

Country Name	<b>Capacity Building of Ho Chi Minh City University of Technology to Strengthen University-Community Linkage (Phase 2)</b>
Socialist Republic of Viet Nam	

**I. Project Outline**

Background	<p>The southern region of Viet Nam had been seen as one of the strategically important areas that would lead the country's economic and social development. In order to promote the regional development that could be accelerated by the development of agriculture, fishery and manufacturing industries, it was requisite to develop human resources endowed with high-level of knowledge and technical and engineering skills. Ho Chi Minh City University of Technology (HCMUT) had functioned as the leading research and educational institution in southern Viet Nam and had provided occasional research and development (R&amp;D) support and training in the region. However, due to a lack of an effective institutional mechanism of "university-community linkage" and insufficiency of experiences in R&amp;D and transfer of its outcomes to local communities that would satisfy actual local needs, efforts by HCMUT and their achievements were still limited. Under such situation, JICA's technical cooperation project (Capacity Building of Ho Chi Minh City University of Technology to Strengthen University-Community Linkage (Phase 1) of this project) was implemented. Since Phase 1 of the project mainly focused on implementation of pilot projects and technical transfer of outcomes of R&amp;D in two provinces, there was a room for improvement to implement university-community linkage in comprehensive and sustainable manner.</p>														
Objectives of the Project	<p>Through transforming classroom-learning based education to research-based education, strengthening HCMUT's R&amp;D capacity, enabling HCMUT to play hub roles to promote academic cooperation for university-community linkage among higher education and research institutions in southern Viet Nam, and enabling HCMUT's activities to promote local development in southern Viet Nam to be well recognized, the project aimed at strengthening education and R&amp;D capacity of HCMUT for promotion of university-community linkage, thereby contributing to enabling HCMUT to become the core university to promote local development in southern Viet Nam. The project objectives set forth are as follows:</p>														
	<ol style="list-style-type: none"> <li>Overall Goal: HCMUT becomes the core university to promote local development in the southern part of Viet Nam.</li> <li>Project Purpose: Education and R&amp;D capacity of HCMUT for promotion of university-community linkage is strengthened.</li> </ol>														
Activities of the Project	<ol style="list-style-type: none"> <li>Project site: Ho Chi Minh City and southern Viet Nam (Tien Giang, An Giang, Lam Dong, Dong Nai and Binh Duong Provinces)</li> <li>Main activities: (1) Transform classroom-learning based education to research-based education at HCMUT; (2) Invite staff members from local institutions to formulate R&amp;D groups, implement R&amp;D activities for practical use, submit papers to journals or international/local conferences, apply for patents and disseminate R&amp;D outputs to local community; (3) Initiate inter-university committee, dispatch staff to other local institutions through staff exchange program/R&amp;D activities; and (4) Share guidelines for the university-community linkage with other local institutions, local governments and communities and hold workshops for promotion of the university-community linkage. (Target faculties: Chemical Engineering, Environmental Engineering, Mechanical Engineering and Civil Engineering)</li> <li>Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Vietnamese Side</td> </tr> <tr> <td>1. Experts: 18 persons</td> <td>1. Staff allocated: Joint Coordinating Committee members: 33 persons, Project Management Committee and R&amp;D Promotion Committee: 15 persons</td> </tr> <tr> <td>2. Trainees received in Japan: 17 persons</td> <td>2. Land and facilities: project office in HCMUT</td> </tr> <tr> <td>3. Provision of equipment (laboratory equipment, etc.)</td> <td>3. Local cost</td> </tr> <tr> <td>4. Overseas activities cost</td> <td></td> </tr> </table> </li> </ol>					Japanese Side	Vietnamese Side	1. Experts: 18 persons	1. Staff allocated: Joint Coordinating Committee members: 33 persons, Project Management Committee and R&D Promotion Committee: 15 persons	2. Trainees received in Japan: 17 persons	2. Land and facilities: project office in HCMUT	3. Provision of equipment (laboratory equipment, etc.)	3. Local cost	4. Overseas activities cost	
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Ex-Ante Evaluation	2008	Project Period	March 2009 to September 2012	Project Cost	323 million yen										
Implementing Agency	Ho Chi Minh City University of Technology (HCMUT)														
Cooperation Agency in Japan	Kumamoto University														

**II. Result of the Evaluation****I Relevance**

<Consistency with the Development Policy of Viet Nam at the time of ex-ante and project completion>

The project was consistent with Viet Nam's development policy on 'promoting development of southern Viet Nam' and 'reforming higher education and promoting development of science and technology' as set forth in "the Strategy for Socio-Economic Development (2001-2010)", "the Five-Year Plan for Socio-Economic Development (2006-2010)" and "the Five-Year Plan for Socio-Economic Development Program (2011-2015)" etc. at the time of both ex-ante evaluation and project completion.

<Consistency with the Development Needs of Viet Nam at the time of ex-ante and project completion>

While the capacity of HCMUT was improved by implementation of the Phase 1 project, in order for HCMUT to firmly establish itself as the region's leading higher education and research institution in the field of engineering, a systematic and institutional setup that enables

continuous social needs surveys and R&D activities based on survey results was necessary. Promotion of university-community linkage for practical technological development and its application in the southern region was the third pillar of HCMUT's mission after "education" and "research". Thus, the project was consistent with social needs in southern Viet Nam at the time of both ex-ante evaluation and project completion.

<Consistency with Japan's ODA Policy at the time of ex-ante evaluation>

The project was consistent with Japan's ODA policy, as stated in the "Country Assistance Program for the Socialist Republic of Viet Nam (2004)", which prioritized 'promotion of growth'. "Human resources development to support growth" is stated as one of the targeted sectors.

<Evaluation Result> In light of the above, the relevance of the project is high.

## 2 Effectiveness/Impact

<Status of Achievement for Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the time of project completion. Based on the annual research needs surveys (Indicator 1), 11 to 12 model laboratories were selected among the target faculties of HCMUT every year, and each model laboratory carried out joint research on a specific topic together with researchers of partner provinces and industries (Indicator 2). More than 30% of the R&D activities carried out at HCMUT were community development-related (Indicator 3). While there was no patent application directly filed by HCMUT before the project, a total of 12 patents were applied by HCMUT based on the 35 research outcomes<sup>1</sup> (three to four patents per year) (Indicator 4). More than 30 research papers were presented at international/domestic conferences and published in international/domestic academic journals (Indicator 5).

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

Since project completion, research needs surveys for local provinces in the southern region have continuously been conducted every year. Based on the needs surveys, four to five topics per year have been selected for promotion of local development. 100% of R&D activities carried out by researchers from HCMUT and related local member institutions have had relation to local development activities. Moreover, seven to nine patents have been applied every year, and more than 100 papers related to R&D topics have been published in international journals and more than 200 papers have been published in local journals every year.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal was mostly achieved at the time of ex-post evaluation. Several actions have been taken by local industries and/or governments to promote local development by utilizing the outcomes achieved through joint research activities with HCMUT in three out of five target provinces. In this sense, it can be said that at least one of the local member institutions of each province in southern Viet Nam and HCMUT have certain roles to promote local development in three out of five target provinces. However, no action has been taken in other two provinces and reasons are unknown (Indicator 1). At HCMUT, four to five pilot projects per year have been implemented, with more than ten provinces (Indicator 2). Moreover, three seminars/workshops were implemented in both 2014 and 2015, and 100 to 200 people from local governments, universities, research institutes and companies attended. In addition, as mentioned above, more than 100 papers have been published in international journals and more than 200 papers have been published in local journals every year. In this sense, it can be said that local related people recognize that HCMUT and related local member institutions promote local development in the southern part of Viet Nam (Indicator 3).

No negative impact of this project (including joint researches) on natural environment has been reported. There were no land acquisition/resettlement due to this project, either.

<Evaluation Result> The targets set in all the indicators for the Project Purpose were achieved and project effects have been well maintained after project completion. The Overall Goal was mostly achieved: although no action has been taken by local institutions to promote local development by utilizing the outcomes achieved through joint research activities with HCMUT in two out of five target provinces, the targets set for the other indicators have been achieved. Therefore, effectiveness and impact of the project are high.

## 3 Efficiency

The project cost was lower than planned (ratio against the plan: 92%) and the project period was as planned (ratio against the plan: 100%). Therefore, efficiency of the project is high.

## 4 Sustainability

<Policy Aspect>

Strategy for Science and Technology Development 2010-2020 (government policy) has one of its directions for improving universities' capacity for basic research and promote close linkage with universities for human resource development. The Strategy also sets a direction for Mekong Delta Region of developing science and technology for key areas such as rice, fruit cultivation, aquaculture, and processing.

Also, a project "Science & Technology for Sustainable Development of Southwestern Viet Nam" approved by the Prime Minister is being implemented from 2014 to 2019. This Project aims at proposing science-technology solutions to promote intersectoral and regional cooperation and implementing the science and technology solutions for South western Viet Nam, which is already specified in the Strategy for Science and Technology Development 2010-2020.

<Institutional Aspect>

At the time of ex-post evaluation, the organizational structure required to sustain project effects is in place. R&D and Project Management Office (RDPMO) is responsible for planning and managing R&D activities including R&D related needs surveys, External Relations Office (ERO) is responsible for planning and managing university-community linkage activities, and Postgraduate Study Office (PGSO) is responsible for promoting research-based education. Ten staff members (one Head, two Deputy Heads, and seven members) are assigned in RDPMO, 11 staff members (one Head, two Deputy Heads, and eight members) are assigned in ERO, and thirteen staff members (one Head, two Deputy Heads, and 10 members) are assigned in PGSO. The number of staff is considered to be sufficient, as all the necessary tasks including planning and managing R&D and university-community linkage activities and promoting research-based education are conducted sufficiently.

<sup>1</sup> During the project implementation, a total of 35 joint research teams (model labs) conducted joint research activities and contributed to solving local technical problems (12 teams in the first batch, 11 teams in the second batch and 12 teams in the third batch). The Batch 1 research period was from August 1, 2009 to July 31, 2010. The Batch 2 research period was from August 1, 2010 to July 31, 2011. The Batch 3 research period was from August 1, 2011 to July 31, 2012.

<Technical Aspect>

At the time of ex-post evaluation, the project counterparts continuously work in HCMUT, and technical skill level of staff in RDPMO, ERO and PGSO is sufficient, as all the necessary tasks including planning and managing R&D and university-community linkage activities and promoting research-based education are conducted sufficiently. Various guidelines such as Patent Guidelines, Guidelines for Joint Research, Guidelines for Introducing RBE (research-based education) to the Master’s Program under SUPREM<sup>2</sup>-HCMUT, and Guidelines for Strengthening Research Partnerships with Provinces, Industry and Other Universities produced under the project have been utilized, while they have not been updated. In addition, there has been no plan in HCMUT to regularly improve skill level of staff members in RDPMO, ERO and PGSO.

<Financial Aspect>

Approximately 2,000 million VND has been annually allocated to ERO since its establishment. As for budget allocated for RDPMO and PGSO, around 33,000 to 46,000 million VND has been annually allocated. According to HCMUT, however, the amount of budget has not been sufficient, as some research topics could not be implemented or could not be implemented in full scale due to a lack of budget. Also, HCMUT does not have a particular plan to increase budget. The general budget of HCMUT, like many other universities in Viet Nam, is limited and has to be allocated to many purposes.

<Evaluation Result> While no major problems have been observed in policy and institutional aspects of the implementing agency, there are some challenges in technical aspects (i.e. lack of plan to improve responsible staff’s skill level) and in financial aspects (i.e. shortage of budget for full implementation of related research). Therefore, sustainability of effects of the project is fair.

5 Summary of the Evaluation

The project achieved its Project Purpose and mostly achieved its Overall Goal. Targets set in all the indicators for the Project Purpose were achieved and project effects have been well maintained after project completion. As for the the Overall Goal, although no action has been taken by local institutions to promote local development by utilizing the outcomes achieved through joint research activities with HCMUT in two out of five target provinces, the targets set for the other indicators have been achieved, showing continuous conduct of joint researches with local authorities/communities and local related parties’ recognition of such activities. In terms of sustainability, there are some challenges in technical and financial aspects, as there has been no plan in HCMUT to regularly improve skill level of staff members, and the amount of budget is not sufficient for full implementation of related research. On the other hand, good policy support and organizational structure for university-community linkage were observed.

In light of the above, this project is evaluated to be highly satisfactory.

**III. Recommendations & Lessons Learned**

<Recommendations for Implementing Agency>

The degree of satisfaction of beneficiaries of University-community linkage research is an important factor to improve the efficiency and effectiveness of the research activities. It is recommended that HCMUT will conduct beneficiaries’ satisfaction survey after each research.

<Lessons Learned for JICA>

(Lessons learned from both Phase 1 and Phase 2 of the project)

For a university to conduct research and development activities with local community in a sustainable manner, it is important to set up a clear and official organization for university community linkage within the university well before project completion, so that feasibility of such an organization can be experimented and necessary adjustment can be made as part of the project activities.

For sustainable use of technologies developed through university-community linkage by the local community, feasibility surveys of pilot projects should evaluate relevance of the pilot projects in terms of both conformities with local needs and commercial viability of adapting the research results.



Meeting with local authorities

<sup>2</sup> SUPREM stands for Strengthen University Project of Research-based Education Model.

## Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results											
(Project Purpose) Education and R&D capacity of HCMUT for promotion of university-community linkage is strengthened.	1. Requests from local provinces in the southern region to solve their technical problems are annually collected.	<p><u>Status of achievement: Achieved (continued)</u></p> <p>(Project Completion) Research needs surveys in the southern region were conducted every year during the project period.</p> <p>(Ex-post Evaluation) HCMUT has continuously collected requests from local provinces every year (30 requests on average have been received every year).</p>											
	2. At least 5 topics related to the above requests every year are selected in HCMUT and concerned local member institutions for promotion of local development.	<p><u>Status of achievement: Achieved (continued)</u></p> <p>(Project Completion) Based on the needs surveys, 11-12 model laboratories were selected every year. Each model laboratory carried out joint research on a specific topic together with researchers of partner provinces and industries.</p> <p>(Ex-post Evaluation) Four to five topics per year have been selected for promotion of local development.</p>											
	3. More than 30% of R&D activities carried out by researchers from HCMUT and related local member institutions have relation to local development activities.	<p><u>Status of achievement: Achieved (continued)</u></p> <p>(Project Completion) According to interviews with relevant HCMUT offices, 30% of all the research activities at the university have been conducted under the project with the aim of contributing to local community development. Considering some of the non-project researches (the remaining 70%) also aim to contribute to community development, it can be said that more than 30% of the R&amp;D activities carried out at HCMUT are community development-related.</p> <p>(Ex-post Evaluation) 100% of R&amp;D activities carried out by researchers from HCMUT and related local member institutions have had relation to local development activities.</p>											
	4. Number of patents applied increases.	<p><u>Status of achievement: Achieved (continued)</u></p> <p>(Project Completion) Before the Project, there was no patent application directly filed by HCMUT. Through the Project, however, a total of 12 patents were applied by HCMUT based on the 35 research outcomes (three to four patents per year).</p> <p>(Ex-post Evaluation) Seven to nine patents have been applied every year since 2013.</p>											
	5. Number of R&D related papers/reports published in international/local journals increases.	<p><u>Status of achievement: Achieved (continued)</u></p> <p>(Project Completion) 44, 31 and 30 research papers were presented at international/domestic conferences and published in international/domestic academic journals by the first, second and third batch model laboratories accordingly.</p> <p>(Ex-post Evaluation) The number of R&amp;D related papers/reports published in international/local journals has increased since project completion.</p> <table border="1"> <thead> <tr> <th>Year</th> <th>No. of papers/reports published in international journals</th> <th>No. of papers/reports published in local journals</th> </tr> </thead> <tbody> <tr> <td>2013</td> <td>115</td> <td>252</td> </tr> <tr> <td>2014</td> <td>169</td> <td>231</td> </tr> <tr> <td>2015 (first 6 months)</td> <td>49</td> <td>88</td> </tr> </tbody> </table>	Year	No. of papers/reports published in international journals	No. of papers/reports published in local journals	2013	115	252	2014	169	231	2015 (first 6 months)	49
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(Overall Goal) HCMUT becomes the core university to promote local development in the southern part of Viet Nam.	1. At least one of the local member institutions of each province in the southern part of Viet Nam and HCMUT has certain roles to promote local development.	<p><u>Status of achievement: Partially achieved</u></p> <p>(Ex-post Evaluation) In An Giang Province, An Giang Plant Protection Joint Stock Company started to use the technology developed by HCMUT for production of alcohol from rice bran in 2015. In Dong Nai Province, My Anh An Company started to use the techniques invented by HCMUT to manufacture an automatic cashew nut shell cutting machine for cashew nut processing factories in Dong Nai, Binh Phuoc and Tay Ninh provinces in 2013. In Lam Dong Province, Hoang Anh Construction Company started to use the unburnt brick technology and machine developed by HCMUT in 2014, and Don Duong District started to use low-cost and small-scale solar dryer with biomass energy backup for farmers in 2015. However, no action has been taken to promote local development by utilizing the outcomes achieved through joint research activities with HCMUT in Tien Giang and Binh Duong Provinces.</p>											
	2. University-community linkage activities are carried out in a wider scale in terms of the number of university-community linkages (more than five (5)) and/or the number of cooperating local provinces/communities in the southern part of Viet Nam.	<p><u>Status of achievement: Achieved</u></p> <p>(Ex-post Evaluation) Four to five pilot projects per year have been implemented since project completion, with more than ten provinces.</p>											
	3. Local related people recognize that HCMUT and related local member institutions promote local development in the southern part of Viet Nam.	<p><u>Status of achievement: Achieved</u></p> <p>(Ex-post Evaluation) Several seminars and workshops were implemented in 2014 and 2015 (three times each in 2014 and 2015), and 100-200 people from local governments, universities, research institutes and companies attended. Themes of these seminars and workshops are 'Promoting the University-Industry-Government Linkage' and 'The First Viet Nam-Japan International Workshop for Sustainable Ocean Development and Disaster-Environmental Risk Management' etc. Moreover, as shown above, more than 100 papers have been published in international journals and more than 200 papers have been published in local journals every year.</p>											

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Source : Project Completion Report, Questionnaire survey to HCMUT.

Note: Means of verification of achievement level of Indicator 1 and 3 of Overall Goal are not clearly stated in PDM. Under Ex-Post Evaluation, the achievement level of these indicators is verified by the following means: (1) Indicator 1: whether local member institutions of each province in southern Viet Nam have taken actions to promote local development by utilizing the outcomes achieved through joint research activities with HCMUT (if local member institutions of each province have taken several such actions, Indicator 1 is evaluated as “achieved”); (2) Indicator 3: how many seminars, workshops, trainings and conferences etc. to disseminate and promote university-community linkage activities have been conducted by HCMUT and local member institutions and how many R&D related papers/reports have been published in international/local journals (if the number of seminars and workshops etc. held and R&D related papers published after project completion is maintained about the same level as that of during project implementation period (several seminars and workshops etc. per year and 20-30 journals per year), Indicator 3 is evaluated as “achieved”)