

フィリピン窯業研究開発センター
エバリュエーションチーム報告書

昭和55年8月

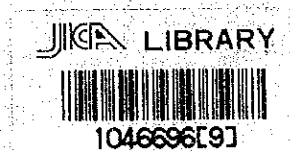
国際協力事業団
鋁工業開発協力部

鋁開技

JR

80-143

フィリピン窯業研究開発センター エバリュエーションチーム報告書



昭和55年 8 月

国際協力事業団
鋳工業開発協力部

鋳開技
JR
80-143

国際協力事業団	
受入 月日 '84. 3. 22	118
登録No. 01234	68.3
	MIT

は　じ　め　に

国際協力事業団は、日本政府に対し、フィリピン共和国から要請のあった同国の国家科学開発庁の国立科学技術研究所に対し協力することとなり、昭和51年7月16日から昭和55年7月15日までの4年間の協力期間で協力を実施してきた。

今般、協力期間が昭和55年7月15日に終了するのに伴い、従来の協力成果を評価するとともに、相手国へのプロジェクトの引継ぎの可否、協力の継続が必要と判断される場合の協力方法につき、調査および相手国実施機関との協議を行なうことを目的とし、当事業国は昭和55年5月1日から5月15日まで15日間、4名からなるエバリュエーションチームを同国に派遣した。同チームはフィリピン側政府関係者と討議を重ねた結果、昭和57年7月15日まで2年間の協力期間の延長が必要であるとの結論に達し、昭和55年5月14日、その討議事項を「討議議事録」として、調査団長と国立科学技術研究所(NIST)のコミッショナーとの間で署名した。

本報告書は、エバリュエーションチームがフィリピン側関係者と討議し、従来の協力成界を評価するとともに、2年間の協力期間延長に伴ない、その間の同研究所に対する協力方法についての討議結果を取りまとめたものである。

フィリピン政府は産業開発の重要な政策として、自国に賦存する天然資源の活用を産業振興に直結させることを掲げている。

当政策における陶磁器産業の位置付けは、同国の発展にとり非常に重要なものであり、本プロジェクトに対するフィリピン側の期待は極めて大きなものである。本協力の成果が同国の産業の振興に寄与し、同国の経済、社会の発展に大きな貢献を果すことを切に願うものである。

ここに、本チームの派遣および討議議事録作成に至るまでにご協力をいただいた関係各機関ならびに関係各位に深甚の謝意を表する次第である。

昭和55年8月

国際協力事業団

理事 久 留 義 雄

目 次

はじめに

I プロジェクトの経緯と目的	1
II エバリュエーションチームの派遣	2
1. 派遣の経緯と目的	2
2. チームの構成	2
3. チームの日程	3
III 討議経過	4
1. 第1回討議	4
2. 第2回討議	9
3. 第3回討議	14
4. 第4回討議	17
5. 第5回討議	20
IV エバリュエーションレポート	24
1. ま え が き	27
2. プロジェクト評価の方法	31
3. プロジェクト評価の結果	33
4. フィリピン産業の現状と将来	42
5. 結 論 と 提 言	44
V 討議議事録 (R/D)	78

参 考 資 料

I 討議議事録 (前)	89
II ディスカッションペーパー	97

I プロジェクトの経緯と目的

フィリピン国政府は地域開発計画の一環として、国産原材料を使用した陶磁器及び低価格住宅用の赤レンガと屋根瓦の製造工場を全国各地に設立し、地方の経済開発と雇用促進をはかる政策の遂行のため、昭和49年8月20日付でフィリピン共和国政府から日本政府に正式に協力要請があった。

国際協力事業団は方要請を受け、要請案件に対するプロジェクト方式技術協力の可能性につき、要請の背景、計画の内容、相手国の開発計画との関係、現地事情、相手国において付与される特権、免除等に関する現地調査を含む基礎的調査を行う目的で昭和50年10月に3名からなる事前調査団を派遣した。

この事前調査結果を踏まえ、要請案件に関する協力の場所、規模、期間、双方がとるべき措置、相手国において付与される特権、免除等につき相手国実施機関と協議し、必要な場合は、事前調査で解明し得なかった点について調査も行い、協力の基本計画の作成の上、これを実施機関相互の討議議事録(R/D)に取りまとめ署名することを目的として、昭和51年6月に5名からなる実施調査団を派遣した。

その結果、協力期間を昭和51年7月16日から昭和55年7月15日までの4年間とし、既存の国立科学技術研究所の工業研究センター窯業部を改組拡充して陶磁器及び建材の分野において研究開発と、その成果に基づいて、地場窯業の振興を行ない、併せてこれに必要な人材の養成を行う機能を有する窯業研究開発センターを設立することを目的として、昭和51年7月16日に双方討議議事録(R/D)に署名した。

その後、当事業団は、協力中のプロジェクトに関し、技術上、運営上の問題点を解明し、わが国派遣専門家及び相手国カウンターパート等に対し、高度な技術的指導及び必要な助言を行なうことを目的とし、昭和53年7月に4名からなる巡回指導チームを派遣した。

又、供与済みの機材に現地で回復し得ない故障を生じた場合の補修、あるいは機材の一般的保守・管理につき、わが方派遣専門家及び相手国カウンターパート等に対し、必要な技術指導及び助言を行なうことを目的とし、昭和55年2月に4名からなる機材修理班を派遣した。今般、昭和55年7月15日に協力期間が終了するのに伴ない、第三者の立場から従来の協力効果を測定するとともに、相手国へのプロジェクトの引継ぎの可否、協力の継続が必要と判断される場合の協力方法につき調査及び相手国側実施機関との協議を行なうことを目的とし、昭和55年5月1日から昭和55年5月15日まで15日間、4名からなるエバリュエーション・チームを派遣した。同チームはフィリピン側政府関係者と討議を重ねた結果、昭和57年7月15日まで2年間の協力期間延長にて双方合意に達し、昭和55年5月14日、「討議議事録(R/D)」署名に至った。

署

II エバリュエーションチームの派遣

1 派遣の経緯と目的

日本政府とフィリピン共和国政府は、「フィリピン窯業研究開発センター」設置に係る討議議事録(R/D)に、昭和51年7月16日署名し、以来4年間に亘る協力期間も昭和55年7月15日をもって満了することとなった。

この満了に伴い、フィリピン共和国に当該センターを引継ぐことの可能性については、討議議事録署名時に設定された技術協力目的の達成度を評価することが先決であり、そのためにはエバリュエーションチームを現地へ派遣し、種々調査の上、達成度を評価し、その評価を基にしてフィリピン共和国側と交渉することが必要不可欠な手続きである。

又、この評価次第では、技術協力延長の必要性の有無、必要とされた場合には今後の協力方式、協力内容等について更にフィリピン共和国側と交渉の上、両国の合意を得ることが必要であると考察された。

以上の経緯と目的をもって、国際協力事業団専門技術嘱託 内藤隆三氏 を団長とし、4名からなるフィリピン窯業研究開発センター事業・エバリュエーションチームを編成し、昭和55年5月1日から昭和55年5月15日までの15日間に亘り現地へ派遣し、技術協力の達成度について種々調査を行なうとともに、フィリピン側関係者と日本人専門家により予め作成されていた“SELF-EVALUATION REPORT ON PROGRESS, ACHIEVEMENT AND FURTHER REQUIREMENT FOR THE ESTABLISHMENT OF CERAMIC RESEARCH AND DEVELOPMENT CENTER”を討議資料とし、討議を重ね技術協力の達成度を評価し、相手国へのプロジェクトの引継ぎの可否につき検討した。

2 チームの構成

氏名	所属先	担当業務	派遣期間
団長 内藤隆三	国際協力事業団 専門技術嘱託	窯業技術全般 および研究開発	55.5.1～55.5.15 (15日間)
団員 今瀬量義	多治見市陶磁器 意匠研究所	人材養成 および研修システム	"
" 中島邦雄	通商産業省 工業技術院	技術普及体制および 地場窯業の振興	55.5.1～55.5.11 (11日間)
" 松田賢	国際協力事業団 鉦工業開発協力部	プロジェクト企画・立案 および業務調整	55.5.1～55.5.15 (15日間)

3 チームの日程

日順	月日	曜日	行 程	宿 泊 地	調 査 内 容
1	5/1	木	東 京→マニラ	マ ニ ラ	移動, 祭日(Labor Day)
2	2	金		"	大使館表敬, J I C A事務所あいさつ, 打合せ, NIST, NSDB表敬, CRDC内視察
3	3	土		"	チームと専門家間で打合せ
4	4	日	マニラ→ドマグッティ	ドマグッティ	移動, タロ・センター視察
5	5	月	ドマグッティ→セブ	セ ブ	移動, 民間工場(ラッキー, チャイナ)視察
6	6	火	セ ブ→マニラ	マ ニ ラ	移動, チーム内打合せ
7	7	水		"	CRDC, NIST, NSDBと協議, チーム専門家間で打合せ
8	8	木		"	CRDC, NIST, NSDBと協議
9	9	金		"	CRDC, NIST, と協議
10	10	土		"	CRDC, NISTと協議, チーム内打合せ, レポート作成作業
11	11	日	マニラ→東京(中島氏)	"	チーム内打合せ, レポート作成作業
12	12	月		"	CRDC, NIST, NSDBと協議
13	13	火		"	CRDC, NSDBと最終協議, タイプ作業
14	14	水		"	大使表敬, 業務整理, タイプ作業, CRDC内視察, 延長 R/Dサイン
15	15	木	マニラ→東 京	東 京	移動(帰国)

☞ CRDC……………Ceramics Research and Development Center

(窯業研究開発センター)

NIST……………National Institute of Science & Technology

(国立科学技術研究所)

NSDB……………National Science Development Board

(国家科学開発庁)

Ⅲ. 討 議 経 過

1. 第 1 回 討 議

Minutes of the Evaluation Meeting Opening Session

、 May 7, 1980
9:50 A.M. – 12:20 A.M.
CRDC Conference Room

Attendance:

Japanese Evaluation Team

Ryuzoh Naitoh	—	Leader, Senior Technical Advisor to the President, JICA
Kunio Nakajima	—	General Affairs Div., Agency of Industrial Science and Technology MITI
Kazuyoshi Imase	—	Director, Tajimi-City Ceramic Design Center
Sakashi Matsuda	—	Technical Cooperation Div., Mining and Industrial Development Cooperation Department JICA

CRDC Japanese Experts

Mr. Kozo Esaki
Mr. Motoo Ueno
Mr. Minoru Maeda
Mr. Ryuichi Yamamoto
Mr. Dai Ohkubo
Mr. Yasuo Ito

Philippine Panel

NSDB Representative

Atty. Dominador Reyes	—	Chief, Education & Public Affairs Represented Minister Melecio Magno
Ms. Nona Almanzor		
Ms. Florita de Jesus	—	Planning and Programming Division
Ms. Zenia Velasco		

NIST Representative

Dr. Quintin Kintanar	—	Represented Dr. Vedasto R. Jose
----------------------	---	---------------------------------

CRDC Staff

Mrs. Guillermina C. Mañalac
Mr. Severino Bernardo
Mr. Christopher Salegumba
Mr. Tomas Récio
Miss Virgilia Villarete
Miss Suzita Oredina

The session was opened formally with Mrs. Mañalac, Project Director, presiding the Evaluation Meeting of the joint NSDB-NIST-JICA Project for the Establishment of the Ceramics Research and Development Center. Presentation of members of the Japanese Evaluation Team, Philippine Panel, CRDC Staff and CRDC Japanese Experts were made by Dr. Naitoh, Mrs. Mañalac and Mr. Esaki respectively. A welcome speech was given by Atty. Dominador Reyes who represented the NSDB Minister. He recalled that almost two years ago, Ambassador Mikanagi was here to commemorate the inauguration of CRDC. He thanked the Japanese Counterparts for making the project possible and acknowledged JICA's contribution to the biggest ground of foreign assistance which marked a closer RP-Japan relationship. He remarked that although the Philippine counterpart was not able to come out with some commitments due to some unaboidable constraints, the Minister endeavors to finish the project as soon as possible. The establishment of CRDC would be a tremendous help especially in the project of the First Lady for Low-Cost Housing. He added that CRDC would be a monument to the JICA. Lastly, he offered the team the use of NSDB and NIST's facilities while here and hoped that they would enjoy their stay and thanked them for coming.

Dr. Quintin Kintanar who represented the NIST Commissioner, gave a Summary of the Report of NIST Activities, primarily on the three commitments of NIST: (See Report of Activities).

- a) Provision of land area for the use of CRDC
- b) Provision of personnel to undergo training
- c) Creation of Organizational Structure

For the first commitment, a part of IRC Building has been used by CRDC for laboratory and offices, in addition the Brick and Tile Unit was constructed and the Pottery Unit which is scheduled to be completed this month of May, 1980.

In so far as Personnel is concerned, 21 staffs were trained in Japan since 1976.

In the Administrative side, CRDC was allowed to function by itself. It is hoped that by 1981, it would already be established as a center.

The report from the Japanese side was given by Mr. Naitoh. He also expressed his thanks for the cooperation attributed to this project. The Japanese side has sent 6 Long Term Experts, 18 Short Term Experts and 13 other for Technical follow-up, Maintenance and Repair of equipment. For 1980, they would continue the provision of equipment, dispatch of experts

and acceptance of CRDC counterparts for training.

Mrs. Mañalac informed the team that with Mr. Esaki's initiative, they took upon themselves to conduct self-evaluation to know how far have been attained. After many discussion meetings between the staff and CRDC Japanese experts they did a very detailed analysis target by target of what have been done so far. As a source of reference and basis for evaluation, a "Self-Evaluation Report on Progress, Achievement and Further Requirement for the Establishment of CRDC" was prepared, copies of which were distributed among member together with CRDC's Program of Activities.

Mr. Esaki added that these references contain all original plans, performance, plus the over-all comment. Achievements in Technical aspects were also included and also further studies whether the project is to be terminated or extended. He asked the evaluation team one question: On which basis would you evaluate: Whether our approach is correct or you have any other basis for evaluation.

Atty. Reyes: The references specified what would be used as basis. Basing on general principles, it is a very good approach and very specific as to the achievements.

Mrs. Mañalac: Do you think the references adopted by self-evaluation study are already sufficient or there may be other more to be included?

Mr. Matsuda: Thank you for preparing the papers for this evaluation meeting. We would like to hear comments frankly. For the next meetings more details will be discussed.

Dr. Kintanar: The format is comprehensive and through because there are criteria and guidelines and if this is acceptable to the Japanese panel, then, this could already be used as basis.

A ten-minute break followed and the discussion continued.

Mrs. Mañalac read the provisions for land and buildings which were referred to the corresponding appendices and attachments.

Dr. Naitoh: What does "except for one laboratory room" in the plan means?

Mr. Mañalac: One room intended for a research laboratory was temporarily used as carpentry room for fabrication of furnitures.

Dr. Naitoh inquired regarding the safety of the X-ray room.

Mrs. Mañalac: The X-ray room is provided with a red light at its door during operation wherein nobody is allowed to enter. Researchers are provided with film badges which are monitored by PAEC.

Dr. Kintanar: Is your equipment registered with PAEC? (Philippine Atomic

Energy Commission).

Miss Villarete explained that before obtaining the film badges, some pertinent papers regarding the equipment was submitted.

Mr. Maeda added that the X-ray equipment is provided with safety protection cover.

Miss Almanzor: Have you taken any move to improve the water system?

Mrs. Mañalac: A contractor has agreed to supply the services.

The next discussions were on budgetary aspects:

Mr. Matsuda inquired about the unbalance schedule of fund release.

Mrs. Mañalac explained that there are so many requirements to be submitted to the Ministry of Budget before release of funds is to be approved.

Mr. Ito: Regarding the total fund release for the pottery, why was there no fund released in 1978?

Mrs. Mañalac: The contract for construction was signed already in December, 1979 although construction has already started so we could not ask for the release in 1978.

Mr. Matsuda commented on the completion of electrical wirings.

Mr. Mañalac explained that because of the delay of construction in the Pottery Unit, some equipment were installed temporarily so as to avail of the services of the short term experts, hence the temporary electrical installations.

The next discussion was on staffing of CRDC which was referred to *J.E.R. Table 4. Mrs. Mañalac explained that the CRDC staff has 2 categories; those under the General Fund (GF) and Grants-in-Aid (GIA). Since it is difficult to get approval for permanent positions, she requested for new GIA positions. Higher authorities have already approved 28 new positions.

Some comments on J.E.R. 2. Staffing (Comments) (i), (ii), (iii) were read.

Miss Almanzor: What is the reason for turn-over of personnel? Were there trained participants who had left?

Mrs. Mañalac: Higher offer from the private sectors and good opportunities abroad are the main reasons. So far, 2 ex-participants have left but their training is not under the JICA Program.

The meeting was adjourned at 12:19 P.M. and to resume at 1:30 in the afternoon.

Recorded by:

SUSAN CABILLON

JOVENCIA GARCIA

SLC/lsr
5/8/80

* J.E.R.: JOINT EVALUATION REPORT

2. 第 2 回 討 議

Minutes of the Evaluation Meeting
Second Session

May 7, 1980
2:15 - 5:05 P.M.
CRDC Conference Room

Attendance:

Japanese Evaluation Team:

- | | | |
|---------------------|---|--|
| Dr. Ryuzho Naitoh | — | (Leader) Senior Technical Advisor to the President,
JICA |
| Mr. Kunio Nakajima | — | General Affairs Division, Agency of Industrial
Science and Technology,
MITI |
| Mr. Kazuyoshi Imase | — | Director, Tajimi-City Ceramic Design Center |
| Mr. Sakashi Matsuda | — | Technical Cooperation Division, Mining and
Industrial Development Cooperation Department,
JICA |

CRDC Japanese Experts:

- Mr. Kozo Esaki
- Mr. Dai Ohkubo
- Mr. Motoo Ueno
- Mr. Ryuichi Yamamoto
- Mr. Minoru Maeda
- Mr. Yasuo Ito

Philippine Panel:

NSDB Representative:

- | | | |
|-----------------------|---|--|
| Atty. Dominador Reyes | — | Chief, Education and Public Affairs (Represented
Min. M.S. Magno) |
| Ms. Nona Almanzor | — | Planning and Programming Division |
| Ms. Florita de Jesus | — | Planning and Programming Division |
| Ms. Zenia Velasco | — | Planning and Programming Division |

NIST Representative:

- | | | |
|-------------------------|---|------------------------------------|
| Dr. Quintin L. Kintanar | — | Represented Commissioner V.R. Jose |
|-------------------------|---|------------------------------------|

CRDC Staff:

Mrs. Guillermina C. Mañalac
Mr. Severino T. Bernardo
Mr. Christopher C. Salegumba
Mr. Tomas D. Recio
Miss Virgilia H. Villarete
Miss Suzita Oredina

The meeting resumed at 2:15 in the afternoon. It started on J.E.R. 4. Equipment prepared by the staff of CRDC, with reference to Annexes 2 and 3, Appendix B, Attachments and 5.

The meeting is a sort of an open forum. After reading the distributed copy of the above mentioned paper, which is the basis for evaluation, questions and answers followed.

Mr. Esaki informed the Evaluation Panel that most equipment received by CRDC since the inauguration in July, are already installed and operated while others are still stocked due to the delayed completion of the Pottery Building.

Dr. Naitoh inquired on the priority rank of request for equipment which is found in Attachment 5.

According to Mrs. Mañalac, when this provision was prepared, it had been agreed upon between the Japanese side and Philippine side which equipment will be delivered first depending on the availability of funds and immediate need of the Center.

The percentage of equipment already delivered to CRDC and whether the Center have personnel assigned for maintenance and repair of equipment were asked by NSDB representatives.

Mr. Maeda responded that 99 percent was delivered and only a total of three (3) units has not yet been delivered (please refer to Attachment 5).

Mrs. Mañalac told the Evaluation team that a personnel is sent to Japan for training on maintenance of equipment but some equipment are so complicated that an specific expertise is needed. Local representative for regular services is hence needed and this plan will be included in the future program of CRDC. Mr. Nakajima asked whether the Center has trouble with regards to equipment.

Mr. Maeda said that only the Atomic Absorption/Flame Spectrophotometer (AA) is out of order, but according to Mrs. Mañalac, minor troubles take place from time to time and this is being taken cared of by the maintenance team of CRDC with the advice of experts.

Next topic brought about for discussion was item 2.1.(d). Experts. No question

was asked on this part so the group proceeded to item 2.1.(e). Counterpart Training in Japan.

NSDB asked on the basis of selecting trainee to Japan.

According to Mrs. Mañalac, a tentative schedule for trainee to Japan for the year 1980 had already been prepared. A review for their qualifications were of course done. After the training, they are to serve CRDC for three (3) years.

Mr. Matsuda asked about the assigning of trained personnel at the Center.

Mr. Esaki explained that at present CRDC is employing the man-to-man system at this stage of establishment and the present set-up should continue until necessary.

We hope that after the series of discussion you will see the close coordination between Japanese Expert and Philippine side in the stage of our establishment, Mañalac said.

It was known that there are already 21 persons trained so far.

Item 2.1.(f). Budgeting was the next topic discussed.

During the year 1978, as shown in the table on page 11-B of the discussion paper, CRDC was not able to spend all funds for operating expenses so this remaining amount was carried over for 1979 to be used for the brick and tile operation. Difficulty in the filling up of vacant positions, evaluating of personnel to fill up these vacant positions account to less expenditure, Mañalac said. Since there was a confusion regarding the asterisk shown on the table, further discussion was scheduled tomorrow, 8 May 1980.

Next item for discussion was 2.1.(g).1. Management and Administration.

Mr. Esaki requested Mrs. Mañalac to elucidate the matter given on 2.1.(g).5.

The following is the explanation of Mrs. Mañalac:

Eversince the start of the joint activity, a proposal that CRDC will become a Center has been endorsed. Because this involved a number of personnel, there was resistance on the part of higher authorities. Due to lack of information on the importance of creating this project into a Center, they were not able to get the approval of higher authorities. Some of their reasons for non-approval were; the facilities of CRDC are not complete and the lack of trained personnel. It was on this year 1980 at CRDC get an appropriate counterpart fund for the establishment of CRDC and approved twenty-eight (28) new positions. This proved that they have recognized the existence of Ceramic Research Center. After filling up of these vacant positions and the completion of facilities, CRDC will be in position to justify that CRDC can stand as a Center and will propose this plan to the Management Office.

The proposal will be officially submitted by CRDC to NIST then NIST will submit it to NSDB and NSDB will endorse it to the Ministry of Budget. After a series of hearings, the

Ministry of Budget then will recommend to the Minister whether or not to create a Center.

Next discussed was about the Evaluation on Achievement of Functions with reference to Attachment 13 which is composed of (I) Transfer and Adaptation of Technology and (II) Training of Manpower. All these fall from Category I up to Category II (please refer to the table on Attachment 13). For the abbreviations and notes refer to page 36 of Attachments.

Mr. Esaki read and explained each Category.

Category 1 – Geologic studies had been undertaken. This program is a sort of inventory of raw materials. Systematic compilation of data has been started.

Category 2 – Within this program there are already testing methodology as described on pages 22–23 of the Program of Activities of CRDC.

Category 3 – Involves evaluation of raw materials and evaluation of commercial products.

Category 4, 5, 6 – This categories are almost the same, they only differ in the nature of activities and nature of products undertaken.

Category 7 – It has been stated previously that after the inauguration, equipment were installed and are now operational. Most of our engineering staff are engaged in the installation and fabrication of simple equipments for manual production of brick and tile, ceramic production and ceramic kilns. At present, there are already three (3) kilns constructed by the group.

Category 8 – Staff Training

Category 9 – Instructor Training

Category 10 – Technical Services

Category 11 – Local Facilities. At present, the Center has three (3) local training center namely. The San Nicolas Brick and Tile Pilot Plant, Daro Provincial Ceramic Training Center and Massin Ceramic Training Center.

The purpose of establishing Ceramic Demonstration/Training Center is that; Whatever technology is developed at CRDC will be demonstrated at the training center.

Mr. Matsuda announced that the first part of the session tomorrow, 8 May 1980 is the opinion or comment of the Panel on what had been discussed today.

Tomorrow's meeting is scheduled at 9.30 A.M.

Recorded By:

MA. SUSANA L. CABILLON

JOVENCIA T. GARCIA

JIG/asr
5/8/80

3. 第 3 回 討 議

Minutes of the Evaluation Meeting Third Session

May 8, 1980
9:40 – 11:50 A.M.

Before going to the main topic of discussion, Mrs. Mañalac clarified the "asterisks" shown on the table which gave confusion during the previous meeting and further explained the budgetary procedures in NIST, NSDB and the Budget Ministry. She also presented a copy of the NIST Budget Record for 1980, particularly that of the CRDC project. Another member of the NSDB Panel from the Deputy Minister's Office was introduced, Miss Veneranda Eclar.

Mr. Ueno inquired as to how the projects were divided; what are those under the General Fund and those under Grants-inAid.

Dr. Kintanar explained that projects under the General Fund are those continuing or related on-going projects while the Grants-in-Aid are new activities undertaken which receives aid from NSDB. Transfer of GIA project to General Fund requires the approval of the Budget Ministry.

Mrs. Mañalac read further related informations in connection with the project.

Item 4.1. Budget System in RP

4.1.1. Budgetary Requirement Preparation

She explained that while the budget for 1981 is being proposed, feedbacks are being studied from the 1980 budget. From NSDB, it will be endorsed to the Ministry of Budget and finally to the BATASAN (law-making body) for final approval.

The cause of the delay of construction of the Pottery Unit was that the contractor was not able to collect all the amount due to an unfinished job.

Item 4.1.3. Compulsory Requirement of Reserve Fund

4.1.4. Foreign Assited Projects

4.3. Later Thrusts in NIST Activities

4.4. Turn-over of Staff (1977 to 1980)

4.5 Recent Movement Among Ceramic Industrialists in ASEAN

Mr. Esaki requested for further explanation of 4.5.

There was an organized association among ASEAN countries formed by Ceramic Industrialists, Mr. Alcantara (President of the Philippine Standards) together with the association's president, Mr. Yusof, a Malaysian visited the Center. They would like to be involved in the undertaking of some projects and the possibility of CRDC serving as the core of the association.

Mr. Nakajima asked if what is the main function of this association.

In considering all aspects, cooperation in research is the primary aim and training is also considered as one aspect.

Desirable requirements after July 15, 1980 was taken up.

- 5.1. Need for further cooperation
- 5.2. Way of further cooperation
- 5.3. Desirable terms and conditions of extension

If request for extension will be considered, this will be stipulated by the Philippine counterpart.

After a short break, the discussion continued.

Mr. Nakajima ascertained that the Japanese Expert's services will be extended until CRDC personnel concerned will be competent.

Dr. Naito inquired regarding the fire accident that happened.

An investigation was conducted but it could not be determined whether it was due to faulty electrical wirings or cigarette butts carelessly left inside. The Engineering staff have inspected the electrical wirings and re-wiring was done.

The following observations and recommendations were brought about by the Japanese team:

- a) Check-up of all electrical installation.
- b) Water system is an important factor so this should be also taken in priority.
- c) Laboratory tables in the Chemical room are too high.
- d) Space for X-ray Room is too small.
- e) Trainees should bring local sample to Japan.

Mrs. Mañalac, reply to the recommendations, remarked that she will propose to the NIST commissioner to have a licensed Electrical Engineer conduct and over-all inspection of the electrical installations. As to the water system, a contract have already been negotiated and drilling was completed. The submersible pump is about to be installed while the contract for

setting-up of a water storage tank is still pending due to unreleased budget for capital outlay.

As to the electrical installations, Mr. Maeda commented that he had proposed to install formal grounding and separate main switch valves for each equipment but due to the impending situation, it was not carried out.

Dr. Kintanar as part of the NIST Management reiterated that NIST is fully aware of its commitments and responsibilities as stated in the RD and assured the visiting panel that various resources will be gathered together to implement the establishment of Ceramic Research and Development Center.

Mr. Nakajima cited about the Government Research Institutions in Japan its functions and how budgetary and personnel problems are tackled. He also mentioned that their government has initiated to put up this research institutions in one area.

The NSDB panel remarked that NSDB also functions in almost the same way and there is also had put up the Science Community Complex, but as usual budgetary constraints cause the delay of its completion.

Mr. Esaki inquired if the transfer of the NIST Administrative Office from Herran to Bicutan is included in the plan for 1981.

Miss Almanzor answered that it was not included in the plan for 1981 but as soon as the on-going construction of other buildings will be completed it may take steps in the transfer of other Science Laboratories.

Mr. Matsuda inquired, "If cooperation will be extended, what is your aim or target in the future?"

Mrs. Mañalac replied that the major aim is to complete what has been left out in accordance with the Program of Activities so as to attain the goal of the three (3) main functions of CRDC.

The meeting was adjourned at 11:50 A.M.

Recorded By:

MA. SUSANA L. CABILLON

JOVENCIA CARCIA

SLC/asr
5/9/80

4. 第 4 回 討 議

Minutes of the Evaluation Meeting
Fourth Session

May 9, 1980
3:32 - 5:23 P.M.

Attendance:

Philippine Side:

Dr. Vedasto P. Jose — NIST Commissioner
Dr. Noel Balitactac — OIC-Industrial Research Center, NIST
Mr. Alberto Pesigan — Chief, Planning & Programming Division, NIST
Mrs. Gullermina C. Manalac
Mrs. Severino T. Bernardo
Mr. Christopher C. Salegumba
Mr. Alberto Sedico
Miss Suzita Oredina
Miss Virgilia H. Villarete
Miss Nona Alamanzor

Japanese Side:

Dr. Ryuzoh Naitoh
Mr. Kunio Nakajima
Mr. Sakashi Matsuda
Mr. Kozo Esaki
Mr. Dai Ohkubo
Mr. Motoo Ueno
Mr. Yasuo Ito

Mrs. Mañalac commenced the meeting by telling Commissioner Jose that CRDC has already presented and discussed to Discussion Report to the Japanese Evaluation Team and the team had prepared their evaluation to be presented during the meeting.

Dr. Naitoh said that after a series of discussions with Philippine side, they have come up on the preparation of an evaluation paper whose content will be explained by Mr. Matsuda.

Recommendation for management system was the first topic mentioned by Mr. Matsuda. It states "In order to develop the Center moreover after this, good and functional management system has to be established, especially tighten connection among the Center, NIST, NSDB, etc." This recommendation suggests the creation of a task force — a joint committee who

could carry out the implementation and improvement of projects. He asked from Philippine side comment about the recommendation.

Mrs. Mañalac inquired who will compose this joint project.

According to Mr. Matsuda, it will be composed of Filipinos and experts.

"During our three (3) years experience, I found progress particularly on the construction of building and the capability of CRDC which is a sole task force led by NIST," Mr. Esaki said. "At present, facilities are functioning in CRDC. If task force could be created jointly with agencies like NACIDA, and Bureau of Mines as members, I think we could have successfully conducted our projects whose ambition is to realize its objectives", he further explained.

According to Dr. Jose, he is not really against the idea of creating task force, but it should be studied beforehand.

Mr. Nakajima read and explained the remaining part of their evaluation.

Dr. Jose asked whether the remark for Category 4 is also applicable to Category 5.

Mr. Matsuda positively answered and said that this is also true to Category 6.

Dr. Jose said that their recommendations will be studied first before going to a conclusion of accepting or non-accepting their recommendations for this matter is not easy to decide.

Mr. Matsuda asked the Philippine side's comments on the JICA Cooperation to the Philippines.

Mrs. Mañalac said that in accordance with what was stipulated in the original RD, most stipulation are almost complied with a number of Filipino counterpart who were sent to Japan for training. Also she is deeply impressed by the capability of experts applied in CRDC. Philippine side will appreciate much if extension of cooperation can be granted. Although difficulty in communication arose during the arrival of short-term experts from Japan, still the training rendered to our staff is satisfactory.

During the evaluation of this project according to Mrs. Mañalac, extension of cooperation is still necessary.

Japanese Evaluation Team cannot conclude themselves what cooperation is expected from their side for the two (2) years extension, so Mr. Marsuda inquired about the nature of cooperation the Philippine side expected from them.

According to Dr. Jose, he has suggestions for the Japanese Evaluation paper but he has to confer it first with Philippine side and with Mr. Esaki. It needs careful planning. Giving comments will affect the future performance of the center. Review of past experiences

of CRDC will be conducted as basis for decision what kind of cooperation is needed for the new RD.

It has been agreed upon that another meeting will be held tomorrow at 1:30 P.M., May 10, 1980 in CRDC.

The meeting was adjourned at 5:23 P.M.

Recorded By:

JOVENCIA T. GARCIA

JTG/asr
5/12/80

5. 第 5 回 討 議

Minutes of the Evaluation Meeting
Fifth Session

May 10, 1980
1:45 - 4:23 P.M.

Attendance:

Philippine Side:

Mr. Noel S. Balitactac
Mrs. Guillermina C. Mañalac
Mr. Severino T. Bernardo
Mr. Christopher C. Salegumba
Miss Nona Almanzor
Miss Suzita Oredina

Japanese Side:

Dr. Ryuzoh Naitoh
Mr. Kunio Nakajima
Mr. Sakashi Matsuda
Mr. Kazuyoshi Imase
Mr. Kozo Esaki
Mr. Yasuo Ito

The meeting was called to order at 1:45 P.M.

Mr. Matsuda made excuses of their being late.

Miss Almanzor presented to the Evaluation Panel the reactions from Philippine side about their recommendations given during the previous meeting as follows:

I. Management of Project

1. The suggestion to establish a joint committee to be composed of representatives from NSDB and NIST management and CRDC is well taken. It was understood that this committee is essentially the task force that will take the lead in discussing policies and taking the necessary actions to accelerate the implementation of objectives for the establishment of CRDC.

II. Organization Set-up:

1. NIST is making representations to the Budget Ministry to officially institutionalize CRDC. At present, recruitment of additional personnel is on progress to bring up a total of eighty-five (85) staff members. In addition to this, daily wage workers will be hired from time to time. Like any other government agency, budget of NIST is fixed by law on a yearly basis. However, NIST will propose for an increase in their budgetary requirement to meet the needs of CRDC.
2. Maintenance team is acceptable. Miss Almanzor told the panel that the completion of the building is expected to be finished on May 15.

- ## III.
1. At this stage of cooperation more emphasis on pilot plant (product development activities) should be given. This sentence had been revised by Mr. Matsuda as: At this stage of cooperation more emphasis should be given on the development of function which are material research services and product development guidance should be given.
 2. Counterpart training in Japan is desirable with emphasis on advanced research and management training.
 3. All the activities mentioned here are in accordance with the three (3) major objectives of CRDC.

Mr. Esaki gave suggestion for no. 3: maintenance and repair team will be an inter-agency committee to look into the problem for immediate actions.

"In our interpretation on recommendation of the panel on maintenance, we believe that you will prepare technical men to be sent here in the Philippines to repair and maintain our equipments and if we are right, we appreciate this very much", Dr. Balitactac said.

Mrs. Mañalac clarified that what appear in "Future Plan" are tentative and this will be revised and finalized after the discussion. In 4, "Counterpart Training in Japan" the first priority was on production technology, second, production of kiln and third is management training.

In management training, Philippine side believed that local training is more effective because management training in Japan is just an overview of the industry.

Mrs. Mañalac suggested that since in research training it is already an advanced training it is better to send to Japan those who are already previously trained there. The best researcher and the most experienced of the CRDC personnel preferable so that her/his training would be more effective. A staff who is believed to stay in CRDC longer will be chosen for he/she will serve as a good foundation of CRDC for the years to come.

Mr. Matsuda replied that when Philippine side dispatch trainee to Japan maybe its good to bring with them raw materials at least 30 kg. so that there would be an actual training on the material deposit of the Philippines.

In the middle of the meeting, Mr. Ito inquired who the chairman of the meeting is.

Mrs. Mañalac explained that the presence of Philippine side is only to support recommendations, to give an idea of what the panel expect, and to present ideas for inclusion to their recommendations, so the Evaluation Panel can be considered as the Chairman for they are trying to come up with their recommendations.

Mrs. Mañalac told the Evaluation Panel that during the preparation of the report "Reactions from Philippine Side", Philippine side considered all those recommendations presented by the panel on the previous meeting. She further explained that contrary to their comments to reduce the number of experts in CRDC, Philippine side suggested that the same number of experts be given and if possible short-term experts should also be sent here according to the need of CRDC.

Mr. Matsuda said that some experts will return home so another experts will take their places.

Mrs. Mañalac requested that in choosing experts to be assigned in CRDC, consideration of the future plans, the future activity of the Center be taken into consideration. She further explained that during the extension period CRDC is bound to complete all targets not yet realized.

Mr. Matsuda asked comments from Philippine side regarding equipments.

"Even before the arrival of the Evaluation Team, we have agreed tentatively on equipment and spare parts which we will request for the extension of RD. Since there are still equipment not yet delivered, we request those urgently needed ones be included in addition to spare parts which is the main requests for this new RD", Mrs. Mañalac remarked.

Mr. Matsuda inquired about the topic "Philippines" which is found at the last part of "Future Plans".

The following are the explanations of Mrs. Mañalac:

1. In accordance with your recommendation on the creating inter-agency/Ministry Task Force to support CRDC the National Institute of Science and Technology will take this up.
2. On official institutionalization of CRDC within the NIST organization, there is already a program submitted to the Ministry of Budget. NIST commits to follow this up.

3. On provision of necessary budget for the continuing operations of CRDC, maintenance and operating expenses and personnel services are included.
4. On hiring of additional staff members, through the years we always propose positions for regular funds.
5. On improvement of facilities, this is in accordance with your suggestion.

She further said that if the panel have something to add, they may inform Philippine side so they can clear it up with Dr. Jose.

Mr. Nakajima suggested that market research be included for the next CRDC targets.

"We do recognize the importance of market research, but due to lack of personnel we have not assigned this formally to any staff, but instead we have already conducted survey on small industry", Mrs. Mañalac said, "We hope we can assign some personnel to do the research".

It was agreed on the meeting that on Monday morning, 12 May 1980 the Evaluation Panel will submit draft of three (3) documents for each member to study and examine for the afternoon's discussion, namely:

1. Evaluation Report
2. Schedule or Program of Activities for the next two (2) years.
3. Extension of Cooperation.

Finally, Mr. Matsuda announced that Mr. Nakajima will return home tomorrow at 2:15, 11 May 1980.

The signing of the aforementioned documents will be done right after the finalization on Tuesday, 13 May 1980.

The meeting was adjourned at 4:23 P.M.

Recorded By:

JOVENCIA T. GARCIA

JTG/asr
5/12/80

IV. エバリュエーションレポート

JOINT EVALUATION REPORT

BY

EVALUATION TEAM OF

THE JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

AND

THE NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY (NIST)

THE NATIONAL SCIENCE DEVELOPMENT BOARD (NSDB)

ON

THE CERAMIC RESEARCH AND DEVELOPMENT CENTER PROJECT

IN THE REPUBLIC OF THE PHILIPPINES

MAY 14, 1980

MANILA, PHILIPPINES

DISCUSSION PAPER BETWEEN THE EVALUATION TEAM
OF THE JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) AND THE
NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY (NIST), NATIONAL
SCIENCE DEVELOPMENT BOARD (NSDB) ON THE EVALUATION OF
CERAMIC RESEARCH AND DEVELOPMENT CENTER PROJECT WHICH IS
TERMINATED ON JULY 15, 1980

DATE: May 2 - May 14, 1980

PLACE: CERAMIC RESEARCH AND DEVELOPMENT CENTER
BICUTAN, TAGUIG, METRO MANILA

ATTENDANCE:

JAPANESE PANEL

JAPANESE EVALUATION TEAM -

- Dr. Ryuzoh Naitoh - Leader, Senior Technical
Advisor to the President
of JICA
- Mr. Kunio Nakajima - General Affairs Division
Agency of Industrial
Science and Technology,
MITI
- Mr. Kazuyoshi Inase - Director, Tajiri-City
Ceramic Design Center
- Mr. Sakashi Matsuda - Technical Cooperation
Division, Mining and
Industrial Development
Cooperation Department,
JICA

JICA MANILA OFFICE -

- Mr. Toshikazu Miura - Resident Representative
JICA, Manila Office

CRDC JAPANESE EXPERTS -

- Mr. Kozo Esaki - Chief Advisor
- Mr. Dai Ohkubo - Applied Mineralogy
- Mr. Motoo Ueno - Production Technique
- Mr. Ryuichi Yamamoto - Beneficiation of Raw
Materials
- Mr. Mimoru Maeda - Physical Property Test
- Mr. Yasuo Ito - Program Analysis

PHILIPPINE PANEL

NATIONAL SCIENCE DEVELOPMENT BOARD -

- Atty. Dominador Reyes - Chief, Education and Public Affairs Service
- Ms. Nona Almanzor - Planning and Programming Division
- Ms. Florita de Jesus - Planning and Programming Division
- Ms. Zenia Velasco - Planning and Programming Division

NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY -

- Dr. Vedasto R. Jose - Commissioner
- Dr. Quintin Kintanar - Deputy Commissioner
- Dr. Noel Balitactac - OIC-Industrial Research Center
- Mr. Alberto Pesigan - Chief, Planning and Programming Division

CERAMIC RESEARCH AND DEVELOPMENT CENTER -

- Mrs. Guillermina C. Mañalac - Project Director
- Mr. Severino T. Bernardo - Head of Programming and Coordination Department
- Mr. Christopher C. Salegumba - Head, Technical Guidance Department
- Mr. Tomas D. Recio - Head, Research and Development Department
- Miss Virgilia H. Villarete - Chief, Material Testing Section
- Miss Suzita Oredina - Chief, Coordination and Control Section

EVALUATION REPORT

1. INTRODUCTION

(1) Objective

The Japanese Evaluation Team organized by the Japan International Cooperation Agency (JICA), (hereinafter referred to as "The Team"), headed by Dr. Ryuzoh Naitoh, visited the Republic of the Philippines from May 1 to May 15, 1980, for the purpose of identifying past achievements and future perspective of the Japan-Republic of the Philippines Cooperation Project on the Establishment of the Ceramic Research and Development Center (CRDC), by virtue of the R/D* which took effect July 16, 1976, for the period of four (4) years.

The team discussed and studied with the Philippine Counterparts concerned, CRDC Personnel, and CRDC Japanese Experts, a number of aspects with respect to the performance of commitments, achievements of CRDC's functions, constraints which hampered past activities, and possible causes which may restrain future prospectives as well.

After careful studies and discussions, the Team summarized its findings and observations, as described in the following chapters.

* Record of Discussions between the Japanese Implementation Survey Team of the Japan International Cooperation Agency and the National Institute of Science and Technology of the National Science Development Board of the Republic of the Philippines signed on July 16, 1976.

(2) Background of the Project

In 1974, the Government of the Republic of the Philippines requested the Government of Japan a cooperation on the establishment of a research and development center in the field of ceramic science and technology, for the purpose of promotion and development of the ceramic industry in the Philippines.

Upon this request, the Government of Japan through the JICA, sent the Preliminary Survey Team to the Philippines from October to November, 1975, in order to establish such a center. The Preliminary Survey Team conducted surveys, studies and discussions regarding the following aspects:

- (i) Present conditions and problems of the ceramic industry.
- (ii) Future prospects of the ceramic industry.
- (iii) Effectiveness of the proposed center.
- (iv) Enthusiasm of the Administrators concerned.

On the basis of this report and recommendations of the Preliminary Survey Team, the Japanese Implementation Survey Team organized by JICA visited the Philippines from June to July, 1976, for the purpose of working out the details of the Technical Cooperation Program to establish the CRDC. The Team discussed and studied with its Philippine Counterparts, a number of points in question with respect to the establishment of the CRDC for its effective implementation and management.

As a result of careful studies and discussions both parties reached the consensus to recommend to their respective governments, the immediate implementation of the Technical Cooperation for the Establishment of the Ceramic Research and Development Center, and the Record of Discussions was signed on July 16, 1976,

between the Head of the Japanese Implementation Survey Team and the Commissioner of NIST, NSDB.

This recommendation was accepted in principle by both governments and as a result, the cooperation program was started.

(3) Summary of the Project

The summarized record of implementation of the technical cooperation program is as listed below:

Chronological Review of the CRDC Project

<u>Year</u>	<u>Date</u>	<u>Items</u>
1974	August 20	Official request from the Government of the Republic of the Philippines
1975	October 14 - November 3	Dispatch of Japanese Preliminary Survey Team
1976	June 28 - July 18	Dispatch of Japanese Implementation Survey Team
	July 16	Signing of the Record of Discussions
1977	January 20 - March 19	Dispatch of Japanese Planning and Coordination Team
	June 1 - June 30	Transfer of IRC Ceramic Division to Bicutan
	August 17 - July 15, 1980	Dispatch of two (2) Japanese Experts (Chief Advisor, Beneficiation of Raw Materials)
	September	Start of partitioning of IRC Building
	December 13 - July 15, 1980	Dispatch of one (1) Japanese Expert (Program Analysis)
	December 20 - July 15, 1980	Dispatch of one (1) Japanese Expert (Physical Property Test)
	December	Start of construction of brick and tile shed
1978	January 10 - July 15, 1980	Dispatch of one (1) Japanese Expert (Applied Mineralogy)

<u>Year</u>	<u>Date</u>	<u>Items</u>
1978	March	Completion of vital parts of IRC Building
	April 17 - July 15, 1980	Dispatch of Japanese Expert (Production Techniques)
	July 7 - July 23	Dispatch of Japanese Technical Guidance Team
	July 10	Inauguration Ceremony of CRDC
	September	Start of construction of Pottery Building
1979	December	Completion of major part of partitioning of IRC Building
1980	February 19 - March 10	Dispatch of Maintenance and Repair Team
	May 1 - May 15	Dispatch of Japanese Evaluation Team

2. METHODOLOGY OF EVALUATION

(1) Materials Used as Reference

In order to evaluate past performance and achievement quantitatively as well as qualitatively, the following materials are adopted as basis of reference:

- (i) The R/D
- (ii) The official request made the Philippine Government with respect to expert services, training of counterparts in Japan and donation of equipment by means of Colombo Plan Forms A-1, A-2, A-3, and A-4, respectively.
- (iii) The discussion papers agreed or accepted in the course of discussion sessions for the R/D (hereinafter referred to as the "Discussion Paper").
- (iv) The Program of Activities of CRDC (hereinafter referred to as the "CRDC Program of Activities").

The background and the roles of these materials are described hereafter.

The R/D is no doubt, the fundamental reference material and accordingly, the R/D is used for the basis of evaluation to the extent possible. However, descriptions in the R/D with respect to various subject of evaluation are mostly too general or indicative only. It is, therefore, very difficult in many cases to evaluate the performance and achievements of and activity quantitatively and/or qualitatively based on the R/D alone. In such cases, other reference materials, which are understood to be within the framework and guidelines of R/D, are use.

- (2) The self-evaluation report made by CRDC in April, 1980, was examined by the Team and Philippine Counterparts, item by item.
- (3) The Team also conducted inspections on buildings, facilities, and utilities with the cooperation of the CRDC staff and the Japanese experts. Discussions with the CRDC Counterparts previously trained in Japan was also held.
- (4) The Team also visited some ceramic plants and producers as well as some research institutions in order to obtain ideas about local conditions.

3. RESULT OF EVALUATION

(1) Buildings and Facilities

(Plan and Performance)

- (i) Building and facilities have been constructed by the Philippine side within September, 1977, but as seen in Table 1, the original schedule has been delayed. However, floor space is almost the same as the original plan as seen in Table 2.
- (ii) Schedule of funding for CRDC building is shown in Table 3.

(Comments)

- (i) Main constraints which brought the delay of construction/ partitioning works were due to limited funds available from time to time due to administrative procedures for all construction works; limited manpower availability for drafting of plan, supervision, coordination, processing of procurement and other administrative procedures.
- (ii) The delay of buildings and facilities cause the corresponding delay to all other activities of CRDC.
- (iii) Facilities and utilities still need further improvement. Following are some observations and suggestions in this aspect among others like provision of doors in Brick and Tile Shed and installation of permanent electric wiring system including grounding system in all buildings which are already planned. These are important factors, not only for a smooth research operation, but also for protection of human lives against

accidents which may occur.

a) Water Leakages

Water leakages from ceiling are observed in the laboratories. It has been observed that these leakages are located where electric wiring have been installed and not only where the installation of machineries and equipment are.

There is a great danger of electric leakage which may cause fire.

It is hoped that the repairs on the above mentioned trouble be done at the earliest possible time.

b) Realignment of Electric Panel and Improvement of Electric Outlets

The existing electric panel carries several wirings. It is extremely dangerous.

It is hoped that the present wiring system be changed, e.g. by installing main switches in each room.

Most numbers as observed in electrical outlets are left bare. There is a danger of wires plugged directly causing electrical leakage and fire.

Please give urgent attention to this matter.

c) Reservation of Electrical Power

The amount of electrical power available now is considered barely enough for the main building alone. Upon the completion of the pottery unit, the shortage of power is expected. Attention to this matter is urgently needed.

- d] Reservation of water source and installation of additional faucets in the laboratories.

Since the drilling of second water well has been completed, earliest installation of water supply system is needed.

The numbers of water outlets are inadequate causing disadvantage and hindrance to the experiments and operation.

Emergency shower in front of IR Room is to be completed as soon as possible.

- e] Expansion of laboratory areas.

Areas of laboratories (e.g. X-Ray Room) is quite small especially in the case of X-Ray Room. The ill effects on the health of personnel are to be considered. It is hoped that additional spaces will be provided for the analysis and interpretations of data.

For full utilization of CRDC's capacities, at least one (1) additional research laboratory space will be also provided in Brick and Tile Shed or any other place.

(2) Staffing

(Plan and Performance)

(i) As seen in Table 4, there was a slack in the acquisition of staff members due to budgetary reasons.

(ii) Measures for filling up the gap between plan and approval by means of availing the positions in other divisions of NIST and employment of casual staff or laborer by operations and maintenance fund are also being carefully studied.

(Comments)

- (i) Staffing has been very behind schedule. This factor has been a big hindrance to the implementation of all activities.
- (ii) It may be noted that the effort which has brought the appropriation of eighty-five (85) personnel in the fiscal year 1980 is being highly appreciated.
- (iii) A high rate of turnover of staff members invites special attention to the necessity of continuous building up of staff capabilities for each line of activities so as to be able to maintain the technology level of CRDC by means of establishment of standard manuals and two (2) personnel or a team of capable personnel on each technology.

(3) Management and Administration

(Plan and Performance)

- (i) CRDC is expected to be an independent center in NIST when it is established, though at present it has not been recognized yet for nearly two (2) years, since its inauguration ceremony on July 10, 1978.
- (ii) Management and administration structure is shown in Figures A, B and C.

(Comments)

The efficient administration and the internal and external management of CRDC may improve its operations through a more systematic and effective approach in Management Control, thereby avoiding possible delays to the project. CRDC, being a research institute has several limitations in respect to administrative actions, such

as negotiations of budget, implementation of engineering works and procurement of materials. It is recommended that close association are required among NIST, NSDB and CRDC personnel, to promote the development of CRDC. It is also important to strengthen administrative affairs of CRDC, internally, because managerial and supervisory staff has to spend most of their time attending to matters to overcome these delays. Many technical staff and Japanese experts had to work on coordinating, following-up, and supervising jobs pertaining to construction. These were primarily not in their line of expertise nor business. Temporary warehousing of equipments gave extra job and even suspension in use of other facilities for further process.

As such, these delays brought a sort of Domino Effect in all activities of Ceramic Research and Development Center.

(4) Equipment

(Plan and Performance)

- (i) From 1977 through 1979, Japanese provision of equipment which count some ¥ 258.7 million or \$ 8.1 million in total had been received by Ceramic Research and Development Center (CRDC). A comparison with A-4 Form request and present status of these equipment are also shown in Table 5.
- (ii) Almost all of the Japanese equipment have been delivered as planned, though at times, there were delays on arrivals or damages upon delivery.

(Comments)

Property control and maintenance system are still open to further improvement. The teams of experts for repair and maintenance which were sent to CRDC were highly appreciated.

(5) Japanese Experts

(Plan and Performance)

- (i) Japan has sent six (6) long-term experts and eighteen (18) short-term experts, in addition, two (2) teams of experts for the service of CRDC were also dispatched. These are listed in Table 6.
- (ii) Most privileges, exemptions, benefits, and other arrangements for experts stated in the RD and official request were made applicable or available except board and lodging allowance which has never been availed. Sometimes, however, such arrangements as secretaries, chauffeurs, travel expenses, etc. were not given enough due to fund inavailability or other reasons.

(Comments)

- (i) In general, all the experts assigned worked very closely with Filipino Counterparts in all lines of activity.
- (ii) In spite of initial difficulty of communication, Japanese experts gradually improved their ways of speaking the English language so that Filipino Counterparts could satisfactorily understand the subject being discussed.
- (iii) It has been noted that all assigned experts showed genuine interest and exerted all efforts for the eventual self-reliant operation of CRDC.

(6) Training in Japan

(Plan and Performance)

- (i) First batch of Counterpart trainees left in February, 1977 and were accorded individual training programs.
- (ii) Since Japanese fiscal year 1977, the opportunity of JICA group training courses in the field of ceramics have been, to the extent possible and practical, availed for counterpart training. These arrangements were made in order to facilitate organizing training programs for each counterpart trainee. Table 7 and Table 8 show the listing of Philippine Counterparts trained in Japan.
- (iii) Training durations and subjects for these technical trainees were sometimes different from original long-term schedules. These differences were made due to training needs in CRDC, timing of JICA group training course, administrative reason, etc.
- (iv) Philippine Counterparts greatly appreciate the special consideration accorded by NITC staff particularly in coordinating their individual training schedules.
- (v) It has been noted that even in group training courses more intensive training opportunities have been given to Philippines CRDC participants.
- (vi) In some cases, however, some difficulties had been met by trainees while on individual training in some private manufacturing establishments.
- (vii) Accordingly, CRDC informed NITC through the assigned experts of its preference for research institutes as the venue for individual training and this suggestion

has been accommodated to the best possible extent.

(Comments)

Training of personnel on the basic aspects has almost reached its fullest achievement. It is now necessary to continue Counterpart training in Japan emphasizing on the advanced training of personnel in order to up-grade research capabilities of the CRDC staff.

(7) Budget

During the past years of cooperation, the Ceramic Division of the IRC continued to exist as such and received funding appropriations for its various projects. Since the objectives of these projects were essentially for the promotion of the ceramic industry, they agreed with the ultimate objectives of the establishment of the CRDC in the implementation of this joint project. A summary of the budgetary appropriations and expenditures that have contributed to the implementation of the project during the period is shown in Table 9.

(Comments)

As observed in the above table, no counterpart funds for maintenance and operating expenses have been provided for except for the year, 1980. However, operating expenses including personal services were charged against the budgeted ceramics projects of the Inorganic Chemistry Division which is essentially the core of the center being jointly established.

Counterpart funds for capital outlay, i.e. for construction of the pottery building was provided for only in 1978 and 1979. In 1977, funds for capital

outlay for the partitioning of IRC Building and for the brick and tile shed was realigned from appropriations of ceramic projects under General Funds and Grants-in-Aid Funds because the Budget Proposal for the year 1977 was already submitted before the signing of R/D.

(8) Expected Target and Achievement

Table 10 lists the various programs of the CRDC for the fulfillment of its three (3) main functions. Corresponding achievements broken down by sub-projects (indicated by two (2) or three (3) digit numbers) are also listed.

4. SOME OBSERVATIONS ON THE PRESENT STATUS
AND FUTURE PERSPECTIVES OF THE CERAMIC
INDUSTRY IN THE PHILIPPINES

(Present Status)

The Ceramic Industry in the Philippines may be classified into three (3) categories, namely:

- (i) Industrialized or modernized manufacturers
- (ii) Hobbyists
- (iii) Local Potters

Out of these, it is observed that local potters are mostly engaged in manufacturing such earthenwares as water jars, cooking pots, flower pots, and red bricks and tiles with traditional techniques and without modern devices and tools. Sometimes, even without kilns for firing, though the assistance of CRDC, their firing technology is being advanced by the introduction of wood-firing kilns, though this is partial.

Their products are accordingly quite crude and lower in quality in most cases.

However, these potters normally settle as a community for a long time and utilize local raw materials. It may be said that they are a seed for local economic development.

Therefore, CRDC's technical assistance will very much serve their promotion.

Hobbyists are manufacturing mostly dolomite wares and semi-porcelain in small-medium scale. However, in most cases, their products are observed to be of low quality and their designs are without originality.

Therefore, their products are desired to be upgraded as a Philippine specialty by introducing products using locally available materials. At this point, stonewares may be recommendable.

(Perspective)

Development of the Philippine ceramic industry is greatly dependent upon the promotion of small local and cottage ceramic manufacturers.

Fundamental and applied research on development of ceramic products from local raw materials are being steadily and effectively conducted in CRDC with guidance of Japanese experts.

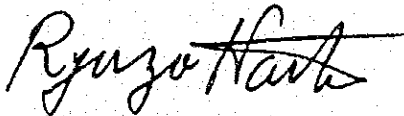
Further efforts on these CRDC activities and manpower training are expected and the output of these efforts are expected to be disseminated throughout the country by means of technical guidance, local or regional training centers and demonstration centers or any other way.

5. CONCLUSION AND RECOMMENDATION

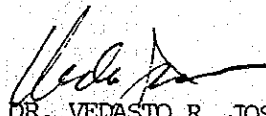
- (1) Most of the activities are behind schedule. These are mainly due to the following factors:
 - (i) Delay in construction;
 - (ii) Lack of manpower
 - (iii) Arrival and timing and order of Japanese equipment;
 - (iv) Trouble with utilities;
 - (v) Lack of laboratory furniture and minor tools which slow down work unexpectedly;
 - (vi) Need for improvement on the Management and Administration System;
 - (vii) A need for a firm step-by-step progress on all scheduled targets achieved through necessary coordination and interlinkage of each activity;
 - (viii) Lack of reliable data pertaining to ceramic raw materials, product, equipment and industrial activities;
 - (ix) Limited availability of funds from time to time.
- (2) It can be concluded at this point, that as of today, CRDC in general still is in Phase I (Basic Establishment) of its establishment. However, activities under a few categories have been more or less reaching their final targets which is covered under Phase II (Development). Other activities are still in the initial stage, some have not even started achieving their targets yet.
- (3) In accordance with the above observations, it is deemed that further cooperation between both countries is still needed for two (2) years in order to attain the objectives and targets of the cooperation program.

MUTUALLY ATTESTED AND SUBMITTED
TO ALL CONCERNED

14 May 1980



DR. RYUZOH NAITOH
Leader
Evaluation Team
Japan International Cooperation
Agency



DR. VEDASTO R. JOSE
Commissioner
National Institute of
Science & Technology
National Science Development
Board

Table 1

ORIGINAL SCHEDULE AND PERFORMANCE
OF CONSTRUCTION

	<u>ORIGINAL SCHEDULE OF COMPLETION</u>	<u>PERFORMANCE COMPLETION</u>	<u>NOTE</u>
IRC Building	September 1977	Mar. 1978 - Dec. 1979	Ready for installation of equipment
Brick and tile building	September 1977	Jan. 1978 (roof and structure)	Completion of walling and extension was Dec. 1979
Pottary Building	September 1977	May 1980	Now under construction

Table 2

Floor Space For CRDC Buildings

	<u>ORIGINAL</u>	<u>PERFORMANCE</u>
IRC Building	1557 ^{m²}	1500 ^{m²}
Brick and Tile building	546	438
Pottery Building	1062	1080
TOTAL	3165	3018

Table 3

Schedule of Fund For CRDC Buildings.

	<u>APPROVED APPROPRIATIONS</u>		<u>SCHEDULE OF FUND RELEASE</u>	
	<u>DATE</u>	<u>AMOUNT</u>	<u>DATE</u>	<u>AMOUNT</u>
IRC Building (Partitioning)	Sept. 1977	£200,000	Oct. 1977	£200,000
Brick and tile shed	March 1977	76,500	March 1977	76,500
Pottery bldg. and water system	1978 1979	900,000 900,000	April 1979 July 1979 Feb 27, 1980	200,000 700,000 664,775

Table 4

PLAN AND RECORD OF STAFFING

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Planned	-	66	76	86	100
<hr/>					
Budgeted					
Total	47	58	58	63	85
(GF)*	13	(24)	(28)	(30)	(30)
(GIA)**	34	(34)	(30)	(33)	(55)***
EMPLOYED at end of year 46		57	55	54	

NOTE:

- * GF = Regular (Permanent) Staff
- ** GIA = Staff from Grant-in-Aid Fund
- *** Out of 55, 27 from ordinary Grant-in-Aid Fund and 28 from Peso Counterpart Fund

In addition to this table, there are casual workers from time to time averaging 8-10.

TABLE 5

STATUS REPORT: PROVISION OF CERAMIC EQUIPMENT BY JAPANESE GOVERNMENT
As of May 1, 1980

ITEM NO.	ITEMS	QUANTITY	STATUS OF EQUIPMENT	REMARKS
As per Request in Colombo Plan Form A-4				
I. EQUIPMENTS LISTED IN FORM A-4: REQUESTS FOR EQUIPMENTS				
A. TEST AND RESEARCH				
155	Universal Scale	1	Installed in Physical Testing Room 1 for routine use	
35-1	Hand Press	1	Routine use in forming samples	
36	Optical Pyrometer	3	Routine use during kiln firing	
37	Portable Pyrometer, 1600 °C	10	Routine use during kiln firing	
38	Portable Pyrometer, 10/25 mv	2	Routine use during kiln firing	
87	Refractoriness Test Furnace	1	Installed in Physical Testing Room I for PCE test	
66	Siliconit Furnace	1		Not yet arrived
90	Analysis Furnace	2	One (1) unit installed in Chemical Analysis for test/analysis	
158	Laboratory Furnace	3	One (1) unit installed in Kiln Room.	One unit not yet arrived
63	X-Ray Diffractometer	1	Installed in X-Ray Room for test/analysis.	
69/70	Atomic Absorption/Flame Spectrophotometer	1	Installed in Chemical Analysis Room for test/analysis.	
71	Scanning Electron Microscope	1	Installed in SEM Room for test/analysis	

ITEM NO.	I T E M S	QUANTITY	STATUS OF EQUIPMENT	REMARKS
72	Coaster (SEM)	1	Installed in SEM Room for test/analysis	
79	Boiled Type Distiller	2	One (1) unit installed in Chemical Analysis Room.	One (1) unit at the Pier.
82	Autostill	1	Installed in Chemical Analysis Room.	
83	Electric Drying Oven (Medium)	7	Three (3) units installed for R and D's use.	Four (4) units at the Pier.
85	Vacuum Drying Oven	1	Installed in Thermal Test Room.	
91	Direct Reading Balance, 200 gr.	2	Installed in Balance Room.	
92	Even Balance, 200 gr.	9	Half were already installed for R and D's use. Other half are kept in Stock Room.	
93	Even Balance, 500 gr.	9	Half were already installed for R and D's use. Other half are kept in the Stock Room.	
94	Even Balance, 1 kg.	9	Half were already installed for R and D's use. Other half are kept in the Stock Room.	
95	Even Balance, 5 kg.	2	One (1) unit used for Material Testing Section.	One (1) unit at the Pier.
96	Even Balance, 10 kg.	2	One (1) unit used for Product Development Section.	One (1) unit at the Pier.
97	Reagents and Chemicals	1	One (1) lot already arrived for R and D's use. Part of lot are kept in Stock Room.	
100	Sedimentograph	1	Installed in Physical Testing Room for R and D's use.	
101	Universal Testing Machine	1	Installed in Physical Testing Room 1 for routine use.	
101-1	200-ton Pressure Machine	1	Installed in Physical Testing Room 1 for routine use.	
102	TG - DTA	1	Installed in Thermal Test Room for test/analysis.	

ITEM NO.	I T E M S	QUANTITY	STATUS OF EQUIPMENT	REMARKS
105	Dilatometer	1	Installed in Thermal Test Room for test/analysis.	
106	Polarizing Microscope	1	Installed in Microscope Room for R and D's use.	
107	Metallurgical Microscope	1	Installed in Microscope Room for R and D's use.	
108	Stereo Microscope	1	Installed in Microscope Room for R and D's use.	
109	Portable Microscope	1	Installed in Microscope Room for R and D's use.	
124	Photographic Equipment	1	Installed in Dark Room.	
111	Stomer Viscometer	1	Installed in Physical Testing Room I	
112	Redwood Viscometer	1		At the Pier.
115	Tools for Field Work	1	Kept in Stock Room and use for Field Survey from time to time.	
117	ASTM Cards	1	Installed in X-Ray Room	
119	DTA Cards	1	Installed in Physical Testing Room I	
120	Powder Diffraction Data and minerals	1	Installed in X-Ray Room.	
127	Autoclave	1	Installed in Kiln Room.	
128	Circuit Tester	2	One (1) unit kept in Stock Room for Repair and Maintenance other unit kept in Physical Test Room I	
129	Wheatstone Bridge	1		At the Pier.
130	Potentiometer	1		At the Pier.
131	DC Voltage Current Standards	1	Kept in Stock Room and use for Repair and Maintenance.	
132	Messer	1		At the Pier.

ITEM NO.	I T E M S	QUANTITY	STATUS OF EQUIPMENT	REMARKS
178	AC Meter	2		At the Pier.
179	Syncroscope	1		At the Pier.
125	DC Volt Meter	1		At the Pier.
128	DC Ammeter	1		At the Pier.
198	AC Voltmeter	2		At the Pier.
133	Micro-Calculator	5		At the Pier.
73	Photo-Electric Photometer	1	Kept by Senior Research Staff members for official use. Installed in Chemical Analysis Room.	
75	PH Meter	2	One (1) unit kept in Chemical Analysis Room other unit kept in Physical Test Room II.	
79	Magnetic Stirrer	2	Installed in Chemical Analysis Room.	
90	Orsat Gas Analyzer	2	Kept in Stock and Experts Room	
81	Water Bath	2	Installed in Chemical Analysis Room.	
82	Centrifuge	1	Installed in Thermal Test Room for test/analysis.	
86	Infrared Moisture Meter	1	Installed in Thermal Test Room.	
98	Laboratory Ware	1	One (1) lot already arrive, part of lot being use for R and D's use other lot kept in Stock Room.	
133	Handy Aspirator	1	Installed in Sample Preparation Room.	
187	Labo-Cart	2	One (1) unit installed in Chemical Laboratory Room other unit used as base of computer kept in Thermal Test Room.	

ITEM NO.	I T E M S	QUANTITY	STATUS OF EQUIPMENT	REMARKS
83	Ultrasonic Cleaner	1	Installed in Chemical Laboratory Room for test/analysis.	
121	Stop Watch	3	Two (2) units kept in expert for RDD's use; one (1) unit kept in Stock Room.	
123	GM Survey Meter	1	Routine use in X-Ray Room.	
126	Compressor	1	Installed in Laboratory Room ² for utility use.	
140	Vacuum Pump	1	Installed in Physical Testing Room 2	
142	Standard Sieves	2	Installed in Sample Preparation Room.	
144	Rock polisher	1		At the Pier.
144-1	Small Polisher	1	Installed in Sample Preparation Room.	
145	Mixing and Grinding Machine	1	Installed in Sample Preparation Room for routine preparation sample.	
164	Dark Room Equipment	1	One (1) lot installed in-Dark Room for photographic use.	
170	Color Standards	1	Kept in Expert Room for routine use.	
182	Measuring Tools	1	Kept in Stock Room for routine use.	
191	Sundries	1	Kept in Stock Room for routine use.	
199	Vibrating Pulverizer	1		At the pier.
168	Impact Strength Apparatus	1	Installed in Physical Testing Room 1 for test/analysis	
171	Brick Cutter	1	Installed in Sample Preparation Room.	

ITEM NO.	I T E M S	QUANTITY	STATUS OF EQUIPMENT	REMARKS
161	Humidity Cabinet	1		
162	Rheometer	1	Installed in Chemical Analysis Room.	At the Pier
178	Vacuum Cleaner	1	Installed in Stock Room.	
180	Transformer, 0.3 kw.	10	Half were installed together with test equipments other half are kept in Stock Room.	
180-1	Transformer 0.5 Kw	10	Half were installed together with test equipments other half are kept in Stock Room.	
180-2	Transformer, 1 kw.	10	- do -	
180-3	Transformer, 3 kw.	10	- do -	
183	Rockwell Harness Tester	1	Installed in Thermal Test	
200	Infrared Spectrophotometer	1	Installed in IR Room for test/analysis.	
201	Mixer (Large)	1	Installed in Chemical Analysis Room.	
202	Mixer (Medium)	1	Installed in Sample Preparation Room.	
204	Load Testing Machine at High Temperature	1	Installed in Physical Testing RM 1	
205	Thermal Shock Test Furnace	1	Installed in Kiln Room	
206	Spalling Test Furnace	1		
207	Abrasion Testing Machine	1	Installed in Physical Testing Room 1 testing.	Not yet arrived
B. TEST PRODUCTION/CONSTRUCTION MATERIALS				
40	Roll Crusher, Manganese Steel	1	Installed in Brick and Tile Pilot Plant for studies.	
193	Belt Conveyor	5	Installed in Brick and Tile Pilot Plant for pilot plant studies.	Inspected and Temporarily placed in Staff Room.