and enhance transparency in financial management. It is composed of three tranches and each tranche specifies requirements of issuing regulations or policies in the fields of governance, financing, and/or quality improvement. For instance, the

[23] Implementation Status & Results, Vietnam: Second Higher Education Project (P079665)

first tranche conditions include issuance of regulation on charter for the first new model university. The second tranche conditions include issuance of regulation on functions and responsibilities of university councils. The Government has already completed the first and second tranche conditions and has been dealing with conditions of the third tranche.

Following guidance of Prime Minister's Decision (No.145/2006/QD-TTg dated June 20, 2006), the Government has pursued establishing Viet Nam's universities of international standards to be leading universities in Viet Nam in training and research and to have international competitiveness. Primarily, the Government set targets of establishing 4 new model universities (universities of excellence) in Hanoi City, Da Nang City, Ho Chi Minh City and Can Tho City by 2020 at least. Currently, two new model universities, The Vietnamese–German University (VGU) in Ho Chi Minh City and The University of Science and Technology of Hanoi (USTH), have been established. MOET discussed new model universities in other areas with potential partner countries, but no concrete agreements have been made yet.

The Vietnamese–German University (VGU) opened in 2010 and has been supported by the Government of Germany and WB. The Germany side spends €3.3 million/year at maximum to provide curricula, the rector, academic staff and scholarships.[24] For the New Model University Project, WB finances 119.40 million USD including the government portion through International Development Association and covers 4 components: i) establishment of policy and regulatory framework (Component 1); ii) academic and research development (Component 2); iii) campus and facilities development (Component 3); and iv) project management, monitoring and evaluation (Component 4).

To implement the WB financed portion (New Model University Project), a Project Management Unit (PMU) at MOET and a VGU Project Management Unit (V-MU) were set up. The PMU manages the civil works part of the project, i.e., campus development (part of Component 3). The V-MU is responsible for the implementation of component 1, component 2 and component 3, except for campus development.

Germany sends a rector and, under the supervision of the rector, VGU are managed by the university council. The council is composed of 10 Vietnamese representatives and 10 German representatives, including representatives from the private sector. A university consortium composed of 35 German universities has been providing operational assistance for VGU.

At present, 206 students are enrolled for two Bachelor's programs: Electrical Engineering & IT and Finance and Accounting. Computer Science program will start in 2012. VGU expects 150 undergraduate students to be enrolled annually. On the other hand, 169 students are enrolled in four Master's programs: Computational Engineering; Mechatronics & Sensor Systems Technologies, Sustainable Urban Development and Business Information System.[25] Around 10 PhD candidates are working as researchers and part-time lecturers, but no official PhD courses have been set up.

VGU plans to start another 4 clusters (Electrical Engineering, Civil Engineering, Computer Science, Economics and Industrial Engineering) by 2017 and additional 2 clusters (Biosciences and Biotechnology, and Natural Science) by 2022. As a result, the enrolment is supposed to increase to 1,000 students by 2014, 5000 students by 2020, and 12,000 students by 2030.

[24] According to VGU, two Germany states (Hessen and Baden-Wurttemberg) and Federal Ministry of Education and Research are responsible for the funding and the budget of €3.3 million/year at maximum is secured up till 2016 at present. After that, annual approval process of securing budget is required by the German side.
[25] Most of students are part-time students for Business Information System.

New academic courses are developed through the coordination between VGU and the consortium through academic coordinators in VGU. VGU will send outlines of new courses and then member universities in the consortium which have interests will send proposals back to VGU. Finally VGU will select the most suitable proposal and the member university(s) will send lecturers to VGU.

There are some issues or concerns VGU pointed out at the meetings with the JICA study team.

- VGU will move to a new campus at Binh Duong New City in around 2016 and the international architectural design competition is on-going. However, activities of developing the new campus have been delayed.
- Delay in procurement of facilities and equipment is also observed. It hinders opening some academic courses which heavily rely on them.
- Clear plans have not been prepared to develop Vietnamese faculty and management staff.

The University of Science and Technology of Hanoi (USTH), supported by the Government of France and Asian Development Bank (ADB), opened in 2010. The Government of France spends about €100 million to provide curricula, research capacity, the rector, academic staff and scholarships.[26] For the University of Science and Technology of Hanoi Development (New Model University) Project, ADB finances USD 213 million through a combination of ordinary capital resources and hard terms facility of the Asian Development Fund. ADB finance is responsible for i) an effective management and governance system for USTH will be developed and implemented, ii) systems to promote high-quality and relevant academic programs at the USTH will be developed and implemented, iii) physical facilities at the USTH will be constructed and outfitted, and iv) effective project management and implementation.

To implement the ADB financed portion (University of Science and Technology of Hanoi Development (New Model University) Project), MOET established a PMU for USTH (the PMU-USTH) and USTH established a university implementation unit (UIU). The PMU-USTH plays a role of mainly implementing Component 3 and supporting the UIU in the implementation of Component 1 and 2. The UIU is responsible for i) implementing component 1 and 2, ii) providing oversight of USTH's internal management and academic development and iii) determining the specifications and lists of specialized equipment for laboratories and the library and so on.

France sends a rector and under the supervision of the rector, USTH is managed by the university council.[27] The council composed of 10 representatives of both Vietnamese and French sides, including representatives from the private sector. A university consortium composed of 29 French universities, including 23 polytechnics and 5 academies, has been providing operational assistance for USTH.[28] The member universities send lecturers and receive PhD students for their research work.

At present, 93 students are enrolled and 150 will be enrolled in 2012 for undergraduate courses.[29] 90 students are enrolled and 90 will be enrolled in 2012 for Master's courses: Biotechnology, Material Science and Nanotechnology, Water-environment Science, ICT, and

[26] 40 million Euro will be used for PhD research in France, 30 million for implementing 6 courses, and 30 million for establishing high tech laboratories.
[27] 3 positions (Rector, General secretary of service, Director for research and innovation) in administration are taken by French.
[28] The consortium only provides support for graduate level.
[29] Originally, France was not supposed to support undergraduate courses. Currently, France provides limited support, such as support for recruitment of lectures and selection of students, and does not send French lecturers for undergraduate courses.

Aeronautics and Space. The 2nd year students of Master's courses should work as intern at companies' laboratories. 50 students are enrolled and 29 will be enrolled in 2012 for Ph.D. courses. At present, students at PhD courses will go to France for research work. USTH plans to produce 400 Vietnamese PhD within 10 years and to set up PhD course in Viet Nam.

There are some issues or concerns VGU and ADB pointed out at the meetings with the JICA study team.

- For the ADB financed portion (University of Science and Technology of Hanoi Development (New Model University) Project), there is no significant progress since the commencement of the project in February 2012, due to the delay in approval of several key project documents on Vietnamese side as of the end of June 2012.
- The PhD students will return to Viet Nam in 2012 and will start work as lecturers at USTH. It is uncertain that salary of those lecturers will actually be paid, even though MOET approved their high standard salary scale.
- Clear plans have not been prepared to develop Vietnamese faculty and management staff.

The United Kingdom and the Government signed a memorandum of understating (MOU) about cooperation of establishing a model university in March 2010. UK does not provide any financial support, but political support. Actual cooperation should be initiated and implemented by universities in UK and Viet Nam. To seek a cooperation model of upgrading Da Nang University to international level, UK recently conducted a Feasibility Study through the British Council. However, no concrete agreements have reached yet and no actions have been decided by either governments or universities yet.

To supplement 4 new model universities (or universities of excellence), the Government is now in the process of developing Vietnam-Russia University of Technology (VRUT) with the partnership of Russia Army University and Le Quy Don University of Technology. The Memorandum of Understanding was signed between Viet Nam and Russia on 24th October 2011. The students of this university will be taught by visiting Russian lecturers in Russian language in areas such as management and ICT in construction of underground cellars, electronic technology and telecommunication technology. The University is being established and may start its first school year in 2012-2013.

4.1.4 Cooperative Activities by Japanese Universities and Private Sector

(1) Cooperation Activities between Vietnamese Universities and Japanese Universities

This section describes the situation and issues of cooperation between Japanese and Vietnamese universities, and identifies key considerations in formulating university projects in Viet Nam which Japanese universities are involved in. The analysis is made based on desk reviews of existing studies and interviews with the selected Japanese universities. For the interviews, the JICA study team visited 13 Japanese universities which are relatively active in cooperation with universities in developing countries through various programs. The 13 universities include the University of Tokyo, Nagoya University, Kyoto University, Tohoku University, Osaka University, Kyushu University, Tokyo University of Agriculture and Technology, National Graduate Institute for Policy Studies, Toyohashi University of Technology, Waseda University, Ritsumeikan University, Meiji University, and Tokai University.

The Japanese universities have concluded exchange agreements and cooperated with Vietnamese universities regarding matters of exchange students, collaborative researches, and collaboration of the establishment of new universities. The following sections describe the current situation and issues.

1) Exchange Agreements

According to the survey, a total of 281 exchange agreements were concluded between Vietnamese universities and Japanese universities as of year 2008.[30] Appendix 4-1-3 shows the pattern of exchange agreements between Japanese universities and selected 15 Vietnamese universities, including 10 universities which are subjects for the Study.

Figure 4-1 illustrates relationships of exchange agreements between 10 Vietnamese universities and Japanese universities which have two exchange agreements, at least with these 10 Vietnamese universities. 17 Japanese universities signed the exchange agreements.

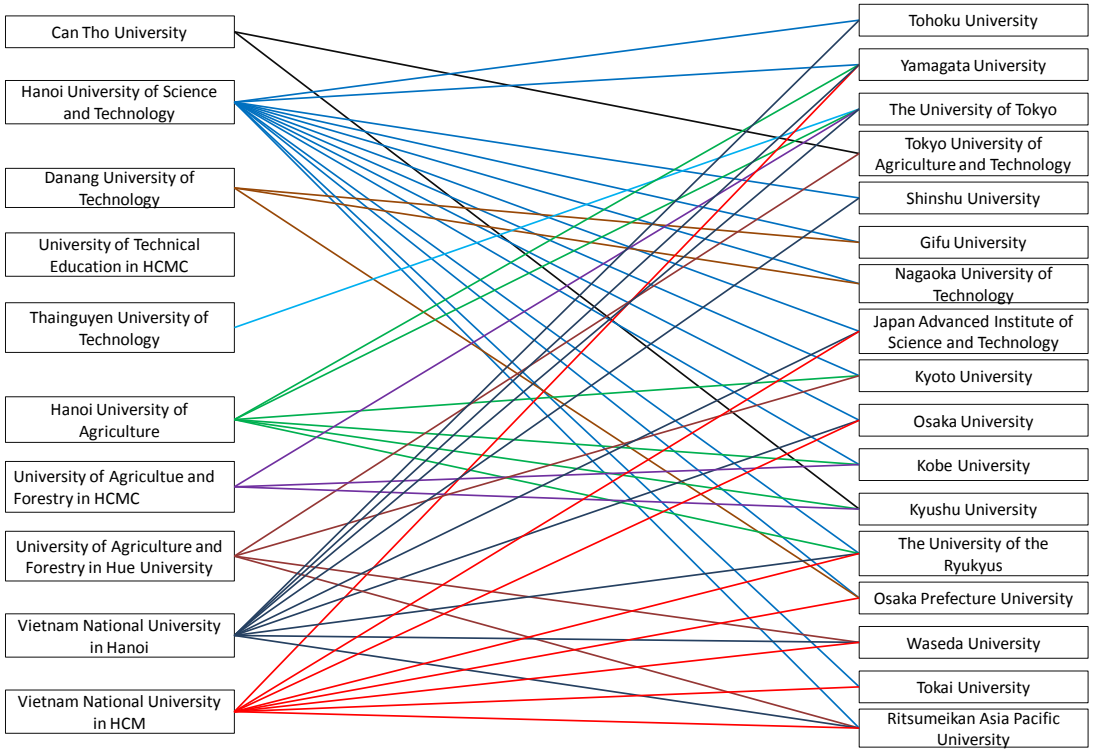


Figure 4-1 Exchange Agreements with Vietnamese 10 Universities and Japanese Universities[31]

2) Exchange Students

Many Japanese universities have been actively receiving exchange students from Viet Nam because Vietnamese exchange students have been evaluated as being hard-working and talented by Japanese universities. In fact, the number of exchange students from Viet Nam has increased to 4,033 students in 2011 from 2,582 students in 2007 as shown in Table 4-2.

[30] Status of Reform of Educational Contents in Japanese Universities from Report on International Collaboration and Offshore Offices of Japanese Universities by the Ministry of Education, Culture, Sports, Science and Technology in Japan (in Japanese)
[31] Source: ibid

Table 4-2 Number of Exchange Students from Viet Nam from 2007 to 2011

	2007	2008	2009	2010	2011
No. of Exchange Students from Viet Nam	2,582	2,873	3,199	3,597	4,033

Source: International Students in Japan 2007-2011 from Japan Student Service Organization Statistics, Japan Student Service Organization

In 2011, Viet Nam is ranked the fourth in term of exchange students in Japan, following China, Korea and Taiwan as shown in Table 4-3.

Table 4-3 Top 5 Countries which Sent Exchange Students to Japan in 2011

Ranking	Countries of Exchange Students	Number of Exchange Students in Japanese Universities
1	China	87,533
2	Korea	17,640
3	Taiwan	4,571
4	Viet Nam	4,033
5	Malaysia	2,417

Source: International Students in Japan 2007-2011 from Japan Student Service Organization Statistics, Japan Student Service Organization

The Government of Japan, the Ministry of Education, Culture, Sports, Science and Technology in Japan (MEXT), and Japanese universities have encouraged foreign students to study in Japan through various programs and incentives.

The Government of Japan has promoted exchange students though ODA. For instance, the Japanese Grant Aid for Human Resource Development Scholarship (JDS) program has been implemented. It aims to support HRD in countries that receive Japanese grant aid, targeting highly capable, young government officials and others who are expected to engage in formulating and implementing social and economic development plans and to become leaders in their countries. In Viet Nam, a total of 334 exchange students have been sent to Japan under the program since 2000. The ASEAN University Network/South East Asia Engineering Development Network (AUN/SEED-Net) is another example of providing opportunities to students in developing countries to study abroad. The phase II of the AUN/SEED-Net is on-going, aiming to establish a foundation of a sustainable framework of human resource development in the engineering field in the ASEAN region.

MEXT has implemented a Project for Establishing Core Universities for Internationalization (Global 30) to establish university network for internationalization of Japanese universities. The project aims to promote Japanese universities to create more English-taught courses and increase the number of international students. In 2012, MEXT will start implementing the "Project for Promotion of Global Human Resource Development" and the "Re-Inventing Japan Project-Support for the formation of Collaborative Programs" with ASEAN universities. Through these projects, Japan continuously aims to support Japanese universities to receive foreign students.

Japanese universities themselves have provided various incentive programs to encourage talented students from other countries to study in Japan. For instance, they even offer support to private-funded foreign students in terms of waiver of all or part of tuition fee and/or provisions of scholarship. They also have English courses where students can complete their study without learning Japanese language. The students are provided with daily livelihood support such lodgings and counseling.

The types of academic programs for exchange students include "2+2 programs" for undergraduate students as well as "sandwich programs" for postgraduate students. The students of the 2+2 program will study at a university of their home country (i.e., Vietnamese) for two years before transferring to a university of another country (i.e., Japanese) to study for another two years in order to graduate from the home countries' and/or Japanese university. In the "sandwich programs" students will spend a certain period in the postgraduate courses in another university for field work or research, while students study in the home countries' university before and after that period to improve the quality of the dissertation. It is a common recognition among Japanese universities that "sandwich programs" are easier to introduce than 2+2 programs and are more appropriate to train Vietnamese teaching staff for upgrading capacities of Vietnamese universities.

According to the survey by the Japan International Cooperation Center (JICE), exchange students who arrived in Japan in 2009 through the JDS program assessed that the study in Japan was highly satisfactory and effective.[32] The exchange students also assessed that all abilities, such as ability in conducting scientific investigation and analysis and ability in coming up with new concepts or frameworks, were developed and improved during the study in Japan through various activities as shown in Figure 4-2 and Figure 4-3.

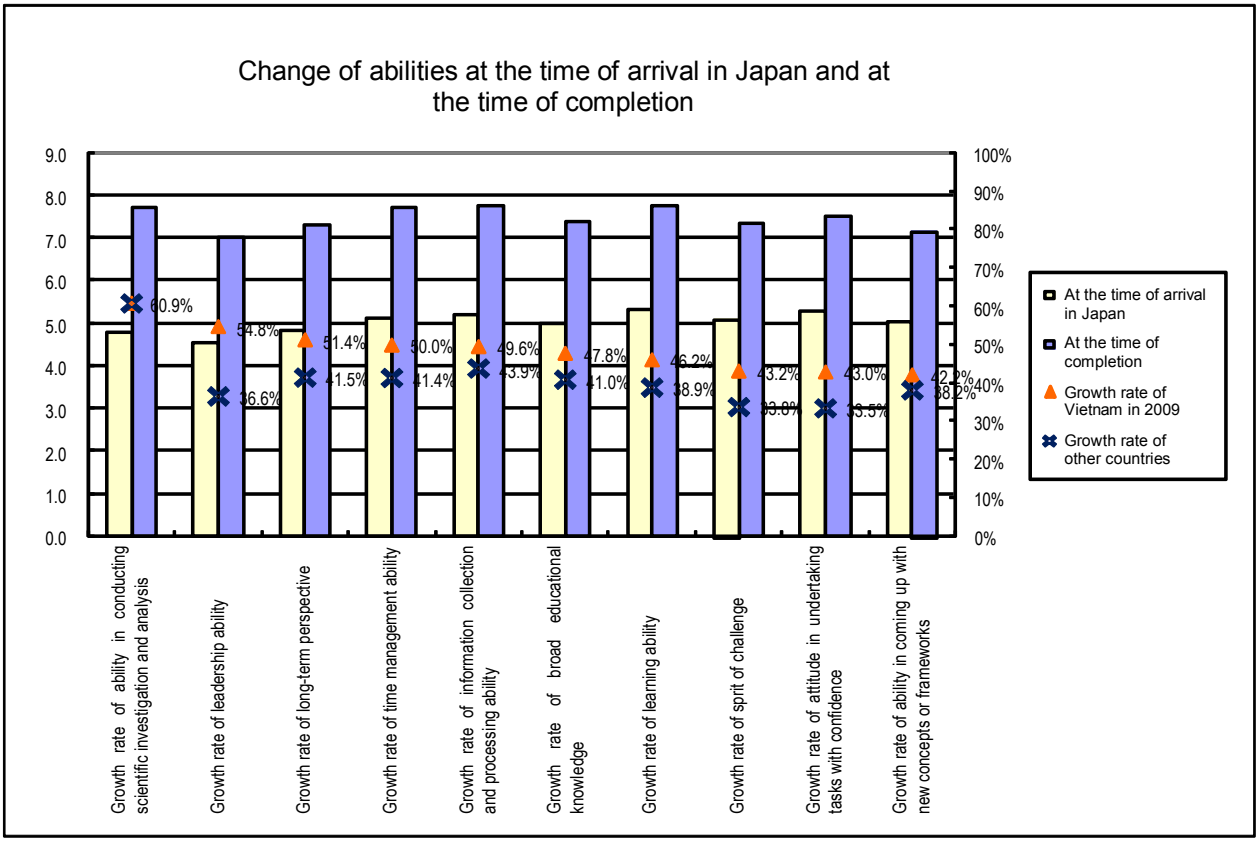


Figure 4-2 Changes in Abilities among Exchange Students in 2009 of JDS Program at the Time of Arrival in and Departure from Japan

[32] Questionnaire for Project Evaluation on JDS Program

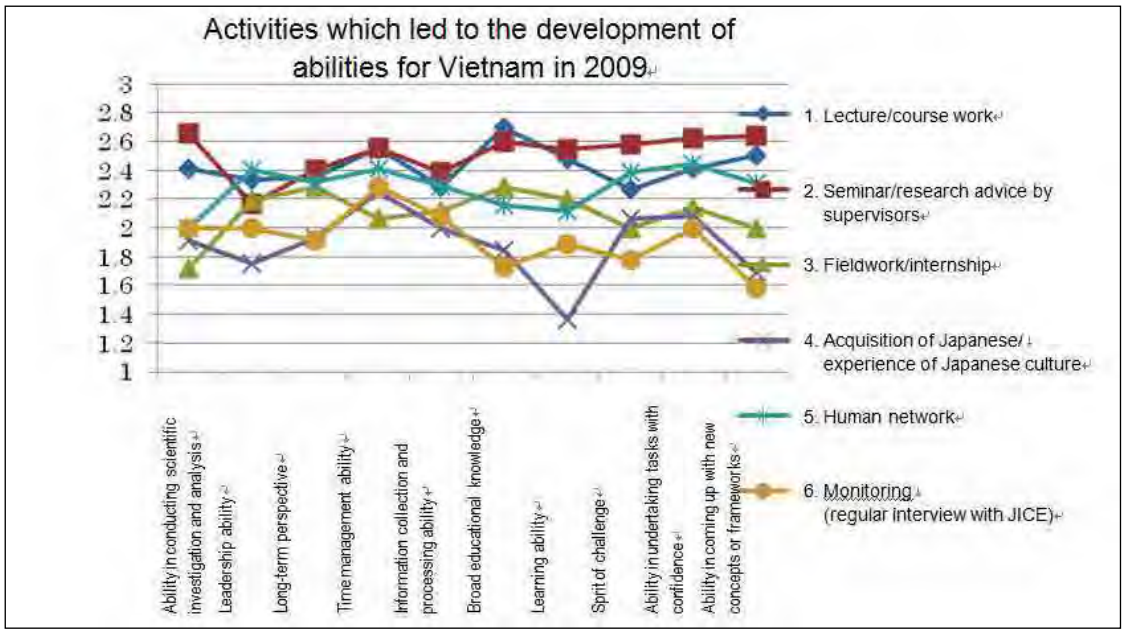


Figure 4-3 Activities which Led to the Development of Abilities

Japanese universities have been active in receiving exchange students and positive effects have been identified. However, some issues still remain, for which remedial actions need to be taken. These issues are:

- The number of graduate courses in Japanese universities taught in English has increased, but it is still limited. For instance, most of undergraduate courses are taught in Japanese language. This hinders foreign students to study in Japan.
- Universities in developing countries often request Japanese universities to introduce double degree programs with them. Japanese private universities relatively have more experience with setting double degree programs with universities in developing countries. However, Japanese national and public universities are still not willing to implement the double degree programs because they have less experience and it is difficult to ensure the consistency in levels of academic programs between Japanese and Vietnamese universities.

3) Collaborative Researches

There are many university staff members in Japan who are willing to carry out joint researches in the fields of agriculture, life science and social science. They regard Viet Nam as their research fields. On the other hand, the partnerships in the cutting-edge fields of engineering remain at the level of technical guidance or transfer rather than conducting joint researches, since the technical standards of Viet Nam is still low. Nonetheless, practical researches applying some technologies which have been established to a certain extent to the climate of Viet Nam have been actively carried out.

For instance, six joint researches have been implemented in Viet Nam as practical researches through the Science and Technology Research Partnership for Sustainable Development (SATREPS). This partnership is jointly promoted by the Japan Science and Technology Agency (JST) and JICA. Table 4-4 shows research topics, and Vietnamese and Japanese partner universities of these six joint researches.

Table 4-4 Research Titles and Vietnamese and Japanese Partner Universities of SATREPS in Viet Nam

Research Titles and Duration	Vietnamese Partner Universities	Japanese Partner Universities
Multi-Beneficial Measure for Mitigation of Climate Change in Viet Nam and Indochina Countries by Development of Biomass Energy (2011-2015)	Viet Nam National University, Hanoi, etc	Osaka Prefecture University, Ehime University, Japan International Research Center for Agricultural Sciences(JIRCAS), Osaka City University
Development of Landslide Risk Assessment Technology and Education in Viet Nam and Other Areas in the Greater Mekong Sub-Region (2010-2014)	Institute of Transport Science and Technology, Ministry of Transport	International Consortium on Landslides(ICL), Tohoku Gakuin University, Forestry and Forest Products Research Institute
Determine the Outbreak Mechanisms and Development of a Monitoring System at Food Administration for Multi-Drug Resistant Bacteria (2011-2015)	National Institute of Nutrition etc.	Osaka University, Osaka Prefectural Institute of Public Health University
Establishment of Carbon-Cycle-System with Natural Rubber (2010-2014)	Hanoi University of Science and Technology, Rubber Research Institute of Viet Nam	Nagaoka University of Technology, National Institute for Environmental Studies
Project for the Development of Crop Genotypes for the Midlands and Mountain Areas of North Viet Nam (2010-2014)	Hanoi University of Agriculture(HUA)	Kyusyu University, Nagoya University
Sustainable Integrations of Local Agriculture and Biomass Industries (2009-2013)	Ho Chi Minh City University of Technology	Institute of Industrial Science, The University of Tokyo, National Agriculture and Food Research Organization

Source: http://www.jst.go.jp/global/english/kadai/index.html

Among the six researches, the "integration of sustainable regional agriculture and biomass industry" is carried out by the University of Tokyo, etc., and Ho Chi Minh City University of Technology. This is a research which extracts biomass ethanol from rice straws, which are abundantly produced in Viet Nam, and rice-husk charcoals are used as fuels for the distillation of alcohol. This joint research is not a simple support, but each researcher has been carrying it out on an equal footing by providing each expertise.

In this research project, JST bears the expenses for activities in Japan, JICA bears expenses for equipment and transportation in Viet Nam and Viet Nam bears laboratory construction fees.

4) Conference of University Presidents in Japan and Viet Nam

Many exchange events between Vietnamese and Japanese universities have taken place. One of them is the conference of university presidents in Japan and Viet Nam. It was established in September 2009 as exchange students from Viet Nam increased and Viet Nam strategically became an important partner for Japan. The first conference was held in Hanoi, Viet Nam on 17th and 18th September, 2009 with participants from 45 Vietnamese universities and 49 Japanese universities. During the conference, 9 Memorandum of Understanding (MOU) were exchanged. The second conference was held in Kyoto on March 13, 2012. 42 universities and MEXT from the Japanese side, and 36 universities and MOET from the Vietnamese side attended the second conference. The participation of the large number of universities indicates

that many Japanese and Vietnamese universities are willing to strengthen cooperation with each other.

At the second conference, Japanese and Vietnamese universities made presentations on three topics: i) vital themes for universities in the 21st century; ii) educational cooperation & quality assurance, and iii) development of university systems to cultivate highly skilled human resources. MEXT explained programs to strengthen study of exchange students in Japan and budgets to develop global human resources. MOET requested Japan's ODA support to develop high quality human resources.

Each Japanese university expressed their willingness to expand their cooperation with Vietnamese universities as much as possible. The Vietnamese side is willing to ask Japanese universities' support in developing training programs for high quality human resources; however, they did not forward any concrete requests. At the end of the conference, 8 exchange agreements were newly established.

5) Considerations for University Projects

a. Lessons learnt from collaboration for establishment of new universities in other countries

In some cases, the support for higher education in developing countries involves the creation of new universities, including development of academic programs. For instance, JICA has implemented two projects: Egypt-Japan University of Science and Technology (E-JUST) and Malaysia-Japan International Institute of Technology (MJIIT). E-JUST has been implemented for the period of October 2008-Octorber 2013 and MJIIT has been implemented for the period of December 2011-June 2018. Since the development of academic programs in various fields was difficult to be completed by a single university, partner universities in Japan established a consortium. Table 4-5 shows key features of these two projects.

Generally, it is difficult for Japanese universities to send their staff members for a long period for overseas projects, since there are schedule conflicts with lectures at their universities or a long absence at their universities hinders their own research activities. Particularly in the field of engineering, many universities in Japan claim that it is practically impossible for a university staff to be involved in long term overseas assignments.

In particular, the following challenges and difficulties have been identified from these two projects.[33]

- It is difficult to secure professors, especially presently working teachers and young teachers from a Japanese university consortium due to i) no clear career path after working in the partner country, ii) less merit and incentive for Japanese teachers to work in the partner country, and iii) costs for Japanese university to find alternative teachers in case of sending presently working teachers.
- There are big burdens for leader universities due to i) many logistic arrangements for Consortium meeting and ii) travel expenses for joint supervision.
- There are differences in quality assurance and academic degree systems between partner universities and Japanese universities.
- Incentives should be created for Japanese University to implement joint supervision.
- Mechanisms should be created to enhance Japanese students to come to the partner universities.

[33] Presentation by JICA at Mid-term Consultation Meeting on June 14, 2012

Table 4-5 Key Features of Egypt-Japan University of Science and Technology and Malaysia-Japan International Institute of Technology

Name of Projects	Project Purposes	Inputs	Features of Consortium
Egypt-Japan University of Science and Technology (E-JUST)	Foundation to become a world class leading university will be established by steadily practicing the basic concept of E-JUST.	Japanese side has provided i) 7 long-term experts in positions of chief advisor, project advisor, field advisors and project coordinator, ii) 34 short-term experts/year including 7 program teacher*4persons/year, 3 Administration staff, and 3 technical staff, iii) field support (contract-out) including 7 fields (12 persons/year/field), iv) training in Japan of 10 persons/year, v) Equipment and vi) local cost.	15 Japanese universities formed a consortium including 3 leader universities and 12 supporting universities.
		Egyptian side is responsible for i) recruitment of E-JUST staff including management, teacher, technical staff and administration staff, ii) construction of new campus, iii) management costs including personnel costs, research/education costs and maintenance fees for building/equipment and iv) running costs.	
Malaysia-Japan International Institute of Technology (MJIIT)	A Japanese-style engineering education will be introduced and human resources with the practical, state-of-the-art technological R&D capacity needed in industry will be developed.	Japanese side has provided equipment and consulting services through yen loan. Japanese side has also dispatched the Vice President and 3 technical experts in positions of academia-industry collaboration, procurement and exchange program and developed education curriculum and management system through technical cooperation project.	24 Japanese universities formed a consortium.
		Malaysian side has been responsible for recruitment of MJIIT staff including management, teachers, technical staff and administration staff, salary for Japanese professors, scholarship for students and construction of the campus.	

Source: Presentation by JICA at Mid-term Consultation Meeting on June 14, 2012

b. Considerations for future university projects in Vietnam

Japanese universities have accumulated experiences of cooperative activities with Vietnamese universities, even though they faced difficulties and limitation. Considering the experiences, the JICA study team identifies that the following matters should be considered when university projects are designed and implemented in Viet Nam.

Overall approaches for cooperation. Japanese universities consider that cooperation with universities in developing countries should be implemented based on long-term views and plans because it takes a long time to see the outcomes of HRD as well as research outputs in higher education.

It can be an appropriate approach to start building individual relationships between university staff including professors on both sides and then expand the cooperation between departments and universities based on the positive individual relationships. For instance, a joint research between researchers or laboratories will start at first and then with the development of mutual trusts, the cooperation will lead to sustainable exchanges and joint researches between departments, divisions and universities. In this context, it is relatively easy to implement university projects of universities in developing countries where some of researchers or professors have had prior experiences studying in Japan and working in collaboration with Japanese universities.

If it is appropriate to form a consortium, it is indispensable to discuss target academic fields, contents, roles of each Japanese university and implementation arrangements in details with potential partners in Japanese universities at an earlier stage. The roles of each member university should be clarified according to academic fields so that coordination among consortium members is required at minimum. In addition, the number of consortium member should be limited considering burdens of lead universities. As the number of member universities increases, burdens of lead universities will increase, which is not sustainable, even if there are leaders who have persistent enthusiasm.

Many Japanese universities are not able to send their staff members to projects overseas for a long period, while they are relatively willing for short-term overseas assignments for developing the capacity of lecturers and researchers. Considering the situation, the following measures should be taken into account when projects are formulated.

- Enough time and opportunities should be provided so that Vietnamese researchers, lecturers and management staff are mainly trained in Japan with the outcome of the training monitored in Viet Nam.
- Opportunities, such as receiving of university staff in Japan, holding of seminars and short-term teaching sessions in Viet Nam, should be allocated over the project periods to effectively achieve goals.

Some Japanese universities showed concerns regarding the motivation of Vietnamese lecturers about researches. Vietnamese lecturers tend to be less motivated and spend more time on side business rather than researches partly due to a low salary. This issue should be examined carefully when university projects are designed.

Approaches of cooperation towards individual issues. In the current situation, in general, Japanese universities are not willing to cooperate with Vietnamese universities in pursuing double degree programs because it takes time to develop a system to ensure the transfer of credits and consistency of levels.

Despite an increasing number of academic courses in English in Japanese universities, it is necessary to bear in mind the necessity of learning Japanese language when exchange students programs are designed because they need somg Japanese language proficiency to comfortably live in Japan.

When Japanese universities consider joint researches or projects with Vietnamese universities beyond receiving exchange students, it will be helpful if Vietnamese universities have professors who have experiences studying in Japan. Those professors are familiar with the way of conducting researches and other works of Japanese professors and the practice of maintenance and operation of facilities and equipment in Japanese universities.

Senior Japanese professors are able to support developing academic programs. However, it is not easy to find such persons and ensure enough time for long-term overseas assignments. When university projects include the development of academic programs, it is necessary to examine the possibility of combining university staff members who have retired and postgraduate researchers.

(2) Academic and Industry Cooperation

The following section mainly describes mainly cooperation between Vietnanese universities and Japanese industries in Viet Nam.

1) Internship

Internship is considered as an effective process for students to gain practical job experience and see if they are qualified for the job. There are many private companies, especially in Ho Chi Minh City and vicinities, which accept interns and employ from among them. However, interviews with Japanese companies, most of which are manufacturers, revealed that they seem hesitant to accept interns with poor practical experiences.

2) Scholarship

Japanese companies in Viet Nam offer scholarship for Vietnamese students, which are summarized in Table 4-6. Several companies support few students studying in Japan each year.

Table 4-6 Examples of Scholarships Provided by Japanese Companies in Viet Nam

Student		Sponsor Companies
Students studying in Japan	Graduate	All Nippon Airways, Panasonic, Nagoya Institute of Technology + Brother Industries, Hitachi, Iwatani
Students studying in Viet Nam	Graduate	Toshiba
	Undergraduate	Toyota Motor, DENSO, HOYA, Brother Industries, Sumitomo, LIXIL (former INAX), Sumiden Shoji, Nghi Son Cement (Taiheiyo Cement + Mitsubishi Materials), Yamaha Motor, Oshima Shipbuilding, Mitsubishi Corp.

Source: Scholarship of Japanese Companies (by Japanese Embassy in Viet Nam)

3) Collaborative Research and Development

Universities and industries work together in research and development where the former's academic interest meets the latter's application interests. It is mutually beneficial. The universities enjoy the chance to find new research fields and applications, get a hefty research fund and utilize the company's production facilities. Companies are able to acquire

state-of-the-art science and technology, have intellectual property rights and stimulate their researchers and engineers.

Some of the 10 universities which are subjects for the Study have provided list of their private-sector partners of collaborative research and development, which are summarized in Table 4-7. Though it shows they are very active in collaboration with many international companies, the details of the collaboration are not disclosed.

Table 4-7 List of Partners of Collaborative Research with 10 Universities

Target Universities for this Study	Partners of Collaborative Research
Can Tho University	Sumitomo Metal Industries, Sumitomo Forestry, Mitsubishi Electric, SIEMENS
Hanoi University of Technology	Toshiba, Panasonic, Mitsubishi Electric, Canon, Mitsubishi Heavy Industries, Honda Motor, Yamaha Motor, Samsung Electronics, Intel, SIEMENS
Danang University of Technology	Daikin Industries, Ajinomoto, Toyota Motor, Cadence Design Systems, Texas Instruments, SIEMENS, Agilent Technologies
University of Technical Education in Ho Chi Minh City	Environment-friendly civil engineering with a Japanese consultant firm (Firm's name was not disclosed)
Thai Nguyen University of Technology	Toyota Motor
Hanoi University of Agriculture	New variety development with seed and plant suppliers (Partners' names were not disclosed)
University of Agriculture and Forestry in Ho Chi Minh City	Industrialization of upland crops and food processing (partners' names were not mentioned)
University of Agriculture and Forestry in Hue University	About five collaborations on fertilizer
Viet Nam National University, Hanoi	Toshiba, Panasonic, Petrovietnam, Viettel Mobile
Viet Nam National University, Ho Chi Minh City	JFE Steel, POSCO, Samsung Electronics

Partner companies of collaborative research (this table shows only mentioned ones)

4) Intellectual Property Right and Technology Transfer

Viet Nam established "Intellectual Property Law (No.50/2005/QH11)" in 2005 with a JICA's technical assistance project "Modernization of Intellectual Property Administration Project" to improve the complicated law system and began to cooperate with international community.[34] The law protects intellectual properties according to international standards, including copyrights, inventions, industrial designs, layout-design of semiconductor chips, business secrets, trademarks, trade names, and geographical indications.

National Office of Intellectual Property of Viet Nam (NOIP) provides statistics. They registered 666 patents in 2008 and 7,460 in patents cumulatively. But the numbers of patents applied by the Vietnamese are 39 and 360, in 2008 and , respectively, sharing only 5%. They offer no data regarding university's applications. Some of the target universities have provided the list of their intellectual property rights, which are shown in Table 4-8.

[34] Watanabe & Toyosaki: "Vietnam Intellectual Property System; Its Impact on Innovation System of Vietnam", Patent Studies (in Japanese) No. 47 (March 2009) pp47-60

Table 4-8 List of Their Intellectual Property Rights of Target Universities

Nominated Universities	Owned Intellectual Property Rights
Can Tho University	a university trademark
Hanoi University of Technology	Less than 10
Danang University of Technology	8 domestic patens, 3 international patents
University of Technical Education in Ho Chi Minh City	3 rights
Thai Nguyen University of Technology	Not mentioned
Hanoi University of Agriculture	6 varieties of rice, 3 varieties of tomato
University of Agriculture and Forestry in Ho Chi Minh City	3 patents, 13 industrial designs
University of Agriculture and Forestry in Hue University	13 varieties of rice
Viet Nam National University, Hanoi	a patent, 8 patents pending, 3 industrial designs, a trademark
Viet Nam National University, Ho Chi Minh City	13+ patents, 5 patents pending

Source: Intellectual property rights owned by the university (this table shows only mentioned ones)

Viet Nam established "Law on Technology Transfer (No.80/2006/QH1) and "Decree Detailing and Guiding the Implementation of a Number of Articles of the Law on Technology Transfer (Decree No.133/2008/ND-CP) to simplify the procedure for technology transfer. The law also specifies which transfer is eligible, encouraged, restricted or prohibited.

For instance of technical transfer by Vietnamese universities, Hanoi University of Agriculture transfers new rice varieties to seed suppliers so that they distribute seeds to farmers, while Can Tho University distributes new varieties to farmers and cooperatives through its agricultural experimental station. But currently, there seems to be no standard model for Viatnamese universities to transfer technology and resultantly earn money.

5) Venture/Startups

Viet Nam has just begun to incubate venture businesses bringing intellectual properties (e.g., new ideas, materials and technology) created in the university into the market. Vietnamese universities do have good inventors but not so many entrepreneurs who start up new businesses with special expertise and experiences. It is a pressing issue for Viet Nam to breed entrepreneurs by giving young apprentices necessary knowledge and experiences.

Though entrepreneurship classes, like those introduced in Japanese universities in the last decade, could provide them with necessary knowledge, it is not easy to recruit such mentors in Viet Nam who have experiences in managing startups and/or guiding their management. It is more practical to send and train graduate students and teaching staffs of economics and business administration to developed countries. The graduate students and teaching staffs sent could also be from Japan where venture companies are born very frequently.

Ho Chi Minh City University of Technology founded a venture business to extract useful substances from plant leaves by patented technology invented in a collaboration program with Toyohashi University of Technology. Unfortunately, this startup has not yet taken off because of insufficient supporting industry. Hanoi University of Technology created a venture fund, Bach Khoa Hanoi Technology Investment and Development One Member Co. Ltd. (BK Holdings), in 2008 to invest in new businesses. It has a plan to promote venture businesses by building an incubation facility for them in its planned new campus. University staffs are encouraged to buy

shares so that they have incentives to create intellectual properties and startups. Another example of incubation is Unitech Viet Nam Co. Ltd., hosted by Danang University of Technology (DUT). It is a small branch of Unitech in Japan and employs more than dozen DUT graduates to design printed-circuit boards within the university campus.

6) Sponsored Course

Toyota Viet Nam Foundation, founded in 2005 with USD 4 million from Toyota Motor, has been sponsoring "Monozukuri (Japanese-style manufacturing)" course in Hanoi University of Technology since 2005. It began with "Kaizen (a systematic mechanism of continuous improvement as a part of Toyota Production System)" training for professors and students of the university as well as managers from enterprises. The program has expanded to seven courses including "The 7-step Problem Solving Process at Toyota," and more than 350 people join each lecture. The Foundation wants to supply human resources with Monozukuri expertise not only for Toyota Motor but also Vietnamese industries. The Foundation and the university agreed in December 2011 to extend the program for another three years.

7) Trainer Dispatch

There are programs for enterprises to dispatch their experienced and knowledgeable employees as a trainer in the university. International companies sometimes dispatch ones from outside Viet Nam when they have no candidate of trainers in Viet Nam. Universities welcome this practice because a trainer can provide very practical expertise and is paid by his/her employer.

Intel Corp. has "Intel Lab" in Danang University of Technology where selected students are trained by Intel experts in English for three weeks at a time. This is an advanced training course and Intel wants to find gifted students. This university also accepts trainers from Japanese companies.

Figure 4-4 Intel Lab in Danang University of Technology

Since 2000, Toyota Motor Viet Nam provides "Toyota Technical Education Program" to Ho Chi Minh University of Technical Education and four other universities to train instructors of vocational schools in common repair as well as body-and-paint repair. The program not only supplies facility and teaching tools but also sends Toyota instructors, helping vocational schools train maintenance and repair engineers, partially as corporate social responsibility (CSR) and partially as preparation for emerging motorization in Viet Nam.

Figure 4-5 Toyota Technical Education Program at Ho Chi Minh University of Technical Education

8) Donation of Equipment

Vendors of automation devices and measurement instruments donate or provide their products at very low prices to universities for students' training and experiments. They do this as a part of CSR and expect trained people to continue using their desired instruments after graduation. The lab is also expected to serve as a showroom for university visitors. Companies often leave equipment after a collaborative research to be used by students. However, no further information is available on the number of such equipment.

9) Science Park Plan

Japan Viet Nam Economic Forum (JVEF) proposes a plan for "Hanoi Science Park with Japan-Viet Nam University."[35] See Figure 4-6. Its major advantage is to aim at an autonomous and self-sustaining university supported by "Science Park Fund" to provide specialists and technology to industries. The plan is to install colleges and schools of Science & Technology, Medical-Nursing-and-Care, Economy & Business Management, Agriculture & Forestry, and Japanese Culture & Language, in Hoa Lac area, 30km from Hanoi and next to Hoa Lac Hi-tech Park. It also intends to entice hotels, hospitals, convention centers, residential buildings, shopping centers, factories and research labs of companies as well as transit services to/from central Hanoi.

The Japan-Viet Nam University is expected to provide human resources to those industries and solicit, in return, contributions from their profit to the Fund for operation and research activities of the University. JVEF anticipates 1,000 enrollments each year and discusses collaboration with Viet Nam National University Hanoi, which has another plan to migrate its campus to Hoa Lac.

[35] JVEF; http://jvef.org/index.vn.html

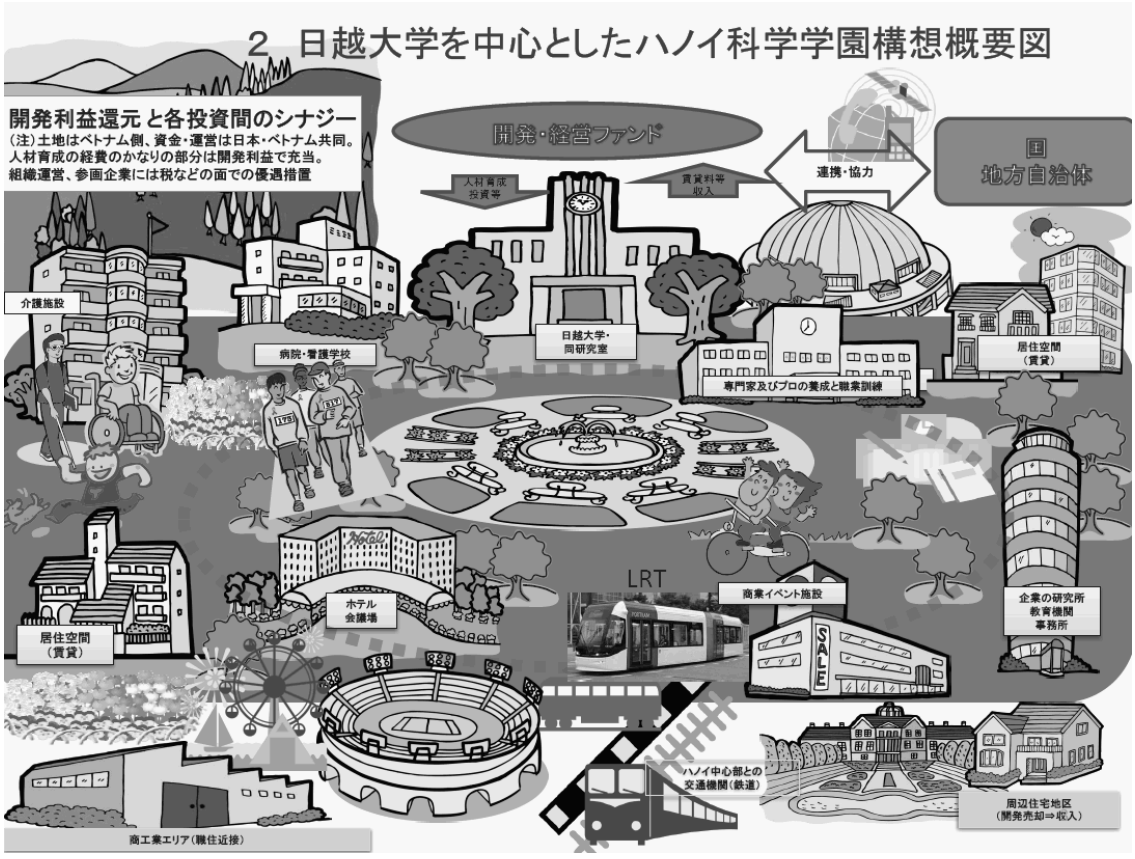


Figure 4-6 Conceptual Map of Hanoi Science Park Plan[36]

4.1.5 Private Provision of Higher Education

The ideas of cooperation with the private sector are becoming popular when discussing issues in Vietnamese education. There is an example of the private university founded by a private enterprise as well as foreign invested universities highlighted by MOET at the Mid-term Consultation Meeting on June 14, 2012 in Hanoi, Viet Nam.

Reviewing the historical background, Viet Nam only had public institutes until 1988. The law cautiously changed to allow non-public investment with three types of higher education institutes: people-founded universities[37]; semi-public universities; and private universities[38]. The people-founded universities would be phased out and become either semi-public or private universities. The first people-founded (currently considered as private) university Thang Long University, was established in 1988 by Vietnamese mathematics professors in Hanoi and France.[39]

The Government also set up the target that "non-public" categories would cater to 40% of higher education enrolment by 2010,[40] which was not achieved as of 2012. The private students'

[36] Source: Hanoi Science Park Plan from VJEF homepage
[37] Universities founded by a community in locality.
[38] Universities established by an individual or by a social or profession association.
[39] Wikipedia, "Hanoi" (http://en.wikipedia.org/wiki/Hanoi accessed on July 2, 2012)
[40] Technical Assistance Consultant's Report for Viet Nam: Preparing the Higher Education Sector Development Project (HESDP), SMEC International Pty. Ltd, June 13, 2010.

ratio was around 10% in 2010. MOET stated to increase the ratio of private higher education institutes in Viet Nam by 2020 at the Mid-term Consultation Meeting on 14th June 2012.

RMIT University[41] (the Royal Melbourne Institute of Technology) is an Australian public university located in Melbourne, Victoria. It has two branches in Viet Nam as RMIT International University in Hanoi and in Ho Chi Minh City. RMIT International University Viet Nam is the first fully foreign-owned university licensed to operate in its own right in Viet Nam. In 1998, RMIT University was invited by the Government to establish campuses in Viet Nam and a license was granted in 2000 from the MPI to deliver undergraduate and postgraduate training and research programs. The RMIT was approved in 2000 as a private enterprise under the trade laws, and is regulated under commercial law rather than Education Law. The status of the university in Viet Nam is private university.

The programs started in Ho Chi Minh City in 2001 and in Hanoi in 2004. A new campus was established in Ho Chi Minh in 2005. The total number of students of both campuses is now over 5,000. The bachelor's programs are Commerce, Accountancy, Marketing, Economics and Finance, Multimedia Design, Information Technology, Business Information Systems, and Professional Communication. The master's programs are MBA, and Master of Engineering (Electronic and Computer Engineering). The programs are taught in English and the students receive international degrees.

The British University Viet Nam (BUV)[42] is the first and the only British owned university in Viet Nam. It was established in 2009 by a full foreign investment to provide world class educational opportunities to Vietnamese students. BUV is considered as a private university. The cost of studying at BUV is less compared to the cost of studying in UK. A full-time enrolment in UK costs around $30,000 to $40,000 per year, including living costs, but BUV provides courses ranging from $19,000 to $22,000. The curricula, teaching materials and resources, as well as its degrees are provided by partner institutions, such as University of London and Staffordshire University.

In 2012, BUV started offering a pre-university program to enter UK universities and three other programs: i) Banking and Finance (BSc. awarded by University of London); ii) International Business Management (BA awarded by Staffordshire University); and Marketing Management (BA awarded by Staffordshire University).

BUV has a campus in Hanoi with the capacity of 1,000 students. For their future plan, BUV will start constructing buildings and open its new campus in 2014 at Ecopark[43], located 13 km away from the center of Hanoi, with its investment of $40 million. The new campus has capacity of receiving 10,000 students.

Tan Tao University[44] (TTU) is a private university established on November 25, 2010, according to the Decision No 2154/ QD-CP of the Prime Minister. TTU is founded by TANTAO

[41] RMIT, "RMIT Vietnam" (http://www.rmit.edu.vn, accessed on 28 June 2012)
[42] British University Vietnam, "FQA"(http://www.buv.edu.vn/en/admissions/faqs.html, accessed on June 28, 2012)
[43] Ecopark is an urban township development in Hanoi, the capital of Vietnam. Currently under development, Ecopark will span 500 ha with an estimated investment capital of over US$8.2 billion. The entire development, divided into nine construction phases, is expected to complete in an 18-year period. (Wikipedia, http://en.wikipedia.org/wiki/Ecopark)
[44] Tan Tao University website: http://ttu.edu.vn/
http://www.thuvienphapluat.vn/archive/Quyet-dinh/Quyet-dinh-2514-QD-TTg-thanh-lap-Truong-dai-hoc-Tan-Tao-vb115065t17.aspxn)
(http://www.nhandan.com.vn/cmlink/nhandandientu/thoisu/giao-duc/gop-ph-n-xay-d-ng-tr-ng-i-h-c-tan-t-o-x-ng-t-m), Bao Nhan Dan Dien Tu

Group[45] and its main campus is located in Tan Duc, Duc Hoa district, Long An province. The campus of 103 ha was built in 2008. Nearly 60% of TTU's lecturers come from abroad. They are experienced lecturers working in foreign universities. The curriculum is taught in English based on the model of high quality training of the Duke University in United State. The Advisory Board members are composed of Rectors/ Vice Rectors/ Director of Rice University and Duke University.

4.1.6 Challenges in Higher Education Sector

Despite of some remarkable achievements in the last 10 years, higher education in Viet Nam still faces serious weaknesses and challenges. Their summary is presented as below[46].

- Training quality and effectiveness are low. Competencies of trained labor force do not meet the demands of society's development. Lack of educational equity is still a serious concern.
- Training scales do not meet requirements of the industrialization and modernization of the country. Higher education is still "education for minority of population". Only 10% of age-group in population gets access to higher education. The ratio of students majoring in natural science and engineering fields is as low as 4% and 16%, respectively[47].
- The network of higher education institutions proves unreasonable. There are no effective links between training and research. Research capacity of higher education institutions is still not enough.
- Resources for higher education development are limited to mainly those from state funds and small tuition fees paid by learners. Universities have no plans or capacity to mobilize and find various resources for their development.
- Training curricula are closed and inflexible, focusing on academic and theoretical contents and do not pay attention to practice. Teaching and learning methods are not renewed. They give a lot of responsibilities to teachers and do not encourage self-learning by learners.
- Lecturers do not meet requirements of higher education development in both quantity and quality, especially at the leading research institutes. Lecturers do not pay attention to scientific research.
- Higher education management is too centralized. It does not provide autonomy and accountability for individual universities/colleges. In addition, competition among institutions is not encouraged.

In short, higher education in Viet Nam has not yet caught up with the need of country's economic innovations and does not meet the requirements for the country to integrate into global and regional community. In addition to the above weaknesses, after Viet Nam joined WTO in 2007, there have been other concerns for higher education development. The influences of globalized society might lead to increase the distance between Viet Nam and other countries. For example, brain-drain might be more serious. Domestic higher education might be damaged since it is not strong enough to compete with other countries' imported education in Viet Nam. Traditional values and cultures may have to be changed into the preferable foreign styles.

[45] Its founder is Madam Dang Thi Hoang Yen, the president and Chairwoman of the Governing Board of Tantao Group. She is now a member of Vietnam National Assembly.
[46] MOET, Project "Comprehensive and substantial renewal of higher education in Vietnam 2006-2020"
[47] Technical Assistance Consultant's Report for Viet Nam: Preparing the Higher Education Sector Development Project(HESDP), SMEC International Pty. Ltd, June 2010

4.2 Vocational Training

4.2.1 Basic Policies and Strategies on HRD through Vocational Training Sector

(1) Law on Vocational Training

Law on Vocational Training was passed by the 11th National Assembly of Socialist Republic of Viet Nam on November 29, 2006 and was effective from June 1, 2007. The Law applies to vocational training institutions and individuals engaged in vocational training activities, and institutions and individuals related to vocational training activities in Viet Nam. The Law regulates the organization and operation of vocational training institutions, and rights and obligations of organizations and individuals engaged in vocational training activities.

The Law on Vocational Training has 11 chapters and 92 Articles. In addition to the chapter of general provisions on vocational training levels, vocational training institutions, vocational trainers and trainees, and state management of vocational training, the Law also has chapters regulating relevant contents of particular characteristics of vocational training, such as the rights and obligations of enterprises in training activities, vocational trainings for disabled persons, accreditation for vocational training quality and assessment and certification of national vocational skills.

The Law prescribes the Government policies on vocational training development as follows:

- Investment is encouraged in i) enlarging the vocational training networks, improving the vocational training quality in order to supply human resources for the nation's industrialization and modernization, ii) helping to sort out graduates from lower secondary schools and upper secondary schools, iii) popularizing vocations among youth, iv) meeting the demand for vocational training, and v) training workers for employment abroad.
- Investment is focused to i) renew vocational training syllabus, curriculum and methods, ii) develop the trainers, iii) modernize equipment, iv) encourage scientific researches to improve training quality, v) develop some vocational training institutions in order to approach the quality of regional and world levels, vi) pay attention to develop vocational trainings in socio-economic areas, particularly those with poor conditions, and vii) prioritize the training of occupations required by the market which are difficult to socialize.
- Measures are taken to i) socialize vocational training activities, ii) encourage Viet Nam-based organizations and individuals, foreign organizations and individuals, and overseas Vietnamese to set up vocational training institutions and participate in vocational training activities, iii) encourage artisans and expert workers to participate in vocational training, iv) encourage and support the training of traditional and rural vocations, v) enjoy incentives in land, tax, and credits in accordance with laws and regulations.
- Support should to be given to policy beneficiaries, those who have devoted to the country, veterans, ethnic minority people and the poor. The support also extends to disabled people, homeless orphans, laborers of agricultural households whose lands have been confiscated and other beneficiaries. The support aims to provide vocational training to them so that they can find a job or be self-employed to earn a living.

The Law has created a legal framework for the development of vocational training. However, some provisions of the Law need to be added or adjusted to fit the situation and context. Therefore, the National Assembly decided to amend the Law and supplement some articles, which will be passed in 2013. The amended Law on vocational training is a basis for implementation of the action program of "Vocational Training Development Strategy 2011-2020 (VTDS)".

(2) Vocational Training Development Strategy 2011-2020

The VTDS was approved by the Prime Minister on May 29. 2012.[48] By 2020, the strategy plans to achieve the following targets: i) vocational training will satisfy the labor market needs; ii) quality of some occupation will reach that of developed countries in ASEAN and the world; and iii) vocational training will produce a contingent of skilled employees to contribute to improving national competitiveness, and vocational training will be universalized. To achieve the general targets, VTDS sets 9 specific targets to be achieved by 2015 and 2020 as shown in Table 4-9.

Table 4-9 Specific Targets in the Vocational Training Development Strategy 2010-2020

Performance Indicators	Performance Targets	
	2011-2015	2015-2020
The rate of trained employees will increase.	- 40%, equivalent to 23.5 million people (20% of which include collegial vocational and intermediate vocational trainings)	- 55%, equivalent to 34.4 million people (23% of collegial and intermediate vocational training)
The new training programs will be applied for collegial and intermediate vocational trainings.	- About 2.1 million people receiving new program at collegial and intermediate vocational trainings. - About 7.5 million people receiving new programs at elementary vocational training and vocational training under 3 months	- About 2.9 million people receiving new program at collegial and intermediate vocational trainings. - About 10 million people receiving new programs at elementary level and vocational training under 3 months
The networks of vocational institutions will be expanded.	VCs: 190 (60 non-public, 26 high quality) VSSs: 300 (100 non-public) VTCs: 920 (320 non-public)	VCs: 230 (80 non-public, 40 high quality) VSCs: 310 (120 non-public) VTCs: 1,050 (350 non-public)
The number of vocational teachers will increase.	VCs: 13,000 VSSs: 24,000 VTCs: 14,00	VCs: 28,000 VSSs: 31,000 VTCs: 18,00
The programs and curriculum will be upgraded or newly developed at each level.	International level: 26 Regional level: 49 National level: 130 Elementary level: 300	International level: 35 Regional level: 70 National level: 150 Elementary level: 200
The quality of all key occupations will be verified.	3 quality verification centers will be operated.	
The framework of national vocational qualification will be developed.	- 250 standards of national vocational skills issued. - 2 million people receiving certificate	- 400 standards of national vocational skills issued. - 6 million people receiving certificate
Improving the labor market system connecting vocational training with employment.*	N/A	N/A

Source: Vocational Training Development Strategy 2011-2020
Note*: No numerical performance targets are set in the VTDS.

[48] Decision Approving Vocational Training Development Strategy Period 2011-2020 (No. 603/QD-TTg) dated May 29, 2012

To achieve the specific targets, the VTDS identifies 9 actions (or solutions): i) innovating State management on vocational training; ii) improving the lecturers, teachers and vocational training management staff; iii) building a national vocational qualification framework; iv) developing program and curriculum, v) enhancing the vocational training facilities and equipment; vi) controlling and ensuring the vocational training quality; vii) connecting vocational training with labor market by participation of the enterprises; viii) raising awareness of vocational development; and iv) promoting international cooperation on vocational training. Among these 9 actions (or solutions), MOLISA-GDVT will proceed with the first three actions (or solutions) on a priority basis because they affect the whole vocational training system and improve the quality of the system.[49] The summary contents of these priority actions (or solutions) are presented in Table 4-10

Table 4-10 Specific Targets in the Vocational Training Development Strategy 2010-2020

Prioritized Actions (or Solutions)	Summary Contents of Priority Actions (or Solutions)
Innovating State management on vocational training	- To improve the legal system of vocational training. To amend the Law on Vocational Training and regulations related to vocational training in the Labor Law. - To improve mechanisms and policies on vocational training by: (i) improving policies to attract vocational teachers; (ii) innovating financial policies on vocational training; (iii) making the training policies of foreign language consistent with the level of training; and (iv) improving policies for trained employees. - To improve the mechanism of state management on vocational training. - To have a mechanism to make vocational training institutions independent and self-sufficient. - To promote IT application in vocational training and vocational management; to set up database network for vocational training - To implement training articulation and strong separation in vocational training. - To establish a vocational training assistance fund toward socialization with initial capital from State budget, contributions of enterprises and other sources to develop vocational training. - To plan a network of vocational training institutions by region, locality; priority is given to newly established non-public vocational training institutions and cooperation and establishment of vocational training institutions invested by foreign capital is encouraged. There are specialized vocational training institutions for the disabled and the ethnic minorities. - To promote socialization and diversification of resources for development of vocational training, including government, enterprises, students, national and international investors, for which the state budget is important (to raise the rate of expenditure on vocational training from the State budget for education to 12% - 13%). The Government has assistance policies on capital, land, and tax for non-public vocational training institutions.
Improving the lecturers, teachers and vocational	- Standardizing teachers in national, regional international key jobs about the level of training, vocational skills and vocational pedagogy. 100% of

[49] Differentiating from other six actions (or solutions), the VTDS categorizes the first two actions (or solutions) as breakthrough solutions and the third action (or solution) as key solution. Among these three, the first two are prioritized.

Prioritized Actions (or Solutions)	Summary Contents of Priority Actions (or Solutions)
training management staffs,	these teachers shall meet the standards in 2014. - The State shall ensure the training and retraining for vocational teachers toward the standardization, securing sufficient number of teachers; an appropriate structure by profession and training levels. Mobilize scientists, technicians, artisans, skilled workers, and excellent farmers participating in vocational training for rural workers. - Arranging, reorganizing and training and innovating activities retraining institutes for vocational teachers to train and retrain vocational pedagogy and improve vocational skills for vocational teachers. - Standardizing the vocational management staffs. Set up the training and retraining content and program for vocational management staffs; develop the professional vocational management staff. - Establishing vocational training institute with the training and retraining function for new technology; training and retraining teachers and vocational management staff; research vocational training science based on the merger and upgrade of the National Institute Vocational Training (NIVT).
Building a national vocational qualification framework,	- Building a national vocational qualification framework corresponding with national education framework - Completing national vocational qualification framework. - Promulgating standards of national skills for popular profession. - Receiving and transferring the standards of skills for professions focusing on developing training curriculum framework investment at the regional and international level.

Source: Vocational Training Development Strategy 2011-2020

More specifically, the VTDS indicates 8 action programs (2 actions under 'To build the Law and legal documents' and 6 actions under "To build and implement proposals, projects and programs"), which help achieve the goals and targets set out in the VTDS. The status of action programs are describes in section 4-2-2.

(3) Regulation on Key Occupations and Vocational Institutions

MOLISA selected key occupations and vocational institutions for investment support from national targets program during 2011-2015 by Decision No: 826/QĐ-LĐTBXH dated 7th July, 2011. In the decision, 30 occupations, 58 occupations, and 120 occupations were selected to attain the international level, ASEAN level and national level, respectively.[50] In addition, 246 vocational institutions were selected to develop one or more occupations to the designated level.

The key occupations were selected based on three criteria: i) labor market needs; ii) situation of the local economic industry which has fast growth and highly competitive goods and services; and iii) usage of high-quality human resources and high technology. On the other hand, vocational institutions which provide training of the key occupations at the designated levels were selected based on four criteria; i) schools selected to train key national occupations approaching regional or international standards; ii) schools in the planning of the high-quality school network, reached international standards and received investement from ODA projects; iii) schools belonging to key economic sectors, dynamic economic regions or localities which

[50] International level, ASEAN level and national level are used as follows: International level: following standards of advanced countries or standards recognized by advanced countries over the world, ASEAN level: following standards of advanced countries in ASEAN region or standards recognized by advanced countries in ASEAN regions, and national level: satisfying conditions to ensure the training quality under the national regulations.

have industrial parks; and iv) schools which have good training results in the past and schools which have favorable situations to develop and conduct the designated levels of the training.

Vocational institutions which were included in the list can get an access to "Renovation and Development of Vocational Training" under the National Target Program. The budget is ensured to upgrade the vocational training quality by 2015.[51]

(4) Project of Establishment of High Quality Vocational Schools

One of the action programs specified in the VTDS is a Project of Establishment of High Quality Vocational Schools. Currently, MOLISA-GDVT is preparing the list of the 40 high quality vocational schools including international level vocational schools. The schools designated as high quality vocational schools are intended to lead the vocational training sector in Viet Nam. According to the draft list of the 40 high quality vocational schools as of April 2012 in Table 4-11, 26 vocational schools including 5 international level vocational schools and 40 vocational schools including 12 international level vocational schools will be upgraded to high quality schools by 2015 and by 2020, respectively.

Table 4-11 List of 40 High Quality Vocational Schools (Draft as April 2012)

No	High Quality School	By 2015		By 2020	
		Total Number of High Quality Schools	Total Number of International Level Schools	Total Number of High Quality Schools	Total Number of International Level Schools
I.Northern Midland & Mountain Areas		2	0	4	1
1	Yen Bai Vocational College	x		x	X
2	Phu Tho Mechanic & Electric Vocational College	x		x	
3	Dong Bac Vocational college of Technology and Agro-Forestry			x	
4	Bac Giang Vocational College			x	
II.Red River Delta		7	1	11	3
1	Hai Duong Vocational College	x		x	
2	Central Vocational College of Transport No.II			x	X
3	Vocational College Mo.3/BQP	x		x	
4	Hai Phong Vocational College of Tourism			x	
5	Vocational College of Agriculture Mechanics	x	x	x	X
6	Hanoi Vocational College of high technology	x		x	X
7	Hanoi Vocational College of Industry	x		x	
8	Vocational College of Technology & Technique	x		x	
9	Vinh Phuc Vietnamese – German Vocational College			x	
10	Nam Dinh Vocational College	x		x	

[51] Every year up to 2015, Prime minister's approval is necessary to actually allocate the budget.

No	High Quality School	By 2015		By 2020	
		Total Number of High Quality Schools	**Total Number of International Level Schools**	**Total Number of High Quality Schools**	**Total Number of International Level Schools**
11	Tam Diep Vocational College of Electric Engineering Building			x	
III.North Central and Central Coast		7	2	10	3
1	Thanh Hoa Vietnamese – German Vocational College			x	
2	Vietnamese – Korea Vocational College of Technology & Technique	x	x	x	X
3	Nghe An Vocational College of Tourism & Commerce	x		x	
4	Ha Tinh Vietnamese – German Vocational College	x		x	
5	Phu Yen Vocational College			x	
6	Central Region Vocational College of Electric Engineering Building & Agro-Forestry			x	
7	Nha Trang Vocational College	x		x	
8	Hue Tourism Vocational College	x	x	x	X
9	Da Nang Vocational College	x		x	
10	Dung Quat Vocational College of Technology & Technique	x		x	X
IV.Tay Nguyen (Highland)		2	0	2	1
1	Da Lat Vocational College	x		x	
2	Central Highlands Ethnics Youth Vocational College	x		x	X
V. Southeast		6	1	8	3
1	HCMC Vocational College	x		x	X
2	Central Vocational College of Transport No.III			x	
3	HCMC Vocational College of Technology & Technique	x		x	
4	Vietnamese – Singapore Vocational College	x		x	X
5	Dong Nai Vocational College			x	
6	Lilama 2 Vocational College	x	x	x	X
7	Vocational College No.8/BQP	x		x	
8	Ba Ria Vung Tau Vocational College	x		x	
VI.Mekong Delta		2	1	5	1
1	Can Tho Vocational College	x	x	x	X
2	An Giang Vocational College	x		x	
3	Long An Vocational College			x	
4	Ca Mau Vietnamese – Korea Vocational College			x	
5	Kien Giang Vocational College			x	

No	High Quality School	By 2015		By 2020	
		Total Number of High Quality Schools	Total Number of International Level Schools	Total Number of High Quality Schools	Total Number of International Level Schools
	Total	**26**	**5**	**40**	**12**

Source: MOLISA-GDVT

4.2.2 On-going Government Initiatives for Vocational Training Reform

MOLISA-GDVT just started the preparation of programs/projects to achieve specific objectives of the VTDS. Some have progressed and some have not been started yet. The key contents, status and time frame of each program/project are summarized in Table 4-12.

Table 4-12 Key Contents/Status/Timeframe of Each Task in Action Programs Specified in Vocational Training Development Strategy 2011-2020

No.	Tasks and Work	Key Contents/Status/Timeframe of Tasks
I	To Build the Law, the Legal Documents	
1	To build the Law amending and supplementing some articles of the Law on Vocational Training	**Background/Key Contents/Status:** The Law may amend such points as training level structure, enterprises' involvement, quality assurance, autonomy of vocational schools, support fund of vocational training and private vocational training. The committee was established for drafting the amendment.
		Timeframe: The Law will be amended by 2012-2013 and be implemented for the period of 2013-2020.
2	To develop the legal documents, the implementation guidance of the Law on Vocational Training (revised) after the law is approved;	**Background/Key Contents/Status:** Several decrees will be prepared after the Law on Vocational Training is amended.
		Timeframe: Several decrees will be prepared for the period of 2013-2016 and be implemented for the period of 2013-2020.
	Mechanism and policies of vocational training	**Background/Key Contents/Status:** Mechanism and policies will examine issues such as the policy for trainees, vocational training fees, vocational teachers, and socialization of vocational training to attract investors, domestic and international enterprises. Tasks have been started. Some policy topics have already been done and some have continuously been dealt with.
		Timeframe: The policy will be set for the period of 2012-2015 and implemented for the period of 2013-2020.
II	**To Build and Implement Proposals, Projects and Programs**	
1	Project for network development planning of vocational colleges, vocational secondary schools and vocational training centers by 2020	**Background/Key Contents/Status: Tasks aims to i)** review and assess the actual situation of the vocational training network and ii) plan the network of vocational training institutions in accordance with ministries, branches, localities, region, and profession (quality stratification). The draft was prepared and it will be revised according to the approved Vocational Training Development Strategy 2011-2020.
		Timeframe: The project will be formulated in 2012 and be implemented for the period of 2012-2020.
2	Project of Innovation and development of vocational training by 2020	**Background/Key Contents/Status:** The project aims to develop time bound action programs to achieve 12 objectives: i) improving the vocational lecturers and teachers; ii) improving the vocational management staff; iii) building plans for establishment of vocational training institute; iv) developing the programs, curriculum, and training materials; v) standardizing the facilities and equipment for vocational training; vi) developing the accreditation system for vocational training quality; vii) developing the evaluation system of national vocational skills; viii) building a quality management system for vocational training; ix) applying IT in management and training activities; x) consulting about career mentoring and introducing jobs for students in vocational schools; xi) teaching English and information technology in vocational schools; and xii) strengthening international integration of vocational training. The proposal of the project will provide justification of the project and conditions of investment and financial requirements in addition to time bound action programs. The draft proposal was prepared and will be revised for the approval of Vocational Training Development Strategy 2011-2020.
		Timeframe: The project will be formulated in 2012 and will be implemented for the period of 2012-2020.

No.	Tasks and Work	Key Contents/Status/Timeframe of Tasks
3	Project of Building 40 high-quality vocational schools	**Background/Key Contents/Status:** The project will determine: i) criteria of high-quality schools and the operation mechanism, ii) Investment policies and roadmap and iii) Inspection, evaluation and recognition of selected 40 high-quality vocational schools. At present, the draft is being prepared.
		Timeframe: The project will be formulated for the period of 2012- 2013 and will be implemented for the period of 2013-2015 and 2016-2018.
4	Project of Vocational Assistance Fund	**Background/Key Contents/Status:** The project will determine: i) the contents of Vocational Assistance Fund and ii) mechanism of formation and use of Vocational Assistance Fund. At present, the preparation tasks have not yet been started.
		Timeframe: The project will be formulated for the period of 2012-2013 and will be implemented for the period of 2013-2020.
5	Project of Innovation for scientific research activities in the vocational training system	**Background/Key Contents/Status:** The project will evaluate and review the research activities and implementation at all levels to develop the projects and organize the implementation. At present, the preparation tasks have not yet been started
		Timeframe: The project will be formulated in 2013 and will be implemented for the period of 2013-2020.
6	Continue to implement the project "Vocational training for rural workers by 2020" (Project 1956) with 08 specific activities by 2020.	**Background/Key Contents/Status:** The project is being implemented. The summary information is as follows. ・Annual vocational training is organized for 1 million rural workers, including training and fostering of 100,000 officers and public servants at communes. ・The project aims to improve the quality and performance of vocational training in order to create jobs, increase incomes of rural workers, contribute to restructuring labor and economic sectors for the industrialization and modernization of agriculture and rural areas. ・The project also aims develop a contingent of staff and public servants who have strong political bravery, qualification, capability and characteristic to meet the requirements of administrative management and socio - economy operation and to develop the industrialization and modernization of agriculture and rural areas; iv) The project components include i) to create public awareness regarding vocational training and employment counseling for rural workers; ii) to survey and forecast the vocational training demand for rural workers; iii) to pilot and expand the vocational training model for rural workers; iv) to enhance vocational facilities and equipment for public vocational training institutions; v) to develop the programs, curriculum, learning materials and build the equipment training list; vi) to improve the teachers and vocational management staff; vii) to support for rural labor in vocational training; and assess the vocational skills for rural workers; and viii) to monitor and evaluate the implementation of the project. ・The Estimated budget is 25,980 billion VND.
		Timeframe: The project was formulated in 2009 and approved its implementation by 2020

4.2.3 Donors' Support for Vocational Training Reform

There is a wide variety of donors supporting vocational training sector in Viet Nam. As for international organizations, ADB and the International Labour Organization (ILO) have provided support. As for bilateral and regional donors, Belgium, Canada, Denmark, EU, France, Germany, Ireland, Italy, Japan, Korea, Luxembourg, Netherland, Norway, Spain, Switzerland and the United States of America have been involved in developing the vocational training sector. They have provided assistance directly and/or through trust funds.

The JICA study team collected information on completed or on-going projects in the vocational training sector and sorted out which areas they provided/provide inputs to accommodate trends of cooperation in the vocational training sector. Table 4-13 summarizes the trends by grouping of 30 completed and on-going projects by areas of inputs and data of each project are shown in Appendix 4-2-1.

More projects have focused on capacity development of vocational training institutes rather than one of state management. 25 projects out of 30 (90%) have supported individual schools. 19 projects (63%) have assisted institutionalization and capacity building of state management. Provision of equipment/infrastructure also consists of the majority (19 projects, 79%). Though there are 21 in-service training projects which target teachers of individual schools, there is no project which targets all the teachers.

Table 4-13 Grouping of ODA Projects of Vocational Training Sector in Viet Nam by Inputs Areas

Type of Activities in Projects	No. of Projects	Percentage
TVET Institute-Capacity Development	27	90%
Management Capacity	20	67%
Teacher	21	70%
Programs	21	70%
Equipment/ Infrastructure/	19	63%
Testing and Assessment	11	37%
Skill Standards	11	37%
Certification	11	37%
Employment	17	57%
State System - Capacity Development	19	63%
Capacity Building (Policy, Legal, Management)	14	47%
Model	13	43%
Employment	15	50%

Source: The JICA study team developed the table based on materials prepared GIZ and modified it based on hearings from PMU in MOLISA-GDVT.

ADB, Germany, France and Korea are major donors in the vocational training sector. ADB's approaches are to focus on i) helping national systems, and ii) strengthening specific institutes, e,g., centers of excellence, through comprehensive assistance. Taking the approaches, the Skills Enhancement Project (SEP) is implementing, with two loans; a $50 million investment loan to strengthening the vocational training system, and a $20 million credit line to provide additional support to provide training institutes for upgrading their vocational training equipment and facilities. The expected outcome of the project is the establishment of higher-level skills training in 15 key occupations that will help reduce skills shortages in sectors of automotive technology, electrical manufacturing, hospitality and tourism, ICT, mechanical manufacturing, and navigation and shipping. The project will produce three outputs: i) improved quality and

management of training; ii) vocational colleges upgraded to deliver priority occupational programs; and iii) strengthened partnerships with the private sector.

Considering the loan period elapsed almost 30%, the implementation of project activities under all outputs is seriously delayed. According to ADB, bottlenecks of the delay include i) limited practical knowledge and experience of PMU in the ADB-funded projects; ii) lack of timely and structured guidance and support from MOLISA; iii) limited intervention of and communication with the overseeing ministries; iv) lack of hands-on support from ADB; and v) highly complex project design.

Appendix 4-2-2 shows project organization structure and procurement procedures of goods and works of the SEP.

As far as bilateral aid is concerned, Germany is the leading donor. German approaches are essentially similar to ADB. Germany supports the sector comprehensively from school level to policy level by coordinating projects effectively. Currently four projects, including advisory services, are on-going. Recently, the Establishment of Vocational Training Center of High Quality (Center of Excellence) was launched. This project aims to improve quality and training efficiently through upgrading facilities and training equipment and to develop a high quality vocational college, targeting Lima II vocational colleges in Dong Nai province. The project will procure equipment for occupations of metal cutting, mechatronics and industrial electronics.

France provides the loan for the Development of High Performance Vocational Education Institutions through AFD. The project aims to i) strengthen training capacity and facilities for selected vocational schools to establish high quality schools and ii) contribute to provide high quality manpower for the labor market in the process of industrialization, modernization and international integration. The selected schools include Vocational College of Agriculture and Mechanics in Vinh Phuc province, Viet Xo Vocational College in Ninh Binh province, Nghi Son Vocational Secondary School in Thanh Hoa province, Dung Quat Vocational College in Quang Ngai province and Lilma II Vocational College in Dong Nai province.[52]

Korea has supported individual vocational schools through the Korean International Cooperation Agency (KOICA) and Economic Cooperation Development Fund (ECDF). The Korea-Viet Nam Industrial Vocational College in Nghe An Province is a model school for Korean support. Korea has supported the college since its establishment in 1998 by constructing buildings and facilities and providing equipment and technical cooperation. The Government acknowledged achievements of the support and nominated this college as one of the international level high-quality vocational schools among 40 high-quality vocational schools. Korean support for this college is characterized by its holistic approach. It dispatches a technical cooperation team, individual experts and volunteers in addition to provision of buildings and equipment. The training includes language trainings of Korean and English to support companies to send employees to Korea.

Japan has provided technical cooperation through JICA. At present, a technical cooperation project and advisory services are on-going. Hanoi University of Industry received technical cooperation projects twice. The first project was implemented for the period 2000 to 2005 to upgrade technical skills of trainers in the training fields of Metal Cutting, Metal Sheet Processing and Electrical Equipment Controls Repairing. The second project is being implemented for the period January 2010 to January 2013. The project aims to strengthen i) vocational training capacities of metal working, sheet metal working and electric control, i) vocational training capacities to teach employability (5S etc.,) and iii) industrial needs

[52] The project does not provide equipment for Nghi Son Vocational Secondary School.

assessment of teachers by encouraging them to visit industries by themselves. Through these two projects, Hanoi University of Industry has already been able to provide vocational training at the international (Japanese) level and produce high quality graduates. Graduates received good reputations from industries.

JICA is also providing advisory services by dispatching an advisor for organizing national skill testing system to MOLISA-GDVT. The advisor has developed skill testing system for several occupations, such as metal working, and transferred its knowhow to MOLISA-GDVT. The advisor has developed skill testing system for several occupations, such as metal working, and transferred its knowhow to MOLISA-GDVT.

4.2.4 Private Provision of Vocational Training

Private provision of vocational training is growing, encouraged by the Government. In 2010, 25 % of VCs, 35% of VSSs and 38% of VTCs were private. The expansion of private provision services has two aims: enrolment is expanded without any significant government funding, and the training programs at private vocational training institutes are more closely linked with labor market needs so that quality of graduates will be better. The Government has supported the expansion of private provision by preferential policies on investment credit and taxation, though private vocational institutions have to follow the same curriculum framework as public schools. Private vocational institutions can participate in bidding of vocational training from the State budget. Table 4-14 shows key features of some private vocational colleges.[53]

[53] 36 private vocational colleges exist as of the end of December 2011.

Table 4-14 Summary of Selected Private Vocational Colleges

School Names	Investors	Training Occupations	Methods of Cooperation with Enterprises	Enterprises with Cooperative Relationships
Bắc Nam Vocational College (in Hai Phong)	Individuals	- Business Accounting - Fashion tailor - Fashion Design - Cooking technique - Corporate Governance - E-Commerce - Database Administration - Computer Network - Administration	- Students learn theory in school in the morning and learn practice at workshop of enterprises in the afternoon. - Students participate in making products. - School allocates graduates to the factories in Haiphong and other provinces. - School provides vocational training under the contracts for a number of enterprises.	- Viet Thang Garment Joint Stock Company - Bắc Nam Garment Company - Hondam Resort - Nomura Industrial Park - Hoang Gia Restaurant
Lod Vocational College of Technique &Technology (in Hung Yen)	LOD Human Resources Development JSC	- Business Accounting - Bank Accounting - Corporate Governance - Technique of computer repair and assembly - Computer Network Administration - Civil Electricity - Industrial Electricity - Automotive Technology - Tour guide - Weld	- School provides vocational training under the contracts for a number of enterprises. - School retrains students who joined internship in Japan to meet the needs of the enterprises. - School introduces students who joined internship in Japan to work for the major enterprises at the industrial zones in Hai Duong and Bac Ninh provinces.	- National enterprises include Hòa Phát Group, GARCO 10 JSC and Vinatex group. - Foreign enterprises include Brother Viet Nam Ltd, Co, Foxconn Viet Nam Company, Daietsu Viet Nam, Oshima Viet Nam Company, Daizotech Viet Nam Company. JETRO and Japanese Business Association (just start cooperation).
Thăng Long Vocational College (in Hanoi)	Dai Viet Commerce & Construction JSC	- Mechanics - Weld - Industrial Electricity - Construction - Business Accounting - Tourism, Hotel, Restaurant - IT - Fashion design	- School implements an innovative training program for learners, schools and enterprises. - School links the training with the demand of the enterprises. - School focuses on creating jobs for students in the Industrial Zone under contracts signed with enterprises. - School organizes a career fair with the participation of enterprises.	- Enterprises accepting students include Sam-sung, Bắc Ninh Industrial park, Nam Thăng Long Industrial park, Bắc Giang Industrial park, and Đông anh Industrial parks. - Enterprises supporting internship include DONG ANH Mechanics pressure JSC and Mạnh Cường Mechanics company.

School Names	Investors	Training Occupations	Methods of Cooperation with Enterprises	Enterprises with Cooperative Relationships
An Nhất Vinh Vocational College (in Thanh Hoa)	Individuals	- Construction engineering - Fashion tailor & design - Hotel management - Cooking - Operation of construction machine - Weld - Automotive Technology - Industrial Electricity	- School supplies the labor to enterprises. - Enterprises accept students for internships. - School teachers go for internships at the enterprises to improve skills and update new technology. - Enterprises appoint technical staffs to teach students at school.	- Investment cónstruction & trading Ltd., co No. 36 - Sông Đà 7 JSC - Hải Thịnh Phát JSC - Thanh Liêm Limited Company
LADEC Vocational College of Technique & Technology (Long An)	LADEC Human Resources Development JSC	- Computer programming - Graphic design, Web - Network Management - Repair computer and peripherals - Industrial electricity - Refrigeration - Civil electricity - Industrial electronics - Business accounting	- School conducts combined trainings at school and enterprises. - School provides internships at the enterprises. - School teachers go for internships at the enterprises to improve skills and update new technology.	- At Long An Industrial park : Đế Vương Ltd., co, Đông Phương Long An Commercial & Service Ltd., co, Deltafood , FORMOSA ETAFFETA VIETNAM Ltd., co, Lê Long Ltd., co - In HCMC: FreeTrend Ltd., co, Taiwan; Mobile World.,JSC, Eximbank

4.2.5 Challenges in Vocational Training Sector

In the period 2001 - 2010, the Government and society enhanced awareness of vocational training. As a result, vocational training system was rehabilitated and improved so that it would gradually meet the human resources requirements of the labor market. However, there are some weaknesses which the Government of Viet Nam has tackled.[54]

Training programs are not market driven. Efforts have been made to meet the needs of the labor market and enterprises. However, several training institutions have reported that training programs do not meet actual requirements in the workplace. This issue can be attributed partly to the composition of the groups preparing the curricula framework. They tend to be dominated by persons whose knowledge do not completely represent the needs of labor market.

Variance in quality of training and graduates exists. The number of vocational institutions has increased rapidly, but the quality does not catch up with the speed of the expanded network. As a result, there are many high quality vocational institutions, but the variance in quality still remains. This comes from limited budgets, lack of accreditation system, limited output standards, limited assessment of trainees by independent entities, and limited capacity of managers' skills to respond to the market needs. This variance in quality of training leads to variance in quality of graduates. In this circumstance, vocational certificate may not hold the original meaning.

Teaching quality is inadequate because of some reasons. First, teachers who are equipped with both theory and practical experience are limited in number. The Law on Vocational Training of 2006 specifies necessary qualifications to teach both theory and practical class respectively. Those who lack practical experience can be teacher to teach theory, while those who lack pedagogical skill can be teachers for practical class. Second, teachers typically lack industrial and enterprise experience in the fields they teach. In the current system, there is little connection with the industry after the teachers receive their teaching qualification. For instance, the needs assessment of industry is not done by teachers, but by staff at vocational institutions. There are limited opportunities for teachers to be sent for internships to enhance their practical skills. Third, teachers tend to prioritize teaching more classes than enhancing their skills as teachers' salary depends on the number of classes they teach.

Links with the concerning industry is weak. The participation of industry in vocational training is limited. The industry needs to be more directly involved in identifying the current and future needs and in the design of programs to meet these needs.

To tackle with challenges above, state management for vocational training needs to be strengthened so that appropriate mechanisms and policies can be established. However, State management of vocational training has not met the development requirements of vocational training

Capacity of Project Management Unit (PMU) is limited because of some reasons. First, the PMU in MOLISA-GDVT is solely responsible for all ODA projects regardless of their financier/financial schemes. With the significant number of active donors, it is difficult for PMU staff to enhance their knowledge and familiarity with guidelines of individual donors in depth under a single PMU. Appendix 4-2-3 shows the organization charts of MOLISA, MOLSIA-GDVT and PMU in MOLISA-GDVT. Second, the number of staff is limited to the volume of the responsible tasks. 49 staff in the PMU under a Director General and two Deputy Director Generals are allocated to four units and they are responsible for day to day project

[54] This section was mainly prepared based on hearings from ADB. ADB prepared Education and Training Sector Assessment, Strategy, and Roadmap in 2011.

activities, financial management, procurement management, quality control, and monitoring and evaluation of all on-going projects. This occasionally makes it difficult for the PMU staff to find time to attend training courses organized by donors. Third, in addition, most of the current PMU staff are recruited based on their English proficiency, regardless of them lacking management skills and experiences.

5. Industrial Needs of HRD

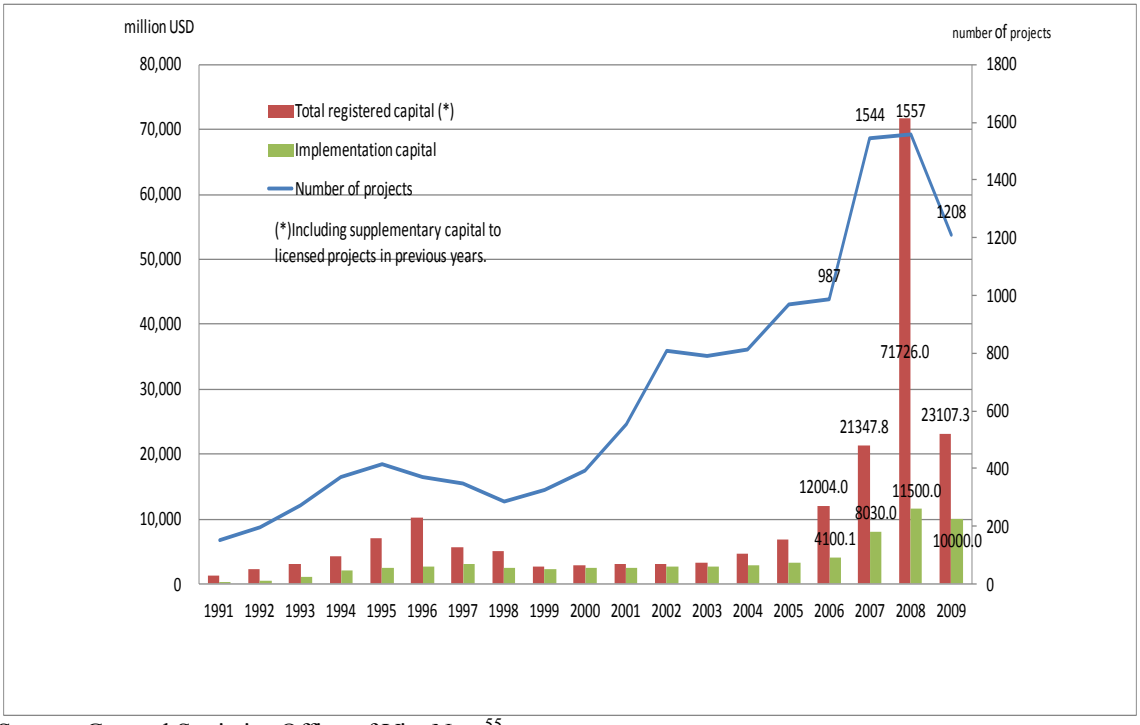
5.1 Foreign Direct Investment (FDI) and Japanese Firms in Viet Nam

5.1.1 FDI in Viet Nam

(1) Trend of FDI in Viet Nam

FDI has started to flow into Viet Nam after the inception of economic reforms in 1986 known as "doi moi", a comprehensive change by restructuring a planned economy into a market economy.
Source: General Statistics Office of Viet Nam

Figure 5-1 shows the trends in the number of projects, total registered capital, and implementation capital from 1991 to 2009. FDI has grown continually except during the short period of the Asian financial crisis in 1997 and 1998. After the recovery from the crisis, the increase of FDI has resumed, supported by steady national economic growth and the government's various measures to encourage FDI. Corresponding with Viet Nam's accession to the World Trade Organization (WTO) in 2007, FDI inflows showed a remarkable rise in 2007 and 2008. However, due to the global financial crisis caused by the Lehman Shock in 2008, FDI in Viet Nam decreased in 2009 to the same level as in 2007.



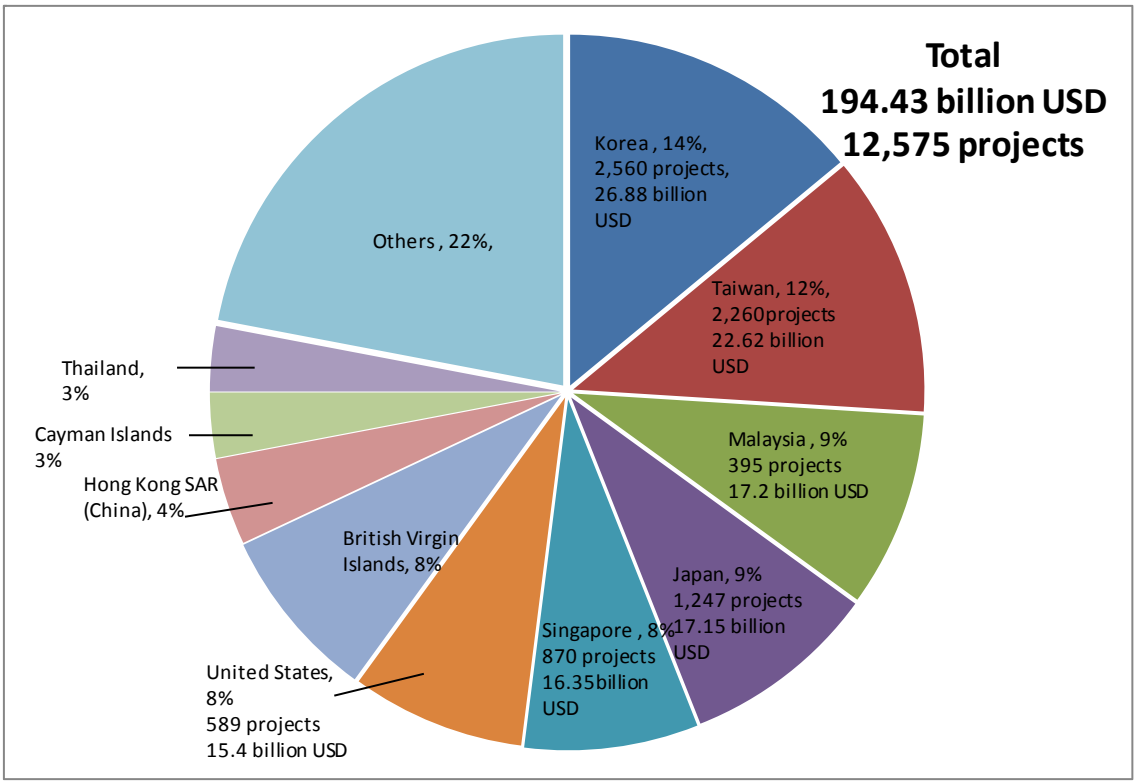
Source: General Statistics Office of Viet Nam[55]

Figure 5-1 Trends in FDI in Viet Nam in Terms of the Number of Projects, Total Registered Capital, and Implementation Capital

(2) FDI Inflows by Country

As for the cumulative FDI inflows from 1988 to 2009 by country, Korea topped the ranking, which occupied 14% of the total with 2,560 projects amounting to US$26.88 billion. The second was Taiwan, followed by Malaysia, Japan and Singapore (See also Figure 5-2). In terms of the number of projects, Japan was in the third position, following Korea and Taiwan.

[55] http://www.gso.gov.vn/default_en.aspx?tabid=471&idmid=3&ItemID=11385



Source: JBIC, Viet Nam no Toushi Kankyo, April 2011, p.25, Figure 3-2-2

Figure 5-2 Total FDI Inflows to Viet Nam by Country from 1988–2009 in Terms of the Number of Projects, Total Registered Capital, and Implementation Capital

In 2010 the total FDI registered capital in Viet Nam reached US$19,886.1 million. The top country was Singapore, which registered a large resort development project in Quang Nam in central Viet Nam. Singapore took up 23% of the total with 111 projects amounting to US$4585.6 million. Korea positioned in the second followed by the Netherlands and Japan (See details in Table 5-1). The registered capital from Japan in 2010 totaled US$2,399 million and the number of projects was 144, approximately half of which was brought by a steel manufacturing plant in southern Viet Nam by KOBELCO valued at about $1,000 million, followed by a plank production factory in the central region by SUMITOMO FORESTRY Co., Ltd. valued at about $100 million[56].

Table 5-1 The Number of Projects and Registered Capital of FDI by Country in 2010

Country	Number of projects	Total registered capital (Mill. USD)(*)
Singapore	111	4585.6
Korea Rep. of	313	2545.2
Netherlands	16	2417.5
Japan	144	2399.0
United States	64	1936.0
Taiwan	126	1453.1
British Virgin Islands	28	823.1
China , PR	105	685.0
Cayman Islands	5	565.8

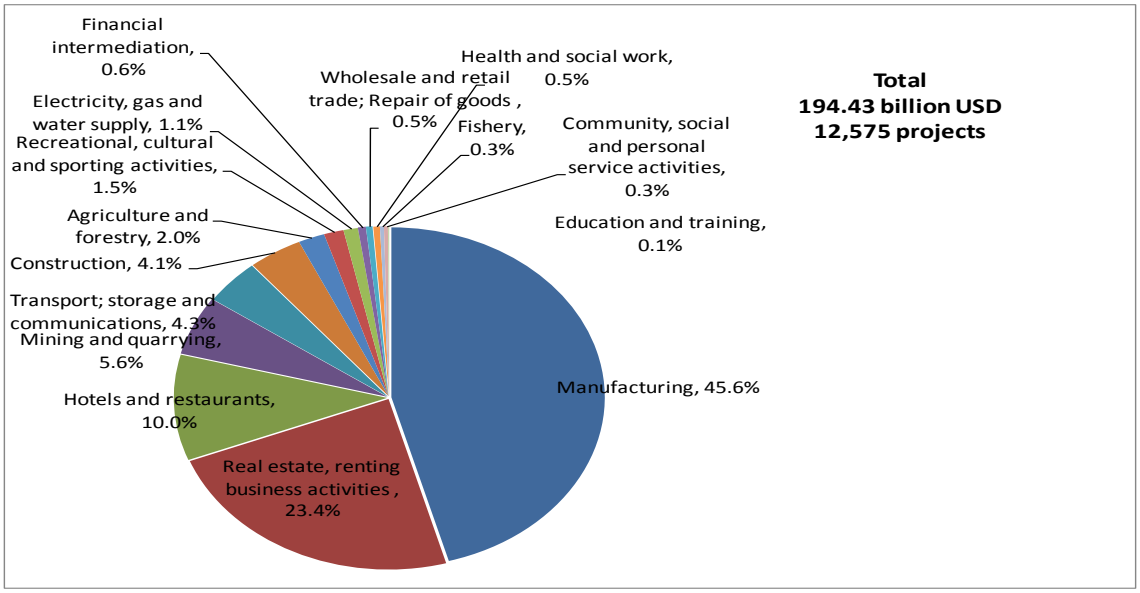
[56] JBIC, Vietnam no Toushi Kankyo, April 2011, p.25

Country	Number of projects	Total registered capital (Mill. USD)(*)
Malaysia	31	491.3
British West Indies	1	475.8
British West Indies	5	290.7
Hong Kong SAR (China)	59	248.7
Thailand	20	166.2
Fed. Russian	8	146.0
Luxembourg	2	110.4
Slovakia	3	102.4
United Kingdom	13	56.7
Lao PDR	2	50.2
Canada	13	48.2
F.R Germany	22	46.1
Australia	18	34.5
Brunei	10	32.7
France	41	30.1
Israel	3	19.1
United Arab Emirates	2	16.2

(*) Including supplementary capital of licensed projects in previous years.
Source: General Statistics Office of Viet Nam[57]

(3) FDI Inflows by Kind of Economic Activities

With regards to the cumulative FDI inflows into Viet Nam by kind of economic activities from 1988 to 2009, the "manufacturing" category constituted about half of the total, followed by "real estate, renting business activities", and "hotels and restaurants". These top three categories represented about 80% of the total FDI inflows in the country (See also Figure 5-3).



Source: JBIC, Viet Nam no Toushi Kankyo, April 2011, p.26, Figure 3-3-2

Figure 5-3 The Total of FDI Inflows by Economic Activities in Viet Nam from 1988-2009

Table 5-2 shows FDI inflows by kind of economic activities from 2008 to 2010. It is difficult to simply compare figures in these three years because the classification of economic activities

[57] http://www.gso.gov.vn/default_en.aspx?tabid=471&idmid=3&ItemID=11387

published by General Statistics Office of Viet Nam changed in 2010 to reflect a recent transformation of economic activities in Viet Nam that are attracting FDI. Main classification changes are summarized as follows:

1. The two categories "agriculture and forestry" and "fishery" were combined into one new category "agriculture, forestry and fishing".
2. The category "electricity, gas and water supply" was divided into two new categories "electricity, gas, stream and air conditioning supply" and "water supply, sewerage, waste management and remediation".
3. Likewise "transport, storage and communications" was divided into "transportation and storage" and "information and communication".
4. A new category was created and named "professional, scientific and technical activities", which includes providing firms with various kinds of services to start up and expand their business in Viet Nam or build up their factories and maintain their proper running.

In 2009, in terms of the number of projects, "manufacturing" was the largest, followed by "real estate, renting business activities" and "wholesale and retail trade; repair of motor vehicles and motorcycles and personal and household goods". With respect to the registered capital, the "hotels and restaurants" category received the most investment, followed by "real estate, renting business activities" and "manufacturing". In 2010, in terms of the number of projects, "manufacturing" was prominently on the top, followed by "wholesale and retail trade; repair of motor vehicles and motorcycles", and "construction". Pertaining to the registered capital, the "real estate activities" category came first, followed by "manufacturing" and "electricity, gas, stream and air conditioning supply". These figures demonstrate that the manufacturing sector is the main category which keeps attracting FDI inflows into Viet Nam while the service sector has also started to draw investments.

Table 5-2 FDI Inflows by Kind of Economic Activities from 2008 to 2010

Old category name used until 2009	2008		2009		2010		New category name being used from 2010 onward
	No. of projects	Registered capital *(Mill. USD)*(*)	No. of projects	Registered capital *(Mill. USD)*(*)	No. of projects	Registered capital *(Mill. USD)*(*)	
Agriculture and forestry	17	203.2	28	128.5			Agriculture, forestry and fishing
Fishery	6	20.3	1	6.0	12	36.2	
Mining and quarrying	7	6840.8	6	397.0		5.6	
Manufacturing	455	28902.4	388	3942.8	478	5979.3	
Electricity, gas and water supply	1	3.7	32	183.9	6	2952.6	Electricity, gas, stream and air conditioning supply
					6	10.1	Water supply, sewerage, waste management and remediation activities
Construction	142	492.1	124	652.0	174	1816.0	
Wholesale and retail trade; Repair of motor vehicles, motor cycles and personal and household goods	29	54.8	152	261.1	177	462.1	Wholesale and retail trade; Repair of motor vehicles and motorcycles
Hotels and restaurants	17	1350.2	45	9156.8	39	315.5	Accommodation and food service activities
Transport; storage and communications	23	1882.1	131	299.8	20	881.0	Transporation and storage
					73	106.5	Information and communication
Financial intermediation	1	62.6	2	100.0	3	59.1	Fiancial, banking and insurance activities

Old category name used until 2009	2008		2009		2010		New category name being used from 2010 onward
	No. of projects	Registered capital *(Mill. USD)*(*)	No. of projects	Registered capital *(Mill. USD)*(*)	No. of projects	Registered capital *(Mill. USD)*(*)	
Real estate, renting business activities	447	23702.8	254	7808.4	33	6827.9	Real estate activities
Education and training	12	86.7	12	30.4	8	74.7	
Health and social work	7	402.9	11	15.0	9	205.6	Human health and social work activities
Recreational, cultural and sporting activities	4	5.8	13	107.4	8	62.3	Arts, entertainment and recreation
Community, social and personal service activities	3	0.6	9	18.2			
					6	4.6	Administrative and support service activities
					165	71.5	Professional, scientific and technical activities
					20	15.5	Other activities
Total	1171	64011.0	1208	23107.3	1237	19886.1	

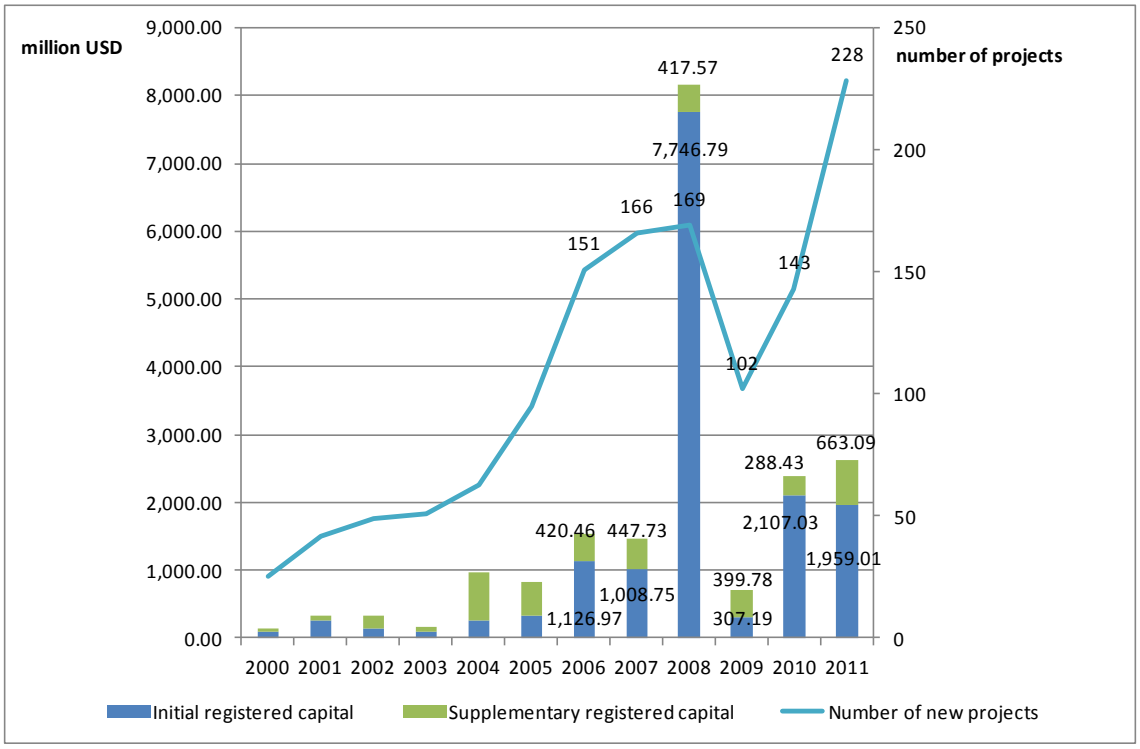
(*)including supplementay capital of licensed projects in previous years
Source: General Statistics Office of Viet Nam[58]

(4) FDI Inflows from Japan

Trends in FDI inflows from Japan to Viet Nam, in terms of the number of projects, initial registered capital and supplementary registered capital, from 2000 to 2011 is shown in Figure 5-4. Since around 2004, FDI inflows from Japan have started to increase gradually, which have been prompted by the establishment of industrial parks in Viet Nam. It is also a risk hedging measure taken by the Japanese firms, commonly known as "China+1" approach, to avoid massive concentration of investment in China alone and to decentralize their production base in Asia. For many Japanese manufacturers, Viet Nam is a major candidate for the second Asian production base after China.

After a sudden increase in 2008 caused by registrations of large projects, it dropped sharply in 2009 due to the effect of the 2008 global economic crisis. However, it has already started to recover since 2010 and the number of new FDI projects registered, which reached 228 in 2011, recorded the largest number ever from Japan. From the perspective of Japanese firms, production bases in Viet Nam help prevent disruption of supply chain by natural disasters. An increasing number of Japanese manufacturers are opening their production sites in Viet Nam after the massive earthquake in Japan in 2011 and the severe flood in Thailand later that year, both of which caused catastrophic damage to the global supply chain. The continued high appreciation of yen is another factor which propels Japanese companies to shift more of their operations overseas including to Viet Nam to reduce production costs.

[58] http://www.gso.gov.vn/default_en.aspx?tabid=471&idmid=3&ItemID=8706
http://www.gso.gov.vn/default_en.aspx?tabid=471&idmid=3&ItemID=9936
http://www.gso.gov.vn/default_en.aspx?tabid=471&idmid=3&ItemID=11388

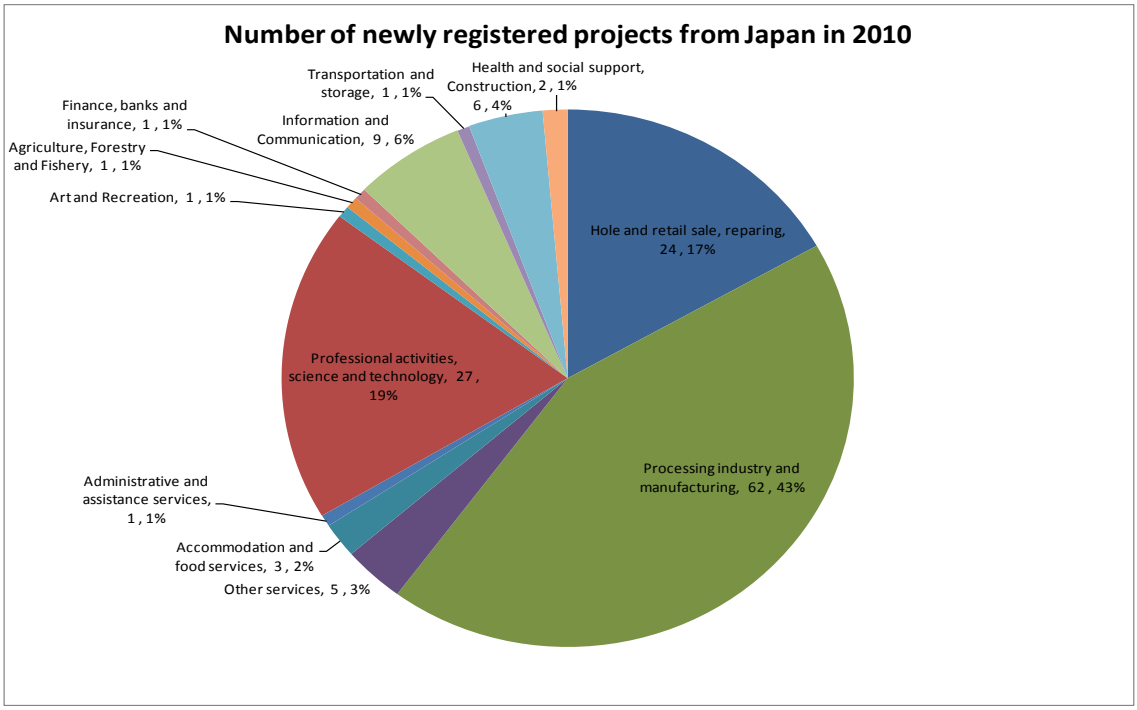


Source: Created by the Study Team based on data provided by Ministry of Planning and Investment in Viet Nam

Figure 5-4 Trends in FDI in Viet Nam from Japan in Terms of the Number of Projects, Initial Registered Capital, and Supplementary Registered Capital

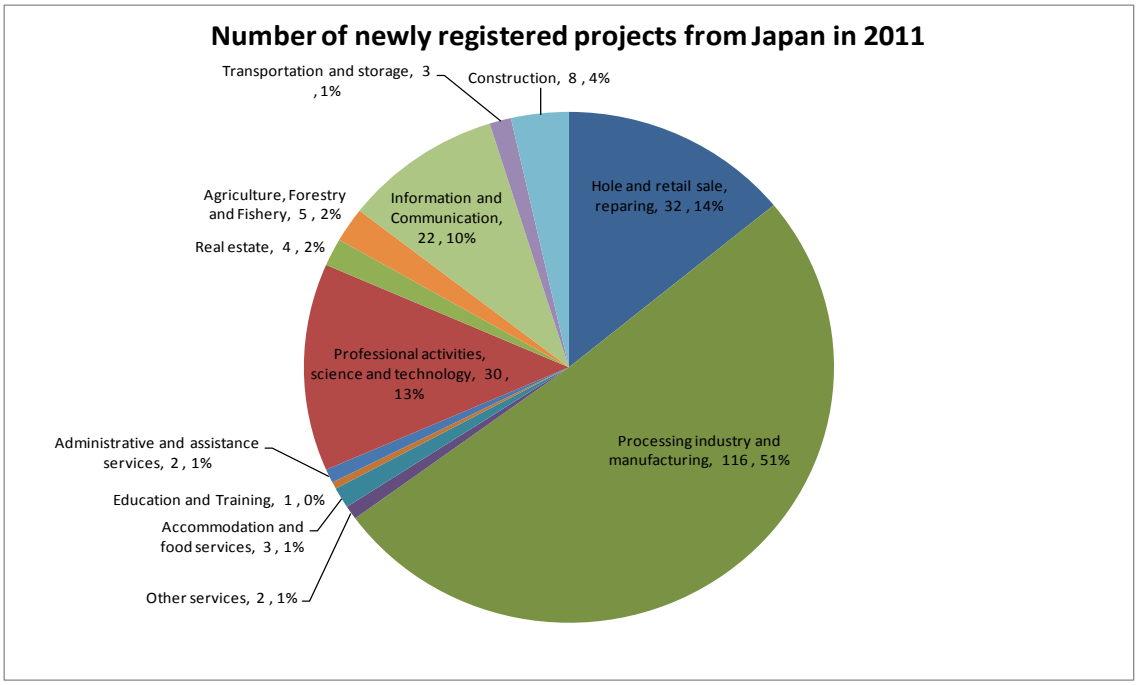
FDI inflows from Japan by economic activities in 2010 and 2011 are shown in Figure 5-5 through Figure 5-8. Both in 2010 and 2011, the "processing industry and manufacturing" category occupied the largest share in terms of the number of projects as well as the amount of the newly registered capital. Regarding the number of projects, the share of "processing industry and manufacturing" was 43% with 62 projects in 2010 and 51% with 116 projects in 2011. In 2010, "professional activities, science and technology" was the second largest economic activity category with a 19% share followed by "whole and retail sales, repairing" with a 17% share. In 2011, these two categories had almost the same amount of shares with 13% and 14%, respectively. Concerning the amount of newly registered capital, "processing industry and manufacturing"' maintained the top share with 77% in 2010 and 67% in 2011. In both years, the second category was "construction" with about 15-19% shares and the third was "whole and retail sales, repairing" with about 5-7% shares. "Professional activities, science and technology", which made up the third largest share in terms of the number of projects, occupied only 1% of the total. This means that a project size in this category is relatively small. One of the examples of the investment of this category in 2010 was by Max Integra located in Da Nang that provides project consultancy, promotion and management services in clinical trials and pharmaceutical products with a total investment of US$300,000[59]. From these trends, it is clear that in Viet Nam FDI from Japan has concentrated in the sectors included in the categories of "processing industry and manufacturing" and "whole and retail sale, repairing".

[59] Da Nang Investment Promotion Center
http://ipc.danang.gov.vn/modules/news/news_event.aspx?NewsId=710&CateId=1



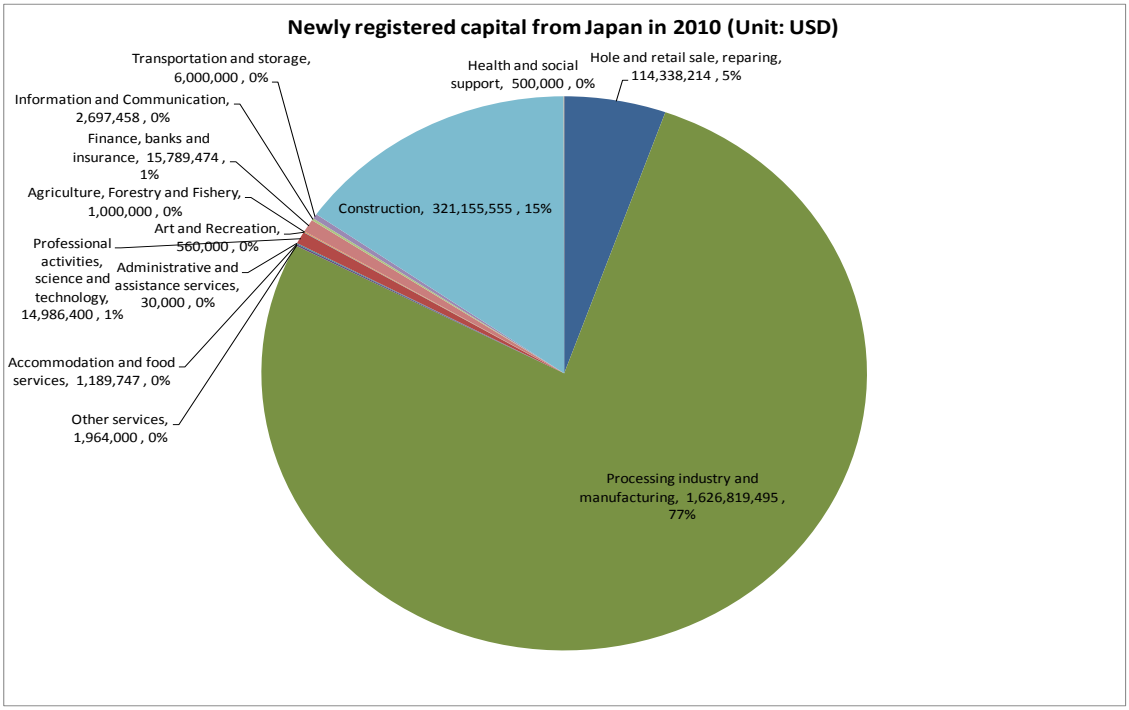
Source: Created by the Study Team based on data provided by Ministry of Planning and Investment in Viet Nam

Figure 5-5 The Number of Newly Registered Projects from Japan in 2010



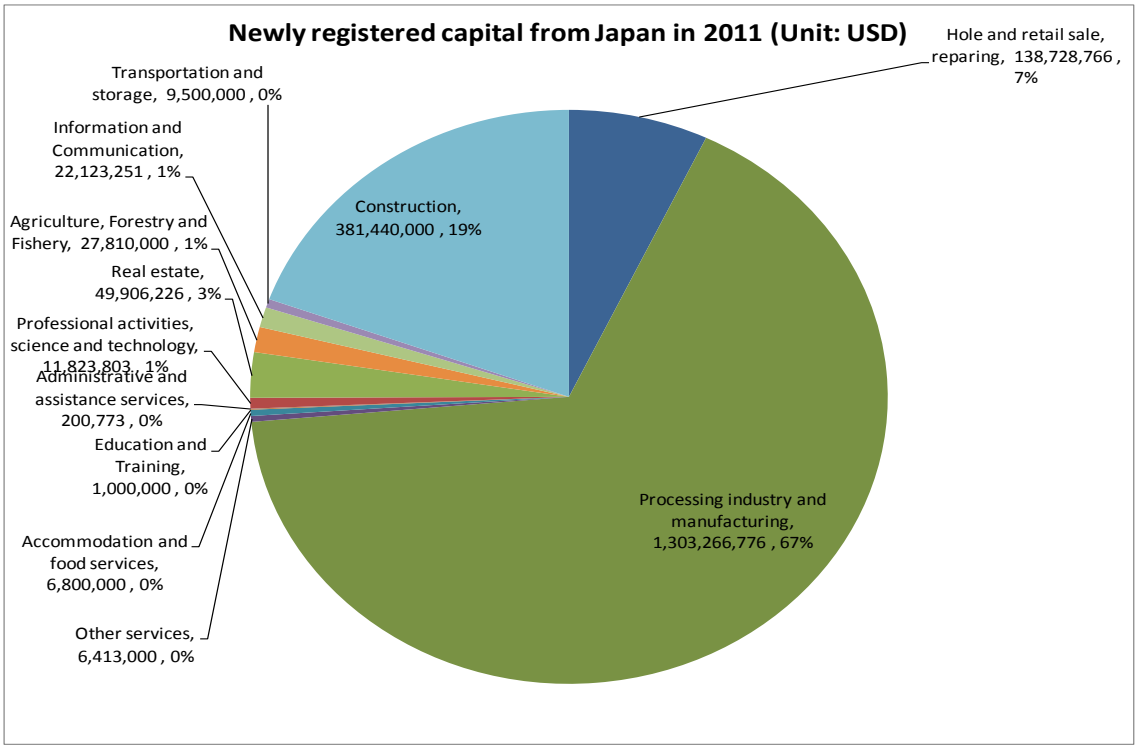
Source: Created by the Study Team based on data provided by Ministry of Planning and Investment in Viet Nam

Figure 5-6 The Number of Newly Registered Projects from Japan in 2011



Source: Created by the Study Team based on data provided by Ministry of Planning and Investment in Viet Nam

Figure 5-7 The Amount of the Newly Registered Capital from Japan in 2010



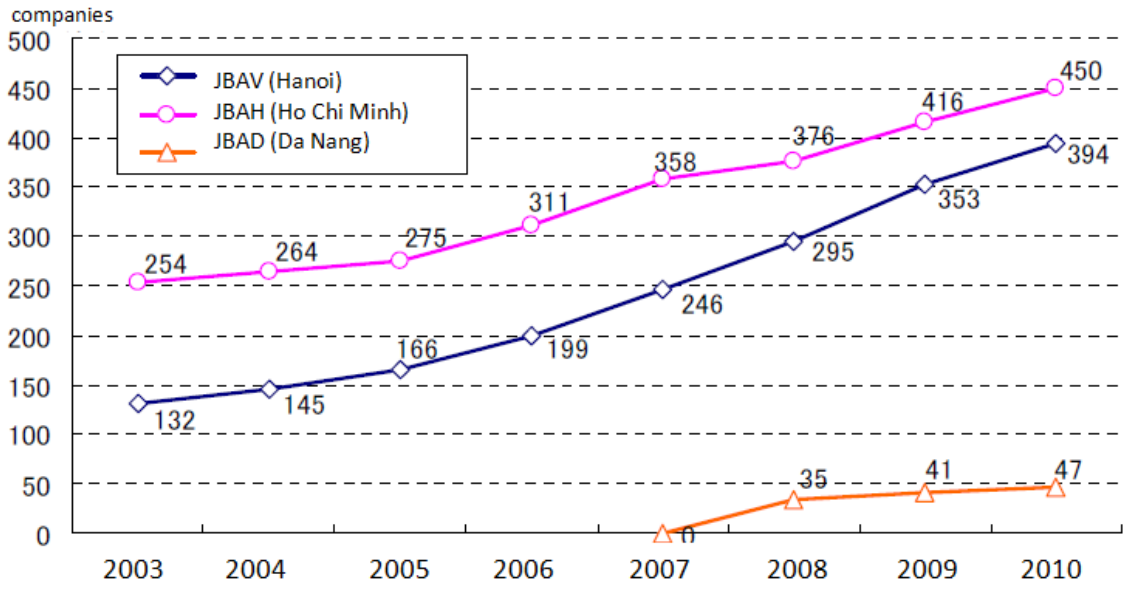
Source: Created by the Study Team based on data provided by Ministry of Planning and Investment in Viet Nam

Figure 5-8 The Amount of the Newly Registered Capital from Japan in 2011

5.1.2 Japanese Firms in Viet Nam

(1) Number of Japanese Firms in Viet Nam

There is an increasing number of Japanese firms operating in Viet Nam as shown in Figure 5-9. Though there are some fluctuations in the figures provided by the available statistics, it is generally estimated that more than 1,000 Japanese firms are currently in operation in Viet Nam. For example, the sum of registered member companies of three Japanese Business Associations in Viet Nam (in Hanoi, Ho Chi Minh and Da Nang) totaled up to 1,029 in 2011[60]. As for the Japanese Business Association in Hanoi, the number of member companies has been almost tripled in 7 years from 132 in 2003 to 394 in 2010.



Source: JBIC, Viet Nam no Toushi Kankyo, April 2011, p.31, Figure 3-8

Figure 5-9 Number of Member Companies of Japan Business Association in Viet Nam (Based in Hanoi, JBAV), Japan Business Association in Ho Chi Minh (JBAH) and Japan Business Association in Da Nang (JBAD)

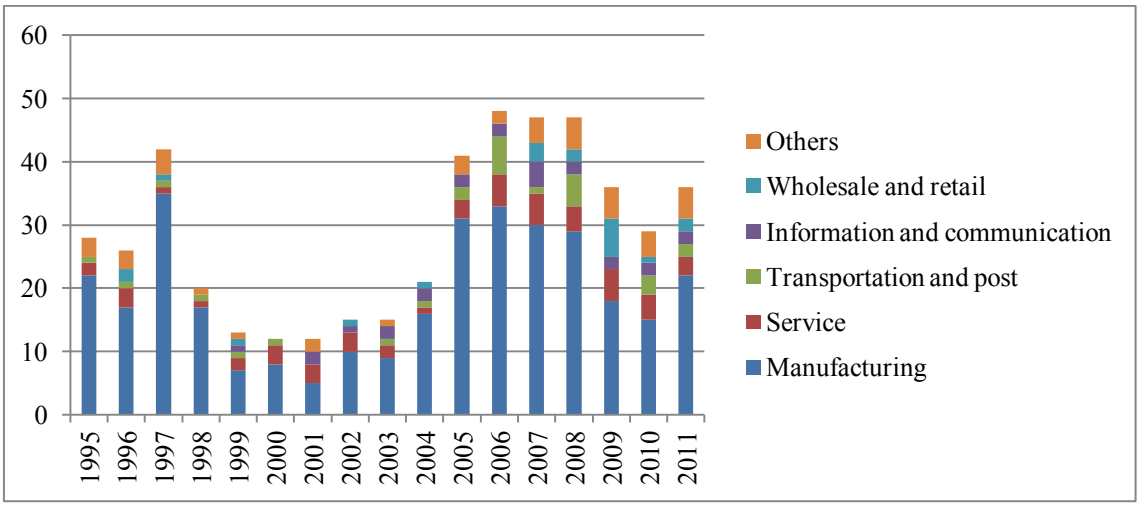
Other than member companies of the Japanese Business Associations, various estimates suggest that there are more than 700 Japanese companies in Viet Nam which have not been registered in any of these Associations. A research reveals that there are 1,542 Japanese firms currently in operation in Viet Nam[61].

(2) Sector in which Japanese Firms Launch Their Operation in Viet Nam

As shown in Figure 5-10, Japanese firms are starting their operations mainly in the manufacturing sector. Japanese companies in the manufacturing sector can be roughly categorized into the following eight categories: 1. transportation equipment, 2. electronic/electric equipment, 3. general machinery, 4. precision machinery, 5. steel and nonferrous metals, 6. food processing, 7. chemical products and 8. others. Viet Nam has become an important production base for Japanese manufacturers because of its favorable investing environment, which includes the availability of young and relatively inexpensive labor force, geographical advantage of being located near China and ASEAN economic blocs, stable political and social climate and Vietnamese people's affinity and cultural similarity to Japan.

[60] Japan Chamber of Commerce and Industry (2012)
[61] TEIKOKU DATA BANK; http://www.tdb.co.jp/report/watching/press/p120201.html

One of the major constrains that Japanese manufacturing companies have been facing in Viet Nam is the absence of local supporting industries. Unlike neighboring China or Thailand, Japanese assemblers have to rely on imports to obtain parts and materials which are not locally available. In response to this constraint, Japanese supporting industries are gradually shifting their operations from Japan into Viet Nam. Among the 348 Japanese manufacturers which started their operations in Viet Nam between 1990 and 2012, about 100 companies can be regarded as supporting industries, which mainly process steel and nonferrous metal or manufacture electronic/electric parts to serve other Japanese assemblers. In fact, as shown in the Figure 5-11, the number of major Japanese assemblers starting operation in Viet Nam and the number of Japanese supporting industries also initiating operations in Viet Nam are seen to be synchronized over the past 20 years.



Source: Touyou Keizai, Kaigai Shinshutsu Kigyou Souran, April 2012

Figure 5-10 The Sector in which Japanese Firms Launch Their Operations in Viet Nam

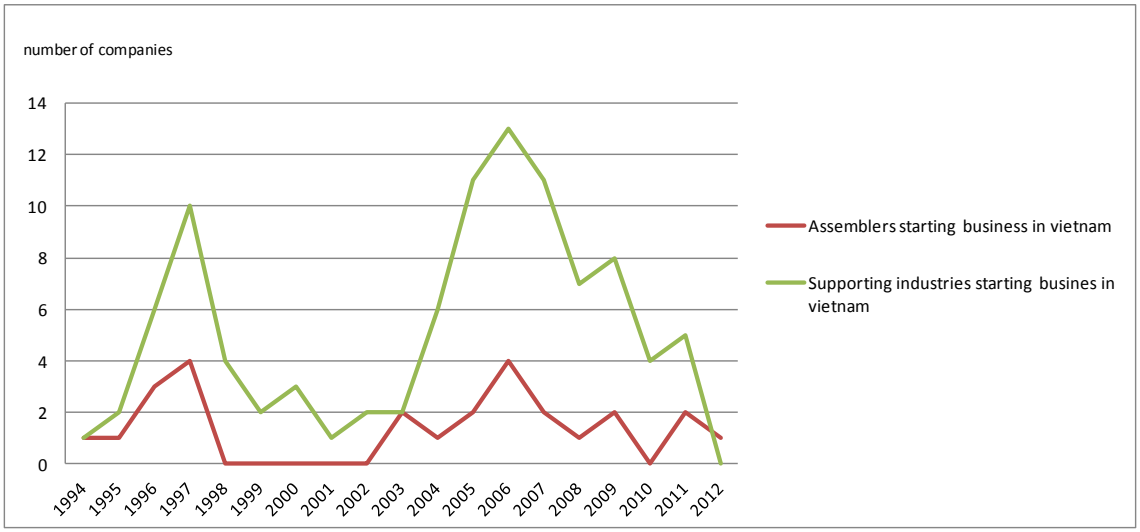
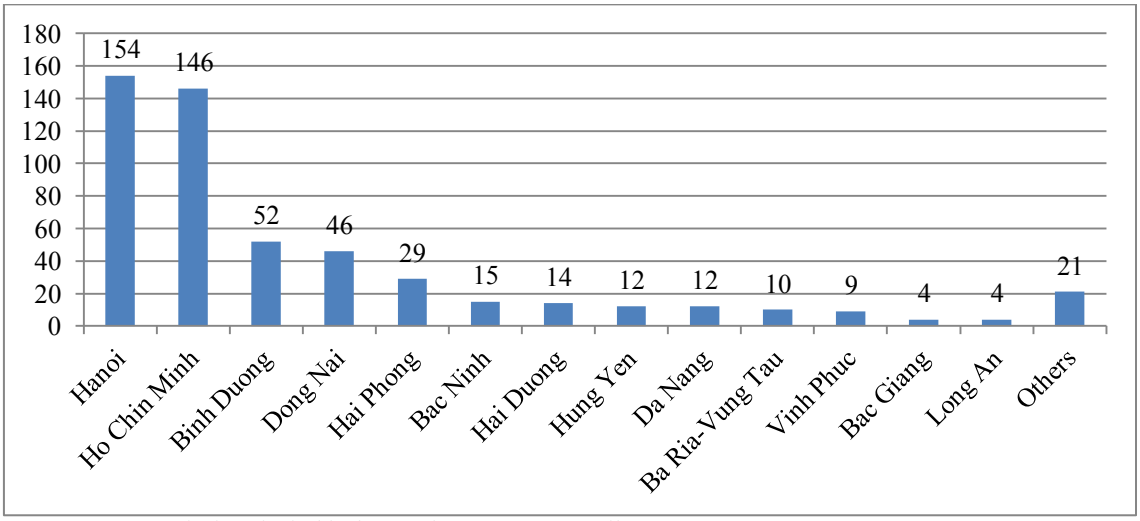


Figure 5-11 The Number of Japanese Major Assemblers and Supporting Industries Launching Business in Viet Nam

Other than the manufacturing sector, there is also an increase in the number of Japanese companies in the service and retail sector in recent years. They expect to expand the market in this promising country with a large population of approximately 90 million, whose average age is around 27, and growing household income in urban areas.

(3) Locations of Japanese Firms

As shown in Figure 5-12, more than half of Japanese firms in Viet Nam are concentrated in two big cities, Hanoi and Ho Chi Minh and their surrounding provinces such as Bing Duong, Dong Nai and Ba Ria-Vung Tau (near Ho Chi Minh) and Hai Phong, Bac Ninh and Hai Duong (near Hanoi). Besides, there are more than 10 companies in Da Nang, the main province in the central area.



Source: Touyou Keizai, Kaigai Shinshutsu Kigyou Souran, April 2012

Figure 5-12 The Number of Japanese Firms in Vietnamese Cities and Provinces

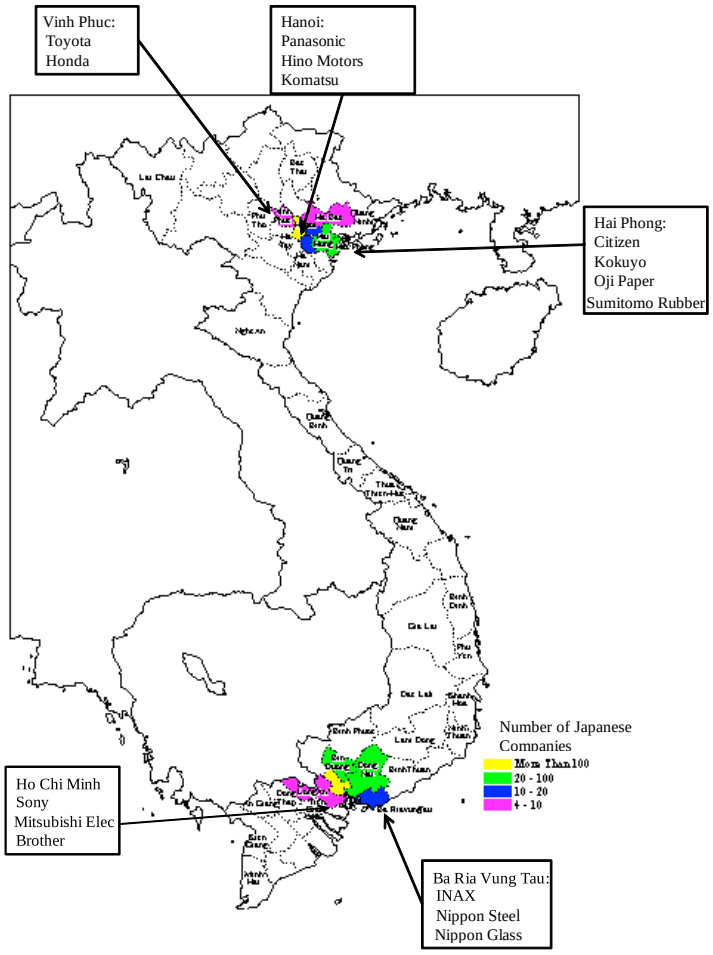


Figure 5-13 The Number of Japanese Companies and Major Assemblers in Each Region (Map)

5.1.3 Conclusion

Although a sudden drop of FDI in Viet Nam occurred in 2009 due to the effect of the global economic crisis of 2008, it has recovered to almost the same level as that in 2007, right before the global economic crisis in 2008. With regard to FDI by economic activities, the manufacturing sector is the main category attracting FDI inflows, while the service sector has also begun to attract investments. FDI inflows from Japan show more or less the same tendency. From a perspective of Japanese firms, Viet Nam has been an attractive country for manufacturers to set up a production base because of its positive investment climate. In recent years, there are increasing investments by Japanese companies in Viet Nam partly due to a risk hedging measure, commonly known as "China+1" approach. Production bases in Viet Nam also help prevent disruption of supply chain by natural disasters. The continued high appreciation of yen is another factor which propels Japanese companies to shift majority of their operations overseas, including to Viet Nam, to reduce production costs.

5.2 Survey Methodology

In order to assess the current situations and challenges of Japanese firms in Viet Nam in terms of human resource related matters, particularly their skill requirements for new local employees, recruitment methods, skill gaps between their requirements and existing HR pools, and in-company trainings to narrow these gaps, the study team conducted a review of existing literatures, such as available reports, publications, statistics, etc, and conducted face-to-face

interviews with selected 30 Japanese firms operating in Viet Nam. To select firms for interviews, the study team determined two key criteria: 1. their location in Viet Nam and 2. their industry categories.

Firstly, the areas of companies to be interviewed were chosen based on the spread of geographical locations of Japanese firms. As shown in Figure 5-12, a large percentage of companies are located in two major cities of Hanoi and Ho Chi Minh city and their surrounding provinces, such as Hai Phong in Northern area, and Binh Duong and Dong Nai in Southern area. Therefore, firms located in these areas were selected. In addition, one firm located in Da Nang in central Viet Nam was also selected to ensure a reasonable balance in regional coverage. Second, in terms of the sectors, the manufacturing industry, such as automobile parts, plastics and metal fabrications, precision instrument, and others, was selected based on their prominence among Japanese companies in Viet Nam. According to the statistics of Japanese firms in Viet Nam, the manufacturing industry accounts for 47 % of the total[62]. Furthermore, recent data on FDI in Viet Nam indicate that the manufacturing sector is the main target category of FDI inflows, approximately half of the share in terms of the numbers and registered capitals in 2010. Moreover, the supporting industry was also included based on the review of the trends in an increasing number of Japanese supporting industries which are already in Viet Nam and are expected to increase rapidly, propelled by the high appreciation of yen as well as for the prevention of supply chain disruption caused by natural disasters, such as earthquakes and floods, in the region. Table 5-3 shows the profiles of 30 firms interviewed.

Table 5-3 Profile of 30 Firms Interviewed

Types of Manufacturing	No. of company
Automobile Parts	6
Plastics fabrication and production	2
Metal fabrication and production	5
Precision instrument	7
Other manufacturing	10
Total	30

Types of Production	No. of company
Assembling	6
Assembling and fabrication	2
Fablication	6
Build to Order	7
Others	9
Total	30

Company size	No. of company
1-100	6
101-300	3
301-1000	10
1001-3000	7
3001-5000	4
Total	30

Area	City or Province	No. of company
Northern	Hanoi	6
	Hai Phong	8
Central	Da Nang	1
Southern	Ho Chi Minh	10
	Binh Duong	2
	Dong Nai	3
Total		30

[62] TEIKOKU DATABANK, LTD, Special edition: Survey on Japanese firms launching in Vietnam (2012/2/1) Japanese language
http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=2&ved=0CG0QFjAB&url=http%3A%2F%2Fwww.tdb.co.jp%2Freport%2Fwatching%2Fpress%2Fpdf%2Fp120201.pdf&ei=YWzlT8TSGqW9iAfPic1b&usg=AFQjCNHWAXpJj-BZ7x0MD4AwMF35d0bIeg&sig2=ENaoiejFGf8Fe001ddh-tw

5.3 Survey Results of Japanese Manufacturing Industries in Viet Nam

This section describes findings of the survey from several perspectives, such as 1) skill levels expected by Japanese firms by job responsibility, 2) local recruitment methods and skill gaps between skill levels expected from the firms for new employees and the actual skill levels of the new employees, 3) the current situations of in-company trainings, and 4) feedback/recommendations to higher education or vocational training institutions from the firms[63].

5.3.1 Expected Skills by Job Responsibility

Based on literature reviews as well as interviews, the general practice of Japanese manufacturing firms in Viet Nam basically classifies their employees into the following 6 job responsibility categories shown in Table 5-4

Table 5-4 Job Responsibility Categories in Typical Japanese Manufacturing Firms

No.	Job Responsibility categories	Example of position summary	Main educational background of employees
1	General Director	Running profitable business	University graduate
2	Management positions	Supervising division staffs	University graduate
3	General staff	Conducting daily operation	University graduate
4	Engineer	Managing guality control and designing	University graduate with a technology-related major
5	Tradesman	Fablicating and molding materials	Vocatinoal College graduate
6	Labor intensive workers	Operating assembly lines	Vocational College / Basic education graduate

In order to analyze skill levels expected from Japanese firms for each job responsibility category, the study team developed a framework consisting of four different types of skills, ranging from 1) essential ethics and attitudes, 2) soft skills, including cognitive and communication skills, 3) hard skills, and 4) management skills. Firstly, essential ethics and attitudes, described in the bottom of Figure 5-14, are the foundation of work ethics including punctuality and understanding of the corporate rules or regulations. In addition, since interviewed firms are all operating factories, most of the Japanese manufacturing firms strongly emphasize on 5S[64], a commonly used concept in Japanese manufacturing industry to ensure a safe and efficient production environment. Second, soft skills refer to the ability to work effectively with others and build up good relationships with others to achieve specific goals. In order to fulfill most of the tasks at work, good communication skills and logical thinking are essential. Thirdly, hard skills refer to job specific skills or special techniques that can be obtained through education/training and work experiences. In Japanese manufacturing firms, the typical hard skills that they are expecting are designing, fabricating, molding, refining, and assembling different materials. Fourthly, the management skills consist of ability to lead, supervise, motivate, and encourage employees to work together for achieving organizational goals, as well as an ability to forecast the future trends.

[63] Results of interview shall be attached as separated document (JICA only)
[64] 5S stands for five Japanese words staring from S-sounds: Seiri (Sort, Clear, Classify), Seiton (Straighten, Simplify, Set in order, Configure), Seiso (Sweep, Shine, Scrub, Clean and Check), Seiketsu (Standardize, Stabilize, Conformity), and Shitsuke (Sustain, Self discipline, and Practice).

(4) Management Skills		
Planning instructional leadership, assesment, organization and implemention plans, financial management, communication and information management		
(3) Hard Skills	**(2) Soft Skills**	
Specialized knowledge and skills	**(2-1) Cognitive Skills**	**(2-2) Communication Skills**
Applied skills	Understanding of the "Improvement approach"	Language skills (English, Japanese)
Techniques	Problem finding and solving ability	Presentation skills
Subject-specific knowledge	Logical and critical thinking	Persuasiveness
Work Experiences	Ability to observe causal relationships	Ability to work in teams
Technical certification	Ability to understand external conditions and constrains	Ability to understand inquiries, intentions and situations
Basic knowledge of math and physics	Objective Perspective	Ability to express opinions or intentions clearly
(1) Essential Ethics and Attitudes		
Adherence to the laws, rules and regulations		
Knowledge of basic laws and regulations (insurance, health systems, employment systems, etc.)		
Literacy and basic ability to comprehend situations and understand instructions		
Manners and basic communications rules (reporting, contacting and consulting)		
Understanding of working hours		
Understanding of 5S concepts		

Figure 5-14 Category of Required Skills

Based on the analysis of the survey results, the study team summarized the skill sets expected from Japanese firms for each job responsibility category except General Director since difficulty of breaking down into patterns. The skills highlighted in Figure 5-14 correspond to the skills that are highly desired by the firms in that category.

(1) Expected Skills for Labor Intensive Workers

Expected skills for workers of this category are limited to essential ethics and attitudes comparing to other job responsibility category workers. The workers in this category are expected to follow the company regulations and working hours. Many employers during interviews commented that they did not expect much for labor intensive workers because the assigned work at the level is simple and no specific inquiry or judgment is required.

(2) Expected Skills for Tradesmen

For this category, the employers expect essential ethics and attitudes with some hard skills and communication skills. Tradesmen are often found at supporting industries as well as component and parts-supply industries, and many of them have vocational school backgrounds. Their typical work at manufacturing firms are, for example, fabricating or molding metals and plastics. It takes time to acquire these technical skills and some of the techniques used are highly company-specific. Thus, they often gain skills and techniques through on-the-job work experiences. This category of work requires communication skills because some of the products are made-to-order or customized, so they need to communicate with their supervisors or sometimes their clients in order to manufacture specific products.

(3) Expected Skills for Engineers

High levels of hard skills and some degree of soft skills in both logical thinking and communication skills are desired for this category. Typical engineers at manufacturing industries are university graduates with industrial or technical degrees. Once they are employed, they are assigned in positions in quality control, designing, and research and development (R&D). Those engineers are required to possess highly technical skills, especially designing skills to develop prototypes of company's new products. Team work is also very important in order to work with other engineers for R&D, and communication skills are also expected since they are in charge of maintaining machines at factories and they are occasionally required to supervise the workers regading the use these machines.

(4) Expected Skills for General Staff

General staff are required to have more soft skills rather than hard skills. They mostly have university backgrounds and once they are hired, they will be assigned in divisions such as accounting, information technology, legal affairs, human resources, trades, sales, and quality control. While employees working as accountant and IT staff are required to have specific knowledge and skills, most of the general staff are expected to have certain soft skills. Since they communicate with other employees or with expatriate managers in English or Japanese, foreign language skills are also desired. Since they handle daily operations interlinking different divisions of the company, team work is more important comparing to other job responsibility category workers.

(5) Expected Skills for Management Staff

The management staff are expected to possess principally almost all the skills mentioned in Figure 5-14. It is highly expected to integrate all these skills flexibly depending on situations of the workplace to solve problems in order to achieve firm's business objectives. Through interveiw, JICA study team summarized an image of ideal required skill by job responsibility category as shown in Figure 5-15.

1) Unskilled labor

(4) Management skils		
Planning, instructional leader ship, assessment, organizing and implementing plan, managing finance, communication, and information management		
(3) Hard skills	(2) Soft skills	
Specialized knowledge	(2-1) Logical thinking	(2-2) Communication
Applied skills	Improvement approach	Language skilln (English, Japanese)
Techinique	Problem finding and solving ability	Presentation skill
Specialized knowledge	Thinking ability	Persuasiveness
Work experiences	Clarification of causal relationships	Team work ability
Techical certification	Understanding external condition and constraint	Understand inquires, intentions and situations
Basic knowledge of math and physics	Objective perspective	Express opinions or intentions comprehensibly.
(1) Essential Human skills		
Adherence of the laws, rules and regulations.		
Knowledge of basic laws (insurance, health system, employment system, etc.)		
Basic ability and literacy to comprehend situations and understand orders		
Manners and basic communications (reporting, contacting and consultation)		
Understanding of Working hours		
5S (5S stands for Seiri (Sorting), Seiton (Stabilizing Straigthening Out), Seiso(Sweeping or Shining), Seiketsu (Standardizing), and Shitsuke (Sustaining the Practice)).		

2) Tradesman

(4) Management skils		
Planning, instructional leader ship, assessment, organizing and implementing plan, managing finance, communication, and information management		
(3) Hard skills	(2) Soft skills	
Specialized knowledge	(2-1) Logical thinking	(2-2) Communication
Applied skills	Improvement approach	Language skilln (English, Japanese)
Techinique	Problem finding and solving ability	Presentation skill
Specialized knowledge	Thinking ability	Persuasiveness
Work experiences	Clarification of causal relationships	Team work ability
Techical certification	Understanding external condition and constraint	Understand inquires, intentions and situations
Basic knowledge of math and physics	Objective perspective	Express opinions or intentions comprehensibly.
(1) Essential Human skills		
Adherence of the laws, rules and regulations.		
Knowledge of basic laws (insurance, health system, employment system, etc.)		
Basic ability and literacy to comprehend situations and understand orders		
Manners and basic communications (reporting, contacting and consultation)		
Understanding of Working hours		
5S (5S stands for Seiri (Sorting), Seiton (Stabilizing Straigthening Out), Seiso(Sweeping or Shining), Seiketsu (Standardizing), and Shitsuke (Sustaining the Practice)).		

3) Engineer

(4) Management skils		
Planning, instructional leader ship, assessment, organizing and implementing plan, managing finance, communication, and information management		
(3) Hard skills	(2) Soft skills	
Specialized knowledge	(2-1) Logical thinking	(2-2) Communication
Applied skills	Improvement approach	Language skilln (English, Japanese)
Techinique	Problem finding and solving ability	Presentation skill
Specialized knowledge	Thinking ability	Persuasiveness
Work experiences	Clarification of causal relationships	Team work ability
Techical certification	Understanding external condition and constraint	Understand inquires, intentions and situations
Basic knowledge of math and physics	Objective perspective	Express opinions or intentions comprehensibly.
(1) Essential Human skills		
Adherence of the laws, rules and regulations.		
Knowledge of basic laws (insurance, health system, employment system, etc.)		
Basic ability and literacy to comprehend situations and understand orders		
Manners and basic communications (reporting, contacting and consultation)		
Understanding of Working hours		
5S (5S stands for Seiri (Sorting), Seiton (Stabilizing Straigthening Out), Seiso(Sweeping or Shining), Seiketsu (Standardizing), and Shitsuke (Sustaining the Practice)).		

4) General staff

(4) Management skils		
Planning, instructional leader ship, assessment, organizing and implementing plan, managing finance, communication, and information management		
(3) Hard skills	(2) Soft skills	
Specialized knowledge	(2-1) Logical thinking	(2-2) Communication
Applied skills	Improvement approach	Language skilln (English, Japanese)
Techinique	Problem finding and solving ability	Presentation skill
Specialized knowledge	Thinking ability	Persuasiveness
Work experiences	Clarification of causal relationships	Team work ability
Techical certification	Understanding external condition and constraint	Understand inquires, intentions and situations
Basic knowledge of math and physics	Objective perspective	Express opinions or intentions comprehensibly.
(1) Essential Human skills		
Adherence of the laws, rules and regulations.		
Knowledge of basic laws (insurance, health system, employment system, etc.)		
Basic ability and literacy to comprehend situations and understand orders		
Manners and basic communications (reporting, contacting and consultation)		
Understanding of Working hours		
5S (5S stands for Seiri (Sorting), Seiton (Stabilizing Straigthening Out), Seiso(Sweeping or Shining), Seiketsu (Standardizing), and Shitsuke (Sustaining the Practice)).		

Figure 5-15 Image of Ideal Required Skills by Job Responsibility Category

5.3.2 Recruitment Methods and Observed Gaps between Expected Skill Levels by the Firms and Actual Skill Levels of the Employees at Hiring

Japanese firms utilize different kinds of methods to recruit their local employees according to their job responsibility category. To recruit labor intensive workers or tradesman, the firms place vacancy announcements on a bulletin board inside the industrial parks or request Jobs Placement Centre which is a kind of an employment office to assign candidates. In addition to these methods, to recruit labor intensive workers, placing advertisements in neighboring communities through local community broadcasting systems is also used. These methods have been successful in recruiting workers but the firms have begun to explore new channels of recruitment, one through training or educational institutions to secure enough number of recruitments for this category of workers. To recruit engineers, general staff and managers who have generally higher educational backgrounds than workers, the firms utilize internet recruitment agent sites or human networks of existing employees than the methods mentioned above. Especially for the recruitment of engineers and general staff, some firms look for candidates through internships. Fourteen out of thirty interviewed firms make use of internships for recruitment purposes. At the same time, these firms are actively promoting their businesses to universities through job fairs, networks of alumni among the employees, and through recommendations by university professors.

According to the interviews, Japanese manufacturing firms have faced difficulty in recruiting their employees who have already acquired expected skills mentioned in the previous section at the time of hiring. It means that there are skill gaps between the levels expected by the firms and actual skills of the new employees. Therefore, at the hiring stage, the firms try to assess whether the candidates have potential to grow after employment.

Regardless of the job responsibility category, the firms often evaluate the candidates through interviews to look for the following characteristics:

- Whether the candidate has good manners and communication skills
- Whether the candidate suits the company's culture
- Whether the candidate is willing to work for the company in the long term

Due to the skill gaps at the hiring stage, many Japanese companies try to train new employees after hiring them so that they can develop skills as required by the firms. The in-company

training is more common among large firms which can afford such expenses. However, for small and medium-sized enterprises in supporting industries, which started their business to follow major assemblers' move to Viet Nam as shown in Figure 5-10, such investment in staff training creates a heavy financial burden. The next section will analyze how Japanese manufacturing firms are tackling these skill gaps by utilizing in-company trainings.

5.3.3 In-Company Trainings

The previous section discussed about a gap between desired skills by the firms and actual skills that new employees have when hired. To narrow this gap, various kinds of trainings, for instance, in the form of induction trainings for new employees or a follow-up training, have been carried out by the firms.

Induction trainings for new employees are provided to basically all new employees regardless of the job responsibility categories. The average training length is between 4 to 9 weeks and most of the companies consider that in-company training is necessary and effective[65]. According to the report on youth employment in Viet Nam by University of Leicester for Viet Nam Chamber of Commerce and Industry and International Labour Organisation, training of younger workers by other staff members in the same company is the most effective method and the survey reveals that over 85% of respondents agree on the effectiveness of in-company training[66]. Many Japanese companies conduct trainings for new employees and the length of the training is from one week to one month. The content of the training includes company rules, workplace safety, basic skills and procedures[67].

In addition to the induction training for new employees, the results of interviews show that many companies have invested on follow-up trainings, particularly for employees who have worked in the company for more than 2-3 years. Table 5-5 shows the contents of follow-up trainings by job responsibility category.

Table 5-5 The Contents of Follow-up Trainings by Job Responsibility Category

Follow-up training	Management	General staff	Engineers	Tradesman	Labor intensive workers
5S				○	○
Quality, Production Control		○	○	○	○
Special Skills (Accounting, IT, Machine operation)		○	○	○	○
Leadership	○	○	○		
Management	○				
Language (English)	○	○	○		
Language (Japanese)	○	○			
Training in Japan	○				

[65] Vietnam: Higher Education and Skills for Growth: The World Bank June,2008
[66] Youth Employment in Vietnam: Report of Survey Findings
http://www.google.com/url?sa=t&rct=j&q=&esrc=s&frm=1&source=web&cd=1&ved=0CFsQFjAA&url=http%3A%2F%2Fwww.ilo.org%2Fpublic%2Fenglish%2Fdialogue%2Factemp%2Fdownloads%2Fprojects%2Fyouth%2Fvietnam_reportv5.pdf&ei=zHrlT7_XCqjeigfF47Fa&usg=AFQjCNErJPhtZirkjwdbk3O9cZ15QTTOzA&sig2=6o89k_BV9nbs37ggY7NInQ
[67] Survey Report Quality of Technical and Vocational Education and Training: Perception of Enterprises in Hanoi and Surrounding Provinces, Junichi Mori, Pham Trong Hoang, Nguyen Thi Xuan Thuy, November, 2010
http://www.grips.ac.jp/vietnam/VDFTokyo/Doc/IHRsurveyreportE(Nov10).pdf

Through the interviews, the study team found that the most of the Japanese companies do not hire managerial staffs from outside. Instead, they are trained and promoted to the managerial level through in-company trainings while they are working for the company for 5-10 years. As shown in the first column of Table 5-5 above, training contents for the management category focus on management skill trainings. Many companies, especially with a staff size of over 1,000, tend to require Japanese language for local management staff in order to carry out daily communication with Japanese management staff. Many local management staff and its candidates have been sent to overseas trainings in Japan to learn Japanese working styles at the headquarters in Japan.

The second column shows the training contents for general staff conducted for special skills in each of their assigned department for better understanding or updates of newly introduced methods. Many firms responded that they had utilized external seminars for training purposes. Those seminars are often based on requests from staffs and staff members are encouraged to participate in seminars and trainings as long as the trainings are deemed beneficial to their work. Many staff members take the opportunity to learn foreign languages, such as Japanese and English, through the external trainings. Some companies mentioned that they paid tuitions for evening courses at higher education institutions for staff trainings.

Training contents for engineers are shown in the third column. It is similar to those of general staff. Engineers are often required to learn new technologies and new design techniques, such as CAD and CAM. As the training options for engineers are highly specific, the companies usually send them to external seminars to acquire particular skills and knowledge.

Regarding the training for tradesmen, as indicated in the fourth column, they are mostly trained by their senior workers in the company since they are considered as highly skilled labors by the company. Some companies introduce an in-company technical license system. For example, an in-company license is required to operate some machinery which requires high technical skills to operate. Once or twice a year, depending on the company policy, the test for obtaining such license is organized. By introducing this license system, workers are motivated to acquire in-company licenses for gaining both technical skills and allowance.

For labor intensive workers' training in the fifth column, those who have been working at the company for more than one year are often given in-company trainings on 5S in order to teach 5S concepts to the new employees.

5.3.4 Recommendations to Higher Education and Vocational Training Institutions from Japanese Firms in Viet Nam

This section summarizes recommendations made by Japanese manufacturing industries in Viet Nam to higher education and vocational training institutions based on the survey results.

(1) Recommendations to Higher Education Institutions

The survey shows that Japanese manufacturing firms mostly recruited their local general staff, engineers, and potential management staff from the pool of graduates from higher education institutions in Viet Nam and have some recommendations for these institutions based on their recruitment experiences of Vietnamese workforce.

Engineers in Japanese manufacturing companies are often required to have both technical skills and communication skills because they work both in office and factory for designing products, managing quality of the products, and maintaining the machines, requiring them to work well with physical materials as well as with people. Japanese firms request higher education institutions in Viet Nam to provide prospective engineers with more training on solid knowledge

and skills on: 1) basic knowledge of mathematics and physics; 2) communication; 3) planning and management; 4) quality control and production control; and 5) product design.

As for general staffs, the field specific knowledge is not necessarily required, except for those who will work in accounting or IT divisions. Thus, more general skills, such as communication skills, foreign language skills, and administrative skills, are required. Since some of these general staff will be future candidates for management staff, leadership and management skills are also desired to be taught at universities. Japanese firms recommend higher education institutions in Viet Nam to provide students who are potential candidates for general staff with more solid skills on: 1) communication; 2) team work; 3) report writing; 4) leadership; and 5) logical thinking.

(2) Recommendations to Vocational Training Institutions

The survey found that many of the graduates from vocational training institutions are still considered as unskilled labors and they participate in the assembly lines at factories. The study team often noted during the survey that there was not a lot of difference between graduates from high schools and those from vocational training institutions in the way the companies treat these two groups of employees. However, some of the firms expect immediate contributions by new employees hired from vocational training institutions as tradesmen and their desired technical skills are mainly fabricating and molding metal/plastics for production by order. These firms strongly recommend to incorporate the development of the following skills in the curriculum for vocational training institutions: 1) essential work ethics such as 5S and corporate cultures; 2) basic knowledge of mathematics and physics; 3) hands on experience on technical skills; and 4) specific technical skills such as fabricating and molding plastics/metals, and electric control,.

5.4 Pre and Post Employment Training with Practical Experience in Japan

As described in capter 5.3.2, there are gaps between skills expected by Japanese firms and the actual skill levels of the new employees. Education and training in Viet Nam tends to focus on classroom lectures and students are rarely provided with practical experiences. The last section of this chapter introduces several examples of institutions or courses that have attempted to provide practical experiences or trainings for students to narrow the gaps between expected skills by Japanese firms and the skills of their new employee candidates or employees.

(1) KAIZEN YOSHIDA School

Esuhai Co. Ltd., founded in 2006 at Ho Chi Minh City, runs KAIZEN YOSHIDA School to train graduates from high school and university, and introduce them to Japanese companies both in Viet Nam and Japan. JICA recognizes its contribution and provided assistance for its new school building in 2012. To date, 720 students are studying at this school, 700 interns are working in Japan, and more than 2,200 young Viet Namese people participated in the program to have working experience in Japan.

Mr. Le Long Son, the founder and the president, explains the objective of his school as follows: “Vietnamese youngsters tend to repeat unnecessary job-hopping just to be paid more because they don’t see a role model or a career path for their job. Many of them have grown up in rural areas and had almost no chance to know about the industrial labor”. He wants to give young graduates the fundamentals of business manner and ethics as well as the skill of oral communication and believes this school helps them to find their work place in Japanese labor market. Their working experience in Japan is the key to their successful career.

Figure 5-16 Classes in KAIZEN YOSHIDA School where Students Experience Standing at Work (right) Popular in Japanese Manufacturers

High school graduates can apply for Japanese "Technical Intern Training Program" which offers work experience in machining or manufacturing in Japan for three years after the training for several months in KAIZEN YOSHIDA School for four hours a day. School fees are considerably low but the School instructs them that they are investing in themselves. In Japan they are paid about eighty thousand Japanese Yen (more than twenty billion Vietnamese Dongs) each month as trainees, which they send home or save for future investment after the training. They also learn Japanese language to pass Japanese Language Proficiency Test (JLPT) Level N2 before they come back. After the internship, the School gives them business training for a month and a half on PC operation, 5S program and reporting, which is necessary for the next step towards a career in Japanese companies in Viet Nam. Japanese Ministry of Economy, Trade and Industry conducted a survey on ex-trainees of the "Technical Intern Training Program" in 2011, which showed their careers after the internship. Some joined Japanese companies in Viet Nam for a similar job or helped the company in which they were trained in Japan to launch its business in Viet Nam, while others started their own business, often supported by the company in which they had their internship in Japan.

University graduates with engineering degrees apply for the engineer job after one-year training in KAIZEN YOSHIDA School. They have to pass the entrance exam first and then receive a scholarship of forty billion Vietnamese Dongs from the School for the full-time training from 8AM to 5PM. When they pass the JLPT Level N2 exam and obtain a working visa in Japan, they are employed as a mechanical, electronics & electronic or information technology engineer by a company in Japan. Many of them hope to come back home to find a job in the company's branch in Viet Nam.

The School recognizes the most critical and important part of the training program for both high school as well as university graduates is the job experience in Japan to make them fit in Japanese companies. Since the Schools' major revenue comes from referral fees of human resources to firms, producing human resources that Japanese firms are willing to hire is a key for their operation.

This School's programs are also beneficial for Japanese SMEs. Trainees know both countries so well that they can assist Japanese companies in coming to Viet Nam or even setting up their own business as a Vietnamese subsidiary of a Japanese company. There are some small Japanese companies that are concerned about their business successors and provide Vietnamese trainees with money and/or equipment for starting up their business in Viet Nam in order to maintain their technology even in Viet Nam.

(2) Japanese Vocational Schools

Osaka Federation of Colleges and Vocational Schools has implemented a program to exchange trainees of Japan and developing countries with a subsidiary in Osaka Prefecture in the framework of "Osaka internationalization action program." Its member schools provide international trainees, including Vietnamese, with various programs for development of professional skills and Japanese language skills in order for them to be engineers or middle-level managers. Training and internship in Japan are the most important part. Osaka Federation of Colleges and Vocational Schools are now considering the establishment of partnership with Japanese language institutions in Viet Nam.

(3) VJCC Management Course

Viet Nam-Japan Human Resources Cooperation Center (VJCC) offers business management training on strategy, human resource development and business plans to Vietnamese young managers, mainly of supporting industries in Hanoi and Ho Chi Minh City. More than twenty trainees join each period of ten-month training program, including a two-week overseas training in Japan. They maintain a network of alumni for the future collaboration. VJCC also offers business training programs for working people and plans to have advanced course similar to Master of Business Administration (MBA) with additional programs of Japanese-style business administration and manufacturing based on quality control and 5S.

6. The Draft of the Roadmap for Mid- and Long-term HRD in Viet Nam

6.1 Purpose and Usage of the Roadmap

The Roadmap is not a new creation by the JICA study team, but a document prepared based on existing policy documents of the Government. The Roadmap outlines overall directions, mid-term and long-term targets, actions to tackle challenges, and resources to implement actions in developing human resources through higher education and vocational training. The targets include performance indicators which can be monitored and assessed.

The Roadmap is used for consultation among Vietnamese partners, international partners and private sector communities. It helps all the stakeholders to share common understandings of goals and strategies of the government and the progress of achievements in HRD. It also helps identify necessary areas for inputs, and avoid duplications among the stakeholders.

6.2 Approaches and Methodologies in Preparing the Roadmap

The Roadmap was prepared to ensure that its targets can be achievable. The targets and actions indicated in the Roadmap are aligned with visions, goals and strategies of the Government which are already specified in various Government policy documents. The targets and actions in the Roadmap have a 5-year timeframe in line with Viet Nam's national planning system, i.e., the first phase for the period of 2011-2015 and the second phase for the period of 2016-2020. The Roadmap pays equal attention to resources for implementation to achieve targets as well as government requirements. These factors above were carefully taken into consideration in order to increase the likelihood of the Roadmap to be achieved.

Following these approaches, the Roadmap was prepared through the following methodologies:

- Desk review of the latest policy documents and statistics to accommodate the recent trends
- Interviews to analyze relationships and alignment among various policy documents
- Interviews and desk review of the government initiatives, donors' support and private sector's involvement
- Consultation with stakeholders
- Analysis of other donors' templates relevant to the Roadmap
- Field trips and interviews at universities, vocational training schools and Japanese industries to assess the situation in the fields

At the national level, the JICA study team mainly reviewed such government policy documents as i) the Socio-Economic Development Strategy 2011-2020 (SEDS), ii) Socio-Economic Development Plan 2011-2015 (SEDP), iii) Human Resources Development Strategy 2011-2020 (HRDS), iv) Human Resources Development Master Plan 2011-2020 (HRDMP), and v) Decision on National Target Programs 2011-2015. To analyze the resources required for the implementation of the Roadmap, JICA study team also examined the implementation status of action programs specified in the HRDS.

At the sub-sector level, the JICA study team mainly studied such policy documents as i) Higher Education Law, ii) Law on Vocational Training, iii) the Education Development Strategic Plan 2011-2020 (EDSP), iv) Higher Education Reform Agenda (HERA), v) Vocational Training Development Strategy 2011-2020 (VTDS), and vi) Decision on Key Occupations and Vocational Schools for Investment Support from National Target Program. The JICA study team also looked into i) the implementation status of action programs specified in the EDSP and VTDS and 8 initiatives under the HERA, ii) donors' support and iii) private provision of higher

education and vocational training, in order to assess the resources required for the implementation of the Roadmap.

6.3 Composition of the Roadmap

Similar to most of the government policy documents, the Roadmap includes two major elements: i) objectives and targets and ii) actions (or solutions). The objectives and targets are incorporated in the format as shown in Figure 6-1. "Government Objectives" illustrate the government visions and directions for HRD. They are in line with general objectives of strategies and plans of socio-economic development, HRD and sub-sector development of the government. "Government Targets" present performance indicators and performance targets related to HRD and are dividing into two phases: those for the period 2011-2015 and those for the period 2016-2020. Various government strategies and plans set targets according to their levels, such as higher education or vocational training. In the Roadmap, all targets are incorporated into a single document and their respective statuses, as of 2010, are also included in the Roadmap to provide the benchmark for the achievement of government targets.

Government Objectives	**Government Targets**			**Status in 2010**
	Performance Indicators	**Performance Targets**		
		2011-2015	**2016-2020**	
	Indicator 1…..,,			
	Indicator 2…….			
	Indicator 3…			

Figure 6-1 The Format for Government Objectives and Targets of the Roadmap

The second major part of the Roadmap presents the government priority actions (or solutions) to achieve the targets, which are illustrated in the format shown in Figure 6-2. This part will generally follow priority actions in sub-sector development strategies. While existing sector strategies and plans for socio-economic development and HRD also outline actions or solutions, the sub-sector development strategies offer more detailed actions, fully accommodating guidance from the higher-level plans and strategies of the Government. In addition, the Roadmap presents time-bound actions within 2020 in accordance with the government policy documents.

In addition to the requirements from the Government side, the investment status of planned actions was analyzed and was incorporated into the Roadmap as supply-side information. While the Government has implemented some programs and projects by their own resources, donors have also supported the implementation of Government strategies and plans. The private sector has also contributed to developing human resources. The Roadmap partly sorted out areas of inputs by the government and donors according to the actions and illustrated some selected cases of private sector involvements. This enables the Roadmap to function as a document to guide all the stakeholders to identify areas for further inputs.

Action Areas/Actions			**On-going initiatives**
2011-2015		**2016-2020**	
Action Areas /Actions A:……..			
	Sub Action Areas /Actions A-1 :……		
	Sub Action Areas /Actions A-2:……	Sub Action Areas /Actions A-3:……	

Figure 6-2 The Format for Action Areas/Actions of the Roadmap

6.4 Contents of the Roadmap

6.4.1 Higher Education

The Government objectives in HRD are mentioned in various policy documents. In summary, these objectives refer to the rapid development of high-quality human resources to fulfill socio-economic development requirements through education and training reforms. To meet the requirements of the country's industrialization and modernization, the higher education reform aims that Viet Nam's tertiary education shall attain advanced standards in the region, approach the world's advanced level, achieve high competitiveness and suit the socialist-oriented market mechanism.

To achieve these national goals, the Roadmap specifies mid-term and long-term government targets. Most of them are specified in the HERA which was issued in 2005, and other performance indicators and performance targets were added and updated in the latest policy documents such as the HRDS and the HRDMP. As a result, the Roadmap contains 9 government targets in higher education: i) the rate of trained workers over total workforce; ii) university networks; iii) the ratio of university students to teaching staff; iv) the ratio of university and college students to the total population; v) the number of excellent international-standard universities; vi) the development of research-oriented profession and application-oriented curricula; vii) the proportion of university teaching staff with master's and doctoral degrees; viii) the revenue ratio from science and technology activities over the total university revenue; and ix) the development of a revised policy regarding universities' autonomy and accountability. Table 6-1 shows government objectives and targets of HRD through higher education with the status of performance targets as of 2010 in the Roadmap.

Table 6-1 Government Objectives and Targets of HRD through Higher Education with Status of Performance Targets in 2010 in the Roadmap

Government Objectives	Goverment Targets			Status in 2010[68]
	Performance Indicators[69]	Performance Targets[70]		
		2011-2015	2016-2020	
[SEDS]Enhance education to develop highly qualified human resources to satisfy socio-economic development requirements.[71] *[SEDP] Rapidly develop human resources, especially high-quality human resources, focusing on innoavting the national education.[...] Concentrate on high-quality human resources[...] emphasis on improving the quality*	The rate of trained workers over the total work force will increased.	55%	70%	40%
	The network of univesities and colleges will be renewed in line with the socio-econoimic situation.	Universities: 259, Colleges: 314 (70 universities and 88 colleges are newly established during 2011-2015.)		Universities: 163 Colleges: 223
	The raito of university students to the teaching staff will be reduced.		20:1	29.57:1
	The ratio of university and college students to 10,000 people will be increased.	300:10,000	400:10,000	200:10,000
	Excellent international-standard universities will be established.		>4	2 projects ongoing (2012)
	Research-oriented curricula/ profession and application-oriented curricula will be developed, ensuring the transferability among these curricula in the entire system. Solutions and system of quality assurance will be finalized.			
	The proportion of university teaching staff with master's level	Master:	Master:70%	Master: 43.2%

[68] Socio-economic Development Plan in Vietnam 2011-2015, Specific Targets" from Approving the Strategy on Development of Vietnamese Human Resources During 2011-2020 (Decision No.579/QD-TTg, April 19, 2011), Appendixes of Education Sector Development Strategy 2011-2020 (draft) and Survey by JICA Study Team

[69] "Specific Targets" from Higher Education Reform Agenda (Government Resolution No.14/2005/NQ-CP, dated November 2, 2005) and Specific Targets" from Approving the Strategy on Development of Vietnamese Human Resources During 2011-2020

[70] "Specific Targets" from Higher Education Reform Agenda, "Specific Targets" from Approving the Strategy on Development of Vietnamese Human Resources During 2011-2020, Approving the Master Plan on Development of Vietnam's Human Resources During 2011-2020 (Decision No.1212/QD-TTG, dated July 22, 2011), Plan for Human Resource Development for Education Sector during 2011-2020 (Decision No. 6639/QD-BGDDT dated December 29, 2022)

[71] Socio-economic Development Strategy in Vietnam 2011-2020

Government Objectives	Goverment Targets			Status in 2010[68]
	Performance Indicators[69]	Performance Targets[70]		
		2011-2015	2016-2020	
of teachers and scientific researchers.[72] *[HRDS] [...]To build a contingent of human resources in the filed of science and technology[...].To build a system of advanced, modern and diversified human resources training institutes[...].*[73]	degrees and doctoral level degrees will be increased respectively.	Doctoral :	Docotoral:30%	Doctor:14%
	The revenue ratio from science and technology activitires over the total university revenue will be increased.		25%	
	Higher education policies will be revised to give universities and colleges more autonomy and accountability.	N/A	N/A	N/A

[72] Socio-Economic Development Plan in Vietnam 2011-2015
[73] Approving the Strategy on Development of Vietnamese Human Resources During 2011-2020

To achieve the Government targets, the Roadmap indicates action areas/actions, most of which are defined in the HERA, but some others were added with some updates in wordings according to a presentation about "Higher Education in Viet Nam" by MOET at the Mid-term Consultation Meeting at June 14, 2012, Hanoi, Viet Nam.

The Roadmap identified 7 challenges to achieve targets, which include: i) the renewal of training structure and improvement of the network of tertiary education institutes; ii) the renewal of training contents, methods and processes; iii) the renewal of the planning, training, mentoring and employment of lecturers and administrators; iv) the renewal of the organization of scientific and technological activities; v) the renewal of resource mobilization and financial mechanisms; vi) the renewal of the management mechanisms; and vii) international integration.

In line with Government objectives and targets, the Government, donors and the private sector have already been implementing programs and projects in higher education. Based on the review of the JICA study team, the government has implemented 8 projects and the donor has supported 11 on-going programs/ projects. The private sector has been also supporting some higher education institutions. The Roadmap presents the indicative information as to which action areas/actions the government or donors have provided inputs for. Some examples of privately invested universities in Viet Nam are mentioned in section 4-1-5.

The action areas and parts of on-going initiatives and support of the Government and donors are shown in Table 6-2 and an Analysis on Mid-term and Long-term HRD in Viet Nam is attached as Appendix 6-1.

Table 6-2 Action Areas/ Actions in HRD through Higher Education and On-going Initiatives

Action Areas/Actions [74]		On-going Initiatives by Vietnamese Government and International Donors under MOETManagement[75]	
2011-2015	2016-2020		
A. Renewal of Training Structure and Improvement of Network of Tertiary Education Institutions		**Policy Level**	✓Developing Higher Education Law (G) ✓Higher Education Development Policy Program (WB)
A-1 To evaluate and revise the existing network of universities and colleges in the whole country.			
A-2 To develop more *profession and application oriented curricula* and provide training in flexible ways in order to give learners more learning opportunities.			
A-3 To transform all semi- public and some public universities/colleges into private ones. -To finalize a model of community colleges -To consolidate the open universities -To encourage the establishment of new universities/colleges by large enterprises			
A-4 To concentrate investment and mobilize human resources for establishing universities of international standards.		✓Vietnamese-Germany University (G, Germany, WB) ✓University of Science and Technology of Hanoi (G, France, ADB)	
B. Renewal of Training Contents, Methods and Processes		**Policy Level**	✓Developing Higher Education Law(G) ✓Higher Education Development Policy Program (WB)
B-1 -To restructure the framed curricula in order to improve quality and effectiveness of all subjects -To revise subject contents in order to catch up with the fast development of science and technology and to meet the demands of society development and learners' personality development.		✓Import of Advanced International Curricula (G) ✓Second Higher Education Project (WB) ✓Vietnamese-Germany University(G, Germany, WB) ✓University of Science and Technology of Hanoi (G, France, ADB) ✓Higher Education Development Support Project on ICT (G, JICA)	
B-2 To innovate teaching-learning methods for assisting learners to develop self-learning methods and skills of using ICT.		✓Vietnamese-Germany University(G, Germany, WB) ✓University of Science and Technology of Hanoi (G, France, ADB) ✓Higher Education Development Support Project on ICT (G, JICA)	
B-3 To implement credit-based training at all universities and colleges.			

[74] Summary of "Renewal tasks and solutions" from Higher Education Reform Agenda by JICA Study Team
[75] Survey by JICA Study Team

Action Areas/Actions [74]		On-going Initiatives by Vietnamese Government and International Donors under MOETManagement[75]
2011-2015	2016-2020	
B-4 To innovate the assignment of student enrolment quotas for universities/colleges based on schools' capacity, teaching - learning facilities and demands of learners.		
B-5 To innovate the organization and implementation of university entrance examinations by using new assessment methods for selecting new undergraduate students.		
B-6 To renew contents and training methods for training post graduate students.		
C. Renewal of Planning, Training, Fostering and Employment of Lecturers and Administrators		**Policy Level** ✓Developing Higher Education Law (G) ✓Higher Education Development Policy Program (WB)
C-1 To work out and implement a master plan to develop the contingent of higher education lecturers and administrators, ensuring both quality and quantity of these professionals		✓Training of 20,000 Phd holders for Colleges and Universities (G) ✓Second Higher Education Project (WB) ✓Vietnamese-Germany University(G, Germany, WB) ✓University of Science and Technology of Hanoi (G, France, ADB) ✓Higher Education Development Support Project on ICT (G, JICA)
C-2 To renew contents and training methods for refresher training of lecturers and managers.		
C-3 To employ managers and lecturers through a fairer selection process using long-term contracts. To ensure the equity between managers, lecturers and staff of public schools and those of non-public schools.		
C-4 To develop new policies for universities and colleges lecturers including standards, working norms, working conditions, responsibilities of teaching and doing research, rights and benefit.		✓Vietnamese-Germany University(G, Germany, WB) ✓University of Science and Technology of Hanoi (G, France, ADB)
C-5 To reform standards, criteria, and processes of assessment for conferring the title of Professor and Associate Professor.		✓Vietnamese-Germany University(G, Germany, WB) ✓University of Science and Technology of Hanoi (G, France, ADB)
D. Renewal of Organizing and Implementing Scientific and Technological Activities		**Policy Level** ✓Developing Higher Education Law (G) ✓Higher Education Development Policy Program (WB) ✓Improvement of Research Capacity of Vietnamese Universities (G)
D-1 To invest for establishing new research institutes under some major universities		
D-2 To develop specifications and guides for university lecturers in doing scientific research, and encouraging involvement of undergraduate and post graduate students.		✓Second Higher Education Project (WB) ✓Vietnamese-Germany University(G, Germany, WB) ✓University of Science and Technology of Hanoi (G, France, ADB)

Action Areas/Actions [74]		On-going Initiatives by Vietnamese Government and International Donors under MOETManagement[75]
2011-2015	2016-2020	
D-3 To allocate at least 1% of the annual government budget for universities, colleges to conduct their scientific and technological research.		
E. Renewal of Resource Mobilization and Financial Mechanisms		Policy Level: ✓Developing Higher Education Law (G) ✓Higher Education Development Policy Program (WB)
E-1 To build clearing houses, e-libraries, laboratories, student hostels for common use of some universities. To develop *Fund of Land* in some localities to establish universities of international standards.		
E-2 To develop policies to encourage domestic and foreign investors to invest in higher education in Viet Nam		
E-3 To diversify and increase universities' income by creating training, research contracts and services		✓Second Higher Education Project (WB) ✓Vietnamese-Germany University(G, Germany, WB) ✓University of Science and Technology of Hanoi (G, France, ADB)
E-4 To develop and implement policies on student tuition fees, loans and scholarships to give learners more learning opportunities and to share higher education expenditures between the government, learners and the community.		
E-5 To distribute the government fund for universities, colleges based on society's assessments on quality and effectiveness of each school. To regularly conduct assessments on cost effectiveness of higher education.		
E-6 To conduct revenue-expenditure accounting in public universities/colleges to implement the autonomy and accountability of each school. To supplement financial policies for non-public universities and colleges.		✓Vietnamese-Germany University(G, Germany, WB) ✓University of Science and Technology of Hanoi (G, France, ADB)
F. Renewal of Management Mechanisms		Policy Level: ✓Developing Higher Education Law (G) ✓Higher Education Development Policy Program (WB)
F-1 To shift the management of public universities/colleges to the autonomous management mechanism whereby the schools have the full legal person status and the right to decide on, and bear responsibility for, training, research, organization, personnel and finance.		✓Development of Major Universities in Viet Nam (G) ✓Second Higher Education Project (WB)
F-2 To eliminate the situation where different universities are managed by different ministries and to create a mechanism of representatives of the government-owner at public higher education institutions.		✓Accreditation for All Universities in Viet Nam (G) ✓Second Higher Education Project (WB)

Action Areas/Actions [74]		On-going Initiatives by Vietnamese Government and International Donors under MOETManagement[75]	
2011-2015	2016-2020		
F-3 To concentrate the government's role for higher education management on developing and directing the implementation of higher education strategies and policies, school supervision, assessment and accreditation.		✓Development of Major Universities in Viet Nam (G) ✓Accreditation for All Universities in Viet Nam (G) ✓Second Higher Education Project (WB)	
F-4 To develop the Law on Higher Education.			
G. International Integration		Policy Level	✓Developing Higher Education Law (G) ✓Higher Education Development Policy Program (WB)
G-1 To formulate a strategy on international integration,			
G-2 To develop and implement a strategy on teaching and learning foreign languages, especially English at higher education institutions; To select and import international advanced curricula; To have agreements on equivalent diplomas and curricula with universities abroad (peer-recognition); To encourage various forms of high-quality training cooperation, and personnel exchange with universities abroad ; To encourage overseas Vietnamese lecturers to come and give lecturers in Viet Nam; To increase the number of foreign students doing their study in Viet Nam		✓Development of Strategy for Teaching and Learning Foreign Languages in the Education System (G) ✓Import of Advanced International Curricula (G) ✓Vietnamese-Germany University(G, Germany, WB) ✓University of Science and Technology of Hanoi (G, France, ADB)	
G-3 To create a mechanism and favorable conditions for foreign investors to establish international universities/colleges in Viet Nam.			

6.4.2 Vocational Training

The objectives of the Government in HRD are mentioned in various policy documents. In summary, it is said that the objectives are to rapidly develop high qualify human resources to satisfy socio-economic development requirements through education and vocational training reforms. By 2020, the Vocational Training Development Strategy 2011-2020 (VTDS) defines 4 general objectives of development of vocational training. They include: i) meeting labor market needs; ii) enhancing quality of some occupations to international and ASEAS levels; iii) forming a contingent of skilled employees; and iv) universalizing vocational training for employees.

To achieve these national goals, the Roadmap stipulates mid-term and long-term government targets. All of them are specified and incorporated in the VTDS, even though some of them are also included in the national strategies and plans. As a result, the Roadmap lists the following 8 government targets: i) rate of vocationally trained employees; ii) application of new training programs; iii) network of vocational institutes; iv) number of vocational teachers; v) upgrading/new development of programs and curriculum; vi) verification of quality occupation; vii) development of a national vocational qualification framework; and viii) connection between vocational training with employment. These indicators are consistent with the overall policies and strategies including those in the SEDS, HRDS and HRDMP. Table 6-3 shows government objectives and targets of HRD through vocational training with status of performance targets as of 2010 in the Roadmap.

Table 6-3 Government Targets of HRD through Vocational Training with Status of Performance Targets in 2010 in the Roadmap

Government Objectives	Government Targets[76]			Status in 2010[77]
	Performance Indicators	Performance Targets		
		2011-2015	2016-2020	
[SEDS] Enhance education to develop highly qualified human resources to satisfy socio-economic development requirements.[78] *[SEDP] Rapidly develop human resources, especially high-quality human resources, focusing on innoavting the national education.[...] Concentrate on high-quality human resources[...]. Enhance vocational training; especially concentrating on some sectors using high technology to transfer the labor structure from the primitive to the high-level [...].*[79]	The rate of trained employees will be increased.	40%, equivalent to 23.5 million people (in which 20% are of advanced level and intermediate level)	55%, equivalent to 34.4 million people (in which 23% are of advanced level and intermediate level)	25%
	The new training programs will be applied for vocational intermediate and secondary levels.	About 2.1 million people receiving new program at advanced level and intermediate level About 7.5 million people receiving new programs at elementary level and vocational training under 3 months	About 2.9 million people receiving new programs at advanced level and intermediate level About 10 million people receiving new programs at elementary level and vocational training under 3 months	Period (2006-2010) About 1,53 million people receiving new programs at advanced level and intermediate level About 6,34 million people receiving new programs at elementary level and vocational training under 3 months
	The network of vocational institutes will be expanded	VC: 190 (60 non-public, 26 high-quality) VSS: 300 (100 non-public) VTC: 920 (320 non-public)	VC: 230 (80 non-public, 40 high-quality) VSC: 310 (120 non-public) VTC: 1050 (350 non-public)	VC: 123 (33 non-public) VSS: 300 (94 non-public) VTC: 810 (296 non-public)
	The number of vocational teachers will be increased.	VC: 13,000 VSS: 24,000 VTC: 14,00	VC: 28,000 VSS: 31,000 VTC: 18,00	(For : 2009) VC: 5,697 VSS: 7,769 VTC: 12.083
	The programs and curricula will be upgraded or newly developed at each level.	International level:26 Regional Level:49 National Level:130 Elementary:300	International level:35 Regional Level:70 National Level:150 Elementary:200	Nil

[76] "Specific Target" of Decision No.630 dated May 29, 2012 (Approving Vocational Training Development Strategy Period 2011-2020)
[77] To be specified.
[78] Socio-economic Development Strategy in Vietnam 2011-2020
[79] Socio-Economic Development Plan in Vietnam 2011-2015

Government Objectives	Government Targets[76]			Status in 2010[77]
	Performance Indicators	Performance Targets		
		2011-2015	2016-2020	
[HRDS] To build a system of advanced, modern and diversified human resources training institutes[...].[80]	The quality of all key occupations will be verified.	3 quality verification centers will be operational.		Nil
	The framework of national vocational qualification will be developed.	250 standards of national vocational skills issued. 2 million people receiving certificates	400 standards of national vocational skills issued. 6 million people receiving certificates	109 standards of national vocational skills issued.
	The labor market system connecting vocational training with employment will be Improved.	N/A	N/A	N/A

[80] Approving the Strategy on Development of Vietnamese Human Resources During 2011-2020

To achieve the government targets, the Roadmap describes action areas defined in the VTDS, which are also aligned with the higher-level policy documents. The Roadmap defines 9 action areas/actions which should be concurrently performed. They include: i) innovating the government management on vocational training; ii) improving lecturers, teachers and vocational training management staff; iii) building a national vocational qualification framework; iv) developing program and curricula; v) enhancing vocational training facilities and equipment; vi) ensuring vocational training quality; vii) the connection of vocational training with labor market and participation of enterprises; viii) raising awareness of vocational development; and ix)promoting international cooperation on vocational training. Among these 9 actions (or solutions), the Government will proceed with the first three action areas/actions as their priority areas because they affect the whole vocational training system and create an impact on the overall quality of the reform process.[81]

In line with the Government objectives and targets, the Government, donors and the private sector have implemented vocational training programs and projects. The government has just started the implementation of the VTDS and donors have supported several on-going programs and projects. The private sector has also invested vocational training institutions and directly provided vocational training. The Roadmap partly provides the indicative information regarding the action areas the government and donors have provided inputs for. The private provision of vocational training is mentioned in section 4-2-5.

The action areas/actions and parts of on-going initiatives and support of the Government and donors are shown in Table 6-4 and an Analysis on Mid-term and Long-term HRD in Viet Nam is attached as Appendix 6-1.

[81] Differentiating from other six actions (or solutions), the VTDS categorizes the first two actions (or solutions) as breakthrough solutions and the third action (or solution) as a key solution. Among these three, the first two are prioritized.

Table 6-4 Action Areas/ Actions in HRD through Vocational Training and On-going Initiatives

(Action Areas/ Actions for HRD throuhg Vocational Training)

Action Areas/ Actions [82]			On-going Initiatives by Vietnamese Government and International Donors under MOLISA Management[83]
	2011-2015	2016-2020	
9 following solutions should be concurrently performed, which include: - two breakthrough solutions: (i) "Innovation of the government management on vocational training" and (ii) "Improving the lecturers, teachers and vocational training management staffs" - a key solution : (iii) "Building a national vocational qualification framework"			Action Program implementation of Vocational Training Strategy Period 2011-2020
1. Innovation of the government management on vocational training			
	1-1. To improve the legal system of vocational training. To amend the Law on Vocational Training and regulations relating to vocational training in the Labor Law.		- 2012-2013 To amend the Law on Vocational Training - 2013-2016 To amend regulations relating to vocational training in the Labor Law.
	1-2. To improve mechanisms and policies on vocational training: (i) Policies to attract vocational teachers; (ii) Financial policies on vocational training (iii) Training policies of foreign languages consistent with the level of training; (iv) Policies for trained employees		- 2012-2015 To improve mechanisms and policies on vocational training
	1-3. To improve the mechanism of the government management on vocational training		
	1-4. To have a mechanism to encourage vocational training institutions to be have more independence and autonomy		
	1-5. To promote IT application in vocational training and vocational management; to set up a database network for vocational training		Project of Innovation and development of vocational training by 2020
	1-6. To implement the training articulation and strong separation in vocational training.		
	1-7. To establish a vocational training assistance fund toward socialization with initial capital from the government budget, contributions of enterprises and other sources to develop vocational training.		Project of Innovation and development of vocational training by 2020

[82] Summary by JICA Study Team from "Solutions for Vocational Training Development" of Decision No.630 dated May 29, 2012 (Approving Vocational Training Development Strategy Period 2011-2020)
[83] Hearing from MOLISA-GDVT by JICA Study Team

Action Areas/ Actions [82]		On-going Initiatives by Vietnamese Government and International Donors under MOLISA Management[83]
2011-2015	2016-2020	
1-8. To plan a network of vocational training institutions by region, locality; priority is given to newly establish non-public vocational training institutions, and to encourage cooperation and establishment of vocational training institutions invested by foreign capital. There are specialized vocational training institutions for the disabled, and for ethnic minorities.		- 2012 Project for network development planning of vocational colleges, vocational secondary schools and vocational training centers by 2020 - 2013 Project of Building 40 high-quality vocational schools.
1-9. To promote socialization, diversification of resources for development of vocational training, including the government, enterprises, students, national and international investors, in which the government budget is important (to raise the rate of expenditure on vocational training from the government budget for education to 12% - 13%). The government has assistance policies on capital, land, and tax for non-public vocational training institutions.		
2. Improving the lecturers, teachers and vocational training management staffs		Project of Innovation and development of vocational training by 2020
To prepare standards for teachers in national, regional international levels in terms of training, vocational skills and vocational pedagogy. 100% of these teachers shall meet the standards in 2014.		Project of Innovation and development of vocational training by 2020
2-1. To ensure the training and retraining for vocational teachers toward the standardization, securing sufficient number of teachers; To establish an appropriate structure by profession and training levels and to mobilize scientists, technicians, artisans, skilled workers, excellent farmers participating in vocational training for rural workers.		
2-2. To arrange, reorganize and innovate activities for retraining institutes for vocational teachers to train, retrain vocational pedagogy and improve vocational skills for vocational teachers.		
2-3. To prepare standards for vocational management staffs. To set up the training and retraining contents and programs for vocational management staffs; To develop the professional vocational management staff.		Project of Innovation and development of vocational training by 2020
2-4. To establish vocational training institutes with the training and retraining function for new technology; To train and retrain teachers and vocational management staff; To research vocational training science based on the merger and upgrade of the National Institute Vocational Training (NIVT).		Project of Innovation and development of vocational training by 2020
3. Building a national vocational qualification framework		
3-1. To build a national vocational qualification framework corresponding with the national education framework		
3-2. To complete the national vocational qualification framework.		
3-3. To promulgate the standards of national skills for popular professions		

Action Areas/ Actions [82]		On-going Initiatives by Vietnamese Government and International Donors under MOLISA Management[83]
2011-2015	2016-2020	
3-4. To receive and transfer the standards of skills for professions focusing on investment at the regional and international level.		
3-5. To develop a training curriculum framework		Project of Innovation and development of vocational training by 2020
4. Developing programs and curricula		Project of Innovation and development of vocational training by 2020
4-1. To issue and develop programs and training curricula on the basis of the standard national vocational skills (for key occupations at the national level)		
4-2. To receive and use the programs, vocational training curricula from/of the advanced countries in the ASEAN region and internationally, consistent with the labor market in Viet Nam (for occupations at regional and international levels)		
4-3. To develop programs and other vocational curricula of vocational training on the basis of the standard curriculum or national vocational skills.		
4-4. To develop programs and vocational curricula for rural workers: To guide and instruct institute development programs, develop vocational training curricula, and develop programs on business knowledge to start a business for rural workers		
5. Enhancing the vocational training facilities and equipment		
5-1. To develop and issue standards of vocational training facilities and a list of equipment (for key occupations at the national level)		
5-2. To receive and apply the standards of vocational training facilities and a list of equipment of the advanced countries in the ASEAN region and internationally. (for occupations at regional and international levels)		
5-3. To regulate the standards of vocational training facilities and a list of minimum equipment (for jobs not on the list of key jobs)		
5-4. To ensure minimum investment in vocational training facilities and equipment for training by vocational training institutions		
5-5. To develop a list of equipment for the elementary training level and for vocational training materials for rural workers.		
6. Ensuring the vocational training quality		Project of Innovation and development of vocational training by 2020
6-1. Accreditation of vocational training quality		Project of Innovation and development of vocational training by 2020
6-1-1. To manage the vocational training quality in general (by the government); To ensure the quality of vocational training (by ministries, branches and People's Committees at all levels, the executive, vocational training institutions)		

Action Areas/ Actions [82]		On-going Initiatives by Vietnamese Government and International Donors under MOLISA Management[83]
2011-2015	2016-2020	
6-1-2. To self-accredit and verify the vocational training institutions and programs		
6-1-3. To establish Bureau of Vocational Training Accreditation; To build 3 centers of vocational training accreditation in three areas; To develop some centers of vocational training accreditation established by organizations and individuals.		
6-2. Assessment and certification of national vocational skills		Project of Innovation and development of vocational training by 2020
6-2-1. To develop the vocational skill assessment centers in the vocational training institutions, enterprises and other facilities.		
6-2-2. To establish the Bureau of Vocational Skill Development, To build skill assessment centers for vocational teachers.		
6-2-3. To build the test bank exam and assessment agencies for certification of national vocational skills for workers.		
7. Connection of vocational training with the labor market and participation of the enterprises		
7-1. To build strong relationships between vocational training and the labor market at all levels (national, regional, provincial, district and commune)		
7-2. To entrust main responsibility for vocational training in their own business (by enterprises); To entrust responsibility for contributing to vocational training assistance fund, at the same time directly involve in training activities (by enterprises)		
7-3. To entrust responsibility for providing information about employment needs and the requirements for employees to vocational training institutions (by enterprises)		
7-4. To monitor and collect information on trainees after graduation (by vocational training institutions)		
7-5. To receive information from enterprises and change to adapt to needs of enterprises (by vocational training institutions)		
7-6. To develop the labor market information system to connect the training with employers.		
8. Awareness raising of vocational training development		
8-1. To embody the spirit of the Resolution of the 11th Party Congress and the resources development strategy and plan for 2011-2020 to direct ministries, branches and localities and implementation organizations to develop HRD plan (the party committees and the government)		
8-2. To implement guidelines and policies of the party and government thoroughly on vocational training for 2011 - 2020 and to promote and consult vocational guidance for members of their organization, and contribute to change the perception of the society about vocational training. (by the social-political organizations, social professional organizations, and professional unions)		

Action Areas/ Actions [82]		On-going Initiatives by Vietnamese Government and International Donors under MOLISA Management[83]
2011-2015	2016-2020	
8-3. To strengthen the consultancy and vocational guidance in schools; and to form departments in charge of counseling and vocational guidance for trainees.		
9. International cooperation on vocational training		Project of Innovation and development of vocational training by 2020
9-1. To strengthen the international cooperation on vocational training and selection of strategic partners in developing vocational training in ASEAN and the Asia region (such as Malaysia, Korea, and Japan), EU (such as the Federal Republic of Germany, and UK) and North America.		
9-2. To cooperate with ASEAN countries towards the vocational skill recognition among countries, and towards the ASEAN Community by 2015.		
9-3. To strengthen the cooperation on scientific research and vocational training, research and application of scientific and advanced technology achievements. To actively participate in international activities on vocational training		
9-4. To encourage the domestic vocational training institutions to expand training cooperation and join other training institutions abroad.		
9-5. To create a favorable legal framework to attract investors, the foreign enterprises for the development of high-quality vocational training institutions and vocational training cooperation in Viet Nam.		

7. Prioritized Requested ODA Projects

7.1 Higher Education

7.1.1 Request of Japan's ODA Support for Higher Education Projects

The Government requested the Government of Japan to support HRD in Viet Nam through higher education projects. The requests include projects at 10 universities: i) Can Tho University, ii) Hanoi University of Technology; iii) Danang University of Technology; iv) University of Technical Education in HCMC; v) Thai Nguyen University of Technology; vi) Hanoi University of Agriculture; vii) University of Agriculture and Forestry in HCMC; viii) Hue University of Agriculture and Forestry; ix) National University in Hanoi; and x) National University in HCMC.

The JICA study team explained the study background, objectives, study items and outputs to MOET and discussed i) criteria of selecting 10 universities' request to Japan's ODA assistance, ii) prioritizing 10 universities on Vietnamese side, iii) alignment between the requested projects and policies in higher education.

According to MOET, Vietnamese side selected the 10 universities' request to Japanese ODA assistance based on the following criteria.

- Academic fields in which Vietnamese side considered that Japan or Japanese universities have an advantage (i.e., advanced technology, environment, agricultural related fields and their combination)
- Universities which are identified as key universities and/or strong in the specialized fields in Viet Nam according to No.1269/CP-KG
- Universities which have working experiences with Japanese universities in the past and/or at present

MOET commented that the JICA study team would review the proposed projects to determine whether Japan or Japanese universities are indeed strong in the proposed academic fields and Japanese universities can participate in the proposed projects as partner universities.

MOET also expressed that there was no geographical priority and in general, no order of priority among the 10 projects on Vietnamese side, but Can Tho University would be given more emphasis according to the dialogues of both governments.

The JICA study team confirmed that Higher Education Reform Agenda (HERA) is the latest policy in higher education and eight programs/projects are on-going under the HERA.

After discussions with MOET, the JICA study team visited the 10 universities in May 2012, assisted by MOET. The field visits aimed to i) understand future development plan of the universities and willingness of representatives of the universities, ii) collect information on basic statistics of universities, iii) collect information on cooperation with Japanese universities and industries, iv) observe facilities and equipment and, v) discuss and confirm contents of the proposals. The summary of the findings at field trips are shown below.

i) All the top management staff and a rector and/or vice rectors at each university attended meetings with the JICA study team and explained their proposals and clarified the alignment with their university's development plans.

ii) All the universities submitted basic statistics such as number of teaching staff, number of PhD holders and master's degree holders among teaching staff as the JICA study team requested.

According to data, most of universities have made efforts that all the teaching staff obtain a master's degree shortly and subsequently, increase the number of PhD holders. Appendix 7-1-1 shows the universities' profiles.

iii) All the universities have collaborative activities such as promoting students exchanges and collaborative researches. In terms of cooperation with Japanese industries, all the universities are interested in collaborative activities with the industries and are committed to increasing them. It seems that universities having engineering related programs have more cooperation in the form of collaborative researches, job placement and scholarship. Universities which are located near big cities or industrial park seem to more easily establish relationships with Japanese industries.

iii) All the universities have begun to recognize the importance of their graduates' job placement, which could be one of the criteria to accredit universities' quality; therefore, tracer study of their graduates have been conducted in some of the universities.

iv) Basically all the universities have basic equipment for experimentation.[84] However, Hue University of Agriculture and Forestry has limited floor space in facilities and the number of equipment is not enough to serve all the students.

v)-1 Nine universities, except for Hanoi University of Technology, submitted the detailed proposals to the JICA study team. Each proposal is focused on increasing the quality of education and research activities. Common project components include i) construction of buildings and facilities, ii) improved laboratories with provisions of equipment, iii) sending teachers abroad for degree and/or non-degree purposes, iv) curriculum development including international degree/ dual degree, advanced curriculum and its implementation to students and v) capacity development of administrative staff/ management staff. In addition some universities requested i) increased academic network for research publication, ii) technology transfer to community and iii) intellectual property right.

v)-2 National University in Hanoi clarified that the requested ODA project is different from a plan initiated by Japan Viet Nam Economic Forum (JVEF) and also mentioned that the plan will be implemented through private financing.[85] In their proposal, the VNU component (component 1) indicates the requested ODA projects this time and Viet Nam-Japan Science Academy (component 2) indicates the plan by Japan Viet Nam Economic Forum in their proposal.

Individual proposal outlines are shown in Table 7-1

[84] The JICA study team could not observe facilities and equipment of Hanoi University of Technology and National University in Hanoi due to time constraint.

[85] Table 2.1 Components of the Hoa Lac Technopolis, Page 7-8, *Developing Vietnam National University, Hanoi to an International Standard University by Training of High Quality Human Resources, Science and Technology Research on the Basic of Viet Nam-Japan Cooperation* (Hanoi, March 2012). Accroding to the table, both are one of components of the Hoa Lac Technopolis. The VNU component (component 1) is corresponding to the requested ODA projects this time and Vietnam-Japan Science Academy (component 2) is corresponding to the plan by Japan Vietnam Economic Forum.

Table 7-1 Summary Contents of Each Proposals

No	Name of University	Project Title	Activities	Academic Fields	Total Budget and Breakdown in US$	Term
1	Can Tho University	Strengthening Can Tho University to be an excellent university of education, scientific research and technology transfer	・Education: Sending lecturers to study abroad at graduate level. Establishing undergraduate and graduate international programs. Establishing bilingual programs, exchanging students, and etc. ・Research: Conducting collaborative research, exchanging staff, setting up interdisciplinary research groups, procuring equipment, etc. ・Facility: International conference hall, project management building	Agriculture, Aquaculture, Biotech, Environment including climate change, Technical Engineering, IT, Social Science	Total：150M Work Package 1: Strengthening the capacity of CTU on education, scientific research, technology transfer, and human resource: 134 M Work Package 2: International Conference Center (6M), CTU tower (10 M),	2013-2020
2	Hanoi University of Technology	Strengthening research and training on advanced materials, electronics and electrical engineering at the Hanoi university of science and technology, Viet Nam	・Research: Establishing network (material, electronics and telecom, control engineering/automation). Developing teaching staff's capacity to match the international standards ・Facility: Science complex ・Equipment: Equipment for 3 fields (material, elec-telecom, control engineering/ automation)	Advanced Material Science, Physics an Micro, Nanotechnology, Electronics and Telecom, Control Engineering and Automation	Total：72.6M New building: 12.6M Equipment & lab: 60M Material & nanotech: 31M Electronics & telecom: 18M Control & automation: 11M	2012-2016
3	Danang University of Technology	Investment for establishment of Danang techno pole high tech institute (Technopole Danang)	・Education: Enhancing library management and equipment management. Sending 45 lecturers to study abroad. Conducting 6 month research in Japan etc ・Faclity: Classroom, lab center, workshops ・Equipment: Equipment for labs of elec-telecom, automatic production and environment	Electronics-communication Technology, Auto Production Technology, Environment-energy Technology	Total：50M Basic constructions: 15M Equipments for 22 labs: 26.7M Training: 3.3M Contingency: 3M	2012-2016
4	University of Technical Education in HCMC	Enhancing capability in training technical teachers for vocational colleges at HCMC university of technical education	・Education: Developing administration and teaching staff's capacity to successfuly keep running the training center ・Facility: Setting up a training place, Upgrading current facilities ・Equipment: Equipment for 6 fields' activities ・Management: Improved management for the proposed project management, implementation and monitoring	Electrical and Electronic, Mechanical, Automotive, Civil and Structure, Environmental Engineering, IT (for teachers in vocational colleges/schools)	Total： 52M 1. Capacity building: 8M 2. Building and facilities development and upgrading: 22M 3. New labs for six training programs: 18M 4. Project management: 4M	2011-2015

No	Name of University	Project Title	Activities	Academic Fields	Total Budget and Breakdown in US$	Term
5	Thainguyen University of Technology1[86]	Investment of infrastructure to build areas belonging to mechanical and aerospace engineering at Thai Nguyen university of technology to meet the regional and international standards	・Education: Sending lecturers for training overseas. Improving lab and equipment management etc. ・Facility: Classrooms, labs, students hall, library, roads, etc.	Mechanical and Electronic Engineering	Total：50 M I. Construction of building: 19. 217 M II. Lab and workshop 1. Construction: 8M 2. Lab for research: 19M 3. Workshop: 3M	2012-2016
6	Hanoi University of Agriculture	Establishing the center of excellence in biotechnology and environmental sciences at Hanoi university of agriculture	・Education: Sending teaching staff to study abroad for graduate level, opening international program for undergraduate and graduate level, developing teaching materials and textbook, etc. ・Collaborative research: Exchanging teaching staff, establishing academic research group, and having research network with Japanese universities ・Facilities: labs, research stations	Environment, Biotechnology	Total：76.07M[87] Component 1: Biotechnology:40.5 M Component 2 : Environmental Science: 31 M * Total amount is a bit different from the total in proposal.(miss-curricula ion?)	2013-2017
7	University of Agriculture and Forestry in HCMC	Building NONG LAM UNIVERSITY – Ho Chi Minh to become an excellent training and education center for agricultural human resource in the south of Viet Nam	・Facility: Buildings and labs ・Equipment: Equipment for labs ・Education: Human resource development ・Facilities: Library ・Management: Upgrading university management and setting up its standard	Agricultural Engineering, Agronomy and Forestry, Animal Science, Aquaculture, Biotech, Agro-industry, Agro-economy and Agriculture Management,	Total：60M 1. Infrastructure and facility development: 23 M 2. Laboratory's facilities and equipment: 15 M 3. Key human resource training: 10 M 4. Modern curriculum and programs development: 3.5 M 5. Upgrading library's infrastructure and resources: 5 M 6. Upgrading and standardizing university management: 3.5 M	2013-2017
8	Hue University of Agriculture an d Forestry	Building infrastructure and facilities to enhance education and research capacity of Hue university of agriculture and forestry	・Equipment: Equipment for research and high tech equipment for agriculture, forestry, and aquaculture ・Facility: Classroom, labs, and workshops ・Management: Implementing the proposed project and effective use of equipment and facilities	Agriculture, Environment, Aquaculture	Total：50M 1. Building construction: 20M, 2. Equipment and lab: 10M, 3. Building for IDS (Institute for Development Studies): 10M, 4. Capacity building: 1M 5. Training and consultancy: 7M 6. Management: 2M	5 years

[86] The University explained soft components' request; however, the entire proposed budget in the proposal is planned to be spent on hard components such as facility, buildings, equipment.
[87] Total amount is a bit different from the total in the proposal.

No	Name of University	Project Title	Activities	Academic Fields	Total Budget and Breakdown in US$	Term
9	National University in Hanoi	Developing Viet Nam National University, Hanoi to an international standard university by training of high quality human resources, science and technology research on the basis of Viet Nam- Japan cooperation	・Management: Developing environment for quality assurance and credit transfer. Implementing the proposed project. ・Education: Implementing lectures by scientist and company staff. Establishing courses to be conducted by companies. Developing human resources. Exchanging students ・Research: Establishing groups of center of excellence research and implementing collaborative research ・Industry sector: Establishing co-program with government, university and science park ・Facility: Establishing medical complex	Medical, Pharmacy, Microbio/Biotech, IT, Science, Technical Engineering, etc.	Total：450 M 1. Capacity development of staff to international standard level:11M 2. Condition to ensure the training quality: 210 M 3. Human resource development of international quality:60M 4. Scientific and technological work following international standard: 67M 5. Exchange of lectures and students: 77M 6. Viet Nam-Japan model for university-enterprise-Hoa lac high tech park: 25M	2013-2020
10	National University in HCMC	Developing capacity of academic researchers, training and administration of Viet Nam National University-Ho Chi Minh	・Education: Lecturers' upgrading academic degree support. Training for staff. Improving curriculum, guidance and syllabus. ・Research: Conducting research in medical technology ・Facility: Medical lab, e-medical library, center for material science, etc. ・Equipment: Upgrading equipment for level of international standards ・Management: Improved management for the proposed project management and implementation, and international conference and computerization of university management system	Advanced/Modernized Medicine, Biotech, Material, ICT, Social Science	Total：98.5M 1. Develop group of biotechnology , advance medicine:40M, 2. Develop branch of electronics, telecommunication, IT, ICT:35M, 3. Develop advanced materials:13.5M, 4. Training and research in Economics and Social Science in Humanities: 5M, 5. Improve capacity of university management: 5M,	2012-2017

7.1.2 Reviews of Requested ODA Projects in Higher Education

To review the requested ODA projects in higher education, the JICA study team took two step approaches. Firstly, the study team mainly reviewed the proposals from a policy point of view and secondly from an implementation point of view.

As the first step, the proposals were reviewed maily from the following policy viewpoints: 1) alignment with the government strategies/plans in higher education; 2) alignment with universities' development plan; and 3) alignment with Japan's ODA policies.

1) Alighnment with the government strategies/plans in higher education

As described in Section 2-2, the SEDS set three orientations for the development towards an industrialized country by 2020 and one of them is to develop high quality human resources to satisfy socio-economic development requirements. All other important national strategies and plans follow the orientation and set more concrete strategies with targets and action programs. For instance, the SEDP provides guidance of developing high quality human resource which focuses on innovation of the national education and emphasizes improving the quality of teachers and scientific researchers. The HRDS also mentions to build a contingent of human resources in the field of science and technology and to build a system of advanced, modern and diversified human resources training institutes and so on. All the proposals recognize these guidance and aim to improve the quality of students, lecturers and researchers and advance education and research activities into international levels.

As described in section 4.1.1(2) of the ESDP, eight solutions (or actions) are identified. All the proposals are designed to highly contribute to some of them, especially v) enhancement of the connection between training with use, scientific research and technology transfer to meet the society's demands, and viii) extension and enhancement of international cooperation in education.

The HERA representing an important commitment by the Government to the higher education sector, has set several targets. Some of them are: increasing the proportion of university teaching staff with master's degree to 60% and doctoral degree to 35% by 2020; developing higher education programs under the research orientation and the career – application orientations; and building several universities up to international standards. All the proposals include some components that would contribute to some of these set targets.

Except University of HCMC Agriculture and Forestry and University of Technical Education HCMC, all the universities that submitted the proposals are one of the fourteen key universities designated by No.1269/CP-KG.

2) Alignment with universities' development plan

All the universities that submitted the proposals have their own university development plans and all the proposals are well aligned with each university's development plan. Moreover, according to the face-to-face interviews with the top management of each university, the proposals seemed to be understood well with each university's top management.

3) Alignment with Japan's ODA policies

Considering the background of the requested ODA projects and orientations of the proposals, the proposals are aligned with Japan's ODA policies and are closely linked with "Development Industrial Human Resources" (Program) of "Business Environment Improvement and Private Sector Development" (Development Issue) in "Promotion of Economic Growth and

Strengthening of International Competitiveness" (Priority Area) in Japan's ODA policies. "Development Industrial Human Resources" Program aims to support the development of core human resources, such as at higher education level, contributing to economic growth as mentioned in section 2-3.

To develop and provide high quality human resources for industries are among the important goals for universities in Viet Nam to achieve Vietnamese industrialization by 2020. As mentioned in 2.3.2, Japan has supported Vietnamese industrialization through various kinds of projects and policy making. At the same time, as described in 5.1, Japanese industries, especially those in the manufacturing sector are keen to expand their operation in Viet Nam. Under these circumstances, to examine the potential benefits to be brought by the proposed projects to the Japanese industries operating in Viet Nam, whether or not 1) the universities have collaborative activities with Japanese firms, and 2) they are close to the industrial areas where Japanese firms are operating are also scrutinized.

As written in 4.1.4 (2) Table 4-7, all the universities seem to have collaborative research and development with Japansese firms although some of their names were not disclosed. Danang University of Technology has some Japanese firms' representative offices inside the campus. Among the selected universities, Thai Nguyen University of Technology and Hue University of Agriculture and Forestry have some distance from the industrial areas. All other eight universities are close to the industrial areas. Some organizations of Vietnam National University (VNU), Hanoi is planned to move to Hoa Lac Hi-tech park area, the first and largest hi-tech park in Viet Nam. The park is located about 30 km from Hanoi, where universities, research institutes, and industries are to be located in one place to promote linkage between academia and industries. These institutions including VNU, Hanoi to be gathered in Hoa Lac Hi-tech Park are expected to play a vital role to turn research results into practical application.

In addition to the policy review above, an overlap with other on-going or planned programs/projects by development partners are reviewed. Currently, the Government has implemented 8 main activities under the HERA as mentioned in detail in 4-1-2. All the proposals could be considered to supplement some of these on-going programs/projects. Moreover, all the proposal components have no overlap with on-going or planned programs/projects by development partners although there are some on-going projects targeting the same universities that submitted the proposals.

After confirming that all the proposals are well aligned with both the Vietnamese and Japanese policies, the JICA study team reviewed the proposals from implementation viewpoints under three criteria: 1) current and past experiences of Japanese ODA assistance and research activities/relationships with Japanese universities; 2) relationships between academic fields of requested projects and Japanese interests in which Japan can utilize its advanced science and technologies; and 3) preparation of proposal and project start-up. These criteria are all related to success of the implementation of proposed projects.

(1) Experiences of Japanese ODA Assistance and Research Activities/Relationships with Japanese Universities

According to reviews of existing reports and interviews with Japanese universities, it is an efficient and effective way to utilize existing relationships or networks between Vietnamese and Japanese universities. Moreover, it would be an advantage for Vietnamese universities to have university staff who have already experienced Japan's ODA implementation or who have known Japanese culture and Japanese universities, to implement projects smoothly. Therefore, in this criterion, i) experience of Japan's ODA, ii) list of Japanese universities which have/had

collaborative activities with the Vietnamese University, mainly in the research field, have been checked.

(2) Interests/Advantages of Japan or Japanese Universities

It is meaningful for both Japanese and Vietnamese sides to support academic fields which Japan or Japanese universities have advantages or strengths in. This means academic fields in which Japan or Japanese universities can utilize advanced science and technology, such as research activities in biotechnology, environment including climate change, and medical and pharmacy related fields. Vietnamese side has already expected Japan's contribution to fields where Japan or Japanese universities have advantages in. Therefore, in this criterion, whether the proposal includes these academic fields or not has been checked.

(3) Status of Proposal Preparation

Maturity of the proposals is also considered as it shows the readiness of the project to go forward to the subsequent steps. Therefore, the proposals have been checked with several perspectives. They include views of whether there are clear explanations about rationale, impact, outcome, outputs and activities, whether academic fields and departments are selected according to the required extents, whether they mention Japanese partner universities, and so on.

Based on the criteria set above, the JICA study team reviewed the 10 university projects.[88] As a result of reviews shown in Table 7-2, the JICA study team selected Can Tho University, Da Nang University of Technology, and Viet Nam National University in Hanoi as priority universities. Hanoi University of Agriculture was given secondary importance due to regional and fields' constraints.

Can Tho University, located in Southern Viet Nam and Hanoi University of Agriculture, located in Northern Viet Nam have been in close collaborations for quite a long time as one of the top and oldest universities in the field of agriculture. Furthermore, both of them have kept sound relationships with Japan and Japanese universities for more than a decade. Therefore, from a standpoint of contributing more to achieving HERA's target, if Can Tho University project is selected, it might be a good idea to include some components to spread its project's outputs to Hanoi University of Agriculture, which was determined as a runner-up univeristy.

[88] The priority was based on university projects which are subjects for this Study. This priority does not define the Japan's ODA assistance policy for the future or disturb any relationships between Vietnamese and Japanese universities under current cooperation.

Table 7-2 Results of Reviews

No.	Name of University	Required Amount (Million US$)	Relationship with Japan		Fields related to Japanese interests (Utilizing Japanese Advanced Science and Technology)		Proposal Preparation		Supplementary Explanation on Review Results	Priority
1	Can To University	150	◎	i) **Experience of Japan's ODA**: Development of Agriculture Department (TA[89], 1970-1976), Mini Project of Improvemental Education in Agricultural Sciences (TA, 1999-2002) with Tokyo University Agriculture and Technology, Agriculture Department Improvement Plan (Grant aid, 1993-96) ii) **Japanese universities which have/had collaborative activities with the University**: Kyushu University, Hokkaido University, Kyoto University, Osaka University, Tokyo Institute of technology, Yokohama National University etc	◎	**Academic Fields in the Proposal:** Agriculture, Aquaculture, Biotech, Environment including climate change, Technical Engineering, IT, Social Science	◎	・Detailed proposal was submitted. ・The proposal is well organized ・The proposal has been revised several times to review and update	Can Tho University (CTU), a regional university in Viet Nam, was the first university in Viet Nam supported by Japans ODA. The technical assistance to the Agriculture Department was conducted during 1970-1976, followed by the Agriculture Department Improvement Plan in 1993-1996. Since then, the relationship with Japanese universities has continued at CTU. As for the proposal to this term, the detailed proposal was already submitted once in early April 2012. During the study term, CTU revised the proposal again and narrowed down to 7 academic fields. The relationships or functions among the academic fields are also considered. The activities of CTU will also benefit the Mekong regional development and some activities have already been implemented. The direction toward Mekong development also matches the interests of Viet Nam, Japan and ASEAN regions, which was highly evaluated. The students of CTU used to come from the Mekong region; however, the students' enrollment method changed 7 years ago, and students now come from all over Viet Nam, facilitating the impact of the CTU project to spread nationwide.	◎

[89] TA: Technical Cooperation

No.	Name of University	Required Amount (Million US$)	Relationship with Japan		Fields related to Japanese interests (Utilizing Japanese Advanced Science and Technology)		Proposal Preparation		Supplementary Explanation on Review Results	Priority
2	Hanoi University of Technology	72.6	◎	i) **Experience of Japan's ODA:** Strengthening the Capacity of ITSS Education at Hanoi University of Technology Phase 1 (TA, 2006-2008) and Phase2 (TA, 2009-2012), SEED-Net2[90] (TA, 2008-2013), Higher Education Development Support Project on ICT(Loan, 2006-2014), Natural Rubber with Nagaoka University of Technology (SATREPS[91], 2011-2016) ii) **Japanese universities which have/had collaborative activities with the University:** Nagaoka University of Technology, Kyoto University, Ritsumeikan University, Nagoya University, Doshisha University, Japan Advanced Institute of Science and Technology. Kyoto University has a contact office of Japanese universities.	○	**Academic Fields in the Proposal:** Advanced Material Science, Physics an Micro, Nanotechnology, Electronics and Telecom, Control Engineering and Automation	△	・No Detailed proposal was submitted. Listed fields were only submitted.	Hanoi University of Technology (HUT), a civil university in Viet Nam, has on-going ODA projects, mainly in the field Information Technology, such as Higher Education Development Support Project on ICT. Targeted academic fields in the proposal for this term are different from the IT field. The detailed proposal has not yet been submitted to the JICA study team. The requested fields in this term seem to be very specialized high-technology fields in three disciplines.	

[90] SEED-Net: ASEAN University Network / Southeast Asia Engineering Education Development Network
[91] SATREPS: Science and Technology Research Partnership for Sustainable Development

No.	Name of University	Required Amount (Million US$)	Relationship with Japan		Fields related to Japanese interests (Utilizing Japanese Advanced Science and Technology)		Proposal Preparation		Supplementary Explanation on Review Results	Priority
3	Danang University of Technology	50	◎	i) **Experience of Japan's ODA**: Capacity Building for School Centered Community Based Disaster Risk Management in Central Viet Nam **(JICA Partnership Program,** 2010-2011） ii) **Japanese universities which have/had collaborative activities with the University:** Kyoto University, Yokohama National University, Nagaoka University of Technology, Kanazawa University etc. Kyoto University has a contact office of Japanese universities.	◎	**Academic Fields in the Proposal:** Environment-energy technology, Electronics-communication Technology, Auto Production Technology	◎	・Detailed proposal was submitted ・Each component is well organized	Danang University of Technology (DUT), a part of regional university in Viet Nam, had a JICA Partnership program. Some major Japanese universities are also assisting DUT, as well as other countries' donors, such as US, UK, and France. According to DUT, Japan is a strong donor in the field of environment at DUT because of the continuous contribution of Japanese universities. In addition, one Japanese electronics company, UNITEC Viet Nam, has its office branch on campus, and hiring graduate students of DUT for their business. According to UNITEC Viet Nam, they decided to set up the office in Danang City, but not Ho Chi Minh City or Hanoi, due to the living environment and business opportunities for the future. The detailed proposal of DUT is aimed to contribute to the industrial zone in Danang as well as Danang city's transformation to Eco city. In the proposal, DUT is considering the sustainability of the proposed project by estimating income generated by project activities.	◎
4	University of Technical Education in HCMC	52	△	i) **Experience of Japan's ODA:** None ii) **Japanese universities which have/had collaborative activities with the University:** Kanazawa University	△	**Academic Fields in the Proposal:** Electrical and Electronic, Mechanical, Automotive, Civil and Structure, Environmental Engineering, IT (to work for vocational schools/colleges teachers)	○	・Detailed proposal was submitted. ・The relationship between the objective and components are not clear.	University of Technical Education in HCMC (UTE-HCMC), a civil university in Viet Nam, has no experience of ODA, but has several relationships with Japanese universities in terms of receiving students. In the field of research, 5 year (2012-2017) relationship with Kanazawa University is planned in the fields of civil engineering and environment. The requested fields are listed in the field of engineering but many other fields are included as well. The title of the project is "Enhancing capability in training technical teachers for vocational colleges," the contents are not clearly mentioned with regards to the impact of the proposed project on the quality of vocational teachers' capacity. As the direction is assumed for teacher development, therefore, lower priority is given to the score of academic fields.	

No.	Name of University	Required Amount (Million US$)	Relationship with Japan		Fields related to Japanese interests (Utilizing Japanese Advanced Science and Technology)		Proposal Preparation		Supplementary Explanation on Review Results	Priority
5	Thai Nguyen University of Technology	50	△	i) **Experience of Japan's ODA:** None ii) **Japanese universities which have/had collaborative activities with the University:** Nagoya University of Technology (mechanical)	△	**Academic Fields in the Proposal:** Mechanical and Electronic Engineering	○	・Detailed proposal was submitted. ・Objectives are clear, but it needs to clarify the steps toward implementation need to be clarified.	Thainguyen University of Technology (TNUT), a part of regional university, has no experience of ODA, and the other donors' assistance, such as that of US, is currently ongoing. From Japan, Nagaoka University of Technology is working in the field of mechanical engineering, a field which TNUT considers itself the strongest in among universities in Viet Nam. In the future, TNUT is planning to introduce aerospace engineering under the strong leadership of the rector, so TNUT requests assistance to enhance mechanical and electronic engineering corresponding to aerospace engineering. The detailed proposal was submitted. The future direction is clear but the steps toward the goal should be considered further. Concrete ideas of activities and step by step plans, including human resource development plan, need to be included.	
6	Hanoi University of Agriculture	76.07	◎	i) **Experience of Japan's ODA:** Education and Research Capability Building Project of Hanoi Agricultural University (TA, 1998-2003), Development of Crop Genotypes with Kyushu University (SATREPS, 2010-2015) ii) **Japanese universities which have/had collaborative activities with the University:** Tokyo University, Kyushu University, Yamaguchi, Yamagata, Miyazaki University etc.	◎	**Academic Fields in the Proposal:** Environment, Biotechnology	◎	・Detailed proposal was submitted. ・It is well organized and has focused fields.	Hanoi University of Agriculture (HUA), a civil university, has experiences of Japanese ODA in the past, such as "The Education and Research Capacity Building Project of HUA" (1998-2003), and presently, SATREPS of development of crop genotypes (2010-2015) is ongoing. The detailed proposal was submitted and presentation of the analysis of issues found by HUA was well-organized and well-constructed. The project is to deal with climate change. Two selected fields are: environment including projection function and biotechnology for adjusting to the change. The project members are already assigned and some activities with Japanese universities in the requested fields have already started.	○

No.	Name of University	Required Amount (Million US$)	Relationship with Japan		Fields related to Japanese interests (Utilizing Japanese Advanced Science and Technology)		Proposal Preparation		Supplementary Explanation on Review Results	Priority
7	University of Agriculture and Forestry in HCMC	60	△	i) **Experience of Japan's ODA:** None ii) **Japanese universities which have/had collaborative activities with the University:** Kobe University	○	**Academic Fields in the Proposal:** Agricultural Engineering, Agronomy and Forestry, Animal Science, Aquaculture, Biotech, Agro-industry, Agro-economy and Agriculture Management	○	・Detailed proposal was submitted. ・Objectives are clear, but focus and priority should be considered	University of Agriculture and Forestry in HCMC (UAF), a civil university, has no experience of ODA but has several relationships with Japanese universities in terms of receiving students. In the field of research with Japanese universities, Kobe University has over 10 years of relationship (2001-2012) with UAF. The detailed proposal was submitted in early stage along with some university information. There are several requested fields, but mainly the focus is on the field of agriculture. The objective is clear that it aims to become an excellent training and education center for agricultural and human resource in the South of Viet Nam. The focused fields or core issues and priority, however, have not yet been discussed internally.	
8	Hue University of Agriculture and Forestry	50	○	i) **Experience of Japan's ODA:** Integrated Approach to the Vulnerable People to Cope with Natural Disasters in Central Viet Nam with Kyoto University(JICA Partnership Program, 2006-2013), JOCV ii) **Japanese universities which have/had collaborative activities with the University**: Kyoto University, Okayama University Kyoto University has contract office of Japanese universities.	△	**Academic Fields in the Proposal:** Agriculture, Environment, Aquaculture (mainly focus on agriculture and rural development in central region)	○	・Detailed proposal was submitted. ・Objectives are clear, but focus and priority should be considered	Hue University of Agriculture and Forestry (HUAF), a part of regional university, has an ongoing JICA Partnership program (2006-2013) with the collaboration of Kyoto University. Japan Overseas Cooperation Volunteer and the Kyoto University project coordinators are stationed regularly at HUAF. The Kyoto University also has a contact office at HUAF, and is sending graduate students for their field research in Viet Nam. Okayama University and Kyoto University are conducting educational and research activities with HUAF maintaining very close relationships. Those two universities are already working with HUAF in the requested fields of assistance and will be core members for project implementation. The target academic fields are mainly focused on agricultural and rural development in middle region of Viet Nam, which do not strongly match with academic fields of Japanese interests.	

No.	Name of University	Required Amount (Million US$)	Relationship with Japan		Fields related to Japanese interests (Utilizing Japanese Advanced Science and Technology)		Proposal Preparation		Supplementary Explanation on Review Results	Priority
9	National University in Hanoi	450	◎	i) **Experience of Japan's ODA:** Multi-beneficial Measure for the Mitigation of Climate Change in Viet Nam and Indochina Countries by Development of Biomass Energy with Osaka Prefecture University (SATREPS, 2011-16) ii) **Japanese universities which have/had collaborative activities with the University:** Tokyo University, Kyoto University, Osaka University, Keio University, Ehime University etc. Kyoto University has a collaboration office(VKCO).	◎	**Academic Fields in the Proposal:** Medical, Pharmacy, Microbio/Biotech, IT, Science, Technical Engineering, etc.	◎	・Detailed proposal was submitted ・Listed fields are too wide.	National University in Hanoi (VNU-Hanoi) has an ODA experience by SATREPS of “Multi-beneficial Measure for Mitigation of Climate Change in Viet Nam and Indochina Countries by Development of Biomass Energy,” with the collaboration of Osaka Prefectural University (2011-16). It has Viet Nam National University, Hanoi-Kyoto University Collaboration Office (VKCO) for “Global 30” project supported by MEXT. The network consisted of major Japanese universities. VNU-Hanoi has discussed with the University of Tokyo, Osaka University, and Keio University for assistance for the whole university, since those universities have similar structure and departments with VNU-Hanoi. The current detailed proposal contents are large across many different fields; the focus should be narrowed down.	◎

No.	Name of University	Required Amount (Million US$)	Relationship with Japan		Fields related to Japanese interests (Utilizing Japanese Advanced Science and Technology)		Proposal Preparation		Supplementary Explanation on Review Results	Priority
10	National University in HCMC	98.5	○	i) **Experience of Japan's ODA4[92]:** Capacity Building of Ho Chi Minh City University of Technology to Strengthen University-Community Linkage Phase 1with Toyohashi University of Technology (2006-09) and Phase2 with Kumamoto University (2009-2012), SEED-Net (TA, 2008-2013), Sustainable Integration of Local Agriculture and Biomass Industries with Tokyo University (SATREPS, 2009-2014) ii) **Japanese universities which have/had collaborative activities with the University:** Kumamoto University, Tokyo University, Nagaoka University of Technology	○	**Academic Fields in the Proposal:** Advanced/ modernized medicine, Biotech, Material, ICT, Social Science	◎	・Detailed proposal was submitted ・Each component is well organized, but the coverage of each academic field is too broad to implement and needs to be narrowed down.	National University in Ho Chi Minh City (VNU-HCMC) has relationships with Japanese universities in education activities in terms of student exchanges. In the field of research activities, the provided data show that the majority of activities under JICA ODA projects are under Ho Chi Minh City University of Technology. The priority of request is in the field of modernized/ advanced medicine, however, the research activities with Japanese universities are not in the data. Each component of proposal is well organized with a few universities, but, similar to VNU-Hanoi, the proposal is still large across different fields due to the expectation of the project impact on the whole of VNU, consisting of 6 universities, 1 faculty of medicine, and 1 institute.	

[92] All projects have been implemented at Ho Chi Min City University of Technology.

The JICA study team conducted the Mid-term Consultation Meeting on 14 June, 2012, in Hanoi, Viet Nam. The participants were several members from MOET, MOF, from Vietnamese side, and Embassy of Japan, MEXT, and JICA Viet Nam from Japanese side. The meeting had several sessions including progress of the JICA basic survey, a draft of the Roadmap, the prioritization of university proposals, higher education issues presented by MOET, and introduction of selected JICA's ODA projects in higher education. The summary of discussions is shown in Appendix 1-1.

At the meeting, all participants agreed and confirmed that three university projects of Can Tho University, Danang University of Technology, and National University in Hanoi should be prioritized and advanced to subsequent steps.

In addition, participants shared the following matters to be considered in the following steps at the meeting.

- Japanese partner universities in Japan should be identified before/once project formulation starts.
- Target academic fields should be selected among the academic fields in the prioritized projects, actually confirming Japanese partner universities' interests, advantages and availabilities.
- Considering the universities are aiming to be international standard research universities, the projects should focus on enhancement of research capacity of universities, mainly on graduate level.
- Project components and cooperation scheme should be designed, considering advantages and disadvantage of each scheme. For reference, the JICA Study team presented some options as shown in Table 7-3.

Table 7-3 Project Components and Possible Cooperation Scheme

Project Components	Possible Cooperation Scheme
• Faculty Development - Study in Japan for degree for core researchers - Study in Japan for non-degree (short term for research purpose or collaborative research with Japanese companies) - Master's and Ph.D. Students' project involvement as course work	Loan or Technical Cooperation
• Enhancement of Research Activities - Joint research , Joint publication	Loan or Technical Cooperation
• Enhancement of Universities' Management	Loan or Technical Cooperation
• Procurement of Equipment and Facilities for research	Loan
• Building Construction	Government and/or Loan

7.2 Vocational Training

In this section, the JICA study team reviews the requested projects for Japan's ODA support from the Government together with counterproposals from the Japanese side in order to support the Vietnamese vocational training sector more effectively by Japanese ODA.

7.2.1 Basic Principles for Review

The following four basic principles are developed to examine the requested ODA projects and an effective assistance for the vocational training sector in Viet Nam.

Basic principle 1:	To pay a full attention to the original aims and ideas of the Vietnamese side behind the request.
Basic principle 2:	To support occupational fields that Japan has an advantage in.
Basic principle 3:	To consider national interests of Japan.
Basic principle 4:	To utilize experiences of Japan's ODA assistance in vocational training sector in Viet Nam.

Basic principle 1: To pay a full attention to the original aims and ideas of the Vietnamese side behind the request

The Government submitted to the Japanese government a request for ODA assistance in the vocational training sector to enhance and strengthen vocational training institutions, which eventually develops high quality human resources. Aiming at providing international level vocational training, the request includes procurement of vocational training equipment for invested occupations, training vocational teachers and managers, development of curriculum, training materials and syllabus and civil works for 5 vocational training institutions. Paying full attention to these original aims behind the request submitted by the Vietnamese, Japan will provide a balanced assistance from upgrading equipment and facilities to enhancing the quality of teachers and managers so that the vocational training institutions supported by Japan's ODA would provide international level vocational training.

Basic principle 2: To support occupational fields that Japan has an advantage in

Japanese high economic growth after World War II was not achievable without the manufacturing sector. The ratio of labor force working for the manufacturing sector reached its peak in 1973, accounting for 27.6% of total labor force.[93] Though Japanese manufacturing sector is gradually moving their manufacturing base overseas, like China and Asian emerging countries, 17%[94] of the total workforce is still dedicated to the manufacturing sector. Thus, it can be said that manufacturing has consistently been the core of the Japanese industry.

To support the development of manufacturing, Japan has made efforts to develop high quality human resources. For instance, the number of departments for aquaculture is 44[95] in high schools, while the number of departments for the industry[96]sector is 565[97]. Though Japan is a relatively large seafaring country surrounded by oceans, vocational training related to the manufacturing industry is more prevalent than that of aquaculture. In addition, as for the national colleges of technology, the number of departments for commercial ship[98] is only 5 (2%) while the number of departments for the industry sector is 227 (97%), majority of which is related to machine and electricity (119 courses, 52%)[99]. Therefore, targeting occupations in the manufacturing sector (especially machine and electricity) is reasonable as it is Japan's strongest vocational training fields.

Furthermore, with the current Japanese support for Vietnamese industrialization, Japan has been in discussion with the Government of Viet Nam to make i) electricity / electron, ii) food processing, iii) shipbuilding, iv) agricultural machine and v) environment / energy saving, the five most promising sectors of the country, and i) fiber, ii) metal, iii) two-wheel vehicle and iv)

[93] Calculated by the JICA study team using data from http://www.stat.go.jp/data/roudou/longtime/zuhyou/lt05-02.xls
[94] Calculated by author using data from http://www.stat.go.jp/data/roudou/longtime/zuhyou/lt05-01.xls
[95] For example, fishing (including navigation), aquafarming, food, machine and communication.
[96] For example, machine, electronics and electrics, information communication, architecture and construction, chemistry, fiber, interior and designing.
[97] Ministry of Education, Culture, Sports, Science & Technology in Japan
[98] In commercial ship course, the students are trained to be ship captains.
[99] http://www.kosen-k.go.jp/outline4.html (Japanese only)

motor cycle, the 4 potential sectors with specific conditions. From this perspective, it is again reasonable to target occupations related to the manufacturing sector as it contributes to the development of human resources needed in the supporting industry which bolsters these priority sectors of industrialization.

Basic principle 3: To consider national interests of Japan

As described in Chapter 5, Japanese investment in Viet Nam has been increasing after the sudden drop in 2009. There is an increasing number of Japanese industries launching businesses in Viet Nam. The majority of Japanese industries in Viet Nam are manufacturers. Recently, there are not only large assemblers but also small and medium enterprises providing parts to these assemblers launching their operation in Viet Nam. In line with this tendency, a survey of Japanese industry in Viet Nam, conducted by the JICA study team, revealed that they not only need relatively cheap labor force but also high-skilled human resources to support such industries to process parts. In addition, some of them think there should be a national skill testing system to measure skills in accordance with a uniform standard. This national system could be useful for them to identify good local partner companies, to hire highly capable human resources, and to enhance employees' motivation for skill development. When considering assistance to vocational training sector, these needs expressed by Japanese industry should be taken into consideration. This will also benefit further development of Vietnamese industry.

Basic principle 4: To utilize experiences of Japan's ODA assistance in vocational training sector in Viet Nam

Japan has been assisting Hanoi University of Industry by strengthening 1) vocational training capacities on metal working, sheet metal working and electric control, 2) vocational training capacities to teach employability (5S etc.,) and 3) industrial needs assessment of teachers by encouraging them to visit industries by themselves. As a result, Hanoi University of Industry has already been able to provide vocational training at the Japanese level and produce high quality graduates. They received good evaluation from industries. Furthermore, Japan has dispatched an advisor for organizing national skill testing system to MOLISA-GDVT. The advisor has developed skill testing system for several occupations, such as metal working, and transferred its knowhow to MOLISA-GDVT.

In addition, according to notification by the Office of Government, Hanoi University of Industry is regarded a model institute of providing high quality human resources for Japanese industry.[100]

Under such situation, it is effective to coordinate the national skill testing system and disseminate outcome produced by Japan's assistance for Hanoi University of Industry to other institutions in order to respond to the needs of the Japanese industry described in basic principle 3. To be more precise, teachers of Hanoi University of Industry will conduct technical transfer to teachers of other vocational training institutions. Vocational training institutions, equipped uniformly by the Japanese support, will be the venues for the national skill testing system. This would contribute to the dissemination of national skill testing system. Using vocational training institutions as venues for national skill testing system is consistent with MOLISA-GDVT's policy.

7.2.2 Cooperation Approaches

Based on the basic principles described in the previous section, this section examines approaches to support Vietnamese vocational training sector.

[100] Notification No.267/TB-VPCP dated July 24 2012 by the Office of Government

Overall approaches for support. In order to establish vocational training capacity of the international (Japanese) level in selected vocational training institutions, the Japanese side should select appropriate vocational training institutions and strengthen their capacity from both aspects of hard components and soft components by combining various development assistance schemes, such as ODA Loans and Technical Cooperation. The hard components include equipment and facilities and soft components include skills and knowledge of teachers and managers and management of the institutions.

Approaches for provision of equipment and facilities. After inspecting current conditions of equipment and facilities of the target institutions, equipment and facilities needed to reach international (Japanese) level will be identified and supported by ODA Loans. When selecting the equipment and facilities, standardization among the institutions should be pursued to enhance the effectiveness of the project. Furthermore, the equipment and facilities should be made available to be used for the national skill testing system with an expectation that the institutions could become venues for the national skill testing system.

In order to avoid the equipment provided from being under-utilized due to the absence of teachers or their lack of ability, the current allocation of teachers and capacity of school management should be verified before developing a procurement plan of equipment. When developing the procurement plan, equipment which meets the current structure and capacity of teachers at vocational training institutions should be selected. It is also possible to consider the equipment provision presuming that the allocation and capacity of teachers will be strengthened in the future. In this case, as for the allocation of teachers, the Vietnamese plans will be investigated and its feasibility will be tested, while the capacity of teachers can be enhanced through Technical Cooperation or ODA Loans.

Approaches for enhancement of skills and knowledge. Technical and human resources of the Hanoi University of Industry will be utilized to build capacities of each target institution. Hanoi University of Industry has already reached vocational training capacity at the Japanese (international) level through two technical cooperation projects supported by JICA. By making this university a center of Japanese vocational training model, the aforementioned overall approach would be realized effectively.

MOLISA-GDVT has strategized that Hanoi Technique and Technology College (Hanoi TTC) would be a Vocational Training Institute which would be a hub of in-service training for vocational teachers and then be a vocational training research institute in the future. Vocational Training Development Strategy 2011-2020 specifies the establishment of the Vocational Training Institute. Thus, Hanoi TTC should be prioritized in the technology transfer from the Hanoi University of Industry.

Approach of phased assistance. Figure 7-1 shows the relationships between Hanoi University of Industry and Hanoi Technique and Technology College (Hanoi TTC) and other target institutions in the first phase. Technologies and knowledge will be transferred from Hanoi University of Industry to other target institutions by in-service training, among which Hanoi TTC will be prioritized.

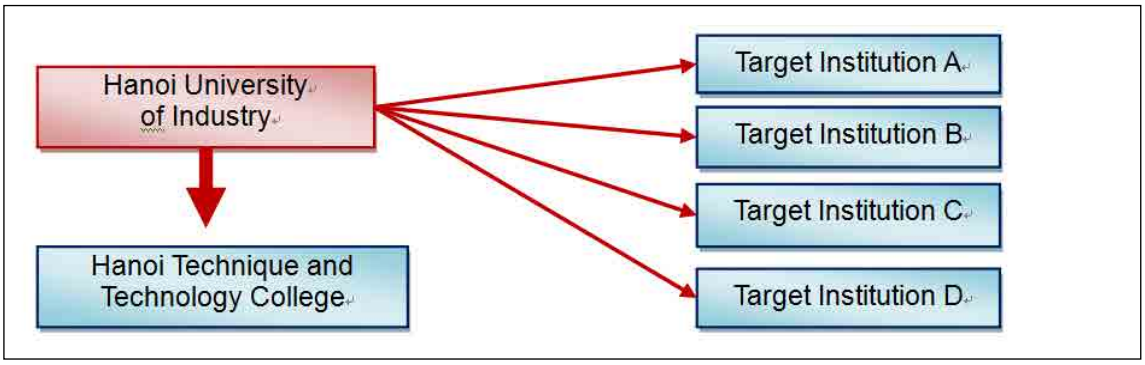


Figure 7-1 Relationships among Institutions in Technology and Knowledge Transfer (First Phase)

When capacity level of Hanoi TTC is enhanced, the relationships will be advanced to the next phase as shown in the Figure 7-2. Hanoi University of Industry and Hanoi TTC will continue to exchange technologies and knowledge as partners and both institutions will transfer technologies and knowledge by providing in-service training to other institutions. The institutions who receive the transfer of technologies and knowledge will be gradually expanded to the schools which Japan's ODA does not provide equipment for.

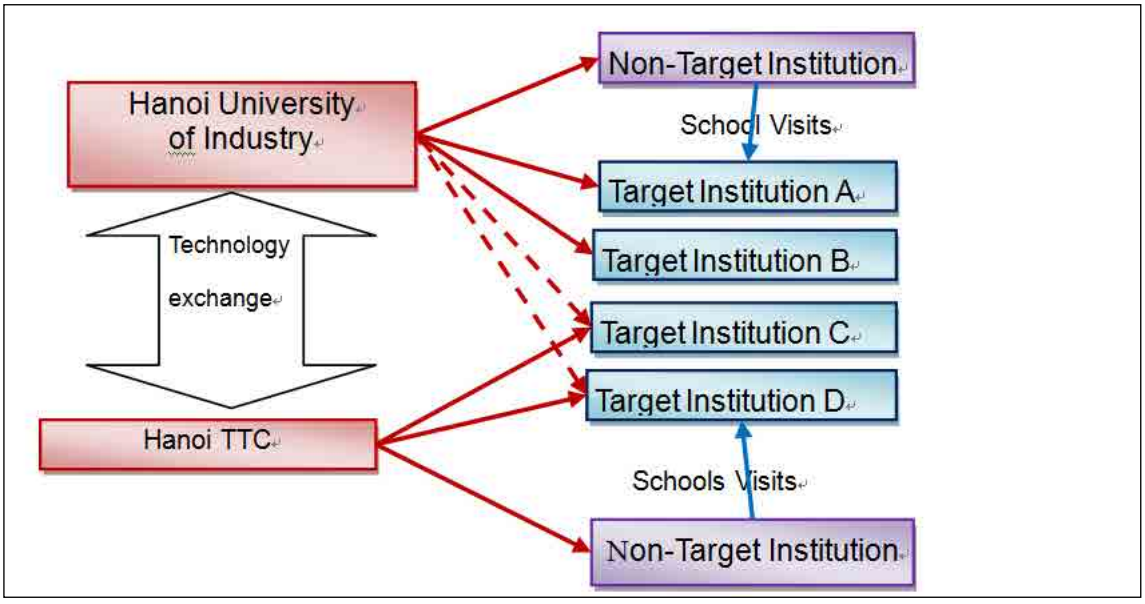


Figure 7-2 Relationships among Institutions in Technology and Knowledge Transfer (Second Phase)

To implement the project with good balance of soft and hard components, it is not enough for vocational training institutions to receive support and coordination from Hanoi University of Industry and Hanoi TTC as hubs. It is also necessary to dispatch an advisor at MOLISA-GDVT to institutionalize the system. The advisor will be expected to 1) coordinate with and assist MOLISA-GDVT to institutionalize the in-service training model developed jointly by Japan and Hanoi University of Industry, 2) assist MOLISA-GDVT to procure equipment and facilities for the targeted institutions and 3) assist implementation of skill testing in each institution.

7.2.3 Selection of Target Vocational Training Institutions

The target institutions are selected based on the following criteria in accordance with the basic principles.[101]

Selection criteria 1:	To check consistency with Vietnamese request/desire for cooperation by Japan
Selection criteria 2:	To check consistency with Vietnamese policy / strategy
Selection criteria 3:	To check consistency with Japanese strong vocational training fields (Manufacturing)
Selection criteria 4:	To check potential benefits to Japanese industry in Viet Nam

Selection criteria 1: to check Consistency with Vietnamese request / desire for cooperation by Japan.

The Vietnamese side requested assistance for 5 vocational training institutions. Using this list from the Government as a starting point, the JICA study team has developed the short-list of candidate vocational training institutions and scrutinized and finalized the beneficiary schools for cooperation from Japan. In addition to these 5 institutions, vocational training institutions in Vinh Phuc Province and Hanoi University of Industry, which the Vietnamese side had previously requested assistance for, will be included as candidate institutions for reviews.

Selection criteria 2: to check consistency with Vietnamese policy / strategy.

When selecting target vocational institutions, consistency with Vietnamese strategies, such as the Vocational Training Development Strategy 2010-2020 (Prime Minister's Decision 630/OD-TTg), Decision on key Occupations and Vocational Schools for Investment Support from National Target Program (MOLISA's Decision 826/QĐ-LĐTBXH) and 40 high quality vocational schools (draft), should be verified. The Vocational Training Development Strategy 2010-2020 stipulates that innovation of the national management system of vocational training sector, capacity building of teachers and managers of vocational training institutions and establishment of national skill testing framework are the important policy issues. MOLISA's Decision 826/QĐ-LĐTBXH and the 40 high quality vocational schools nominate occupations and institutions which aim at being upgraded to ASEAN or international level by concentrating allocation of national budget. When checking for consistency with Vietnamese strategy and policy, it should also take into account if the places of the schools are special economic zones or prioritized provinces of the supporting industry.

Selection criteria 3: to check consistency with Japanese strong vocational training field (Manufacturing).

The target occupations should be manufacturing, which is Japan's strongest vocational training field according to basic principle 2. In particular, metalworking, sheet metal working and electric control are highly consistent in terms of utilization of past Japanese cooperation.

Selection criteria 4: Potential benefits to Japanese industry in Viet Nam.

Graduates of vocational training institutions are employed not only near school locations but also in broader areas. However, establishing close relationships between vocational training institutions and local industries enable the vocational training institutions to develop training contents consistent with the needs of the local industries, allowing local industries to recruit quality graduates more easily. Thus, areas where Japanese industries have been operating or will

[101] As indicated in Table 7-4 and Appendix 7-2-1, the JICA study team paid a special attention to the name of Vietnamese-German Vocational College.

operate are prioritized. For example, as Hai Phong City and Ba Ria-Vung Tau Province are prioritized areas to develop supporting industries related to manufacturing and many Japanese industries are expected to launch operations in the areas, these locations are appropriate keeping in perspective the locations of the target institutions.

Based on these criteria, the JICA study team reviewed the 9 vocational training institutions. The detailed result of the review is attached in Appendix 7-2-1. The appendix provides comprehensive summary of each institution including its basic information and training fields and result of review.

The summary of the review is shown in Table 7-4. In the table, schools numbered 1 to 5 are requested by MOLISA-GDVT. The JICA study team found that school number 5 is not appropriate (detail is shown in the Appendix 7-2-1), thus, school number 6 was alternatively added. In addition to MOLISA-GDVT, Vinh Phuc Province also requested assistance in the past; therefore, the JICA study team added two institutions (number 7 and 8) to the list for review. Hanoi University of Industry is also reviewed. As school No. 4 in Bac Ningh requested assistance in health sector, it is more appropriate to consider cooperation under the framework of Economic Partnership Agreement (EPA); thus, the JICA study team did not review nor develop the appendix on this school.

Table 7-4 Summary of Review

No.	Source of Nomination	Location	Target School	Governing Agency	Proposed Occupations	Status of Review	Remark
1	MOLISA -GDVT	Hanoi	Hanoi Technique and Technology Vocational College	MOLISA	Mechanics / Automotive Technology Electricity Industrial Electronics	High Potential and recommended	Necessary to consider as TOT core school. However, it is necessary to change occupations to ones related to manufacturing
2	MOLISA -GDVT	Ba Ria Vung Tau	Ba Ria Vung Tau Vocational College	People's Committee	Sea products exploitation and catching / Aquaculture products processing and preservation	Conditional High potential /recommended	This Province is prioritized for supporting industry and, therefore, important. School itself has high potential, but it is necessary to change occupations to ones related to manufacturing. It is also recommended to amend Decision No: 826/QĐ-LĐTBXH to include occupations related to manufacturing.
3	MOLISA -GDVT	Nighi Son	Nghi Son Vocational Secondary School	DOLISA	Industrial Electricity / Automotive Technology / Metal Cutting / Operation of Petroleum Processing Equipment	Appropriate/ Recommended	Necessary to reconsider according to their capacity. Only vocational school in Nighi Son Industrial area. Necessary to consider reasonable size of the project
4	MOLISA -GDVT	Bac Ningh	Vocational College of Engineering, High Technology and Services	Viet Nam Women's Union	Technique of health testing / Technique of physical treatment and functional rehabilitation / Health care	Pending	Necessary to wait for the conclusion of the argument among other main stakeholders in the health sector under EPA.
5	MOLISA -GDVT	Hai Phong	Vocational College of Northern Fisheries	Ministry of Agriculture and Rural Development	Sea products exploitation and catching, Aquaculture products processing and preservation	Invalid	This Province is prioritized for supporting industry and, therefore, important. However, the requested occupation does not fit the review criteria. Necessary to Replace with No. 6.
6	Japan	Hai Phong	Hai Phong Industrual Vocational College	People's Committee	Occupations related with manufacturing (metal cutting and lathing, welding)	High Potential/ Recommended	Substitute for No. 5. It is also recommended to amend Decision No: 826/QĐ-LĐTBXH to include occupations related to manufacturing.
7	Vinh Phuc Provinde	Vinh Phuc	Vietnamese-German Vocational College	People's Committee	Occupations related with manufacturing (metal cutting and lathing, welding)	Invalid	The Japanese side has concerns regarding the name of the school if it provides ODA support. However, the Vietnamese side is unwilling to change the school name due to diplomatic reasons. Ultimately, both sides could not find any solutions.

No.	Source of Nomination	Location	Target School	Governing Agency	Proposed Occupations	Status of Review	Remark
8	Vinh Phuc Provinde	Vinh Phuc	Vocational College of Mechatronics and Agriculture	Ministry of Agriculture and Rural Development	Occupations related with manufacturing (metal cutting and lathing, welding)	Conditional Potential/ Recommended.	Necessary to consider demarcation of another project supported by AFD on occupations.
9	Japan	Hanoi	Hanoi University of Industry	Ministry of Industry and Trade		Necessary	This school is necessary as a core school for this cooperation to transfer their knowledge and skills obtained during JICA technical cooperation in the past.