

The Summary of Terminal Evaluation

| 1. Outline of the Project | |
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| Country: Islamic Republic of Pakistan | Project title: Project for Development of Center of Excellence (CoE) for Technical Education |
| Issue/Sector: Education-Technical and Vocational Education and Training | Cooperation scheme : Technical Cooperation |
| Division in charge: Technical and Higher Education Division, Human Development Department | Total cost (at the time of evaluation study) : 4.2million yen |
| Period of Cooperation (R/D) 15 December 2008 – 14 December 2013 (5 years) | Partner Country's Implementing Organization: Technical Education and Vocational Training Authority (TEVTA) Government College of Technology Railway Road Lahore (GCT R.R.) |
| | Supporting Organization in Japan: - |
| | Related Cooperation: The Project for Strengthening of DAE Mechanical & Architecture Departments in GCT Railway Road of Punjab Province (Grant Aid) |
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| 1-1 Background of the Project <p>The Government of Islamic Republic of Pakistan has envisaged the share of the manufacturing sector to increase from current 18 percent of GDP to 30 percent by the end of the period of the national development plan, Vision 2030. In order to achieve it, the manufacturing sector has been growing annually by about 10 percent. Meanwhile, the flexible, skilled and innovative technical personnel are required to develop, in addition to upgrading technical, legal and physical infrastructure. Lahore, the site of this Project, is the second largest industrial city in the country after Karachi, with growing various types of engineering industries which demand technicians in mechanical and architecture fields. Particularly the demand for middle-level technicians who can link the construction/manufacturing sites and management is growing fast.</p> <p>The Government is reforming the system of Technical and Vocational Education and Training (TVET), by establishing National Vocational and Technical Training Commission at the federal government level and by developing “The National Skill Strategy (2009-2013)” which aim to implement different reforms including establishment of Center of Excellence.</p> <p>The Government College of Technology Railway Road (GCT R.R.) is a leading training institute in Punjab. However, it faced various problems such as an outdated curriculum which had not been revised for more than 10 years, insufficient number and quality of trainers, unavailable placement service, weak linkage with industrial sectors, etc.</p> <p>The Project for Development of Center of Excellence (COE) for Technical Education started in December 2008 for the period of five years, with an official request from the Government of Islamic Republic of Pakistan to the Government of Japan, in order to address these problems, and eventually to enhance the capacity of GCT R.R. to provide quality education in Mechanical and Architecture courses based on industrial needs as COE.</p> <p>The Terminal Evaluation Team for the project is implemented by the representatives of Pakistani side and JICA in order to evaluate the achievements of the Project and to derive lessons from the Project.</p> | |
| 1-2 Project Overview (1) Overall Goal Acquired knowledge of the project, which provides technical education to fulfill industrial needs, is applied into other institutes (Mechanical and Architecture) in Punjab. | |

(2) Project Purpose

Mechanical and Architecture courses of GCT R.R. provide quality in technical education based on industrial needs as CoE.

(3) Outputs

- 1) Management system of GCT R.R. is strengthened as a CoE which can offer technical education relevant to industrial needs.
- 2) Training Management Cycle (TMC) of Mechanical and Architecture courses is strengthened.
- 3) Placement support of GCT is strengthened.
- 4) Knowledge and experience of GCT R.R. is shared with other courses in GCT R.R. and other TVET institutes.

(4) Inputs (at the time of evaluation)

Japanese Side:

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|------------------------------------|----|--------------------|---------------------|
| No. of long-term experts: | 4 | Equipment: | 109,105,402.80 PKRs |
| No. of short-term experts: | 3 | Operational costs: | 44,870,449.23 PKRs |
| No. of personnel trained in Japan: | 18 | | |

Pakistani Side:

No. of Counterparts: Main C/Ps (36), Mechanical(35), Architecture (12)
Office and facilities: Office for experts
Operational costs 18,145,577 PKRs

2. Evaluation Team

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| Members of Evaluation Team | <u>Japanese side</u> | |
| | 1) Leader: Mr. Tsutomu TANAKA, Director, Technical and Higher Education Division, Human Development Department, JICA 2) Cooperation Planning: Mr. Keiichiro TANIGUCHI, Special Advisor, Technical and Higher Education Division, Human Development Department, JICA 3) Evaluation Analysis: Ms. Yuko OGINO, Senior Consultant, KRI International Corp. | |
| | <u>Pakistani side</u> | |
| | 1) Mr. Irfan Ali, Chairperson, TEVTA 2) Lt Col (R) Hamid Ghani Anjum, TI (M), GM-Operations/Project Director, TEVTA 3) Engr. Arif Ali Nadeem, Principal/Project Manager, GCT R.R. | |
| Period of Evaluation | 8 - 21 September 2013 | Type of Evaluation: Terminal Evaluation |

3. Results of Evaluation

3-1 Project Performance

(1) Output

Output 1 is **achieved** in light of all PDM indicators including use of computerized data for management (Indicator 1-1), participation from significant market players in IMCs and working groups (Indicator 1-2), conducting various collaborative activities with industries (Indicator 1-3), organizing working group meetings for promotion of college-industry linkages (Indicator 1-4) and public relations through newsletters and Webpage (Indicator 1-5).

Output 2 is **achieved** in light of all PDM indicators covering whole process of TMC including TNA (Indicator 2-1), revising curriculum based on industrial needs (Indicator 2-2), which have been officially approved at both provincial and federal levels. The project has trained master trainers (Indicator 2-3) and teachers (Indicator 2-4), revised teaching materials and examination papers (Indicator 2-5), completed installation of equipment and maintenance activities (Indicator 2-6) and

conducted M&E (Indicator 2-7), which are all incorporated in TMC Manual (Indicator 2-8).

Output 3 is **overall achieved** (achieved in Mechanical and in the process of being achieved in Architecture) in light of PDM indicators including computerized data on placement, internship and opportunities (Indicator 3-1) managed by Career Section and both Departments. Career Counseling (Indicator 3-2) as well as students' and employers' satisfaction on job placement (Indicator 3-3 and 3-4) were achieved for Mechanical and are planned to be conducted for Architecture. Appropriate support for Architecture is to be discussed in consideration of different employment trends from Mechanical.

Output 4 is **achieved** in light of all PDM indicators for holding seminars (Indicator 4-1), participation rate of institute (Indicator 4-2) and rate of understating of the participants (Indicator 4-3) in both departments.

(2) Project Purpose

Project Purpose is likely to be achieved in light of PDM indicators for Mechanical and Architecture courses as follows:

Employers' satisfaction (Indicator 1): For Mechanical, 72% of employers are satisfied with performance of 2012 pass outs³ compared with other pass outs who graduated before year of 2011. For Architecture, 80% of employers are satisfied with performance of the pass outs, but not in the question of before-after comparison and the number of eligible respondents were limited. An additional survey for Architecture is scheduled to be conducted for more coverage of employers.

Graduates' satisfaction (Indicator 2): For Mechanical, 95% of the 2012 pass outs is satisfied with new course contents compatible to industrial needs, and for Architecture, satisfaction rates are 95% for curriculum and 100% for equipment.

Passing examination rates (Indicator 3): For both courses, passing examination rates (%) of students under revised curriculum have increased by approximately 20 to 30 points as compared to those before the curriculum revision.

(3) Overall Goal

Overall Goal is likely to be achieved. Following the Pakistani system on DAE curriculum, the revised curriculum for mechanical technology has been adopted by all GCTs in Punjab (19 colleges including GCT R.R.) For architecture technology, the revised curriculum is adopted by private colleges that have DAE Architecture course across the Punjab Province⁴ The introduction of the project outputs has as such already in progress, but sufficient support is required for proper introduction and implementation of the revised curriculum such as 1) trainer training, and 2) curriculum compliant labs and equipment.

3-2 Summary of Evaluation Results

(1) Relevance

Relevance is **high**. The project is in line with the needs of Pakistan and Punjab that promote skill development in middle level technical personnel, and the needs of relevant target groups of GCT R.R., TEVTA, NAVTTC, industries in Punjab and students. The project is consistent with policies in Pakistan and Japan. In National Skills Strategy (NSS) 2009-2013 as TVET policy in Pakistan, 20 reforms are proposed including establishing industry specific Centers of Excellence. In the latest Japan's Country Assistance Program for Pakistan (2012), assistance to TEVT sector through

³ Pass outs are graduates of GCT R.R., and 2012 pass outs are the 1st batch of graduates under the revised curriculum.

⁴ Among GCTs in Punjab, only GCT R.R. has Architecture Department.

developing CoE is clearly positioned in one of the 3 priority pillars. The project strategy is concluded to be appropriate in terms of project approach (output 1~4) and other aspects such as selection of GCT R.R., 2 departments, and target groups. There have also been linkages with TVET Reform Support Programme (2011-2015) assisted by other development partners, and synergy effects with the Grant Aid supported by the Japanese Government for GCT R.R. under which new building for Architecture, various equipment items necessary for both Mechanical and Architecture Departments have been provided based on the needs of revised curriculum. Due to the election in May 2013, new Government administration took the office. The present Government also strongly supports the development of TVET Sector.

(2) Effectiveness

Effectiveness is *high* because the Project Purpose is achieved in light of PDM indicators as well as other evidences such as increased merits of admissions and accreditation results of Mechanical Department. All such achievements have been contributed by Outputs of the Project.

(3) Efficiency

Efficiency is *fairly good*. Output 1, 2 and 4 have been overall achieved as planned. Output 3 is achieved in Mechanical and in the process of being achieved in Architecture. Institutionalization of Career Section within GCT R.R. management system needs to be improved for sustainability. Equipment have been purchased, delivered, and installed as planned but it was time consuming at an initial stage of the Project because of long procedures and there was a shortage of teachers of Architecture Department at the time of evaluation. Inputs from Japan and Pakistan have been mostly appropriate and efficiently utilized except for some issues: delay in fielding Japanese experts in some posts and frequent changes of C/Ps in the 1st half of the Project.

(4) Impact

Impact is *potentially high if TEVTA continues its commitment to sustain and disseminate the project outputs*. The Overall Goal is likely to be achieved because the introduction of the project outputs has already in progress, but sufficient support is required for proper introduction and implementation of the revised curriculum. No hampering factors for achieving Overall Goal is identified concretely as yet, but for wider dissemination throughout to Punjab, huge resources are required particularly for replacing latest machines and providing teachers training. As a ripple effect, introduction of co-education in Architecture Department is first-ever achievement at DAE level of GCT, and giving a notable impact. The first batch of female students (21 graduates) successfully graduated in 2013.

(5) Sustainability

Sustainability is *potentially high but subject to TEVTA's commitment*.

Policy and institutional aspect: Policy environment/institutional settings are likely to continue favourably both at federal and provincial levels, as mentioned in the Relevance.

Organizational and financial aspect: Organizational development of management aspects of GCT R.R. has been steadily progressing including the development of various data base and creating Career Section etc. However, the position of Career Section is still not fully institutionalized under TEVTA/GCT R.R. including staffing and budget appropriation. It is necessary to define the roles and responsibilities, scope of work, personnel and budgets for sustainability of Career Section and job placement services by GCT R.R. In addition, TEVTA's organizational capacity strongly affects the sustainability of GCT R.R. as well as for other TVET institutions to adopt good elements of the Project, and therefore capacity building of TEVTA is further required. On financial aspect, according to the past 5-year budget records of GCT R.R. the amounts from TEVTA have been steadily increasing. In addition to such TEVTA budget, GCT R.R. has

Institute Own Funds which can be used at Principal's discretion. Considering such budget status, it is most probably that necessary costs after the Project will be met by Pakistan Side.

Technical aspect: Overall, C/Ps at GCT R.R. have been developed to be able to conduct the courses of the revised curriculum. They have become technically independent in this regard. For maintenance of equipment in Mechanical Department, local agents are available for all the newly introduced equipment, and they are usually introduced in the local industries. Therefore, maintenance can be done locally without technical problems. For maintenance of equipment and facility in Architecture Department, technical capacity of teachers is sufficiently developed to be able to maintain.

Dissemination mechanism: Dissemination into other institutions in Punjab is primarily the TEVTA's responsibility. TEVTA is preparing a plan of actions. Dissemination at federal level is beyond project purview and Pakistan side will take care. Since the curriculum developed under the Project has become national curriculum, NAVTTC is in a position to be responsible for proper dissemination.

3-3 Contributing Factors

(1) Factors related to planning

- 1) Completing Training Management Cycle (TMC): Completing the whole Training Management Cycle (TMC) for three years has been effective in terms of assuring quality and relevance of the revised curriculum as well as enhancing capacity development of teachers and C/Ps, and organizations.
- 2) Comprehensive project design: The inter-related three components of the project, such as college management including industries linkage, TMC, and the job placement support, which provides a comprehensive project design for strengthening GCT R.R. as CoE, have a synergy effect to provide quality technical education.
- 3) Good Training Needs Assessment (TNA) and Plan of Operations (PO): Conducting a high-quality training needs assessment has provided a good picture of industrial needs and has promoted college-industry linkages. Making a feasible and detailed plan of operation in the beginning of the project has also been effective in terms of project management. All these aspects have accelerated the proper implementation in the later project period.

(2) Factors related to implementation process

- 1) Consistency at GCT R.R. and TEVTA: Project Focal Person in TEVTA has remained the same throughout the project period, and the present Principal (PM) has been in the office for the last 3 years. At departmental level, TEVTA has complied with a basic policy not to transfer teachers who got trained under the Project in principle. All such arrangements have maintained consistency of the project management and implementation particularly for the 2nd half of the project.
- 2) Regular Meeting on Project Management: Communication with regards to project management has been improved compared to the time of MTR by establishing monthly meetings chaired by GM-Operations (PD) with attendance of Principal (PM), TEVTA relevant staff and Japanese Expert Team.
- 3) Commitment and ownership of Pakistan side: Strong commitment and cooperation from authority of TEVTA as well as strong ownership of concerned C/Ps personnel is a contributing factor.

3-4 Hampering Factors

(1) Factors related to planning

Fixing discrepancies between planning and implementation regarding curriculum revision: In the early stage of the Project, the most critical discrepancy was related to the system of curriculum revision in Pakistan. First, curriculum revision is not done at GCT level but at TEVTA which is a primarily responsible organization. Second, DAE curriculum is common all over the country in Pakistan. Completely aligning with the formal system was required accordingly.

(2) Factors related to implementation process

- 1) Shortage of Teachers and staff: At Architecture Department, there are 8 teachers at the time of evaluation out of 13 sanctioned posts and no lab technician is employed. From the both aspects of teacher workload as well as subject coverage, number of teachers is in short.
- 2) Frequent changes of C/Ps: Frequent changes of C/Ps in the 1st half of the Project, together with the problem of recruitment and deployment of trainers (short staffing, transfer and workload) are hampering factors for smooth implementation of the project.
- 3) Delay in fielding Japanese experts: First Chief Advisor was appointed 4 month after the Project commencement, and expert of Architecture was appointed after the 1st year revision of curriculum. Timing of fielding TMC Expert (Apr.-May 2012) would have been done earlier in order to maximize the effectiveness and efficiency of their services.

3-5 Conclusions

Based on the evaluation results, the project purpose is likely to be achieved although there are some efforts to be made continuously towards the end of the Project. It is appropriate to complete the project as scheduled. The Team would like to acknowledge tremendous efforts made by those who have been involved in the Project for the last five years. In the 1st half of the Project, there were lots of ground works to get all the mechanisms on board, particularly to the curriculum revision based on the industrial needs as it was central to the Project design. Based on such foundation, the 2nd half of the Project extended its focuses on strengthening linkages with industries and job placement support which are particular features of the Project. In view of such achievements, sustainability is a next agenda for all concerned to confirm. TEVTA is fully aware of their responsibility. Details are given in the recommendations.

3-6 Recommendations

(1) Recommendations for the rest of the project period

- 1) Integrating Website of Architecture Department into College Website;
- 2) Establishing gender-wise data management for students in Architecture Department;
- 3) Completing and disseminating TMC Manual for relevant users;
- 4) Strengthening Career Section, including defining roles and responsibilities, scope of work, necessary staffing and budget;
- 5) Promoting services by Career Section for students of Architecture Department.

(2) Recommendations for the period after the termination of the cooperation

Regarding the sustainability of achieving the Project Purpose

- 1) TEVTA / GCT R. R. are expected to have and implement a teacher recruitment plan on the basis of the age structure of the college;
- 2) TEVTA / GCT R. R. are expected to make efforts on raising the quality of education under the two shift teaching system, especially improving the quality of the afternoon session;
- 3) TEVTA / GCT R. R. are expected to continue implementing the industrial linkage activities with having an annual plan;
- 4) TEVTA / GCT R. R. are expected to continue holding dissemination seminars regularly, so that the knowledge and experiences of GCT R.R. are shared within other courses of the college and other GCTs in Punjab;
- 5) TEVTA / GCT R. R. are expected to strengthen support system for female students in Architecture, including the job placement support;
- 6) TEVTA / GCT R. R. are expected to secure the necessary budget on promoting the quality of education of GCTs.

Regarding the sustainability of achieving the Overall Goal

- 1) TEVTA / GCT R. R. are expected to strengthen the Career Section in the college and other GCTs in Punjab, including deployment of the full-time counselor;
- 2) NAVTTC/TEVTA are expected to start preparing for the next curriculum revision timing from 2014;
- 3) TEVTA is expected to evaluate the situation of the adopted revised curricula among the other GCTs and take necessary actions based on the result of evaluation;
- 4) TEVTA is expected to identify the fields and skills of other GCTs in Punjab for expanding the knowledge and experiences of the Project gained in GCT R.R.⁵;
- 5) The Pakistan side is expected to strengthen PR activities to disseminate lessons learnt of the GCT R.R. among other parts of Pakistan.

3-7 Lessons Learnt

The following findings within the project can be utilized for the similar projects in the future:

- 1) Completing the whole Training Management Cycle (TMC) for three years enhances capacity development of teachers and C/Ps, and organizations;
- 2) The inter-related three components of the project, such as college management including industries linkage, TMC, and the job placement support, have a synergy effect to provide quality technical education;
- 3) Conducting a high-quality training needs assessment and to make a feasible and detailed plan of operation in the beginning of the project accelerates the proper implementation in the later project period.
- 4) In revising curriculum, the formal system of curriculum development and revision of the partner country needs to be well confirmed in advance, and accordingly organizes the implementation structure completely aligning the system.

⁵ The Chairperson of TEVTA requested for further cooperation when the mission members visited his office on 16th of September 2013.