

付 属 資 料

**MINUTES OF MEETING
BETWEEN THE JAPANESE MID-TERM EVALUATION TEAM
AND THE AUTHORITIES CONCERNED OF THE
GOVERNMENT OF THE REPUBLIC OF INDONESIA
ON THE JAPANESE TECHNICAL COOPERATION
FOR THE PROJECT ON SUPPORTING INDUSTRIES
DEVELOPMENT FOR CASTING TECHNOLOGY**

The Japanese Mid-term Evaluation Team (hereinafter referred to as "the Team") organised by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Tsunenobu Miki visited the Republic of Indonesia from 15 to 25 January, 2002 for the purpose of monitoring and reviewing the activities and of formulating further operational plans of the Project on Supporting Industries Development for Casting Technology (hereinafter referred to as "the Project").

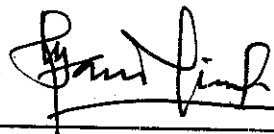
During its stay in the Republic of Indonesia, the Team had a series of discussions and exchanged views with the authorities concerned of the Government of the Republic of Indonesia over the matters for the successful implementation of the Project.

As a result of the discussions, both sides agreed upon the matters referred to in the documents attached hereto.

Jakarta, January 25, 2002

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Attached Document

I General Items

1 Current Situation of Japan's ODA

The Japanese side explained and the Indonesian side understood that Japan's ODA continues to face budgetary constraints, being expected to decrease by ten (10) percent in its volume for the Japanese fiscal year (hereinafter referred to as "JFY") 2002, and voices to call for more efficiency, effectiveness and accountability become higher and higher among Japanese citizens.

2 Purpose of the Mid-term Evaluation

The Japanese side explained that its main purpose was to conduct mid-term evaluation of the Project so that both sides could monitor the progress of technical cooperation, make a plan for further effective implementation in the remaining period and discuss necessary measures to be taken by both sides in preparation for the final evaluation.

3 Project Cycle Management

With regard to JICA's project management system, both the Japanese side and the Indonesian side reconfirmed the Project Cycle Management (hereinafter referred to as "PCM") as a tool for monitoring and evaluation.

4 Joint Evaluation and Five (5) Basic Evaluation Components

(1) Joint Final Evaluation

The Japanese side reaffirmed and the Indonesian side understood that toward the end of the project period, around September 2003, final evaluation would be conducted to examine the level of achievement of the Project objectives from the aspects as mentioned in the Article I-4-(3).

It will be a joint evaluation conducted by the Japanese evaluation team dispatched by JICA and the Indonesian evaluation team, as stipulated in the Record of Discussions signed on December 15, 1998 (hereinafter referred to as "R/D").

In this connection, the Japanese side explained to the Indonesian side that the members of the latter's evaluation team had to include persons who were not directly involved in the Project to secure the fairness of the said evaluation and that



the nomination would be requested formally through JICA Indonesia Office in due course of time, while JICA would hire a consultant exclusively for the Japanese evaluation team for the same reason.

(2) Monitoring

The Japanese side requested the Indonesian side and the latter agreed to conduct as follows:

- (a) Continuous monitoring as had been conducted by the Project
- (b) Pre-evaluation before Joint Final Evaluation

(3) Five (5) Basic Evaluation Components

Both sides agreed that the Project would be monitored and evaluated from the Five (5) Basic Evaluation Components, that is Relevance, Effectiveness, Efficiency, Impact and Sustainability shown in Annex 1, and that the confirmation of Project Design Matrix (hereinafter referred to as "PDM") shown in Annex 20 was a matter of great significance in this regard.

II Current Status of the Project

1 Government Policy and Strategies

The Indonesian side explained to the Japanese side the Government policy and strategies as follows:

The small and medium scale industries (hereinafter referred to as "SME") development is one of most important issues in Indonesia. In this context, to assist supporting industries, which are mostly SME and the main target-group of the Project, is given a first priority to be tackled.

The both sides confirmed that Institute for Research and Development of Metal and Machinery Industries (IRDMMI, hereinafter referred to as "MIDC") and this Project have played and will expectedly play a significant role in the said policy.

2 Present Situation of MIDC

(1) Organisation

Organisation chart of Ministry of Industry and Trade (MOIT). Agency for Research and Development of Industry and Trade (BPPIP) and MIDC are shown in

Annex 2, Annex 3 and Annex 4 respectively.

The Japanese side confirmed that there was no change in the legal status of MIDC as a national government agency.

(2) Budget

The annual budget, expenditure and income of MIDC are shown in Annex 6 and Annex 7.

The Indonesian side explained to the Japanese side that the current budgetary situation, especially related to the necessary local costs for the Project, as follows:

Regarding current Indonesian economic conditions, the budgetary situation was quite severe. For example, in the beginning, MIDC was admitted as the costs for electricity only for 4 months by the Government in the Indonesian Fiscal Year 2002. However, those running costs were actually very necessary to implement the Project's activities smoothly, the Indonesian side would make its best effort to bear those local costs additionally.

Besides, current policy of BPPIP is to encourage research institutes to be more active in extending their services to the manufacturing industries, and also to increase their service budget by doing so.

(3) Staff Allocation

The staff allocation of MIDC is shown in Annex 11, and among them, the counterpart personnel (hereinafter referred to as "C/P") of the Project is shown in Annex 14. Regarding the aging problem for the C/P, the Japanese side proposed the Indonesian side to make its best effort to allocate necessary number of young staff in order to sustain results by the Project, although Indonesian Government adopts so-called "zero growth policy" for civil servants. The Indonesian side explained to the Japanese side and the latter understood as follows:

- (a) Firstly, MIDC had started to hire so called Project Staff from the Project Budget, and Daily Workers from the Service Budget since 2001 on the contract basis.
- (b) Secondly, MIDC proposed a request of 17 new staff to the Minister of Industry and Trade instead of old retiring C/P, and in this request, it is expected that the C/P staff on the contract basis would be promoted as new civil servants.

III Mid-term Evaluation of the Project

1 Review of the Inputs to the Project from April 1999 to December 2001

(1) Input by the Japanese side

a Dispatch of the Japanese experts

Both sides confirmed the record of dispatch of Japanese experts to date as shown in Annex 12.

b Training of the Indonesian C/P in Japan

Both sides confirmed the record of training of C/P in Japan to date as shown in Annex 13.

The Japanese side confirmed that those ex-training-participants had conducted internal seminars for other C/P to transfer their knowledge and techniques gained in Japan.

c Provision of Machinery and Equipment

Both sides confirmed the record of provision of machinery and equipment to the Project to date as shown in Annex 15, and those machinery and equipment are properly used and maintained as shown in Annex 16.

(2) Input by the Indonesian side

a Building and Facilities

Both sides confirmed that the Indonesian side provided buildings, including "Foundry Shop" (1900 square meter) and "Office for JICA Experts" (60 square meter), and facilities, including furniture and electric panels

b Provision of Machinery and Equipment

Both sides confirmed the record of equipment provided by the Indonesian side as shown in Annex 17.

c Allocation of the C/P and the Administrative Personnel for the Project

Both sides confirmed that allocation of the C/P staff in MIDC was shown in Annex 14.

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d Allocation of the Budget

Both sides confirmed that budget allocation for the Project was shown in Annex 19.

In this connection, both sides reconfirmed that the Indonesian side would make its best effort to bear necessary local costs for the smooth implementation of the Project, especially utility expenses and cost for materials.

2 Mid-term Evaluation based on Five (5) Basic Evaluation Components

Both sides confirmed the results of mid-term evaluation based on five (5) basic evaluation components as described in Annex 1.

In conclusion, during the former half of the cooperation period, the Project activities have been implemented efficiently and effectively in general. It is judged that most activities of the Project have been appropriate enough in order to achieve the project purpose in time, and no drastic change of project's structure or direction is required. Summarised evaluation from five (5) basic components is as follows:

(1) Efficiency

Sufficient outputs, such as technology transfer from Japanese Experts to MIDC C/P and variety of services to SME by MIDC, have been efficiently produced and achieved by fully utilising given inputs.

(2) Effectiveness

Project Purpose "Improvement of Technical Services to SME by MIDC" has begun to be achieved gradually through effective implementation of Trial Prototyping Services, Technical Dissemination Services, Information Services, etc. by MIDC, compared to the situation before the Project started.

Satisfaction of the beneficiaries and expectation of the prospective beneficiaries are high enough in this stage, and should be continuously monitored to measure its improvement till the end after.

(3) Impact

Although statistical information could not be found, fragment information available seems to indicate that positive impact on SME is expected to be realised in near future.

No negative impact caused by the Project has been reported.

(4) Relevance

Implementation of the Project is relevant enough, regarding following three (3) points:

- a SME development is one of the most important issues in Indonesian development policy.
- b Foundry industry is one of the most important industries in Indonesia, and would be given a high priority to be developed, because it has close linkage with variety of other industries in providing them with those products.
- c To assist SME development in Indonesia is one of key-issues for Japan's Official Development Assistance.

(5) Sustainability

MIDC technical services to SME would be provided continuously as activities of national governmental organisation. However, in order to sustain and utilise the benefit of the Project, following points should be taken into consideration by the both sides.

a "Ownership"

To implement any kinds of activities in the scope of the Project, MIDC should have strong ownership, initiative and responsibility to them.

b "Linkage with beneficiaries (SME) and the Project"

Any feedback from beneficiaries should be highly considered by MIDC, and it is expected that MIDC would be recognised widely and build strong cooperative relationship with SME.

c "Human Resources"

Although empowerment of C/P in MIDC has been proceeding smoothly, further human resource development would be required in the perspective of, not only the capacity, but also the "number" of young staff, in order to solve the aging problem.

d "Budget / Finance"

Referring the severe budgetary situation of Indonesian Government, MIDC would be required to ensure the self-income, taking the balance between income generation and SME development.

3 Mid-term Evaluation focused on the technology transfer

Both sides confirmed the results of mid-term evaluation focused on

technology transfer to C/P in MIDC.

In conclusion, technology transfer through OJT has been proceeding smoothly. In the former half of the Project period, it was carried out for upgrading techniques and skill of each C/P through the detailed guidance of each technical field by Japanese experts. Generally speaking, the consciousness of each C/P related to the "quality" has been improved gradually.

Results of evaluation for each technical field is summarised as follows, and more detailed information is shown in Annex 26:

(1) Casting Plan

Casting design, which plays an important role in the manufacturing process, have been remarkably advanced. As the group composed of young engineers mainly, it is expected that good results will be borne through accumulating practical experience and theoretical study.

(2) Pattern Making

A long-term expert had served until September 2001. Ability of the group leader was evaluated, during his training in Japan, as equivalent to the Japanese professional level. Therefore, with his leadership, it is expected that the technical level on pattern making group would be going up by own efforts.

(3) Moulding

In the former half of the Project period, the wide range of moulding skill has been improved steadily, such as sand preparation, green sand moulding process (hand and machine) and organic resin sand moulding process, etc.

In the latter half, the further technical upgrading is expected in some other areas, such as moulding sand control, proper operation and maintenance of equipment, etc.

(4) Melting

C/P in charge have already obtained necessary skill enough to the level that they could carry out the routine melting work smoothly using 200 and 500kg High Frequency Induction Furnace. However, their confidence in technical matters like chemical composition arrangement during melting is not enough yet, because of shortage of their experience. Further fundamental technical knowledge and practice are required.

(5) Examination and Quality Control

Theoretical knowledge of testing has been upgraded gradually. However, the technical level in general is not satisfactory yet, because of shortage of practical experience. In the latter half, quantitative and visual control would be introduced to this field in connection with defect analysis and its countermeasures.

**4 Reconfirmation of the Project Concept
(Review and Confirmation of the PDM)**

In the process of mid-term evaluation, both sides jointly reviewed the PDM shown in Annex 20 to check the achievement-level of the "outputs" and "project purpose" as mentioned in Article III-3, and by "verifiable indicators" shown in Annex 21. At the same time, both sides also reviewed the "indicators", the "activities" and "important assumptions" of the PDM. Both sides confirmed that there was no necessity to amend the PDM, and also reconfirmed that the "project purpose" was "the technical services for small and medium scale foundry industries extended by MIDC will be improved" and it meant that the main target of the Project should be small and medium scale foundry industries.

Both sides further confirmed that the said PDM excluding the columns of "overall goal", "project purpose" and "outputs" would be reviewed along with the progress of the Project by the time of final evaluation. For example, following "assumption" may have to be added such as:

- (1) Availability of sufficient fund to cover running cost either from the government budget or from the service budget
- (2) Situation of the market for the components manufactured by small and medium foundry industries, and
- (3) Business environment of SME in non-technology aspects such as financing and marketing, technology aspects being looked after by MIDC.

5 Review of the Technical Cooperation Program (TCP), the Plan of Operations (PO), and the Tentative Schedule of Implementation (TSI)

Both sides also confirmed the TCP, PO and TSI based on the progress of technology transfer reviewed during the mid-term evaluation and the results of discussions on the future plan of the Project.

The TCP was revised to some extent with more clarified classification of sub-technical factors in TCP.

The TSI was also revised with recent decrease of one (1) number of long-term experts, because of difficulty with recruitment of a new expert, while it was originally planned that five (5) experts would be assigned in MIDC. In actual operation of the Project, instead of the long-term expert, some short-term experts complement its area together.

The TCP, PO and TSI are shown in Annex 25, Annex 23 and Annex 22 respectively.

IV Plan of the Project in the Remaining Cooperation Period

1 Annual Plan of Operations (APO) for Japanese Fiscal Year 2001 and 2002

The both sides confirmed the APO for Japanese fiscal year (JFY) 2001 and 2002 as shown in Annex 24.

2 Input by the Japanese side

(1) Dispatch of Japanese Experts

a Long-term Experts

The both sides confirmed as follows:

- (a) The Chief Advisor would continue to serve until the expiration of his term. (until March 2004, the end of the Project)
- (b) The Expert on Casting Technology Management would continue to serve one (1) more year after the expiration of his term. (until April 2003)
- (c) The Expert on Moulding would continue to serve until the expiration of his term. (until January 2002)
- (d) The Project Coordinator and SME Development would continue to serve four (4) more months, specially focusing on the field of SME Development, after the expiration of his term. (until August 2002)
- (e) A new Expert on Moulding / Manufacturing Technology would be dispatched and serve from June 2002 to March 2004, the end of the Project.
- (f) A new Project Coordinator would be dispatched and serve from April 2002 to March 2004, the end of the Project.

b Short-term Experts

The both sides confirmed that six (6) short-term experts were to be

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dispatched in the rest of JFY 2001 in the following fields:

- (a) Defect Analysis and Testing Technology:
two (2) and a half months from January 2002
- (b) Technical Extension Consultation:
two (2) and a half months from February 2002
- (c) Facilities Maintenance:
two (2) months from February 2002
- (d) Casting Technology (Seminar Presentation):
one (1) week in March 2002
- (e) Melting:
three (3) and a half months from March 2002
- (f) Casting Design:
six (6) and a half months from March 2002

The both sides also confirmed that six (6) short-term experts were to be dispatched in JFY 2002 in the following fields (the dispatch of more short-term experts would be discussed in line with budgetary availability):

- (a) Casting Design Defect Solution (Seminar Presentation):
one (1) month in August 2002
- (b) Facilities Maintenance:
one (1) and a half months from September 2002
- (c) Technical Extension Consultation:
one (1) and a half months from September 2002
- (d) Casting Design:
three (3) months from January 2003
- (e) Melting:
three (3) months from January 2003
- (f) Technical Extension Consultation:
two (2) months from February 2003

(2) Training of the Indonesian C/P in Japan

The both sides confirmed the training of C/P in Japan in JFY 2002 as follows (the dispatch of more short-term experts would be discussed in line with budgetary availability):

- (a) Casting Defect Countermeasures
two (2) months from August 2002



(b) Organic Sand Moulding / Core Making
two (2) months from August 2002

(3) Provision of Machinery and Equipment

The both sides confirmed that no machinery and equipment would be provided in JFY 2002 basically.

3 Input by the Indonesian side

The both sides confirmed that following machinery and equipment would be provided by the Indonesian Side.

- (1) Sand Mixer
- (2) Compressor
- (3) Selected Spare Parts, Materials and Consumables

Refer to the Article III-1-(2) also.

4 Quantitative and Visual Control

As a tool of the technology transfer in the latter half, the Japanese side proposed and the Indonesian side agreed that "Manufacturing technique utilising quantitative and visual control" would be promoted in MIDC. Introduction of this methodology is not intended to lead to the introduction of a sophisticated Quality Control (QC) System necessarily, but it would help upgrade MIDC's guidance services in QC system in the future.

V Specific Issues

1 Technology Transfer based on On-the-Job Training utilising Ordered Products as Complements to Target Castings (Trial Prototyping Service)

As stipulated in the Minutes of Meeting (hereinafter referred to as "M/M") of the Management Consultation Team dispatched in September 2000, the both sides reviewed the "Target Casting Programme" utilising ordered products accepted by MIDC.

Both sides confirmed that firstly this programme has greatly contributed to upgrading the technical capability of C/P by

- (a) providing a lot of opportunities of practical casting,



- (in total 125 items as shown in Annex 31)
- (b) its wide variety that covered sub-technical factors in TCP and target levels,
 - (c) the actual customers feedback, and
 - (d) its additional incentive for C/P.

And secondly, regarding the current economic circumstances, the Project would continue this programme in the same way in the latter half of the cooperation period.

Both sides also agreed that this activity would be the "Trial Prototyping Service", which is described in the M/M attached to R/D signed in December 1998.

On the other hand, the Japanese side stressed to the Indonesian side that this activity should not become an obstruction of businesses of small and medium scale foundry industries. On the contrary, this MIDC's Trial Prototyping Service and supports from the Project must be the "process" of upgrading MIDC's technical capabilities to the satisfied level for the guidance of those SME. The Indonesian side explained that there is no claim from SME against this service reported, however, the possibility of the problems should be monitored carefully.

As an ideal form of this service in the future, the Indonesian side explained that MIDC should increase number of technical services to assist SME in the following form:

- (1) Prototyping and product manufacturing which are high added value, as well as
- (2) Technical consultancy, industrial training, testing and calibration activities.

2 Technical Dissemination Services

Both sides also reviewed the technical dissemination services, namely "extension service" and "training courses", and confirmed their fruitful results for the SME development.

Both sides agreed again, in order to secure the sustainability of the Project, the initiative and responsibility of MIDC in implementing this service would be increased further. Thus, it could enhance the practical capability of C/P.

3 Maintenance and Management of Equipment in MIDC

Both sides reconfirmed that the cost and responsibility for maintenance, management and renewing of machinery and equipment should be borne by the Indonesian side.

The Japanese side explained to the Indonesian side and the latter

understood that maintenance and management of the machinery and the equipment was quite important for securing sustainability of the Project, and confirmed that, the Project had been trying hard to implement the "local procurement" in Indonesia as much as possible, for the purpose of effective maintenance after the end of the Project.

The Japanese side confirmed and appreciated that MIDC set up the "Maintenance Room", and have been introducing "5S" activities and preventive maintenance in MIDC.

Refer to the Article III-1-(1)-c.

4 Safety Control in MIDC

Both sides reconfirmed that safety control in MIDC was very essential for the further development of MIDC activities, although it was not positioned as a planned Project-activity.

The Japanese side requested to the Indonesian side that MIDC should formulate and implement the action plan to prevent from any kinds of accidents caused by miss-operations of the equipment, the Indonesian side asked Japanese Experts for their assistance to prepare this action plan. The Japanese side answered that Japanese Experts would support and help MIDC to formulate and implement action plan as advisers, while the initiative, responsibility and ownership of the Indonesian side were essential in order to tackle with safety control.

5 Future Prospects of MIDC, especially the way of realisation on SME Development

The Japanese side asked the Indonesian side to the prospects of MIDC from the perspective of MIDC's sustainable development after the termination of the Project, and the latter answered as follows: (Refer to the Annex 5)

- (1) MIDC should become the leading institute in foundry technology in Indonesia and contribute to the development of specific foundry technology needed by SME.
- (2) MIDC could solve any problems faced by SME related to foundry technology.
- (3) MIDC could enhance the mastery of new and applicable technology and transfer it to industries for the sake of human resource development in SME.

6 Service Budget (Self-Income of MIDC)

Since the last Management Consultation Team and Japanese Experts had

proposed to the Indonesian side that MIDC would disclose the amount of Service Budget and its expenditure, MIDC provided relevant data as shown in Annex 8, Annex 9 and Annex 10 in response to the request made by Japanese side.

Japanese side appreciated their efforts to disclose it, however, those data are still not so clear enough to understand the expenditure in detail. Japanese side again requested further disclosure. The Indonesian side explained and both confirmed that MIDC would allot its Service Budget reasonably for the running costs like electricity, spare-parts of the equipment, etc. in order to complement their Governmental Budget and sustain the results of the Project as much as possible after termination of the Project.

Japanese side also proposed that extension service and training courses could be provided on the cost-covering basis. Indonesian side explained that MIDC had already implemented such services on the fee basis, where it is possible. While small industries have been considered not in a position to pay such fees so far, there is an opinion that the cost-covering should be introduced, even on a partial basis, in accordance with the market mechanism.

VI Attendees of the Meeting

The list of attendees of the meeting is as shown in Annex 32.

List of Annexes Attached to the Minutes of Meeting

Mid-term Evaluation

JICA/MIDC Project on Supporting Industries Development for Casting Technology in Indonesia

- Annex 1: Result of Mid-term Evaluation
- Annex 2: Organization Chart of Ministry of Industry and Trade (MOIT) [Original in A3 size]
- Annex 3: Organization Chart of Agency for Research and Development of Industry and Trade (BPPIP)
- Annex 4: Organization Chart of Institute for Research and Development of Metal and Machinery Industries (IRDMMI / MIDC)
- Annex 5: Vision, Mission and Activities of MIDC
- Annex 6: MIDC Budget Allocation and Spent (Routine and Service)
- Annex 7: MIDC Budget Allocation and Spent (Development / Project)
- Annex 8: MIDC Activities and Results (MIDC Services to Industry)
- Annex 9: MIDC Foundry Activities (Annual Self-Income of Foundry Shop)
- Annex 10: Record of Technical Services by Foundry Shop
- Annex 11: MIDC Personnel Allocation
- Annex 12: List of Japanese Experts Dispatched
- Annex 13: List of Training for MIDC Counterpart Personnel (C/P) in Japan
- Annex 14: MIDC Counterpart Personnel (C/P) Allocation [Original in A3 size]
- Annex 15: List of Machinery and Equipment Provided by JICA
- Annex 16: Sample of MIDC Operation and Maintenance Record
- Annex 17: List of Equipment Currently Existing and Prepared by MIDC
- Annex 18: Record of Services to Industries (Seminar, Training Course, Extension Services)
- Annex 19: JICA Budget Allocation
- Annex 20: Draft Project Design Matrix (PDM)
- Annex 21: Summarized Results of PDM Indicators
- Annex 22: Tentative Schedule of Implementation (TSI)
- Annex 23: Plan of Operations (PO)
- Annex 24: Annual Plan of Operations (APO) (Draft)
- Annex 25: Technical Cooperation Program (TCP)
- Annex 26: Monitoring and Evaluation Sheet for TCP (Draft) [Original in A3 size]
- Annex 27: Map of Actual Target Castings
- Annex 28: Summarization of Target Casting Evaluation (Draft) [Original in A3 size]
- Annex 29: Curriculum for Individual Target Casting Level (Draft)
- Annex 30: List of Prototypical Products
- Annex 31: List of Ordered Casting Products
- Annex 32: List of Attendees of the Discussions

RESULT OF MID-TERM EVALUATION

JICA/MIDC Project on Supporting Industries Development for Casting Technology in Indonesia

	Evaluation Result	Reference																
1. Efficiency	<p>(0) Abstract</p> <p>➤ Sufficient outputs have been efficiently achieved by fully utilizing given inputs.</p> <p>(1) Achievement of Outputs</p> <p>Output 0: Project operation unit will be enhanced.</p> <p>[Indicators]</p> <p>0-1. Number and capability of staff 0-2. Budget 0-3. Number of established management system</p> <p>[Comment]</p> <p>0. Overall</p> <p>➤ Despite the severe circumstances such as tight governmental budget and zero-growth policy on government officials, Indonesian side made best effort to allocate C/P and budget.</p> <p>➤ It is expected to find solution to the problems such as budget shortage and aging of staff caused by the said circumstances.</p> <p>➤ Management systems have been established well.</p> <p>0-1. Number and capability of staff</p> <p>➤ 203 persons are allocated as MIDC staff and 38 members of staff are allocated as MIDC C/P.</p> <p>➤ Number of C/P has increased because several Project-employed staff and daily-basis staff were allocated newly in 2001, although number of MIDC staff has decreased due to the so-called zero-growth policy (limitation of government officials recruitment),</p> <p>0-2. Budget</p> <p>➤ MIDC budget allocation was nominally improved as follows:</p> <table border="1" data-bbox="371 1301 1254 1469"> <thead> <tr> <th>(Million Rp.)</th> <th>FY 2000</th> <th>FY 2001</th> <th>Difference</th> </tr> </thead> <tbody> <tr> <td>MIDC Total</td> <td>3,081</td> <td>4,762</td> <td>+55%</td> </tr> <tr> <td>MIDC Project Budget</td> <td>577</td> <td>1,062</td> <td>+84%</td> </tr> <tr> <td>MIDC Counter Budget for JICA Project</td> <td>325</td> <td>387</td> <td>+19%</td> </tr> </tbody> </table> <p>➤ Best efforts have been made to secure enough budget, however practically the budget is still short to implement the Project effectively especially electricity charge and facilities maintenance.</p> <p>0-3. Number of established management system</p> <p>➤ More than 15 kinds of systems have been established.</p> <p>➤ Samples of the established management system: Public Relations (Project Leaflet, Project Video), Linkages (with Industries, associations, academies, institutions etc.), Organization (Joint Coordinating Committee), Meetings (Regular Meeting, Technical Meeting, Review Meeting, Morning Meeting etc.), Need Survey (Report, Questionnaire etc.), Communication (Networking, Client List etc.) etc.</p>	(Million Rp.)	FY 2000	FY 2001	Difference	MIDC Total	3,081	4,762	+55%	MIDC Project Budget	577	1,062	+84%	MIDC Counter Budget for JICA Project	325	387	+19%	<p>Annex 11 Annex 14</p> <p>Annex 6 Annex 7</p>
(Million Rp.)	FY 2000	FY 2001	Difference															
MIDC Total	3,081	4,762	+55%															
MIDC Project Budget	577	1,062	+84%															
MIDC Counter Budget for JICA Project	325	387	+19%															

RESULT OF MID-TERM EVALUATION

JICA/MIDC Project on Supporting Industries Development for Casting Technology in Indonesia

Evaluation Result	Reference
<p><u>Output 1: Machinery and equipment will be provided, installed, operated and maintained properly.</u></p> <p>[Indicators] 1-1. Contents and conditions of machinery and equipment 1-2. Route to get spare parts and situation to secure spare parts</p> <p>[Comment] 1. Overall > Many kinds of machinery and equipment have been appropriately provided, installed, operated and maintained. > Since OJT through Trial Prototyping Service is very active in MIDC, the facilities provided by JICA are utilized or operated well. > A series of guidance related to machinery maintenance has been provided by JICA experts, regarding preventive maintenance and development of local sources of spare parts, and MIDC C/P start to understand the idea and importance of self-improvement. It is expected that MIDC will establish maintenance system to secure sustainability by reducing the maintenance cost through the measures mentioned above. As one of the results of these activities, the maintenance room has been just completed as the base of maintenance activities thanks to MIDC budget.</p> <p>1-1. Contents and conditions of machinery and equipment > Machinery and Equipment, total 67 items (24 items procured in Japan and 43 items procured locally in Indonesia), which are worth ¥281,561,200 (or Rp. 21,659 million), has been provided by JICA. > Most of the machinery and equipment have been installed in MIDC by the end of the first Japanese fiscal year because of the best effort by Japanese and Indonesian side. The completion of the machinery set up is much faster than other similar projects. > The machinery and equipment mentioned above are kept and utilized in good conditions in MIDC.</p> <p>1-2. Route to get spare parts and situation to secure spare parts > The routes to get 84 kinds of parts, materials etc. have been identified available in local market.</p>	Annex 15
<p>> For the two most valuable, important and crucial equipment, that is, Double Squeeze Moulding System and α/β Organic Sand Moulding System, 108 kinds of spare parts have been already provided by JICA and more than 50 kinds of spare parts are to be provided in JFY2001.</p> <p><u>Output 2: Technical capability of the counterpart personnel (hereinafter referred to as "C/P") will be upgraded.</u></p> <p>[Indicators] 2-1. Assessment by the Japanese experts 2-2. Number of achieved Target Castings for Technology Transfer</p> <p>[Comment] 2. Overall > Technology transfer from JICA expert to MIDC C/P has been imple-</p>	

RESULT OF MID-TERM EVALUATION

JICA/MIDC Project on Supporting Industries Development for Casting Technology in Indonesia

Evaluation Result	Reference
<p>mented through several measures such as lectures, hands-on trainings and OJT through Trial Prototyping Service.</p> <p>➤ Application of ordered products to target castings as technology transfer tool has greatly contributed to upgrade the technical capability of C/P by:</p> <ul style="list-style-type: none"> - (a) providing a lot of opportunities of practical casting, - (b) its wide variety that covered sub-technical fields and target levels, - (c) the actual customers feedback, and - (d) its additional incentive for C/P. <p>➤ JICA expert's assessment shows technical levels in each technical field have improved, mostly meeting the annual target level.</p> <p>➤ It is expected "quantitative quality control", using well-maintained records and visual control system, should be established in the latter half of the Project and that would lead to the establishment of quality control system.</p> <p>2-1. Assessment by the Japanese experts</p> <p>➤ Assessment (0-to-4 Scale) shows the progress of the average point of each group of the 1st, 2nd and 3rd year as follows [1st year -> 2nd year -> 3rd year] [Actual Point / (Target Point)]:</p> <ul style="list-style-type: none"> - Overall [0.66/(0.66) -> 1.26/(1.92)]-> 2.22/(2.60)] - (1) Casting Plan [0.6/(0.8) -> 0.8/(1.6) -> 1.6/(2.0)] - (2) Pattern Making [1.0/(1.7) -> 2.0/(2.7) -> 2.7/(3.1)] - (3) Moulding [0.9/(0.2) -> 1.1/(1.7)-> 2.2/(2.3)] - (4) Melting [0.3/(0.1) -> 1.6/(2.1) -> 2.9/(3.1)] - (5) Examination and Quality Control [0.5/(0.5)->0.8/(1.5)->1.7/(2.5)] <p>- Notice: Target points are set to evaluate the achievement at the end of the JFY, while actual points in the 1st, 2nd and 3rd JFY are in 12th, 6th and 9th month respectively.</p> <p>➤ Achievement of target level in the 3rd year in each technical field is as follows:</p> <ul style="list-style-type: none"> - Overall [85%] - (1) Casting Plan [80%] - (2) Pattern Making [87%] - (3) Moulding [96%] - (4) Melting [94%] - (5) Examination and Quality Control [68%] <p>- Since there is another three months to complete the 3rd year, the achievement is expected to be increased more.</p> <p>2-2. Number of achieved Target Castings for Technology Transfer</p> <p>➤ Total 28 items of Target Castings have been achieved for Technology Transfer, which has already compared favorably with the number (15) planned at the beginning of the Project.</p> <p><u>Output 3: Trial Prototyping Services will be implemented systematically.</u></p> <p>[Indicators] 3-1. Number of implemented trial prototyping services</p> <p>[Comment]</p>	<p>Annex 25 Annex 26</p> <p>Annex 27 Annex 28 Annex 29</p>

RESULT OF MID-TERM EVALUATION

JICA/MIDC Project on Supporting Industries Development for Casting Technology in Indonesia

Evaluation Result	Reference
<p>3. Overall</p> <ul style="list-style-type: none"> ➤ One hundred twenty-five (125) prototypical casting products requested by industries and others has been produced in MIDC and the trial prototyping services have been contributed to more than thirty (30) clients. ➤ The services have also greatly contributed to upgrade the technical capability of MIDC C/P as mentioned in Output 2 above. ➤ This activity has not become an obstruction of businesses by small and medium scale foundry industries so far, and this should be continuously monitored. <p>3-1. Number of implemented trial prototyping services</p> <ul style="list-style-type: none"> ➤ One Hundred Twenty-five (125) trial prototypical products have been made and implemented as trial prototyping services. <ul style="list-style-type: none"> - 18 Automotive Components - 9 Agricultural Machinery Components - 7 Electrical Components - 26 Textile Machinery Components - 20 Castings for Jig & Fixture for Automotive Assembling (Export) - 7 Industrial Machinery Components for Multifarious Industries - 38 Others ➤ Number of clients is more than thirty (30). <p><u>Output 4: Technical dissemination services will be implemented systematically.</u></p> <p>[Indicators]</p> <p>4-1. Number of implemented technical dissemination services 4-2. Number of clients</p> <p>[Comment]</p> <p>4. Overall</p> <ul style="list-style-type: none"> ➤ Two (2) major technical dissemination services, namely extension services to industries and training courses in MIDC, are implemented and highly appreciated by beneficiaries. Most of beneficiaries of extension services request repeated visit and consultation, while applicants to the training courses are always more than capacity. ➤ The visit to industries by C/P with JICA experts also gives a good opportunity to absorb their practical consultation technique against casting defects and others. It has also contributed to the increase of C/P motivation and self-confidence. ➤ Intensive extension services carried out in August-September, 2001, by C/P with JICA short-term expert who is exclusively involved in industries visit, has contributed to the improvement of the services, thanks to the output of 12 consultation reports. ➤ If inputs, especially number of human resources and budget, are enough, it is confident that these services greatly contribute directly to the Project Purpose and MIDC can act an important role in SME development. <p>4-1. Number of implemented technical dissemination services</p> <ul style="list-style-type: none"> ➤ Two (2) major technical dissemination services have been implemented as follows: 	<p>Annex 30 Annex 31</p> <p>Annex 18</p>

RESULT OF MID-TERM EVALUATION

JICA/MIDC Project on Supporting Industries Development for Casting Technology in Indonesia

Evaluation Result	Reference
<p>➤ (a) Extension Services: Fifty (50) foundries/companies have been visited by the Project totally 96 times mainly for the purpose of extension services (technical consultation).</p> <p>➤ (b) Training Courses: Four (4) training courses carried out for small and medium scale foundry industries, while three (3) training courses carried out for large-scale companies such as Toyota and University on a charged basis. Other than these seven (7) courses, some more short courses less than one week were also implemented.</p> <p>4-2. Number of clients</p> <p>➤ (a) Extension Services: Ten (10) foundries/companies among Fifty (50) foundries/companies mentioned above have been designated as the Target Companies or main clients and the Project members have repeatedly visited and provided guidance and consultations (2 in Bandung, 3 in Surabaya / East Java, 3 in Ceper / Yogyakarta, 1 in JABOTABEK and 1 in Sukabumi). Number of target companies has increased from four (4) in 2000 to ten (10) in 2001.</p> <p>➤ (b) Training Courses: Totally 108 trainees have been trained by four (4) training courses, while six (6) trainees have been benefited by three (3) training courses carried out for large-scale companies on a charged basis.</p> <p><u>Output 5: Information services will be implemented systematically.</u></p> <p>[Indicators]</p> <p>5-1. Number of implemented information services 5-2. Number of beneficiaries and participants</p> <p>[Comment]</p> <p>5. Overall</p> <p>➤ Seminars implemented had good response with 130-200 participants per seminar beyond estimation from all over the country.</p> <p>➤ Expectation on information service is high and the Project is planning to extend it to publications.</p> <p>5-1. Number of implemented information services</p> <p>➤ Seminars: Two (2) Seminars on Iron Casting Technology in March 2000 and in March 2001 and one (1) Opening Ceremony with Commemorative Seminar in July 2000 have been carried out so far. Third seminar is under preparation to be held in March 2002.</p> <p>➤ Publications: Project leaflet and project video have been prepared and distributed to any prospective beneficiaries. The Project is planning to make publications such as the MIDC magazine "Metal Indonesia - casting edition" and others.</p> <p>5-2. Number of beneficiaries and participants</p> <p>➤ Totally 510 participants have attended these seminars.</p> <p>(2) <u>Adequacy of timing, quality and quantity of Inputs from Japanese Side</u></p>	Annex 18

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RESULT OF MID-TERM EVALUATION

JICA/MIDC Project on Supporting Industries Development for Casting Technology in Indonesia

Evaluation Result	Reference
<p>[Indicators]</p> <ol style="list-style-type: none"> 1. Dispatch of Japanese Experts 2. Indonesian C/P training in Japan 3. Provision of machinery and equipment 4. Budgetary allocation for supporting local cost <p>[Comments]</p> <p>0. Overall</p> <ul style="list-style-type: none"> ➤ Most of the inputs from the Japanese side were delivered in accordance with required timing, quality and quantity. <p>1. Dispatch of Japanese Experts</p> <ul style="list-style-type: none"> ➤ Since the beginning of the Project, a total of Six (6) long-term experts and 34 short-term experts have been dispatched as planned, which contribute to the achievement of the Output. ➤ Due to the recently decrease of the number of long-term experts (Five (5) always stationed in MIDC in the original plan), sufficient dispatch of short-term experts became important to satisfy the expertise. <p>2. Indonesian C/P Training in Japan</p> <ul style="list-style-type: none"> ➤ Twelve (12) C/P Trainees have been trained in Japan as planned, which contribute to the achievement of the Output. The trained C/P contributes to the Project as core members in MIDC. <p>3. Provision of Machinery and Equipment</p> <ul style="list-style-type: none"> ➤ Sixty-seven (67) Items (24 items procured in Japan and 43 items procured locally in Indonesia) of Machinery and Equipment, which are worth ¥ 281,561,200 or Rp. 21,659 million, have been provided by Japanese side. They are already installed and basically kept and operated in good conditions in MIDC. ➤ The Project has made a lot of efforts to localize the machinery procurement considering the maintenance and sustainability, although those were not easy processes such as making of original specification and monitoring local machinery production. <p>4. Budgetary Allocation for Supporting Local Cost</p> <ul style="list-style-type: none"> ➤ Supporting local cost total amount of ¥32,045,038 (Rp. 2,670 million, cf. ¥1=Rp 0.012, in Dec. 2001) have been provided by Japanese side for ordinary cost as well as extraordinary cost such as electric power extension cost, urgently-provided machinery installation cost, technical exchange cost in Sri Lanka and promotion video production cost. <p>(3) Adequacy of timing, quality and quantity of Inputs from Indonesian Side</p> <p>[Indicators]</p> <ol style="list-style-type: none"> 1. Renovation, provision and maintenance of building and facilities 2. Allocation of C/P and administrative personnel 3. Provision and maintenance of machinery and equipment 4. Budgetary allocation of local cost <p>[Comments]</p>	<p>Annex 12</p> <p>Annex 13</p> <p>Annex 15 Annex 16</p> <p>Annex 19</p>

RESULT OF MID-TERM EVALUATION*JICA/MIDC Project on Supporting Industries Development for Casting Technology in Indonesia*

Evaluation Result	Reference
<p>0. Overall</p> <ul style="list-style-type: none"> ➤ Most of the inputs from the Indonesian side has been provided, however, all the input faces the problem of shortage of budget. Consequently effective use of the input and proper prioritization are expected. <p>1. Renovation, provision and maintenance of building and facilities</p> <ul style="list-style-type: none"> ➤ Necessary renovation and provision of buildings including 1900 m² Foundry Shop and 60 m² JICA Expert Office Room, and facilities have been mostly implemented properly. Maintenance room recently opened as a base of maintenance system in Foundry Shop of MIDC. <p>2. Allocation of C/P and administrative personnel</p> <ul style="list-style-type: none"> ➤ Necessary number of C/P and administrative personnel has been allocated. However, lack of the younger personnel as long-term employee is the most serious problem. In 2001, three (3) engineers employed with the Project Budget and several daily-basis technicians were newly employed and these fresh human resources greatly contributed to the MIDC foundry shop activities. Converting these fresh persons into long-term contract basis employees or new recruitment are inevitable for sustainability of the Project. <p>3. Provision and maintenance of machinery and equipment</p> <ul style="list-style-type: none"> ➤ Maintenance of machinery and equipment is most important but there are some difficulties faced in order to carry out maintenance due to the lack of budget. <p>4. Budgetary allocation of local cost</p> <ul style="list-style-type: none"> ➤ Indonesian side made best effort to provide counter-budget despite of the unfavorable economic situation. However, it is expected to be allocated more properly especially inevitable purposes such as electricity charge, for which routine budget has been provided only enough for four months in 2002. (JICA has provided extraordinary support to extend the capacity of electricity to satisfy machinery operations in response to the Indonesian side strong request under the economic crisis, although normally these infrastructure preparations should be completely made by Indonesian side.) <p>(4) Relevance of Inputs to Outputs (Important Assumptions)</p> <ul style="list-style-type: none"> ➤ Inputs provided by both the Japanese and the Indonesian sides are efficiently converted into outputs. ➤ Important assumptions for this matter "C/P will remain at MIDC" would give no negative affect so far, since most of C/P still remain at MIDC. 	<p>Annex 14</p> <p>Annex 17</p> <p>Annex 6 Annex 7 Annex 8 Annex 9 Annex 10</p>

RESULT OF MID-TERM EVALUATION

JICA/MIDC Project on Supporting Industries Development for Casting Technology in Indonesia

	Evaluation Result	Reference
2. Effectiveness	<p>(1) Achievement of Project Purpose</p> <p><u>Project Purpose: Technical services for small and medium scale foundry industries extended by MIDC will be improved.</u></p> <p>[Indicators]</p> <ol style="list-style-type: none"> 1. Level of satisfaction of present and former service beneficiaries 2. Level of satisfaction of industries 3. Number of newly improved services and targeted group <p>[Comments]</p> <p>0. Overall</p> <ul style="list-style-type: none"> ➤ MIDC technical services for SME have been already provided a lot in the forms of trial prototyping services, technical dissemination services (extension services to industries, training courses in MIDC), information services (seminar etc.). ➤ All the technical services are quite active and the quantity (frequency) of the technical services has increased significantly. ➤ On the other hand, to achieve this situation, great contribution of JICA experts' daily activities has been made and it was not easy matter. Since the C/P start gaining the self-responsibility, the activities become effectively implemented. ➤ Satisfaction of the beneficiaries and expectation of the prospective beneficiaries are high enough and should be continuously monitored to measure its improvement. ➤ The fact that beneficiaries from outside Bandung or surroundings are much more than the ones inside Bandung almost means that there are many participants who might think the MIDC services provided in Bandung are worth while visiting even using their own transportation cost. <p>1. Level of satisfaction of present and former service beneficiaries</p> <ul style="list-style-type: none"> ➤ Average satisfaction ratio of the participants for the latest Seminar in 2001 is 4.19 out of 5.00. ➤ Average satisfaction ratio of the participants for the latest Training Course in 2001 is 4.23 out of 5.00. <p>2. Level of satisfaction of industries</p> <ul style="list-style-type: none"> ➤ Expectation for the Project technical services in 2001 is: <ul style="list-style-type: none"> - Information Service (Seminar etc.) (72%), Extension Service (Site Visit & Consultation) (57%), Training Course in MIDC (53%), Prototyping Service (29%) <p>3. Number of newly improved services and targeted group</p> <ul style="list-style-type: none"> ➤ Four (4) major services, thus, Extension Service (Technical Consultation in Industry), Training Service (Training Course for SME in MIDC), Information Service (Seminar etc.) and Trial Prototyping Service have been newly improved. ➤ Ten (10) foundry companies are designated as target companies or targeted group. <p>(2) Factors hindering the Achievement of Project Purpose on basis of Outputs</p>	

RESULT OF MID-TERM EVALUATION

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	Evaluation Result	Reference
	<p>➤ In order to carry out the technical services more actively and sustainable, efforts to increase self-income through the services are required under the current budget-shortage situation.</p>	
3. Impact	<p>(0) Abstract</p> <p>➤ Although statistical information could not be found, fragment information available seems to indicate that positive impact on SME is expected to be realized in near future.</p> <p>➤ No negative impact caused by the Project has been reported.</p> <p>(1) Achievement of Overall Goal</p> <p><u>Overall Goal: Small and medium scale foundry industries will be able to provide domestic assembly industries with casting products to meet their quality level.</u></p> <p>[Indicators]</p> <ol style="list-style-type: none"> 1. Increase of production delivered to assembly industries 2. Improvement of quality of products 3. Improvement of productivity and efficiency <p>[Comments]</p> <p>0. Overall</p> <p>➤ The indicators, namely production volume, quality of products, productivity and efficiency in the foundry industry in Indonesia, are not available, consequently it is hard to evaluate the matter correctly.</p> <p>1. Increase of production delivered to assembly industries</p> <p>➤ Annual production of automobile, the largest user of casting products, increased from 58,079 units in 1998 to 123,244 units in 1999 and 345,416 units in 2000.</p> <p>➤ Annual casting production in Indonesia is estimated at 150,000t in 1996.</p> <p>➤ Annual average casting production of surveyed 15 companies in 2000 is 110t (Referential Data: to be carefully handled).</p> <p>2. Improvement of quality of products</p> <p>➤ Defect ratio in surveyed 15 companies in 2000 is 14.8% (Internal 11.8%, Customer 3.0%) (Referential Data: to be carefully handled).</p> <p>3. Improvement of productivity and efficiency (Followings are referential data to be carefully handled)</p> <p>➤ Labor Productivity Index (used in the Project: Monthly Production (t) / Number of Technical Personnel (person)) in 15 surveyed companies in 2000 is 1.56 (t / person).</p> <p>➤ Energy Efficiency Index (used in the Project: Monthly Production (t) / Monthly Induction Furnace Electric Power Consumption (kwh)) in 15 surveyed companies in 2000 is 1,180 (kwh / t).</p>	

RESULT OF MID-TERM EVALUATION

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	Evaluation Result	Reference
	<p>(2) Positive Impact (for Cross-Cutting Issues)</p> <ul style="list-style-type: none"> ➤ As it is generally considered the impact investigation usually takes a long time and is not easy to be measured in the mid-term evaluation, basically impact evaluation will be carried out at the final evaluation with continuous impact assessment toward final evaluation. ➤ As the policy aspects, which is one of the most important issues both in Indonesian governmental policy and in Japanese technical assistance policy, the Project plays the significant role as the core project in the technical assistance regarding supporting industries development in the Japanese Government and JICA SME Development Program. <p>(3) Negative Impact (for Cross-Cutting Issues)</p> <ul style="list-style-type: none"> ➤ There is no negative impact reported so far. <p>(4) Areal Spread of Impact</p> <ul style="list-style-type: none"> ➤ Major clusters of foundry industry such as Ceper and surroundings in Central Java, Surabaya and surroundings in East Java, Bandung and JABOTABEK, is covered as the target area. ➤ As the foundry industry is concentrated in Java, and due to the budgetary reasons, there has been not so much impacts to other regions out of Java. 	
4. Relevance	<p>(1) Relevance of Overall Goal</p> <ul style="list-style-type: none"> ➤ The overall goal of the Project is relevant and in accordance with Indonesian governmental policy regarding small and medium-scale industries development. ➤ It is also in accordance with Japanese technical assistance strategy for Indonesia regarding small and medium-scale industries development. ➤ Regarding foundry industries, it is also relevant since the foundry industries is the fundamental technology of manufacturing industries and the needs for casting technology will be continuously high. <p>(2) Relevance of Project Purpose</p> <ul style="list-style-type: none"> ➤ The Project Purpose is relevant since MIDC is the supreme technical institute, which originally has functions to provide technical services for SME foundry industries, and its technical services are widely expected by industries. <p>(3) Factors Diminishing the Relevance</p> <ul style="list-style-type: none"> ➤ There have been observed no factors that could diminish the relevance of the Project. 	

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	Evaluation Result	Reference
5. Sustain-ability	<p>(1) <u>Prediction of Sustainability of the Items in the Narrative Summary after the Completion of the Project</u></p> <p>(1-1) <u>Inputs</u> > As the JICA inputs will terminate at the end of the Project, Indonesian inputs should cover all the activities to continue the effect of the Project using effectively with current human resources and Machinery & Equipment. Because the governmental budget and governmental employees would be continuously limited, Indonesian side should pay more attention to secure these inputs for MIDC from both the Government and self-income by service activities.</p> <p>(1-2) <u>Outputs</u> > Following system should be established for sustainability of outputs and further effort by MIDC to meet that requirement: - Establishment of preventive and other maintenance system of the machinery & equipment, - self-practice or internal technology transfer for continuous technical upgrading, and - self-implementation of technical services for industries</p> <p>(1-3) <u>Project Purpose</u> > MIDC technical services for SME might be continuously provided, however, feedbacks from beneficiaries should be highly taken into consideration to make the MIDC technical services more beneficial ones.</p> <p>(1-4) <u>Overall Goal</u> > The overall goal is not easy to be achieved several years after the Project is over, and heavily depend on the market situation and the contributions of other factors such as management, finance and marketing for supporting industries development out of the Project</p> <p>(2) <u>Prediction of Cross-Cutting Issues after the Completion of the Project</u></p> <p>(2-1) <u>Policy Aspects</u> > SME development policy will be continuously one of the important policies in Indonesia.</p> <p>(2-2) <u>Technical Aspects</u> > Technical needs for casting technology will be continuously high as long as it is the fundamental technology of manufacturing industries.</p> <p>(2-3) <u>Environmental Aspects</u> > The foundry industry has potentials to give negative impact to environment and it should be carefully considered even for the local SME in the future.</p> <p>(2-4) <u>Socio-cultural Aspects</u> > Negative impact from the socio-cultural aspects will not be realized because the SME development is considered as a socio-cultural friendly issue. If it succeeds, it will give positive impact to reduce unemployment and poverty of the people involved in foundry industry.</p>	

RESULT OF MID-TERM EVALUATION*JICA/MIDC Project on Supporting Industries Development for Casting Technology in Indonesia*

Evaluation Result	Reference
<p>(2-5) Institutional and Management Aspects</p> <p>➤ As the institutional and management aspects affect sustainability most, understanding and mastering of the importance of management including labor management, facilities maintenance, working environmental management etc. will be the biggest key for success. It is required to improve these aspects more.</p> <p>(2-6) Economic and Financial Aspects</p> <p>➤ Since the sustainability of the Project heavily depends on these aspects, continuous effort is expected both (a) gaining income from services or budget allocation and (b) reducing costs by preventive maintenance and effective cost control. MIDC is trying to master these ideas and it is expected to contribute to sustainability.</p>	

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Five Components vs Goal Hierarchy

Evaluation Criteria

Sustainability:

Evaluate the extent to which the positive effects as a result of the project will still continue after external assistance has been concluded.

Relevance:

Evaluate the degree to which the project can still be justified in relation to the national and regional priority levels given to the theme.

Impact:

Foreseeable or unforeseeable, and favourable or adverse effect of the project upon the target groups and persons possibly affected by the project.

Effectiveness:

Evaluate the extent to which the purpose has been achieved or not, and whether the project purpose can be expected to happen on the basis of the outputs of the project.

Efficiency:

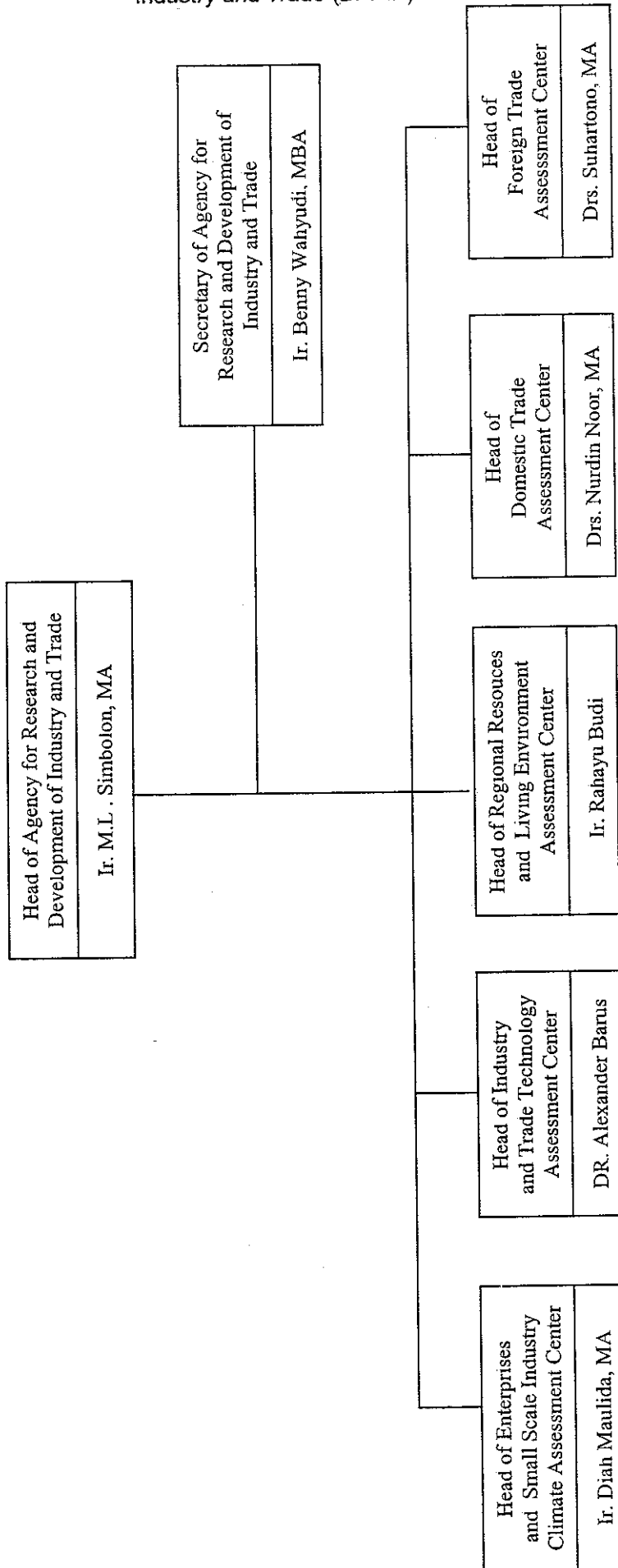
Evaluate how the results stand in relation to the efforts and resources, how economically the resources were converted to the outputs, and whether the same results could have been achieved by other better methods.

Inputs	Outputs	Project Purpose	Overall Goal
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Goal Hierarchy

ORGANIZATION CHART OF AGENCY FOR RESEARCH AND DEVELOPMENT OF INDUSTRY AND TRADE (BPPIP)

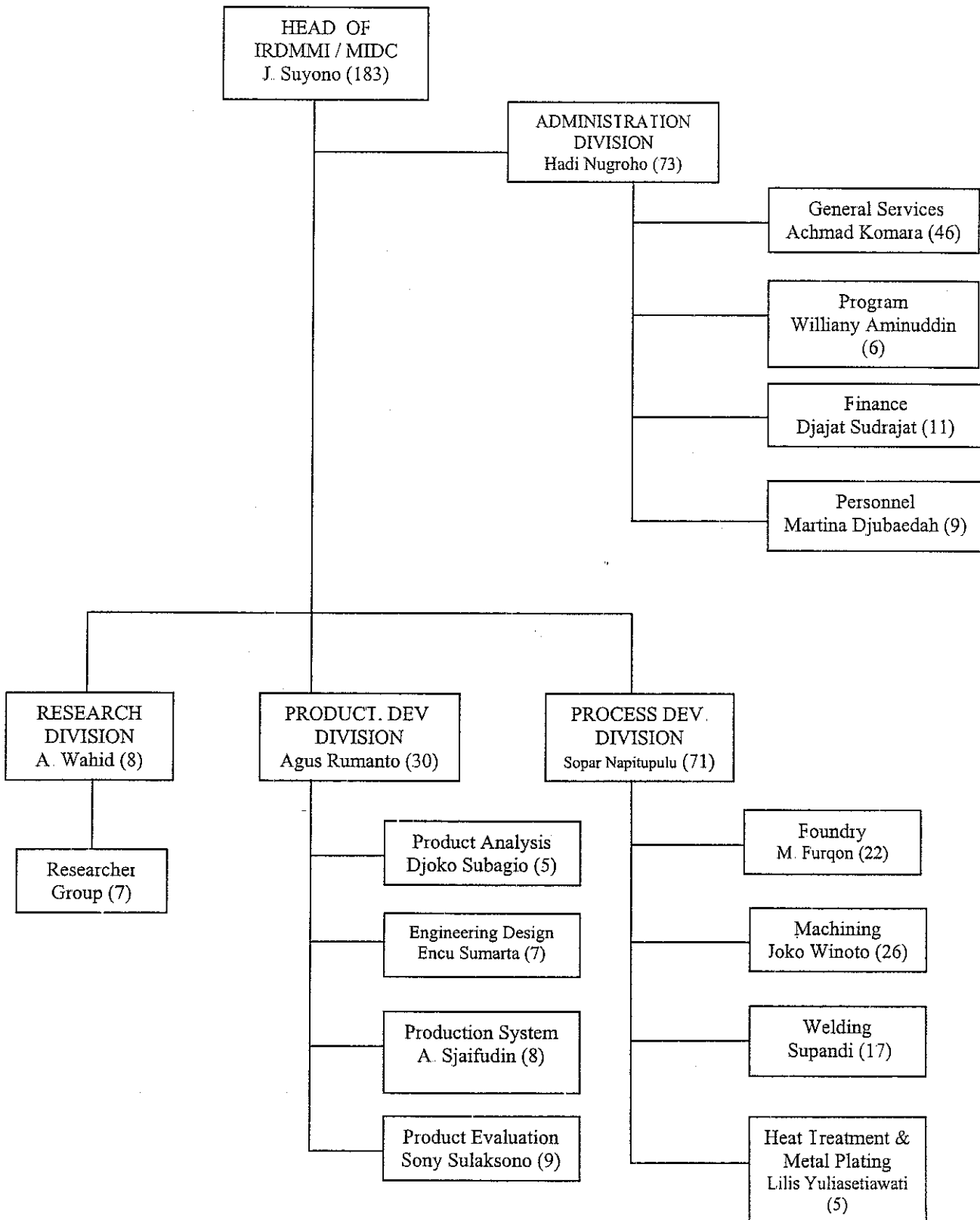
(November 20, 2001)



Annex 3: Organization Chart of Agency for Research and Development of Industry and Trade (BPPIP)



**ORGANIZATION CHART OF IRDMMI / MIDC
(November 20, 2001)**



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INSTITUTE FOR RESEARCH AND DEVELOPMENT OF METAL AND MACHINERY INDUSTRIES

VISION, MISSION AND ACTIVITIES

- 1) **Vision** as a foremost research and development institution in the field of manufacturing technology in Indonesia, MIDC provides metal and machinery industries with technological solutions in improving productivity and product quality.
- 2) **Mission** of MIDC is to provide metal and machinery industries with technological services thorough activities of applied research and development, training for personnel of industries, product testing, calibration of equipment, product development, consultation and supervisions in order to enhance technology mastery capability of small and medium sized industries in the country.
- 3) **Activities** conducted covering : research and development, engineering design and product quality control, training, calibration of equipment and production management.

With its vision, mission and activities mentioned above, MIDC divides itself into three divisions namely :

PRODUCT AND PROCESS TECHNOLOGY RESEARCH DIVISION

The essential function of this division is to carry-out researches in product and process technology mastery, focused on advanced material product and innovative metal working process.

Available resources owned are : professional personnels in the field of metallurgy, mechanics and management, who are supported with computer sets, mini-CNC lathe and milling machines and robot for automation.

With such resources, this division is ready to provide technical services in the form of :

- Research cooperation for creating new product and process.
- Supervision in industrial development.
- Training in the fields of materials science, engineering analyses, automation and CNC programming.
- Consultation in the field of failure analyses.

PRODUCT TECHNOLOGY DEVELOPMENT DIVISION

The most important function of this division is to carry-out product development, started from product analyses, engineering design, materials testing, product performance, calibration of equipment and production management.

Available resources possessed by this division are : professional personnel in the fields of mechanics, metallurgy, electricity and management supported with computer sets, material and performance testing instrument and calibration equipment.

With such resources, Product Technology Development Division is ready to provide technical services in the forms of :

- Product development including system for its implementation.
- Training in the fields of : engineering design, technical drawing, production and product management, calibration and testing and quality control.
- PPC supervision, checking of technical drawing, engineering design and new product development.
- Consultation in the fields of : feasibility study, project and product development, quality standard Implementation of ISO series 9000 and ISO Guide 25 (17025), PPC technical supervision, project management services and technical drawings.

PROCESS TECHNOLOGY DEVELOPMENT DIVISION

The main function of this division is to carry-out process development on casting, precision machining, welding and forming, heat treatment and metal coating.

Available resources are covering : professional personnel in the fields of : metallurgy, mechanics, management and experienced operators having attended overseas trainings who are supported with sets of machines and instruments for ferrous and non-ferrous metal casting, precision machining, heat treatment and metal coating, metal forming and welding.

With such resources, this division is ready to provide technical services in the forms of :

- Development of new-metal working process, which is suited with facilities available in industry.
- Training in the fields of casting technology, machining technology, heat treatment and coating technology, welding and metal forming technology.

- Supervision in application of new technology.
- Consultation in the fields of casting materials, machines tools, jigs and fixtures, welding and coating, maintenance management and also in solving problems arised in technology of metal working processes.

COOPERATION

In setting up cooperation with industries, MIDC always relies on principle of mutual-benefit cooperation.

Cooperation can be made in the forms of : individual (separated as case by case), package (integrated of several cases) or other system suitable to consumer.

Product and process assurance resulted from research and development is performed towards higher quality, on time finishing better competitiveness and feasible to be implemented by customer as a partner.

BALAI BESAR LOGAM DAN MESIN

Adalah unit pelaksana teknis dibidang penelitian dan pengembangan industri logam dan mesin dalam lingkungan Departemen Perindustrian.

FUNGSI

Melaksanakan kegiatan penelitian dan pengembangan dalam bidang :

- Proses pengecoran logam.
- Proses permesinan.
- Proses penyambungan dan pembentukan logam
- Proses pengolahan panas dan pelapisan logam.
- Perancangan keteknikan
- Penelaahan spesifikasi produk
- Perencanaan dan pengembangan sistim produksi
- Standarisasi dan evaluasi produk.

FASILITAS BALAI

Dalam melaksanakan tugas dan fungsinya, BBLM memiliki sarana dan fasilitas laboratorium, antara lain :

1. Pengecoran Logam, dilengkapi oleh mesin dan peralatan untuk pembuatan model (pattern), cetakan (modul) dan dapur pelebur (Cupola, Rotary & Induction Furnace) serta Shot Blast Furnace
2. Pemesinan, ditunjang dengan sejumlah mesin perkakas, termasuk mesin EDM dan CNC.
3. Penyambungan dan Pembentukan Logam, dilengkapi dengan mesin-mesin las listrik, zircomatik, vertomatik, oksiaselitalin dan mesin-mesin pembentuk plat.
4. Pengolahan Panas dan Pelapisan Panas, terdapat beberapa tipe dapur / tungku, antara lain : Electric Hardening Furnace, Electric Chamber Furnace dan Salt Bath Furnace
5. Perancangan Keteknikan, yang dilengkapi dengan CAD & CAM dengan seperangkat komputer PC 386
6. Beberapa Laboratorium Pendukung Lainnya, yaitu :
 - a. Laboratorium Kimia, untuk meneliti Komposisi Campuran Logam.
 - b. Laboratorium Logam (Metalography), untuk Pemeriksaan struktur Logam.
 - c. Laboratorium Mekanik (DT&NDT), untuk mengukur tegangan tarik, kekerasan, impact dan dilengkapi peralatan ultrasonik dan radiography
 - d. Laboratorium ukur Dimensi (Metrology) untuk mengukur presisi & kalibrasi dengan cara mekanik, optik dan elektronik
7. Dan tersedia sarana pendukung berupa : Perpustakaan, Asrama, Ruang Seminar dan Kelas

Institute for Research and Development of Metal and Machinery Industries (IRDMMI) is an implementing institution for research and development of metal and machinery industries under the Agency for Industrial Research and Development - Ministry of Industry.

FUNCTION OF IRDMMI :

To carry out research and development activities in the areas of :

- Casting Process.
- Machining Process.
- Metal Joining and Forming Process.
- Heat Treatment and Metal Plating Process.
- Engineering Design.
- Product Specification Analysis.
- Standardization and Product Evaluation

FACILITIES OF IRDMMI

In carrying out its task and function, the IRDMMI has the following facilities :

1. Foundry Laboratory, equipped with pattern and mould making equipment, cupola, rotary & induction furnaces and shot blast.
2. Machining Laboratory, supported by a wide range of machine tools including EDM and CNC machines
3. Construction and Welding Laboratory, equipped with electric welding machines, zircomatic, vertomatic, oxy-acetylene and plate forming machines
4. Heat Treatment and Metal Plating Laboratory with various furnaces, among others : Electric Hardening Furnace, Electric Chamber Furnace and Salt Bath Furnace.
5. CAD & CAM Centre
6. The other supporting laboratories are :
 - a. Chemical Laboratory and analyse metal composition.
 - b. Metallographic Laboratory to inspect metal structure.
 - c. Mechanical Laboratory (DT&NDT) to measure tensile strength, hardness & impact that is equipped with ultrasonic and radiography equipment.
 - d. Metrology Laboratory to measure precision and calibration with mechanical, optical and electronic systems.
7. And there are some more supporting facilities, such as : library, dormitory, class room and conference hall

KEMAMPUAN TEKNOLOGI / TECHNOLOGICAL CAPABILITIES

TEKNOLOGI PENGECORAN

TEKNOLOGI RANCANG BANGUN DAN PEREKAYASAAN MESIN (RBPM) DAN CAD/CAM

CASTING TECHNOLOGY

ENGINEERING & MACHINE DESIGN AND CAD/CAM TECHNOLOGY

TEKNOLOGI PEMESINAN

TEKNOLOGI PERLAKUAN PANAS DAN PELAPISAN LOGAM

MACHINING TECHNOLOGY

HEAT TREATMENT AND METAL PLATING TECHNOLOGY

PENGUJIAN DAN KALIBRASI

TEKNIK DAN MANAJEMEN INDUSTRI

TESTING AND CALIBRATION

INDUSTRIAL ENGINEERING AND MANAGEMENT

TEKNOLOGI PENYAMBUNGAN DAN PEMBENTUKAN LOGAM

METAL JOINING AND FORMING TECHNOLOGY

KEMAMPUAN BALAI

Sebagai wujud konstrubusi Balai dalam pengembangan industri Logam dan mesin, BBLM elah mampu memberikan bantuan jasa pelayanan eknis kepada industri dalam bentuk :

- 1 Rancang Bangun dan Perakayasaan Untuk Mesin & Peralatan Pabrik, melalui pembuatan disain produk, mesin, & peralatan pabrik.
- 2 Pebuatan Prototipe dan Produk, termasuk untuk pembuatan Jig & Fixture serta Mould & Dies
- 3 Pendidikan dan Pelatihan (Diklat), untuk berbagai bidang, antara lain :
 - a. Perancangan (CAD & CAM).
 - b. Pengecoran Logam (Ferro & Non Ferro)
 - c. Pemesinan (termasuk CNC).
 - d. Pengelasan (SMAW, GTAW, GMAW & SAW).
 - e. Pengolahan Panas & Pelapisan Logam
 - f. Manajemen Produksi & Pemeliharaan
- 4 Pengujian dan Kalibrasi
- 5 Konsultasi dan Supervisi, baik di bidang teknologi proses pembuatan maupun dalam bidang pengolahan industri (Manajemen Produksi dan Pemeliharaan)
- 6 Dalam kegiatan penyebaran informasi hasil penelitian dan pengembangan dalam rangka alih teknologi kepada industri, BBLM disamping melaksanakan diklat untuk industri juga melakukan kegiatan :
 - a. Publikasi (Majalah Metal Indonesia)
 - b. Pameran & Peragaan.
 - c. Lokakarya & Seminar

CAPABILITIES OF IRDMMI

As the realization of its contribution to the development of metal and machinery industries, the IRDMMI has been able to provide technical service assistance to industries in the forms of :

- 1 Engineering and design of industrial machinery and equipment trough product design and prototyping activities
2. Prototyping and product manufacturing, including the manufacturing of jig and fixture and mould & dies making
3. Education and training (Short Courses) for an extensive range of training subjects, among others:
 - a. Design (CAD & CAM).
 - b. Casting (Ferrous & Nonferrous).
 - c. Machining (including CNC)
 - d. Welding (SMAW, GTAW, GMAW & SAW)
 - e. Heat Treatment and Metal Plating
 - f. Production and Maintenance Management
4. Testing and Calibration
5. Consultancy and supervision, either in the field of manufacturing process technology or in the field of industrial management (Production and Maintenance Management)
- 6 In its activity to disseminate information pro-cured trough research and development in the frame of technology transfer to industries, the IRDMMI not only conducts short courses for industries but also performs the following :
 - a. Publication (Indonesian Metal Magazine)
 - b. Exhibition and Demonstrations.
 - c. Workshop and Seminars

**BUDGETARY ALLOCATION OF MIDC
YEAR PERIODE : 2000 - 2001 - 2002**

ANNEX (3) -]

NO.	DESCRIPTION	2000		2001		2002 PLAN/PROPOSAL
		ALLOCATION	SPENT	ALLOCATION	SPENT *)	
1	<u>ROUTINE :</u>	1,231,314,000	1,810,726,363	1,899,401,000	3,226,687,288	2,875,709,000
1	Wage/Salary	896,768,000	1,487,715,747	1,424,359,000	2,753,156,743	2,148,402,000
2	Stationeries/Office Equipment	20,183,000	19,497,600	13,370,000	12,923,775	33,539,000
3	Electricity & Telephone	127,622,000	154,773,195	276,688,000	276,631,036	444,000,000
4	Material	64,242,000	28,197,650	50,419,000	50,400,000	70,000,000
5	Others	38,000,000	36,441,171	30,174,000	29,566,584	49,350,000
6	Maintenance					
	- Building	25,087,000	25,050,000	18,948,000	18,889,530	33,948,000
	- Machine & Equipment	43,777,000	43,424,200	62,033,000	61,725,870	73,050,000
7	Travelling	15,635,000	15,626,800	23,410,000	23,393,750	23,420,000

Annex 6: MIDC Budget Allocation and Spent (Routine and Service)

*) Status : Desember '2001

File : B: Yusuf/Y/p.hadi

**BUDGETARY ALLOCATION OF MIDC
YEAR PERIODE : 2000 - 2001 - 2002**

NO.	DESCRIPTION	2000		2001		2002 PLAN / PROPOSAL	
		REVENUE		REVENUE			EXPENSES *)
		TARGET	ACTUAL	TARGET	ACTUAL		
II	<u>SERVICES :</u>						
1	<u>Remaining Budget</u>						
2	R & D	1,272,194,000	1,130,418,852	1,800,000,000	1,799,144,903	793,935,000	
3	Training	151,500,000	93,406,997	-	190,169,510	-	
4	Consultation	225,000,000	43,727,500	102,045,000	94,950,900	75,907,000	
5	Testing & Calibration	356,000,000	247,572,000	550,000,000	737,330,800	134,030,000	
6	Others (Product Mfg.)	175,000,000	285,941,595	450,000,000	350,071,160	122,853,000	
		364,694,000	416,807,760	347,955,000	242,034,500	438,890,000	
			42,963,000	350,000,000	184,588,033	22,255,000	
1	Wage/Salary	-	-	-	-	-	
2	Material	-	-	-	-	-	
3	Electricity	-	-	-	-	-	
4	Maintenance	-	-	-	-	-	
5	Travelling	-	-	-	-	-	
			242,615,190		599,503,970		
			211,517,705		611,427,866		
			170,818,397		146,735,780		
			4,984,000		8,500,000		
			310,314,050		311,939,500		

*) Status : Desember 2001

File : B: Yusuf/V/p.haci

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**REPORT OF ELECTRICITY
YEAR : 2001**

NO.	DESCRIPTION	FIXED COST (1.110 KVA)	VARIABLE COST	TOTAL COST (RP)
1	January	1110 x Rp. 16,000 = 17,760,000	13,015,355	30,775,355
2	February	1110 x Rp. 16,000 = 17,760,000	12,196,385	29,956,385
3	March	1110 x Rp. 16,000 = 17,760,000	13,334,505	31,094,505
4	April	1110 x Rp. 16,000 = 17,760,000	14,266,925	32,026,925
5	May	1110 x Rp. 16,000 = 17,760,000	16,209,395	33,969,395
6	June	1110 x Rp. 16,000 = 17,760,000	16,606,455	34,366,455
7	July	1110 x Rp. 16,000 = 17,760,000	15,784,850	33,544,850
8	August	1110 x Rp. 19,000 = 21,090,000	14,712,075	35,802,075
9	September	1110 x Rp. 19,000 = 21,090,000	13,986,780	35,076,780
10	October	1110 x Rp. 21,500 = 23,865,000	14,081,570	37,946,570
11	November	1110 x Rp. 21,500 = 23,865,000	12,105,310	35,970,310
12	December	1110 x Rp. 21,500 = 23,865,000	10,341,795	34,206,795

BUDGET ALLOCATION FOR
MIDC DEVELOPMENT

20th November 2001

Annex 7: MIDC Budget Allocation and Spent (Development / Project)

No	For the Project	2000		2001 (Oct)		2002	
		Allocated (Rp)	Spent (Rp)	Allocated (Rp)	Spent (Rp)	Allocated (Rp)	Spent (Rp)
I	PROJECT ADMINISTRATION						
	Honorarium/salary	4905000	4905000				
	Material	10500000	10477175				
	Travelling	10560000	10539500				
	Others	14135000	12279125				
	Sub Total	40100000	38200800	47064000	37289700		
II	LABORATORY EQUIPMENT PROCUREMENT						
1	Pump procurement & installation	60000000	57743000				
2	Maintenance of particular building	5000000	4895000				
	Sub Total	65000000	62638000	125959000	-		
III	DEVELOPMENT OF INSTITUTION						
1	JICA :						
	Honorarium/salary	44342000	44190000		42540000		
	Material	40500000	40189450	115504000	111560790		
	Travelling	23606000	23175600	27844000	22076100		
	Others	216400000	211088600	184100000	132939790		
	Sub Total	324848000	318643650	387040000	309116680	473250000	
2	Technical Supervision of Ceper Testing Laboratory						
	Honorarium/salary	6615000	6615000				
	Material	1250000	1243550				
	Travelling	10840000	10822000				
	Others	830 000	720 000				
	Sub Total	19535000	19400550				

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3	Development of corrosion proof pump (NIRIN)												
	Honorarium/salary	6183000				6183000							
	Material	11000000				16875650							
	Travelling	5160000				18115900							
	Others	250 000				1 245 750							
	Sub Total	22593000				42420300							47210000
IV	EQUIPMENT DESIGN AND MANUFACTURING												
1	Design of machine for manufacturing pearl core												
	Honorarium/salary	6183000				6183000							
	Material	17000000				16875650							
	Travelling	18136000				18115900							
	Others	1250000				1245750							
	Sub Total	42569000				42420300							263850970
2	Design and manufacturing of metal casting equipment for improving export quality												
	Honorarium/salary	6183000				6183000							
	Material	18500000				18294100							
	Travelling	4940000				4811500							
	Others	1250000				1217500							
	Sub Total	30873000				30506100							
3	Design and manufacturing of hummer teeps by applying be-metal technology												
	Honorarium/salary	6183000				6183000							
	Material	19000000				18874350							
	Travelling	5220000				5058500							
	Others	1250000				1196500							
	Sub Total	31653000				31312350							

4	Design and manufacturing of blacksmith equipment for improving export quality	Honorarium/salary	6183000	6183000					
		Material	16000000	15770700					
		Travelling	8512000	8432700					
		Others	1250000	1182000					
		Sub Total	31945000	31568400					
V	TEST OF PRODUCT/PRODUCTION PROCESS								
1	Implementation and test of prototype at small & medium industries	Honorarium/salary	6183000	6183000			73644000		48413500
		Material	8500000	8437000					
		Travelling	9628000	9343800					
		Others	5250000	5170000					
		Sub Total	29561000	29133800					
2	Implementation of plating process at leather bag accessories workshop at Tanggul angin	Honorarium/salary	6183000	6183000					
		Material	21000000	20825750					
		Travelling	7290000	7252000					
		Others	1250000	1209500					
		Sub Total	35723000	35470250					
		Grand Total I, II, III, IV & V	577171000	585542050	1062095000	706206250			520460000

Annex 8: MIDC Activities and Results (MIDC Services to Industry)

MIDC SERVICES TO INDUSTRY
31 December 2001

NO	ACTIVITIES	1999/2000		2000		2001		REMARKS
		NR OF ACT	VALUE	NR OF ACT	VALUE	NR OF ACT	VALUE	
1	Research and development	2	15,300,000	0	-	2	104,690,000	
2	Training	4	190,229,000	10	238,799,850	18	733,928,500	
3	Supervision & Consultation	8	287,799,000	7	209,155,000	4	112,600,000	
4	Testing & Calibration	308	249,945,600	241	243,103,200	232	223,061,130	
5	Standardization	2	8,325,000	0	-	1	6,000,000	
6	Product manufacturing	36	140,961,300	22	93,916,000	52	293,558,650	
	Total :	360	892,559,900	280	784,974,050	309	1,473,838,280	

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