

完成課長

No 7

112/209/107

昭和57年度

フィリピン・カガヤン農業開発計画
計画打合調査団報告書

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昭和58年11月

国際協力事業団

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国際協力事業団

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はじめに

この報告書は、昭和57年6月29日から7月10日までの12日間、フィリピンに派遣されたカガヤン農業開発計画(Cagayan Agricultural Pilot Center Project)への計画打合チームの帰国報告書である。

カガヤン農業開発計画は、フィリピン国内で開発が遅れているカガヤン地域の総合開発を目指すCIADP(Cagayan Integrated Agricultural Development Project)の活動の一環として、農業基盤整備や農村電化に向けられた円借款を始めとする社会資本の投入と関連させて、それ等の効果を一層高める為に実施されている農業技術協力プロジェクトであり、昭和51年2月発足した。

その後、3ヶ年の準備協力を経て、APC(Agricultural Pilot Center)の完成をみて、本プロジェクトは、昭和54年2月よりM/A(Memorandum of Agreement)に基づく、本格的な協力を開始した。即ちAPCを拠点として、水稲二期作を主体とする現地適応技術を開発し、これを拠点普及地域(LEA: Leading Extension Area)で実証、展示する事に依り、周辺地域への普及を図ろうとするもので、日比間で真摯な協力活動が続けられてきた。

M/Aに依る協力期間終了に先立ち、昭和56年11月~12月にかけて、エバリュエーション、チームを派遣したが、同調査団は比側と合同で調査を実施し、「各種実証試験、普及活動、インフラ整備事業等は、ほぼ当初目標に達しつつあるものの、なお拠点普及地域に対する活動や初処理、種子生産等の一部の活動が不十分な段階にある。」と判断し「効果的な技術移転を終えるには、なお2ヶ年の協力が必要である。」と勧告した。本勧告を受け、昭和57年2月5日、約2ヶ年1ヶ月の協力期間延長のR/Dが署名され、本プロジェクトへの協力活動は継続して遂行される事になったのであるが、この協力をより効果的にすべく、本計画打合せ調査団派遣の運びとなった。調査団は、現況確認、ヒアリング、実績等につき詳細な調査を実施し、問題点を指摘し、今後の重点協力事項を選定した。

これ等の勧告がプロジェクトの運営に反映され、より高い成果が挙げられん事を願うものである。

最後に、和田団長を始め、調査に参加された団員の方々、並びに多大な御協力を頂いたプロジェクト関係者、関係機関各位に対し、あらためて謝意を表するとともに、技術協力の最終段階に入った本プロジェクトに対し、今後一層の御支援を御願ひする次第である。

昭和58年11月

国際協力事業団

農業開発協力部長

田内 堯

11-11-11

Dear Mr. [Name],

I am writing to you regarding the [subject] of your letter dated [date]. I have reviewed the information provided and am sorry to hear that you are experiencing [issue].

[Detailed body text describing the situation, including dates, names, and specific details of the problem. The text is very faint and difficult to read, but appears to be a standard business correspondence.

I am sorry to hear that you are experiencing [issue]. I will do my best to resolve this for you as quickly as possible. I will contact you again once a solution has been reached.

Thank you for your patience and understanding.

Sincerely,
[Name]

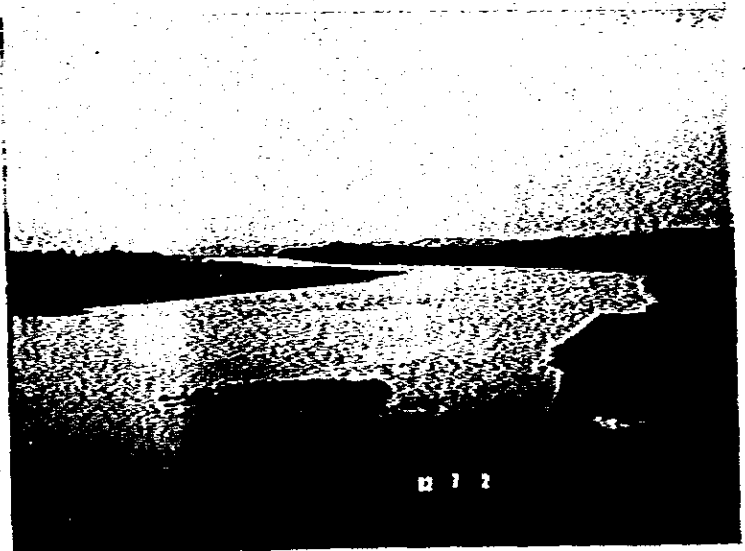
Yours faithfully,
[Name]

[Name]
[Address]



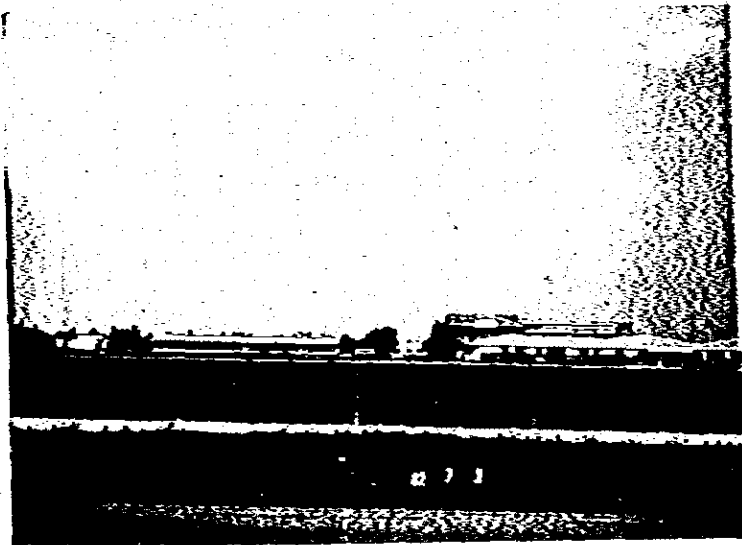
雨入りのカガヤン平野とルソン島東側を走る
山脈

017



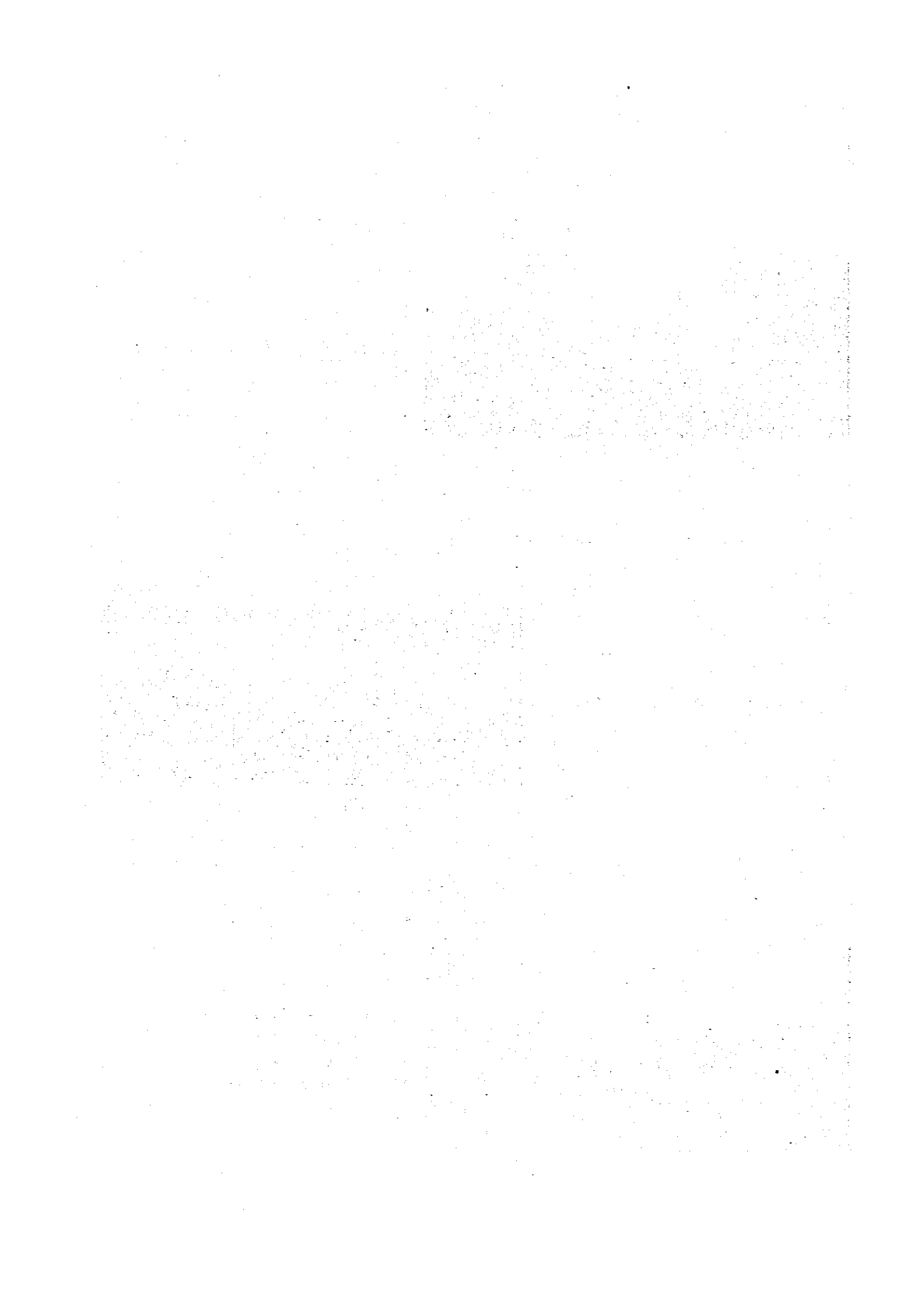
フィリピン 第二の大河 カガヤン河

018



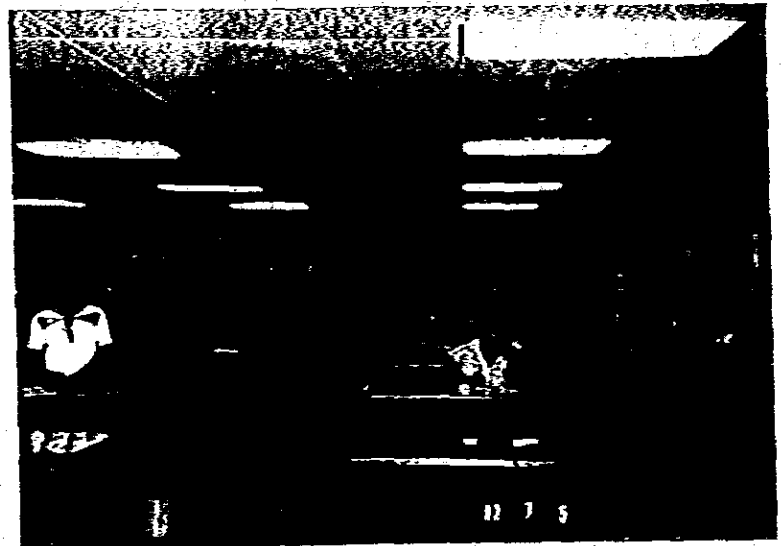
APC遠望、向って左より
給油所、農機具庫、ゲストハウス
建築中の実験棟
研修員宿舎と青屋根の事務所本館

019





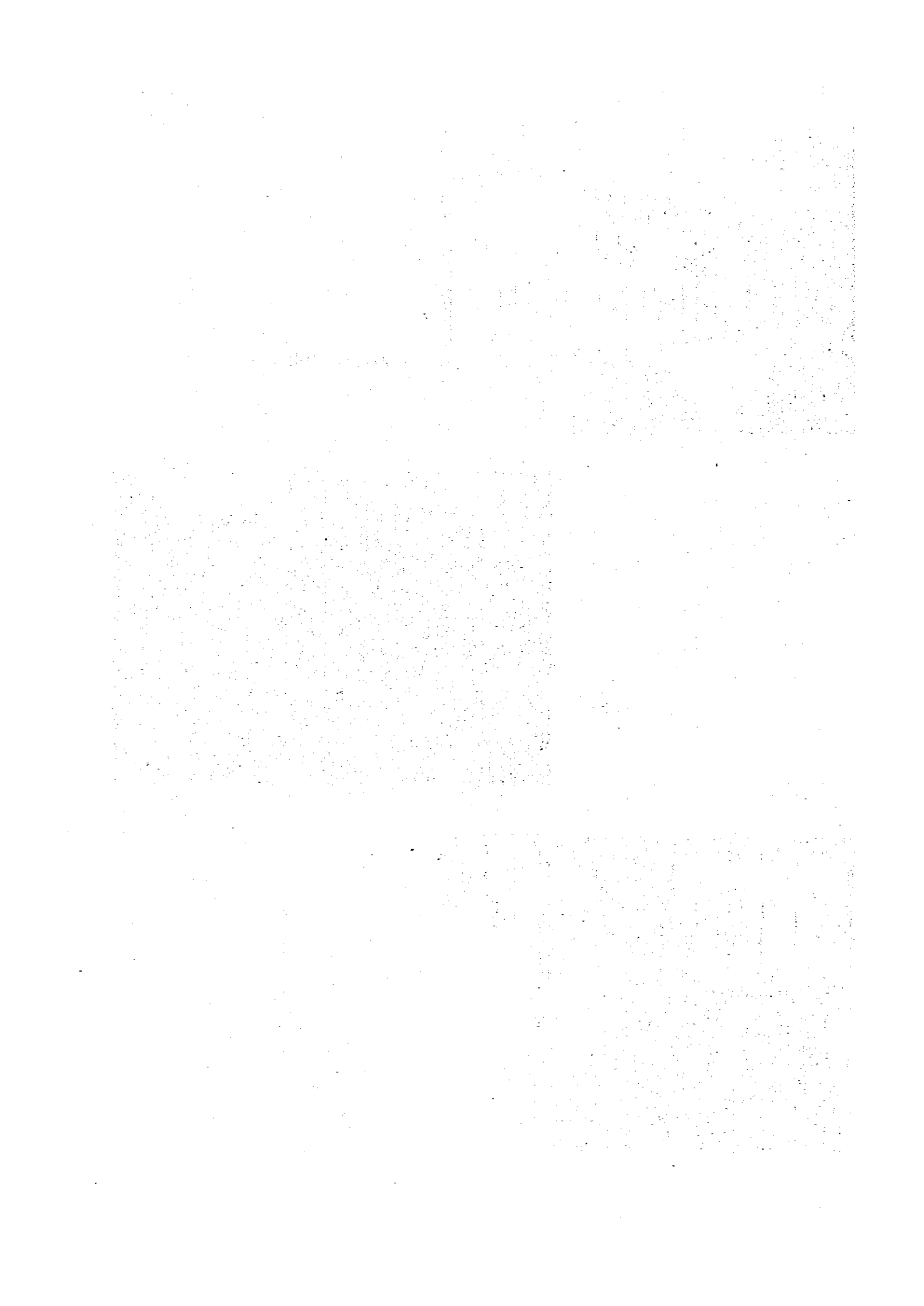
APC本館内の各種の展示

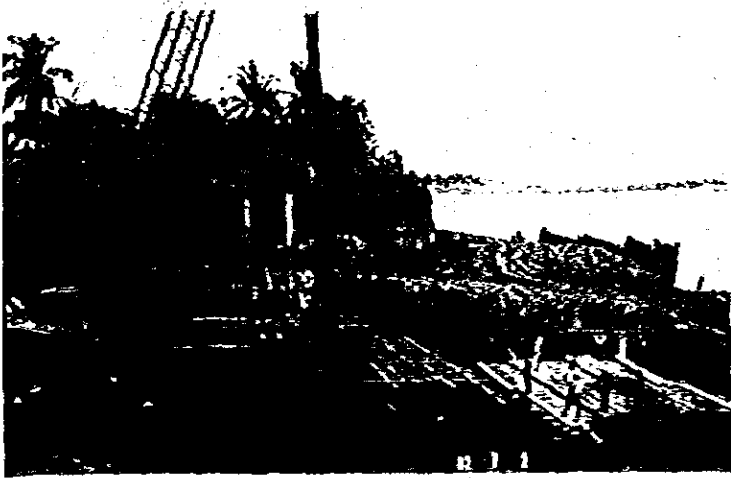


APC職員室の寸括



APC 実験室





基礎工事中のイグイグ揚水機場



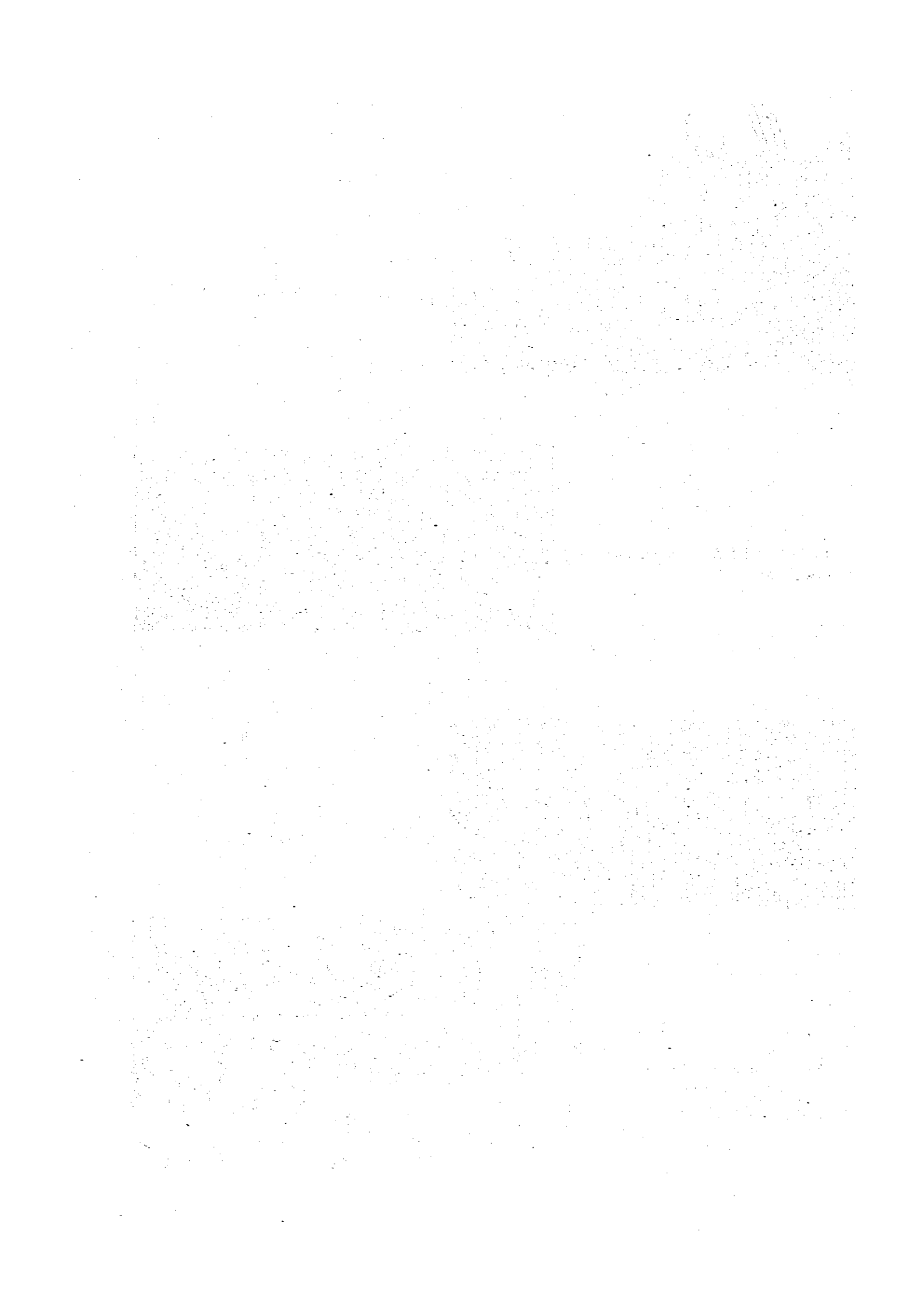
LEA-Iの水利組合長 MR. BALUBL氏
の水田 (5ha)



LEA-II ブゲイの肥料試験畝



合同会議 中央扇原の前、CIADP
DIRECTOR REYNO氏 その左
VICE DIRECTOR LEON氏
於マニラ 7月8日



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I 巡回指導チーム派遣について

1. 経緯および目的

本プロジェクトはフィリピン国で推進しているカガヤン農業開発計画 (Cagayan Integrated Agricultural Development Project, 略してCIADP) の基盤整備地域を直接の対象に Agricultural Pilot Center (APC) を拠点に水稲二期作を中心とする現地適応技術の開発および普及を行うために実施されているプロジェクト方式の技術協力である。

本プロジェクトは昭和51年2月27日に締結された R/D に基づく3年間の準備協力期間を経て、昭和54年2月22日に締結された M/A に基づいて実施されて来た。この農業技術プログラムは昭和57年2月21日をもって協力期間が終了することになっており、その実績評価とその後の処置について検討のため昭和56年11月23日にエバリュエーションチームが派遣された。その結果、本プロジェクトは昭和59年3月31日まで延長された。

本計画打合せチームは、本プロジェクト運営上の問題点および実施計画について現地関係機関および現地専門家と協議し、所要の指導助言を行うと共に、延長期間の運営計画を策定し、本協定終了後の取扱いについての意向を聴取する事を目的とした。

2. 調査内容

- 1) APC および関係機関の組織の体制および活動状況の確認
- 2) APC 施設および園場の利用状況
- 3) 拠点普及地域 I, II (LEA I, LEA II) の運営状況および拠点普及地域と周辺地域との比較
- 4) Infrastructure の整備状況とくに灌排水施設と電化計画
- 5) 専門家チームの分野別活動状況
- 6) 昭和57, 58年度のAPC各部の運営計画(比側および専門家)の聴取とそれについての協議
- 7) 供与機材の利用および延長期間中における供与機材の要求
- 8) 専門家派遣, 研修員受入れの内容と計画

3. 団員構成

調査団を下記4名により構成し、

団長 和田 源 七 農林水産省熱帯農業研究所研究第一部 主任研究官
 団員 曾根 熊 人 広島県農政部農業振興課 専門技術員
 団員 清野 修 農林水産省構造改善局整備課園場整備第二係長
 団員 江口 義 弘 国際協力事業団農業開発協力部農業技術協力課

それぞれの業務分担を以下の通りとした。

和田団長；総括及び水稲関係試験研究関係調査

曾根熊人；教育訓練普及関係調査

清野 修；施設及び灌漑排水関係調査

江口義弘；庶務其他必要事項

4. 調査日程

当初計画通り順調に、次表の日程に添って調査を実施した。

月 日	行 動	業 務 内 容
6. 29	成田→マニラ着	金山調整員の出迎えを受け、JICA事務所にて調査日程の打合せを行う。
6. 30	在 マニラ	CIADP office に Director Reyno 氏 Vice Director Leon 氏に表敬。 調査団の訪比目的を説明、Leyno 氏からAPCの展開とカガマン開発の展望につき説明があった。 後、JICA事務所にて、三浦所長よりAPCの歴史的な経緯につきオリエンテーションを受ける。
7. 1	空路マニラ→ ツグガラオ着	APC Sana 所長、田中リーダー、水沢、小林越智専門家の出迎えを受け、APCにゆき構造物や施設を視察後、田中リーダー始め専門家から、APCの活動の現況と今後2ケ年の計画につき聴取。
7. 2	在 ツグガラオ	LEA I を視察後、前日に引き続き、各専門家からAPCの活動の現況と今後2ケ年の計画につき聴取。
7. 3	同 上	LEA II を視察、同時にNIA事務所を訪れ、灌漑排水工事の進捗状況を聴取した。
7. 4	同 上	田中リーダー、水沢専門家にAPCの活動の現況と今後

月 日	行 動	業 務 内 容
7. 5	在 ツゲガラオ	2ケ年の計画につき補足説明をうける。 所長 Sana 氏立会の下に, APCの各部長に今后2ケ年の計画を聞き Free discussion を行う。
7. 6	同 上	資料を整理し, 合同会議提出用の書類を作成, 一方, 所長 Sana 氏に1983年度, 短期専門家研修員, 供与機材についての希望を聴取
7. 7	空路ツゲガラオ —マニラ着	JICA事務所, 三浦所長に合同会議用書類を提出し, 調査結果を報告し, 大使館松浦一等書記官に計画打合せ結果についての報告を行った。
7. 8	在 マニラ	合同会議を実施, 団長より書類に添った報告を行い, 若干のコメントを受けた。
7. 9	在 マニラ	JICA事務所, 三浦所長 大使館, 松浦一等書記官 CIADP, Director Reyno 氏に表敬
7. 10	マニラ—成田	帰 国

5. 関係者

調査団が, 調査或いは会議に於いて面談した主要関係者は次の通りである。

氏 名	職 位 及 び 所 属 機 関
1 Mr. Atty. Alfonso R. Reyno, Jr.	Director CIADP
2 Mr. Cdr. Juan A. de Leon	Vice Director "
3 Ms. Atty. Carole Y. Quirolgico	"
4 Mr. E. J. Sana	Director CIADP APG
5 Mr. Oriculo A. Perez	Div. Chief " "
6 Mr. Carlos J. Andam	" " "
7 Mr. Rufito C. Pagautan	" " "
8 Mr. Silvino O. Tejada	" " "
9 Mr. Wilson Mateo	" " "
10 Ms. Rosalinda T. Peri	" " "
11 Mr. Juan Lasam	" " "
12 Mr. Orland A. Siapno	Chief, Ministry of Agriculture
13 Ms. Virginia Ballesteros	PMS, Malacanang

氏名	職位及び所属機関
14 Ms. Carolyn Bukuhan	Office of the Budget and Management
15 Mr. Bayani Quilala	Ministry of Finance
16 Mr. Vice-consul Usop	Ministry of Foreign Affairs
17 Mr. Oscar Tobias	NEDA
18 Mr. Andres A. Clincaoco	Director NACIAD
19 Mr. Tsuji	NEA
20 Mr. Vicente Garvez	NIA
21 Dr. Ponciano A. Batugal	PIOARR
22 Mr. Buvecio Aqatep	Assistant Project Manager NIA
23 Mr. Ernesto D. Peralta	Chief Engineer NIA
24 Mr. Victoriano Rivera	Chief Construction NIA
25 松 浦 良 和	一等書記官 在フィリピン
26 三 浦 敏 一	所 長 日本国大使館
27 中 村 三樹男	所 員 国際協力事業団
28 田 中 幸 彦	リーダー カガヤン農業開発計画
29 水 沢 芳 名	普 及 専門家 "
30 越 智 博 孝	灌 漑 " "
31 小 林 博 則	農業機械 " "
32 金 山 史 朗	業務調整 "

註 略語については127, 128, 129頁参照。

Ⅱ 総 括

1. 今回の計画打合せチームは、フィリピン・カガヤン農業開発計画の問題点について、現地専門家および比例関係機関と協議し、所要の助言、指導を行うとともに、今後2か年間の運営計画を策定することにある。
2. 農業パイロットセンターは最近機構が改善されて6部門制となった。うち2部門が管理およびサービス部門であり、実施部門はつぎの4部門—作物部、普及部、農村教育部および農機具（農業水利も含む）部である。
3. APCの最近目ざましい発展を遂げ、場内施設も充実して、土地利用状況もよく、多くの試験が行われ、農民教育活動も活発である。LEA地域内における水稲の作柄も周辺地域に比し非常に良好であり、普及効果もあがりつつあるものとみられる。しかし、Milling house および Laboratory の建設は予定よりかなりおくらせている。
4. 現在、APC内で行われている個別試験および作付体系に関する基礎試験ともに順調に進んでおり、かなりの成果が期待できる。しかし、試験項目が多すぎて完全に消化しきれない面もあり、重点項目を決めてそれに力を注ぐべきであるとみられる。
また、試験は自主的に進められているが、その実施者が試験目的およびその背景について必ずしも理解しないまま進められている面もみられる。試験結果の解析、さらにその普及への応用という面については今後かなりの努力が必要であり、この点で現地専門家の強力な指導が望まれる。
5. 普及活動はよく組織され、その機能も充分生かされている。今後さらに職員および Key Farmer の資質の向上と農業省普及関係機関との協調によるより効果的な普及活動が望まれる。現在、農民等の訓練に際し、ほとんどの講師は外部の他機関に依存しているが、できるだけ早い機会に講師はAPC職員で充当できるよう現地専門家の指導が望まれる。
6. 施設等はかなり整備されているが、未だMilling house と Laboratory が未完成である。それと同時に電気および水の供給が充分でないため供与機材の一部が使用不能の状態にあり、大部分の供与機材も電力等の不足のためにその機能が充分生かされているとはみられない。この点の改善が強く望まれる。
7. CIADP地域内における Infrastructure の整備が実行しており、完成した施設の利用がおくらせている。早急に各工事に関与する機関の上部での調整が望まれる。
8. 今後、灌漑面積が増加するにつれて、今までにみられなかった諸問題がでるものと想像される。たとえば、大面積の水田に対する灌漑計画、作付計画、農作業の機械化、病虫害の発生および優良種子の不足等である。これら予想される諸問題に対して、今からこれらを解決するような手段を考慮すべきである。

III 現地報告書

現地に於ける調査結果や、日本人専門家及びAPCの比叻幹部からの聴取結果をもとに下記の英文報告書を作成し、7月6日、これをAPCサナ所長と日本人専門家団に報告。翌々7月8日、マニラに於ける日比合同会議に和田団長がこれを提出した。

8 July 1982

Atty. Alfonso R. Reyno, Jr.
Project Director
Cagayan Integrated Agricultural
Development Project
Second Floor Sarmiento Bldg.
Ayala Avenue, Makati, Metro Manila

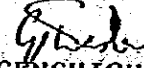
Dear Atty. Reyno:

Owing to the hearty cooperation extended by the staff members of the APC and Japanese experts assigned in the project, I have carried out the close consultation on the programme of the project.

Herein attached are the impression and comments. It is my great honour in case that these would contribute to the further progress of the project.

On behalf of the team, I would like to express my sincere appreciation for the kind cooperation you have extended to us during our stay in the Philippines.

Truly yours,


Dr. GENSHICHI WADA
Leader
Japanese Consultation Team

cc.: Dr. Ponciano Batugal
Director, International
Projects Division, PICARRD
Mr. Edmund Sana
Technical Director, APC
Mr. Yoshikazu Matsuura
First Secretary, Embassy of Japan
Mr. Toshikazu Miura
Resident Representative
JICA Manila Office

IMPRESSION AND COMMENT

1. It is recognized that the efforts of the APC being supported by the related organs have become bearing fruits which gave bright future to the project. For instance, the growth of rice in the LEA is obviously better than those in outside area of the LEA.
2. As the APC, the LEA and the irrigated area expand, the tasks loaded to the staff members of the APC would become larger and harder.
3. The two-year program for fiscal year from 1982 to 1984 is ambitious enough to meet the expected requirements which may arise in the field. However, some parts of the program contain the plans which are too sophisticated or too voluminous for the staff to manage. Thus, it is advised that some plans questioned above had better be revised and that the authority had better increase the eligible manpower of the APC.
4. Especially, the fundamental knowledge of agriculture, the experiences of growing crops and the experimental techniques are pre-requisites for the staff members of the APC. For the better solution of the problems stemming out from the field, they should be able to afford to upgrade themselves on those matters mentioned above to satisfy the farmers' needs.
5. The system of extension work has been organized and

functioning well, however, the employment of following measures will give more efficiency to the extension program. They are continuous guidance on the subject to the key farmer by means of the letter, opening of High Yield Contest and the school where devoted farmers exhibit his techniques.

6. As the irrigated area expands, the paddy field will become utilized intensively. Eventually, such problems as shortage of labor force, rice seed and the lack of proper guidance on growing crops are predicted to arise. It is advisable to make counter means beforehand against those.
7. Electricity and tap water are not supplied constantly in the APC. As such, smooth activity of the staff is often disturbed. The urgent improvement of these conditions should be undertaken.
8. The delayed construction of the milling house and the laboratory have interrupted the full use of the Japanese experts. It is requested that the authority should give due consideration to the fact mentioned above.
9. It is advised that the APC is supplied with enough budget to its two-year-program and that the budget would be released timely.

会議への主な出席者は、次の通りであり、

CIADP	Mr. Reyno	NEA	Mr. Tsuji
"	Mr. Leon	OBM	Mr. Bukuhan
APC	Mr. Sana	PMS	Mr. Ballesteros
PICARR	Dr. Batugal	NIA	Mr. Garuez
MOF	Mr. Quilola		
NACIAD	Mr. Clineaoco		
"	Mr. Siapns		

外務、大蔵、農林各省他関連機関からの出席もあった。

和田団長の報告に対し、Director Reyno は「技術的な面への調査団の指摘は尤もであり、今后、留意してゆく。精米所、実験棟の建設業務の遅れは設計図の変更や業者の変更によるものであり、今後の進捗は良くなる。APC予算の示達はより早く行われる様、手続の改善が行われた。」と答弁し、Dr. Batugal はUPにAPCの研究員を留学させ、資質の向上に努めている。」又、Mr. Sanaは「建設的な意見である。」とこれを補足した。以上をCIADPのReyno局長は、「日本政府及び国際協力事業団に本事業に対する協力を深謝する。本調査団の指摘事項は極めて啓発的であり、それ等の改善に鋭意努力し、所期の目的達成に邁進する。」と結んだ。

Ⅳ インフラ整備の現状と問題点

1. APC内施設

1) 試験圃場、灌漑排水施設の造成

APC本館と周囲の試験圃場および灌漑排水施設は1978年度にJICAのモデルインフラ整備事業費により建築造成された。造成された施設は、

- i) 面積 4.9 ha
- ii) 工事費 483,900 ペソ
- iii) 工期 1978. 11～1979. 6
- iv) 主要施設
 - 試験圃場
 - 訓練圃場
 - 種子採取圃場
 - 展示圃場
 - 暗渠排水施設
 - 揚水機場
 - 排水機場
 - 導水路および吐出槽

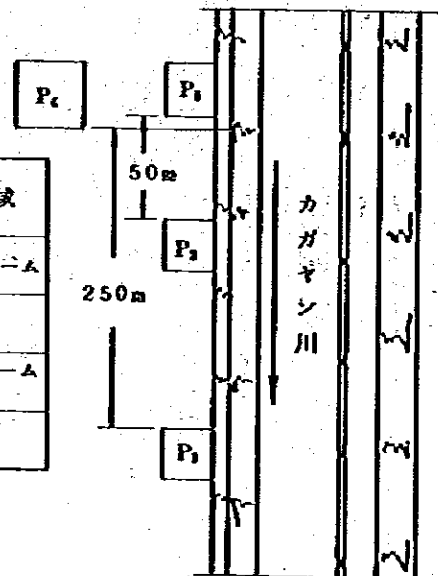
であった。その後被災、復旧・改修を行いつつ現在に至っている。

2) 灌漑施設の被災と改修・改良

(i) 揚水機場の建設 APCの揚水機場(P₂)はIguigパイロットファームの揚水機場

表-1 揚水機場の概略

ポンプ内名称	施行主体	施工年度	かんがい面積	かんがい地域
P ₁	NIA	1979. 3	60 ha	イグイグパイロットファーム
P ₂	JICA	1979. 6	6 ha	APC圃場
P ₃	JICA+CIAD	1980. 6	66 ha	イグイグパイロットファーム APC圃場
P ₄	NIA	1981. 4～1983.	750 ha	イグイグ全地域 (APCを除く)



(P₁)と隣接してカガヤン川に設置されていたが、1979年11月の洪水で被災し使用不能となった。

そこで、1980年6月、応急対策工事により250 m下流の地点に臨時ポンプ(P₂)を取付け、現在利用中である。

P₁: Iguigパイロットファーム(60ha)のポンプ場。このポンプ場はNIAの単独予算により、1979年3月から6月にかけてIguigパイロットファーム60haを灌漑する目的で渦巻きポンプ2台を将来Iguig本機場が完成するまでの期間、臨時揚水機場として設置された。

この機場はポンプおよび取水施設はあくまで本機場が完成するまでの間(約5年間)取水しうるに耐えるような構造であり本機場取入れ口に設けられていた。(取水施設のうち吸水管受枠は木造で、1979年10月の洪水で流失。ポンプも取り除かれて現存はしない。)

P₂: 前述のポンプ場下流50 mの所に設置された。これはAPC圃場造成工事(モデルインフラ工事)の一環として、1979年4月から6月の間に建設された。灌漑面積はAPC圃場6.0haを対象とし、地区内の用水施設(パイプライン)の関連よりして地区外の水路もパイプラインである。河川に設けられた取水施設はコンクリートであり、一応当初設計においては永久構造物と考えるのが妥当であろう。

P₃: Iguigパイロットファーム60haおよびAPC6.0haの灌漑を行っている。建設は1980年4月から6月にかけて、応急対策工事費9万ペソとCIADPよりの6万ペソの予算により建設された。ポンプ類およびパイプ類については日本側予算により、吸水管受枠工、ポンプ類の設置およびパイプ類の伏設についてはCIADPの予算によった。完成後1982年5月まで約3年間運転されている。

カガヤン川は流況の変化が激しく、仮設的な施設では洪水時の被災がやむを得ない面もあり、後述の恒久施設として設置されるCIADP-ICの揚水機場(P₄)の早期完成が待たれる(1983年6月完成の予定)。

ただし、水需要のパターンが農民レベルとAPCの試験レベルとでは異なり、とくに試験圃場では周年取水が必要であることから、ポンプの効率的な運転をはかる上でも別の水系枝揚水施設を設置する必要がある。それまでの応急処理として、水中ポンプ・電気系統の保護工の強化および予備資材の準備を行うことが必要である。

3) 貯水タンク・沈砂池改良工

試験圃場の用水はパイプラインによって行われているが、施設規模が小さいために管径が小さいこと、用水中のシルト含有量が多いこと等により、(1)試験圃場注水部に取付け

られた流量計が十分に作動しない、(2)導水パイプ吐出槽の目づまり、沈でんが問題となっている。

そこで1982年度の応急対策工事により、既設の貯水タンクを利用して降接して沈砂タンクを設置することとし、現在工事中である秋には竣工の予定である。

4) 施設整備の現状と課題

A P C 施設は1978年度に建設された本館以外の付属建物は仮設的なものが大方であり、A P C 活動に不便を生じていたが、昨年来比例の予算措置により急速に整備が進み、上記1および3～5の施設の整備が完了している。ただしMilling house および Laboratory の建設がおくれている。比例では今年中にこれらを完成させたいとの意向であった。

関連する電気および水等の供給が充分でなく、せっかく完成した施設が効率的に利用できない等の事業間に進行の疎行性がみられるが、

A P C 施設全体をみると、各種施設が近年急速に整備されつつある。今後多少の改良と適正な維持管理を行うことにより、専門家および各部の活動を支える充分な機能を発揮するものと考えられる。

表2 付属建物の建設状況

NAME OF BUILDING	TOTAL FLOOR AREA(㎡)	SCHEDULE		REMARKS
		STARTED	DATE FINISHED	
1. Training Dormitory	1,240	May 1981	Feb. 1982	Under Construction
2. Laboratory & Training Building	12,665	June 1981	August 1983	
3. Duplex Guest House	5,167	August 1981	Feb. 1982	
4. Light & Heavy Eqnt. Shed	1,404	August 1981	Feb. 1982	
5. Gasoline Station	210	August 1981	Feb. 1982	

2. L B A 施設の現状と課題

1) 実施面積と収量の推移

表3の1978年以降の実績をみると灌漑面積・収量ともに年次間の変異がみられるが、それは、(1)平行して進められる予定であったCIADP-ICの工事が大幅に遅延したために応急の灌漑施設で用水の手当をしていた。それは台風等の災害を受けやすく、一定した灌漑面積を確保できなかったこと、(2)用排水路が未整備のため台風の影響を受けやすかったこと等が考えられる。

しかし、L B A 全体をみると周辺の水田と比較して、明らかに収量が高い。また、周辺農家においても先進的な技術を取り入れる例からみる等、その展示効果はきわめて大きい

と思われる。

表3 LBAにおける二期作の実施面積と収量

LEADING EXTENSION AREA	CROPPING SEASON/AND PERIOD																
	Area	Wet Season 1978-1979		Dry Season 1979		Wet Season 1979-1980		Dry Season 1980		Wet Season 1980-1981		Dry Season 1981-1982		Wet Season 1981-1982		1982	
		Area (ha.)	Ave. Yield Cor./ha.	Area (ha.)	Ave. Yield Cor./ha.	Area (ha.)	Ave. Yield Cor./ha.	Area (ha.)	Ave. Yield Cor./ha.	Area (ha.)	Ave. Yield Cor./ha.	Area (ha.)	Ave. Yield Cor./ha.	Area (ha.)	Ave. Yield Cor./ha.	Area (ha.)	Ave. Yield Cor./ha.
Iguig Pilot Farm	600	60	305	15	97	52	85	31	87	47	565	25	874	28	686	15	-
Alcala-Amlung Pilot Farm	150	-	-	-	-	750	705	620	747	620	75	480	305	400	627	-	-
Lallo Pilot Farm	310	-	-	-	-	-	-	-	-	270	123	270	893	270	834	255	-
Begay Piles Farm	620	-	-	-	-	-	-	-	-	-	-	-	-	400	651	386	-
TOTAL	2080	600		15		127		360		960		92		135		791	

Note: Wet - From November to March
Dry - From May to September

2) Iguigパイロットファーム (LBA I)

IguigパイロットファームはAPC農場周辺に位置する60haでLBA地区ではもっとも早く設定された。本地区の揚水機場はAPC機場と同様に1979年11月の洪水により被災し、現在APC臨時機場を共用している。

排水については、APC試験農場の排水改良を目的として、1981年にJICAの応急対策費によりAPC北側排水路の、さらにカガヤン川に至る排水路についてはNIAにより拡張工事が行われたため関連効果としてIguig地区南側約25haについて自然排水が可能となった。本地区はLBA地区の中でもっとも用排水施設が整備されており、地区内の農家も二期作を中心とした先進的の営農を行っている。

ただ、前述したように灌漑用の機場が仮設で十分な機能を果たせず、灌漑面積の作期間の変動が大きいことから、Iguig機場の早期完成が望まれる。

3) Alcala Amlungパイロットファーム (LBA I)

当初の計画を縮小して国道沿いの75haを設定したが、揚水機場の位置・規模に問題があり、十分な機能を果たしていない。とくに今年にCIADP-ICの機場工事が行われ、その基礎掘削に伴う落砂のため使用不能となっており、取水していない。

しかし、CIADP-IC (Irrigation Component) の機場が完成し、今秋から本格的な灌漑が始まることになっているので、LBA活動はむしろこれからであろう。とくに、当該地区はCIADP-ICのはじめての受益地となることから、APC活動の重点的実施が

必要と思われる。灌漑が開始された場合にはつぎのような問題点が指摘される。

- (1) カガヤンバレーの現況の農地は大半が天水田であり、既設の水路がなく、一方、CIADP-ICの用水路は末端50haまでしか整備しないため、全水田に用水受益が及ぶかどうか危惧される。
- (2) 支線用水路がないため、田越し灌漑にせざるを得ず、末端の水田まで灌漑するのに時間がかかること、とくに勾配の少ない平坦地の場合にはより深刻となり、上流優先の配水は地区内の農家に差別意識を生ずる。
- (3) 水利組合がないために地区内もしくはブロック間の水管理ルールがなく、水争い等の困難を招く。

営農技術の指導の前に上記の点の解決が急がれる。そのためには、(1)用水ブロックごとに水利組合を組織し、それを中心に水管理の教育を行うこと、(2)末端用水手当のための地区内配水ルールの確立および(3)支線用水路を作るための土木技術者の教育等が重要である。

4) Lalloパイロットファーム (LEA I)

Lower Cagayanの排水良好な地区で国道沿いに32haが設定されている。仮設の用水場はカガヤン川支流に設置されているため乾期の用水枯渇が心配される。また、ICの揚水機場の建設が相当に遅れていることから、まだ数年は仮設揚水機場を利用せざるを得ず、LEAの活動基盤を維持するためにも資機材の配慮が必要である。

ただ、地区内には農民が作った支線用水路がみられる等、熱心な営農がなされている。また、周辺にも自己資金による灌漑二期作の例がみられること等から先進的な地区であり、今後の指導に期待すべき点が多い。

5) Bugayパイロットファーム (LEA II)

当地区は大半が排水不良の低湿地であり、カマラニューガンよりゴンサガに向う国道の北側で42haが設定されている。NIAの揚水施設が完成するまでの仮設機場により国道沿いの排水路から揚水して用水手当をしている。

前回エバチームの報告によれば同排水路は基幹排水路DC-7に接続しており、流域面積から判断しても用水確保に問題はないとされている。その後NIAの排水工事の進捗をみると1982年6月現在50%となっているが、地下水位が平均で1m以上下がっているということで予想以上の排水効果が上っている。NIAの揚水機場工事がさらに遅れ、排水工事との競行が拡大した時の用水不足が心配される。

3. CIADP-ICの実施状況

この事業はカガヤン農業総合開発計画の一環としてOECPの借財により1977年から実施されているもので、カガヤン川からポンプにより取水し、Upper Cagayanで約3000ha、

Lower Cagayanで約11,000haの水田を灌漑するものである。

A P C活動は当然この事業の完成を一つの目標として進められている。全体としての進捗は遅れぎみであるが、用水の供給開始が具体的日程にのぼる段階まで進んでいる。

1) Iguig地区

幹線水路は盛土展正を行った後、掘削する土水路で計画された。揚水機場は請負契約により1981年に着工されたが、洪水により工事途中で被災し、現地視察した時点では基礎杭からやり直していた。83年秋完成を予定しているが流況変動の激しい河川敷内の工事のため乾期における工事促進が望まれる。とくに秋の洪水前に少なくとも基礎工の工事を完了しなければ再度被災の危険性がある。

2) Alcalá Amlung地区

この地区はN I A事業の中でもっとも進捗の良い地区で、揚水機場、幹線用水路ともに完成しており、82年6月現在通水試験中であった。ただ一部にろう水がみられ、高台部へのパイプラインの手直し工事が必要である。

さらに、全揚水機を可動させるためには電気容量が不足しており、電源地までの送電線を全部張り交える必要がある。資材が得られるなら3カ月で送電線は完成することである。これらが順調に進めば、今秋には本格的な用水受益が発生するとみられる。

3) Lower Cagayan地区

受益面積の2/3を占める約11,000haの低平地で、工事は地区内の幹線水路の盛土工事、付帯構造物および排水路の掘削を中心に行われており、用水路工事30%、排水路工事50%の進捗となっている。揚水機場、導水路の工事は着手されておらず、完成は数年先になるとみられる。排水路工事が比較的順調に進み、予想外に地下水位の低下が大きいことから、揚水機場工事が完成するまでの間水不足および塩害の発生が心配される。マガピットのパンプサイトは塩水取水の恐れのない河口から約1.4km上流に予定されており、カガヤン川のパンプサイトとしては珍らしく岩盤上にあり、地形的にも良好な場所とみられる。しかし、大規模なポンプで取水した場合のかく乱による下層の塩水取水の危険性が残されている。

ポンプ工事は国際入札の手続きが長びき、あと数か月かかり、本格的な工事は83年になるとの事であった。

4) 今後の課題

工事全体が大幅に遅れていたが、N I A技術者の説明によれば、Iguig地区83年9月、Alcalá Amlung地区は82年秋、Magapit 84年9月と取水開始が具体的日程にあがっており、受益開始地区に対して、灌漑農業の営農技術、水管理および末端用水の手当等をはじめとして農民の組織化等集中的指導が必要となる。管理費については一年あたり

14～15カバンの積あるいはそれに相当する現金をNIAが直接徴収し、余れば返納するという考え方で受益が発生したものから徴収することになっている。しかし、水利組合もないことから、今後このことについての検討が必要となる。

APCとCIADP-ICは密接に関係するものであるが、現場における連絡調整体制が不十分なため個別事項で齟齬を生じている。

V. A P C 各 部 の 活 動

1. A P C 組 織 人 員 及 び 予 算

発足以来、幾度も機構改革を経て、現在のAPCは、次頁Organizational Chartにみられる如く5部、3室15課、22係、160名を擁する大きな組織に成長した。このAPCの陣容はCIADPのその約60%を占めるからCIADPに於けるAPCの重みが推察出来よう。

CIADPは1978年の75名から1982年の275名にと、僅か4ヶ年間に約4倍に急膨張している。人件費を主体とするCIADPの予算もこれに比例し増大していった。

因みに1979年～1981年のCIADPの予算は、390万ペソ～1,410万ペソ(約2億2千万円)に増加した。又APCの予算も1981年度の996万ペソが1982年には1900万ペソになると予想されている1981年度に於けるCIADP総予算に占めるAPCの割合は71%に達している。この様な予算の裏付けを持ち、APCの施設及び建物は急速に増加、整備されていき、我国からの供与機材を始め、近隣に類のない立派な機関となっている。

2. 作物研究部門 (Crop Research Division)

この部門の研究対象は三つに大別され作付体系試験 (Cropping system)、個別試験 (Component technology) および研究室内の試験 (Laboratory) により成り、個別試験および研究室内の試験は作付体系試験を完成させるための基礎試験に位置づけられる。

1) 作付体系試験 CIADP地域における作付体系はIrrigated area, Partial irrigated area および Rain fed の水田において水稻を中心とするものと、比較的標高の高い土地および河川敷におけるトウモロコシを中心としたものの二つの作付体系を完成させることに目標をおいている。この二つの目標に対して、水稻あるいはトウモロコシを中心とした種々の組合せを作り、主としてAPCおよびLEAにおいて、一部をLEA以外の地域でFarm management division の協力を得て研究を実施している。

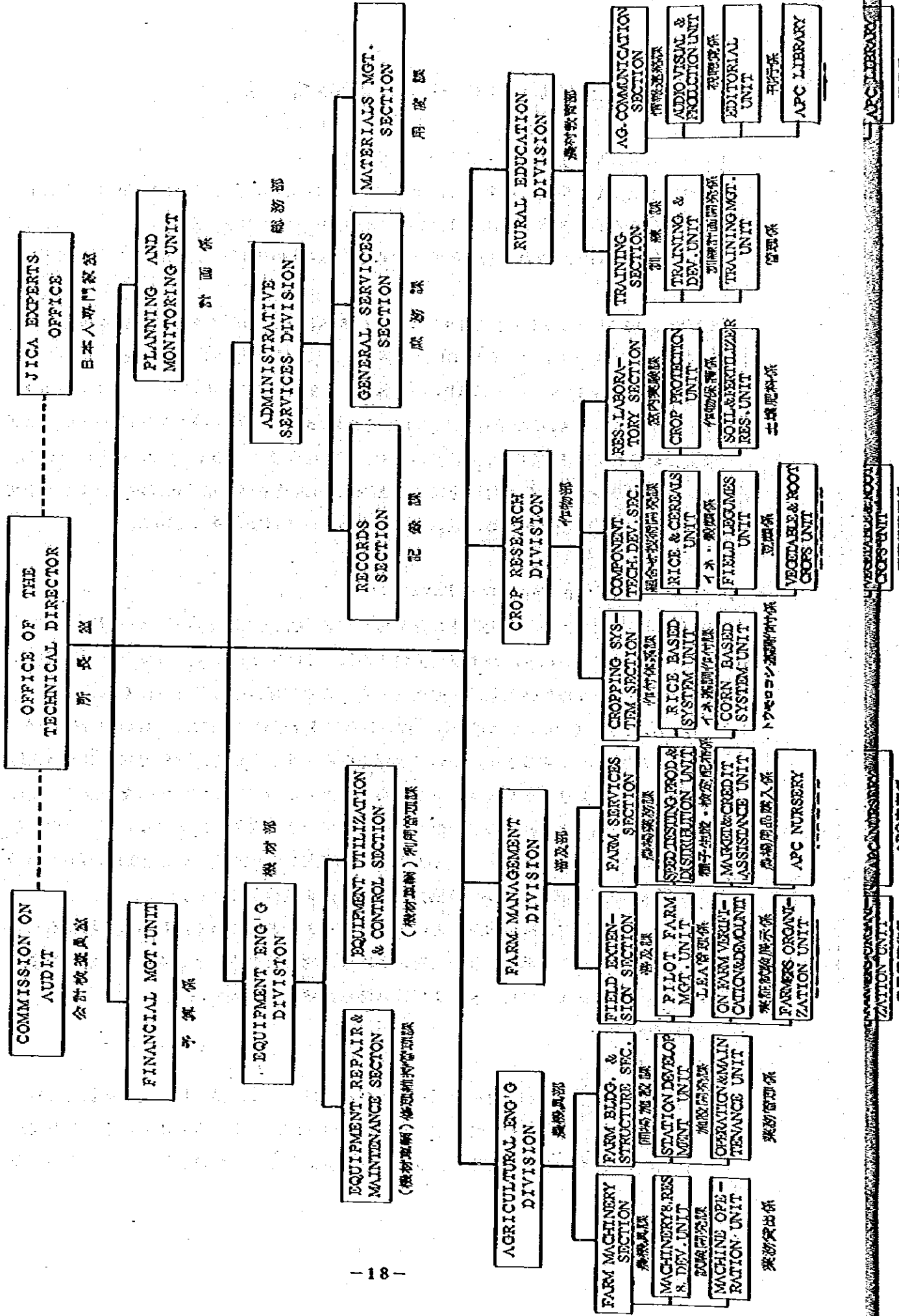
また、それと同時に作付体系ごとの経済性をみようとしている。しかし、現在水稻を除いた他の作物は未だ奨励品種の設定および標準的な栽培法が確立されていないので、同時に品種比較試験、肥料試験および雑草防除試験等も行っている。

2) 個別試験

(i) 品種比較試験

水稻は主としてIRIR育成の系統および品種について、熟期別の比較試験を肥料の異なる条件下を含めて行っている。早生種ではIR36にまさるとみられる有望系統が2～3みられている。現在までは収量のみを主対象として試験が行われていたが、今

APC 組織 - APC ORGANIZATIONAL CHART -



後は主要形質についての比較が品種選定の上で重要となってくるので、82年よりはそれに重点をおいた試験も行われる。

水稻以外では、ソラナにおいて Cowpea, Bush Sitaó (ササグの一種) 落花生、カンショ、緑豆および大豆等の品種比較が行われている。各作物とも普及可能性のある品種が2~3みられるが、奨励品種にするほどの有望品種は得られていない。今後は試験方法の吟味によってより精密な品種比較試験を行うこととしている。

(2) 肥料試験

この地域ではリン酸およびカリの効果は低く、水稻についてはAPC内で主として窒素施用量および施用時期に関する試験、肥料の種類および施肥位置に関する試験が行われ、一応の施肥基準(基肥+追肥2回)が確立している。これと並行してLEA内、その隣接地の各地で施肥量を定めるための試験が行われている。また、有機物(銀ネムの枝)施用法、Azollaの効果についての試験も行われている。

(3) 作物保護

水稻作における除草法は一応確立され、移植直後の除草剤使用と機械除草および手取除草を組合わせた方法が普及されており、とくにマーシェットの日本製の人力除草機の有効性が高く評価されている。しかし、雑草の種類および発生生態の調査がなく、82年以後にそれらの研究が予定されている。雑草の防除については81年以降研究が開始されているが、とくにみるべきものはない。

病虫害の防除は組立て試験あるいは農薬(殺虫剤)の散布試験で農薬散布と収量との関係をみていくにすぎない。水田に発生する病害および害虫の種類および発生時期等についての調査はみられない。82年以降、水稻の主な病気および害虫の同定および発生生態についての調査を行うことになっている。また、今後二期作面積の増大に伴う病虫害の増大が考えられるので、この方面には一層の努力が必要とみられる。

(4) 総合組立試験

品種・施肥法・雑草防除法および殺虫剤の使用の有無等を組み合わせたいわゆる Package 技術の比較試験が行われ、その経済性および諸技術の中でどれがもっとも重要な技術であるかを調査している。現在までもっとも経済的な Package とみられるのは、基肥として60-10-0 kg/ha 施用し、除草は手取と人力除草機によるものであり、殺虫剤の効果は今のところ認められていない。

(5) その他

最適作期を決めるための水稻の作期試験、湛水直播栽培試験、栽植密度の試験、本田期間を短縮するための40日苗を用いた栽培試験等が行われ、一応の成果をあげている。最適作期は乾期では5~6月移植、雨期では11~12月移植であり、栽

培密度は30cm×15cmの並木植え収量が高かった。湛水直播では過酸化石灰(カルバ)粉衣で出芽率が著るしく高まった。このほか、節水栽培を目的とした水管理の試験および干害防止と雑草防止を目的とした緑豆の稲わらマルチ試験等を行っている。

3) 研究室内の試験

(1) 土壌分析

現在LEA内の土壌調査を行い、それを基にして圃場の土壌管理および施肥量等について指導しようとしている。またLEAIIのBugey地区でみられた水稻の栄養障害について今後土壌肥料的調査・研究を行うよう準備を進めている。

(2) 病害および虫害

現在、カガヤン州における主要害虫が何であるかまだはつきりしない段階であり、病害の防除はテキストにある農薬を頒布しているに過ぎず、その効果は収量の多少によって判断している段階である。今後、二期作の増大に伴い病害虫も増加するとみられることより、主要病害虫の同定、発生生態の観察、標本の作成等を予定している。

(3) 種子検定

農薬省からの職員の派遣と協力を得て、水稻・野菜および畑作物の種子の検定を行っている。また、ACP内で普及部門(Farm management division)の協力により種子生産を行っている。

3. 普及部門 (Farm Management Division)

(1) LEAを設立し、その運営に当たっている。現在4地区でLEAを運営しているが、灌漑施設の故障等の関係でLEAの全面積が機能していない。LEAにおいて、作物研究部門の試験結果を現地に適合するような耕種基準の作成、あるいは作物研究部門と共同でLEA内における作物体系および個別試験を行うと共に、それを利用して農民指導を行っている。現在LEA内の水稻の作柄および収量は隣接地のそれと比し非常に良好で指導の効果がみられる。また、今後灌漑面積が増加するにつれ種々の今までに見られないような問題が発生するとみられ、新しい栽培法のPackageを作成する必要がみられる。

(2) NIA, MAとの協力によりLEA内の農民を組織して、水利組合および営農組合を作り、より有効な水利用農作業体系を作ることによりより有効な技術普及をしようとしている。そのための農家経営状態の調査・土地台帳作りが急がれている。

(3) 灌漑計画の進展に伴い、水稻の二期作化、水稻品種の変化、multiple cropping化により農民の各種作物の種子要求量が増大している。これに対し普及部は種子の生産配布を行っているが、農民の要求量に比し、その生産量は非常に少ない。APC圃場内では原種の生産をし、その原種を種子生産農家に配布して種子生産を行うよう計画している。

4. 農村教育部門 (Rural Education Division)

1) 情報

APCにおけるプロジェクトの紹介と各種作物の栽培法等についてのガイドブック(技術者および職員向けには英語, 農民向けはイロカノ語)を作成, 配布している。1978年以降でその数は約20に及んでいる。さらに講義内容を理解し易くするため, 及び巡回指導のためのテキストの作成を行っている。また, LEA域内農民との間で種々の方法で情報交換を行っている。それと並行して, 今後の普及計画作成あるいは普及効果向上のために農家の実態把握が必要である。そのための域内の農家の実態調査(経営規模, 圃場の種類, 農機具および家具の種類と数, 収入および家族構成等)を行いつつある。

2) 放送・通信教育

農業省と協力して, 毎朝30分ずつラジオによる放送大学(UDA, イロカノ語)を通じて農業教育をしている。年度末に学力検定を行い, 合格者に修了証書を与えている(合格率は約50%)。合格者は1978年以来約4,000名に達した。放送原稿の作成, 日本人およびテキストの作成を行うとともに, 巡回訪問と農民よりの便りによりフィードバックしている。

3) 講義・訓練

LEA各地区において, 農家あるいは農民の階層別に種々の課程(訓練の対象者の均一化をはかるため)を設立して, 稲作・畑作および野菜作等についての講義および実習, 家庭管理についての講義を行っている。また, 拠点地域の農家圃場に設けた展示圃を活用して現地での農民指導をも行っている。これと並行して生産省組合に関するセミナーも行っている。さらに, 農民の負荷向上のため, UOA(University on the Air)卒業生およびKey Farmerに対して見学旅行(中部ルソン10~12州)を行っている。

これらとともに, 夜または土・日曜日に域内各地でFilm Showing, Information Campaignを実施して, 農民との直接の接触をはかっている。

5. 灌漑排水部門 (Agricultural Engineering Division)

1) 灌漑排水部門の役割は, APC, LEA地域における灌漑排水施設の建設, 他の分野をサポートするための維持管理およびこれらを通しての技術指導ということになるが, 前述したように施設の建設についてはおおむね完了している。

また, APCとLEAの灌漑面積は作期ごとに変動しているが, 状況変動の不安定性, 地域の自然条件から考えて仮設施設としては一応の成果をあげている。ただ, APCの基本的役割である技術移転については, 今後の課題であろう。それは技術移転の内容を灌漑排水部門のどの分野を中心にすべきかが明確になっていない。また, 日本での研修をうけた者

は相当数になっているが、帰国直後に転職してしまふ等の組織との問題点があった。

2) 今後の実施計画については、今までの調査を継続し、施設の維持管理、基礎データの収集分析を通して技術移転を行っていくことが必要であるが、さらに以下の点を重点的に考えるべきである。

(1) NIA灌漑受益地域が今後数年間に拡大されていることから末端の水管理方法(幹線はNIAにより管理)の確立と普及、さらには末端受益者のために必要なら支線水路(ditch)の施工方法の指導

(2) APCの基本任務がパッケージされて農業技術の地域へのフィードバックであることから、APC・LEA地域内の水管理の実績と手法を検討し、CIADP全域への還元。そのための現地レベルでのNIAと連絡調整体制の強化。

(3) あらゆる活動を通じての人材の養成と確保

6. 農業機械部門 (Agricultural Engineering)

1) 農機具は機種が非常に多いことより、その維持管理に多くの労力を要し、機種間の使用実績には大きなバラツキがある。しかし、APC活動の営農的なサポートを始め、地域への農機具貸出しの拡大等大きな成果をあげている。

ただ、今後は農業機械部門が単なるAPC, LEA地域内に対する営農のためのサービスのみでなく、基礎的な調査研究を行う必要がある。

2) その意味で、昨年のエバ報告を受けて、維持管理部門より農機具部門を独立させたことは今後の活動の性格および方向を考えると賢明な処置であった。今後は、(1) 農機具の基礎的技術・理論の指導、(2) 二期作に対応した農機具の改良、(3) 将来展望を含めて、農業機械導入の前提としての圃場条件・現在の農機具の保有および使用実績および投下労働力(雇用)等の基礎データの収集・分析等が必要である。

Ⅵ 今後の活動における問題点

1. 組織について

前述した如くAPCの施設は近年とみに充実され、近隣に例のない、立派な機関になったが、なお温室、初処理精米乾燥所、農具舎、修理工場、他2、3の小構築物の建設を計画している。現在迄の進捗状況からみて近い将来に良く比国内の予算を得て之等は竣工しよう。問題は我国が供与した実験用機器と農業機械の維持と部品の供給である。比例当局の特別の配慮を要請すると同時に、昭和58年度供与機材は部品を主体に約4000万円の供与をする事にした。

一方、CIADPの職員採用の原則により、APCの幹部職員はカガヤン地方出身の新規学卒者から採用された。従って必然的に職員の年齢は若く、資質はともかくとしても、地方大学の教育水準とフィリピン大学のそれの間には隔差が認められ、彼等の専門分野の知識・技術の水準は低かったと思われる。CIADPは、この人的側面のハンディキャップを改善すべく、国内或いは国外に多くのAPC職員を留学研修させて来た。勿論この中には我国へのカウンタートップ研修も含まれている。派遣専門家も又、APC職員の技術及び知識の向上の必要性を痛感し、この面への努力を怠りなく続けて来た。そもそも人材の養成は一日にして成るものではないが、この様な日比双方の倦まざる努力が積み重ねられた成果となって現われているが、なお、この努力を続ける必要がある。この点に鑑み、昭和58年度には灌漑排水、野菜栽培、害虫防除、土壌肥料、初処理精米、日本農業視察の各分野の研修員を受入れる事を計画し、実験機器修理、初処理精米機械据付及び運転指導、水田土壌、農村経済調査の専門家を短期間ではあるが、それぞれ派遣する事を打合せた。

2. 研究部門

1) APC内における試験、現地実証試験等はAPCスタッフの手でかなり自主的に進められているが、これらの試験は設計の吟味が充分でなく要因分析ができるような設計とはなっていない。さらに、作物の基本的特性の把握も充分とは認められない。この点についてはさらに日本人専門家の指導助言が必要であろう。

2) 現在、水田に発生する主要病虫害の調査がなく、ただ農業散布を行い、その効果をみているに過ぎず病虫害防除についてはその基礎すらもできていない。まず第一に病虫害の発生状況を把握することが最重要である。さらに今後、灌漑施設の整備に伴い二期作が促進され、高収量品種の導入、施肥量の増大に伴う病虫害の多発が予想されるので、病虫害の種類および発生消長を知ることが重要であるとともに、品種試験でも病虫害抵抗性の調査が必要とされる。この点についての日本人専門家の強力な指導助言が必要となる。

3) LBA I, Buggy地区に水稻の栄養障害の発生がみられる。このような障害はLBA I

地区の各処に予想される。これらの障害の発見および対策については土壌化学および植物栄養の面よりの研究が望まれる。この点については土壌肥料専門家の短期派遣が望まれる。

- 4) いずれにせよ現在のAPCスタッフは学問的にも経験的にも力不足とみられ、このプロジェクトを永続的に発展させるためには人材の育成が最重要であり、現地においては日本人専門家による訓練、それと同時に日本における研修を強化する必要がある。

3. 普及部門

- 1) L E Aにおいては現在灌漑水は仮設ポンプに依存しているため、しばしばそのサービスエリアが変動し不安定である。
- 2) 現在APCではCropping systemの確立を急いでいるが、各種作物の経済性の調査を充分せず、栽培面のみよりCropping systemを完成させても、それが農家にとって必ずしも有利になるとは限らない。
- 3) 灌漑面積の拡大により、二期作面積が大きくなるため、新しい水利組合を作り、灌漑の効率化、より有効な水利用の農作業体系を作る必要がある。さらに、多様な栽培形態がみられるようになるため新しい技術 package を作る必要もある。そのための灌漑地域の農家経営状態の調査および土地台帳の作成が急がれる。
- 4) さらに、灌漑計画の進展に伴い、水稻品種の変化、Multiple cropping化による農民の各種作物の種子要求量が増大してくる。それに対応して、優良種子の生産配布体制を農業省と協力して作る必要がある。

4. 農村教育部

- 1) 限られた人員・資材でSystematicに実施しているが、APC各部門間の連携を強化し、しかも農業省普及部との協力を密にすることと、農家の実態把握により精力的にとりくむことにより、より充実した計画が立案できるものとみられる。
- 2) 目標の設定にあたっては、広い視野に立脚する必要があるが、具体的目標に重点をおくことが肝要であり、しかも現場につながる必要がある。知識導入へかたよらず事例訓練力を入れるべきである。
- 3) 訓練内容(普及事項)については、その阻害要因の因果関係を充分分析し、個別技術は作業順序に従って構成(栽培層的なもの)することが望ましい。また、講義は大学や農業省等の外来講師によるものが大半であるので、その内容は講師まかせになっている。講義の内容でAPCで調整することが望ましい。なお、APCスタッフを訓練し、講義のかなりの部分を内部講師でまかなうことが望ましい。
- 4) 訓練を終了したもの、あるいはU O A卒業者の組織化の促進等により、APCと指導拠点

農家との結びつきを強め、それを通して地域農家への間接指導を展開すれば普及効果も向上するものとみられる。さらに、普及効果の確認が重要である。計画中の普及効果測定調査に期待したい。

6. 灌漑排水部門

- 1) CIADP地域内では灌漑面積の拡大と末端水路の不備により、数年内に用水受益の較差が発生する可能性がある。水利組合の組織化・水管理法の確立、灌漑農業の技術の普及等が急務となる。
- 2) 活動の範囲を現在の体制と力量の中で可能な範囲に厳選することが必要である。
- 3) 排水の効果が著しく、Bugay (LEA II) 地区では用水に排水路の水をポンプアップしていることより乾期の水不足が危惧される。
- 4) NIAと現地レベルでの連絡調整体制を整備し、能率の向上を図る必要がある。

6. 農機具部門

- 1) 将来的には土地利用が高度化することが予想され、農機具の導入が不可欠となる。そのため現状の圃場条件（区割、地耐力、一筆面積、地下水位等）現存農機具の実態、投下労働力等についての基礎データの整備が急務である。
- 2) Custom serviceは農民に大きな便宜を与えているが、今後の農機具の需要増に備えてオペレータの養成、運営管理体制の強化およびパーツの十分な確保が問題となる。
- 3) 二期作化の進展に伴い、ポストハーベストが問題になって来る。その点について現地スタッフの訓練が急務となる。

7. 業務実施計画について

以上の点を考慮して1982年9月より1984年3月までの業務実施計画案を次図の通り策定した。

本業務実施計画案は現地専門家の検討を終え、9月23日、マニラCIADP事務所に於いてAPC所長、サナ氏と、当事業団派遣専門家チームリーダー栗原実氏、CIADP局長レイノ氏の間で次の様に署名され、爾后、本実施計画に従って協力業務が遂行される事になった。

1982年9月-1984年3月の協力期間における日本人専門家の業務実施計画案(邦文)

Master planの 項目※	業務の内容	年次計画			備考
		1982	1983	1984	
1-(a)	病虫害の発生調査および同定 雑草の発生調査および同定 栄養障害の発生調査				水 沢 塚 越 短期専門家
1-(b)	末端灌漑水路施工法の指導 および灌漑計画の作成				越 智
2-(a)	品種比較試験, 肥料試験の計画と結果 の解析の指導および実施				塚 越
2-(b)	原種の生産。主として種子貯蔵, 種子 の純化および原種圃運営の指導	貯蔵			栗 原
2-(c)	水稲収穫後の乾燥法, モミの貯蔵法の 指導, モミ摺り精白について指導	採種法			小 林
2-(d)	} 随時協力および指導	乾燥 貯蔵 籾摺精白			水 沢
2-(e)					
2-(f)		農機具の維持管理 農機具の始終業時の点検 在来農機具の改良			
2-(g)	Packageの組みかえ。各種技術の改良 および各試験結果の評価等について指導				全専門家
3	1) LEA Iにおいては専門家の担当 分野に係りのある事項に要請に応じ 対応する。				全専門家
	2) LEA IIにおいては巡回指導にと どめる。				全専門家
	3) LEA IIIの一部でみられる稲の栄 養障害について対策をたてる。				短期専門家

※ 註 フィリピン, カガヤン農業開発計画
エバリュエーション調査報告書(昭和57年5月) P113, 114,
Annex A.
The Master Plan of the Project. 参照。

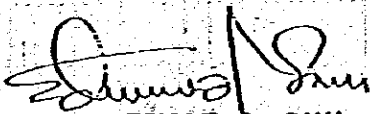


23 September 1982

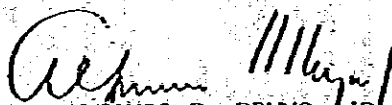
MEMORANDUM OF AGREEMENT

This is to certify that the Japanese Experts of the Agricultural Pilot Center and their counterparts finalized the plan of work attached hereto.

Both sides have agreed to implement the project based on the above mentioned plan to attain the objectives of the project.


EDWARD J. SANA
Technical Director
Agricultural Pilot Center


MINORU KURIHARA
Team Leader
JICA Experts


ALFONSO R. REYNO, JR.
Project Director

THE PLAN OF WORK

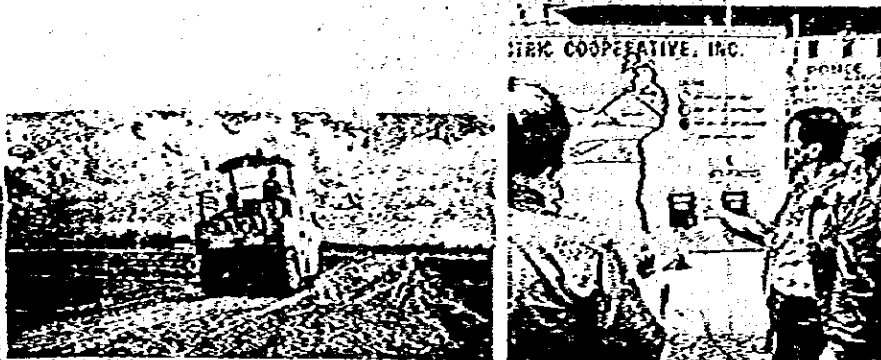
No. 1

ACTIVITY BASED ON MASTER PLAN	DETAIL OF WORK (METHOD AND THEORY BEING IMPARTED TO COUNTERPART)	SCHEDULE OF WORK			REMARKS	CONDUCTED BY	
		'82	'83	'84		EXPERT	COUNTERPART
1-(a) Field study on plant disease, insect pest and weed.	Identification of object. Record of occurrence of plant disease, insect pest and weed. Making specimen. Culture microbes.	_____	_____	_____	The work will be conducted in the same way as it was done previously.	Mizusawa Horikoshi	M. Gaspar Horikoshi
Collection of data related to irrigation	Land measurement. Advice on the design of terminal irrigation system.	_____	_____	_____	Continuation of on-going study.	Ochi	S. Guimoyen Ms. Catanguian
1-(b) Practice on terminal irrigation	Soil test in Wagner pot Chemical analysis of soil and plant.	_____	_____	_____	Continuation of the on going study carried out in the two spots in LEA.	Ochi	Mr. Caranguian
Chemical and physiological study on special soil	Planning of experiment Data collection Data analysis Report Making	_____	_____	_____	The soils where abnormal growth of rice in LEA II is observed will be examined.	Short Term expert Horikoshi	Ms. Mamsung Horikoshi
2-(a) Varietal and Fertilizer Trials	Storage of seed Rouquing of off-type Training of seed producers	_____	_____	_____	At two (2) to three (3) spots in pilot farm, employing rice, corn, mungbean and soybean by split plot design.	Horikoshi Kurihara	Ms. Taja V. Miguel
2-(b) Rice stock seed Production	Husking Polishing	_____	_____	_____	Practice in APC	Horikoshi Kurihara	R. Pagautan
2-(c) Husking and polishing of rice	Refer to master plan for details of said article.	_____	_____	_____		Sport term specialist Proper Expert	V. Mateo F. Reboroso Ms. P. Ferri

ACTIVITY BASED ON MASTER PLAN	DETAIL OF WORK (METHOD AND THEORY BEING EMPLOYED TO COUNTERPART)	SCHEDULE OF WORK			REMARKS	CONDUCTED BY	
		'82	'83	'84		EXPERT	COUNTERPART
2-(e) Refer to master plan for specific of said article.						Proper Expert	Ms. R. Feri
2-(f) Maintenance of farm machine	Maintenance and daily inspection of farm machineries.				On the spot training	Kobayashi	W. Mateo F. Reboroso
Improvement of farm machine	Techniques of improving machine					Kobayashi	W. Mateo
2-(g) Refer to master plan for details of said article.						Proper expert	Ms. X. Feri R. Pagautan
3. On the spot technical guidance in LEA I and pilot farm in LEA II.	Necessary matters related to the subject.				various subject	Proper expert	R. Pagautan Ms. P. Feri P. Damsil

* CIADP 海外研修員

資 料



CAGAYAN INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT

Cover Story

CIADP in '82 received a new mandate from His Excellency, President Ferdinand E. Marcos for the expansion of its operations to cover all the provinces in Region 02. CIADP also continued to intensify its efforts to hasten the development of Cagayan through its infrastructure, social services, economic, agricultural and natural resources development programs. Back cover: Port Irene now and in the year 2000.

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7 June 1983

His Excellency
President Ferdinand E. Marcos
Malacañang, Manila

Thru:

Prime Minister Cesar E.A. Yrata
Chairman
National Council on Integrated
Area Development (NACIAD)



Sir:

I have the honor to submit the attached Annual Report of the Cagayan Integrated Agricultural Development Project (CIADP) for 1982. This document chronicles the accomplishment of CIADP's on-going program components in agriculture and national resources, infrastructure, social services, trade and industry.

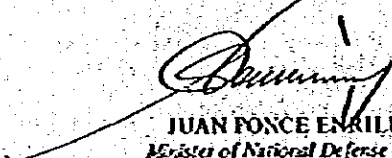
These integrated development programs are envisioned to improve the quality of life not only of every Cagayano but also, all the people in the Cagayan Valley Region, in accordance with your over-all plan of bringing the benefits of development to the countryside.

Undoubtedly, these accomplishments we have chalked, would not have been possible without your precious help.

In behalf of the people of Cagayan and Region 2, please allow me, Mr. President, to thank you for your munificence.

We look forward to your continuing support and assistance in helping us make Cagayan and Region 2 a frontier of development in this part of the country.

Very truly yours,


JUAN PONCE ENRILE
Minister of National Defense and
Concurrently Cabinet Coordinator
CIADP

HIGHLIGHTS '82

EXTENSION OF THE JICA-CIADP TECHNICAL COOPERATION AGREEMENT TO MARCH 1984

In 1981, a joint team composed of JICA and Filipino experts conducted an evaluation on APC's operations and its accomplishments.

The subsequent report on the result of the evaluation was submitted to JICA, NEDA, MA, PMS (Malacañang), and CIADP recommending the extension of the Technical Cooperation Agreement between JICA and CIADP.

Another Records of Discussion extending the JICA-CIADP Technical Cooperation Scheme to 1984 was signed on February, 1982.

INAUGURATION AND BLESSING OF COMPLETED BUILDINGS WITHIN THE APC COMPLEX

To meet its commitments to the Japanese Government under the Records of Discussion, the Philippine Government through CIADP, constructed additional buildings at the APC Complex.

The completed buildings which include the training dorm, guest house, gasoline station, heavy and light equipment building were inaugurated and blessed April, 1982, with the Prime Minister and NACIAD Chairman, His Excellency Cesar E.A. Virata and the Ambassador of Japan, His Excellency Hideho Tanaka, as Guests of Honor.

The affair hosted by CIADP Cabinet Coordinator, Minister Juan Ponce Enrile was graced by other Cabinet members and high-ranking government officials led by Ministers Peña, Corpus, Hipolito, Leviste, the Assemblymen of Region 02, the Governors of the provinces in Cagayan Valley and other prominent figures in the government and business sectors.

CIADP MISSION TO AUSTRALIA

A CIADP Mission was sent to Australia in June, 1982 to follow-up the proposal for a livestock and dairy project in Cagayan which was previously submitted to the Australian Development Assistance Bureau (ADAB).

In the course of their travel, the mission met ADAB Officials including Acting Director Rose McGovern who were receptive to the proposal. An Australian Mission is expected to visit the Philippines soon, to undertake further discussions and to visit Cagayan, among other things.

The finalization of initial talks is hinged on the endorsement of the Philippine Government.

ANNOUNCEMENT ON THE EXPANDED COVERAGE OF CIADP

During the inauguration of the Magat Multi-purpose Dam in October 27, 1982, His Excellency President of the Philippines, Ferdinand E. Marcos, announced that henceforth, the Cagayan Valley Integrated Area Development Program shall include all the provinces in Region II.

The pronouncement places the seven (7) provinces of Region II under the umbrella of CIADP. It is then expected that the coverage will lead to expanded activities starting CY 1984 and consequently, a bigger and more specialized organizational structure will be required not only to strengthen the present planning and coordinating function of CIADP but likewise to make it more responsive to the requirements of the region within the context of regional and national planning.

COMPLETION OF THE NIA AMULUNG PUMPING STATION

Completed this year is the Amulung Pumping Station at Baculud, Amulung. The facility costing some P 26M will serve 2,350 hectares of farmlands in Akala and Amulung and benefit about 11 barangays. The pump on low line, (1 unit) has a capacity of 80 cu. meters and on high line, (3 units) 70.5 cu. meters per minute.

Foreword



Since its inception in 1977, the Cagayan Integrated Agricultural Development Project (CIADP) has continuously paved the way for numerous developmental projects in Cagayan, the implementation of which were always anchored on the broad policies and guidelines set by NACIAD. The Project Office especially has achieved much headway in coordinating the efforts of line agencies through the multi-sectoral and multi-disciplinary concepts of the IAD Approach.

However, the strides which the CIADP has taken to spur development and economic growth in this part of the country would not have been made possible without the support of His Excellency, President Ferdinand E. Marcos; the assistance of Prime Minister and NACIAD Chairman Cesar E.A. Virata and the dynamic leadership of Defense Minister Juan Ponce Enrile, our Cabinet Coordinator who has been the prime-mover in all our undertakings and the inspiration of the CIADP officers and staff personnel.

To His Excellency, President Ferdinand E. Marcos; Prime Minister Cesar E.A. Virata, NACIAD Chairman; Defense Minister Juan Ponce Enrile, the government of Japan through the Japan International Cooperation Agency (JICA) the Honorable Ministers and Heads of participating agencies including their staff; and to all those who are working with us in the attainment of CIADP's goals, go our deepest gratitude.

A handwritten signature in cursive script, appearing to read 'Alfonso R. Reyno, Jr.'.

ATTY. ALFONSO R. REYNO, JR.
*Vice-Governor, Cagayan
and
Project Director, CIADP*

CIADP Development Programs

SUMMING IT UP:

The year 1982 was a significant year for the Cagayan Integrated Agricultural Development Project in its quest to bring the benefits of modernization to the province including the region and in assisting the people to attain a better quality of life.

First, 1982 marked the second year of CIADP's bid to push through with remarkable success, the industrialization of Cagayan and ultimately Region 02, by pursuing two (2) related projects: the Development of Port Irene and the Establishment of an Export Processing Zone, both at Casabalangan, Sta. Ana, Cagayan.

Second, CIADP's agricultural development program has assumed a wider scope as it initiated the implementation of the Integrated Food Production Project and the development of the cattle and dairy industry through foreign technical and financial assistance. The year also marked the beginning of the 2nd extension of the RP-Japan Technical Cooperation Grant, a

JICA grant to Agricultural Pilot Center which will end in 1984.

Third, this year saw the expansion of CIADP's infrastructure development program in the following areas:

- a) Farm-to-Market Roads: an increase in appropriation, from P42M last year (1981) to P45M this year;
- b) Construction of four (4) concrete bridges along the Dugo-San Vicente Road with a released appropriation of P20M;
- c) Extension of the Tuguegarao Airport runway to accommodate heavier aircrafts, with an appropriation of P10M.

And finally, on October 27, 1982, during the inauguration of the Magat Multi-Purpose Dam in Ramon, Isabela, His Excellency President Ferdinand E. Marcos ordered the CIADP to expand its programmed project to cover the whole Cagayan Valley Region. The regionalization of CIADP's operations is in line with the President's overall plan to make Region 02 the "breadbasket of the Philippines."

While CIADP initially sought to (a) construct irrigation facilities to support the introduction of modern technology and thus increase productivity, (b) install power supply system to run the irrigation facilities and generate small-scale agro-based industries, and (c) to provide tech-

nical assistance on improved farming and cropping systems, development efforts to date have assumed wider scope and deeper significance with the inclusion of industrialization plans.

CIADP believes that the development of Port Irene and the establishment of a Cagayan Export Processing Zone within the area will accelerate the industrialization of the province and ultimately, Region 02.

To date, CIADP on-going projects are now centered on the following programs:

- Development of Agriculture and Natural Resources
- Development of Infrastructure and Allied Infrastructure Facilities
- Development of Social and Economic Services, and
- Development of Special Projects

In consonance with the policy of government to promote and accelerate the integration of all development sectors in underdeveloped areas in order to improve existing physical, economic and social structures of Philippine society.

Agricultural and Natural Resources Development Program

Agricultural Pilot Center (APC) and Its Programs

The Agricultural Pilot Center (APC) at Iguig, serves as the facility for CIADP agricultural research, technology packaging and information dissemination necessary for the introduction and adoption of innovations and farming systems.

APC RESEARCH PROGRAM

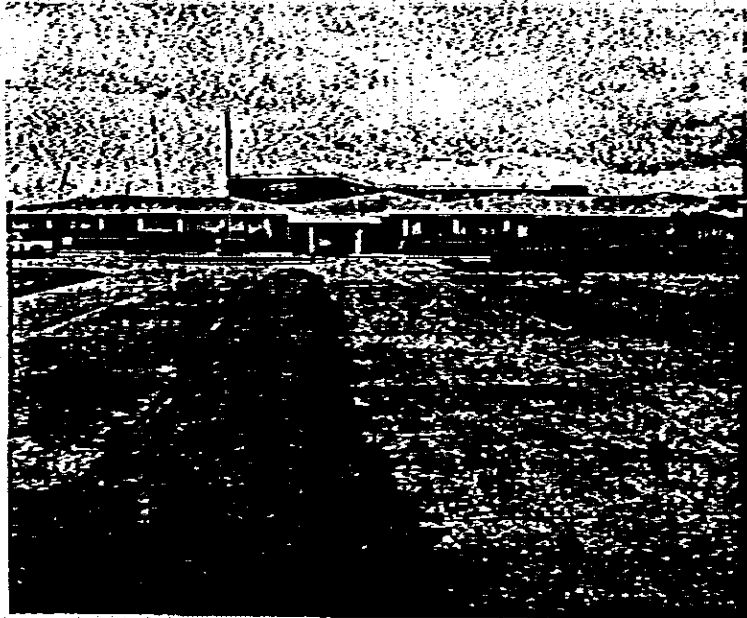
The APC Research Program aims to develop, generate and improve alternative location/situation specific technologies through applied and on-farm multi-location verification trials.

Project Implemented:

a. *Varietal Management Project*

In order to identify varieties and/or lines of important crops that are adaptable to the different agro-ecological situations in Cagayan, crop lines were established and tested in a number of locations, from November, 1981 to December, 1982.

Table I-A-1 reflects in detail the findings of tests conducted.



Transplanted rice during the second cropping season are in various stages of growth.

Upland crops like corn, peanut, mungbean, soybean, planted during the first cropping season (November 1981 to May 1982) in various locations attained 100% completion. For the second cropping season, five commodities: corn, mungbean, peanut, cowpea and bush sitao planted at various locations, are on-going as of December, 1982.



b. Pest Management Project

Although research focused on proper forecasting of pest population, proper usage of chemicals and evaluation of mechanical, biological and other pest control methods, other related studies on corn-based leguminous crops like soybean, mungbean, and cowpea for the dry season were conducted in 1982.

Findings indicate that:

- Complete insect control is needed during the dry season as compared to an earlier recommendation based on economic threshold level.
- Soybean with complete insect protection will produce the highest yield.
- In terms of weed, weight and grain yield, no significant difference exists between handweeding and chemical/mechanical methods.

c. Soils and Fertilizer Management Project

The studies on soils and fertilizers were:

- Verification of recommended fertilizer rates based from actual soil analysis,

TABLE 3-A-1. ANP VARIETAL MANAGEMENT PROJECTS

Findings under actual testing indicate that the highest yielding and best adaptation for crops are the following:

CROPS	VARIETIES/LINES	AVERAGE YIELD PER HECTARE	SEASON	AGRO-ECONOMIC CONDITIONS
1. Rice	a) Early Maturing			
	IR 19/65-28-3-3-3	8.7 t/ha	dry season	Fully irrigated
	IR 36	5.54 t/ha	dry season	Fully irrigated
	IR 3209-208-1-5-3-3	4.83 t/ha	dry season	Partially irrigated
	IR 17500-25-3-3-3-1	5.04 t/ha	dry season	Rainfed
b) Medium Maturing	IR 3625-125-3-3	5.27 t/ha	wet season	Partially irrigated
	IR 34	5.8 t/ha	dry season	Rainfed and Partially
2. Corn				
	a) Field Corn			
	Triad Comp 1 Early	5.26 t/ha	dry season	
b)	Chal. DMR Comp.	4.82 t/ha	dry season	
	Pop 11A	4.82 t/ha	dry season	
3. Soybean	CS 271	1.794 t/ha	dry season	
	CS 260	1.672 t/ha	dry season	
4. Mungbean	CES 10-21 (Propan)	39 t/ha	dry season	
	CES 5-by	34 t/ha	dry season	
5. Cowpea	PI 24	1.32 t/ha	dry season	
		(60 g/ha yield)		
	Vita 3	1.24 t/ha	dry season	
6. Soybean	LPL 57-8	3.318 t/ha	dry season	
	Chal. C3	1.597 t/ha		
	308-50-3-17	2.849 t/ha		
	Walt-10-10	2.114 t/ha		
	362-90-10	1.673 t/ha		
7. Peanut				
	PI 34-33	2.137 t/ha	dry season	
	CES 225	0.802 t/ha		
	360	0.823 t/ha		
	CES 102	0.58 t/ha		
	CES 101	0.74 t/ha		
	K200	0.61 t/ha		
	PC-110208	0.73 t/ha		
LPL PMA (Coronin 17)	0.33 t/ha			
8. Padi-Sow				
	Accord - 43	1.58 t/ha	dry season	
	543	1.53 t/ha		
	Accord - 38	1.52 t/ha		
	107-02	1.53 t/ha		
9. Padi-Sow				
	11652	1.46 t/ha	dry season	
	LPL 85A	1.13 t/ha		
	LPL 857	1.16 t/ha		
	LPL 852	1.14 t/ha		
10. Vegetables				
	a) Cabbage			
	EX Crop	24 t/ha	dry season	
	EY Crop	23 t/ha		
	b) Tomato	VC-1/BG	25.4 t/ha	



- Studies on alternative sources of fertilizers, and
- Time and methods of application of inorganic fertilizer for different crops.

Ten studies were conducted in 11 locations from October 1981 to December 1982.

At the Buguey Pilot Farm, experiments during the wet season revealed that a fertilizer level of 40 kg N per hectare from either urea or ammonium sulfate in addition to 45 kg P_2O_5 + K_2O per hectare is sufficient for rice nourishment.

At the Alcala-Amulang Pilot Farm, the study on the effect of time and rate of N fertilizer application on grain yield of transplanted rice revealed that nitrogen fertilizer can be applied either basally or in split.

At the APC experimental plots, rice crop results from using five different rates of fresh azolla incorporated into the soil at final harrowing were comparable to those treated with an equivalent amount of inorganic nitrogen fertilizer.

In Gattaran (June-October 1982), plots applied with pure azolla gave the highest yield although the yield gaps from other treatments were statistically insignificant.

Studies on the use of fresh ipil-ipil herbage as source of nitrogen fertilizer revealed that application should be done a day before transplanting. It was also noted that a rate of 10 tons/ha. gave the best result.

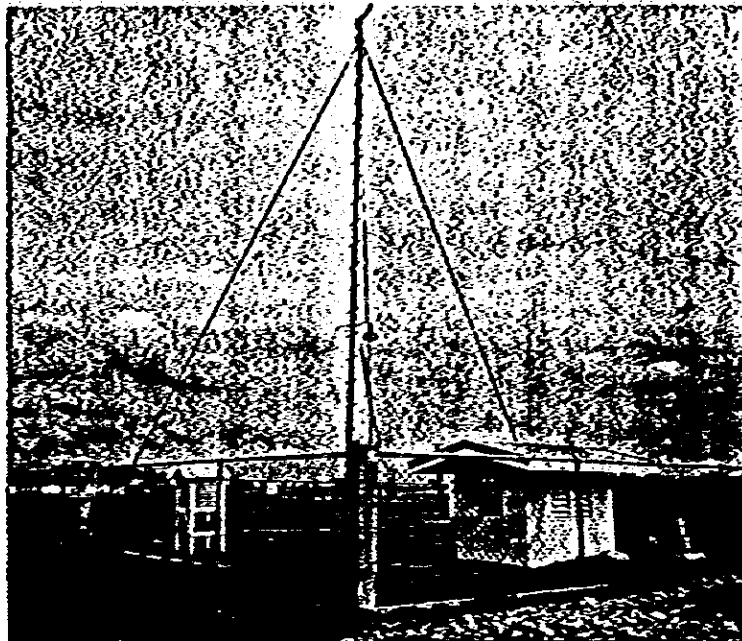
d. Crop Establishment and Management Project

On-going evaluations on existing practices related to crop management are undertaken to develop appropriate crop establishment and management practices for the varied agro-ecological environments within Cagayan. Studies undertaken from October 1981 to December 1982 concentrated on:

- the effect of different seedling age on the yield of rice,
- the levels of management, and
- the use of plant trellis.

Trials conducted at the Buguey Pilot Farm showed that the age of rice seedling for transplanting revealed no statistical difference on the yield of the crop. Yield trends, however, showed that the younger seedlings gave higher yields.

On the farm management level, the application of 40 kg N per hectare and spraying of insecticides twice (farmers' practice) gave the highest



return vis-a-vis variable cost under Iguig Pilot Farm conditions during the wet season (May planting).

Considerable increase in yield was observed when cucumber was provided with trellis. Trellised and untrellised patola, however, gave similar yields.

e. Water Management Project

This study aims to monitor the water requirement of the rice crop per location needed as baseline data for the implementation of the irrigation system of the whole project area.

Initial results showed that during the wet season (May), the reproductive stage required a maximum average of 82

mm/day at Iguig and 7.6 at Buguey Pilot Farms. At the vegetative stage, crops at the Iguig Pilot Farm required 7.2 mm/day while the crops at Buguey Pilot Farm required 6.0 mm/day.

A comparative study conducted at the APC Infra showed that crops need more irrigation water in all the stages of growth. This could be attributed to the open drainage canal system in the area.

f. Cropping Pattern Testing Project

Rice-based and Corn-based Cropping Patterns tested in various agro-ecological conditions in Cagayan are reflected in Table I-A-2.



Initial results of testing conducted at Gohzaga, a fully irrigated rice area, revealed that farmers' pattern with improved

level of technology increased the yield by a maximum of two tons/ha. In Solana, a partially irrigated rice area, improving the

Table I-A-2 APC CROPPING PATTERN TESTING PROJECT

STUDY	LOCATION	NUMBER	TEST PATTERNS NATURE
a) Rice-based 1. Partially Irrigated Cropping Pattern for CLARIC Area	Alcala-Luening	3	1. TPR-TPR (FP)
			2. DSR-TPR-MG (AP)
			3. MG-TPR-MG (AP)
2. Fully Irrigated Cropping Pattern for other Areas	Cocoyag	2	1. TPR-TPR (FP) 2. TPR-TPR-MG (AP)
	Sala	2	1. TPR-TPR (FP) 2. TPR-TPR-MG (AP)
3. Rainfed Cropping Pattern	Alcala	2	1. TPR-TPR (FP) 2. TPR-TPR-MG (AP)
b) Corn-based 1. Patterns for River-flood Plains	Alcala	4	1. CORN-CORN (FP) 2. CORN-TOB-ACCO (FP) 3. CORN-MG (AP) 4. CORN-CORN+PEANUT (AP)
	Solana	3	1. CORN-CORN (FP) 2. CORN-MG (AP) 3. MG-CORN (AP)
	Cocoyag	2	1. CORN-CORN (FP) 2. CORN-MG (AP)

TPR - Transplanted Rice
DSR - Dry-seeded Rice
MG - Mungbean
FP - Farmer's Practice

level of technology for TPR-TPR increased the yield by a maximum of 3.3 tons/ha.

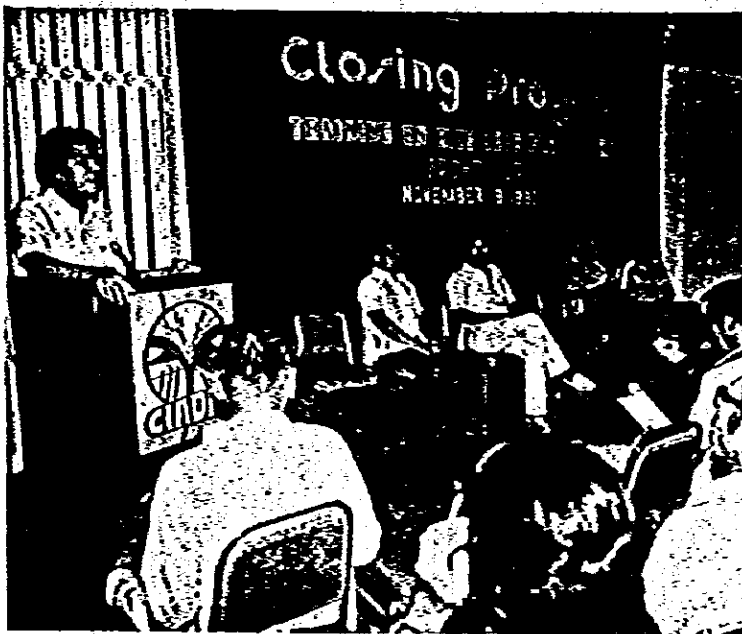
In Alacapan, the yield of the farmer's pattern in rainfed rice could be pushed to a maximum of 3.0 tons/ha. by improving farm technology.

The same cropping patterns will be re-evaluated in 1983, with the exception of the Alacapan rainfed rice area which was transferred to Dumpao, Iguig, a location having similar agro-ecological conditions.

Pattern testing in Alcala-Amulung Pilot Farm was temporarily suspended due to the incorporation of a permanent water pump. Buguey Pilot Farm was included as a test location for December planting.

In the Alcala riverflood plains, the corn-tobacco pattern of the farmers gave the highest income with a total net return of P5,789.00 per hectare per year. However, improving the farmers' pattern (corn-corn) by using the recommended technology did not give additional income to the farmer.

In the Solana flood plains, the corn-mungo alternative pattern gave a total net return of about P5,550.00 while mung-corn pattern gave P5,259.00 per hectare per year.



The same cropping patterns will be re-tested in all locations for the second cycle of pattern testing in 1983.

g. Farm Machinery Evaluation Project

With the end-in-view of testing the capacity and efficiency of different agricultural machineries under local conditions, the KUBOTA S-300, 2-row rice transplanter exhibited a capacity of 0.083 ha./hr. and field efficiency of 76.13%.

h. Special Projects

A total of five (5) socio-economic studies were conducted for the year in review. Four (4) studies were conducted to evaluate the LEA/pilot farms including another socio-economic benchmark and evaluation survey for Minanga Norte, Iguig, Cagayan, where the APC is located.

A cost and return analysis on the Iguig LEA/Pilot Farm showed that net income of rice farmers in that area were

194% higher than those outside of the LEA/Pilot Farm of a 590% increase from that of the benchmark survey conducted in 1977. This was attributed to the abundance of irrigation water and the presence of technicians from APC and other line agencies who provided direct technical assistance and guidance to the farmers in the area. These conditions made possible the double cropping and a sixfold increase in the yield of rice.

Evaluation reports for Alcala-Amulung, Lallo, and Buguey LEA/Pilot Farms are expected to be completed by early 1983.

EXTENSION PROGRAM

The Extension Program adopted a three pronged approach:

- a) Technical guidance through farm and home visits;
- b) Formal training of farmers and technicians, and
- c) The development of communication support services in order to:

- * Initiate/sustain farmers' organization;
- * Promote, organize, and coordinate inter-agency extension activities for a more effective transfer of technology;

- * Train farmers and agricultural development workers;
- * Package tested and adoptable technologies for dissemination to change agents and farmers.

Projects Implemented

a. Pilot Farm Management Project

Four (4) Pilot Farms ranging from 31 to 240 hectares of contiguous lands in Iguig, Alcala-Amuhung, Lallo and Buguey, serve as basis for planning and implementing farm activities at a larger scale in the service areas and also as showcases of recommended rice technologies. These are farmer-owned, farmer-managed and technically assisted by MA and APC personnel.



Improved agricultural technologies indicated that, even during dry season, the highest average yield of 4.2 tons per hectare can be achieved as shown by the performance of the Lallo Pilot Farm. During

the wet season, the Iguig Pilot Farm increased its yield by 170%.

Targets and actual production of PF's are reflected in Table I-A-3.

Table I-A-3 PILOT FARMS MANAGEMENT PROJECT

PILOT FARMS (LEA's)	TARGET & ACTUAL PRODUCTION OF RICE FOR 1981-1983 CROPPING SEASON											
	Dry Season (1981-1982)				Wet Season				Dry Season (1982-1983)			
	Area (ha)		Prod. (ton/ha)		Area (ha)		Prod. (ton/ha)		Area (ha)		Prod. (ton/ha)	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual
Iguig	35	28	105	43	35	15	110	106	36	35	110	
Alcala-Amuhung	75	56	90	23.0			Area not yet planted					
Lallo	27	27	95	34.0	24	24	100	76.2	25	25.0	not yet harvested	
Buguey	42	42	80	45.0	42	42	85	54.8	35	35	area not yet planted	
TOTAL	179	153	350	219.0	81	81	295	237.0	96	96		

Table 1-A-4 APC VEGETABLE EXTENSION PROJECT

VEGETABLE SPECIES/VARIETY	QTY. OF SEEDS PRODUCED (K.G.)	SEEDS DISPERSED (K.G.)	SEEDS ON STOCKS (K.G.)
1. Tomato			
- B4175	28	15	13
- VC11-BUG	25	27	0
- Mac32	27	28	0
- Improved Parbat	22	24	0
- Japanese Variety	300	-	300
2. Eggplant			
- Degrain long purple	450	200	250
- Japanese Variety	200	-	200
3. Pepper			
- Yalo Yalo	320	100	220
- Hot pepper	100	-	100
4. Okra (Luvula)	150	10	140
5. Pechay (Pach. Pak)	105	15	90
6. Kacang Paku	43	32	11
7. Squash (Kacang Variety)	12	20	0
8. White Cored (Nacac)	22	12	10
9. Pale Skin (KCS #2)	116	116	-
10. Bush Skin (KS #1)	85	85	-
11. Bush Pechay	12	-	12
TOTAL	2048	613	2018

b. Vegetable Extension Project

A total of 70.48 kgs. of varied seeds were produced from tomatoes, eggplant, pepper, okra, squash, white gourd, ampalaya, patola, bush sitao and other vegetables planted in the garden of the APC. An estimate of 49.9 kgs. were dispersed to homeyard vegetable growers, leaving 20.18 kgs. seeds on stock. (See Table 1-A-4).

c. Technical Trainings

For this year, the Preliminary Course on the Methodology of conducting Field Researches for APC and line agency staff was implemented with 54 APC and MA Research Force completing the course. The second phase of the training will be implemented on the 1st quarter of 1983.

Training on Rice Seed Production for Rice Seed-Growers was conducted on November 1982, attended by 26 seed growers of Cagayan and Kalina-Apayao.

Training for eight (8) batches of farmer-leaders and LEA's farmers planned for the year was postponed to early 1983 due to the re-scheduling of operation in the Alcala-Amuhung irrigation area.

A total of 806 trainees/participants completed seven (7) unprogrammed activities implemented during the year.

d. Communication Support to APC Extension Program

The program focused on the development of semi-technical, popular and modular print materials intended as training handouts and reference materials on recommended techno-

logy for each major commodity raised in the province.

Four (4) technoguides on the production of Poultry, Swine, Tilapia and Rural Nutrition were packaged this year. Likewise, abstracts (farmer's version) in vernacular were developed from the Technoguide series. Five (5) titles have been finalized and ready for printing.

About 2,600 copies dealing with a number of informative subject matters were printed to support training activities, in addition to four (4) slide sets and two (2) titles prepared for illustrations.

Information campaigns to disseminate information and feedback system were conducted in 11 barangays of Alcala-Amuhung.

• TECHNICAL SUPPORT SERVICES PROGRAM

Objectives:

- a. To establish and make available facilities and services to support research extension activities of various line agencies; and
- b. To provide related services and facilities supportive to the adoption of improved technologies by the farmer clientele.

Projects Implemented:

a. Farm Machinery Project

The accomplishments during the year include the operation of the 6-hectare model farm from land preparation to post harvest operation, and machinery custom service.

A total of 137 hectares in Iguig and Akata-Amulong service areas were served benefiting a total of 113 farmers.

b. Station Development and Operation Project

The Infra Development Section of the APC, along with

the Infra Section Staff of the Project Office, supervised the construction of six (6) buildings in the APC Complex, in addition to specific activities towards station development. These buildings were completed and inaugurated in early part of 1982. Currently under construction are two (2) buildings and a steel tank.

A third Agro-Meteorological Station was established in CSU Piat this year. The other two, in Iguig and Camalanigan, are being utilized to collect data on rainfall, temperature, relative humidity, air and soil temperatures, solar radiation, atmospheric pressure, wind velocity, and direction, and evapo-

ration, which are necessary inputs to the sound planning of cropping systems and farm activities.

c. Seed Production Projects

1) APC Seed Production

Registered and foundation seeds of IR-36 and IR-54 were planted to 1.64 hectares of land utilized for seed production purposes within the APC Complex.

Production was pegged at 156 cavans 56% more than the target yield, with 88 cavans of certified seeds (IR-36) and 68 cavans of registered seeds (IR-36 and IR-54). (See Table I-A-5)

2) CIADP-BPI Seed Production

In a separate but related project, the KBI funded CIADP-BPI Seed Production, since 1979, has continuously provided the farmers of Cagayan with a steady supply of seeds and plant materials, through the facilities of three BPI Experimental Stations.

For 1982, seed production in the stations at Ilagan, Isabela; Abulog, Cagayan; and Luna, Kalinga-Apayao, reached a total of 89,288 kgs. from an

Table I-A-5 APC SEED PRODUCTION PROJECT

VARIETY	AREA PLANTED (ha)	YIELD (cavans)	CLASSIFICATION
IR-36	0.80	88	Certified Seeds
IR-34	0.50	33	Registered Seeds
IR-36	0.35	35	Registered Seeds
	1.65	156	

Table I-A-6: CIADP-PI SEED PRODUCTION PROJECT

Crop Variety	Area Planted (in Hectares)	Total Production (in Kilograms)	Average Production Per Hectare	
			(in kgs)	(in cavans)
Rice	61 ha	21,465	3,537.5	81.31
Corn	151 ha	43,243	2,864.2	65.55
Peanut	103 ha	20,200	1,963.2	24.17
Mungo	4 ha	4,300	1,075	24.43
Vegetables	35 ha	60	80	1.82
TOTAL	44.75 ha	85,258		

aggregate area of 44.75 hectares planted to rice, corn, peanut, mungo and vegetables. (See Table I-A-6a)

Average production per hectare per commodity is as follows:

Rice 3,577.5 kgs. or
81.31 cavans
Corn 2,884.2 kgs. or
65.55 cavans
Peanut 1,063.2 kgs. or
24.17 cavans

Mungo 1,075 kgs. or
24.43 cavans
Vegetable ... 80 kgs. or
1.82 cavans

Out of the seeds harvested, 66,880 kgs. or 74.91% of total production were certified by the Seed Laboratory as foundation, certified and registered seeds. (See Table I-A-6b)

While total project cost was estimated at P1.03 M, actual expenditure amounted to only P598,966.11 or 97.98% of the total amount released. (See Table I-A-6c)

d. Seed Testing Project

The Seed Laboratory, operated jointly with the Bureau of Plant Industry, Region II, serves the seed-growers of Cagayan and Kalinga-Apayao and ensures the availability of high quality seeds.

For 1982, the laboratory inspected and certified 335.05 hectares or an equivalent of 84% of the total target area of 400 hectares. It conducted seed tests on 2,879 samples or 218.11% accomplishment of the total target of 1,320 samples. The laboratory likewise received 1,999 samples for seed certification or 166.58% of the total target of 1,200 samples. About 21,358





cavans of foundation, registered, and certified seeds were tagged and sealed.

The laboratory also rendered quality control service such as supervision in the rebagging and loading of 2,375 cavans of IR-36 certified seeds procured

by the Food and Agricultural Organization of the United Nations. These seeds were produced by Cagayan and Kalinga-Apayao Seed Growers.

e. Soil Testing Project

The soil testing laboratory

provided fertilizer recommendations based on soil analysis for the province of Cagayan. It also conducted water analysis for water management studies.

For the year, the laboratory updated fertilizer requirements of the Lallo and Buguey Pilot Farms at per farmer basis. One hundred per cent (100%) of the samples received underwent outline analysis and 2,740 samples were determined for fertilizer recommendation serving 558 hectares of farmlands.

In addition, seven (7) water samples and 113 of 129 soil samples were analyzed.

f. APC Library and Information Center

The APC Library was established to cater to the information needs of the center's technical staff especially in the planning and preparation of research proposals and preparation of communication materials.

For 1982, the library acquired 530 books, some of these through a literature exchange with other agencies here and abroad. To date, the library has 1,224 books acquired through purchase and donations.

Table I-A-6b CIADP-BPI SEED PRODUCTION PROJECT

SEED QUALITY	PRODUCTION	
	in cavans	in kilos
Foundation	50	2,200
Certified	30	1,320
Registered	1,440	63,360
TOTAL	1,520	66,880

Table I-A-6c CIADP-BPI SEED PRODUCTION PROJECT

Financial Report
As of December, 1982

STATION	RELEASES	EXPENSES	% UTILIZATION	BALANCES
Abolop-Lana Seed Farm Complex	P550,200.00	P519,153.21	99.99	P 147.19
Baguio Experimental Station	101,090.24	88,412.90	87.45	12,277.33
TOTAL	P611,290.24	P598,966.11	92.95	P12,424.51

Research and Development Program for Agriculture (CROPS AND LIVESTOCK)

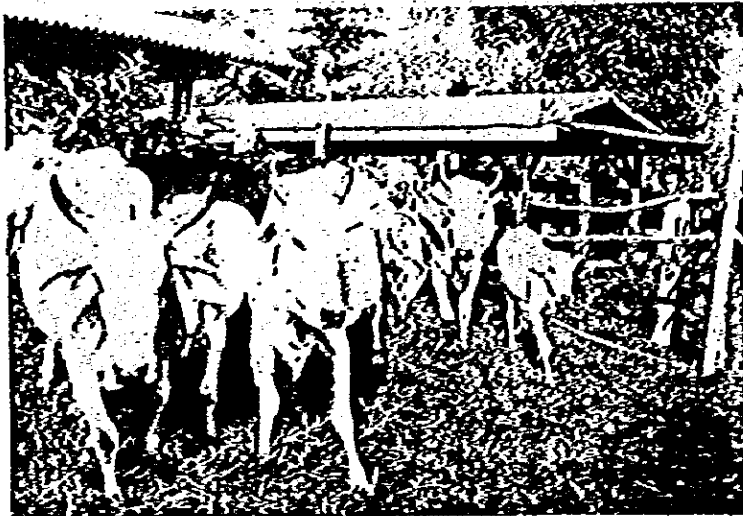
• CIADP-MA LIVESTOCK DISPERSAL PROJECT

The CIADP-MA Livestock Dispersal Project, implemented on a provincial scale, supports the food production campaign of the government, and aims to increase and improve the quantity and quality of breeders in order to attain a high level of self-sufficiency in meat and milk.

Under the CIADP-MA Livestock Dispersal Project (1981-1982) a total of 725 hogs (Large white), 266 goats (Native grape) and 17 native water buffalos (Carabao), were dispersed to 711 recipients from the 29 municipalities of Cagayan, beefing up existing number of stocks dispersed by the MA since 1974, in its Animal Dispersal Program.

Despite a 12.14% decrease due to deaths and losses, redispersed were four (4) heads of cattle, 37 hogs, 73 goats, and 2 carabaos, indicating a 3.86% growth. Still in stock are 753 farm animals composed of 355 goats, 270 hogs, 11 heads of carabaos, and 137 heads of cattle.

The existing stocks under the CIADP-MA Livestock Project represent 73.97% of the total program in the province. (See Table I-B-2).



• CIADP-PCA COCONUT HYBRID PLANTING PROJECT

The CIADP-PCA Hybrid Coconut Planting Project, implemented province-wide, seeks to increase production and bolster the fledging coconut industry of the province through the introduction of the MAWA hybrid coconut variety.

Since 1980, some 92,443 seednuts have been given to Cagayan by the Philippine Coconut Authority (PCA) under two (2) distribution schemes - PCA-COCOFED and PCA-CIADP.

The CIADP-PCA Scheme accounts for the major portion of the Coconut Hybrid Planting

Project in Cagayan, providing 52,380 seednuts or 56.66% of the total seednut-delivered from 1980-82. Out of this, 45,500 or 86.86 percent germinated and 45,440 were transplanted to 257 hectares belonging to 69 farmers. The area represents 77.29% of the total land area planted with hybrid coconut in Cagayan. Likewise the farmer-recipients represent 50.74% of the total number of beneficiaries in the province. (See Table I-B-1)

To date, under the two schemes, some 332.5 hectares of potential coconut lands belonging to 136 farmer-beneficiaries have been planted to 57,520 MAWA seedlings.

TABLE I-B-2 MA-CIADP LIVESTOCK DISPERSAL PROGRAM CUMULATIVE REPORT

	DISPERSED			SUB TOTAL	DEATHS	REDISPERSED	NO OF RECIPIENTS	TOTAL OF EXISTING STOCKS
	1980	1981	1982					
Cat	43	91	17	151	45	4	170	137
Hog	59	121	81	261	28	37	261	270
Goat	154	66	14	234	6	73	263	355
Carabao	-	14	3	17	8	2	17	11
TOTAL	356	292	125	773	87	116	711	753

Table I-B-1 CIADP-PCA COCONUT HYBRID PLANTING PROJECT
Accomplishment as of December, 1982

MUNICIPALITY	AREA PLANTED (ha)	NO. OF SEED LINGS TRANS-PLANTED	NO. OF FARMER/RECIPIENT
Abulug/Balbesteros	30	5,650	8
Sanchez Mira	160	3,250	7
Pamploca	18	3,760	9
Alcala	7	2,120	1
Albacapas	7	2,120	1
Amulung	7	1,120	1
Aparri	7	1,120	1
Bagao	7	1,120	1
Balbesteros	7	1,120	1
Buguey	7	1,120	1
Casalarayan	7	1,120	1
Clayria	7	1,120	5
Enrile	10	1,600	4
Gattaran	8	1,120	8
Conzaga	7	1,120	1
Igig	7	1,120	1
Lallo	7	1,120	2
Lasara	7	1,120	1
Piat	18	2,650	3
Peñablanca	7	1,120	1
Rinal	7	1,120	1
Solana	7	1,120	1
Sta. Ana	7	1,120	1
Sta. Teresita	7	1,120	1
Sto. Niño	7	1,120	1
Tuguegarao	8	1,250	2
Toto	9	1,450	3
TOTAL	257	45,440	69



While there are about 76,729.43 hectares potential area in Cagayan, only 5,286.02 or 6.89% are actually planted with 687,683 native and hybrid coconut trees, of which 467,232 are fruit-bearing trees. Total area available for development is 71,443.41 hectares.

• CIADP-PTA TOBACCO PROJECT

The CIADP-PTA Tobacco Project seeks to revitalize the native tobacco industry through improved technology, credit facilities, post harvest and trading methods with activities centering on researches in nine (9) municipalities: Alcala, Amulung, Bagao, Enrile, Gattaran, Solana, Lasara, Sto. Niño, and Tuguegarao. A preliminary survey for potential verification trials identified the need to undertake technopack, variety, insecticide and in-

Table 1-B-4 CIADP-APC-PCARR-MA-CSU
VERIFICATION DEMONSTRATION PROJECT
In 1982 the following commodities were verified:
NO. OF LOCATIONS

CROP	1st CROP		2nd CROP	
	TARGET	ACTUAL	TARGET	ACTUAL
Rice	35	33	10	11
Corn	5	4	16	9
Mungo	5	4	10	7
Peanut	5	0	5	5
TOTAL	50	43	35	32

tercropping trials with the participation of 152 farmer-cooperators.

Farmer-leaders attended a seminar/workshop on tobacco production held at the Agricultural Pilot Center in September, 1982. An echo seminar on the

methodology of location-specific production followed. (See Table 1-B-3)

• CIADP-APC-IPC POTATO PROJECT

This collaborative research undertaking of the APC and the

International Potato Center (IPC) was designed to provide basic information on the location-specific cultural management of the crop since Cagayan has been identified as a new area for potato production.

Trials on four varieties of white potato are ongoing, although initial activities indicated that crops planted late 1981 were superior in terms of yield than those planted early 1982.

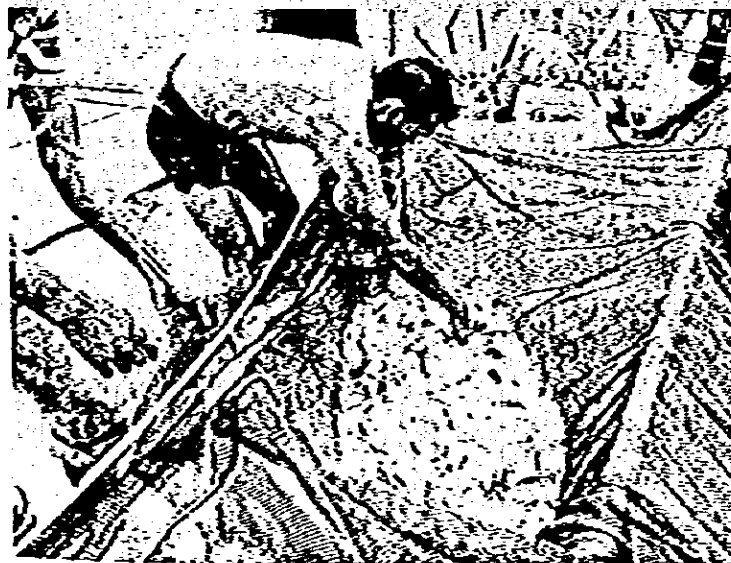
• CIADP-APC-PCARR-MA-CSU VERIFICATION DEMONSTRATION PROJECTS

With the objective of packaging location-specific technologies in specific crops, this joint project with the Office of the Governor of Cagayan verifies and demonstrates the adoptability of certain crops under the Technology Packaging for Countryside Development. Packages of Technology for corn, peanut and mungo are undergoing revision and further verification. The adoptability and profitability of the packaged rice technology, with remarkable average yield ranging from 100 to 204 cavans per hectare, was confirmed after two (2) cropping seasons.

Table 1-B-4 reflects commodities verified.

Table 1-B-3 CAGAYAN TOBACCO PROGRAM PROGRESS REPORT					
MUNICIPALITY	TRIAL	ACTIVITIES	OUTPUT INDICATORS		% ACCOMPLISHMENT
			NO. OF FARMERS WHO TRANSPLANTED		
			TARGET	ACTUAL	
Erika	Technology	Transplanting	4	3	50%
	Varietal	-do-	3	1	33.33
	Insecticides	-do-	5	0	0
	Intercropping	-do-	3	1	33.33
Sibul	Technology	-do-	4	3	75
	Varietal	-do-	5	3	60
	Insecticides	-do-	10	4	40
	Intercropping	-do-	5	5	100
San Nilo	Technology	-do-	5	5	100
Tuguegarao	Technology	-do-	2	1	50
	Varietal	-do-	4	4	100
	Insecticides	-do-	5	1	20
	Intercropping	-do-	3	0	0
Amlang	Technology	-do-	1	0	0
	Varietal	-do-	3	2	66.66
	Insecticides	-do-	5	0	0
Egpa	Technology	-do-	2	0	0
	Varietal	-do-	4	4	100
	Insecticides	-do-	10	0	0
	Intercropping	-do-	3	0	0
Abak	Technology	-do-	2	1	50
	Varietal	-do-	3	3	100
	Insecticides	-do-	5	3	60
	Intercropping	-do-	20	5	25
Cataran	Technology	-do-	5	2	40
	Varietal	-do-	3	1	33.33
	Insecticides	-do-	10	0	0
	Intercropping	-do-	3	0	0
Lanao	Technology	-do-	3	0	0
	Varietal	-do-	5	0	0

**Research and Development
Program for Natural
Resources
(SOILS AND FISHERY)**



• **CIADP-BFAR-SEAFDEC
PRAWN HATCHERY
PROJECT**

The CIADP-CSU-SEAFDEC-BFAR Prawn Hatchery Project seeks to ensure a steady and reliable supply of fry for pond cultivation and dispersal with the initial establishment of a Prawn Hatchery Complex (in CSU-Aparri) which houses the laboratory, rearing-tanks, and growing ponds; to be utilized in mass producing prawns. The Prawn Hatchery will also be a facility for research and the development of prawn production technology under Cagayan conditions.

The completed hatchery complex at CSU-Aparri is presently being utilized to implement the Ludong Research Project, pending negotiations to equip it with laboratory facilities and supplies.

• **CIADP-BFAR-CSU-ICLARM
LUDONG RESEARCH
PROJECT**

The CIADP-BFAR-CSU-ICLARM "Ludong" Research Project aims to develop knowledge on ludong (*Cestreaus plicatilis*) bionomics and life history with concentration on possible propagation techniques and hormonal-induced spawning.

Tuao, Gonzaga and Sta. Ana programmed for survey and classification for 1982, brings to date a total of 212,117.55 hectares surveyed in 11 municipalities since 1976. (See Table I-C-1)

The completed reports and maps of nine (9) municipalities: Enfile, Solana, Tuguegarao, Gattaran, Baggao, Iguig, Alcala, Tuao and Amulung are ready for printing. However, lack of funds hampers the reproduction of

these reports and maps. In view of the available information such documents can provide government planners, decision-makers, farmers, private entrepreneurs and prospective investors, CIADP provided funds for the printing of maps and reports. To date, the report and map of Iguig, a municipality has been completed while those of three others are on-going. (See Tables I-C-2)

A Research Team composed of technical personnel from CIADP, BFAR and CSU are involved in the activities with ICLARM scientists providing supervisory assistance.

Two (2) surviving specimens from the spawning runs of the year are presently kept in the circular tanks of the prawn hatchery at CSU Aparri for observation and study. The preserved mature specimens and Ludong eggs were sent to BFAR Central Office and ICLARM for proper identification and examination.

Meanwhile, BFAR has instituted measures to preserve "lu-dong" with a 5-year ban starting 1982. A fine of not less than P5,000 but not more than P5,000 or imprisonment of from 6 months to 4 years, or both, is imposed on whoever catches, sells, possesses or transports "lu-dong", as per 139, Section 3 of the Fisheries Administrative Order.

• CIADP-BS (MA) SOIL SURVEY AND CLASSIFICATION PROJECT

The CIADP-BS (MA) Soil Survey and Classification Project implemented province wide will be a valuable instrument in charting development efforts within the province.

Table I-C-1 CIADP-BS (MA) SOIL SURVEY AND CLASSIFICATION

YEAR	MUNICIPALITY	ACTUAL AREA SURVEYED (Hect.)	STATUS
1976	Enfile	13,314.22	For printing
1976	Solana	27,722.00	For printing
1976	Tuguegarao	11,391.00	No funds for reproduction
1976	Gattaran	936.50	No funds for reproduction
1976	Baggao	45,622.80	No funds for reproduction
1980	Iguig	10,691.03	For printing
1981	Alcala	19,720.15	For printing
1981	Amulung	24,220.00	For printing
1982	Tuao	16,000.00	3,500 Hect. surveyed
1982	Gonzaga	26,000.00	22,600 Hect. surveyed
1982	Sta. Ana	14,500.00	29,000 Hect. surveyed
TOTAL	11	212,117.55	

* Reproduction of Soil Survey Reports and Maps to be funded by CIADP
 * Unsurveyed areas indicated on this table

Table I-C-2 SOIL SURVEY AND CLASSIFICATION PROJECT

Accomplishment for 1982

MUNICIPALITIES	SURVEY WORK (in Hect.)	SOIL SAMPLES	FINAL REPORT	NO. OF REPORTS/ MAPS TO BE REPRODUCED	REMARKS
Tuao					
Target	16,000	300	1	10	Unsurveyed areas
Accomplished	16,000	50	1		
Gonzaga					
Target	26,000	972	1	10	Considered
Accomplished	26,000	180	1		
Sta. Ana					
Target	14,500	841			Unclassified
Accomplished	14,500	325			
TOTAL					
Target	112,120	2,443	2	20	
Accomplished	56,500	515	2		

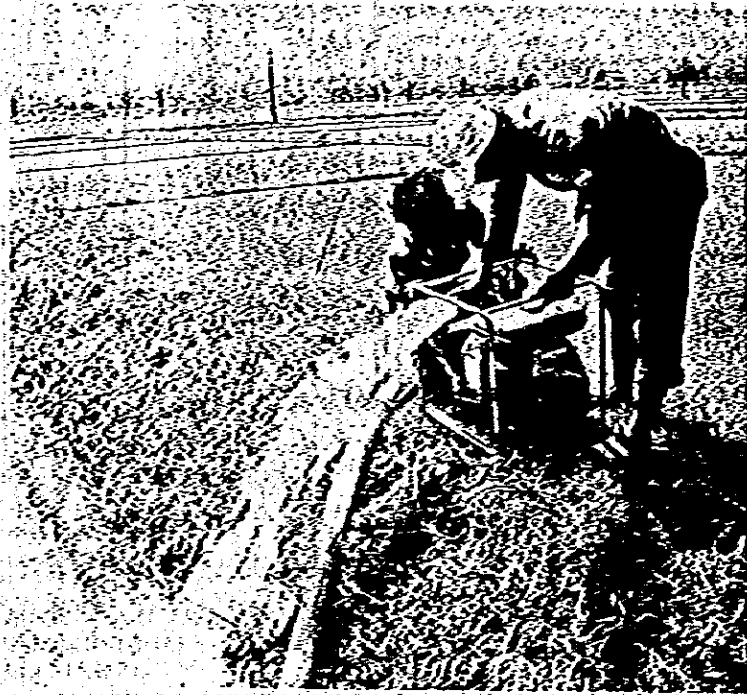
Infrastructure and Allied Infrastructure Development Program

A CIADP-NIA IRRIGATION PROJECT

About 10,000 farmer-households from Iguig, Alcala, Amulung, Aparri, Buguéy, Camalanigan and Lallo are expected to benefit from the CIADP-NIA Irrigation Project which seeks to irrigate about 14,000 hectares of farmlands in the Lead Extension Areas (LEA), through the construction of farm-level facilities and 3 pumping stations in Iguig, Amulung and Magapit. (See Table II-A-1)

Highlights of this year include the completion of the Amulung Pumping Station which will serve about 2,350 hectares of farms within the towns of Alcala and Amulung. Project cost is estimated at P26M. The pump is one of the three (3) to be constructed along the Cagayan River to serve CIADP areas in Iguig, Alcala, Amulung and Lower Cagayan.

With activities concentrating mainly on the construction of irrigation and drainage canals, canal structures and farm level facilities at Amulung, Iguig and Lower Cagayan, physical accomplishment was registered at 51.50% (See Figure 1) as of December 1982.



CIADP-NIA - CIADP IRRIGATION COMPONENT						
PARTICULAR	PROJECT COST		PROJECT AREAS	AREA COVERAGE		BENEFICIARIES
	ORIGINAL	REVISED AS OF JAN. 1982		ORIGINAL	REVISED	
LOCAL	156,328 M	222,519 M	BOAC	10,000 HAS	175,000 HAS	1,000 FARMERS
FOREIGN	100,251 M	131,251 M	ALCALA - AMULUNG	10,000 HAS	1,000,000 HAS	100,000 FARMERS
			LOWER CAGAYAN (BUGUEY, LALLO, APARRI, CAMALANIGAN)	11,000 HAS	1,000,000 HAS	100,000 HOUSEHOLDS
TOTAL	256,579 M	353,770 M		21,000 HAS	1,000,000 HAS	

UNIVERSITY OF THE PHILIPPINES - LOS BAÑOS
 OVERSEAS ECONOMIC COOPERATION FUND (OECCF) LOAN AGREEMENT
 EXCHANGE RATE:
 P1.00 = P1.00
 P1.50 = \$1.00

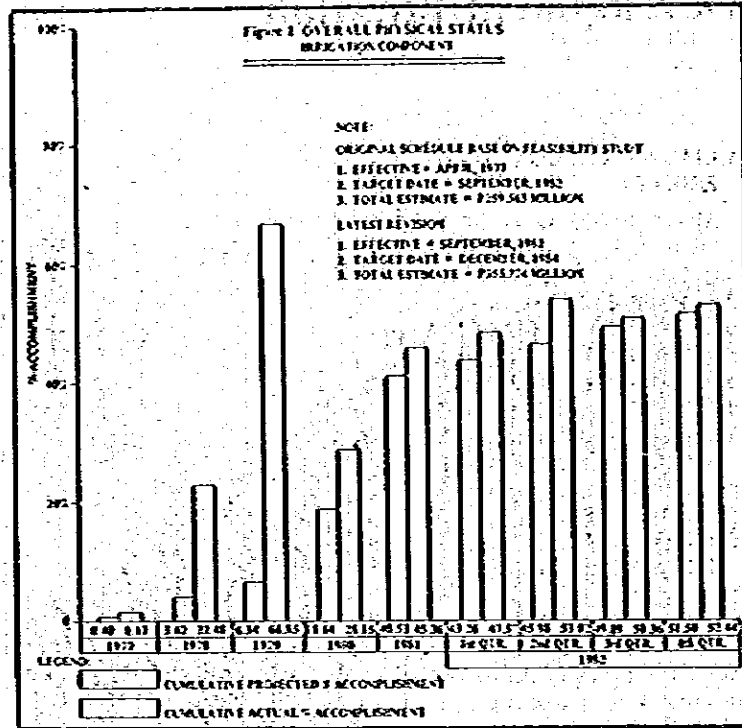
Total expenditures as reflected in Table II-A-2 amounted to P199,122 million or 55.95% of the total project cost of P355,774 million. Loan counterpart under OECF Loan PH-P14 of 1977 is P133,255 million while loan availments has reached P80,868 million (See Table II-A-3).

As per revised work program, the scheduled date of completion of the irrigation project is 1984.

B. CIADP-NEA ELECTRIFICATION PROJECT

About 143,800 Cagayanos in Gattaran, Aparri, Lallo, Buguey and Camalaniugan, are expected to enjoy the benefits of the CIADP-NEA Electrification Project which seeks to energize five municipalities within Lower Cagayan, as provided for in the OECF Loan.

As of December 30, 1982, an additional 170.820 kms. distribution lines were installed in Aparri, Buguey, Camalaniugan, Lallo and Gattaran. Total length installed to date by the 51st Army Engineering Brigade runs 403.617 kilometers or 90.70% of the total target of 445 kms. (See Figure 2)



**Table II-A-2 ACTUAL OBLIGATIONS (P)
 NIA-CIADP IRRIGATION COMPONENT (PH-P14)
 AS OF DECEMBER 31, 1982**

YEAR	GOP	FOREX	TOTAL
1977	2,540,160		2,540,160
1978	14,529,745	858,390	15,418,135
1979	18,020,358	20,515,330	38,535,688
1980	20,500,000	25,263,879	45,763,879
1981	29,027,894	20,192,422	49,220,316
1982	33,635,638	14,008,211	47,643,849
TOTAL	118,253,795	80,868,232	199,122,027
PROJECT COST	222,519,205	133,255,000	355,774,000
BALANCE	104,265,410	52,386,768	156,652,178

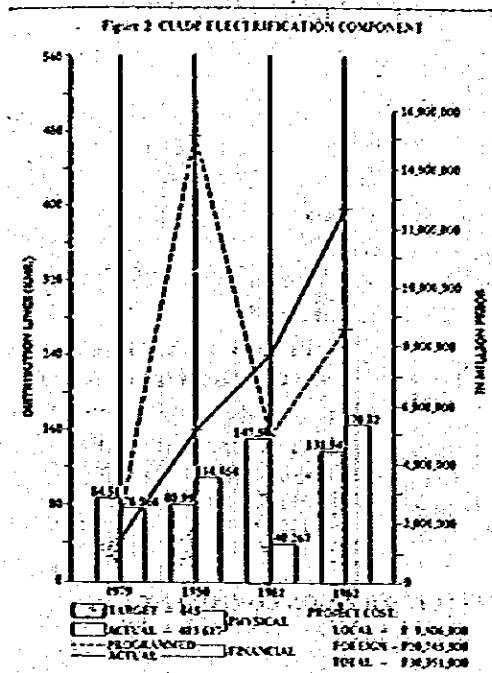


Table II-A-3 RELEASES & LOAN AVAILMENTS

IRRIGATION COMPONENT
As of December 30, 1982

Revised: March 14, 1983

YEAR	PROGRAMMED RELEASES (FEASIBILITY STUDIES)*		ACTUAL RELEASES (P)	ACTUAL OBLIGATIONS/AVAILMENTS		% ACTUAL ACCOMPLISHMENT CUMULATIVE
	LOCAL	FOREX		LOCAL	FOREX	
1976	998,000	-	-	-	-	-
1977	8,081,000	3,157,000	3,896,269	2,540,160	-	0.46
1978	40,384,000	104,043,000	14,057,360	14,529,745	888,390	3.61
1979	31,828,000	32,450,000	19,269,924	18,020,358	20,515,330	6.34
1980	32,005,000	8,330,000	19,977,500	20,500,000	25,263,879	18.64
1981	21,818,000	6,020,000	30,645,000	29,027,894	20,192,422	40.53
1982			33,850,469*	33,635,638	14,008,211	51.50
TOTAL	136,114,000	154,000,000	121,796,533	118,253,795	80,868,232	

Note:

* This includes corporate advances of P1,750,469

Exchange Rate P1.00 = ¥10.00

TABLE II-B-1 CIADP AREA ELECTRIFICATION PROJECT
Cumulative Report

ACTIVITIES	TARGETS	PHYSICAL ACCOMPLISHMENTS				% OF POTENTIAL ACCOMPLISHMENTS
		1979	1980	1981	1982	
A. Installation of 70-kv. Distribution Systems in 3 Municipalities						
- Main Transformer	15,000 units					
- Secondary Line	400 km	76,000	51,404	40,267	176,671	88.3%
B. Feeding and Energizing						
- Services	178	25	34	24	25	14%
- Household connections	10,600	2,954	4,754	4,263	12,011	74.6%
TOTAL PHYSICAL ACCOMPLISHMENTS						74.7%

Some 7,915 household connections or 74.67% of the targeted 10,600 households projected were installed this year, (Figure 3) while 105 barangays or 58.99% of the total potential barangays were energized (See Figure 4).

Physical accomplishment is registered at 74.78% as reflected in Table II-B-1 with an estimated expenditure of P26.266 million or 85.97% of the total project cost of P30.551 million. Loan counterpart under OECF Loan is P20,745 million, bringing a total

of P17,179 million. See Table II-B-2 on yearly expenditures.

Figure 3 CIADP ELECTRIFICATION COMPONENT

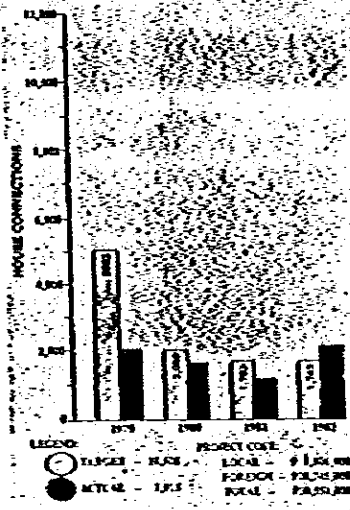


Figure 4 CIADP ELECTRIFICATION COMPONENT

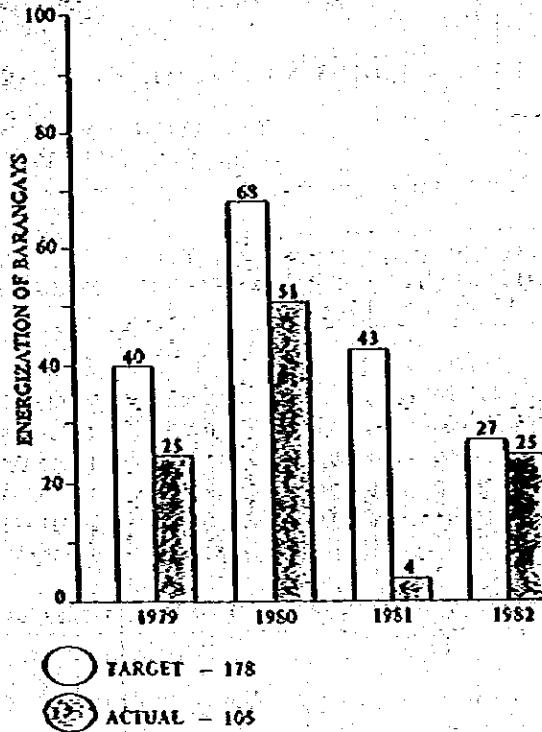


TABLE B-2 ACTUAL EXPENDITURES
CIADP ELECTRIFICATION COMPONENT USE FILE
As of December 31, 1982

YEAR	GOV (P 7)	POPEX (P 8)	TOTAL (P 7)
1979	1,334,998	1,043,998	2,378,996
1980	1,702,156	1,355,817	3,057,973
1981	1,811,728	1,174,418	2,986,146
1982	1,000,000	1,000,000	2,000,000
TOTAL	5,848,882	4,574,233	10,423,115
PROJECT COST	1,000,000	2,265,800	3,265,800
BALANCE	1,000,000	1,308,433	2,308,433

C. CIADP-MPWH INFRA-STRUCTURE PROJECTS

• **Farm-to-Market Roads Project**

The KBI funded CIADP-MPWH Farm-to-Market Roads Project aims to construct and improve roads throughout the province in support of agricultural development.

From 1979 to 1981, a total of 138,984 kms. completed farm-to-market roads costing some P38,110,738 beef-up existing road network.

Meanwhile, the improvement/construction of about 206 kms. of barangay roads under 56 projects of the 1982 program has just started, with twelve on-going projects constituting 57.661 kms. attaining an overall accomplishment of 10.81%. Expenses for these 12 projects have ran up to P1.601 million. The contract papers of 44 projects are under process by the MPWH, the implementing agency with a total project cost estimated at P40.8M. (See Tables II-C-1 & II-C-2).

TABLE II-C-2 CIADP-MPWH FARM-TO-MARKET ROAD PROJECT

YEAR	PHYSICAL			FINANCIAL (P)		
	TARGET (in kms)	ACTUAL COMPLETED (in kms)	% ACCOMPLISHMENT	PROJECTED COST	ACTUAL EXPENDITURES	% FINANCIAL UTILIZATION
1979	4.31	4.31	100	13 M	13 M	100
1980	34.8	34.8	100	15 M	15 M	100
1981	143,209	34,374	52.35	40.2 M	20,227,654	50.27
1982	176.52	on-going (contract cost)	10.81*	16.8 M	1,601,250	8.92
1983	176.52	not yet started		16.8 M		
TOTAL	436,124	138,984		116.9 M	38,110,738*	

* For 12 on-going projects involving 57.661 kms.



Table II-C-1 CIADP-MFWH FARM-TO-MARKET ROAD PROJECT.

TOWN	CALENDAR YEAR		
	1981	1982	1983
	(in kms.)	(On-going) (in kms.)	(Programmed) (in kms.)
1. Abu			
1. Abuhug	4.44	4.973	4.75
2. Akala	4.44*	5.602	5.06
3. Aliscapan	5.602*	10.46	5.29
4. Amuhung	7.45*	5.89	5.87
5. Aparti	7.52	7.42	8.01
6. Bagao	14.332	22.525	14.21
7. Ballesteros	3.680	4.561	4.09
8. Buguey	1.837*	2.492	4.14
9. Calayan		1.34	6.32
10. Camalanogyan	2.561	1.889	2.73
11. Claveria	3.464*	5.96	5.13
12. Eorile	10.312*	5.223	4.89
13. Galtaran	9.352	20.829	11.05
14. Gonzaga	8.780	8.806	7.41
15. Iguig	2.961	2.605	3.15
16. Lallo	7.794*	10.777	10.04
17. Lasara	5.712	6.70	5.15
18. Pamplona	3.60*	4.593	4.03
19. Peñablanca	20.667	15.203	14.47
20. Piat	5.815*	4.472	3.24
21. Rizal		3.22	2.75
22. Sanchez Mira	5.36	2.50	4.38
23. Sta. Ana	4.60	1.72	5.76
24. Sta. Praxedes	0.94*	1.25	1.40
25. Sta. Teresa	1.36	2.02	1.58
26. Sto. Nifo	6.35*	7.00	7.30
27. Solana	12.603*	16.795	7.53
28. Tuao	9.278*	7.821	6.48
29. Tuguegarao	12.329	12.189	10.31
TOTAL	183.209	206.835	176.52

*Completed totaling 138,984 kms. including 1979 to 1980

-Partially completed

• Flood Control Project

CIADP-MFWH Flood Control Project supports the irrigation projects in Iguig, Amuhung and Lallo Pumping Stations.

About P11,2034 has been earmarked to finance the construction of flood control facilities at Iguig and Amuhung Pumping Stations.

As of December 1982, physical accomplishment has reached 28% with an estimated expenditures of P7,137 million or 63.72% of the total project cost. Work has been concentrating in the construction of reinforced concrete revetment on steel sheet piles.



Socio-Economic Development Program

A. HEALTH SERVICES

• "Alay sa Paglilingkod Kapwa"

The CIADP Civic Action Project conducts free medical/dental services to curb incidence of communicable and non-communicable diseases prevalent in depressed barangays.

The CIYAC team composed of interagency doctors, dentists, nurses, social workers, civic-minded civilians and CIADP employees rendered free medical/dental services to 42 barangays of 8 municipalities from March 9 to July 16. Served were 6,168 patients out of which 5,312 were medical in nature.

Total expenses incurred in the implementation of the project amounted to P96,108.70 or an average cost per patient of P15.58.

• Anti-Malaria Fogging Operations

The Anti-Malaria Fogging Operations is intended to eradicate malaria infestation of identified stricken barangays.

The CIADP initiated inter-agency Anti-Malaria Fogging Operation conducted October 25-27 benefitted 2,000 residents of Hacienda Intal, Baggao, Cagayan.



The school building and 234 houses within the community were fogged by a team of technicians jointly with the Philippine Navy.

Total project cost was P7,479.85 or P3.74 per beneficiary.

• UST Medical Mission

The UST Medical Mission was intended for needy patients who could not afford expenses incurred with minor and major surgical operations.

From April 4 to 10, the UST Medical Mission, Inc., through

representations made by CIADP with the Archdiocese of Tuguegarao, rendered free medical services to 207 patients from 21 municipalities. Of this number, 122 patients underwent surgery, like thyroidectomy, cataract extraction, cheiloplasty and

breast incision. Fifty-seven (57) patients required minor operations like pterygium, nasal polypectomy and cyst incisions, and 28 were EENT patients.

Expenses incurred amounted to P25,160.00, of which P13,160.00 came from CIADP funds. Average cost per beneficiary amounted to P121.54.

Table III-B-1 CIADP-MAR LAND TENURIAL SERVICES PROJECT

ACTIVITIES	ACCOMPLISHMENT		
	TARGET	TOTAL	% ACCOMPLISHMENT
1. Land Valuation			
a) Tenast Titles	1116	552	49.46
b) Parochs	1537	274	45.40
c) Area (has.)	346.93	188.35	54.29
2. Emancipation Project			
a) Tenast Titles	1116	111	10.51
b) Parochs	1537	211	13.72
c) Area (has.)	346.93	130.07	37.49
3. Legal Services			
a) No. of Cases	237		
4. Information			
a) No. of Info. Disse.	6	10	166.6
b) Farmers Forum	12	1	8.33
c) Radio	12	1	8.33
5. Trainings			
a) No. of Participants	1200	1310	109.16
6. Extension Services			
a) No. of Farm Visited	1200	1310	110.9
b) No. of Farm Supervised	1200	1400	116.6
7. Research Work			
a) No. of Tenast Interviews	500	500	100
b) No. of Landowners Interviewed	100	100	100

B. SOCIAL SERVICES

• CIADP-MAR Agrarian Reform Services Project

The KBI-funded land tenurial services project seeks to facilitate transfer of ownership of rice and corn lands in CIADP areas, from landlord to tenants, through the provision of legal services, technical improvement, information dissemination, training, extension work and other support activities.

The project covering technical improvement and legal services, information dissemination, training, extension work and other support services rendered in CIADP areas registered an average percentage accomplishment of 69.25%. (See Table III-B-1) Total expenditures was P284,138.80 or 62.01% of the P458,200.00 released to finance the undertaking. Total project cost was estimated at P500 T. (See Table III-B-2)

Table III-B-2 CIADP MAR FINANCIAL REPORT
(as of Dec. 1982)

Activities	Releases	Expenditures	% of Utilization
Reform Services		284,138.60	62.01
IGP		111,600.00	24.36
Total	458,200.00	395,738.60	86.37

C. ECONOMIC SERVICES

• Small-Trade Skills Training

The Small Trade Skills was designed to provide trade skills to out-of-school youth, unemployed quarters and heads of families in order to develop their earning capacity.

Past trainings included Silk Screening, Meat Processing and Candy Making.

Some 61 unemployed individuals, out-of-school youths, and heads of families in Northwestern Cagayan completed an inter-agency skills training program conducted in Abulug municipality from May 19-25, 1982.

Total expenditure was P2,260.00 or an average cost of P32.79 per participant.

• CIADP-MAR Income Generating Projects

The Income Generating Project instituted for the first time this year with an initial appropriation of P111,600 is intended to augment the incomes of farmer-beneficiaries in CIADP areas through the dispersal of goats, swine and poultry, and the extension of a credit scheme.

As of December, 1982, 22 heads of swine and 60 goats were distributed to 29 Agrarian Reform Beneficiaries Association

Table IV-A-1 KKK APPROVED PROJECTS BY MUNICIPALITY
PROVINCE: CAGAYAN
AS OF: 31 DECEMBER 1982

MUNICIPALITY	NO OF PROJECTS	ESTIMATED NO. OF BENEFICIARIES	AMOUNT APPROVED	AMOUNT RELEASED
Abulug	45	45	P 435,000.00	P 198,000.00
Alibon	1	1	3,000.00	
Aringay	20	20	232,000.00	136,000.00
Ayud	0	1,057	425,927.00	267,200.00
Baguio	2	20	878,255.00	648,642.00
Balabagan	1	1	6,000.00	6,000.00
Bepoy	2	2	6,000.00	6,000.00
Calayan	15	15	115,000.00	10,000.00
Carig	20	24	262,600.00	173,600.00
Clayton	24	140	591,547.00	463,547.00
Ermita	1	1	60,000.00	35,000.00
Genisan	1	1	20,200.00	20,200.00
Genisan	1	27	120,025.00	105,740.00
Palabanan	25	24	255,255.00	312,445.00
Rizal	1	1	11,000.00	11,000.00
Sandara Mira	1	26	321,000.00	212,000.00
Sibul	14	241	1,620,115.00	881,115.00
Sta. Ana	1	26	148,500.00	129,420.00
Sta. Rosa	10	10	45,000.00	45,000.00
Sta. Ysabel	3	3	27,000.00	
Tina	25	25	75,000.00	75,000.00
Tuguegarao	24	24	114,439.29	84,000.00
Tuguegarao	45	179	1,690,130.00	1,053,130.00
TOTAL	415	1,828	P1,902,610.00	P759,842.00

Table IV-A-2 KKK APPROVED PROJECTS BY PROTOTYPES
PROVINCE: CAGAYAN
AS OF: 31 DECEMBER 1982

PROTOTYPE	NO OF PROJECTS	ESTIMATED NO. OF BENEFICIARIES	AMOUNT APPROVED	AMOUNT RELEASED
Agri - Family	1	10	P 30,000	
Agri - Extended	20	120	1,200,000.00	1,200,000.00
Agri - Market	0	0	0.00	0.00
Coop & Light Industry	2	120	200,000.00	200,000.00
Health & Welfare Component	1	60	150,000.00	150,000.00
Service	20	60	1,000,000.00	1,000,000.00
Waste Utilization	0	0	0.00	0.00
TOTAL	44	330	P1,680,000.00	P1,650,000.00

(ARBA) members in the municipalities of Baguio, Lallo, Amulung and Camalaujan.

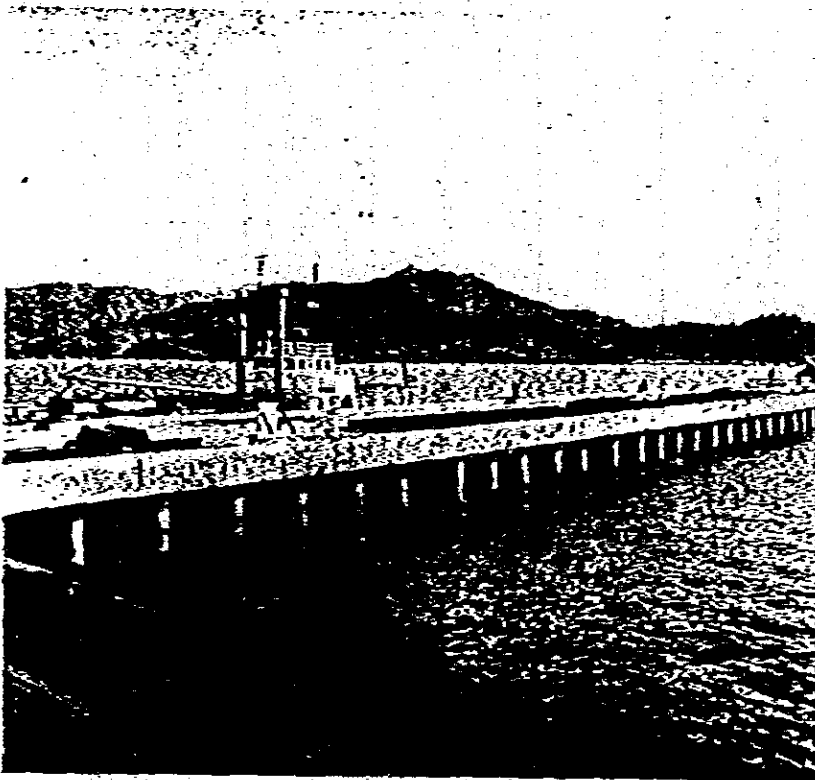
• CIADP-KKK Tie-Up Projects

CIADP renders consultative services in the implementation of KKK projects, through project identification, project prioritization, preparation of feasibility studies and organization of

cooperatives and monitoring. Tables IV-A-1 and 2 reflect status of KKK in the province.

To date, CIADP has prepared 11 feasibility studies on a variety of projects supportive to the KKK program.

SPECIAL PROJECTS



This component assumes that development efforts focusing on the growth of the agricultural sector, at the early stages, are preliminary steps to overall economic plans, i.e., industrialization. CIADP believes that the industrialization of Cagayan and Region 02 is hinged upon the completion of the following projects:

I. CIADP-PPA FORT IRENE DEVELOPMENT PROJECT

The CIADP-PPA Development of Port Irene aims to usher the Industrialization of Cagayan and Region II. The total development of the port is regarded as one of the most important approaches to regional development and the main instrument to bring about resource mobilization through the establishment of industries in the area. Inexpensive mass transportation brought about by developed port facilities accelerates development and utilization of resources, further enhancing the area as an industrial site.

On-going development activities of Port Irene involves the following:

- * extension of the existing pier, and
- * expansion and modernization of the port.

For 1982, the Philippine Ports Authority released P2.5 million - P0.7 million for administrative and engineering expenses plus P1.8 million for the construction of 48 linear meters of the proposed extension project. This amount is part of the P3.5 million which was programmed by PPA in 1979-1980 for the upgrading of Port Irene facilities.

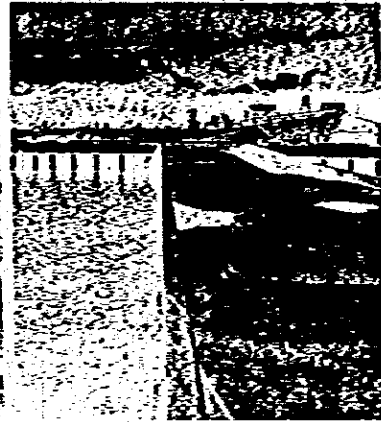
Existing facilities in the Port include a 144 linear meter wharf, the subject of an extension project to make it 210 linear meters long. The construction of the 48 linear meter extension has been programmed for 1982 to 1983. The remaining 18 linear meter will be completed later to coincide with the expansion and modernization of the port as proposed for financing under the OECF Loan.

The contract cost of P1.8 million for the 48 linear meter extension project was sub-allotted to the MPWH by PPA last December 1982 and contract was awarded to a construction firm. Order to commence work will be issued early part of 1983, and work is expected to be completed within 250 calendar days.



In August, 1982, a Philippine Navy Technical Team was dispatched to conduct underwater structure inspection of the 68 driven piles at the project site. A subsequent survey report on the serviceability of the piles and the underwater conditions and a hydrographic chart were submitted to the MPWH through CIADP.

The final report of a Feasibility Study conducted 1981 to 1982 by the JICA Survey Mission and JICA, PPA and CIADP Study Teams recommended a short-term development plan targetted for 1987 and a long-term development plan targetted for 2000.



The short-term development plan with a targetted cargo volume of 248,000 tons of which 60% is exportable goods, i.e., timber and agricultural products, covers the following activities:

- construction of a new 200-linear-meter berth linked to the existing pier

- dredging of a 10-meter-depth berth
- reclamation of the area behind the berth for more efficient cargo handling, and
- construction of a 25-meter wide apron, a transit shed and an open storage yard.

Project cost for the short-term development plan is estimated at P103 million. Actual construction is expected to start 1985.

The plan is significant in the light of present port facilities which are insufficient and a totally undeveloped commercial distribution system. These factors, reinforced by the present poor road network suppress productive activities in Cagayan and other provinces in Region 02 which have high productivity potentials in agriculture and natural resources. These products are transported by land to Manila for local consumption or shipped to other domestic and/or foreign markets via the city ports. Transport cost to Manila is a negative factor in the competitiveness of products from Region 02.

The long-term development plan to be constructed in the southern part of Casambalangan Bay is expected to accommodate an estimated 850,000-ton cargo volume, half of which will be foreign trade goods, i.e., palay, timber products, fertilizer, copper ores, etc., through the construction of 6 new berths and storage facilities like transit sheds and warehouses. A fishing port will also be built adjacent to the commercial port to encourage fishery development. The peripheral areas will be reserved as development site for centers and factories.

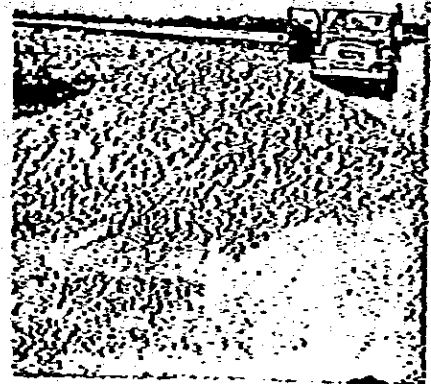
Towards the modernization and expansion of Port Irene, a Detailed Engineering Study will run from September 1983 to August 1984.

The engineering services include the detailed design of port facilities and access road, and the transfer of technology to GOP personnel. As of October 1982, \$1.3M has been proposed by NEDA from the 11th Yen Credit Package of OECF for the detailed engineering study.

II. DUGO-SAN VICENTE ROAD PROJECT

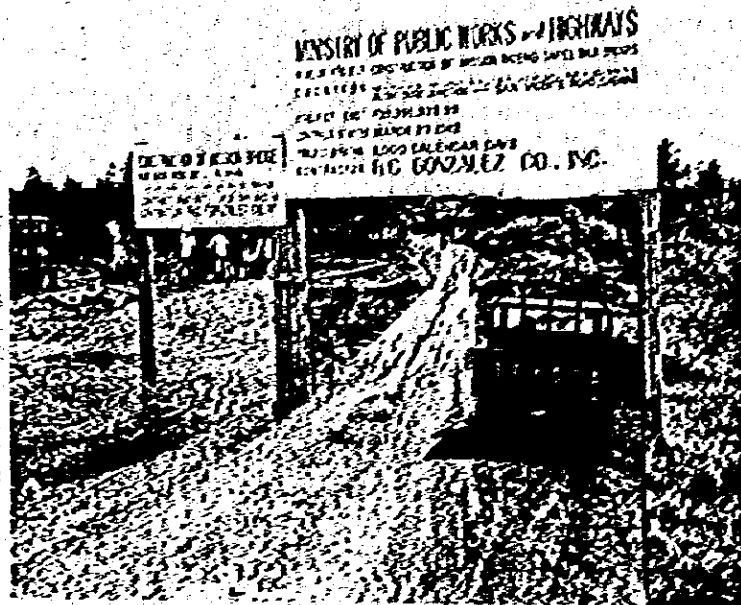
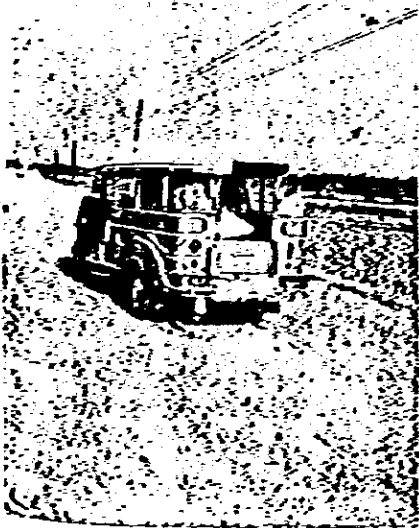
Corollary to the development of Port Irene is the on-going Dugo-San Vicente Road Project initiated by CIADP, and involving the following:

- Construction of 4 major bridges, and
- Cementing of the 73 km stretch.



Some 425,432 linear meters consisting of 4 major bridges (Baus, Misión, Paleng and Tapel) along the Dugo-San Vicente Road have been scheduled for construction within 725 calendar days from March, 1982. Expected date of completion is March 1984, with an estimated cost of P20 M.

With 38.34 percent of the time elapsed, activities for the period concentrated on the delivery and hauling of materials, excavation work, driving of concrete piles and abutments, stocking of aggregates and casting/curing of reinforced concrete piles. Physical accomplishment was chalked at 21.00%.



The 73 km stretch of Dugo-San Vicente Road has been scheduled for cementing with a P70M appropriation from the MPWH. To facilitate work, actual construction will be undertaken by phases.

Phase I will cover 7 kms. of road in Camalanagan while Phase II will cover about 9 kms. in Buguey. Project cost for both phases has been estimated at P28M.

All plans were completed and construction work has been awarded to two (2) capable firms.

To date, mobilization has started and actual work for both phases is expected to be completed in 1,140 calendar days: 600 days for Phase I and 540 days for Phase II.

III. CIADP FOOD PRODUCTION PROGRAM

CIADP is one of the agency recipients of a ¥1.6 billion worth of fertilizers, agricultural machines and vehicles for project coordination donated by the Japanese Government under the expanded coverage of the RP-Japan Food Production Program. As a consequence of this donation, the CIADP Food Production Program has been proposed province-wide.

The program is a comprehensive nutrition plan on a provincial level with the objective of identifying and producing indigenous commodities which have high nutritive value as well as great potential for increasing farm income. Its thrust centers on the design of a composite and economical system of policies, researches, tests and actual implementation meant to simplify the gap between food supply and demand.

As of December, 1982, the project proposal with three (3) components: livestock development/



production; crops and perennial crops; and fishery development; has been completed, although all commodities identified as food or source of food and other commodities that are directly or indirectly related to food or which can greatly affect/complement the production of food will also be included. Initial activities will focus on research, piloting and production.

Also completed are several feasibility studies on specific commodities. These have been packaged and are ready for implementation, in coordination with a number of line agencies.

IV. CIADP-EPZA EXPORT PROCESSING ZONE PROJECT

Complementary to the modernization of Port Irene is the proposed establishment of an export processing zone in the Casambalangan, Sta. Ana area. The port will be a major requirement in site selection for industries which depend in maritime transportation for the procurement of raw materials and/or shipment of finished products. The development of the port is then expected to play a major role in promoting the Port of Irene area into a Cagayan Export Processing Zone.



A Cagayan EPZ near the port will generate employment and business opportunities and further stimulate agricultural production within the region.

The project was originally proposed by CIADP in 1981, but EPZA included it in its priority list for 1984. In view of recent developments in infrastructure and utilities in the province, subsequent letters requesting for an earlier schedule were submitted by CIADP to NEDA and EPZA.

In the meantime, CIADP has initiated the conduct of a pre-feasibility study on the port focus-

ing on the cost of project development including the economic benefits and opportunities it would accrue in the industrialization plans for Cagayan and the Cagayan Valley Region. The Development Academy of the Philippines (DAP) has been commissioned, through a Memorandum of Agreement entered into by CIADP, NACIAD, DAP and EPZA, to undertake and complete the study within six months.

The results of the study will be an important consideration upon which EPZA and CIADP can reassess their earlier stand.

V. TUGUEGARAO AIRPORT IMPROVEMENT PROJECT

The release of the P10 M appropriation for the improvement of the Tuguegarao Airport was facilitated through the efforts of Defense Minister and CIADP Cabinet Coordinator Juan Ponce Enrile. Ongoing work implemented by phases involve the extension of the existing runway and the installation of modern navigational equipment to maximize flight safety in the region. CIADP took an active role in the planning and implementation of the project.

To date, construction work for Phase I covering 0.288 km, was completed at the cost of P1.5M. Phase II covering 0.46 km is expected to be completed early part of 1983, at a cost of P4.7M. The plans, specifications - program of work, and cost estimates for Phase III are ongoing preparation.

When completed, the existing runway will be able to accommodate heavier aircrafts like the pure jets.

Other Pipeline Projects

The CIADP shall continue to play a pivotal role in planning the development of Cagayan through the integrated area development approach. Activities lined up for 1983 involve the sustained coordination, monitoring and evaluation of all on-going projects under its components on agriculture and natural resources, infrastructure, social services, trade and industry and special projects. Project proposals and feasibility studies shall be continuously packaged, including the identification and prioritization of new projects, and the formulation of work programs.

Aside from monitoring on-going KBI-funded projects with line agencies and regular components,

**Table V. FINANCIAL REPORT
OF KBI FUNDED PROJECTS
1982**

Activity	Project Cost	Releases	Expenditures as Reported	% of Support	% of Utilization
A. Farm to Market Road Project	845,169,000.00	1,338,300,000.00	1,160,283.00	14.3	1.1
B. Seed Production Program	1,300,000.00	611,790.34	388,966.11	37.0	27.5
C. Agrarian Reform Services	5,500,000.00	455,300.00	375,718.05	31.6	66.3

(see Table V on Financial Report of KBI-funded Projects) CIADP shall endeavor to pursue the implementation, coordination and monitoring of other projects within the year, among which include the following:

1. Regional Framework Plan

A consultancy firm is presently formulating a framework plan within the context of the overall NEDA Plan which shall constitute the basis by which the regional coverage of CIADP shall be undertaken.

2. Cagayan Updated Socio-Economic Study

The study shall provide basic and important information concerning the socio-economic conditions of Cagayan. This is necessary input not only to planners but decision makers and private entities as well.

This is also a part of the IAD Plan for Region 02.

Project Management

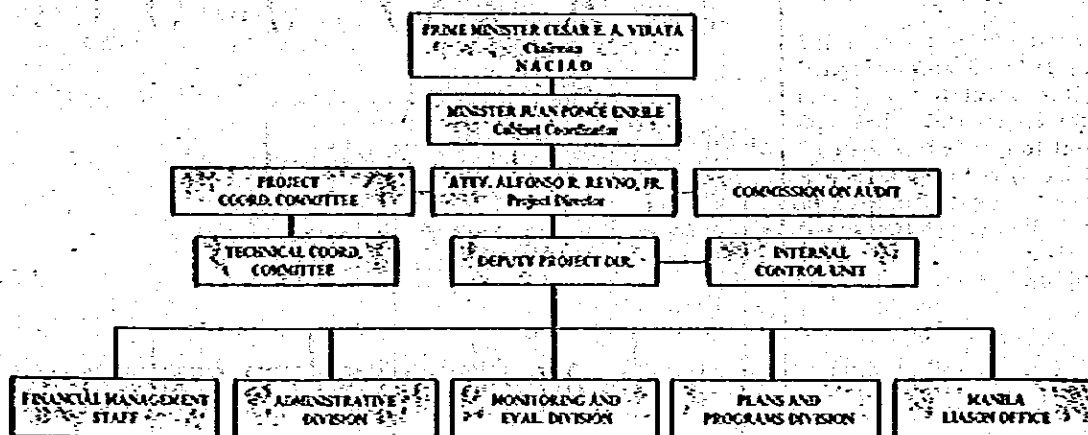
To carry out CIADP functions and to ensure the attainment of its goals, the Project Office at Tuguegarao with its four (4) divisions (See Figure 5) under the direct management and administrative supervision of the Project Director, Vice-Governor Alfonso R. Reyno, Jr., continued to serve as the coordinating center for inter-agency planning and implementation of

development projects in Cagayan. Special attention centered on its regular components in irrigation, electrification, barangay roads, seed production, agrarian reform services, agricultural research and extension work. The Manila Liaison Office facilitated supportive actions at the national level by undertaking liaison and coordination work not only with the central offices of the

NEA, NA, MPWH, MA, MAR and BPI which are implementing CIADP projects, but also with other entities both public and private, which are undertaking projects in Cagayan.

The CIADP is chaired and supervised by the Cabinet Coordinator, Hon. Minister of Defense and Assemblyman of Cagayan, Juan

Figure 5 CIADP ORGANIZATIONAL CHART



Ponce Enrile, who also translates and transmits the board policies and guidelines established by the National Council for Integrated Area Development (NACIAD) in the coordination of the planning and implementing of CIADP projects at the national and provincial levels.

In order to strengthen organizational capability and promote efficiency and effectiveness, the Project Office has beefed-up its present manpower resources with 43 new employees, bringing a total of 120 employees. See Figure 6 on manpower growth. Likewise, the APC Staffs a total of 175 personnel (Figures 6, 7 & 8).

To boost employee morale and enhance technical and managerial capabilities, about 100 employees from the Project Office and APC were sent to specific trainings conducted locally and abroad. Psychological tests were administered to the staff for proper placement and assistance in ascertaining training needs and promotions.

Figure 6 MANPOWER GROWTH

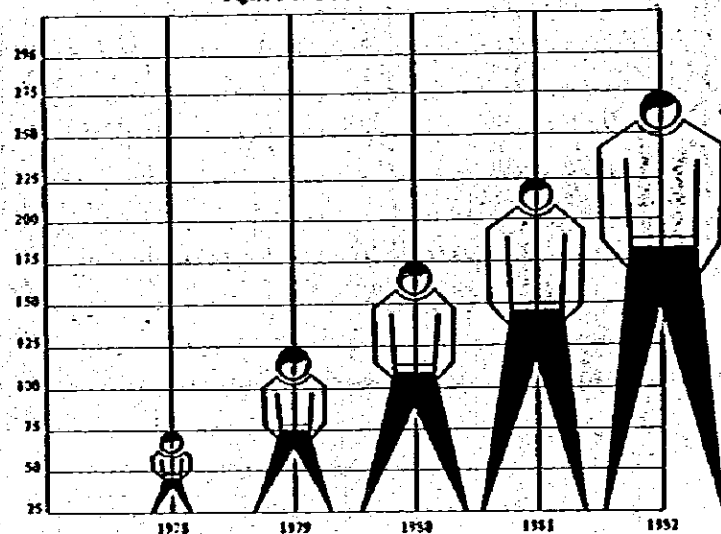
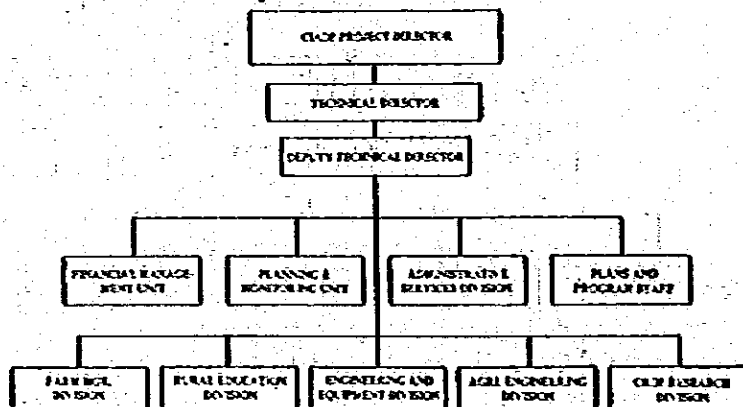


Figure 7 APC ORGANIZATIONAL CHART

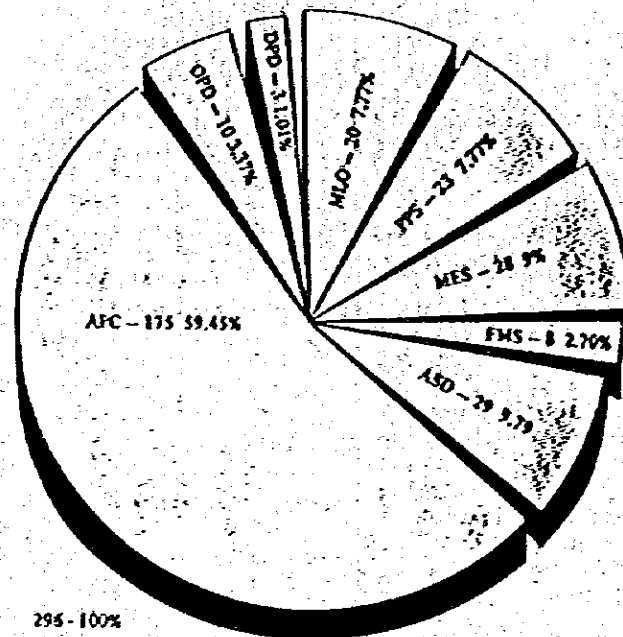


Meetings, recreational and athletic activities, to motivate employees and to promote physical fitness were undertaken on a more regular basis.

The Financial Management Staff reports that of the total allotment of P3.8M for CIADPO operations, P1.4M or 36.84% was fully expended for salaries, wages and allowances.

The Plans and Programs Staff concentrated its efforts in coming up with project proposals and feasibility studies intended for: 1) inclusion in the proposed Cagayan Food Production Program; 2) for foreign funding (World Bank/JICA/ADAB), and 3) for the KKK Program in Region 02. In addition, the Division formulated work programs and coordinated the planning and

Figure 8 MANPOWER DISTRIBUTION



implementation of new projects among which include the Cagayan Tobacco Program and the Cagayan Socio Economic Study.

The Monitoring and Evaluation Staff concentrated on the consolidation/preparation/submission of status reports and periodic monitoring of on-going projects in all components through ocular inspections, field surveys, and consultative meetings with the implementing agencies.

The Project Coordination Committee, chaired by the CIADP Project Director, Vice-Governor Alfonso R. Reyno, Jr., with the Provincial Governor Justiniano Cortes and Regional Directors of line agencies as members, meets regularly as the forum in providing and ensuring technical coordination among the agencies and offices involved in the implementation of CIADP projects.

Prognosis: CIADP in 1984

During the inauguration of the Magat Multi-Purpose Dam in October 27, 1982, His Excellency, President Ferdinand E. Marcos announced that, "...henceforth, the Cagayan Valley Integrated Area Development Program shall include all the provinces in Region II."

The pronouncement places the seven (7) provinces of Region 02 under the umbrella of CIADP. It is then expected that the coverage will lead to the expanded activities starting CY 1984, and consequently, a bigger and more specialized organizational structure will be required not only to strengthen the present planning and coordinating functions of CIADP, but likewise to make it more responsive to the requirements of the region within the context of regional and national planning.

- The formulation of a Comprehensive Development Plan for Region 02 with the RDC and the Provincial Governments, will constitute its major thrust in the planning activities for CY 1984. This Plan shall provide the backbone with which CIADP shall carry out its mandate of integrating development efforts in the region and the establishment of other IAD's within the Region. Furthermore, the existence of several provinces with different characteristics, physical attributes and resources/potentials requires special attention in a sub-regional level but within the context of tregional planning.

- Corollary to the development plan will be the need to generate data to support project proposals and to identify sources of funds. As the plan progresses, efforts will likewise focus on the establishment of socio-economic and technical data-base for a more comprehensive and integrated planning and project development.

The establishment of coordinating and monitoring modules in all the provinces/municipalities of Region II, in addition to a

core of professional and technical staff to strengthen the present planning capability of CIADPO, will constitute part of the organizational build-up, since CIADP's basic responsibility will be to integrate programs and projects, as determined by functional linkages, resource utilization, access to basic services, and local participation in the planning and implementation process.

The establishment of coordinating and monitoring modules in the provinces shall be undertaken by phases on a quarterly basis. Prioritization and grouping of areas shall be determined by proximity and accessibility.

- Continuous activities in monitoring, evaluation and coordination will be conducted to assess the effectiveness of management system on organizational structure, and inter-agency cooperation in the implementation of projects and the generation of socio-economic data to assess project impact.
- Linkage with the RDC and the Provincial Government's.
- Establishment of other IAD's within the Region.

