

**JOINT EVALUATION REPORT  
ON THE PROJECT ON ENGINEERING AND INDUSTRIAL  
DEVELOPMENT CENTER  
FOR SMALL AND MEDIUM SCALE INDUSTRIES  
AT QUERETARO STATE  
IN THE UNITED MEXICAN STATES**

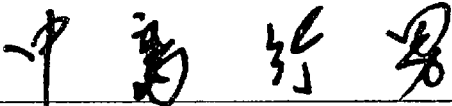
**December 10, 2001**

**Queretaro, Mexico**

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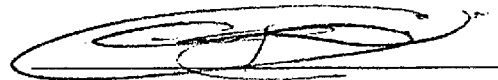
**Queretaro, Mexico**



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# 1. INTRODUCTION

## 1-1. Background of the Final Evaluation of the Project

The Japanese Evaluation Team (hereinafter referred to as “the Japanese Team”) organized by Japan International Cooperation Agency (hereinafter referred to as “JICA”) and headed by Mr. Yukio Nakajima visited the Government of the United Mexican States from November 26 to December 11, 2001 for the purpose of the joint final evaluation with the Mexican Evaluation Team (hereinafter referred to as “the Mexican Team”) on Japanese technical cooperation for the Project on Engineering and Industrial Development Center for Small and Medium Scale Industries at Querétaro State (hereinafter referred to as “the Project”) on the basis of the Record of Discussions signed on February 1, 1998 (hereinafter referred to as “the R/D”).

Both teams discussed and studied the efficiency, effectiveness, impact, relevance and sustainability and future prospects of the Project in accordance with the Project Cycle Management (hereinafter referred to as “PCM”) method.

Through careful studies and discussions, both teams summarized their findings and observations as described in this document.

## 1-2. Schedule of Joint Evaluation

(November 26 – December 11, 2001)

### Date & Schedule

November 26 (Mon)	Arrival at Mexico City (consultant)
November 27 (Tue)	Meeting with JICA Mexico Office Interview with CONACYT Interview with SE Move to Querétaro
November 28 (Wed)	Meeting with Japanese experts Interviews with C/Ps
November 29 (Thu)	Interviews with industries that received extension services
November 30 (Fri)	Interviews with industries that received extension services Interviews with industries, organizations, and research institutes concerned
December 1 (Sat)	Mid-term report of the evaluation to Japanese experts
December 2 (Sun)	Data Analysis Arrival at Mexico City (Main body of the Japanese team)
December 3 (Mon)	Analysis of the research results and report drafting (by consultant) Meeting with JICA Mexico Office Move to Querétaro City Meeting with Japanese experts and consultants
December 4 (Tue)	Kick off meeting and agreement on the schedule and method of the evaluation Discussion with CIDESI Equipment Procurement Survey Meeting with Japanese experts
December 5 (Wed)	Discussion with CIDESI
December 6 (Thu)	Courtesy Visit to the Mayor of Querétaro City Discussion with CIDESI
December 7 (Fri)	Discussion on the Joint Evaluation Report at CIDESI Discussion with the Mexican Team
December 8 (Sat)	Internal Meeting

December 9 (Sun)

Internal Meeting

Move to Mexico City

December 10 (Mon)

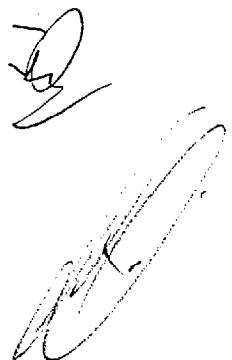
Joint Coordinating Committee

Signing of the Joint Evaluation Report and the Minutes of Meeting

Reporting to the Japanese Embassy

December 11 (Tue)

Leave Mexico City



### 1-3. Members of the Evaluation Teams



#### 1-3-1. The Japanese Team

Yukio NAKAJIMA                      Leader  
Managing Director, Mining and Industrial Development  
Cooperation Department, JICA

Tatsumi TAKEHANA                      Technology Transfer Planning  
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Ken KUBOKURA                      Evaluation Management  
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Mining and Industrial Development Cooperation  
Department, JICA

Hiromi OSADA                      Evaluation Analysis  
Senior Consultant,  
I.C.-Net Limited



### 1-3-2. The Mexican Team

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## **II. METHODOLOGY OF EVALUATION**

### **2-1. Method of Evaluation**

Evaluation was conducted based on the Project Cycle Management (PCM) method. The Evaluation Team (The Team) examined the Project Design Matrix (PDM), which was attached to the Minutes of Meeting of the Implementation Survey signed on February 1, 1998. The Team visited the Project site and had a series of interviews with the Japanese experts, counterparts and other relevant organizations. Consequently, The Team confirmed the situation of the accomplishment of the Project in terms of inputs, activities, outputs and project purpose stated in the PDM. The Team also conducted evaluation of five criteria: Efficiency, Effectiveness, Impact, Relevance and Sustainability. These criteria are defined as follows.

#### **2-1-1. Efficiency**

Refers to productivity in project implementation. Studied from a number of perspectives, including whether inputs have transformed without difficulty into results; the details, methods and period of cooperation; the timing of inputs; appropriateness of costs; and coordination with other donors.

#### **2-1-2. Effectiveness**

Refers to the state of implementation of project goals developed at the beginning and, sometimes, amended during the cooperation period. Studies are conducted on the extent to which project goals have been achieved, or whether they are expected to be achieved.

#### **2-1-3. Impact**

Refers to the direct and indirect, positive and negative impacts caused by implementing the project, including the extent to which the overall goal has been attained. Studied from an array of perspectives, including economic, social, political, technological and environmental. Also includes not only impacts that were expected at the beginning, but also those that were unexpected.

#### **2-1-4. Relevance**

Refers to the extent to which the orientation of project goals is consistent with the needs of the partner country (government, beneficiaries). Studies are conducted on whether the project results, project goals and overall goal are attuned to the needs of the partner

country.

### **2-1-5. Sustainability**

Refers to the extent to which the project can be developed alone by the partner country, and the benefits generated by the project can be sustained under the partner country's policies, technology, systems and organizations, and financial state.



## **III. REVIEW OF THE PROJECT**

### **3-1. Background of the Project**

In Mexico, the former Salinas administration reflected on the debt crisis of the 1980s and shifted the emphasis of its domestic policy from protecting domestic industries or fostering import-substituting industries to economic liberalization and modernization by opening the market. Regarding external policies, Mexico liberalized its economy by joining GATT in 1986, effecting the North America Free Trade Agreement (NAFTA) in January 1994, and joining OECD in May 1994.

Focusing on the domestic economy, however, small and medium scale industries (hereinafter referred to as "SMEs"), many of which depend on parts production, lack the capacity to compete with importers and suffer from bankruptcies and rising unemployment. Because of such social instability, the Mexican government has set as its main priority to strengthen the competitiveness of SMEs.

Under these circumstances, the Government of the United Mexican States made a request to the Japanese Government for the Project-type Technical Cooperation to implement the Project on Small and Medium Scale Industries Development. CIDESI, which is under the Ministry of Public Education, National Council for Science and Technology, administers the Project for the purpose of expanding its function and strengthening the support system for SMEs.

### **3-2. Master Plan of the Project**

The master plan of the Project stated in the R/D has not been changed as shown in Annex 1 in the form of PDM.

### **3-3. Technical Cooperation Program**

The Technical Cooperation Program (TCP) is shown in Annex 6.

### **3-4. Tentative Schedule of Implementation**

The Tentative Schedule of Implementation (TSI) is shown in Annex 3.

## IV. THE RESULTS OF THE EVALUATION

### 4-1. Summary

The evaluation study and analysis were implemented based on PDMe (Shown in Annex 1), which had been made by the team through review of all the previous PDMs.

#### 4-1-1. Effectiveness

<Project Purpose>

CIDESI will be able to provide appropriate technical service in the field of Material Test and Non Destructive Test for SMEs in and around Querétaro State.

The outputs have been realized as shown below and their Important Assumption has been upheld. Therefore, we estimate that the Project Purpose will be achieved at the end of the Project.

- Five outputs have been achieved: (output 0) establish a system for project management, (output 1) install, operate and properly maintain machinery and equipment, (output 2) improve the technical capacity of C/Ps, (output 3) implement seminars and training courses that meet the needs of SMEs, and (output 4) establish a technical support system for SMEs.
- The Project made an effort to maintain the turnover rate of C/Ps who received technical transfer low, and as a result, a low turnover rate has been maintained. In addition, skills have also been transferred within the institute. As a result, the Important Assumption 1 at the output level has been fulfilled.
- The project activities and their high reliability have been recognized by local SMEs, which is the target group of the Project. As a result, the Important Assumption 2 at the output level has been fulfilled.
- The satisfaction level of SMEs regarding the technical service provided by CIDESI has definitely risen (Indicator 1). As a result, many SMEs desire CIDESI to provide the service continuously (Indicator 3).
- CIDESI has become capable of providing twenty six (26) new technical services for SMEs in and around the state (Indicator 2).
- Activities that contribute to achieve the Overall Goal have been undertaken, such as holding twenty one (21) seminars and technical training courses out of Querétaro State, and an international seminar with trainees invited from other Latin American countries.

#### 4-1-2. Impact

Impacts, that are likely to lead to achieve the Overall Goal as expected by the Project,

have emerged as well as unexpected positive impacts.

<Expected positive impacts>

- The initially limited implementation target area for technical training/seminars as set forth by the Project has expanded to all Mexican States. Therefore, we estimate that the Overall Goal will be achieved in the near future.
- The function of CIDESI and its reliability have been recognized due to the Project. During project implementation, the number of technical services dramatically increased such as entrusted tests, extension services, technical training, and information services for SMEs.

<Unexpected positive impacts>

- The focus of CIDESI's technical training courses on basic Material Tests and Non Destructive Tests could shift from instruction of theories to practical training after the Project started, and necessary machinery and equipment have been provided by both Japanese and Mexican sides. As a result, the number of trainees of training courses has been significantly increasing.
- The Project organized an International Seminar where ten (10) trainees from four Central and South American countries, and thirteen (13) trainees and eighty (80) ordinary participants from Mexico were invited. The participants agreed to create a network among related sectors in order to enhance support for SMEs in their respective countries. CIDESI is expected to be the core center of the broad network for the technical support of SMEs.

**4-1-3. Efficiency**

Due to efforts of both sides, inputs and activities were appropriately planned, implemented, and, thereby, efficiently converted to outputs as explained below. A system to support project management was established, and the function of the system contributed to improving efficiency.

- Training of C/Ps in Japan under the Project has been an effective means of supplementing the technical transfers. All C/Ps who received training in Japan have been key members of the Project.
- The number of Mexican C/Ps allocated and their field of expertise have been appropriate. Their qualifications are excellent and they have greatly contributed to achieving outputs.
- The Mexican side made systematic efforts to ensure efficient implementation of the Project, such as improving the employment conditions of C/Ps and ensuring the project budget.

- The Mexican side established the Joint Coordinating Committee and the Project Supporting Committee, which contributed to the efficient implementation of the Project.
- The capacity and field of expertise of Japanese experts, the quality of machinery and equipment, as well as the quantity and timing of inputs of experts and machinery/equipment were appropriate. Local procurement of machinery and equipment made the delivery time short and facilitated maintenance after installation.
- The Japanese supporting committee has functioned well for the most part of the implementation of inputs. Particularly, the committee played an important role for C/P training in Japan.
- The items of instruction by the Japanese missions, i.e. the Management Consultation Team and the Advisory Team, were considered, and problems regarding project management were solved by the concerned parties from both Japanese and Mexican sides.

#### 4-1-4. Relevance

The relevance between the Project Purpose and the Overall Goal has been high, both at the beginning and at the present point of the Project.

- The relevance of the Overall Goal and the Project Purpose to the national policy is high under the current administration.
- The relevance to the needs of target sectors and industries has been still high in the target area as well as throughout Mexico.
- The Overall Goal should be achieved as accomplishment of the Project Purpose expands to various regions. Due to this structure, consistency and coherence between the Overall Goal and the Project Purpose are high.
- The initial project design was just, because it did not require any major change during implementation.

#### 4-1-5. Sustainability

- Since legal reform of the organizational status in May 1999, the role of CIDESI in supporting the production sector has remained the same and the body has become more important in terms of policy. As a result, we estimate that the organizational and financial sustainability will continue to be ensured.
- Regarding the maintenance of machinery and equipment, the budget necessary for contracts made for paid maintenance has been appropriately allocated and will continue to be ensured.
- C/Ps have already acquired the skills necessary to develop and manage the entrusted test

service, seminars/training courses and, furthermore, basic skill for technical consulting service for the SMEs. Therefore, technical sustainability is for the most part ensured. To develop advanced skills for consulting service, it is necessary to keep their experience and knowledge in the field developed especially in the field of Material Test.

#### 4-1-6. Prospects and subject to be solved for the future

- We evaluate that the Project will achieve its purpose by January 2002, as initially planned. It is also possible that the achieved Project Purpose will be sustained and developed to achieve the Overall Goal.
- After completion of the Project, it is necessary to keep track of the latest trends in relevant technology and apply them to the technical services for industries to enable CIDESI to continuously fulfill the potential needs of SMEs. At the same time, CIDESI needs to upgrade its technical capacity, making best use of its own personnel as well as experts from outside.

#### 4-2. Achievement of the Plan

Narrative Summary	Objectively Verifiable Indicators	Result	Reference No.
<p><b>Overall Goal</b></p> <p>CIDESI and other institutes will be able to provide appropriate technical service in the field of Material Test and Non Destructive Test for small and medium scale industries (SMEs) in the United Mexican States.</p>	<ol style="list-style-type: none"> <li>1. The number of entrusted tests, extension service, and information service at respective institutes increases.</li> <li>2. The number of participants in seminars and training courses at respective institutes increases.</li> <li>3. The number of qualified personnel at respective institutes as well as in related industries increases.</li> <li>4. The number of products improved by technical support of respective institutes increases (The production ratio of inferior goods decreases).</li> </ol>	<ol style="list-style-type: none"> <li>1. CIDESI has been conducting technical transfer through training courses and seminars for backbone engineers of CIDESI and other institutes.</li> <li>2. The project has organized 26 seminars and 3 technical training courses in cooperation with industrial, governmental, and academic institutes. In total, 2128 people have participated in these seminars and training courses.</li> <li>3. CIDESI has been helping engineers of respective institute to acquire qualifications through technical training courses and extension services.</li> <li>4. Consulting skills for industries have been improving as a result of the technical training courses and technical transfer to CIDESI and other institutes.</li> </ol>	<p>21-1</p> <p>21-2</p> <p>21-2</p> <p>26</p> <p>21-2</p>
<p><b>Project Purpose</b></p> <p>CIDESI will be able to provide appropriate technical service in the field of Material Test and Non Destructive Test for SMEs in and around</p>	<ol style="list-style-type: none"> <li>1. The high level of satisfaction of SMEs is achieved.</li> <li>2. The number of technical services and their range for SMEs increase.</li> <li>3. The clients that repeatedly request technical services appear.</li> </ol>	<ol style="list-style-type: none"> <li>1. The satisfaction level of the technical services provided by CIDESI has been high.</li> <li>2. The number of technical services in the field of technical transfer, such as entrusted tests, technical training courses, and extension services, has shown a tendency to increase each year. In the field of Non Destructive Test, CIDESI provided technical transfer for 56 industries and</li> </ol>	<p>24</p> <p>22</p> <p>21-1</p> <p>23</p>



Querétaro State.		<p>extension services of material property for four model industries in 2000, and added three SMEs as model industries of extension services during the project period. A total of 7 industries had received regular extension services as of October 2001, and 12 common client industries.</p> <p>3. 44% of the clients of entrusted test (150 industries out of 338) have requested technical services repeatedly.</p>	7
<p><b>Outputs</b></p> <p>0. The management system of the Project will be enhanced.</p> <p>1. Machinery and equipment necessary to implement testing service in the field of Material Test and Non Destructive Test will be provided, installed, operated and maintained properly.</p>	<p>0-1 C/P are allocated as planned.</p> <p>0-2 Authority and responsibility structure within the Project is clarified.</p> <p>0-3 Budget is adequately allocated.</p> <p>0-4 Management capacity of administrative C/P improves.</p> <p>0-5 Committees and management meetings are held at an appropriate pace.</p> <p>0-6 The number of public relations on the Project increases.</p> <p>1-1. The type and quantity of machinery and equipment provided are appropriate.</p> <p>1-2. Machinery and equipment provided are appropriately operated.</p> <p>1-3. Machinery and equipment provided are inspected and repaired as necessary</p> <p>1-4. Spare parts are appropriately procured.</p> <p>1-5. Information necessary for the operation and maintenance of machinery and equipment</p>	<p>0-1. The Project had initially planned to allocate 12 technical C/Ps and 4 administrative C/Ps. However, it allocates 13 technical C/Ps and 5 administrative C/Ps at the present point.</p> <p>0-2. Since the organizational reform in 2000, the Project has established a system in which the director directly controls all the 6 technical business units. The sharing of responsibilities and authorities is clear within target divisions of technical transfer under the Project (Material technology business unit).</p> <p>0-3. 15.4 million pesos (1997-2001) have been locally allocated for project management.</p> <p>0-4. CIDESI has acquired enough management capacity to run the Project by itself and has accumulated information institutionally.</p> <p>0-5. Weekly project management meeting have been held (122 times), as well as meeting at the management level such as the Joint Coordinating Committee, and Project Supporting Committee. Problems concerning project management have been resolved as a result of discussions in the meetings. Technical experts have attended the meeting and given advice when necessary.</p> <p>0-6. The Project published introductory brochures between 1998 and 2001 (4 times in total). Each time, 2000 copies were distributed. In addition, the Project has published 4 newsletters since 2000. Since the establishment of an Internet homepage in February 2001, 24,700 people have visited the site and there had been 9 press releases and 7 exposures on TV and on Internet.</p> <p>1-1. A sufficient types and quantity of machinery and equipment have been installed and maintained for technical transfers. The type and quality of machinery and equipment provided have been appropriate.</p> <p>1-2. The machinery and equipment provided have been appropriately operated. According to a demonstration of tensile test presented to the evaluation mission, it was confirmed that the counterparts in the field of Material Test have acquired skills to operate machinery and equipment appropriately.</p> <p>1-3. The machinery and equipment installed have been appropriately maintained through contracts</p>	<p>9</p> <p>17</p> <p>12</p> <p>29</p> <p>14</p> <p>15</p> <p>19</p> <p>33</p>

	is accumulated within CIDESI.	with maintenance suppliers. 1-4. Spare parts have been appropriately procured through local distributors. 1-5. Operation and maintenance manuals have been filed in usable form and the necessary information has been accumulated within CIDESI.	
2. The technical capability of the counterpart personnel (C/P) will be upgraded in the said field.	2-1. Each C/P improves his own skills of technology transfer items. 2-2. The number of technical services that each C/P can offer increases. 2-3. Original curricula, manuals and instruction materials are developed. 2-4. The number of qualified C/P increases.	2-1. All technical transfer items have been transferred to C/Ps as planned in the TCP and they have improved capacity to the level initially planned. Therefore, all technical transfers should be completed by the completion of the Project. 2-2. C/Ps have acquired 26 new testing skills at the target laboratories of technical transfers under the Project. 2-3. The Project had developed 22 types of operation/maintenance manuals for machinery and equipment and 68 types of instruction materials to be used at seminars and technical training course as of September of 2001. 2-4. The number of qualifications acquired by staff was 18 one year before the Project begun in 1997, whereas the number had significantly increased to be 44 as of September 2001.	13-1 13-2 26 25 18 27 20
3. Seminars and training courses in the said field that meet the needs of SMEs in and around Querétaro State will be established and managed.	3-1. The number of related seminars and training courses increases.	3-1. Seminars and training for backbone engineers from industrial, governmental and academic institutes have been held 50 times and a total of 1,628 people participated by the end of November 2001. Aiming for technical transfers to other industrial, governmental and academic institutes, the project organized 26 seminars and 3 technical training in cooperation with those institutes. In total, 2,128 people participated in these seminars and training courses by the end of November 2001. The number of seminars and training courses has significantly increased since implementation of the Project.	21-1 21-2
4. The technical support towards SMEs will be systematized.	4-1. Related technical information is accumulated at CIDESI. 4-2. The quantity and quality of entrusted test, extension service and information service satisfy the needs of the target group. 4-3. Public relations on the technical services of the Project are promoted.	4-1. The CIDESI's library has filed 2,200 types of technical documents (4,500 volumes). 4-2. The total number of entrusted tests at the laboratories that received technical transfers under the Project was 3,184, and the number of test samples was 10,053 as of September 2001. In addition, the number of industries that received extension services was 56 in the field of Non Destructive Tests and 7 model industries and other 12 industries in the field of Material Test as of October 2001. 4-3. The Project published introductory brochures once a year (4 times in total) as well as 4 newsletters.	28 22 23 29

Inputs	
R/D	Result
<p><u>Japanese side</u></p> <ol style="list-style-type: none"> <li>1. Dispatch of Japanese experts               <ol style="list-style-type: none"> <li>(1) Long-term experts: 5                   <ol style="list-style-type: none"> <li>a. Chief Advisor</li> <li>b. Coordinator</li> <li>c. Mechanical Test and Metallography</li> <li>d. Chemical Analysis</li> <li>e. Non Destructive Test</li> <li>f. Short-term experts</li> </ol> </li> </ol> <p>Appropriate number of experts will be dispatched as necessity arises.</p> </li> <li>2. Acceptance of trainees               <p>Approximately two trainees per year (from 2 weeks to 3 months)</p> </li> <li>3. Provision of machinery and equipment</li> <li>4. Support for local cost</li> </ol> <p><u>Mexican side</u></p> <ol style="list-style-type: none"> <li>1. Provision and maintenance of buildings and facilities</li> <li>2. Allocation of C/P and administrative personnel               <ol style="list-style-type: none"> <li>(1) Administrative C/P: 4</li> <li>(2) Technical C/P: 12</li> <li>(3) Supporting Staff                   <ol style="list-style-type: none"> <li>a. Technical Staff                       <ol style="list-style-type: none"> <li>(a) Technician: 2</li> <li>(b) Skilled Workers: 2</li> </ol> </li> <li>b. Administrative Staff                       <ol style="list-style-type: none"> <li>(a) Secretary 1</li> <li>(b) Driver 1</li> </ol> </li> </ol> </li> </ol> </li> <li>3. Provision of machinery and equipment and their maintenance</li> <li>4. Local Cost:               <p>Necessary budget for the implementation of the project</p> </li> </ol>	<p><u>Japanese Side</u></p> <ol style="list-style-type: none"> <li>1. Dispatch of Japanese experts               <ol style="list-style-type: none"> <li>(1) Long-term experts: 7 (total)</li> <li>(2) Short-term experts: 22 (total)</li> </ol> </li> <li>2. Acceptance of trainees: 15</li> <li>3. Machinery provided: Material Test Equipment, Non Destructive Test Equipment, etc. (206,898 thousand Yen)</li> <li>4. Support for local cost: 23,533 thousand Yen (1997 - Dec. 2001 estimate)</li> </ol> <p><u>Mexican side</u></p> <ol style="list-style-type: none"> <li>1. Provision and maintenance of buildings and facilities: 117,687 thousand Pesos</li> <li>2. Allocation of C/P and administrative personnel               <ol style="list-style-type: none"> <li>(1) Administrative C/P: 5</li> <li>(2) Technical C/P: 13</li> <li>(3) Supporting Staff                   <ol style="list-style-type: none"> <li>a. Technical Staff                       <ol style="list-style-type: none"> <li>(a) Technician: 2</li> <li>(b) Skilled Workers: 2</li> </ol> </li> <li>b. Administrative Staff                       <ol style="list-style-type: none"> <li>(a) Secretary 1</li> <li>(b) Driver 1</li> </ol> </li> </ol> </li> </ol> </li> <li>3. Provision of machinery and equipment and their maintenance: 2,185 thousand Pesos (Dec. 2001 estimate)</li> <li>4. Local Cost: 17,325 thousand Pesos (Dec. 2001 estimate)</li> </ol>

### 4-3. Evaluation Results of the 5 Criteria

#### 4-3-1. Effectiveness

Evaluation Criterion	Findings	Reference
Achievement of outputs 0	<p>Output 0: The management system of the Project will be enhanced.</p> <ul style="list-style-type: none"> <li>• The Project had initially planned to allocate 12 technical C/Ps and 4 administrative C/Ps. However, it allocates 13 technical C/Ps and 5 administrative C/Ps at the present point.</li> <li>• Since the organizational reform in 2000, the Project has established a system in which the director directly controls all the 6 technical business units. The sharing of responsibilities and authorities is clear within target divisions of technical transfer under the Project (Material technology business unit).</li> <li>• The Mexican side has shared the local cost burden throughout the entire project period, and there has been no problem regarding project implementation. Total administrative budget of CIDESI during the last five years (January 1997-September 2001) was 252 million pesos. Local cost absorbed for the Project was included in the budget, which cost 15.4 million pesos.</li> <li>• A management group has been organized in the project and the management is systematized. C/Ps have been taking responsibility for carrying out tasks and managing the Project on their own initiative. There is room for improvement to create smoother management in terms of punctuality and information sharing among staff members.</li> <li>• Members from the Ministry of Foreign Affairs, the SECOFI (SE), the Science and Technology Council, the Japanese Embassy, and the JICA Mexico Office have held Joint Coordinating Committee meetings (5 times) and Project Supporting Committee meetings (3 times). In addition, weekly project management meetings for C/Ps had been held 122 times by the end of November 2001. At those meetings, participants discussed and solved problems regarding management. Also, experts have participated in meetings that C/Ps have held when needed and have given advice.</li> <li>• For public relations, the Project published introductory brochures once a year between 1998 and 2001 (4 times in total). Each time, 2000 copies were distributed to organizations of various fields. In addition, the Project published 4 newsletters since 2000, and 1000 copies each time were distributed to industries concerned and participants of seminars/training courses. Since the establishment of an Internet homepage in February 2001, 24,700 people have visited the site and there have been 9 press releases and 7 exposures on TV and on Internet.</li> </ul>	<p>Annex 9</p> <p>Annex 8</p> <p>Annex 9</p> <p>Annex 17</p> <p>Annex 29</p>
Achievement of outputs 1	<p>Output 1: The machinery and equipment necessary to implement Material Test and Non Destructive Test will be provided, installed, operated and maintained properly.</p> <ul style="list-style-type: none"> <li>• Sufficient types and quantity of machinery for Material Test, Non Destructive Test and other service have been installed and properly operated at four laboratories.</li> <li>• The machinery and equipment provided have been appropriately operated. According to a demonstration of tensile test presented to the evaluation mission, it was confirmed that the counterparts in the field of Material Test have acquired skills to operate machinery and equipment appropriately.</li> <li>• The machinery has been regularly inspected, and failures have been calibrated as mentioned in maintenance/calibration plan, due to contracts made for paid maintenance with vendors.</li> <li>• Spare parts have been appropriately procured through local distributors.</li> <li>• C/Ps have acquired sufficient capacity to operate and maintain the machinery.</li> <li>• There are manuals to train C/Ps to operate, maintain and calibrate 22 machinery and equipment located at four laboratories. In addition, 112 workshops were organized and manuals for these workshops were produced during the project period (from March 1998 to November 2001).</li> </ul>	<p>Annex 14</p> <p>Annex 15</p> <p>Annex 18,26</p> <p>Annex 19</p>

Achievement of outputs 2	<p>Output 2: The technical capability of C/Ps in the field of Material Test and Non Destructive Test will be upgraded</p> <ul style="list-style-type: none"> <li>• According to an evaluation by experts, among the technical transfer items set initially, C/Ps have acquired the capacity to handle the entrusted tests and to implement training courses.</li> <li>• According to the demonstration mentioned above, it was confirmed that the counterparts in the field of Material Test have acquired skills to manage tensile test appropriately, and basic skill to implement consulting service in the field, which has been aimed on the Project.</li> <li>• The result of round robin test was evaluated as appropriate excellent by the Supporting Committee in Japan.</li> <li>• The Project has been able to provide 26 new testing services, including 7 items of new services in Chemical Analysis Division, 9 items in Metallography, 6 items in Mechanical Test and 4 items in the Non Destructive Test.</li> <li>• Regarding basic technical consulting skills, all technical transfers will be completed by December 2001.</li> <li>• The findings above-mentioned show that C/Ps have acquired sufficient skills to implement entrusted tests and to develop and implement training courses and furthermore, basic skill for technical consulting service for the SMEs.</li> </ul>	<p>Annex 13-1</p> <p>Annex 5</p> <p>Annex 20</p> <p>Annex 13-2</p> <p>Annex 21-1,21-2,22,23</p>
Achievement of outputs 3	<p>Output 3: Seminars and training courses in the said field that meet the needs of SMEs in and around Querétaro State will be established and managed.</p> <ul style="list-style-type: none"> <li>• Seminars and training for backbone engineers from industrial, governments and academic institutes have been held 50 times and a total of 1,628 people participated by the end of November 2001.</li> <li>• Aiming for technical transfers to other industrial, governmental and academic institutes, the project organized 26 seminars and 3 technical training in cooperation with those institutes. In total, 2,128 people participated in these seminars and training courses by the end of November 2001. The number of seminars and training courses has significantly increased since implementation of the Project.</li> <li>• The project has developed 68 types of instruction materials to be used at the seminars and technical training courses mentioned above.</li> </ul>	<p>Annex 21-1</p> <p>Annex 21-2</p> <p>Annex 27</p>
Achievement of outputs 4	<p>Output 4: The technical support towards SMEs will be systematized.</p> <ul style="list-style-type: none"> <li>• The number of entrusted tests has shown a tendency to increase each year during the project period, except in the field of Metallography. The increase rate of the samples was 1.87 for Mechanical Test, 1.41 for Chemical Analysis, while the increase rate for service orders was 3.3 for the Non Destructive Test between 1998 and 2000.</li> <li>• The Non Destructive Test Division had implemented technical extension services for 56 industries by the end of October 2001. In addition, the Material Test Division has implemented extension services for 1.5 years, targeting 4 model industries in Querétaro city, 3 model industries in San Luis Potosi (total 7 model industries), and 12 common client industries.</li> <li>• 44% of the clients of entrusted test (150 industries out of 338) have requested technical services repeatedly.</li> <li>• The latest technical information related to this Project has been disseminated through seminars on Material Test and Non Destructive Test, which target engineers from industries, governmental and academic institutes and has been organized 26 times by CIDESI and held 26 times in cooperation with other institutes.</li> <li>• Public relations activities have been implemented to promote the latest information regarding this Project, utilizing media such as project brochures, 8 public relation magazines for SMEs, and the Internet homepage.</li> </ul>	<p>Annex 22</p> <p>Annex23</p> <p>Annex7</p> <p>Annex 21-1 Annex 21-2</p> <p>Annex 29</p>
Achievement of project purpose	<p>The project purpose was set in the narrative summary of the PDM as "CIDESI will be able to provide appropriate technical service in the field of Material Test and Non Destructive Test for SMEs in and around Querétaro State.". The achievement level is as follows:</p> <ul style="list-style-type: none"> <li>• CIDESI administered the latest questionnaires to 59 client industries in July 2001. The results showed that clients highly evaluated the range, reliability, and technology of</li> </ul>	<p>Annex 24</p>

	<p>the test services. Clients also noted improvement since the previous questionnaire in terms of the time period, which took to operate the test services and to deliver test results to clients.</p> <ul style="list-style-type: none"> <li>• According to questionnaires and interviews to the clients by the mission, the result was evaluated to have the same tendency as mentioned above.</li> <li>• The technical transfer of this project resulted in providing 26 new services, including 7 items of new test services for the Chemical Analysis Division, 9 items for the Metallography Division, 6 items for the Mechanical Test Division and 4 items for the Non Destructive Test Division.</li> <li>• C/Ps have been managing training courses and seminars as instructors, targeting trainees from industrial, governmental and academic institutes (by the end of November 2001, a total of 27 technical training courses and 52 seminars had been organized). As a result, C/Ps have acquired sufficient knowledge and technical capacity to transfer the skills learned from Japanese experts to engineers from industrial, governmental and academic institutes.</li> <li>• Many of the client SMEs that received the technical service highly evaluated the contents of the service, and as a result, desire the service be provided continuously.</li> <li>• <u>The above findings appear to indicate that the project purpose will be achieved.</u></li> </ul>	<p>Annex 25</p> <p>Annex 21-1 Annex 21-2</p>
<p>Factors obstructing outputs from achieving the project purpose</p>	<ul style="list-style-type: none"> <li>• During the FY 2001, the number of entrusted tests requested by industries and participants of technical training by the Project has declined. We estimate that the recent economic recession in the U.S., particularly in auto parts industries, has contributed to the decline.</li> </ul>	<p>Annex 21-1</p>

**4-3-2. Impact**

Evaluation Criterion	Findings	Reference
<p>Direct impact (Project purpose level)</p>	<p><u>Project Purpose</u>  <u>CIDESI will be able to provide appropriate technical service in the field of Material Test and Non Destructive Test for SMEs in and around Querétaro State.</u></p> <p>(1) Expected impact</p> <ul style="list-style-type: none"> <li>• The function of CIDESI and its reliability has been recognized due to the Project. During project implementation, the number of technical services dramatically increased, such as entrusted tests, extension services, technical training, and information service for SMEs.</li> </ul> <p>(2) Unexpected impact</p> <ul style="list-style-type: none"> <li>• The focus of CIDESI's technical training courses on basic Material Test and Non Destructive Test has shifted from instruction of theories to practical training since machinery and equipment have been provided by the Project. As a result, the number of trainees in CIDESI training courses has significantly increased.</li> <li>• The Project developed automation technology for Non Destructive Test (Ultrasonic robot) under the Non Destructive Test Division.</li> </ul>	<p>Annex 21-1 Annex 22 Annex 23 Annex 28</p> <p>Annex 21-1</p>
<p>Indirect impact (Overall goal level)</p>	<p><u>Overall Goal</u>  <u>CIDESI and other institutes will be able to provide appropriate technical service in the field of Material Test and Non Destructive Test for SMEs in the United Mexican States.</u></p> <p>(1) The Overall Goal has not been achieved yet, but it is expected to emerge in the near future due to the following reasons:</p> <ul style="list-style-type: none"> <li>• Project Purpose is expected to be achieved.</li> <li>• The Important Assumption at the Project Purpose level should remain upheld.</li> <li>• Financial, technical, and organizational sustainability of CIDESI will continue to be assured.</li> <li>• The number of participants in CIDESI's training has been increasing due to the achievement of the Project Purpose.</li> <li>• The initial limited implementation target area for technical training/seminars as set forth by the Project has expanded to all Mexican States and to other institutes. For example, the Project has cooperated with industries, governmental and academic authorities, and 26</li> </ul>	<p>Annex 21-1 Annex 21-2</p>

	<p>seminars and 3 technical training programs for engineers have been organized outside of the Querétaro State. Therefore, we estimate that these participants will contribute to achieving the Overall Goal in the future.</p> <ul style="list-style-type: none"> <li>• Collaboration among industrial, governmental, and academic authorities for SMEs has been enhanced due to the implementation of the seminars mentioned above.</li> </ul> <p>(2) Indirect impact which was not included in the overall goal.</p> <ul style="list-style-type: none"> <li>• In October 2001, the Project organized a Special Task Force Seminar where 10 trainees from four Central and South American countries, 13 trainees from Mexico and 80 ordinary Mexican participants were invited. The agenda of the seminar was "How should research/test centers and universities cooperate and collaborate with production sections, specifically with SMEs of respective countries". They agreed to create a network among participating sectors, in order to enhance support for SMEs in the respective countries.</li> </ul>	
Negative impact	<ul style="list-style-type: none"> <li>• There was no negative impact that emerged as a result of project implementation.</li> </ul>	
Factors obstructive for overall goal	<ul style="list-style-type: none"> <li>• Economic recession in the U.S. since the beginning of 2001 resulted in a decline in the number of entrusted tests and trainees this year. It is possible that this situation may block the achievement of the Overall Goal.</li> </ul>	

#### 4-3-3. Efficiency

Evaluation Criterion	Findings	Reference
Relevance of the quality, quantity and timing of inputs from Japanese side		
(1) Experts Long-term experts: 7 Short term experts: 22	<ul style="list-style-type: none"> <li>• The number of dispatched experts: The number of long-term experts was sufficient and was not changed.</li> <li>• Fields of expertise: Fields of expertise of Japanese experts were appropriate. The Project had planned to dispatch experts in 12 technical fields at the time of R/D. However, it was found that fields of technical transfer had become vaster and more fragmented than planned. Therefore, the Project actually dispatched experts in 22 technical fields to supplement long-term experts.</li> <li>• Period of technical transfer: In the field of Non Destructive Test, the period of technical transfer by experts shortened to two years, which originally had been three years, and short-term experts subsidized instructions because of the progress in technical transfers and the changing needs.</li> <li>• Cooperation period: Four years was an appropriate period.</li> <li>• Capacity of experts: They possessed sufficient capacity in their respective fields of expertise.</li> </ul>	Annex 10
(2) Machinery and equipment (Total amount of provision: 206,898 thousand yen)	<ul style="list-style-type: none"> <li>• Procurement: Considering maintenance and price, it was appropriate that all machinery and equipment for the Project were locally procured. Local procurement, instead of purchasing from Japan, kept the time period from order to delivery very short. Delayed delivery of the suppliers in Mexico, however, sometimes affected the schedule of technical transfers.</li> <li>• Quality and quantity of machinery and equipment: The quality and quantity of the machinery and equipment provided from the Japanese side were appropriate.</li> <li>• During the first year, the Project planed all the necessary procurement of machinery and equipment. From the second year, the Project purchased additional machinery and equipment, which were not included in the plan. As a result, the Project had more inputs than the amount initially planned.</li> </ul>	Annex 14
(3) Acceptance of trainees (15 trainees)	<ul style="list-style-type: none"> <li>• Contents of curricula: All the technical C/Ps were accepted by professional technical courses organized by the Supporting Committee in Japan. The contents of the courses were effective in terms of subsidizing the technical transfer of this project. Management staff, such as project directors and project managers, were trained in Japan and it was of benefit for project management.</li> <li>• Period and time of training: Appropriate</li> <li>• All C/Ps who received training in Japan have been key members of the Project</li> <li>• The number of trainees dispatched was as initially planned.</li> </ul>	Annex 16
(4) Local Cost provided by	<ul style="list-style-type: none"> <li>• Appropriate</li> </ul>	Annex 32

the Japanese side (23,533 thousand yen, estimated in January, 2002)		
Relevance of the quality, quantity and timing of inputs from the Mexican side		
(1) Allocation of C/Ps (20 persons at the end of September 2001)	<ul style="list-style-type: none"> <li>The number of C/Ps and allocation: 15 technical C/Ps (13 C/Ps who receive direct instruction and 2 supporting staff) were the target of technical transfer. This number was sufficient to implement the planned activities within the project period and achieve outputs. The labor turnover rate of C/Ps remained low throughout the project period because CIDESI improved employment conditions, with vacant positions after turnovers filled accordingly.</li> <li>Capacity of C/Ps: Allocation of excellent personnel contributed to outputs.</li> </ul>	Annex 9
(2) Maintenance of machinery and equipment (1,624 thousand Pesos)	<ul style="list-style-type: none"> <li>The Project has concluded paid contracts for maintenance with vendors since 1999. Based on the maintenance/calibration plan, the Project conducts regular inspections and troubleshooting, as well as has reserved budget for maintenance.</li> </ul>	Annex 12 Annex 19
(3) Project budget (17,325 thousand Pesos, expected in December 2001)	<ul style="list-style-type: none"> <li>The Project allocated an appropriate budget necessary for project management.</li> </ul>	Annex 12
Adequacy of the quality, quantity, and timing of inputs toward achieving outputs		
Adequacy of the quality, quantity, and timing of inputs toward achieving outputs	<ul style="list-style-type: none"> <li>The quality, quantity and timing of the inputs listed above were adequate, because the outputs of the Project have been mostly achieved as planned.</li> </ul>	
Project support structure	<ul style="list-style-type: none"> <li>The Joint Coordinating Committee that was held twice a year has reached a consensus regarding the result of semi-annual monitoring of the Project and the prospect of the future. The Project Supporting Committee was established with members from industrial, governmental and academic institutes and has promoted the project outputs.</li> <li>Support by the Project Supporting Committee in Japan greatly contributed to project implementation in recruitment of experts and C/P training.</li> </ul>	Annex 17
Collaboration with other organizations	<ul style="list-style-type: none"> <li>In collaboration with JICA's "Mini-project on Casting Technology", seminars and training courses on metal processing have been regularly organized. The experts of the Mini-project have conducted technical instruction on casting technology for C/Ps of this project, through extension services for casting industries.</li> <li>CIDESI expects to further collaborate with universities and related institutes.</li> <li>The Project organized seminars/training courses in collaboration with industrial, governmental and academic institutes for the purpose of technical transfers to these institutes. By the end of November 2001, the project has organized 26 seminars and 3 technical training courses in cooperation with industrial, governmental, and academic institutes. In total, 2,128 people have participated in these seminars and training courses.</li> <li>In October 2001, the Project organized an International Seminar where 10 trainees from four Central and South American countries, 13 trainees from Mexico and 80 ordinary Mexican participants were invited. The participants agreed to create a network among participating institutes in order to enhance supports for SMEs in their respective countries.</li> <li>Regarding technical cooperation with other business units within CIDESI, the Project has cooperated with the presswork and metal forming business unit, which was recognized as a necessary cooperation by the Japanese Advisory Team. In addition, in the field of fracture mechanics, cooperation with the Postgraduate Studies business unit (master's and doctor's courses) has begun.</li> <li>29 agencies including CIDESI affiliated to CONACYT aim to contribute to social and economic development in Mexico. Each agency has a special field of expertise and mutually complements its fields and targets of support. CIDESI takes charge of technical assistance for SMEs. CONACYT has been in charge of supervising and supporting these agencies so that they implement activities according to the policy.</li> </ul>	Annex 21-1  Annex 21-2



Application of the discussion with missions	<ul style="list-style-type: none"> <li>The results of discussions with the missions have been considered or reflected on project management.</li> <li>For example, according to discussions of the Japanese Management Consultation Team of 1998 and the Japanese Advisory Team of 2000, the Project planned and implemented a regular monitoring plan and a plan for an extension service for on-the-job training at SMEs.</li> </ul>	Annex 31
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#### 4-3-4. Relevance

Evaluation Items	Findings	Reference
<p><u>Relevance to Overall Goal</u></p> <p>(1) Consistency to the national policy of Mexico</p> <p>(2) Consistency to the needs of SMEs</p>	<p>&lt;Overall Goal&gt;</p> <p><u>CIDESI and other institutes will be able to provide appropriate technical service in the field of Material Test and Non Destructive Test for small and medium scale industries (SMEs) in the United Mexican States.</u></p> <ul style="list-style-type: none"> <li>The National Science and Technology Plan under the National Development Plan 1995-2000 (announced in May 1995) set forth the following goals: <ul style="list-style-type: none"> <li>Enhance collaboration between scientific research institutes and manufacturing and service industries, especially SMEs.</li> <li>Enhance exchange with external cooperation agencies in the field of science and technology in order to keep track of trends of science and technology development at a global level.</li> <li>Enhance collaboration and relationships among technology/research institutes, educational organizations and production sectors</li> </ul> </li> <li>The Overall Goal set for the three goals above has been achieved with measures as follows: <ul style="list-style-type: none"> <li>CIDESI has contributed to developing SMEs by promoting knowledge/skills through the entrusted services, technical instruction services and seminars/training courses.</li> <li>Knowledge and information on science and technology of a global level have been promoted to engineers who participate in CIDESI seminars/training courses from industrial, governmental and academic institutes.</li> <li>CIDESI has organized numerous seminars and training courses in collaboration with other educational, governmental and other related institutes. Participation by engineers from industries, governmental and academic sectors in those seminars/technical training courses has strengthened the collaboration among those sectors</li> </ul> </li> <li>The current Fox administration prioritizes the development of SMEs as an important policy, and the overall goal is relevant to national policy.</li> <li>SMEs sector expects that a technical support system for SMEs will develop the sector in a long run.</li> </ul>	

Relevance to Project Purpose	<ul style="list-style-type: none"> <li>• The current government established in December 2000 maintains an economic policy that focuses on economic liberalization and market opening. Under this framework, modernization of the domestic manufacturing industry is an important issue for the development of Mexico, and the government has developed an economic policy that prioritizes SMEs development.</li> <li>• Presently, however, many small and medium scale manufacturers in the target area lack technical capacity. Therefore, strengthening global competitiveness and improving technical capacity remains the most important issues.</li> <li>• The Presidential Act of May 1999 shifted the legal status of CIDESI from an external organization of the Ministry of Public Education to a public decentralized organization. Under this framework, CIDESI is obviously designed to support technical modernization of the Mexican production sector through the provision of technical service.</li> <li>• Therefore, the consistency of the Project Purpose to national policy is high.</li> </ul>	
(2) Consistency to the national policy of Mexico	<ul style="list-style-type: none"> <li>• The Overall Goal is to transfer the effects of the achieved Project Purpose to other institutes that have the same purpose as CIDESI, and expand the effects to national level. Therefore, the Overall Goal is consistent with Purpose.</li> </ul>	
(3) Consistency to Overall Goal	<ul style="list-style-type: none"> <li>• The technical needs in the said two fields still exist within the target group.</li> </ul>	
(3) Consistency to technical needs of the target group		
Relevance of the project design	<ul style="list-style-type: none"> <li>• Preparation necessary for project activities and inputs was made according to a series of matrices based on PCM such as PDM, PO, APO, TCP, ATCP. As a result, the achievement level of outputs has been high.</li> <li>• The cooperation period of four years was almost appropriate.</li> <li>• The initial plan at the time of R/D had been of high completeness because the original PDM did not require major changes.</li> </ul>	Annex 1 Annex 4 Annex 6
Relevance of the choice of scheme	<ul style="list-style-type: none"> <li>• The Project-type Technical Cooperation scheme has been appropriate, because the main purpose of the Project has been to train engineers and develop a training system.</li> </ul>	
Utility of Japanese technology	<ul style="list-style-type: none"> <li>• The competitive advantage of Japanese technology is high in the said two fields.</li> </ul>	
Overlap of cooperation with other agencies	<ul style="list-style-type: none"> <li>• There was no overlap with other donors in terms of cooperation fields.</li> <li>• 29 agencies including CIDESI affiliated to CONACYT aim to contribute to social and economic development in Mexico. Each agency has a special field of expertise and mutually complements its fields and targets of support. CIDESI takes charge of technical assistance for SMEs. CONACYT has been in charge of supervising and supporting these agencies so that they implement activities according to the policy.</li> </ul>	
Factors that prevented relevance	None	

#### 4-3-5. Sustainability

Evaluation Items	Findings	Reference
Institutional Aspects	<p>(1) Enhancement of the role of implementing agency in policies</p> <ul style="list-style-type: none"> <li>• The Presidential Act announced on an official gazette informed that CIDESI would undergo legal reform of the organizational status and perform the following roles in governmental policy               <ol style="list-style-type: none"> <li>a. Chapter 2 of the Presidential Act defined the role of CIDESI as to promote collaboration between the national educational system and the industry sector, as well as support technical modernization of the production sector.</li> <li>b. Chapter 3 of the Presidential Act defined the function of CIDESI as to realize the roles mentioned in a. as follows:                   <ol style="list-style-type: none"> <li>1. Support collaboration between national industries and national educational institutes.</li> <li>2. Implement research activities and technology development in line with the modernization needs of the production sector.</li> <li>3. Develop applied research and projects on professional technical education for other institutes.</li> <li>4. Provide technical services to the production sector, such as design, quality control/guarantee, standardization, production skill acquisition, testing service, information services etc.</li> <li>5. Contribute to development, promotion, and actualization of the technology appropriate for the country.</li> <li>6. Develop technology necessary for producers and public institutes.</li> <li>7. Train human resources in the field of production process technology at pilot plants and through actual operations.</li> <li>8. Develop relationships for mutual supplementation with domestic/external institutes in the fields of education and technology</li> </ol> </li> </ol> </li> <li>• The roles and functions mentioned above show that CIDESI has maintained the role of a technical service provider for the production sector since legal reform of the CIDESI's status, and the importance of the role has been strengthened.</li> </ul> <p>(2) Prospect of cooperation with external institutes</p> <ul style="list-style-type: none"> <li>• The current Director General has a wide-ranging personal network within political, governmental and economic sectors and is actively collaborating with external institutes.</li> <li>• For the purpose of technical transfers to industrial, governmental and academic institutes, a total of 2128 trainees participated in 26 seminars and 3 technical training courses were organized in collaboration with these institutes by the end of November 2001.</li> <li>• CIDESI plans to maintain the organization of seminars/training courses in collaboration with industries, governmental and academic authorities.</li> </ul>	Annex21-2

	<p>(3) Management system of the implementing agency</p> <ul style="list-style-type: none"> <li>• The project management system has been built up and the Project is able to continue and develop its activities.</li> <li>• CONACYT has promised future support for the Project and the Querétaro Government also promised support for CIDESI.</li> <li>• CIDESI has formulated Strategic Business Plan (2000–2004) in accordance with legal reform of its organizational status. The process of implementation of the plan since January 2000 is as follows: <ul style="list-style-type: none"> <li>a. Organization: The former organizational structure used to allocate 4 technical divisions (1 administrative division) under the director. The new structure allocates one technical management division (1 administrative division) under the director and the technical management division assists 6 business units according to CIDESI project components. The new structure was established for better cooperation among business units and to integrate efforts to solve problems in the production sector.</li> <li>b. Budget: The subsidy from the government was to be reduced by 10% from 2000, due to a policy of promoting accountability of public institutes in Mexico. The project strategy plan set a strategy to subsidize the reduced amount through an increase in self-income. However, the subsidy from the government to CIDESI has not been reduced since 2000.</li> <li>c. Decision-making: CIDESI has gained more decision-making power on budget and employment issues since legal reform of its organizational status. This has facilitated the promotion of an incentive system for staff and the recruitment of staff to fill vacant positions.</li> </ul> </li> </ul>	Annex 8
Financial Aspects	<p>Prospect of the budget</p> <p>(1) Since the beginning of the Project, CIDESI has allocated a budget necessary for project management and maintenance of machinery and equipment.</p> <ul style="list-style-type: none"> <li>• CONACYT has assured to provide financial aid for the project management budget based on a request by CIDESI.</li> <li>• The subsidy from the government to CIDESI allocated through CONACYT was supposed to reduce by 10% over 5 years from 2000. However, there has been no reduction since 2000 and the budget necessary has been filled by the government subsidy.</li> <li>• Each component of the technical projects of CIDESI has earned self-income from their technical services. In 2000, the self-income accounted for 19.37% of the entire management budget, which is on the rise compared to previous years. The Material Technology Division, which is a counterpart division of this project, earned self-income of 2,979,840 pesos in 2000, and has increased three-fold since the beginning of the Project in 1998. The entire amount of self-income is allocated as a financial source.</li> <li>• From the findings above, we estimate that the financial sources necessary for sustainable management of the Project at CIDESI is assured.</li> </ul> <p>(2) Sustainability of maintenance of machinery and equipment</p> <ul style="list-style-type: none"> <li>• CIDESI has allocated enough of its budget for paid contracts for maintenance with vendors since 1999, and we estimate that the maintenance of machinery and equipment is assured as sustainable.</li> </ul>	<p>Annex 12</p> <p>Annex 11</p> <p>Annex 11</p> <p>Annex 11</p> <p>Annex 12</p> <p>Annex 30</p> <p>Annex 12</p>
Technical Aspects	<p>(1) Prospect of developing and sustaining the management skills of the technical services (entrusted tests, extension services and seminars/training courses) for SMEs.</p> <ul style="list-style-type: none"> <li>• C/Ps are able to utilize the provided machinery and equipment, and implement the testing services requested by industries.</li> <li>• C/Ps have acquired maintenance skills of the facilities/machinery/equipment</li> </ul>	

	<p>necessary to implement the services.</p> <ul style="list-style-type: none"> <li>• C/Ps have acquired the skills to manage seminars/training courses, and are able to plan, develop, implement and evaluate seminars/training courses independently.</li> <li>• Technical transfer is successful and we estimate that C/Ps will be able to continue to provide technical services to industries.</li> <li>• It is necessary to continue the internal echo training to reinforce technical capacity.</li> <li>• In addition to the internal echo-training, it is necessary to improve technical capacity making best use of external experts.</li> <li>• C/Ps have already acquired the skills necessary to develop and manage the entrusted test service, seminars/training courses and furthermore, basic skill for technical consulting service for the SMEs. Therefore, technical sustainability is for the most part ensured. To complete advanced skill for consulting service, it is necessary to keep their consulting techniques improved especially in the field of Material Test.</li> </ul>	<p>Annex13-1 Annex13-2</p>
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#### 4-4. Conclusion

- The Project has effectively implemented inputs and activities, and most of the expected outputs have been achieved. Consequently, the Project Purpose is expected to be achieved by the end of the duration of the cooperation period.
- In the future, the Project purpose will be developed to the Overall Goal.
- In conclusion, the Project will be finished successfully.

#### 4-5. Necessity to prolong or follow-up

It is necessary to train more senior-level engineers who can conduct extension services on their own, which enables CIDESI to provide comprehensive technical-support for SMEs. During the first half of the four-year technical cooperation period of the Project, technical transfers at laboratories were successfully implemented. Then, during the second half, the Project focused on improving C/Ps' capability of basic consulting skills through OJT. In the end, the Project is about to achieve the initial Project purpose. However, since it generally takes several more years to train up competent consultant engineers, it is desirable to implement some kinds of follow-up cooperation for the purpose of reinforcing C/Ps' consulting techniques which meet the needs of SMEs in and around Querétaro state even after the completion of the Project.

#### 4-6. Recommendations

It has been highly recognized the importance of technical supports for SMEs under the current administration, so that the role of CIDESI has become more and more important. In this context, CIDESI needs to strategically train such human resources that can implement technical services for SMEs, which leads to strengthen the technical-support system for SMEs.

From this standpoint, we present following recommendations to CIDESI.

#### **4-6-1. Short-term recommendations**

(1) Enhancement of human-resource development

- A demand for senior-level engineers who can conduct technical consulting activities is expected to increase continuously from now on. Therefore, CIDESI needs to continue to develop their technical capability and increase the number of their personnel with expertise, making the best use of their own manpower as well as external experts.
- CIDESI should allocate more staffs who are in charge of technical supports for SMEs

(2) Provision of technical services which meet current needs from SMEs

- CIDESI should make best efforts to catch technical trends and the needs from SMEs through visiting clients, gathering information from the Internet, etc. which should be applied to their technical services.

(3) Expansion of public relations

- CIDESI should expand their public-relations activities to introduce their technical services for SMEs to all over the country through various media such as the CIDESI homepage and public relations magazines, etc.

(4) Enforcement of collaboration among each business unit

- Each business unit and its members should exchange technical information periodically in order to implement comprehensive technical services, which will contribute to solve technical problems of SMEs.

(5) Establishment of a technical support network

- CIDESI should establish such a human network that will deepen the relationship with private, public, educational and other related sectors, and provide appropriate technical services for SMEs. As an example, CIDESI is encouraged to establish a human network among former CIDESI staffs, retired consulting engineers and professors in and around Querétaro, which leads to set up a technical advisory system for SMEs at CIDESI.

#### **4-6-2. Mid to long-term recommendations**

(1) Expansion of regional cooperation

- Keeping a good grip of the international trends on supports for SMEs and establishing a human network among regional supporting centers for SMEs, CIDESI is encouraged to become a core center for regional cooperation for SMEs in Central America.

(2) Core center of technical supports for SMEs.

- CIDESI should become a core institute as a model center of technical supports for SMEs,

when the government starts to establish a nationwide network of technical support institutes for the SMEs promotion in the future.

(3) Establishment of comprehensive support system for SMEs promotion

- Although it is necessary and urgent for SMEs to modernize their machinery and equipment in order to increase their international competitiveness, high commercial interest rates have lagged the pace of modernization. It is desirable that CIDESI not only continue to provide SMEs with technical supports but also appeal to the government to reform the present financial system in order to make financing more accessible to SMEs.

#### **4-7. Lessons learned**

##### **4-7-1. Lessons from the Project design**

The following lessons can be drawn from the Project that resulted in successful outcomes.

The following points make it possible to start a full implementation of technology transfer by long-term experts in the early stage of the Project.

- (1) An appropriate number of mission team should be dispatched to make a well-prepared project design and an implementation plan before the start of the Project.
- (2) The mission team should include long-term experts who are to be dispatched when the Project starts.
- (3) The mission members should monitor the technical skills of each counterpart personnel to complete Technology Transfer Program (TCP), as well as choose appropriate machinery and equipment for the Project.
- (4) Main machinery and equipment, and technical experts should be allocated to the Project in the very beginning of the cooperation period.
- (5) The Project design should be completed on the basis of well-coordinated analyses between counterpart personnel and technical experts.

##### **4-7-2. Lessons from the Project management**

The success of the Project largely depends on the following preconditions.

- (1) Management ability of the counterpart organization and their willingness should be high in terms of appropriation of local costs and allocation of sufficient number of counterpart personnel with good technical skills and knowledge.
- (2) The counterpart organization should have been supported by supervising authorities when needed to solve the organizational matters during the cooperation period of the Project.
- (3) PCM method and its tool should be fully used to share information among the Project

team, as well as conduct the Project management appropriately.

- (4) The Project supporting committee in Japan should have an ability of recruiting good experts, as well as implementing C/P trainings.

#### **4-7-3. Lessons from inputs**

- (1) Qualities and enthusiasms of counterpart personnel, and abilities of experts (expertise, abilities of the Project management and coordination, enthusiasms, etc.) are preconditions depending on the success of the Project. Above all, C/Ps' strong willingness to learn is an important factor.
- (2) In terms of appropriate manners of the Project management and problem-solving, it is very effective to station a long-term expert, who has joined to make the Project design and is familiar with the background of the Project, until the completion of the Project cooperation period.