

Activities under Output 2: Improved operational mechanisms over TVET delivery through lessons learned from piloting CBT on mechanical engineering.	
Activities	Outline of activities
2-1. Select pilot training Institutions for demonstrating CBT on mechanical engineering focusing on the selection of a specific training course for each institution	<p>(1) There were several criteria for making selections of the pilot institutions. These are as follows:</p> <ul style="list-style-type: none"> <li>-Institutions have the minimum facilities and equipment for implementation of CBT.</li> <li>-There are enough facilitators for the pilot CBT activities, and institutions can manage the CBT.</li> <li>-Institutions are located in places that can be monitored, and have easy access to finding workplace experience</li> </ul> <p>(2) From the above criteria the ATTC, NVTI-PTC, and A-Poly were selected as pilot institutions in 2007.</p>
2-2. Develop training plans on mechanical engineering (Welding, Electronic engineering, and Plant engineering)for each CBT piloting Institution	<p>(1) Training plans for each piloting institute was prepared in 2009. The curricula and syllabi ("Unit Specification" of CBT method) for each pilot school was prepared through several TOT workshops.</p> <p>(2) More than 80 CBT workshops have been held since 2008 (most of them including the targeted pilot institutions).</p>
2-3. Develop curriculum (syllabi) on mechanical engineering for pilot TVET Training Institutions	<p>(1) ATTC/NVTI-PTC; the development of curricula and syllabi (Unit Specification, Unit Specification Breakdown, and Lecture Plan) for classroom activities were completed by the end of March 2010.</p> <p>(2) A-Poly; the 2<sup>nd</sup> year curricula and syllabi for classroom activities were completed by the end of March 2010, and the 3<sup>rd</sup> year curricula and syllabi were completed by the end of August 2010.</p>

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<p>2-4. Develop operational guideline and training materials for Industrial-attachment programme on mechanical engineering</p>	<p>(1) The Workplace Experience Program was discussed at the CBT harmonization Conference as part of the CBT program. Besides, credit value for Workplace Experience has been identified in the Finalized Harmonization Reports.</p> <p>(2) The operational guideline for Workplace Experience Learning was developed between April to May 2010, including a format for the Memorandum of Understanding (MOU).</p> <p>(3) A three-month workplace experience learning has been conducted as follows:  ATTC: August to October (16 students were accepted by 9 companies)  NVTI - PTC: August to November (33 students were accepted by 15 companies)  A-Poly; July to October (19 students were accepted by 9 companies)</p>
<p>2-5. Approve CBT materials (syllabus and curriculum) by ITAC and the industrial authority</p>	<p>(1) The unit specification and its program was compiled in August 2010, and approved in November 2010 by the ITAC Subcommittees (SITACOs).</p> <p>(2) The SITACOs also examined all CBT Training Package for approval in November 2010.</p>
<p>2-6. Develop the TOT (Training of Teachers) materials CBT piloting</p>	<p>(1) Various types of TOT materials for CBT methodology have been developed since June 2008. These materials were compiled as <i>CBT TOT material package</i> at the TOT workshop (Effective delivery of Technical and Vocational Trainings in ECOWAS sub-region) jointly organized by COTVET and ECOWAS in November 2010.</p>
<p>2-7. Conduct and evaluate TOT for instructors at each CBT piloting Institution</p>	<p>(1) Training on CBT, facilitation skills, and trade knowledge are being undertaken by the JICA and local experts throughout the project.</p> <p>(2) Technical transfers by Japanese experts are as follows;  - Welding for ATTC: (Jun.21-Jul.30 2010), (Aug.3-Aug.6 2010), (Jul.6 2010), (expected in Jan. 2011)   - Electronics for NVTI: (Jun.28-Jul.6 2010), (Sep.13-17 2010), (Sep.27-Oct.1 2010), (Nov. 2010)</p>

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	- Plant Engineering for A-Poly: (Jun.28 2010), (Jul. 2 2010), (Sep. 20 2010), (Sep.29 2010), (Nov. 2010)
2-8. Implement pilot training by using CBT material and to evaluate the training	<p>(1) The CBT program at institutions have been periodically monitored by observation of theory and practical classes/trainings.</p> <p>(2) The TVETS project members in charge of CBT monitoring started the monitoring activities in March 2010.</p> <p>(3) An updated monitoring method with new instrument has been used since March 2010.</p> <p>(4) Monitoring of Workplace Experience was implemented by the Project staff with facilitators and assessors at the companies from August to October 2010.</p> <p>(5) As an evaluation, the project team is in the process of collecting information and feed-back from companies.</p>
2-9. Reflect results of M&E at each CBT piloting institution onto the process of formulating the occupational standards and qualification accreditation system	<p>(1) Through the monitoring and evaluation including validation procedures by the SITAC and SITACO, as well as the quality assurance procedures by the NTVETQC and TQAC, the acquired lessons have been reflected and continue to be reflected onto the process of developing the occupational standard setting or qualification accreditation system.</p> <p>(2) Feedback to the policy mechanism of the accreditation system has been undertaken since September 2010.</p> <p>(3) Assessment and internal verification instruments of the CBT were created by in-school training and Workplace experience learning.</p>
2-10. Reflect lessons learned from the above activities onto training activities by other TVET Training Institutions	<p>(1) The project team will compile the lessons learned from piloting, and share with the COTVET and other TVET providers. All the lessons and feedback will be shared between January to February 2011.</p> <p>(2) The developed CBT methodology through the piloting was shared with TVET Trainers, curriculum developers (30 persons in total) at the TOT workshop titled: Effective delivery of Technical and Vocational Trainings in ECOWAS sub-region, jointly organized by the COTVET and ECOWAS in November 2010. A TVET Forum for sharing lessons was</p>

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	<p>also organized in September 2010. The second TVET Forum planned for February 2011 will specifically focus on lessons learned through the CBT Piloting.</p> <p>(3) The monitored and analysed results of the project will be a documented under the title: <i>Plan of improvement of operation mechanism: Lessons learnt, Challenges and Recommendation for Industrial demand driven TVET by Computer-Based Training</i> by February 2011.</p>
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Source: Project Progress Report No.2 (2010)

### 2-3 Achievement of Project Purpose

\* The achievement status of outputs and the project purpose is evaluated by the following five ranks: high, almost high, moderate, relatively lower, and low. Evaluation of the rank is based on achievement of each verifiable indicators and finds from interviews, questionnaires, documents the Project made, and site surveys.

Project Purpose	To strengthen implementation capacity of COTVET and its related institutions for introducing CBT at TVET training institutions in and out of Accra, leading to forming a National TVET Qualifications Framework and Qualification Accreditation System under COTVET
Objectively verifiable indicator	<ol style="list-style-type: none"> <li>1) Occupational Standards on mechanical engineering and training package, including curriculum, syllabus, training modules, training materials to be used at pilot training institutions) is developed.</li> <li>2) Trainees receive CBT at pilot training institutions.</li> <li>3) Pass rate of the trainees on mechanical engineering at each qualifications level of piloting performs better than peers in the traditional system.</li> <li>4) COTVET fully established and accepted as a leader in the TVET sector.</li> <li>5) COTVET staff able to deliver mandate of COTVET</li> </ol>

- The level of the achievement of the project purpose is evaluated as “almost high”.

- Thanks to the effort of COTVET and the pilot institutions, with the support of the project staff and experts, the project showed significant progress in particular for the past one year after the mid-term review was conducted. Considering the key word on which the project purpose focused; “to strengthen” capacity of COTVET and related institutions, it is evaluated that the project successfully strengthened the capacity of these newly established organizations. However, if these organizations had been established with the reasonable required number of staff as originally planned, the level of implementation capacity would have been higher. In this line, the evaluation of the achievement level is lower than “high”.

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- The following show the achievement status of each respective indicator:

- Indicator 1: the occupational standards of the pilot trades have already been developed and approved by the ITAC, and are now awaiting approval by the COTVET Board. The Training packages of the targeted trades have also been established except the package for the third year, and some parts of the second year for A-Poly.

- Indicator 2: the following table shows the indicators achievement:

Institution	Number of trainees
ATTC	<ul style="list-style-type: none"> <li>&gt; The original planned number of trainees: 20</li> <li>&gt; Trainees who accomplished in-school training: 16</li> <li>&gt; Trainees who accomplished both in-school training and workplace experience learning: 16</li> </ul>
NVTI - PTC	<ul style="list-style-type: none"> <li>&gt; The original planned number of trainees: 40</li> <li>&gt; Trainees who accomplished in-school training: 33</li> <li>&gt; Trainees who accomplished both in-school training and workplace experience learning: 33</li> </ul>
A-Poly	<ul style="list-style-type: none"> <li>&gt; The original planned number of trainees: 20</li> <li>&gt; Trainees who accomplished in-school training: 18</li> <li>&gt; Trainees who accomplished both in-school training and workplace experience learning: 18</li> </ul>

- Indicator 3: to judge the achievement of indicator 3 is difficult because the concept of “pass” required for the CBT approach differs from the traditional scoring scheme. In addition, economic factors are a major reason for students to dropout of institutions in most cases. It is difficult to judge if the mode of education, either CBT or traditional, can affect dropout rates.

- Indicator 4: the COTVET and standing committees have been formally established, although the official set up was belated.

- As to the recognition of COTVET, although there is still more need for awareness creation and public relations activities, many stakeholders now recognize COTVET as a focal coordinating body for the TVET sector owing to a series of activities including the TVET seminars, workplace experiences, and others.

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- Indicator 5: COTVET is still facing challenges to develop organizational capacity including the reinforcement of staff numbers. There is still a gap between the indicator's requirement and the actual situation.

#### 2-4 Achievement of Outputs

Output 1.	COTVET is established and related structures acquire improved institutional and implementing capacity to deliver TVET under COTVET
Objectively verifiable indicator	<p>1) COTVET and its structures such as ITAC, NTQC and TQAC are established, and 3 Standing Committees are working properly by COTVET.</p> <p>2) Industry participation in delivery of TVET enhanced.</p> <p>3) CBT model for Ghana developed.</p> <p>4) Occupational Standards and Qualification Accreditation system developed.</p>

- The achievement level of output 1 is evaluated as "moderate".

- Through the project activities, COTVET and the standing committees have developed their implementing capacity with institutional setting to deliver the CBT approach. Owing to the effort, the institutional setting with the necessary formats and documentation has significantly progressed. The forward steps taken for the past year is noteworthy, but again, due to the lack of manpower of COTVET, it has not been able to fully function as stakeholders expected. In this line, the achievement level is slightly lower.

- The following show the achievement status of the respective indicators:

- Indicator 1: the standing committees: ITAC, NTVETQC, and TQAC were established in April 2010.

- The standing committees have prepared procedural documents for implementation of the CBT approach. As of the terminal evaluation, the committees had made 15 draft documents, out of the 30 documents supposedly to be made by the end of the project. In addition, the qualification framework for the TVET has been developed among the committees, but some of the key issues including awarding, accreditation and assurance system are still under discussion with stakeholders outside of COTVET.

- The COTVET's function was also developed in various aspects. COTVET has currently been developing its cooperate plan as an organizational master plan. In addition, COTVET has prepared a human resource development manual with an employment plan.

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- Indicator 2: the progress of industrial participation is obvious. Various industries are now participating in the standing committees, as well as receiving students in their companies as venues for workplace experience.

- Indicator 3: The CBT model for Ghana was officially approved by the COTVET board in November 2010, named as the harmonized CBT model in Ghana. In this line, it is evaluated that the base of the Ghana model was successfully established. However, verification of the model has not been completed yet because there are some issues which are still awaiting proper legal approval (e.g. Regulation for registration of assessors/verifiers, Criteria for the registration of Trade Association and professional bodies, etc).

- It is concluded that the base of the CBT model for Ghana has been completed, but the model has not reached a level which can ensure smooth implementation.. More time is required to judge the completeness of the model.

- Indicator 4: the achievement statuses are different for the occupational standard and the accreditation system. The occupational standards on the pilot trades have already been approved at the SITACOS, and the ITAC, now awaiting submission to the COTVET Board for the final approval process. The accreditation system also progressed during the project period, but has not yet reached a final consensus in the standing committees with other stakeholders.

Output 2	Improved operational mechanism over TVET delivery through lessons learned from piloting CBT on mechanical engineering
Objectively Verifiable Indicator	<p>1) Training materials on mechanical engineering, including curriculum, training modules is developed at pilot training institutions.</p> <p>2) Demand-oriented TVET with CBT is conducted on mechanical engineering at pilot training institutions.</p> <p>3) Trainees at pilot training institutions take part in industrial-attachment training programs.</p> <p>4) Training of Trainers (TOT) materials developed</p>

- The achievement level of Output 2 is evaluated as "high".

- With intensive work at each pilot institution, the operational mechanism of the CBT approach was developed, enabling its application to other TVET institutions as a CBT model.

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- The following shows the achievement status of the respective indicators:

- Indicator 1: The Training materials have already been developed in the three pilot institutions for the targeted trades and levels. Only the textbooks for the third year and parts of the second year for A-Poly have not yet been completed..

- Indicator 2: The CBT approach has been piloted in the three pilot institutions as follows:

	Trades	# of students	Period
ATTC	Welding	20 (now 16)	Oct 2009-
NVTI - PTC	Electronics	40 (now 33) 2 classes	Jan 2009-
A-Poly	Plant engineering	20 (now 18)	Oct 2009-

- Indicator 3: all the trainees participated in workplace experience at 19 companies in and out of Accra. Some of the companies signed an MoU with the COTVET in order to secure outputs as well as smooth implementation of the workplace experience. It is noted that there are low motivation for some company's staff to receive and train students on the field for the workplace experience program of the CBT approach.

- Indicator 4: The TOT materials on CBT methodology have been developed. The series of materials were used in the ECOWAS ToT workshop, which invited facilitators from TVET institutions in Ghana in November 2010.

#### Achievement of Output from technical view

##### ● Training Documents

The training programmes which have been piloting at the three training Institutes for the CBT system have been examined by the Evaluation Team. The Team found the following;

##### 1) CBT Methodology

Development of the CBT method and its piloting has resulted in the following documentation development:

- ① Occupational Standard
- ② Unit Specification
- ③ Unit Specification Breakdown
- ④ Lecture Plan

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⑤ Learning Material / Textbook / Handout

⑥ Assessment Instrument

⑦ Assessment Marking Guideline

It is noted that the arrangement and development of these documentations are also discussed and organized by the Pilot Programme Technical Team members (Facilitators) themselves.

In the ATTC, Status of Documentation is "High" though the Documentations for the Social Study are not compiled yet as this subject is exempted in the Pilot Programme.

In NVTI Pilot Training Centre, all the documents for the core subjects (Technical subjects) were completed as well. Status of Documentation is "Almost High", but for the Generic subjects of English, Entrepreneurship and Mathematics are not yet finalized as the Assessment marking Guidelines are still under preparation.

In Accra Polytechnic College, the progress is a little behind the schedule. A matter of fact, Status of Documentation is "Moderate" as most of Documentations only are compiled and some of others are not started yet.

Although the progress in each institute is not completed exactly, the compiled documents are well organized as mentioned above.

- CBT Regulating Documents authorized by the Authority

The system for CBT regulating documents is going on well, and the COTVET has authorized some, however, the products of the COTVET and its standing committees in terms of regulations will have to be authorized as required by the legal procedures of the Ministry of Education. In addition, the arrangement of CBT accreditation by COTVET should be done as soon as possible because the students who have received the CBT course will be graduating soon.

In addition to the above procedure, the Institutes need to coordinate more closely and regularly with the industries that cooperated to develop the Occupational Standard, in order to regularly update on new and emerging technical trends.

- Machines and equipments

Through the development of the CBT method system, all the machines and equipments required have been installed and maintained to perform technical training activities in ATTC and NVTI Pilot Training Centre. Especially in for the Welding Course in the ATTC, the Workshop arrangement is good especially the painted signs for the safety zones and shielding curtains against the stimulated light caused by the arc welding.

However, the installation methods on machines in the Accra Polytechnic are not so well organized

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yet. This is because the equipments provided by JICA are temporary installed in the maintenance section, not in the students' workshop as expected. And, the Universal Milling Machine is not installed yet as the machine was damaged before the installation; it is to be replaced with a new machine.

## **2-4 Implementation Process**

### Communication among organizations/personnel on the project implementation

- The Project has regular communication platforms such as weekly and monthly meetings to share information on the progress of the Project implementation. It is judged reasonable to have weekly meetings internally; whose various activities are proceeding rapidly through the coordination of the related personnel's schedule.
- On the other hand, the frequency of the meeting with COTVET is on a monthly basis, though there was no serious communication gap between COTVET and the project owing to both sides' efforts to reinforce communication opportunities.
- In addition, the project established its branch in the COTVET's office with some officers. The arrangement also effectively promoted communication between the project and COTVET.

### Monitoring system

- A monitoring system has been established for the project. In addition to the regular monitoring of the project activities, the project has paid attention to feed-back obtained from participants of the various types of trainings and workshops organized. The collected information is now in the process of being sorted by the project staff. Once ready the compiled feedback will be shared with related personnel.

### Counteractions to more effective implementation of the Project

- Responding to the recommendations made by the mid-term review mission, the project drastically changed the manpower inputs from an assignment of two experts: chief advisor and coordinator, to an expert team composed of 10 experts in total and other Ghanaian technical officers.
- Since the project requires wide-ranging activities, from assistance to develop capacity and institutionalization of COTVET, to the piloting of CBT at each pilot institution, the increase of experts under the one umbrella team is evaluated as a reasonable amendment, which actually contributed to the acceleration of the achievement of outputs.

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### 3. Results of Review

#### 3-1 Evaluation by Five Criteria

##### 3-1-1 Relevance

###### Policy (Ghana)

- Developing 'human resources for productivity and employment are central to the development of the country', according to the Medium Term National Development Policy framework, titled: *Ghana Shared Growth and Development Agenda (GSGDA) 2010-2013* (pp. 94). The predecessor GPRS II (2006-2009) also supported human resource development for industrial development as a key to Ghana's strategic development, especially for a country aiming for middle-income status by 2015.

- Within the TVET sub-sector, Ghana has been continuously reforming the sub-sector since 2000, with the aim to strengthen TVET delivery to be demand driven and practical. In order to move away from the mostly theory based, sometimes outdated supply driven curriculum, obsolete equipment, and courses with little input from industry being run. As well as there being little equivalences between courses, little relevance to the world of work, and disparate provisions being made by a number of TVET institutions; all as identified by the study for the development of the Master Plan to strengthen Technical Education in the republic of Ghana 2001.

- In a bid to respond to these identified challenges, subsequent policies by the GoG set out the direction for the TVET system to be 'demand-oriented and competency-based' draft TVET policy 2004, 'to adopt the competency-based training (CBT) method' Education Reforms 2007, 'to facilitate collaboration between training providers and industry to promote demand driven curriculum development and placement' COTVET act 2006, and ultimately the subsequent establishment of the COTVET in 2007.

- The country's Education Strategic Plan (ESP) 2003-2015 also has TVET as one of the four focus areas in the education sector, together with improvement of access, quality and educational management. The recently revised ESP II (2010 – 2020) also reiterates the importance of TVET through the capture of the TVET policy, which aims to 'improve the training quality and relevance'. From the forgoing developments, the project, which seeks to support strengthening the capacity of COTVET to implement demand-oriented TVET through piloting CBT in TVET training institutions, is relevant to the needs of the country, as the project is consistent with the approach adopted by the country.

Nevertheless, much work still needs to be done to raise the awareness of the GoG's adoption of the CBT method both within the wider TVET sector especially for TVET providers, and also within

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related MDAs, as the CBT is a new concept in the country.

#### Policy (Japan)

- The project is also relevant to Japan's Country Assistance Program for the Republic of Ghana (2006), as it is within the cooperation program for the Support of Human Resources Development needed for Industrial Sector. Under its Strategic Objective four (SO4): Human Resource Development for Industrial Sector, within the priority development agenda of Promoting Industrial Development. The focal cooperation area of the policy is to support capacity development of the country's educational system from classroom to administration in order to improve TVET and science and mathematics education.

#### Appropriateness of target group/counterpart (COTVET)

(Needs of COTVET)

- Development of organizational as well as individual capacity of COTVET was the most prioritized issue to be tackled for the newly established organization COTVET.

- The project's activity components, which are varied from organizational capacity development, institutional building with a series of documents/formats to implement CBT approach, would directly contribute to forming the organizational and institutional base of COTVET. In this line, the project's activities met with the needs of COTVET, particularly taking into consideration that COTVET was in the launching stage as the focal TVET coordinating organization.

(Consistency with government's direction)

- Under the government's enactment of the COTVET act, only the COTVET can play the focal coordinating role in the TVET sector of Ghana. Although the delay of the organizational set-up of COTVET has had an impact on the performance of the project's outputs, it is evaluated that COTVET is selected appropriately as the counterpart organization in order to achieve the project purpose under the government's direction.

#### Appropriateness of target group/counterpart (TVET institutions in general)

(Needs of TVET students, facilitators and companies)

- The industrial sector in Ghana had requested TVET institutions to upgrade the quality of technical education because many of the graduates received were not able to satisfy the technical level required by industries when they started work. At the same time, the gap existing between industries' expectation and graduates' technical level led to difficulties for TVET graduates to find jobs. The TVET institutions, therefore, had recognized the necessity to improve the education

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system to fill the gap.

- Reflecting such needs of TVET institutions, the project used the CBT approach, an approach which places emphasis on more hands on technical training including work place experience at industries. Since the approach can ensure to upgrade students' technical level more than the traditional TVET approach, it is regarded that the project's activities has met with the needs of the TVET institutions.

#### Appropriateness of the target group/counterpart (three pilot institutions)

- The targeted three pilot institutions are evaluated as being of reasonable selection.

- The project developed the criteria to select the institutions as follows: (1) should have physical environment to enable the conduct of the CBT approach; (2) have minimum facility and workshops in particular; (3) have a certain number of facilitators; (4) be located in reasonable distance for the project to monitor activities.

- The trades targeted at the institutions were also selected from the viewpoints of: (1) the trades that Japan has the technical experience and knowledge; (2) the trades that have strong linkage with developing industrial fields in Ghana; and (3) to avoid duplication with other Development Partner's activities.

- Looking at the performance of the pilot institutions, it is confirmed the selection was appropriate for the project implementation.

#### Advantage of Japanese technologies

- The technical instruction at the pilot institutions fully utilized Japanese technical advantage and experiences because the fields: plant engineering, electronics and welding are one of the major techniques that Japan has dedicated efforts to upgrade their technology for a long time. In addition, the concepts such as 5Ss and Kaizen are also effectively introduced in their instruction. In this line, the project effectively adopted Japanese technical advantage and experiences particularly at the pilot institutions.

- On the other hand, the CBT approach has not been a popular method in the TVET sector in Japan, resulting in less knowledge and lessons accumulated on the CBT method. In order to reinforce the expertise on CBT, the project assigned local/international experts who had plenty of experiences on the CBT approach in African countries. - This assignment successfully enhanced the performance of the project activities. In this line, the project may not be labeled as having "effective use of Japanese technical advantage". However, the implementation of the project did not receive any negative influences owing to such manpower arrangement.

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### 3-1-2 Effectiveness

#### Achievement of Project purpose and outputs

- The Project purpose is prospected to be achieved at an “almost high” level by the time the Project period ends.

- The achievement levels of the outputs are different for Output 1 and Output 2. The Development of organizational capacity of COTVET as well as the institutionalization is expected for output 1. The project has proceeded to the expected level rapidly in the past one year, as set by the indicator of the PDM. However, there are remaining tasks still to be completed as set in the PDM indicators. In this line, the achievement of output 1 is evaluated as moderate.

On Output 2, the piloting activities on the CBT approach in the three TVET institutions has steadily progressed and showed valuable results, able to be applied as lessons towards the institutionalization of the CBT approach. The achievement level of output 2 is evaluated as “high”.

- The details of the output 2 achievements are shown in section 2-3: Achievement of outputs and 2-4: Achievement of project purpose.

### 3-1-3 Efficiency

#### Input (manpower)

(Japanese manpower input)

- As noted in the counteraction taken by the project in the course of implementation, the project drastically changed the manpower inputs from the assignment of two experts: chief advisor and coordinator to an expert team composed of nine experts in response to the recommendations of the mid-term review mission, and the change successfully contributed to the progress of the project’s achievement.

- Additional manpower inputs of experts at each technical field enhanced the quality of CBT approach from the aspect of trainers’ training. Their technical assistance provided valuable feedback to make training packages as well.

- As to the timing of the experts’ assignment, the project placed at least one expert to stay in Ghana during the project period so as to keep monitoring activities. The timing is evaluated reasonable in this line.

- In addition, the assignment of international experts on the CBT approach helped significantly to enrich the contents of the project activities.

(Ghanaian manpower input)

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- COTVET has made staff recruitment efforts in order to fully function as the counterpart organization for the project. The effort is highly evaluated, though, the gap still exists, and the insufficient number of staff has led to multiple workloads for the respective COTVET staff. This has resulted in the counterparts facing serious challenges in sharing their time with the project activities.
- This led to fewer chances to provide technical transfer to COTVET, creating another feature of the project as a consultancy service in parallel with the basic concept of technical cooperation project.
- The pilot institutions provided sufficient manpower to carry out the project. Their dedication for the establishment of the training packages was excellent, and contributed to achieve the outputs.

(Other manpower input (local consultants, etc))

- Local staff employed by the project contributed to the achievement of the outputs and the project purpose. They functioned to reinforce manpower of COTVET sometimes and to keep monitoring activities along with logistical support for all the activities.
- In addition, the manpower input of the Ghanaian technical officers on the CBT methodology is also noteworthy as a contributing factor to raise efficiency.

Input (material and facility)

The Project provided equipment for training on CBT approach to the three pilot institutions. The variety of equipment is evaluated appropriate for training activities, but the arrival of some equipment was delayed due to troubles from the suppliers' side. This procurement problem affected the training schedule in the pilot institutions (A-Poly felt the impact most among the three institutions).

Input (training in Japan and the third country)

- The Project provided training opportunities in Japan and third countries. Training trips to South Africa and Botswana were organized for some representatives of COTVET and the pilot institutions. The visits to both countries; South Africa and Botswana where the CBT approach have been applied for decades gave the participants essential ideas to apply to Ghana. Realization of the effect of the training is expected in the near future (the training was very recently carried out in October 2010).
- The Project sent trainees after collecting feedback from administered question topics to colleagues of the participants. Such prior preparation is evaluated as an effective device to raise the efficacy of the training.

Input (Budget)

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