CIDA/EEA Transmission Training Project

Phase I - 344 / 11787

Impact on Beneficiaries

Revised Final Report

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Table of Contents

II. Scope of Work & Methodology

III. The Sample

IV. The Main Findings

V. Comparison of Findings with Previous Evaluations.

VI. Main Conclusions.

Annexes:

Executive Summary

This report describes the scope of work and methodology used in studying phase I of CIDA's Egyptian Electricity Authority Training project, through the application of CIDA's Performance Measurement Model. The study concentrates on the impact on the beneficiaries. Emphasis is placed on the following criteria: achievement of intended results, beneficiary ownership and satisfaction, sustainability of investment and benefit, and cost effectiveness.

After the Introduction in section I, we deal with the Scope of work & Methodology in section II, the Sample in section III and the Main Findings in section IV. Comparison of findings with previous evaluations of the project is conducted in section V, and the main conclusions are summarized in section VI. Background material and data are relegated to annexes, following the text of the report.

The assessment is based on field-work using a purposive sample of 38 individuals related to the project: EEA senior management, zone managers, trainers and trainees.

The main finding of the study is that the project has achieved its intended results with distinct variations in the attitude of various groups of beneficiaries. There was a division of opinion between senior EEA managers and zone managers about sustainability. Cost effectiveness, though important, was a largely neglected aspect of the project.

Our study also confirms that relations between the Egyptian and the Canadian sides was co-operative throughout.

One decided achievement of the project is the upgrading of the Cairo South Training Center to become the Network Training Center, through which training has gained substantial momentum. This should help EEA increase its capacity to supply electricity to the nation in the face of rising demand.

I. Introduction:

CIDA has developed a bilateral performance measurement model as a learning tool to assess the results of its bilateral projects. The model is intended to serve two purposes: First, to measure the achievement of CIDA funded projects; and Second: to help CIDA understand why and how the intended results were or were not attained.

The purpose of this report is to conduct a study of phase I of the CIDA funded Egyptian Electricity Authority (EEA) Transmission Training (CETT) project. This is to be done by applying CIDA's Performance Measurement Model so as to determine whether the model is relevant, applicable and useful in assessing the effectiveness of projects in CIDA's bilateral program in Egypt.

Building on documents provided by CIDA and information obtained from EEA

regarding CETT - Phase I, the team collected and analyzed field data taking as a basis the sections of the model which relate to impact on beneficiaries. The starting point of the exercise was the set of questions in CIDA's "Data Gathering Instrument" (DGI) under section 2: Criteria for Assessing Results. Such questions are listed under the following five performance criteria.

- Achievement of intended results (2.1)
- Relevance to the needs of the beneficiaries (2.2)
- Beneficiary ownership and satisfaction (2.3)
- Sustainability of investment and benefits (2.4)
- Cost - effectiveness (2.5)

The DGI was thoroughly examined in order to tailor the questions to the specific case of the CETT project. This is explained in the section dealing with methodology. A data collection instrument (DCI) was designed to serve as guidelines for field interviewers. It consisted of six main sections comprising 40 questions in total (see Annex VII) for the English translation of the DCI.

A purposive sample of 38 individuals was selected on the basis of certain criteria which are detailed in section III (The sample).

It was decided, for reasons explained in the Report on Field Work and Methodology, to focus the study on NTC, NECC and two of the seven electric zones - namely Cairo and Mid Delta.

Naturally, this sample had to include top management of EEA, NTC and the two zones. These were interviewed by the consultants. The selection of the additional individuals to be interviewed went through a number of stages, starting with a list provided by EEA of trainees in the various zones, NECC, and trainers/instructors at NTC,. Because of labour mobility/turnover at EEA and the fact that many individuals originally selected for the sample were found to be no longer on board,

many changes had to be made to ensure a meaningful sample. (The glaring case here is the Sakr Kuraish substation, where out of a total of 8 engineers / technicians trained under the project, only 2 remained on site). The basic data on the sample are presented in detail in Annexes IV, V and VI.

According to its Terms of Reference, the study, is supposed to cover the main elements of the project, namely:

- CSTI/NTC training (secondary school, technicians, graduate engineers.
- Field Training.
- Fellowships.
- Maintenance procedure information system (MPIS).

However, in the course of the study it turned out that secondary school training is done jointly with the Ministry of Education (MOE) and students are actually enrolled in schools belonging to MOE who do their practical/ hands-on training on the NTC facilities. It proved impossible to get information on the total number, or the whereabouts, of this group. Consequently it was decided to drop it. Also, there was actually very little field training under Phase I of the project, and what there was was more like field visits rather than training. finally, the MPIS component of the project was never implemented in Phase I. In actual fact, the project mainly centered around training at the CSTI/NTC (involving engineers and technicians only, since craftsmen were not trained during Phase I) and fellowships. According to information supplied by EEA a total of 1101 individuals had trained under the project, 38 of these had training fellowships in Canada for NTC trainers / instructors. Our sample thus amounts to 3.5% of the population (See Annex I). The Annex table gives details of the number of trainees at NTC, NECC and the seven electricity zones.

II. Scope of Work and Methology:

The purpose of the field work was two-fold: to assess the impact of the CIDA/EEA Transmission Training Project (CETT, Phase - I) on the beneficiaries, and to evaluate the Data Gathering Instrument (DGI) proposed by CIDA. In particular, for project-impact assessment, the field study was designed to provide answers to the following questions (the numbers as stated in Terms of Reference TOR):

(2.1) Has the (CETT, Phase - I) achieved its intended results?

(2.2) Did the project address the needs of the beneficiaries?

(2.3) Was the beneficiary satisfaction and ownership of the project accomplished?

(2.4) Has the project produced benefits which are sustainable?

(2.5) Were the resources dedicated to the project used cost-effectively?

For evaluation of the DGI, the field work set out to test the suitability and effectiveness of the model to provide answers to the questions stated above. The outcome of the field test of this instrument is expected to be the basis for amendments, additions and/or deletions to the model to render it more suitable.

II.1: Methodology:

After considerable deliberation and with the extremely tight time schedule in mind, the beneficiaries were classified into four main categories:

1. Senior management at the headquarters of EEA and management of NTC (who were more actively involved in planning and in more direct contact with the Canadian side).

2. Zone manager and management of NECC (those are the direct beneficiaries who employ the trainees)

3. NTC Trainers (who are actually the backbone of the project and the ones directly involved in training).

4. The trainees (as the main vehicle for fulfilling the project objectives).

With emphasis on the impact on beneficiaries as one of the consultancy's main outputs, five main issues in the Data Gathering Instrument (DGI) "were considered to be the most relevant to assessing impact on the beneficiaries. These are:

- Achievement of intended results.
- Relevance to the needs of the beneficiaries.
- Beneficiaries ownership and satisfaction.
- Sustainability of investments and benefits.
- Cost effectiveness.

For each issue, a number of the questions listed in the DGI was selected as being more relevant to the beneficiaries. More detailed questions (probes) were formulated under each question. Finally the questions to be addressed to each group were identified. Annex VII gives a summary of the selection process, while the attached data collection instrument (DCI) lists all questions (probes) used in assessing the impact on the beneficiaries and in checking the CIDA "Instrument".

There was some discussion as whether it might be worthwhile to address all questions to all the persons interviewed (given that responses of some groups of individuals to certain questions may be considered inappropriate). It was finally decided to do so with the clear understanding the such responses will be viewed mainly as indications of the perceptions of those individuals concerning the issues involved. This could be of value in providing useful information on the long-term sustainability of the project and the degree of ownership, since these depend to some extent on the perceptions of individuals in such groups(*).

II.2. Data Collection Instrument:

The DGI served as the point of departure for designing the data collection instrument (DCI). It was thoroughly examined in the light of the specific characteristics of the (CETT - Phase I) project. Since the project involved a large variety of beneficiaries, the design of the instrument has to specify very clearly which questions will be discussed with each group. This was made possible with the help of a check list (Annex VII). The instrument had also to take account of the various components of the projects, namely:

SCTI/NTC training;

Field training;

Fellowships, and

Equipment.

The target groups/individuals are the following:

EEA Management

Cairo Zone Management

Mid Delta Zone Management

NTC Management

Trainers / instructors

Trainees in Cairo, Mid Delta and NECC.

In order to reflect all these concerns / requirements the instrument was divided into six main clusters. Cluster I deals with the basic data / information about the interviewee, and clusters II - V reflect the main issues of CIDA's DGI (2.1 - 2.5; issues 2.1 & 2.2 were combined into one). Finally cluster VI was designed to reflect the views of the interviewee both regarding the project in general and in connection with the instrument applied.

Cluster I: Basic data of interviewee, including: name, age, degree / education, profession / job, marital status, domicile and training.

Cluster II: Achievement of Results and Relevance to Needs, covering achievement of intended results, main outputs of the project and contribution of the Egyptian and Canadian sides to success / failure.

Cluster III: Beneficiary Ownership & Satisfaction, dealing with beneficiary satisfaction and evidence of ownership of the project.

Cluster IV: Sustainability of Investment, reflecting the views of interviewee regarding the sustainability / potential sustainability of investment and benefits.

Cluster V: Cost-Effectiveness, discussing the value of the project in terms of economy and efficiency.

Cluster VI: General Assessment, addressing the interviewee's opinion about the project in general and about the data collection instrument.

The initial result was a data collection instrument of some 40 questions in 14 pages (see Annex IX for the original in Arabic and Annex VIII for an English tranlation)..

II.3. Selection and Briefing of Field Workers:

Special attention was given to the selection and briefing of field workers, particularly in view of the time constraint. A team of experienced researchers headed by Dr. Azza Korayem of the National Center for Social and Criminological Research (NCSCR), was charged with the field work (see Annex II for a short CV of team leader and a list of the team). The team underwent intensive briefing at the offices of IDRC for 8 hours, intended to partially substitute for pre-testing (which could not be done because of the very severe time constraint). During that intensive briefing the general overview of the project, its objective, targets and main components were explained. Four documents were also handed out as briefing aids: (I) a map illustrating the national electricity network; (ii) a chart indicating the organizational structure of EEA and showing the two sample electricity zones out of the seven zones making up the national electricity network; (iii) a preliminary Arabic version of the data - gathering instrument; and (iv) the check matrix relating the impact-assessment issues to the various target groups (Annex VII).

It was made quite clear to the field workers that the purpose of the exercise was more to test the CIDA "Data Gathering Instrument" than to assess the project itself. They were asked to keep an open eye on any problems / suggestions / ideas relating to the strengths / weaknesses of the data-gathering instrument. Each worker was requested to submit an individual report reflecting these aspects.

Some questions of the Arabic version of the instrument were re-phased in the light of discussion during the briefing session. On the basis of this, the data collection instrument list was modified and a final version produced and used in the field work.

III. The Sample:

We aimed for a purposive / indicative sample. Because of the severe time constraint, we had to opt for a size of 35 - 40 individuals. This is not a small sample in the strict statistical sense; it represents 3.5% of the entire target population. The reasons for taking a purposive sample are:

(I) The need to represnet the most important zones within the integrated Egyptian Electricity Network.

(ii) The need to choose the individuals / trainees who have taken the largest number of training courses in order to gauge the extent of benefit and success of project.

(iii) The desire to represent certain specializations / categories, geographical locations, administrative or field positions so as to judge the effectiveness of training from the point of view of the individual.

(iv) The non-availability of up-to-date lists containing names and relevant information on trainees.

III. 1. Electricity Zones Chosen:

All the seven electricity zones making up Egypt's national electricity network sent some of their staff for training through the project. The total number of trainees is about 1100, distributed among the zones as follows: Cairo electricity zone (205 trainees), Alexandria electricity zone (133 trainees), Mid Delta zone (168 trainees), West Delta zone, (178 trainees), South Upper Egypt zone (126 trainees), North Upper Egypt zone (145 trainees), and Canal electricity zone (178 trainees).

Of these seven zones, the following two were selected in our sample:

- Cairo Electricity Zone) (based in Cairo), and

- Mid Delta Electricity Zone (based in Talkha).

There are several reasons for selecting these two zones. First : they are the most important ones; together they account for 48% of Egypt's total electricity consumption and 42% of net electricity production in 1993/94. Second, Cairo zone is the largest net importer and Mid Delta Zone the largest net exporter of electricity. This may be seen by perusal of data in Annex I on inter-zone electricity flows within the national electricity network. Third, from a training standpoint, the two zones have important regional training centers of their own, independent of NTC.

III.2. Sample Individuals:

Selection of sample individuals was made using the lists provided by EEA of engineers and tedinicians who received training during Phase I of the project 344 / 11787. Individuals were chosen such as to represent the various specializations, positions and training courses. The selection of particular individuals to be interviewed wnet through a number of stages, mainly because of labour mobility in EEA and the fact that many individuals originally selected were no longer on board. As a result, we had to make several changes at very short notice in response to the specific situation in the field. The most glaring case was the Sakr Kuraish

substation (Cairo Zone), where it was discovered that out of 8 persons trained under the project according to the EEA list, only two remained there. We had to replace that site.

Eventually, the total number of the sample was 38, and it was divided for the purpose of the analysis into four categories.

(i) Senior EEA/NTC Management:

The sample number in this category is 6 drawn as follows (numbers in parentheses): Egypt Electricity Authority (3), NTC (1), and Cairo Electricity Zone (2).

(ii) Trainers in NTC, Helwan:

The sample number in this category is 7 (all engineers), drawn as follows from various departments at NTC:

- Protection and communication (2)
- Substations (2)
- Programme development (1)
- Training (1)
- Lines (1)

(iii) Direct Beneficiaries:

Originally, this category was to include a total of 4: the chairmen of the Cairo and Mid Delta zones, the director of Lines Dept at NTC, and the director of NECC. But as it turned out some of them were not available during the period of the field work. Eventually, this category included 3, as follows:

- Director of Training at the Cairo Zone.

- Director of the Live-Line Maintenance Training center (overhead lines) Mid Delta Zone.

- Director of Lines Dept., NTC.

(iv) Trainees:

The total sample number in this category is 22 technicians and engineers, divided as follows.

(a) Cairo Zone (9):

- Lines Department (5): 3 technicians and 2 engineers.

- Wadi Hoaf Substation (4): 2 technicians and 2 engineers.

(b) NECC (7):

- Protection technician - Rodh El-Farag (1).

- Protection engineers - Rodh El-Farag (3).

- Operation engineers - Imbaba (3).

(c) Mid Delta Zone (Talkha) (6):

- Live-Line Maintenance Training Center, 3 engineers.

- Talkha Station, 1 engineer and 1 technician.

- Communication and control, 1 engineer.

Annex III gives a full list of names, positions and training information / characteristics of sample members interviewed by the field workers. To these must be added senior-magement individuals interviewed by the consultants (Annex V).

III.3. Main Characteristics of the Sample:

In this section we examine the main characteristics of the sample, on the basis of the information in Annex (V), focussing on age, education, field of study, occupation / position, work affiliation, and country of training. Annex (VI) excludes senior management at EEA and NTC, for whom such information was not collected. But before doing that, a caveat is in order: the results indicated should not be generalized to the "population" of the target groups/individuals of the project. As we mentioned before, the sample was not intended to be representative; one should be extremely careful not to make any statistical inferences based on the sample.

Having said that, we may summarize the main characteristics:

(i) All trainees were within the age bracket "25-45 years", while most trainers and direct beneficiaries were in the age bracket "45 and above". This means their training is a good long-term investment whose benefits extend over the working life of trainees.

(ii) Most trainees (two-third) are university graduates with one trainee from NECC holding a post-graduate degree (M.Sc. in Engineering). Surprisingly, there were two trainers, with pre-university degrees. The rest of the trainers and all direct beneficiaries have university education. As should be expected, almost all of the sample are specialized in engineering and related fields; there was one case of a direct beneficiary holding a degree in social work.

(iii) With regard to occupational profile, the sample included 19 engineers and 9 technicians.

(iv) The sample was evenly spread among various working units, with special emphasis on maintenance training, live-line maintenance training, and operations.

(v) Finally, as regards the place of training, trainers were trained either in Canada only or in both Egypt and Canada. Trainees, by contrast were all trained exclusively in Egypt. Direct beneficiaries presented an even spread: one trained only in Egypt another trained only in Canada, and the third trained in both places.

IV. Main Findings:

Responses of the sample interviewees to some of the questions in the data collection instrument (DCI) were graded on an ordinal scale as either excellent, very good, satisfactory or unsatisfactory. Other questions did not lend themselves to this ordinal scale, but included sub-questions as probes. As a result of this heterogeneity of the questions and the fact that ours is not a random sample, no quantitative analysis of the results will be attempted here; we may occasionally give some indications of a quantitative nature instead.

IV.1. Achievement of Intended Results:

There is overall agreement that the project has produced the intended results to a reasonable extent. However, there are distinct variations in the attitude of the various groups of beneficiaries. While EEA and NTC management were very enthusiastic about the project, direct beneficiaries (direct employers) were less enthusiastic. (This set of questions was not directly relevant for the trainees). There is also broad agreement that Egyptian / Canadian co-operation in the project was reasonably good throughout the project cycle.

(a) EEA and NTC management are quite enthusiastic about the relevance of the project. According to them, it has contributed significantly to:

*	general awareness of the importance of training.
*	improved proficiency of engineers and technicians (craftsmen were not trained under Phase I).
*	improved training capability at NTC.
*	introduction of new approaches in training and practice.
*	preparing zone trainers, instructors.

With regard to relevance of the project to needs, senior management feels that training in the area of protection, was most relevant to EEA needs, followed by protection, followed by communication. Substations (or transformers) did not score well as relevant to needs. The project was instrumental in generating awareness of the importance of protection, created interest in training in protection, and made available valuable protection gear at the zone level. Technicians and engineers in the field are getting used to the practice/habit of always wearing protection gear while on the job.

EEA management also stated that, although the MPIS component of the project was not implemented during Phase I, the project generated an appreciation of the importance of MPIS. It was decided to start a mini MPIS on a pilot scale in the Cairo zone.

NTC management is also quite enthusiastic about the Project. Equipment supplied either by the zones or through CIDA financing scores highest with them, followed by training manuals, introducing new fields of training and, finally, capacity-building amongst trainers.

(b) Unlike senior management, direct employers (zone managers and NECC management) were much more critical of the Project. The latter do not feel that the Project has achieved a good deal of its objectives and tend to attribute this to implementation rather than to planning, and also to changing circumstances over the life span of the project. Even though they rate the degree to which NTC managed to improve training as good, especially with regard to introducing new training fields, they tend to view NTC as useful only in providing basic theoretical training. This remains to be supplemented by on-the-job training. They attribute this to the unusual variety of types and designs of equipment coming from many different sources, ranging from the former Soviet Union to Europe (France, Germany), the USA, and Japan, and currently used in the field. This makes it impossible for the Canadian team to cover the whole range of heterogeneous equipment.

It is not difficult to account for this glaring difference in views between senior management at headquarters level, or even that of management, and the views of managers in the field. While the former take a general "bird's eye" view of training as desirable in generic terms, the latter, from their position much closer to the day-to-day business of providing the service, look much more carefully and in greater detail at the relevance of the training provided to their needs in the field. When pressed in the interviews to elaborate on their views on the reasons for this shortcoming, they related it to lack of adequate, in-depth consultation with them in the process of project formulation and planning. They also highlighted the impact, mentioned earlier of the rapidly changing situation in EEA as regards sources of equipment and operation procedures, coupled with the usually rapid expansion in the network and increase in loads

(c) Direct beneficiaries offered other explanations for shortcomings of the project by selecting from a list of 13 possible probes included in the data collection instrument. They emphasized, in particular, problems involved in the selection of trainers, deficiency in the level of Canadian expertise, and the time horizon for

implementation. Other less important causes were inadequacy of funding, buildings, delays on the Canadian side, lack of periodic review, and non-availability of trainees on the site for urgent work.

(d) As for other unplanned positive results, all agreed that at the institutional level, the project contributed to establishing better working relations within EEA between the zones and the NTC. At the level of individuals, all agreed that it created a stronger sense of belonging and job satisfaction. They did not consider skill drain caused by labour mobility a serious drawback, and were of the opinion that it will decrease with time.

As migt be expected, unplanned negative impacts were the disruption of work due to the withdrawal of personnel from the field for training. There were other reasons that are inherent in EEA organization; of particular significance are two main shortcomings: inadequate field training and improper selection of trainees.

(e) Although the questions in Cluster II (relevance to Needs), of the data gathering instrument, addressed above, were not directly applicable to the trainers and trainees, we believed it was useful to reflect their individual perceptions and perspectives (see Annex VII and Section II.1 on Methodology). It is interesting to report that the response of these two groups broadly indicates that the project has achieved most of its intended results, and was relevant to their needs. Trainers underscored the close co-operation between the Egyptian and Canadian sides as a factor contributing to success. They also noted the positive effects at the institutional and individual levels (better working relations between NTC and the zones and, a sense of belonging and job satisfaction, respectively). More than 80% of trainees rated the success of the project in achieving its objectives in general as good to excellent, the best achievement being in the area of protection, followed by lines and communications. They identified the most important impediments to complete success as improper selection of trainers, poor planning of training courses (confusion about the short-term/long - term mix), and the mix of theoretical and applied (hands-on) training. The trainees also pointed out that one positive unintended result of the project is the interaction between technicians and engineers from other zones, and the exchange of information and experience. They complained about the lack of field training, which was only confined to field visits by graduate engineers.

IV.2. Beneficiary Ownership and Satisfaction:

It is clear from the returns of the field work that there is broad beneficiary satisfaction with the results. This was expressed clearly by senior management, trainees and some zone heads. Many factors were cited as indicators of beneficiary satisfaction: requests for more technical assistance and the implementation of technical advice given, new requests for specifically tailor-made training courses, and the over-subscription to some training courses. As to ownership of investment and benefits there is a division of opinion between senior management of EEA and NTC on the one hand, and Zones on the other. The first group cited many factors indicating that beneficiaries assumed ownership of the project; EEA putting more funds in the project, improving the incentive system, clear support of NTC by the zones, and development of a training philosophy. Zone managers, especially the Cairo Zone, seem less certain about ownership. They pointed out that training was largely theoretical; field training was neglected and actually boiled down to field visits. Moreover, for view was expresed that the Canadian side put more emphasis on the transfer of skills and technological know-how than on the supply of needed training equipment. Almost all trainees, on the other hand, were satisfied with their training under the Project, and they listed many indicators of their overall sense of satisfaction. They only wanted to see more attention given to applied training. This is a reflection of the same attitude of this group discussed under (b) in the previous section (IV.1 Achievement of Intended Results).

IV.3. Sustainability of Investment and Benefits:

This cluster of questions applies particularly to EEA / NTC management and direct beneficiaries (Zone managers), but not to eventual beneficiaries (i.e. trainees). It is clear that both EEA / NTC management and some Zone managers agree that measures have been taken to protect the investment and to maintain it at an appropriate level. However, there is disagreement about the sustainability of investment: Cairo Zone management seemed a bit skeptical, while EEA / NTC management sounded very certain of sustainability.

With regard to trainees, more of them believed that the project is potentially sustainable than those who doubted this. For those who believed that the project can be sustainable, the main factors leading to this view were establishing well-defined training policies, systems and procedures, better selection of both trainers and trainees and an effective incentive system to encourage trainees. Those who had their doubts attributed these mainly to financial constraints. Other less important reasons cited for doubts about sustainability were the low technological standard of training and inappropriate systems and regulations. While this is a minority view, it is in marked contrast to that of the majority. We could not get to a more articulate expression of the reasons for this view. The suspicion is that although there may be a subjective factor involved, there may also be some, objective justification. Potential difficulties that may endanger the future of the project relate mainly to the shortage

of qualified trainers, difficulty in attracting experienced personnel, and what most trainees consider as the low salary scales.

Senior management does not seem alarmed by the high attrition rate among trainers (about one in two). In fact, the director of NTC made the point that some trainers leave for work either in the Gulf or in the private sector but return after some time with even more skill and experience. He also related the case of one trainer who left for the Gulf and was quite helpful in providing needed manuals and documentation to NTC while working abroad. In short, he believes that staff that leave for jobs abroad remain attached to EEA, loyal to it, and eventually come home to take up posts in EEA. He also feels that the window of opportunity for outside work is narrowing and the worst in terms of attrition is over, or soon will be.

All trainers believed that the project is potentially sustainable, and that the investment and benefits will continue after withdrawal of CIDA. They indicated bases for this judgment, the most important of which are: implementation of well-defined policies, systems and procedures and a suitable financial-reward system. The last reason seems to indicate that inspite of the improvements in salary scales highlighted by senior management, the employees still expect more.

IV.4. Cost Effectiveness:

There is general agreement that resources allocated to the project were used in an economic and efficient manner. Equipment funded by CIDA for the Project was deemed suitable, and there was no strong evidence that it was overpriced. But it should be underlined that issues of cost-effectiveness did not seem to be of real concern to beneficiaries since the Project was financed by a grant. But many seemed shocked to learn of the division of CIDA-originating project funds to Ontanio Hydro totalling CAD $ 15.1 among services (68%), equipment (23%), and training (9%) (as indicated in the Termination Report 1995). They expressed strong feelings that too much money was allocated to services and too little for equipment and training. Cairo zone chairman felt particularly strong about this aspect of the project, arguing that he had expected the project to provide practiced hands-on training and, to turn out well-trained and skilled engineers in the field so that money spent on retaining expert services in the future may be saved. But that did not really happen. This echoes a concern expressed by Mike Pender (an OH man during phase I) that very expensive Canadian experts were teaching basic utility theory- something which a community collage graduate would have done, but much cheaper.

Fieldwork returns reflect the fact that cost-effectiveness considerations were not addressed during Phase I. Senior EEA management did not seem attentive to the issue. this is reflected quite clearly in the response of senior management as well as direct beneficiaries to questions (36) and (37) of the Data Collection Instrument. Asked whether they thought that the output of the project in general can be considered good value for the maney, only half of the intererivees answered in the

positive. Again asked whether quantitative estimates of the cost per trainee were made, almost all of them answered in the negative.

This may have been because the felt that EEA was getting additional resources in the form of a grant with no obligation of future repayment. So they harboured the attitude that something is definitely better than nothing, and issues of cost effectiveness were not really their main concern. Another reason may have been that the over riding concern was to comply with bureaucratic / accounting criteria. Only NTC management gave a rough estimate of the cost of training at NTC, spanning a wide range LE 7-15 per trainee/day. But no details were given as to the basis of this estimate, which - even at the upper limit-looks extremely low. No estimates of the training cost per trainee in Canada were uncovered throughthe field work. But according to the Termination Report 1995, a total of 94 EEA staff were trained in Canada for some 260 person-months at a cost of CA $ 1.838 million. This gives a rough figure of CAD $ 7 000 per trainee / month or 280 dollars per trainee / day. Eng. Kamal Wali, Director General of NTC, commented that staff who didn't belong to the training section attended courses in Canada, which reduced, the time that those who are genuinely qualified for training spent on Canadian traineeships. There was not enough time provided to train them properly (minutes of Meetings of CIDA team on March 6, 1996).

Finally, it should be remembered that the time frame for the project was to be 1985-1990, but it was actually completed by March 1995, five years behind schedule. This is almost double the time originally envisaged by the PAM. In itself, this would contribute to reduce the cost-effectiveness of the project.

But it is really hazardous to state any firm conclusions regarding cost-effectiveness for a number of reasons. First, the nature of the project is such that externalities are relatively large (examples are: trained staff taking their newly acquired skills to the private sector, the provision of training services by NTC to Syrians, Libyan and CIS trainees). Second, this is really a human-development project, and thus analysis should adopt a long-term horizon. It may be too early, therefore, to make assessment about effectiveness. Third, there is lack of widely accepted criteria for making serious cost-effectiveness analysis. One approach may be to compare cost-return aspects of this project with similar ones. This goes beyond the scope of the present exercise.

V. Comparison with Previous Evaluations:

It was considered useful, at the end of this report to compare its main findings with previous evaluations using the same DGI. It should be clearly understood that this relates only to those elements of the DGI that were used in this study, viz. the ones relevant to the assessment of impacts on the beneficiaries.

The consultants had in hand two such previous evaluations. The first is an undated consolidated report prepared by the Performance Review Division. The second is three sets of minutes of meetings of CIDA staff with personnel of EEA, held in Cairo on March 4, 5 and 6, 1996.

The Performance Review Division (PRD) Report is a comprehensive document that covers all the issues listed in the DGI and provides answers to each one of them. The second set of minutes of meetings covers more or less the issues this study covered, perhaps with one main addition (accountability).

The PRD report differs significantly from the findings of the present study mainly in not differentiating in its evaluation of the project between the views of different categories of Egyptian personnel (senior management, and users, employers in the field, trainers and trainees). It seems to reflect more the outcome of the review

reports of the project, rather than those of key personnel or trainees on the Egyptian side.

As examples of the differences and agreements, we mention:

* For 2.1 (Achievement of Intended Results): the PRD report does not catch the differences in views between senior staff at headquarters and the level of the zones (the direct employers), nor the variety of views amongst the trainees themselves. On the other hand, it catches other important points that did not come out in our interviews, particularly the adverse impact of lack of matching between budgetary time-frames and those for human-resources development. Apart from these two points, there is general agreement between the two reports.

* For 2.2 (Relevance to Needs): There is a very brief statement in the PRD report that is in sharp contrast with the rather detailed investigation in the present report of the variety of views on this issue.

* For 2.3 (Beneficiary Ownership): There is general agreement between the two reports. The indicators cited are almost indentical, even though they are not related to particular groups.

* For 2.4 (Sustainability): The PRD report is generally more pessimistic than the present report. However, the latter relates both optimistic and pessimistic views to the particular groups that have expressed them, and addresses the issues of potential sustainablity.

* For 2.5 (Cost Effectivess): The PRD report does not really tackle the issue, because it is based totally on examining the documents, while the present report goes much further by highlighting the lack of attention given to the issue and underlying some of the methodological difficulties involved.

The minutes of meetings are much closer to the findings of this study- at least in as far as they relate to the Egyptian side of the exercise. This comes as no surprise, since the present study has concentrated on the impacts on beneficiaries, rather than on other aspects in project design or implementation, and the meetings have provided opportunities for expressing the views of different Egyptian personnel. This, however, did not include trainees, zone management or trainers. These minutes elaborate on the views of a number of Canadian personnel - an aspect that is not part of the terms of reference of in the present report.

VI. Main Conclusions:

- On the whole the project has been reasonably successful, given the complex relations between CIDA and the main contractor, the rapid changes EEA underwent during implementation, and the rather high staff turnover.

- Most stakeholders are satisfied to some degree with the outcome of the project. While field managers are quite critical of certain aspects, no one was openly and decidedly hostile to the project. Rather, they were seeking more benefits and better use of resources by emphasizing the need of engaging them in identification and planning..

- Both the Canadian and Egyptian sides were criticized for certain shortcomings. Again, none of the criticism was particularly vehement or unexpected.

- There seems to have been a tacit assumption throughout that what ever shortcomings there are, Phase II will address these and achieve better results.

- Relations between the Canadian and Egyptian sides seem to have been particularly smooth, at all levels of responsibility and personnel.

ANNEXES

I.	Total Number of Individuals Trained

Annex (I)

Total Number of Individuals

Trained Under GETT Project

Zone / Institution	Number
Sample size	**38**
1. NTC (Fellowships in Canada)	38(*)
2. NECC	30
3. Cairo Electricity Zone.	205
4. Alexandria Electricity Zone.	133
5. Mid Delta " "	168
6. West " " "	78
7. Canal " "	168
8. North Upper Egypt " "	145
9. Aouth Upper Egypt " "	126
Total(**)	1101

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Annex (II)

Egypt's National Electricity Network

Inter-Zone Fl ows, 1993/1994

(million kWh)

From \ To	CAI	MID	NUE	SUE	WED	ALX	CNL	prod-uction (net)
CAI	9777.8	613.4						10396.2
MID		5872.1	58.4		621.9		2795.0	9347.4
NUE	148.6		1020.9		147.3			1316.8
SUE			2584.7	8223.1				10817.8
WED					1431.0	804.9		2235.9
ALX						5015.3		5015.3
CNL	6016.5						1698.7	7715.2

Consumption	**15942.9**	**6485.5**	**3664.0**	**8223.1**	**2200.2**	**5820.2**	**4493.7**	**46839.6**

Net Exporters: MID, SUE, WED, CNL

Net Importers: CAI, NUE, ALX.

CAI = Cairo Zone.

MID = Mid Delta Zone.

NUE = North Upper Egypt Zone.

SUE = South Upper Egypt Zone.

WED = West Delta Zone.

ALX = Alexandria Zone.

CNL = Canal Zone.

Annex (III)

Field-Work Team

1. Dr. Azza Ali Korayem(*), Sociologist, National Center for Social and Criminological Research (NCSCR), Team Leader, in charge of field work.

2. Hosni Yossef Soliman Ali, Social Worker, Ministry of Social Affairs, Cairo.

3. Ahmed Hassan El-Masri, Social Worker, Nasser Youth Center, Imbaba, Guiza.

4. Abdel-Hamid Youssef Abdel-Hamid, Social Worker, Directorate of Youth and Sports, Guiza.

5. Abdel-Salam Mohamed Abdel-Salam, Assistant Researcher, Anthropology, NCSCR.

6. Ahmed Abdel-Mawgoud El-Shinnawy, Assistant Researcher, Anthoropology, NCSCR.

Annex (IV)

List of Interviewees

I. NTC Trainers:

No.	Name	Category	Department	Period of Training in Canada
1	Ahmed Abdel-Hakim El-Gamal	E	Protection & Comm.	3 months
2	Abdel-Monem Ahmed El-Dossouki	E	" "	2 months
3	Ahmed Fawki Ahmed Soliman	E	Substations	8 weeks
4	Magdi Youssef Yanni	E	Prog-Development	8 weeks
5	Emad Naguib Rizk	E	Training Aids	6 weeks
6	Mohamed Ismail Shahin	0	Substations	3 months

7	Adel Mohamed Belal	**0**	Lines	6 months

II. Direct Beneficiaries:

No.	**Name**	**Category**	**Position**	**Dept./Zone**
1	Nagwa Fareed Abul maaty	**E**	Director of Planning & Implementation	Live-Line Training Center (over-head Lines), Mid Delta, Talkha.
2	Hashem Hamed Ali Khattab	**E**	Director	Training Dept., Cairo Zone, Cairo
3	Merghany M.A. Shehata	**E**	Director, Lines Dept.	NTC.

Annex (IV) Contd.

III. Trainees:

No.	Name	Category	Field	Training Courses

A. Cairo Zone-Lines Dept:

1	Mohamed Abdel Rahim	T	Maintenanc e	Overhead lines 1-7
2	Osama Ahmed	T	"	Overhead lines 1-7
3	Milad Raafat Farag	T	"	Overhead lines 1-4
4	Ashraf Gouda	E		(3), P1, P2, P4
5	Salah Emam M. Amer	E	lines	Part(1): Part (2)

B. Cairo Zone-Wady Hoaf:

1	Farahat Hessein Ahmed.	T	Operation	S(i)
2	Said Hassan El Sayed	T	Maintenanc	S(1)

			e	
3	Mohamed Sayed Esmail	E	"	SF6, P1, P2
4	Raafat Mohamed Ahmed	E	Operation	(A), P1,P2,(1),SF6(2)

C. NECC:

1	Essam Ahmed Hafez	T	Protection	N.A.
2	Osama Helmy Ahmed	E	"	P1, P2, P4
3	Aly Ibrahim El Nahrawy	E	"	P1, P2, P4
4	Alaa El Din Abdalla	E	"	P1, P2
5	Shrif Salama	E	Operation	P1, P2, P4
6	Nasr Abdel-Kader	E	"	P1
7	Hazem Hanafy Ibrahim	E	"	P2

D. Mid Delta Zone - LLTC(OL):

1	Hassan Aly El Sakka	E	Lines	Overhead lines (1)-(8)
2	Hassan Abd El-Hakim Aly	E	"	Overhead lines(1)-(8)
3	Ahmed Medhat Mostafa	E	"	Overhead lines(1)-(8)

E. Mid Delta Zone-Talkha Substation:

1	Ahmed Mohamed Abd Ellatif	E	Mech. Main-tenance	Graduate Engineers(7)
2	Aiman Mohamed Ahmed	T	Control	Substations (1)
3	Ezzat Saad El Metwally	E	Comm. & Com.	PC1, PC4, C1, C5, C8, P1, P2,P4,SF6, RTU

Annex (IV) Contd.

Memo. Items:

E = Engineer

T = Technician

O = Other

Com.& Con. = Communication & Control.

LLMTC (O-L) = Live-Line Maintenance Training Center (Overhead Lines).

Annex (V)

Senior Management

Interviewed by the two Consultants

A. (1) Eng. Kamal Wali, NTC Director,

(2) Eng. Merghani Shehata, Head of Network Dept. NTC.

(Meeting on Saturday, March 23 1996, 9-11 am at NTC in Helwan. Field visit to NTC, 11 am - 12 noon.

B. (3) Dr. Bassiouni El Baradei, Managing Director, Manpower &

Training EEA,

(4) Eng. Gamal Lamei, Director of Training, EEA.

(5) Eng. Ibrahim Badawy, Former Deputy Chairman of Manpower & Training, EEA.

Meeting on Saturday, March 23, 1966, 12-2 PM at EEA Old Building Abbasiya.

C. (6) Mike Pender, Meeting on Monday March 25, 1996, 4-5 PM, at Sofitel Towers Hotel Maadi.

(7) Eng. Fikry Nawara, Chairman, Cairo Zone.

(8) Eng. Ahmed Abdel-Gawad Mohamed, Inspector General of

Networks, Cairo Zone.

Meeting on Tuesday, March 26, 1996, 9-10.30 am at Cairo Zone headquarters, 53, 26th of July St., Cairo.

In addition:

E - (9) It was not possible to fix an appointment with the management of NECC because nobody was available.

(10) The Mid Delta Zone chairman, Eng. Hassan Shafee'a was not available for interview during the period slotted for field work.

(VI)

Sample Charcteristics

1. Age Distribution of Sample

	25-	35-	45-	Total
D. Beneficiaries	-	1	2	3
Trainers	2	1	4	7
Trainees	16	6	-	22
Total	18	8	6	32

2. Educational Characteristics of Sample

	Pre-Univ. Degree	University Graduate	Post - Graduate	Total

D. Beneficiaries	-	3	-	3
Trainers	2	5	-	7
Trainees	7	14	1	22
Total	9	22	1	32

3. Academic Specialization of Sample

	Direct Beneficiaries	Trainers	Trainees
Field of Study	Gen. Engineer (1) Elect. Power (1) Social Work (1)	Lines/Networks(2) Mech-Photography (1) Power & Electric Equipment (2) Elect. Power (2)	Communication (5) Mech. Power (2) Power Electric (8) Power St. (3) Other (4)

Total	3	7	22

Annex (VI) Cont.,

4. Occupational Profile of Sample

D. Beneficiaries	Trainers	Trainces		

Occuption	No.	Occupation	No.	Occupation	No.
Engineer	2	Engineer	5	Engineer	12
Social Worker	1	Technician	2	Lines	1
				Protection	4
				Maintenance	2
				Operation	3
				Electric	2
				Technicians	7

				Lines	1
				Protection	1
				Maintenance	3
				Operation	2
				Trainers	3
Total	3	Total	7	Total	22

5. Distribution of Sample According to Working Unit

D. Beneficiaries	Trainers	Trainees		

Unit	No.	Unit	No.	Unit	No.
Network Training Dept. - NTC	1	Network Dept.	2	Networks Dept.	2
Training Dept.		Protection Dept.	1	Maintenance Dept.	4
Cairo Zone	1	Training Dept.	2	LLMTC (O-L)	3
LLMTC (O-L)		Substations	1	Talkha Power Stn.	2
Mid Delta Zone	1	Prog. Design & Development.	1	Substations	2
				Tests & Control	2
				Operation	3
				Lines	2

Total	3	**Total**	7	**Total**	**22**

6. Distribution of Sample by Place of Training

Country / Group	Egypt only	Canada only	Both Places	Total
Direct Beneficiaries	1	1	1	3
Trainers	-	3	4	7
Trainees	22	-	-	-
Total	23	4	5	32

Annex (VII)

Data Collection Instrument

(English Translation)

CIDA/EEA Transmission

Training Project

Phase I - 344 / 11787

Code

Interview Guidelines

1. Senior Management

2. Trainers

3. Direct Beneficiaries

4. Trainees

Position:

Place of Interview:

Data of Interview:

Name of Interviewer:

Interview Date:

First: Basic Data

1. Name of interviewee

2. Age.

3. Last degree.

4. Field of Study.

5. Occupation.

6. Specialization.

7. Department.

8. Marital Status.

9. Residence: Governorate .....

10. Place of work: governorate ....

11. Place of training

a. Egypt

b. Canada

c. Both countries

2.1. Second Achievement of intended results, or progress towards achieving them:

(1) (2.1.1). In your judgment, to what extent has the project achieved its outputs in the following areas:

a. Achievement of outputs in general:

Ex ( ) Gd ( ) St ( ) Us ( ) Dk ( )

b. Achievement of output in the area of training in administrative and field positions:

- Field positions: (networks, substations, lines, protection & communication).

	Degree

Position	**Excellent**	**Good**	**Satisfactory**	**Unsatisfactory**
1. **2.** **3.**				

4. 5.				

- Administrative Positions (within offices of EEA)

	Degree	

Office	Excellent	Good	Satisfactory	Unsatisfactory
1. 2. 3. 4.				

- Inside branches

	Degree	

Branch	Excellent	Good	Satisfactory	Unsatisfactory
1. **2.** **3.** **4.**				

C. Give appropriate degree for achievement of NTC in developing training in the various spheres

	Degree	

Sphere	Excellent	Good	Satisfactory	Unsatisfactory
1. Tools, Equipment				

2. Training material **3.New training areas** **4.Trainer upgrading** **5.** **6.**				

(2) (2.1.2) Has the Project achieved the expected targets in planning and implementaiton:

Planning **Implementation**

a. Has not achieved all ( ) ( )

b. Has achieved some ( ) ( )

c. Has achieved all ( ) ( )

In case of a or b ask (3), and in case of c ask (4).

(3) Which targets were not achieved?

	Inadequate Planning		**Inadequate Implementation**
1. **2.** **3.**		**1.** **2.** **3.**	

4.		4.	

(4) Which targets were achieved?

	In Planning		In Implementation
1.		1.	
2.		2.	
3.		3.	
4.		4.	

(5) (2.1.3). Has the project achieved all its intended results?

Achieved all ( ) Achieved some ( ) Achieved none ( )

(6) In case all or some results were not achieved, give reasons:

Reasons	Yes	NO

1. Failure to select needs with high priority 2. Failure to determine implementation period 3. Inadequate financial resources 4. Inadequate physical resources 5. Unavailability of buildings 6. Lack of equipment 7. Improper selection of trainers 8. Unsuitable training programs 9. Inadequate Canadian expertise 10. Egyptian side not respecting agreed time schedule. 11. Canadian side not honoring agreed time schedule 12. 13.		

(7) (2.1.4.) Which of the two sides (Egyptian or Canadian) has contributed to the success (ask a) or failure (ask b) of the project? And what were the relevant factors?

a. Project success (indicate factors in detail).

Side	In Planning	In Implementation
Egyptian only Canadian only Both		

b. Project failure (indicate factors in detail).

Side	In Planning	In Implementation
Egyptian only Canadian only Both		

(8) 2.1.5. Did the project achieve unintended positive results?

Yes ( ) NO ( ) Don't know ( )

In case of Yes, ask (9) & (10)

(9) Most important achievements at institutional level:

example: better relations between management and NTC

(10) Most important achievement at individual level:

example: Job satisfaction.

-

-

(11) Did the project produce unintended negative resdults?

Yes ( ) NO ( ) Don't know ( )

In Case of Yes, ask (12) & (13).

(12) What are the most important at the institutional level?

example: disruption of work relations as a results of training.

(13) What are the most important at the individual llevel?

example: trained personnel leaving in pursuit of higher pay.

(14) (2.1.6) To what extent has the project achieved its targets according to original plan in:

a. Personnel training?

Ex ( ) Gd ( ) St ( ) Us ( ) DK ( )

b. Upgrading NTC?

Ex ( ) Gd ( ) St ( ) Us ( ) DK ( )

(15) (2.1.7) What did you expect the project to achieve but was not achieved?

In case of achieving all expectations, do not ask (16):

(16) (2.1.8) What factors hindered achievement of expectations?

- inaccurate definition of training priorities.
- inadequacy of requirement (such as equipment)
- lack of suitable time schedules
- bad choice of trainees
- bad choice of trainers
- low quality of Canadian expertise
- bad or inadequate field training

2.3. Third: Beneficiaries Satisfaction and Onwership:

(17) (2.3.1) What are the indications that the project beneficiaries are satisfied with the results?

- desire of staff to join training courses ( )
- seeking to organize specially-tailored training courses ( )
- technology transfer though zone visits ( )
- seeking technical assistance ( )
-
-

(18) (2.3.2. What are the factors which led to beneficiaries assuming

ownership of project and protecting results?

- EEA providing more funds to NTC ( )
- improving salary and incentive system ( )
- upgrading NTC to improve training ( )
- measures to ensure retaining qualified trainers at NTC ( )
- measures to upgrade the design & development of training courses ( )
- providing equipment by zones to NTC ( )
- adopting a philosophy of performance training at EEA ( )
- adopting a strategy for adequate recruiting at NTC ( )

2.4. Fourth: Sustainability of the Investment and Benefits:

(19) (2.4.1) Have certain measures been taken to protect the investment, maintain it at an appropriate level or developing it further?

Yes ( ) NO ( ) Don't know ( )

In case of yes, ask (20)

(20) What are such measures?

- measures to improve level and quality of training ( )
- specific measures to select trainees & trainers ( )
- instituting incentives and bonuses to encourage employees to go

for training ( )

-

-

(21) (2.4.2) Are there any indications that benefits achieved in various project areas will continue following withdrawal of CIDA support?

Yes ( ) NO ( ) Don't know ( )

<u>In case of yes, ask (22) & in case of no, ask (23).</u>

(22) In which areas do you expect benefits to continue?

- Secondary technical school ( )
- NTC ( )
-
-

(23) Which areas do you expect benefits not to continue?

- the entire training effort ( )
- equipment and instruments ( )
- training aids and material ( )

(24) (2.4.3) Is it probable in your judgement that achievements and benefits generated by the project will continue after withdrawal of CIDA?

Yes ( ) NO ( ) Don't know ( )

In case of yes, ask (25) in case of no, ask (26):

(25) What are the reasons?

- existence of an appropriate financial system ( )
- adoption of advanced technology ( )
- instituting appropriate systems and procedures ( )
- implementing specific policies conducive to success of project ( )
-
-
-

(26) What are the reasons?

- existence of financial constraints ( )
- poor level of technology ( )
- inappropriate systems and proceudres ( )
- lack of policies conducive to success( )

-

-

-

(27) (2.4.2) Are there other reasons which may affect the sustainability of the investment and reduce its benefits?

Yes ( ) NO ( ) Don't know ( )

In case of yes, ask (28):

(28) What are they?

- Shortage of qualified trainers ( )
- difficulty of attracting experienced people ( )
- low salary seale compared to private sector and Gulf states. ( )

(5.2) Fifth: Cost Effectiveness:

-

-

Memo item:

According to the Termination Report 1995, 68% of CIDA contribution was allocated to expert services, 23% for equipment and only 9% for training.

(29) (2.5.1) Were resources allocated to the project used

- economically? Yes ( ) No ( ) Don't know ( )

- efficiently? Yes ( ) No ( ) Don't know ( )

(30) Were the prices of equipment and expert fees reasonable or exaggerated?

reasonable ( ) exaggerated ( )

Don't know( ) Not my area ( )

(31) Were the equipment and materiels of the right types?

Yes ( ) No ( ) Don't know ( )

Not my area ( )

(32) Were equipment and materiels supplied on time?

One time ( ) delayed ( )

Don't know ( ) not my area ( )

(33) In case of delay, ask about the reasons:

- red tape and bureaucracy ( )

- too many signatures ( )

- customs procedures ( )

- rules and regulations ( )

(34) Was the level of overhead cost suitable for the project?

Suitable ( ) Exaggerated ( )

Don't know ( ) not my area ( )

(35) Was the level of trainers suitable to the level trainees?

Suitable ( ) Unsuitable ( )

(36) (2.5.2) can the outputs delivered under the project be considered good value for the money?

Yes ( ) NO ( ) Don't know ( )

(37) Were there any estimates of the cost per trainee?

Yes ( ) NO ( ) Don't know ( )

In case of yes, ask (38)

(38) What is the total cost per trainee/day

- in NTC? ( )

- in the field? ( )

- in Canada? ( )

Sixth: General Remarks:

(39) What is your overall evaluation (Pluses & minuses) of :

a. training program.

b. overall cost of project

c. effectiveness of project in general

(40) Evaluate the data collection instrument used here, giving suggestions to add or delete items in order to ensure full evaluation of the beneficiary impact of the project.