

(単位：千ペソ)

グループ	既存案件			新規案件		
	小規模 (0.5 ha)	平均規模 (1.25 ha)	大規模 (2.0 ha)	小規模 (0.5 ha)	平均規模 (1.5 ha)	大規模 (2.0 ha)
<u>事業を実施しない場合</u>						
(1)農家粗収入	13.8	34.5	55.2	6.6	19.9	26.5
(2)総生産費	5.9	14.7	23.5	3.0	8.9	11.9
1.生産費	5.8	14.4	23.1	3.0	8.9	11.9
2.維持管理費	0.1	0.3	0.4	0.0	0.0	0.0
3.償還金	0.0	0.0	0.0	0.0	0.0	0.0
(3)農家純収入(1)-(2)	7.9	19.8	31.7	3.6	11.0	14.6
(4)生計費	24.0	24.0	24.0	24.0	24.0	24.0
(5)農家余剰(3)-(4)	-16.1	-4.2	7.7	-20.4	-13.0	-9.4
<u>事業を実施した場合</u>						
(1)農家粗収入	16.8	42.1	67.3	16.8	50.5	67.3
(2)総生産費	7.5	18.7	29.9	7.7	23.1	30.8
1.生産費	7.1	17.7	28.4	7.1	21.3	28.4
2.維持管理費	0.3	0.8	1.2	0.3	1.0	1.3
3.償還金	0.1	0.2	0.3	0.3	0.8	1.1
(3)農家純収入(1)-(2)	9.3	23.4	37.4	9.1	27.4	36.5
(4)生計費	24.0	24.0	24.0	24.0	24.0	24.0
(5)農家余剰(3)-(4)	-14.7	-0.6	13.4	-14.9	3.4	12.5
農家余剰増分	1.4	3.6	5.7	5.5	16.4	21.9

(詳細は表11-07から11-09参照)

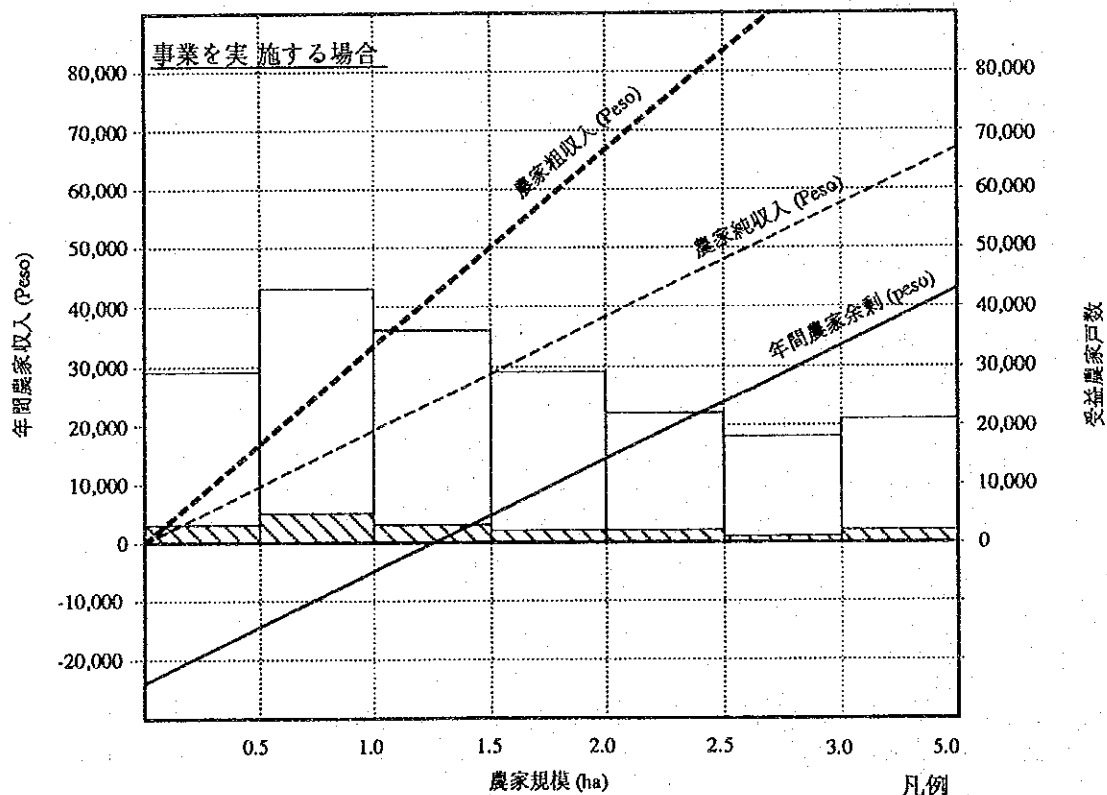
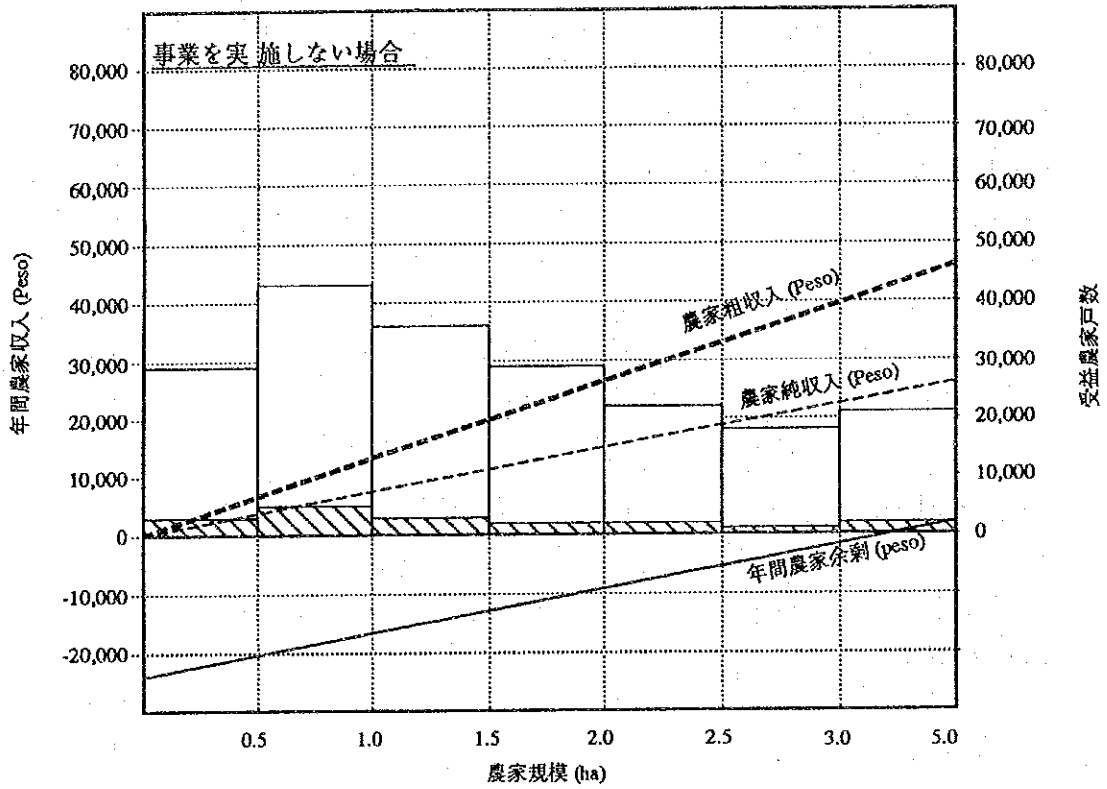
農家規模別年農家収入を以下2ページに示す。

- 11.16 SSIDPは農家収支を大きく改善させる。平均経営規模農家の事業を実施した場合の農家収入は既存事業と新規事業でそれぞれ1.2及び2.5倍増となる。農家収入は農家規模で左右される。新規案件の平均農家規模(1.5 ha)以上の規模の受益農家は生計費及び追加の維持管理費を支払うに十分な収入を得ることが可能である。農家規模1.0 ha以下の零細農家が生活を維持するためには、農外収入による補填が必要である。この結果はフィリピンにおける農地改革(CARP)の必要性を裏付けている。

社会・経済インパクト

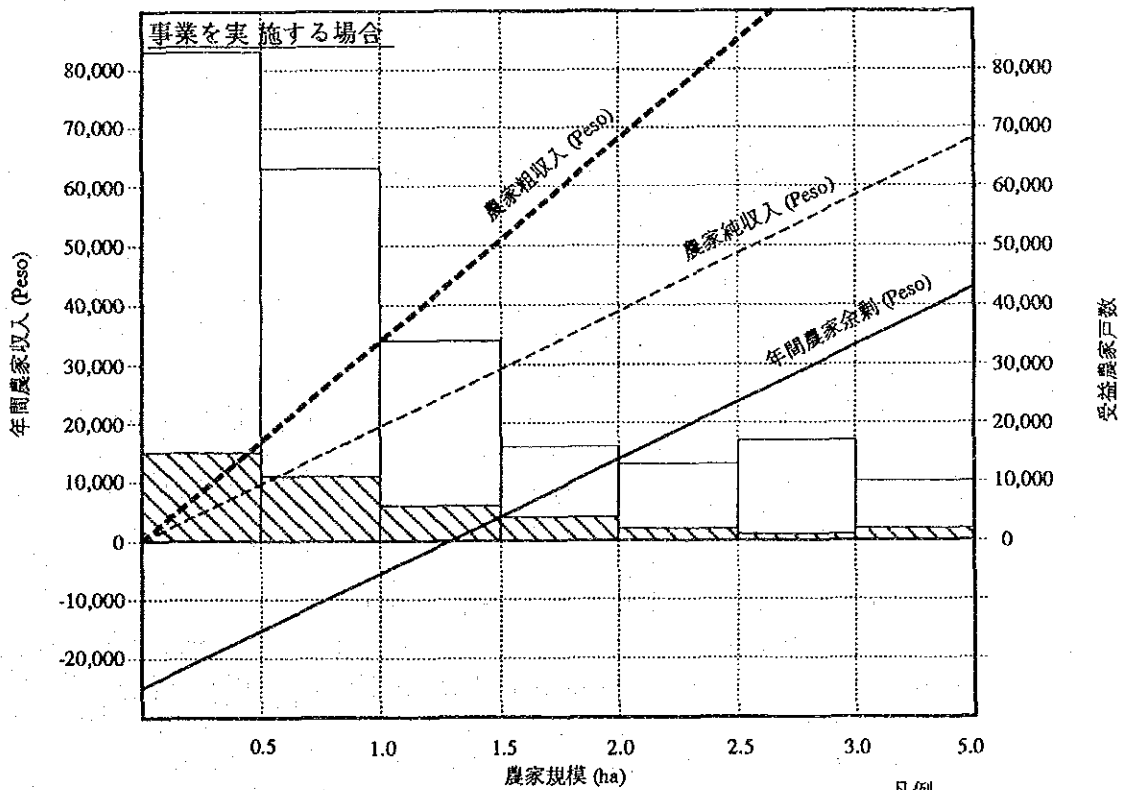
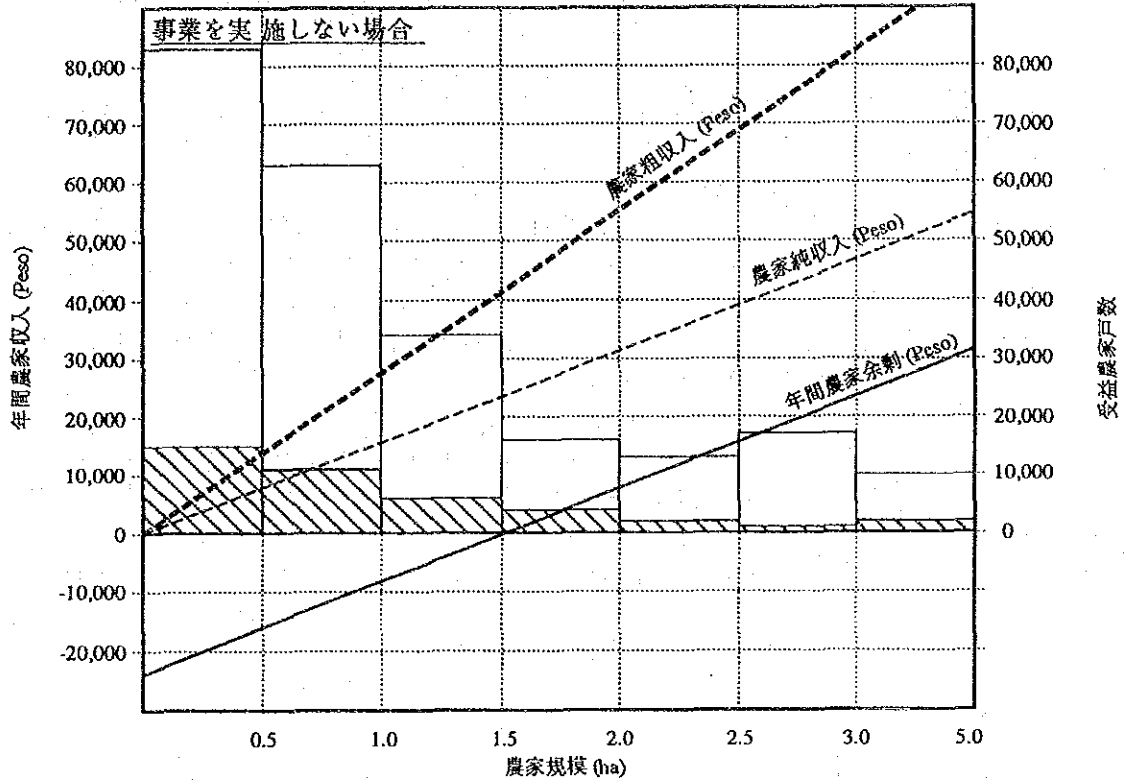
- 11.17 図11-01は2つの農業開発シナリオの状況を示している。最初(左図)は、灌漑施設が全く無い状況ないしは未整備の状況下において想定されうる問題構造を示した農村シナリオであり、

年農家収入と農家経営規模：CIP



- 凡例
- : SSIDP全体
 - ▨ : "A"グループ

年農家収入と農家経営規模：CIS



凡例

- : SSIDP全体
- ▨ : "A"グループ

もうひとつ（右図）は小規模灌漑開発事業（SSIDP）に代表される共同灌漑開発計画の実施によってもたらされる効果等を例証したシナリオである。農村地域の経済は主に農業生産によって支えられている事から、灌漑開発はこれら地域において開発の原動力と見なされている。農村地域における事業並びに雇用の大部分は農業に係わっており、従ってその収入源も農業によるものが多い。農村経済の向上は農産物の生産増によってもたらされる事からも、灌漑の農村開発に果たす役割は大きいとすることができよう。

- 11.18 農業生産に係わる主要問題として、不十分な水供給並びに不十分な農業インプットによる低収量があげられる。かかる問題に相次ぐ自然災害が加わり、事態を悪化させる事が多い。そして、こうした事態、並びに災害の影響を大きく受けるのは小規模農家である。低生産は低収入を意味し、この低収入は低生活水準と低投資能力を意味する。これが農村地域における慢性的貧困を生み出す悪循環の図式である。
- 11.19 かかる状況下において、人々（特に若者）はより良い雇用機会を見い出すべく都市へと移動する。都市への移住は、その結果として新たな社会、環境問題を生み出す。このような悪循環の環を断ち切り、こうした状況より抜け出すには、農村地域における社会・経済成長と貧困撲滅を主眼に置いたSSIDPのような農村インフラ開発計画を推進することが不可欠である。
- 11.20 SSIDPの実施により、同国の社会・経済上に下記のインパクトが期待できる。

- (1) 米の需給状況の改善
- (2) 雇用機会の創出
- (3) 農村経済基盤の強化と多様化
- (4) 外貨の節約と獲得
- (5) 農村の収入水準の向上
- (6) 農村資源の活用
- (7) 農村住民の制度・組織能力の向上
- (8) 収入の公平分配と福祉の向上
- (9) 地域開発への貢献と乗数効果

11.21 米の需給

過去10年の統計を見ると、フィリピンは米不足を経験している。（表11-10及び図11-02参照）米の全需要のうちの約93%は食糧消費である。このうちの98%は国内の生産で賄われているが、残り（2%）は輸入されている。同国は米生産について高いポテンシャルを有しているにもかかわらず、生産性が低いこともあり、ここ数年、近隣諸国より米を輸入せざるを得ない状況にある。過去10年の同国における米の平均収量は1ヘクタール当たり2.6トンである。これまで実施された各種の農業、社会・経済調査結果によれば、この低生産性は主に不確切な灌漑及び低い施肥レベルにあるとの指摘がなされている。

- 11.22 本SSIDPの実施により、1993年から2002年までの10年間に約57万500ヘクタールを対象とした灌漑施設の改修・改良及び新規開発が実施されることになる。最初の5年間に1,208の事業が実施され、約10万9,800ヘクタールを対象に既存灌漑施設の改修・改良が実施されるとともに11万900ヘクタールを対象に灌漑施設の新規開発が実施される。後半の5年間には2,829の事業が実施され、17万700ヘクタールの改修・改良、17万9,100ヘクタールの新規開発が実施さ

れることになっている。

11.23 年間の人口増加率を2%と想定すると、フィリピンにおける米の需要は1995年に686万3,000トン、2002年には805万トンとなる。SSIDPの生産目標は米の自給率100%達成にある。本事業が適切に実施されるならば、1996年には2万トン、2000年には102万8,000トンの余剰が見込めることになり、近い将来、米の輸出も可能となろう。(表11-10参照)

11.24 雇用機会の創出

現在のフィリピンの人口は約6,200万人である。このうちの約60%は15才以上で労働力人口と見なされている。雇用労働者のおよそ半数は農業に従事しており、残りの半数は非農業に分類される。失業は都市圏よりも農村地域において顕著である。このことは農村地域はより多くの労働力余剰を生み出しており、従ってこれに見合う雇用機会の創出が求められていることを意味する。従って、農村地域にあってはこうした労働力需給の大きなギャップを埋め合わせるためにも、農業は言うに及ばず農業外の雇用創出が求められている。

11.25 毎年、労働力人口が増加し続けるフィリピンにあって、失業問題は政府の重要課題のひとつである。失業率低減のためにも、労働力人口増に見合った雇用が創出されねばならない。表11-11は、2002年までの雇用政策に係わる政府目標を示している。

11.26 本事業の実施により、建設並びに運営の2つの段階において雇用が創出されることになろう。灌漑施設の建設では、熟練、非熟練の労働力が必要となる。10年の事業実施期間で必要となる労働力は6,800万人・日と推計される。年間の1人当たりの労働日数を260日と想定すると、投資がピークに達する2000年には約3万7,800人の雇用が創出されることになる。この雇用数は目標失業率の約0.1に該当する。なお、Aグループ459事業の実施に必要な労働力は、640万人・日と推定される。

11.27 事業の完成後、栽培面積の増加とともに田植え、除草、穫入れ等の農作業量も増え、こうした生産並びに施設の維持運営面における労働力需要も増大する。事業の目標開発面積は57万500ヘクタールで、1ヘクタール当たりの耕作労働力を95人・日とすると、開発がピークに達する2005年にはおよそ3,500人・日の雇用が創出されることになろう。なお、この運営段階のAグループ全体の事業実施に要する労働力は1,300万人・日と推計される。農村地域における雇用創出に寄与する本事業が実施されれば、健全な人口分布状況維持に役立つ一方、若年層の都市流出にも歯止めとなるだろう。

11.28 農村経済基盤の強化と多様化

SSIDPの実施で灌漑開発が進み、農村地域の開発にはずみがつくことになろう。本事業の目標受益者は、当該事業サービス地区内の農民である。本事業の主眼とするところは、その選定基準に見られるように、事業実施地区並びにその周辺地域における貧困の撲滅である。事業選定に当たっては、とりわけ下記事項が重視されている。

- 1) 開発に社会正義と公平を立脚させるべく、農地改革計画の推進
- 2) 地域の貧困発生率
- 3) 失業対策
- 4) 開発のポテンシャル

- 11.29 灌漑開発が行われる農村地域の経済は、現在のところ主に米の生産によって支えられているが、灌漑開発は米の生産のみならず他の農作物の栽培、すなわち作物の多様化をも可能ならしめる。実際、それぞれの地域の事情に即して、他の高収量、高収益の作物も導入されて行くことになろう。
- 11.30 乾期米は、全開発面積の90%で栽培されることになろう。これは、本事業の実施で灌漑施設は整備されることになるが、乾期における水量不足もあり栽培面積が減少した結果である。しかしながら、乾期は一方で野菜並びに他の現金作物の栽培に適したシーズンである。米の生産増と他の作物の栽培により、流通を含む農業加工業も進展し、地域の経済活動は活況を呈したものになろう。
- 11.31 外国為替の節約と獲得
 フィリピン人の主食は米で、1人当りの平均的米の消費量は約100キログラムである。過去10年の年平均需要量は約530万トンで、そのうちの93.5%は食糧用、6.5%がその他の用途であった。いくつかの米増産計画が実施されたにもかかわらず、地域毎の需要が満たされることはなく、しかも年毎の生産についても振幅の度合いが大きい。米の輸入は、1987年を除いて1984年以降続いている。輸入量が多かった年は1985年で、53万8,000トンにのぼった。(表11-10参照)
- 11.32 SSIDPの実施により米の輸入代替が実現し、フィリピンの米生産事情は一変するだろう。事業の進展と相まって、米の輸入量は漸減し、自給自足が達成されることになろう。こうした米の輸入に割り当てられてきた外貨は、いずれ別の用途のために用いることが可能となるばかりか、輸出も夢ではない。本事業が順調に実施されれば、1996年には2万トンの米の余剰が見込まれている。本事業は長期的には同国の国際貿易収支の動向を左右、もしくは強化するものとなるだろう。
- 11.33 本章では、経済的内部収益率 (EIRR) による評価に加えて、外貨の節約と獲得効果を評価するために、“国内資源コスト” (別称ブルーノ比率) を算定した。これは、事業が外貨1単位を節約または獲得するためにどれだけの国内資源の投入を要するかを示すもので、次式によって算定を行なった。

$$\text{国内資源コスト} = \frac{\text{外貨節約/獲得に要する内貨コストの現在価値}}{\text{節約/獲得される外貨の現在価値}}$$

上記の内貨と外貨に区分されるコストと便益の内訳は表11-12に示す通りである。

資本の機会費用 (OCC) を15%で割り引いた国内資源コストは、9.3ペソ=1米ドルと算定された。この値は公定為替レート (27.5ペソ=1米ドル) の約35%と小さく、従って本事業は外貨節約、獲得の見地からも非常に有効的である。

11.34 農村の収入水準の向上

農村在住家族の平均収入は、都市居住家族の半分でしかない。この結果、貯蓄率にしても都市において高く、農村地域の2.5倍以上となっている。都市居住家族の収入は支出をはるかに上回る高い伸び率で増加している。これに反し、農村在住家族の家計においては、支出の伸

びが顕しい。同国の貧困発生率は1988年で49.5%であった。(表11-13参照)なお、農村地域並びに都市圏での貧困発生率は、それぞれ63%と52%という結果となっている。

- 11.35 灌漑施設や農道の建設といったインフラ整備事業は、地域住民の生産能力並びに福祉全般の向上に寄与する。しかし、こうした施設やサービスは、住民、とりわけ農村の低所得層のニーズにより良く対応するには未だ不十分である。灌漑事業は農村地域、とりわけ農業生産地区において開発推進の主要手段と見なされている。また、本事業のような共同灌漑事業は、農村地域の辺りな所にもその効果が及ぶことから、経済面は言うに及ばず公正分配の見地からもきわめて有効である。こうしたことから、フィリピン政府は経済的に窮乏な地域において灌漑開発を優先/推進する政策を打ち出している。
- 11.36 フィリピンのほとんどの地域において、水不足が農業生産の制約要因となっている。特に、稲作の低生産性は、この水不足による場合が多い。本SSIDPは同国の抱えるこうした水不足問題を解決すべく立案された計画で、すべての事業が実施した暁には、全国でおよそ57万ヘクタールの灌漑用地が整備されることになる。同事業の実施に伴い、雨期米の1ヘクタール当りの収量は2.7トンから3.6トンへと増大しよう。本事業の収入増は、ヘクタール当りの単収増と作付率のアップによるところが大きい。
- 11.37 本事業の主眼とするところは、直接的には安定した灌漑と充実した農業支援サービスを通じて、約42万戸の農家世帯の収入を向上/安定させ、貧困の軽減に寄与することにある。本事業において平均農地面積の1.5ヘクタール以上を保有する農家は、生計費並びに維持管理費、他を支出し、さらに十分なる貯蓄をする家計の余裕があるだろう。修復事業並びに新規事業双方の平均農地面積より得られる農家収入は、事業の実施によりそれぞれ1.2倍と2.5倍になるものと推定される。生産による収入増に伴い、余剰金は農外投資にも振り向けられることになるだろう。かくて、農業加工業、運送、それに流通面での経済活動も活発化し、農家世帯はこうした連関産業によってもたらされる恩恵にもあずかることが可能となる。
- 11.38 農村資源の活用
SSIDPで取り上げられている開発案件は修復1,975件、新規2,062件の計4,037件である。各事業地区のサイトは、いずれも経済活動に資する各種資源に恵まれているにもかかわらず、それらの多く、特に土地、水そして労働資源はあまり有効に活用をされていない。かかる資源の開発により地域のポテンシャルを高めるに当たっては、灌漑開発が最も有効な変革手段となるだろう。
- 11.39 1991年時点において、フィリピンの灌漑開発はそのポテンシャルのおよそ半分でしかない。開発の遅れの理由として灌漑施設の不備があげられる。共同灌漑事業として灌漑開発が可能な面積は約42万ヘクタールである。そのうち本事業の実施により23万ヘクタールが新規に造成/整備されることになるだろう。
- 11.40 灌漑事業の実施は地域の資源開発の口火でしかなく、これら事業の完成とともに種々の活動が提起されることになる。灌漑開発の主要目標である生産増により、農産加工業や流通分野への波及効果も生じよう。具体的には、精米所、加工施設、購買センター、倉庫、商店等々による取り引き、商業活動が活発になる。かくて、商活動の拡大化に伴い、物資と人の往来も急増し、それに見合った交通輸送網も発達するだろう。

- 11.41 灌漑水田は環境面で最も安定した侵食防止の土地利用法である。本事業は資源の有効利用と、高い生産性の実現の見地から策定されていることから、環境面でも建設的なインパクトをもたらすであろう。
- 11.42 農村住民の制度・組織能力の向上
本事業実施の一環として水利組合に対する灌漑システムの管理強化が行われることになるが、この過程で受益者に対する適性技術の移転が計られるだろう。さらに、当該事業に係わる他の機関によっても彼ら農民の収入増に結びつく技術移転が行われる予定である。
- 11.43 事業への農民参加を推進するに当たっては、その支援を行う官側の現場責任者、とりわけ灌漑開発官（IDO）の資質が成否の決め手となる。この開発官は事業受益者らを灌漑事業の計画立案と建設に参画させるとともに、その完成後に施設の維持管理を委ねるべくその組織化に協力する責務を負っている。
- 11.44 本事業実施の一環として、計画立案、建設、それに運営管理の3段階を通じた水利組合の能力強化（特に人員／組織、施設、資材、資金面での）が計画されている。上記能力強化の支援は、主に水利組合に対するトレーニングを通じておこなわれることになろう。
- 11.45 収入の公平分配と福祉の向上
フィリピン政府は、農業社会構造の実質的変革を実現するために土地の配分を目標とする総合農地改革計画（CARP）を推進中である。この農地改革計画は、同国の国家開発目標のひとつである“公平と社会正義”実現するための重要政策としてその成り行き、進捗が注目されている。
- 11.46 しかしながら、現行の共同灌漑開発事業においては、上述の社会経済目標の達成はあまり重視されていない。これを受けて、国家灌漑庁（NIA）の“事業選定基準”でも、当該受益者の土地保有形態は考慮されていない。つまり、現行の事業選定基準ではその受益者が経済的に貧窮な借地人であるか、また、比較的裕福な土地所有者であるかといったことは問題となっていない。
- 11.47 以上に鑑みて、SSIDPでは従来の共同灌漑開発事業のいわゆる抜け穴を埋めるべく、公平と社会正義を標榜する総合農地改革計画（CARP）との関連性を評価する基準を含む新しい選定基準を盛り込んでいる。これにより、CARP促進・戦略地域内における事業が優先されることになっている。（図11-03参照）
- 11.48 SSIDP促進のために抽出された実施候補案件数は、総計4,037である。これらの事業サイトは全国に散らばっていることから、事業実現の暁には社会・経済面で全国規模の効果が期待できる。事業実施案件は、1人当りの地域総生産（RGDP）が低い管区及び州に位置するものが優先される。本事業は地域間の格差を軽減するために、収入水準の低い（4～6クラス）遠隔地や郡といった後進地域の開発に狙いを定めている。（図11-04参照）
- 11.49 地域成長への貢献と乗数効果
事業の実施により当該地域の農業開発は促進され、これにより農産加工、農業サービス部門等の様々な前方、後方連関産業が振興し、雇用創出及び収入増の効果をもたらすことになる

う。米の増産により生じた副産物であるわら及び糠は、畜産振興に役立つし、本事業は環境の保全ばかりでなく、農村地域の交通、流通面での改善、向上にも寄与する。以上からも、SSIDPは、定量化することの難しい様々な副次的インパクトを含む多大な効果を有したプロジェクトであると言える。

11.50 本事業の地域経済効果には、投資誘発効果と農業生産誘発効果の2つがある。

(1) 投資誘発効果

フィリピンの建設部門に係わる乗数係数は1.9747808*である。SSIDP全体の投資額（10年計画1993年～2002年）は254億7,000万ペソであるので、投資誘発効果はしたがって503億ペソと推計される。

(2) 農業生産誘発効果

本事業の実施により、米ならびにその他農作物の生産増が計画されており、これにより当該地域経済への効果は相当なものとなるものと見込まれている。同国の農業生産に係わる乗数係数は1.5196468*である。同事業の耐用年数50年間（1994年～2042年）における総生産額は、3兆9,462億ペソであるので、農業生産誘発効果は、従って、5兆9,968億ペソと推計される。

出典： * Matrix of Inverse Coefficients, (1-A) ¹Philippines 1983, 1990 Philippine Year book, National Statistical Board

11.51 1995年、2000年、それに2005年における本事業実施による乗数効果は、以下のとおり推定される。

(単位：百万ペソ)

年度	投資誘発	乗数効果 生産誘発	合計	国内総生産(GDP) 推定値	国内総生産に対する 本事業の貢献
1995	33,591	2,320	35,911	2,454,895	1.46%
2000	7,433	69,281	76,714	5,416,646	1.42%
2005	-	138,584	138,584	12,083,444	1.15%

環境影響評価

11.52 SSIDP 10年開発計画下の開発対象面積（57万ヘクタール）は、既に稲作地として利用されており、またその内の約49%は灌漑されている。したがって、SSIDP事業の実施により著しく環境条件が変化することはないだろう。

11.53 本事業の中には、大統領令第1151号「フィリピンの環境政策」で言うところの“環境面で著しい影響の生じる工事”は含まれていないので、詳細な環境評価は必要ないであろう。また、既存の稲作地での開発、整備であることから、土地の取得や移住などを含む深刻な社会問題は起きないものと思われる。

11.54 下流域への影響

本事業の実現により生じ得る影響のひとつに、下流での水量減がある。ただし、どの事業もすでに灌漑のための水利権を有しているので、この点で大きな問題が生じる可能性はないだろう。ただ、農薬や肥料の使用により下流の水質汚染が危惧されるが、こうした問題も当該地における適切な水管理並びに農作業の励行によって解決可能である。

SSIDPの総合評価

11.55 開発の社会・経済効果を含むSSIDPの総合評価の詳細は、次表にとりまとめられている。

小規模灌漑事業の総合評価

評価指標	グループ"A"	10ヶ年開発計画
経済的妥当性：	妥当	妥当
(1)経済的内部収益率	29.0%	26.7%
(2)便益・費用比率(割引率10%)	3.6	3.3
(3)純現在価値(割引率10%)	27億2,800万ペソ	190億3,500万ペソ
技術的妥当性：	特に問題は無い	特に問題は無い
環境への影響：	問題となる影響は無い	問題となる影響は無い
<hr style="border-top: 1px dashed black;"/>		
事業実施案件数：	459	4,037
(1)既存案件改修(CIS)	313	1,975
(2)新規案件(CIP)	146	2,062
灌漑開発面積 (ha)：	70,831	570,517
(1)既存案件改修(CIS)	49,024	280,517
(2)新規案件(CIP)	21,807	290,000
受益者総数 (農家戸数)：	53,700	419,700
総事業費：	20億6,000万ペソ	254億7,000万ペソ
<hr style="border-top: 1px dashed black;"/>		
開発による便益：		
(1)増加粗生産量(トン)	155,000トン	1,530,000トン
(2)雇用機会創出 (10ヶ年)		
(a)建設工事期間	640万人・日	6,800万人・日
(b)農作業	1,300万人・日	9,700万人・日
(3)外貨節約・獲得	213億ペソ	912億ペソ
(4)乗数効果		
(a)投資誘発効果	46億ペソ	503億ペソ
(b)農業生産誘発効果	7,590億ペソ	5兆9,970億ペソ
(c)国内総生産に対する貢献度	0.22%	1.42%
(5)その他		
(a)本事業の実施により米自給率100%を達成する。		
(b)本事業の実施により米増産の他、農産物の多様化が促進し、この波及効果として農産加工業並びに諸種の関連商活動が振興される。		
(c)本事業の案件位置は全国に分散していることから、社会・経済面で全国規模の効果が期待できる。		
(d)本事業では案件選定の基準として、開発の遅れた地域の事業実施に優先順位を置いているので、事業実現の暁には貧農の生活水準が改善/向上する。		
(e)同事業実施の一環として、農民の直接参加が組み込まれているので、これにより農村住民の維持管理能力向上が計られる。		

第12章 勧告

SSIDPの早期実施

- 12.01 農業分野がフィリピンの基幹産業であるにもかかわらず、農民の大部分が居住する農村部は、貧困に直面している。農村部で職につけない失業者が、職を求めて都市へ流れ込み、都市の社会問題を引き起こしている。農村地域の活性化が緊急の課題である。このため、政府は農地解放等、種々の救済プログラムに着手している。しかし、農村部は依然として期待する生活水準に遠く及ばない。
- 12.02 4,037件（既存案件；1,975件、新規案件；2,062件）の事業で構成される小規模灌漑開発計画（SSIDP）は灌漑開発による農村地域の発展を促進する。全国的に水資源が農業生産の重要な要因となっている。農産物、特に籾の低生産性は水不足が原因である。SSIDPは、全国に分布する570,000ヘクタールの灌漑開発を行い、約420,000世帯の農家収入の改善を図り以て貧困撲滅を目指している。
- 12.03 SSIDPの10ヶ年開発計画は、技術的にも経済的にも妥当で、実施可能であることが確認された。特に経済性においては、全対象案件4,037件に対する内部収益率は、26.7%と高く、またこれら案件のうち最も実施優先度の高い“A”グループ459件に対する内部収益率は、29%とさらに高くなっている。
- 12.04 SSIDPは農村経済の活性化、農村福祉向上への多大な寄与が期待される。特に下記効果が期待できる
- (1) 平均経営規模農家の事業を実施した場合の農家収入は、既存事業と新規事業でそれぞれ1.2及び2.5倍増となる。これは、灌漑を実施することにより、単位収量・作付け率が増加することによる。
 - (2) SSIDPの灌漑施設の建設で6,800万人・日の労働力が、また建設後の運営及び営農活動により9,700万人・日の農業労働の雇用が創出される。
 - (3) 事業の実施により当該地域の農業開発は促進され、これにより農産加工、農業サービス部門等の様々な前方、後方連関産業が振興し、雇用創出及び収入増の効果をもたらす。
 - (4) SSIDP事業の実施により農民の事業への直接参加が促進され、農民の維持管理能力が強化される。
 - (5) SSIDPは経済的に逼迫した地域での実施の優先度合いが高いので貧農の生活水準向上に寄与する。
 - (6) SSIDPの実施により米増産以外に、農産物の多様化が促進される。この波及効果として農村工業等が振興され間接的に農外収入源を創出する。
- 12.05 これらの効果を勧告し、SSIDPの早期実施を勧告する。特に、第1期計画としての“A”グループ案件を早急に実施すべきである。
- 12.06 第1期計画は(1) “A”グループ案件の実施と(2) 州灌漑事務所(PIO)の組織強化の2つの

プログラムから成る。(1)のプログラムには、事業の持続性を考慮して、“B”及び“C”グループ案件の計画見直し・新規調査及び設計業務を含め、また(2)のプログラムには以下の事項を含めることが望まれる。

- (1) PIO職員の事業推進能力の強化・育成のトレーニング実施
- (2) 調査・計画・設計・積算等のPIO業務の標準化
- (3) 事務所施設及び建設機械、調査／事務機器の整備拡充
- (4) データベースシステムの導入及び活用（維持管理要員育成トレーニング含む）

SSIDP実施のための地方灌漑事務所組織強化計画

12.07 SSIDP実施のための地方灌漑事務所組織強化計画

地方灌漑事務所の事業実施能力を高めるために、本組織強化計画では次の4項目の改善を目指す（第8章参照）。

- (1) 組織運営面の改善
- (2) 人事・研修・報酬面の改善
- (3) 施設・設備面の改善
- (4) 財政面の改善

12.08 上記改善目標は若干の修正によって、水利組合の組織強化計画にも対応可能である。しかし、水利組合の組織強化は地方事務所職員、特に水利組合担当の灌漑開発官の資質・能力に負うところが大きい。

12.09 地方レベルで組織強化を成功させるためには、NIA本部の機能強化が不可欠である。組織強化計画においては、新規・既存灌漑事業の計画立案、事業実施及び維持管理を監督する共同灌漑部の正式な設立を期待する。共同灌漑部には適任者を配し、地方事務所に直結可能なデータベースシステムの構築等必要な機材を整備する必要がある。

12.10 組織強化計画においては以下の提言を行う（短期・中長期の提案の詳細は表12-01に示した）。

地方灌漑事務所

- (1) 州灌漑事務所長（管区灌漑事務所長を含む）の共同灌漑事業に関する計画立案・事業実施にかかる権限拡大
- (2) 地方職員の人員補強、研修機会均等化、十分な報酬の供与
- (3) 施設・設備面の拡充
- (4) 事業資金源の確保、予算配分方法の改善

水利組合

- (1) 水利組合の自立、組織活性化を図る
- (2) 水利組合員に対する教育・啓蒙活動の継続実施

- (3) 受益者に対する償還・負担義務の徹底
- (4) 他の関連支援組織との連携

SSIDP事業の監視及び評価

12.11 SSIDPを成功させるためには、SSIDP事業のモニタリング及び事後評価システム（PBME）の確立を提言する。PBMEでは、事業の進捗、開発目標達成（特に事業便益）、事業実施に係わる種々の要因の評価及び必要に応じた問題解決法の提示を行い、最終的にはそれらの成果及び今後の示唆をとりまとめる。SSIDPのモニタリング及び事後評価システムは次の項目について実施する様勧告する。即ち(1)ベンチマーク調査、(2)適性監視、(3)事業実施後の社会・経済効果評価である。これにより、情報の収集・分析及び評価の効果的実施が可能となる。

12.12 PBMEに関する勧告は下記のとおりである。

- (1) 水利組合の組織活動に関しては、水利組合員の技術・意識が依然初歩的段階にあることを勘案し、組合員との対話や非公式な接触を通じて情報を得る、また協力者に対しては順当な報酬を与える。
- (2) 事業管理者、水利組合、関連組織・機関の何れにも有効なシステムを確立する。
- (3) 平易さ、信頼性、運営の持続性、慢性的資金難に配慮した費用の効率的運用ができるPBMEシステムの基本的機能を確立する。
- (4) NIA組織の合理化・経費節減の必要性に鑑み、既存の共同灌漑事業計画の監視・評価システムをここで提案したPBMEシステムと統合させることも検討する。

SSIDP事業管理のためのデータベースシステム

12.13 JICA調査団は、インベントリー調査で収集したデータ・情報の集計・分類を目的としたデータベースを構築した。これは、小規模灌漑事業の実体把握および10ヶ年開発計画策定に十分活用された。NIAは情報管理システムの重要性を認識しており、事業実施管理にデータベースの活用を意図している。

12.14 NIAの要請を受けて、将来データの追加・更新を行うことによってNIAが独自にデータベースの維持管理を行える様にJICA調査団はデータベースを修正した。インベントリー調査で得たデータ及び解析用プログラムで構成される本システムは、平成3年12月にNIAに移管された。データベースの詳細は付属資料-Jに解説されている。

12.15 このシステムは、主にNIA本部の共同灌漑部職員用に作成されたものである。利用者は必要に応じて素早く基礎データや情報の検索が可能となり、したがって開発計画策定や監視・評価が円滑に推進できる。

12.16 このデータベースはSSIDPの効率的管理・推進を目的として、共同灌漑部が十分活用し、ま

た将来最新データ・情報を定期的に追加してデータベースの更新・拡大を図る様提言する。このためには、共同灌漑部にデータベースの管理、修正、更新が十分可能な職員を配し、必要に応じてプログラム作成の任に当たらせる必要がある。

ピナツボ山噴火被災案件に対する提言

12.17 ピナツボ山噴火（1991年6月）によって農地、農作物、施設等は被害を受け、この結果ターラック、ザンバレス、パンパンガ、バタアン各州の経済は壊滅的な打撃を受けた。被災地とされているピナツボ山を中心とした半径40km圏内に位置するSSIDPの各案件も噴火の害を被った。しかし、10ヶ年開発計画はNIAと協議した結果、噴火前のデータに基づいて策定することとなった。

12.18 被災地とされているピナツボ山を中心とした半径40km圏内にあるSSIDP対象案件は、以下に示す63CIS（約9,750ha）と16CIP（約2,000ha）と推定されている。また、このなかで既存案件の95%、新規案件の76%はピナツボ山から20-40kmの距離範囲に位置している。被災地内の案件リストを表12-02と-03に示す。また、被災地内の案件位置図を図12-01に示す。

州	CIS		CIP	
	灌漑面積 (ha)	案件数	灌漑面積 (ha)	案件数
ターラック	2,396	9	130	1
ザンバレス	982	5	-	-
パンパンガ	5,448	40	1,885	15
バタアン	870	9	-	-
合計	9,696	63	2,015	16

12.19 最新の報告によれば、ピナツボ山は57億 m^3 の火砕流と5億 m^3 の火山灰を上記四州に噴出したと言われている。噴火後は、連続した豪雨により、大規模な泥流を誘発し、河川に大量の噴出物を滞積させた。さらに泥流は、通水能力を失った河川から氾濫し、農地及び灌漑排水施設にも噴出物を滞積させた。また近隣山腹には、莫大な量の噴火物が残っており一説によれば、これらすべての噴火滞積物が、降雨により下流域へ洗い流されるには、少なくとも5年は必要であると言われている。

12.20 このような状況下で、今までと同じように改修及び新規開発事業を実施すれば、再び噴火滞積物の泥流により被害を受けることになるかと推定される。とりあえず、本格的な事業実施は、噴火滞積物が、洗い流されるまで待つことが必要と考えられる。関係州灌漑事務所は、早急に被害状況等のインベントリー調査を行い、暫定的用水源として、浅井戸開発を検討することを提案する。

附表

作業監理委員・調査従事者及びNIA関係者名簿

NIA Officials Concened

- | | |
|------------------------------|----------------------------------|
| (1) Jose B. del Rosario, Jr. | Administrator |
| (2) Jose A. Galvez | Assistant Administrator for SOEM |
| (3) Antonio A. Galvez | OIC, CID |
| (4) Sumio Oishi | JICA Expert, NIA |

JICA Advisory Committee

- | | |
|------------------------|-------------------------|
| (1) Kazuo Kimura | Chairman |
| (2) Osamu Umekawa | Irrigation and drainage |
| (3) Teruyuki Nishijima | Geology |
| (4) Haruji Nakagawa | Agriculture |
| (5) Masaki Mizuno | Project Evaluation |

NIA Technical Advisors

- | | |
|--------------------------|-----------------------|
| (1) Isidro R. Digal | Manager, PDD |
| (2) Rodrigo N. de Guzman | Division Manager, CID |

NIA Counterpart Personnel

- | | |
|---------------------------|--|
| (1) Calixto P. Timonera | Counterpart Team Leader |
| (2) Virgilio S. Miguel | Irrigation and Drainage |
| (3) Francisco T. Orense | Agriculture |
| (4) Conrado M. Paredes | System Design and Analysis |
| (5) Silvino A. Alonzo Jr. | Meteorology and Hydrology |
| (6) Violeta M. Benico | Agro-economy and Institution |
| (7) Adonis C. Beringuela | Facility Planning and Design (Phase-I) |
| (8) Epifanio G. Gacusan | Facility Design |
| (9) Antonio F. Mamuyac | Researcher |
| (10) Ariel M. Baña | Researcher (Phase-I) |
| (11) Emelita B. Parallon | Design and Cost Estimates (Phase-II) |
| (12) Artemio A. Tapa | Design and Cost Estimates (Phase-II) |

JICA Study Team

- | | |
|---------------------------|----------------------------|
| (1) Tadashi Sakamoto | Team Leader |
| (2) Naoki Ariga | Co-leader/Project Planning |
| (3) Toshikazu Higashikawa | Irrigation and Drainage |
| (4) Yukihiko Kawahara | Facility Design |
| (5) Wilmarth S. Mirasol | Agro-Economy/Institution |
| (6) Hishasi Ikewada | Agriculture |
| (7) Sei-ichi Makino | Agronomy/Soil |
| (8) Kunita Okuwa | Hydrology |
| (9) Takuya Igawa | System Design and Analysis |
| (10) Fumihiko Furuichi | Project Evaluation |

フィリピン国の経済指標

(1) TOTAL POPULATION: 1980-1990

	1980	1990
(1) Total Population (million)	48.078	61.477
(2) Annual growth rate (%)	—	2.3
(3) No. of households (million)	8.607	11.380
(4) Average size of household	5.6	5.3
(5) Population density	160	202

Source: Preliminary Population Count, NSO, August 1990

(2) MACRO-ECONOMIC INDICATOR: 1986-1990

	1986	1987	1988	1989	1990
(1) GNP at current prices (¥billion)	627.1	708.4	825.9	964.0	1,130.0
(2) Real GNP growth (%)	1.9	5.8	6.7	5.7	3.5
(3) Per capita GNP at current price (¥1,000)	11.0	12.3	14.0	15.9	18.4
(4) Exports fob (US\$ million)	4,842	5,720	7,074	7,821	8,450
(5) Imports fob (US\$ million)	5,044	6,737	8,159	10,419	12,260
(6) Current account (US\$ billion)	-0.95	-0.44	-0.39	-1.47	-2.98
(7) Total external debt (US\$ billion)	28.3	30.1	29.4	30.4	...
(8) Total debt service (US\$ billion)	2.65	3.22	3.30	3.42	3.68

Source: Philippines Country Profile 1990-1991, The Economic Intelligence Unit

(3) CONSUMER PRICE INDEX: 1980-1990

	1983	1984	1985	1986	1987	1988	1989	1990
(1) Inflation rate (%)	10.0	50.3	23.1	0.8	3.8	8.8	10.6	14.5
(2) Exchange Rate: Peso/US\$	14.0	19.8	19.0	20.5	20.8	21.3	21.7	24.3
(3) Consumer price index: 1978=100	190	286	353	355	369	401	443	508

Source: Philippines country Profile 1990-1991, The Economic Intelligence Unit

(4) POVERTY INCIDENCE: 1988

	Poverty threshold*	Nos. of families below poverty line (million)	% of families below poverty line
Urban area	₱4,037	1.297	31.8
Rural area	₱2,531	3.458	52.5
Philippines (total)	₱2,709	5.200	49.5

Source: National Economic Development Authority (NEDA)

*: minimum average monthly income that a family of 6 should receive to be considered above poverty

(5) INDUSTRIAL ORIGIN OF GDP: 1988

	₱ billion	%
(1) Agriculture, forestry and fishery	27.8	27.4
(2) Mining	1.6	1.6
(3) Manufacturing	25.3	24.9
(4) Construction	4.3	4.2
(5) Utilities	2.0	2.0
(6) Transport and Communications	5.5	5.4
(7) Commerce	15.8	15.6
(8) Government and other services	19.2	18.9
Total	101.5	100.0

Source: Philippines country Profile 1990-1991, The Economic Intelligence Unit

(6) TREND OF EMPLOYMENT: 1985-1989

	1985	1986	1987	1988	1989
(1) Labour force (million)	21.3	22.0	23.0	23.4	25.2
(2) Employment (million)	19.8	20.6	20.8	21.5	22.3
(3) Unemployment (million)	1.5	1.5	2.1	2.0	2.9
as % of labour force	7.1	11.1	9.1	8.3	11.4
(4) Underemployment (as % of employed)	33.7	36.0	30.5	29.4	—

Source: Philippines country Profile 1990-1991, The Economic Intelligence Unit

NIAの開発目標 (1990-2000年)

I. Target for New Development

(Unit: 1,000 ha)

Year	Service Area (ha)			Total Service Area (ha)
	National	Communal	Pump	
1990	16.1	19.2	0.0	35.3
1991	16.5	39.6	0.0	56.1
1992	7.6	20.0	0.0	27.6
1993	12.0	20.3	0.0	32.3
1994	20.1	21.1	0.0	41.2
1995	20.4	17.4	0.0	37.8
1996	19.2	16.3	0.0	35.5
1997	39.3	21.3	0.0	60.6
1998	50.2	24.4	0.0	74.6
1999	57.8	22.6	0.0	80.4
2000	30.0	19.8	0.0	49.8
Total	289.2	241.7	0.0	531.2
Average/Year	26.3	22.0	0.0	48.3

Minor differences in totals due to rounding

Source: NIA Corporate Plan: 1990 - 2000
NIA, May 1990II. Target for Rehabilitation

(Unit: 1,000 ha)

Year	Service Area (ha)			Total Service Area (ha)
	National	Communal	Pump	
1990	262.4	83.5	0.0	345.9
1991	94.5	40.2	0.0	134.7
1992	118.4	21.5	0.0	139.9
1993	30.8	21.0	0.0	51.8
1994	31.1	21.3	0.0	52.4
1995	37.5	20.4	0.0	57.9
1996	70.0	18.2	0.0	88.2
1997	58.5	22.4	0.0	80.9
1998	44.0	22.8	0.0	66.8
1999	23.9	21.6	0.0	45.5
2000	17.8	21.4	0.0	39.2
Total	788.9	314.1	0.0	1,103.2
Average/Year	71.7	28.6	0.0	100.3

Minor differences in totals due to rounding

灌漑開発の現況 (1980-1989年)
STATUS OF IRRIGATION DEVELOPMENT: 1980 - 1989
(New Development)

(Unit: 1,000 ha)

Year	National		Communal		Pump		Total
	Annual	Comulative	Annual	Comulative	Annual	Comulative	
1979		475.2		552.1		152.1	1,179.4
1980	-3.0	472.2	27.7	579.8	0.0	152.1	1,204.1
1981	19.5	491.7	22.3	602.1	0.0	152.1	1,245.9
1982	22.6	514.3	32.0	634.1	0.0	152.1	1,300.5
1983	35.6	549.9	14.8	648.9	0.0	152.1	1,350.9
1984	-1.6	548.3	9.9	658.8	0.0	152.1	1,359.2
1985	19.9	568.2	6.3	665.1	0.0	152.1	1,385.4
1986	27.7	595.9	3.7	668.8	0.0	152.1	1,416.8
1987	1.1	597.0	4.3	673.1	0.0	152.1	1,422.2
1988	17.2	614.2	11.5	684.6	0.0	152.1	1,450.9
1989	6.9	621.1	11.4	696.0	0.0	152.1	1,469.2

(a) Service areas were firmed up.

(b) Small systems were turned over to IAs and thus converted to CISs.

Average/Year	14.6		14.4		0.0		29.0
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Minor differences in totals due to rounding

Source: NIA Corporate Plan: 1990 - 2000
NIA, May 1990

灌漑開発の現況 (1980-1989年)
STATUS OF IRRIGATION DEVELOPMENT: 1980 - 1989
(Rehabilitation)

(Unit: 1,000 ha)

Year	National		Communal		Pump		Total
	Annual	Comulative	Annl	Comulative	Annual	Comulative	
1980	85.8	85.8	17.6	17.6	0.5	0.5	103.9
1981	27.4	113.2	16.3	33.9	0.0	0.5	147.6
1982	27.7	140.9	20.0	53.9	0.0	0.5	195.3
1983	23.8	164.7	17.9	71.8	0.0	0.5	237.0
1984	5.6	170.3	12.4	84.2	0.0	0.5	255.0
1985	10.2	180.5	11.3	95.5	0.0	0.5	276.5
1986	4.7	185.2	10.4	105.9	0.0	0.5	291.6
1987	5.3	190.5	21.3	127.2	0.0	0.5	318.2
1988	155.1	345.6	40.9	168.1	0.0	0.5	514.2
1989	207.7	553.3	21.6	189.7	0.0	0.5	743.5

(a) Service areas were firmed up.

(b) Small systems were turned over to IAs and thus converted to CISs.

Average/Year	55.3		19.0		0.0		74.3
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Minor differences in totals due to rounding

Source: NIA Corporate Plan: 1990 - 2000
NIA, May 1990

灌溉開發面積 (1989年)
IRRIGATION DEVELOPMENT : 1989

Region	Potential Area (ha)	Service Area (ha)			Total Service Area (ha)	%
		National	Communal	Pump		
1	309,810	45,386	132,782	5,520	183,688	59.3
2	539,710	153,287	83,486	36,593	273,366	50.7
3	482,220	172,064	84,817	22,946	279,827	58.0
4	263,590	55,455	69,818	27,948	153,221	58.1
5	239,650	16,209	50,887	16,943	84,039	35.1
6	197,250	53,500	32,285	21,677	107,462	54.5
7	50,740	0	18,611	2,481	21,092	41.6
8	84,380	15,633	36,100	2,176	53,909	63.9
9	76,500	13,348	21,337	2,804	37,489	49.0
10	230,150	20,282	44,636	2,045	66,963	29.1
11	290,250	38,370	62,564	5,872	106,806	36.8
12	362,080	37,610	58,621	4,123	100,354	27.7
Total	3,126,330	621,144	695,944	151,128	1,468,216	47.0

Source: NIA Corporate Plan: 1990 - 2000
NIA, May 1990

ANNUAL STATUS OF IRRIGATION
DEVELOPMENT: 1979 - 1989

Year	Service Area (ha)			Total Service Area (ha)	%
	National	Communal	Pump		
1979	475,174	552,092	152,128	1,179,394	37.7
1980	472,182	579,751	152,128	1,204,061	38.5
1981	491,729	602,081	152,128	1,245,938	39.9
1982	514,334	634,102	152,128	1,300,564	41.6
1983	549,930	648,837	152,128	1,350,895	43.2
1984	548,345	658,807	152,128	1,359,280	43.5
1985	568,203	665,099	152,128	1,385,430	44.3
1986	595,902	668,828	152,128	1,416,858	45.3
1987	596,953	673,119	152,128	1,422,200	45.5
1988	614,164	684,639	152,128	1,450,931	46.4
1989	621,144	695,944	152,128	1,469,216	47.0

Source: NIA Corporate Plan: 1990 - 2000
NIA, May 1990

共同灌漑事業予算の管区及び州灌漑事務所に対する分配 (1/5)

(1) REGIONAL SHARING FORMULA

$$RA = 0.25 NA/12 + 0.25 NA (UCLR/UCLN) + 0.25 NA (RNI) + 0.25 NA (RPI)$$

RA: Regional Allocation

NA: National Allocation

UCLR: Unirrigated Communal Land in the Region

UCLN: Unirrigated Communal Land Nationwide

RNI: Regional Need for Irrigation

$$= 0.35 AFI + 0.35 FRP + 0.30 CC$$

AFI: Average Family Income Index

$$= AFIN / AFIR$$

AFIN: Average Family income (national)

AFIR: Average Family income (regional)

FRP: Food Requirement to Production Ratio

$$= FR/FP (\leq 1.0)$$

FR: Food requirement

FP: Food production

CC: Climatic Condition

$$= TR + RR$$

TR: Typhoon frequency rating

RR: Rainfall rating

RPI: Regional Performance Index (average for last 2 years)

$$= \text{Expenditures/Releases}$$

共同灌漑事業予算の管区及び州灌漑事務所に対する分配 (2/5)

(2) PROVINCIAL SHARING FORMULA

$$PA = 0.50 RA (1/NP) + 0.25 RA (UCLP/UCLR) + 0.25 RA (PPI)$$

PA: Provincial Allocation

RA: Regional Allocation

NP: No. of Provinces in the Region

UCLP: Unirrigated Communal Land in the Province

UCLR: Unirrigated Communal Land Regionwide

PPI: Provincial Performance Index (PIO's Performance)

$$= 0.25 PP + 0.25 PC + 0.20 OM + 0.25 FM + 0.05 AA$$

PP: Planning and Programming

quantity, quality, timeliness and acceptability of reports and/or designs submitted

PC: Project Construction

overall physical/financial status of project construction, turnover/acceptance, equity generation and IA participation

OM: Operation and Maintenance

no. of functioning systems, area actually irrigated to programmed ratio and frequency of repairs of operable equipment

FM: Financial Management

provincial viability index (expenditures/ releases) and collection efficiency of CIS amortization

AA: Administrative Aspect

cleaness and neatness of office and compound

共同灌漑事業予算の管区及び州灌漑事務所に対する分配 (3/5)

(3) DATA FOR ESTIMATES OF REGIONAL/PROVINCIAL ALLOCATION

Region	Potential Irrigable Area (ha) (RPIA)	Service Area 1989 (ha) (SAR)	Unirrigated Communal Land 1989 (ha) (UCLR)	Average Family Income 1988 (Peso) (AFIR)	Rice Production 1989 (tons) (FP)	Population 1990 (thousand)	Rice Requirement 1989 (tons) (FR)
1	309,810	183,688	72,983	33,421	617,326	4,292	553,368
2	539,710	273,366	65,014	32,765	711,242	2,845	301,200
3	482,220	279,827	19,160	46,034	1,093,842	6,142	709,770
4	263,590	153,221	46,712	38,381	669,595	8,105	1,023,094
5	239,650	84,039	47,825	26,676	433,766	4,388	436,211
6	197,250	107,462	20,130	30,397	702,575	5,672	613,427
7	50,740	21,092	11,243	27,351	150,232	4,616	407,593
8	84,380	53,909	29,400	25,069	246,804	3,360	409,954
9	76,500	37,489	16,609	32,033	247,775	3,195	348,990
10	230,150	66,963	50,679	34,422	305,450	3,616	508,193
11	290,250	107,806	22,572	36,680	470,155	4,334	398,641
12	362,080	100,354	71,853	34,605	499,108	2,942	331,063
Total/ Average	3,126,330 (NPIA)	1,469,216 (SAN)	474,180 (UCLN)	39,728 (AFIN)	6,147,870	53,507	6,041,503
Source	Corplan	Corplan	PIP/CIDIP	NSCB	BAS	NCSO	NCSO

(4) WORKING TABLE (RATIO OF REGIONAL/NATIONAL)

Region	Potential Irrigable Area (RPIA)	Service Area 1989 (SAR)	Unirrigated Communal Land 1989 (UCLR/UCLN)	Average Family Income 1988 (AFIN/AFIR)	Rice Production 1989 (FP)	Population 1990	Food Requirement (FR)
1	0.10	0.13	0.15	1.19	0.10	0.08	0.09
2	0.17	0.19	0.14	1.21	0.12	0.05	0.05
3	0.15	0.19	0.04	0.86	0.18	0.11	0.12
4	0.08	0.10	0.10	1.04	0.11	0.15	0.17
5	0.08	0.06	0.10	1.49	0.07	0.08	0.07
6	0.06	0.07	0.04	1.31	0.11	0.11	0.10
7	0.02	0.01	0.02	1.45	0.02	0.09	0.07
8	0.03	0.04	0.06	1.58	0.04	0.06	0.07
9	0.02	0.03	0.04	1.24	0.04	0.06	0.06
10	0.07	0.05	0.11	1.15	0.05	0.07	0.08
11	0.09	0.07	0.05	1.08	0.08	0.08	0.07
12	0.12	0.07	0.15	1.15	0.08	0.05	0.05
Total/ Average	1.00	1.00	1.00	1.00	1.00	1.00	1.00

共同灌漑事業予算の管区及び州灌漑事務所に対する分配 (4/5)

(5) WORKING TABLE (Calculation of Regional Allocation)

Region	Food Production Index (FRP)	Climatic Condition (CC)	Regional Need for Irrigation (RNI)	Regional Share for RNI	Regional Performance Index (RPI)	Regional Share for RPI	Regional Share (RA)
1	0.90	0.90	0.9998	0.0851	0.8600	0.0909	0.1033
2	0.42	0.90	0.8426	0.0718	0.8000	0.0846	0.0942
3	0.65	0.90	0.7992	0.0681	0.5700	0.0603	0.0630
4	1.00	0.80	0.9523	0.0811	0.7100	0.0751	0.0845
5	1.00	0.80	1.1112	0.0946	0.7400	0.0782	0.0893
6	0.87	1.00	1.0630	0.0905	0.7700	0.0814	0.0744
7	1.00	0.90	1.1284	0.0961	1.0200	0.1078	0.0777
8	1.00	0.70	1.1147	0.0949	0.9200	0.0973	0.0844
9	1.00	1.00	1.0841	0.0923	0.4600	0.0486	0.0648
10	1.00	0.90	1.0240	0.0872	0.9100	0.0962	0.0934
11	0.85	0.80	0.9158	0.0780	0.9600	0.1015	0.0776
12	0.66	0.80	0.8740	0.0744	0.7400	0.0782	0.0969
Total	0.98	10.4000	11.9090	1.01	9.46	1.00	1.00

(6) RATING FOR CLIMATIC CONDITION

- Type-I: Two pronounced seasons, dry from November to April,
wet during the rest of the year
- Type-II: No dry season with very pronounced wet season
from November to January
- Type-III: Seasons not very pronounced, dry from November to April,
wet during the rest of the year
- Type-IV: Rainfall more or less evenly distributed throughout the year

Typhoon frequency (TR)	Rainfall Rating (RR)			
	Type-I 60	Type-II 40	Type-III 60	Type-IV 40
Rare 40	R6	R10&11	R6,7,9,10	R7,11,12
Frequent 30	R1,3,4,5	R5&8	R2&4	R4

Region	TR	RR	CC
1	0.30	0.60	0.90
2	0.30	0.60	0.90
3	0.30	0.60	0.90
4	0.30	0.50	0.80
5	0.30	0.50	0.80
6	0.40	0.60	1.00
7	0.40	0.50	0.90
8	0.30	0.40	0.70
9	0.40	0.60	1.00
10	0.40	0.50	0.90
11	0.40	0.40	0.80
12	0.40	0.40	0.80

共同灌漑事業予算の管区及び州灌漑事務所に対する分配 (5/5)

(7) WORKING TABLE (Sample Calculation of Provincial Allocation)

REGION	PROVINCE	UCLP (ha)	UPLP/UPLR	PPI	Provincial Allocation (PA)	Share in Regional Allocation (RA)	Share in National Allocation (NA)	Budget (P600,000,000)	
I	1 ILOCOS NORTE	17,557	0.24	0.880	0.352	0.151	0.0156	9,340,019	
	2 ABRA	7,233	0.10	0.885	0.317	0.136	0.0138	8,303,085	
	3 ILOCOS SUR	9,086	0.12	0.865	0.319	0.137	0.0139	8,338,326	
	4 MOUNTAIN PROVINCE	19,504	0.27	0.950	0.376	0.161	0.0164	9,827,506	
	5 LA UNION	3,916	0.05	0.890	0.307	0.132	0.0134	8,038,598	
	6 BENGUET	14,057	0.19	0.910	0.347	0.149	0.0151	9,077,940	
	7 PANGASINAN	1,630	0.02	0.950	0.315	0.135	0.0137	8,226,115	
	Sub-total	72,983	1.00	6,330	2,333	1.000	0.1033	61,980,000	
II	8 BATANES	0							
	9 CAGAYAN	12,246	0.19	0.788	0.327	0.177	0.0166	9,971,364	
	10 KALINGA APAYAO	9,344	0.14	0.733	0.303	0.164	0.0154	9,212,779	
	11 ISABELA	15,515	0.24	0.783	0.339	0.183	0.0172	10,316,115	
	12 IFUGAO	14,130	0.22	0.708	0.315	0.170	0.0160	9,582,910	
	13 NUEVA VISCAAYA	3,481	0.05	0.693	0.270	0.146	0.0137	8,221,648	
	14 QUIRINO	10,298	0.16	0.693	0.296	0.160	0.0150	9,019,958	
	sub-total	65,014	1.00	4,398	1,850	1.000	0.0942	56,520,000	
III	15 NUEVA ECUA	6,485	0.34	0.613	0.321	0.188	0.0117	7,033,653	
	16 TARLAC	3,441	0.18	0.538	0.263	0.154	0.0096	5,753,313	
	17 ZAMBALES	4,103	0.21	0.655	0.301	0.176	0.0110	6,582,983	
	18 PAMPANGA	3,276	0.17	0.695	0.300	0.176	0.0109	6,565,667	
	19 BULACAN	840	0.04	0.560	0.234	0.137	0.0086	5,130,578	
	20 BATAAN	1,015	0.05	0.765	0.288	0.169	0.0105	6,302,856	
		sub-total	19,169	1.00	3,826	1,707	1.000	0.0638	37,800,000
IV	21 AURORA	2,942	0.13	0.513	0.206	0.079	0.0067	3,992,495	
	22 QUEZON	2,308	0.05	0.840	0.268	0.102	0.0087	5,196,160	
	23 RIZAL	152	0.00	0.645	0.208	0.079	0.0067	4,026,463	
	24 CAVITE	1,735	0.04	0.650	0.217	0.083	0.0070	4,215,038	
	25 LAGUNA	380	0.01	0.840	0.257	0.099	0.0083	4,996,026	
	26 BATANGAS	3,014	0.05	0.614	0.215	0.082	0.0070	4,173,176	
	27 MARINDUQUE	456	0.01	0.578	0.192	0.074	0.0062	3,733,020	
	28 MINDORO ORIENTAL	4,357	0.09	0.593	0.217	0.083	0.0070	4,210,719	
	29 MINDORO OCCIDENTAL	7,486	0.16	0.745	0.272	0.104	0.0088	5,272,834	
	30 ROMBLON	747	0.02	0.719	0.229	0.0974	0.0088	4,447,182	
	31 PALAWAN	23,153	0.50	0.649	0.332	0.127	0.0107	6,433,455	
		sub-total	46,730	1.00	7,386	2,613	1.000	0.0845	50,700,000
	V	32 CAMARINES NORTE	8,998	0.19	0.856	0.344	0.171	0.0153	9,164,918
33 CAMARINES SUR		11,158	0.23	0.900	0.367	0.182	0.0163	9,758,167	
34 CATANDUANES		1,187	0.02	0.764	0.281	0.140	0.0124	7,466,140	
35 ALBAY		19,846	0.41	0.846	0.399	0.198	0.0177	10,607,556	
36 SORSOGON		4,286	0.09	0.855	0.319	0.159	0.0142	8,502,732	
37 MASBATE		2,350	0.05	0.821	0.301	0.150	0.0133	8,007,180	
		sub-total	47,825	1.00	5,042	2,011	1.000	0.0893	53,580,000
VI	38 AKLAN	510	0.03	0.640	0.316	0.201	0.0148	8,899,150	
	39 CAPIZ	2,586	0.13	0.684	0.303	0.193	0.0142	8,527,311	
	40 ANTIQUE	2,510	0.12	0.818	0.336	0.213	0.0157	9,443,185	
	41 ILOILO	2,183	0.11	0.784	0.323	0.205	0.0151	9,089,814	
	42 NEGROS OCCIDENTAL	12,341	0.61	0.170	0.296	0.188	0.0139	8,320,540	
	43 NEGROS DEL NORTE	0							
		sub-total	20,130	1.00	3,296	1,574	1.000	0.0741	44,640,000
VII	44 CEBU	2,583	0.23	0.022	0.188	0.164	0.0128	7,658,710	
	45 NEGROS ORIENTAL	6,540	0.58	0.735	0.454	0.397	0.0308	18,508,377	
	46 BOHOL	1,020	0.09	0.818	0.352	0.308	0.0239	14,351,982	
	47 SIQUOR	1,100	0.10	0.000	0.149	0.131	0.0102	6,090,743	
		sub-total	11,243	1.00	1,575	1,164	1.000	0.0777	46,620,000
VIII	48 NORTHERN SAMAR	7,012	0.24	0.840	0.370	0.233	0.0196	11,779,643	
	49 WESTERN SAMAR	5,727	0.19	0.810	0.351	0.221	0.0187	11,192,395	
	50 EASTERN SAMAR	5,221	0.18	0.713	0.323	0.203	0.0171	10,282,446	
	51 NORTHERN LEYTE	10,094	0.34	0.012	0.189	0.119	0.0100	6,017,948	
	52 SOUTHERN LEYTE	1,346	0.05	0.980	0.356	0.224	0.0189	11,359,600	
		sub-total	29,400	1.00	3,355	1,583	1.000	0.0844	50,640,000
IX	53 ZAMBOANGA DEL NORTE	3,335	0.20	0.005	0.218	0.234	0.0152	9,108,835	
	54 ZAMBOANGA DEL SUR	13,069	0.79	0.720	0.543	0.584	0.0378	22,692,485	
	55 BASELAN	205	0.01	0.000	0.170	0.182	0.0118	7,089,120	
	56 SULU	0							
	57 TAWI-TAWI	0							
		sub-total	16,609	1.00	0,725	0,931	1,000	0,0648	38,880,000
X	58 SURIGAO DEL NORTE	4,991	0.10	0.815	0.300	0.138	0.0129	7,738,840	
	59 CAMIGUIN	315	0.01	0.820	0.278	0.128	0.0120	7,175,566	
	60 AGUSAN DEL NORTE	4,245	0.08	0.635	0.301	0.139	0.0130	7,772,893	
	61 MISAMIS ORIENTAL	5,142	0.10	0.820	0.302	0.139	0.0130	7,790,337	
	62 MISAMIS OCCIDENTAL	2,884	0.06	0.820	0.291	0.134	0.0125	7,502,757	
	63 BURIDNON	15,482	0.31	0.825	0.354	0.163	0.0152	9,139,515	
	64 AGUSAN DEL SUR	17,610	0.35	0.750	0.346	0.159	0.0149	8,926,545	
		sub-total	59,669	1.00	5,685	2,171	1,000	0.0934	56,040,000
XI	65 SURIGAO DEL SUR	3,105	0.14	0.810	0.337	0.186	0.0145	8,686,749	
	66 DAVAO ORIENTAL	1,695	0.08	0.759	0.309	0.170	0.0133	7,955,310	
	67 DAVAO DEL NORTE	4,080	0.18	0.950	0.383	0.211	0.0164	9,867,676	
	68 DAVAO DEL SUR	3,940	0.17	0.960	0.384	0.211	0.0165	9,892,157	
	69 SOUTH COTABATO	9,752	0.43	0.779	0.403	0.222	0.0173	10,385,215	
		sub-total	22,572	1.00	4,258	1,815	1,000	0.0776	46,560,000
XII	70 LANA DEL NORTE	6,566	0.09	0.905	0.349	0.206	0.0199	11,921,232	
	71 LANA DEL SUR	13,347	0.19	0.406	0.248	0.147	0.0141	8,466,838	
	72 NORTH COTABATO	30,520	0.42	0.950	0.444	0.262	0.0253	15,151,508	
	73 MAGUINDANAO	14,365	0.20	0.810	0.352	0.208	0.0201	12,036,855	
	74 SULTAN KUDARAT	7,055	0.10	0.695	0.298	0.176	0.0170	10,186,513	
		sub-total	71,853	1.00	3,766	1,692	1,000	0.0969	58,140,000
	Total	474,188		49,642			1.0000	600,000,000	

外国援助による共同灌漑事業

Period	Name of Projects		Funding Agency	Service Area (ha)
1	1975-1983 Mindro Rural Development Project*	(CIC)	World Bank	3,000
2	1978-1984 Philippine Rural Infrastructure Project*	(CIC)	World Bank	8,500
3	1976-? Pulangui River Irrigation Project (NIS)**	(CIC)	ADB	2,800
4	1979-? Second Agusan Irrigation Project (NIS)**	(CIC)	ADB	2,000
5	1979-? Allah River Irrigation Project (NIS)**	(CIC)	ADB	1,100
6	1980-? Bicol River Irrigation Project (NIS)**	(CIC)	ADB	2,100
7	1980-1987 Samar Island Rural Development Project*	(CIC)	World Bank	2,000
8	1982-1989 Palawan Integrated Agricultural Dev't Project*	(CIC)	ADB	3,000
9	1983-1990 Communal Irrigation Dev't Project (CIDP-I)	CIS/CIP	World Bank/IFAD	65,000
10	1985-1992 First Irrigation Saterite Project (Region 11&12)*	(CIC)	ADB	15,000
11	1987-1991 Highland Agricultural Development Project*	(CIC)	ADB	2,000
12	1987-1991 Accelerated Agricultural Production Project ***	(CIC)	USAID	10,000
13	1989-1994 Sorsogan Integrated Area Development Project*	(CIC)	ADB	3,000
14	1990-1995 Central Cordillera Agricultural Project*	(CIC)	EEC	?
15	1991-1997 Communal Irrigation Dev't Project (CIDP-II)	CIS/CIP	World Bank	25,000
16	1990-1994 Earthquake Rehabilitation Project(Region 1,2&3)***	(CIC)	World Bank	?
17	1989-1993 Palawan Integrated Area Development Project*	(CIC)	ADB	4,319
18	1992-1996 Communal Irrigation Support Program****	(CIC)	IFAD	?
Total				148,819

CIC: Communal Irrigation Component
 *: mostly small scale less than 50 ha
 **: incorporated into NIS
 ***: Minor repairs only
 ****: under negotiation

Source: National Irrigation Administration (NIA)

Communal Irrigation Development began in 1970's either as component of a rural development project or an irrigation project. Most of these projects were financed either by the World Bank or Asian Development Bank (ADB). The first "pure" project was the World Bank/IFAD financed Communal Irrigation Development Project (CIDP-I) in 1983.

世銀CIDP-Iの概要

1. Project Name : Communal Irrigation Development Project (CIDP-I)
2. Implementation Period : 1983 - 1990
3. Project Features
 - (1) Strengthening of PIOs
 - (i) New construction and rehabilitation of office buildings and workshops
 - (ii) Provision of equipment, machinery and vehicles for construction
 - (iii) Provision of office and workshops equipment
 - (iv) Provision of instruments for topographic surveying and hydrologic observations
 - (2) Training to the following personnel
 - (i) RIOs' and PIOs' staff (some 2,600 persons)
 - (ii) Community Organizers (at present called IDOs)
 - (iii) DA extension workers
 - (iv) IAs
 - (3) Development of CISs/CIPs
 - (i) Plan (as of May, 1982)
 - New Construction : 94 nos. (22,800 ha)
 - Rehabilitation/improvement : 50 nos. (10,700 ha)
 - (ii) Progress (as of July, 1990)
 - New Construction : 64 nos. (18,500 ha)
 - Rehabilitation/implementation : 100 nos. (24,400 ha)
 - (4) Monitoring and evaluation (M&E) system
 - (i) Improvement and implementation of M&E system
 - (ii) Improvement of monthly reporting system
 - (iii) Monitoring the O&M of 80 sample sub-projects
 - (5) Review of NIA's financial reporting system with a support of local consultants
 - (i) Review of the present system
 - (ii) Preparation of 5-year work program for development of integrated financial management
4. Costs

(Unit : US\$ million)			
Items	Local	Foreign	Total
(i) Strengthening of PIOs	3.4	17.2	20.6
(ii) Training	2.1	0.8	2.9
(iii) Development of CISs/CIPs	25.8	25.2	51.0
(iv) Monitoring and evaluation	1.2	0.2	1.4
(v) Review of financial reporting system	0.1	0.2	0.3
(vi) Contingencies etc.	26.7	18.9	45.6
Total	59.3	62.5	121.8

(Source : World Bank's Staff Appraisal Report in May, 1992)

世銀CIDP-IIの概要

-
1. Project Name : Second Communal Irrigation Development Project (CIDP-II)
 2. Implementation Period : 1991 - 1995
 3. Project Features
 - (1) Development of CISs/CIPs
 - (i) New Construction : 65 nos. (10,000 ha)
 - (ii) Rehabilitation/Improvement : 115 nos. (15,000 ha)
 - (2) Development of IAs
 - (i) Review of IA training program
 - (ii) Training and related activities to assist the establishment of IAs and to strengthen IAs
 - (3) Institutional Strengthening of NIA
 - (i) Improvement of NIA's communal irrigation accounting system and collection efficiency
 - (ii) Strengthening of monitoring and evaluation system
 - (iii) Strengthening of RIOs and PIOs
 - (iv) Training of NIA's technical staff including improvement of NIA's ability to assess micro-catchment hydrological potential and yield
 - (4) Agricultural Development
 - (i) Preparation and implementation of agricultural development plans for all the CISs/CIPs of CIDP-II.
 - (ii) Coordination between NIA, DA and DENR
 - (iii) Technical guidance to IAs
 4. Costs

(Unit : US\$ million)

Items	Local	Foreign	Total
(i) Development of CISs/CIPs	18.4	15.5	33.9
(ii) Development of IAs	2.4	0.3	2.7
(iii) Institutional Strengthening of NIA	4.4	7.3	11.7
(iv) Agricultural Development	0.6	0.3	0.9
(v) Contingencies etc.	10.4	5.4	15.8
Total	36.2	28.8	65.0

(Source : World Bank's Staff Appraisal Report in June 1990)

世銀CIDP-I及びIIの管区及び州別案件リスト (1/3)

REGION NO.	NAME	NEW			EXISTING			TOTAL			
		NO.	Area	No.	No.	Area	No.	Area	No.	Area	
I	ILOCOS	01	Ilocos Norte	0	0	16	2,772	16	2,772	0	0
		02	Abra	7	155	4	157	11	312	7	790
		03	Ilocos Sur	2	194	1	211	3	405	13	1,715
		04	Mountain	5	618	0	0	5	618	7	707
		05	La Union	4	209	12	1,280	16	1,489	5	695
		06	Banguet	5	104	1	67	6	171	5	465
		07	Pangasinan	3	390	11	1,864	14	2,254	0	0
			SUB-TOTAL	26	1,670	45	6,351	71	8,021	31	2,852
				0	0	0	0	0	0	5	975
				1	80	8	2,257	9	2,337	1	350
II	CAGAYAN VALLEY	08	Batanes	0	0	0	0	0	0	4	1,290
		09	Cagayan	2	330	2	210	4	540	4	660
		10	Kalinga	2	400	2	360	4	760	0	0
		11	Isabela	4	993	4	310	8	1,303	10	1,985
		12	Iligao	1	600	6	855	7	1,455	1	80
		13	Nueva Viscaya	6	1,435	2	160	8	1,595	0	0
		14	Quirino	16	3,838	24	4,172	40	8,010	3	270
			SUB-TOTAL	0	0	4	976	4	976	0	0
				1	160	3	1,157	4	1,317	0	0
				0	0	4	1,001	4	1,001	0	0
III	CENTRAL LUZON	15	Nueva Ecija	0	0	4	976	4	976	0	0
		16	Tarlac	1	160	3	1,157	4	1,317	3	360
		17	Zambales	0	0	4	1,001	4	1,001	4	900
		18	Pampanga	1	211	4	876	5	1,087	4	724
		19	Bulacan	1	300	0	0	1	300	9	1,925
		20	Bataan	0	0	1	40	1	40	8	1,170
			SUB-TOTAL	3	671	16	4,050	19	4,721	25	4,032
				4	849	1	200	5	1,049	2	460
				6	878	0	0	6	878	3	849
				0	0	0	0	0	0	4	517
IV	SOUTHERN TAGALOG	21	Aurora	0	0	0	0	0	0	0	0
		22	Oxon	0	0	0	0	0	0	0	0
		23	Rizal	0	0	0	0	0	0	0	0
		24	Cavite	0	0	0	0	0	0	0	0
		25	Laguna	0	0	0	0	0	0	0	0
		26	Batangas	6	871	3	290	9	1,161	3	752
		27	Marinduque	0	0	2	330	2	330	0	0
		28	Mindoro Oriental	3	650	2	638	5	1,288	1	400
		29	Mindoro Occider	1	100	3	2,510	4	2,610	1	400
		30	Romblon	1	165	1	50	2	215	0	0
	SUB-TOTAL	0	0	0	0	0	0	0	0		
		21	3,513	12	4,018	33	7,531	5	1,349		
		4	1,060	2	175	6	1,235	0	0		
		2	750	3	640	5	1,390	2	420		
		2	205	3	710	5	915	5	1,010		
		1	650	6	2,644	7	3,294	3	675		
		5	1,010	3	361	8	1,371	5	2,102		
		1	230	2	92	3	322	15	4,207		
	SUB-TOTAL	15	3,905	19	4,622	34	8,527	33	7,991		
V	BICOL	32	Camarinon Norte	4	1,060	2	175	6	1,235	2	410
		33	Camarinon Sur	2	750	3	640	5	1,390	0	0
		34	Catanduanes	2	205	3	710	5	915	2	545
		35	Albay	1	650	6	2,644	7	3,294	8	2,114
		36	Sorsogon	5	1,010	3	361	8	1,371	6	1,295
		37	Masbate	1	230	2	92	3	322	13	3,557
			SUB-TOTAL	15	3,905	19	4,622	34	8,527	33	7,991
				3	480	0	0	3	480	4	1,930
				1	125	2	420	3	545	2	545
				3	1,104	5	1,010	8	2,114	3	675
		3	620	3	675	6	1,295	5	1,124		
		8	1,455	5	2,102	13	3,557	0	0		
	SUB-TOTAL	18	3,784	15	4,207	33	7,991	10	1,995		
		2	1,520	2	410	4	1,930	0	0		
		1	50	0	0	1	50	6	957		
		2	388	6	957	8	1,295	0	0		
		9	1,650	0	0	9	1,650	2	590		
		3	1,370	2	590	5	1,960	10	1,957		
	SUB-TOTAL	17	4,328	10	1,957	27	6,285	203	38,633		
TOTAL		160	30,707	203	38,633	363	69,340	363	69,340		

世銀CIDP-I及びIIの管区及び州別案件リスト (2/3)

表2-09 (2/3)

REGION NO.	REGION NAME	NEW			EXISTING			TOTAL					
		NO.	Area	No.	Area	No.	Area	No.	Area				
I	ILOCOS	01 Ilocos Norte	0	0	7	1,230	7	1,230	0	50			
		02 Abra	0	0	1	54	1	54	0	1,055			
		03 Ilocos Sur	0	0	1	211	1	211	0	200			
		04 Mountain	2	368	0	0	2	368	0	480			
		05 La Union	1	150	3	775	4	925	0	640			
		06 Benguet	0	0	0	0	0	0	0	0			
		07 Pangasinan	1	250	6	1,488	7	1,738	0	0			
	SUB-TOTAL	4	768	18	3,758	22	4,526	12	2,425				
II	CAGAYAN VALLEY	08 Batanes	0	0	0	0	0	0	0	1,145			
		09 Cagayan	0	0	6	1,914	6	1,914	0	960			
		10 Kalinga Apayao	1	70	0	0	1	70	0	710			
		11 Isabela	1	300	1	150	2	450	0	0			
		12 Ifugao	2	608	2	210	4	818	0	0			
		13 Nueva Vizcaya	1	600	3	458	4	1,058	0	0			
		14 Quirino	1	750	1	60	2	810	0	0			
			SUB-TOTAL	6	2,328	13	2,792	19	5,120	10	2,331		
		III	CENTRAL LUZON	15 Nueva Ecija	0	0	2	390	2	390	0	0	
				16 Tarlac	0	0	2	678	2	678	0	0	
17 Zambales	0			0	0	0	0	0	0	0			
18 Pampanga	0			0	4	876	4	876	0	0			
19 Bulacan	1			300	0	0	1	300	0	0			
20 Bataan	0			0	1	40	1	40	0	0			
	SUB-TOTAL			1	300	9	1,984	10	2,284	0	0		
IV	SOUTHERN TAGALOG			21 Aurora	2	559	0	0	2	559	0	0	
				22 Quezon	3	553	0	0	3	553	0	0	
				23 Rizal	0	0	0	0	0	0	0	0	
		24 Cavite	0	0	0	0	0	0	0	0			
		25 Laguna	0	0	0	0	0	0	0	0			
		26 Batangas	2	200	3	290	5	490	0	0			
		27 Marinduque	0	0	2	330	2	330	0	0			
		28 Mindoro Oriental	0	0	0	0	0	0	0	0			
		29 Mindoro Occider	0	0	2	2,410	2	2,410	0	0			
		30 Romblon	1	165	1	50	2	215	0	0			
		31 Palawan	0	0	0	0	0	0	0	0			
			SUB-TOTAL	8	1,477	8	3,080	16	4,557	9	2,421		
		V	BICOL	32 Camarines Norte	2	870	1	85	3	955	0	0	
33 Camarines Sur	1			600	1	180	2	780	0	0			
34 Catanduanes	0			0	1	350	1	350	0	0			
35 Albay	0			0	4	2,257	4	2,257	0	0			
36 Sorsogon	3			827	2	210	5	1,037	0	0			
37 Masbate	0			0	0	0	0	0	0	0			
	SUB-TOTAL			6	2,297	9	3,082	15	5,379	4	1,930		
VI	WESTERN VISAYAS	36 Aklan	0	0	1	50	1	50	0	0			
		39 Capiz	1	900	3	155	4	1,055	0	0			
		40 Antique	1	200	0	0	1	200	0	0			
		41 Iloilo	1	300	1	180	2	480	0	0			
		42 Negros Occidental	2	310	2	330	4	640	0	0			
		43 Negros del Norte	0	0	0	0	0	0	0	0			
			SUB-TOTAL	5	1,710	7	715	12	2,425	0	0		
		VII	CENTRAL VISAYAS	44 Cebu	1	170	5	975	6	1,145	0	0	
				45 Negros Oriental	2	630	1	350	3	980	0	0	
				46 Bohol	1	50	4	660	5	710	0	0	
				47 Siquijor	0	0	0	0	0	0	0	0	
					SUB-TOTAL	4	850	10	1,985	14	2,835	0	0
				VIII	EASTERN VISAYAS	48 Northern Samar	0	0	0	0	0	0	0
						49 Samar	0	0	0	0	0	0	0
50 Eastern Samar	0	0	0			0	0	0	0				
51 Northern Leyte	3	845	3			650	6	1,495	0	0			
52 Southern Leyte	3	363	1			473	4	836	0	0			
	SUB-TOTAL	6	1,208			4	1,123	10	2,331	0	0		
IX	WESTERN MINDANAO	53 Zamboanga del Norte	1			180	3	849	4	1,029	0	0	
		54 Zamboanga del Sur	1	170	1	150	2	320	0	0			
		55 Basilan	0	0	0	0	0	0	0	0			
		56 Sulu	0	0	0	0	0	0	0	0			
		57 Tawi Tawi	0	0	0	0	0	0	0	0			
			SUB-TOTAL	2	350	4	999	6	1,349	0	0		
		X	NORTHERN MINDANAO	58 Surigao del Norte	1	550	1	187	2	737	0	0	
59 Camiguin	0			0	0	0	0	0	0	0			
60 Agusan del Norte	1			150	0	0	1	150	0	0			
61 Misamis Oriental	2			372	3	752	5	1,124	0	0			
62 Misamis Occidental	0			0	0	0	0	0	0	0			
63 Bukidnon	0			0	0	0	0	0	0	0			
64 Agusan del Sur	1			400	0	0	1	400	0	0			
	SUB-TOTAL			5	1,472	4	949	9	2,421	0	0		
XI	EASTERN MINDANAO			65 Surigao del Sur	3	480	0	0	3	480	0	0	
				66 Davao Oriental	1	125	1	150	2	275	0	0	
		67 Davao del Norte	3	1,104	3	660	6	1,764	0	0			
		68 Davao del Sur	3	620	2	480	5	1,100	0	0			
		69 South Cotabato	3	980	2	1,742	5	2,722	0	0			
			SUB-TOTAL	13	3,309	8	3,032	21	6,341	0	0		
		XII	CENTRAL MINDANAO	70 Lanao del Norte	2	1,520	2	410	4	1,930	0	0	
				71 Lanao del Sur	0	0	0	0	0	0	0	0	
				72 North Cotabato	0	0	4	447	4	447	0	0	
73 Maguindano	1			300	0	0	1	300	0	0			
74 Sultan Kudarat	1			620	0	0	1	620	0	0			
	SUB-TOTAL	4	2,440	6	857	10	3,297	0	0				
	TOTAL	64	18,509	100	24,356	164	42,865	0	0				

世銀CIDP-I及びIIの管区及び州別案件リスト (3/3)

REGION NO.	REGION NAME	PROVINCE NO.	PROVINCE NAME	NEW		EXISTING		TOTAL		EXISTING No.	EXISTING Area	TOTAL No.	TOTAL Area						
				No.	Area	No.	Area	No.	Area										
I	LOCOS	01	Ilocos Norte	0	0	9	1,542	9	1,542			9	1,542						
		02	Abra	7	155	3	103	10	258			10	258						
		03	Ilocos Sur	2	194	0	0	2	194			2	194						
		04	Mountain	3	250	0	0	3	250			3	250						
		05	La Union	3	59	9	505	12	564			12	564						
		06	Benguet	5	104	1	67	6	171			6	171						
		07	Pangasinan	2	140	5	376	7	516			7	516						
			SUB-TOTAL	22	902	27	2,592	49	3,495			49	3,495						
		II	CAGAYAN VALLEY	08	Batanes	0	0	0	0	0	0			0	0				
				09	Cagayan	1	80	2	343	3	423			3	423				
10	Kalinga Apayao			1	260	2	210	3	470			3	470						
11	Isabela			1	100	1	230	2	330			2	330						
12	Iligan			2	385	2	100	4	485			4	485						
13	Nueva Vizcaya			0	0	3	997	3	997			3	997						
14	Quirino			5	685	1	100	6	785			6	785						
	SUB-TOTAL			10	1,510	11	1,380	21	2,890			21	2,890						
III	CENTRAL LUZON			15	Nueva Ecija	0	0	2	586	2	586			2	586				
				16	Tarlac	1	160	1	479	2	639			2	639				
		17	Zambales	0	0	4	1,001	4	1,001			4	1,001						
		18	Pampanga	1	211	0	0	1	211			1	211						
		19	Bulacan	0	0	0	0	0	0			0	0						
		20	Bataan	0	0	0	0	0	0			0	0						
			SUB-TOTAL	2	371	7	2,066	9	2,437			9	2,437						
		IV	SOUTHERN TAGALOG	21	Aurora	2	290	1	200	3	490			3	490				
				22	Quezon	3	325	0	0	3	325			3	325				
				23	Rizal	0	0	0	0	0	0			0	0				
24	Cavite			0	0	0	0	0	0			0	0						
25	Leguna			0	0	0	0	0	0			0	0						
26	Batangas			4	671	0	0	4	671			4	671						
27	Marinduque			0	0	0	0	0	0			0	0						
28	Mindoro Oriental			3	650	2	638	5	1,288			5	1,288						
29	Mindoro Occidental			1	100	1	100	2	200			2	200						
30	Romblon			0	0	0	0	0	0			0	0						
31	Palawan	0	0	0	0	0	0			0	0								
	SUB-TOTAL	13	2,036	4	938	17	2,974			17	2,974								
V	BICOL	32	Camarines Norte	2	190	1	90	3	280			3	280						
		33	Camarines Sur	1	150	2	460	3	610			3	610						
		34	Catanduanes	2	205	2	360	4	565			4	565						
		35	Albay	1	650	2	387	3	1,037			3	1,037						
		36	Sorsogon	2	183	1	151	3	334			3	334						
		37	Masbate	1	230	2	92	3	322			3	322						
			SUB-TOTAL	9	1,608	10	1,540	19	3,148			19	3,148						
		VI	WESTERN VISAYAS	38	Aklan	2	260	4	460	6	740			6	740				
				39	Capiz	0	0	9	660	9	660			9	660				
				40	Antique	2	160	4	347	6	507			6	507				
41	Iloilo			1	200	4	515	5	715			5	715						
42	Negros Occidental			3	316	3	135	6	451			6	451						
43	Negros del Norte			0	0	0	0	0	0			0	0						
	SUB-TOTAL			8	936	24	2,137	32	3,073			32	3,073						
VII	CENTRAL VISAYAS			44	Cebu	1	32	0	0	1	32			1	32				
				45	Negros Oriental	1	310	0	0	1	310			1	310				
				46	Bohol	0	0	0	0	0	0			0	0				
		47	Siquijor	0	0	0	0	0	0			0	0						
			SUB-TOTAL	2	342	0	0	2	342			2	342						
		VIII	EASTERN VISAYAS	48	Northern Samar	1	227	1	80	2	307			2	307				
				49	Samar	3	270	0	0	3	270			3	270				
				50	Eastern Samar	3	360	0	0	3	360			3	360				
				51	Northern Leyte	2	180	1	250	3	430			3	430				
				52	Southern Leyte	1	83	3	251	4	334			4	334				
	SUB-TOTAL			10	1,120	5	581	15	1,701			15	1,701						
IX	WESTERN MINDANAO			53	Zamboanga del Norte	1	280	0	0	1	280			1	280				
				54	Zamboanga del Sur	0	0	3	367	3	367			3	367				
				55	Basilan	0	0	0	0	0	0			0	0				
				56	Sulu	0	0	0	0	0	0			0	0				
		57	Tawi-Tawi	0	0	0	0	0	0			0	0						
			SUB-TOTAL	1	280	3	367	4	647			4	647						
		X	NORTHERN MINDANAO	58	Surigao del Norte	0	0	0	0	0	0			0	0				
				59	Comoguin	0	0	0	0	0	0			0	0				
				60	Agusan del Norte	1	130	0	0	1	130			1	130				
				61	Misamis Oriental	0	0	0	0	0	0			0	0				
62	Misamis Occidental			0	0	0	0	0	0			0	0						
63	Bukidnon			0	0	1	400	1	400			1	400						
64	Agusan del Sur			0	0	0	0	0	0			0	0						
	SUB-TOTAL			1	130	1	400	2	530			2	530						
XI	EASTERN MINDANAO			65	Surigao del Sur	0	0	0	0	0	0			0	0				
				66	Davao Oriental	0	0	1	270	1	270			1	270				
		67	Davao del Norte	0	0	2	350	2	350			2	350						
		68	Davao del Sur	0	0	1	195	1	195			1	195						
		69	South Cotabato	5	475	3	360	8	835			8	835						
			SUB-TOTAL	5	475	7	1,175	12	1,650			12	1,650						
		XII	CENTRAL MINDANAO	70	Lanao del Norte	0	0	0	0	0	0			0	0				
				71	Lanao del Sur	1	50	0	0	1	50			1	50				
				72	North Cotabato	2	938	2	510	4	848			4	848				
				73	Maguindanao	8	1,950	0	0	8	1,950			8	1,950				
74	Sultan Kudarat			2	750	2	590	4	1,340			4	1,340						
	SUB-TOTAL			13	2,488	4	1,100	17	3,588			17	3,588						
TOTAL												96	12,196	103	14,277	199	26,475		

マスタープラン検討対象案件数

(Unit: Nos.)

Region	Province	Inventoried Sub-Projects			Sub-Projects Given Answers as of Dec.3			Candidate Sub-Projects for SSIDP		
		CISs	CIPs	Total	CISs	CIPs	Total	CISs	CIPs	Total
I	1 ILOCOS NORTE	127	1	128	122	1	123	119	0	119
	2 ABRA	46	19	65	38	17	55	37	17	54
	3 ILOCOS SUR	76	74	150	73	68	141	70	51	121
	4 MOUNTAIN PROVINCE	52	76	128	8	44	52	8	44	52
	5 LA UNION	39	29	68	39	27	66	39	27	66
	6 BENGUET	7	56	63	10	53	63	9	42	51
	7 PANGASINAN	311	6	317	187	7	194	178	3	181
	Sub-total	658	261	919	477	217	694	460	184	644
II	8 BATANES	0	0	0	0	0	0	0	0	0
	9 CAGAYAN	103	69	172	105	66	171	105	65	171
	10 KALINGA APAYAO	65	52	117	64	44	108	64	43	107
	11 ISABELA	44	49	93	47	46	93	47	44	91
	12 IFUGAO	37	54	91	42	49	91	35	46	81
	13 NUEVA VISCAYA	137	20	157	134	13	147	131	13	144
	14 QUIRINO	28	47	75	29	45	74	29	41	70
	sub-total	414	291	705	421	263	684	411	253	664
III	15 NUEVA ECIIJA	45	4	49	45	3	48	43	1	44
	16 TARLAC	40	5	45	37	3	40	36	3	39
	17 ZAMBALES	47	17	64	10	0	10	10	0	10
	18 PAMPANGA	93	22	115	78	20	98	73	20	93
	19 BULACAN	21	5	26	18	4	22	18	4	22
	20 BATAAN	37	2	39	35	3	38	30	0	30
	sub-total	283	55	338	223	30	253	210	28	238
	IV	21 AURORA	38	14	52	41	10	51	39	10
22 QUEZON		38	19	57	38	18	56	38	16	54
23 RIZAL		27	2	29	19	1	20	19	1	20
24 CAVITE		6	9	15	5	6	11	5	6	11
25 LAGUNA		25	3	28	26	2	28	25	2	27
26 BATANGAS		20	31	51	23	23	46	22	21	43
27 MARINDUQUE		4	5	9	6	2	8	5	0	5
28 MINDORO ORIENTAL		65	28	93	48	26	74	48	18	66
29 MINDORO OCCIDENTAL		54	20	74	55	15	70	54	15	69
30 ROMBLON		11	4	15	2	2	4	2	2	4
31 PALAWAN		41	98	139	42	98	140	41	96	137
sub-total		329	233	562	305	203	508	298	187	485
V		32 CAMARINES NORTE	13	67	80	18	63	81	18	63
	33 CAMARINES SUR	116	67	183	116	61	177	96	30	126
	34 CATANDUANES	10	4	14	11	1	12	9	1	10
	35 ALBAY	80	77	157	83	66	149	78	48	126
	36 SORSOGON	44	15	59	34	8	42	34	7	41
	37 MASBATE	16	17	33	19	14	33	19	8	27
	sub-total	279	247	526	281	213	494	254	157	411
VI	38 AKLAN	14	4	18	15	2	17	14	2	16
	39 CAPIZ	14	12	26	14	10	24	12	10	22
	40 ANTIQUE	49	23	72	45	21	66	41	19	60
	41 ILOILO	44	14	58	37	3	40	34	3	37
	42 NEGROS OCCIDENTAL	8	45	53	17	35	52	17	34	51
	43 NEGROS DEL NORTE	0	0	0	0	0	0	0	0	0
	sub-total	129	98	227	128	71	199	118	68	186
VII	44 CEBU	13	6	19	13	5	18	11	5	16
	45 NEGROS ORIENTAL	24	19	43	26	15	41	26	14	40
	46 BOHOL	40	0	40	39	0	39	39	0	39
	47 SIQUIJOR	0	4	4	0	4	4	0	4	4
	sub-total	77	29	106	78	24	102	76	23	99
VIII	48 NORTHERN SAMAR	15	42	57	15	42	57	13	40	53
	49 SAMAR	9	24	33	10	23	33	10	19	29
	50 EASTERN SAMAR	1	28	29	2	15	17	2	12	14
	51 NORTHERN LEYTE	110	55	165	106	49	155	101	43	144
	52 SOUTHERN LEYTE	21	7	28	22	4	26	20	4	24
	sub-total	156	156	312	155	133	288	146	118	264
IX	53 ZAMBOANGA DEL NORTE	14	19	33	15	18	33	15	13	28
	54 ZAMBOANGA DEL SUR	60	34	94	52	19	71	51	19	70
	55 BASILAN	1	1	2	2	2	4	2	0	2
	56 SULU	0	6	6	4	4	8	4	4	8
	57 TAWI-TAWI	0	6	6	4	4	8	4	4	8
	sub-total	75	66	141	69	45	114	68	40	108
X	58 SURIGAO DEL NORTE	34	32	66	26	20	46	22	19	41
	59 CAMIGUIN	3	2	5	3	1	4	3	0	3
	60 AGUSAN DEL NORTE	58	33	91	61	33	94	43	24	67
	61 MISAMIS ORIENTAL	18	22	40	16	17	33	16	13	29
	62 MISAMIS OCCIDENTAL	25	5	30	20	3	23	20	3	23
	63 BUKIDNON	29	50	79	35	44	79	31	41	72
	64 AGUSAN DEL SUR	11	32	43	16	26	42	16	26	42
sub-total	178	176	354	177	144	321	151	126	277	
XI	65 SURIGAO DEL SUR	20	20	40	23	17	40	22	17	39
	66 DAVAO ORIENTAL	15	18	33	15	14	29	12	14	26
	67 DAVAO DEL NORTE	42	19	61	15	9	24	15	9	24
	68 DAVAO DEL SUR	35	10	45	34	7	41	32	7	39
	69 SOUTH COTABATO	26	33	59	33	25	58	31	25	56
	sub-total	138	100	238	120	72	192	112	72	184
XII	70 LANA DEL NORTE	17	28	45	20	25	45	20	22	42
	71 LANA DEL SUR	7	48	55	10	30	40	10	29	39
	72 NORTH COTABATO	30	84	114	30	78	108	24	77	101
	73 MAGUINDANAO	36	71	107	44	58	102	43	58	101
	74 SULTAN KUDARAT	32	30	62	23	25	48	22	24	46
	sub-total	122	261	383	127	216	343	119	210	329
Total	2838	1973	4811	2561	1631	4192	2423	1466	3889	

現地補足調査対象案件

Region	Province	Sample Sub-Projects (Scheduled)	Area (ha)	Sample Sub-Projects (Final)	Area (ha)	Inspection Period In 1990	Remarks
I	Pangasinan	(1) Camcing CIS	60				The road is not passable due to flood. Peace and order problem.
		(2) Viga CIP	100				
		(3) Alos-Paed CIS	280	(1) Alos-Paed CIS	280	Sept. 4 - 7	
		(4) Nama-Inuman-Sugcong CIS	430	(2) Nama-Inuman-Sugcong CIS (3) Calsib CIS	369 180	" "	Selected by PIE's recommendation
II	Nueva Viscaya	(5) San Vicente CIS	380				Poor accessibility Under construction as CARP-IC
		(6) Aurora CIP	200				
		(7) Allay-Nangcalapan CIS	160	(4) Allay-Nangcalapan CIS (5) Conception CIS	117 165	Sept. 11 - 15 "	Selected by PIE's recommendation
				(6) Casat-Wacal CIS (7) Simmaguer CIS	80 400	" "	" "
III	Pampanga	(8) Culubasa CIS	359				Not constructed due to peace and order problem.
		(9) Camias CIS	58	(8) Camias CIS	58	Sept. 10	
		(10) San Agustin CIS	187	(9) San Agustin CIS	187	"	
		(11) Gatiawin CIS	83	(10) Gatiawin CIS	83	"	
IV	Palawan	(12) Tigman CIS	84	(11) Tigman CIS	75	Sept. 11 - 14	
		(13) Barake CIS	150	(12) Barake CIS (13) Tagbuaya CIP	135 250	" "	Selected by PIE's recommendation
V	Camarines Sur	(14) Pinit CIS	110	(14) Pinit CIS	107	Sept. 4 - 7	
		(15) Kaanunangan CIP	150	(15) Kaanunangan CIS (16) Gatbo CIS	150 150	" "	Selected by PIE's recommendation
				(17) Curry Caromas CIS	500	"	"
VI	Iloilo	(16) Oyungan CIS	162				Not constructed due to ROW problem.
		(17) Bayunan CIS	310	(18) Bayunan CIS	310	Oct. 9 - 12	
		(18) Bairan CIP	125	(19) Bairan CIP (20) Tanduyan CIS	64 80	" "	Selected by PIE's recommendation
VII	Cebu	(19) Argao CIS	110	(21) Argao CIS	110	Oct. 2 - 4	
		(20) Lagan-Ocana CIS	270	(22) Lagan-Ocana CIS	145	"	
		(21) Dumanjug CIS	285	(23) Dumanjug CIS	300	"	
VIII	Northern Leyte	(22) San Vicente CIS	410				No data is available.
		(23) Macanip CIS	160	(24) Macanip CIS	160	Sept. 18 - 21	
		(24) Maragundong CIP	150	(25) Maragundong CIP (26) Caray-Caray CIS	400 130	" "	Selected by PIE's recommendation
IX	Zamboanga del Sur	(25) Guiwan CIS	114	(27) Guiwan CIS	114	Oct. 9 - 12	
		(26) Vitali CIP	150	(28) Vitali CIP	160	"	
		(27) Binayan CIP	100	(29) Binayan CIP	100	"	
X	Misamis Oriental	(28) Lampasyao CIS	70	(30) Lampasyao CIS	70	Sept. 18 - 21	
		(29) Lourdes CIS	102	(31) Lourdes CIS	102	"	
		(30) Farmbugas CIP	100	(32) Farmbugas CIP	65	"	
		(31) Mat-i II CIP	300	(33) Mat-i II CIS	65	"	
XI	Davao del Norte	(32) Mawab CIS	250				No feasibility study is made yet.
		(33) Linoan CIS	85	(34) Linoan CIS (35) Daunan CIS	200 150	Oct. 2 - 5 "	
XII	Lanao del Norte	(34) Balagtas-Segapod CIS	200				Poor accessibility Poor accessibility
		(35) Digkilaan CIP	200				
				(36) Bahili CIS (37) Waterfalls CIS	220 80	Sept. 22 - 23 "	Selected by PIE's recommendation
				(38) Limuag CIS	200	"	"
TOTAL		6,444 ha 25 CISs = 4,869 ha 10 CIPs = 1,575 ha		6,511 ha 32 CISs = 5,472 ha 6 CIPs = 1,039 ha			

I. GENERAL

(1) Classification According to Present Stage
CISs

Present Stage	CISs (Nos.)	Proportion (%)
O/M	15	47
F/S for Rehabilitation/Improvement and O/M	4	13
D/D for Rehabilitation/Improvement and O/M	7	22
Rehabilitation/Improvement Works	3	9
New Construction	3	9
Total	32	100

Present Stage	CIPs (Nos.)	Proportion (%)
F/S for Irrigation Development	1	17
D/D for Irrigation Development	5	83
Total	6	100

(2) Distribution of Irrigable Area

Area (ha)	CISs (Nos.)	CIPs (Nos.)	Total (Nos.)	Proportion (%)
50 - 100	8	2	10	26
100 - 200	15	2	17	45
200 - 300	4	1	5	13
300 - 400	3	0	3	8
400 - 500	2	1	3	8
Total	32	6	38	100

II. MAJOR REQUIREMENTS OF THE SELECTION
CRITERIA OF CISs/CIPs

(3) Distribution of Cropping Intensity

Cropping Intensity (%)	CISs (Nos.)	CIPs (Nos.)	Total (Nos.)	Proportion (%)
Less than 130	0	0	0	0
130 - 150	6	0	6	16
150 - 175	5	0	5	13
175 - 200	21	6	27	71
Total	32	6	38	100

(4) Distribution of Average Farm Size

Average Farm Size (ha)	CISs (Nos.)	CIPs (Nos.)	Total (Nos.)	Proportion (%)
Less than 1	3	0	3	8
1 - 2	20	4	24	63
2 - 3	5	1	6	16
3 - 4	2	1	3	8
4 - 5	2	0	2	5
Total	32	6	38	100

(5) Distribution of Development Cost per ha (at a 1990 price level)
New Project

Development Cost per ha	Sub-Projects (Nos.)	Proportion (%)
Less than P 35,000	10	71
P 35,000 - P 70,000	4	29
P 70,000 - P 100,000	9	0
Average/Total	P 25,000	100

Development Cost per ha	Sub-Projects (Nos.)	Proportion (%)
Less than P 18,000	18	82
P 18,000 - P 35,000	2	10
P 35,000 - P 55,000	1	4
More than P 55,000	1	4
Average/Total	P 14,700	100

(6) Distribution of EIRR

EIRR (%)	CISs (Nos.)	CIPs (Nos.)	Total (Nos.)	Proportion (%)
10 - 20	9	1	10	26
20 - 30	9	2	11	29
30 - 40	6	0	6	16
More than 40	2	1	3	8
Unknown	6	2	8	21
Total (Nos.)	32	6	38	100
Average (%)	26.7%	26.7%	26.7%	...

III. TECHNICAL ASPECTS

(7) Sub-Projects with/without Diversion Weir

Items	CISs (Nos.)	CIPs (Nos.)	Total (Nos.)	Proportion (%)
No Diversion Weir (Intake Only)	2	0	2	5
Concrete Weir	23	4	27	71
Rubble Masonry Weir	7	0	7	19
Unknown (Under Design)	0	2	2	5
Total	32	6	38	100

(8) Sub-Projects with/without Drainage Facilities

Items	CISs (Nos.)	CIPs (Nos.)	Total (Nos.)	Proportion (%)
With Drainage Facilities	11	1	12	32
Without Drainage Facilities	21	3	24	63
Unknown (Under Design)	0	2	2	5
Total	32	6	38	100

(9) Sub-Project with/without Water Shortage in Dry Season

Items	CISs (Nos.)	CIPs (Nos.)	Total (Nos.)	Proportion (%)
With Water Shortage	7	0	7	18
Without Water Shortage	25	6	31	82
Total	32	6	38	100

IV. INSTITUTIONAL ASPECT

(10) IA's Viability

IA's Viability	CISs (Nos.)	Proportion (%)
Good	12	38
Fair	11	34
Poor	9	28
Total	32	100

V. ENVIRONMENTAL ASPECT

(11) Negative Environmental Aspect

Negative Environ. Impact	CISs	CIPs	Total	Proportion
No Negative Impact	21	3	24	63
Deforestation	5	2	7	18
Schistosomiasis etc.	3	1	4	11
Polluted Water	2	0	2	5
Quarrying in the River	1	0	1	3
Total	32	6	38	100

共同灌漑事業の実施手順 (1/2)

ACTIVITIES OF PIOs/RIOs (Activities of RIO are shown in brackets.)	Related Activities of IDO/IAs	Activities of Central Office
<p>I. Identification, Investigation and Selection Phase (About 1 year)</p> <p>I-1 Identification of Projects (2 weeks)</p> <p>I-2 Preparation and Submission of Program-of-Work (POW) for Investigation and Data Gathering to CO through RIO (1 week)</p> <p>I-4 Conduct of Preliminary Investigation (see Form I-2) and Submission of Results to C.O. through RIO (1 week)</p> <p>I-6 Investigation and Data Gathering</p> <ul style="list-style-type: none"> • Soil Survey and Analysis (1 week) • Discharge Measurement • Agro-Economic Survey (1 week) • Institutional Profile Preparation (see Form I-3B) <p>I-7 Preparation of Initial Project Feasibility Report (see Form I-3C) (1 week)</p> <p>I-9 Conduct of Topo. Survey (4 weeks)</p> <p>I-10 Preparation of Technical Report (1 week)</p> <p>I-11 Preparation of Final Project Feasibility Report (see Form I-3) (1 week)</p> <p>I-12 Project Evaluation, Selection & Prioritization at PIO (1 week) and at RIO (1 week)</p> <p>I-13 (Preparation and Submission of the Following to C.O.)</p> <ul style="list-style-type: none"> • List of Project for Implementation (2 weeks) • Regional Annual Program (2 weeks) • POW of Detailed Survey and Design (2 weeks) 	<ul style="list-style-type: none"> • Farmers' Petition of CIP/CIS to PIO <ul style="list-style-type: none"> • Farmers' Cooperation to PIO's Investigation and Data Gathering at Field <p>1. Request to hire IDO to CO through RIO (6 weeks)</p>	<p>I-3 Evaluation of POW and Fund Release for Preliminary Investigation</p> <p>I-5 Evaluation of Results and Fund Release for Investigation and Data Gathering</p> <p>I-8 Evaluation of Report and Fund Release for Topo. Survey</p> <p>I-14 Evaluation of the List</p> <p>I-15 Evaluation of the Program</p> <p>I-16 Evaluation of POW and Fund Release for Detailed Survey (1 week)</p> <p>2. Evaluation and Approval of Request</p>
<p>II. Pre-Construction Phase (About 1 year)</p> <p>II-1 Conduct of Detailed Survey (12 weeks)</p> <p>II-2 Conduct of Design (10 weeks)</p> <p>II-3 Preparation and Submission of Construction POW to RIO (4 weeks)</p> <p>II-4 (Evaluation of Construction POW by RIO and Submission to C.O.) (3 weeks)</p> <p>II-6 (Request of Contract Bidding for Local Minor Contract (LMC) to C.O.) (4 weeks)</p>	<p>3. Hire and Training of IDO at PIO/RIO (4 weeks)</p> <p>4. Orientation to IDO at PIO (2 days)</p> <p>5. Commencement of IDO's Integration with Farmers Community or IA (4 weeks)</p> <p>6. Reactivation or Formulation of Committee for Pre-Construction (2 weeks)</p> <p>7. Firming-up of IA Membership (8 weeks)</p> <p>8. Formulation of IA and Ratification of By-Laws (2 weeks)</p> <p>9. Commencement of Negotiation of Right-of-Way</p> <p>10. IA Training Needs Analysis (1 week) and Conduct of IA Training</p> <p>11. Preparation and Submission of IA Registration Paper to Securities and Exchange Commission (SEC), (4 weeks)</p> <p>12. Application of Water Permit to National Water Resources Board (NWRB), (4 weeks)</p> <p>13. IDOs Training for Construction Phase (2 weeks)</p> <p>14. First Pre-Construction Conference (2 days)</p> <p>15. Reactivation or Formulation of Working Committee for Construction (2 weeks)</p> <p>16. Formulation of NIA-IA Policies and System for Construction Phase (4 weeks)</p> <p>17. Final Pre-Construction Conference (2 days)</p> <p>18. Evaluation of IA Viability (1 week)</p> <p>19. Signing of Memorandum of Agreement (MOA) (1 week)</p>	<p>II-5 Evaluation of POW and Fund Release for Construction (4 weeks)</p> <p>II-7 Evaluation of Contract Bidding and Approval for LMC</p>

Note: PIO: Provincial Irrigation Office, RIO: Regional Irrigation Office, IDO: Irrigation Development Officer, IA: Irrigator's Association, CO: Central Office of NIA

共同灌漑事業の実施手順 (2/2)

ACTIVITIES OF PIOs/RIOs (Activities of RIO are shown in brackets.)	Related Activities of IDO/IAs	Activities of Central Office
<p>III. Construction Phase (About 1.5 years)</p> <p>III-1 Bidding for LMC III-2 Evaluation of Bid and Contract Award (4 weeks) III-3 (Approval of Contract by RIO) and Issuance of Notice to Proceed (2 weeks) III-4 Construction (52 weeks) III-5 Inventory of Completed Facilities by PIO and IA (1 week) III-6 Test Run by PIO and IA (2 weeks) III-7 Repair of Defect of Facilities (6 weeks) III-8 Conduct of Final Cost and Equity Reconciliation (2 weeks) III-9 Turnover of Facilities to IA (see form III-3B and 3C) (2 weeks)</p>	<p>20. Orientation of Planning of On-Farm Facilities and Conduct of Maintenance Works on Completed Structures 21. Pre O&M Conference (1 week) 22. Reactivation or Formulation of O&M Committee (1 week) and Appointment of O&M Personnel (1 week) 23. Formulation of Repayment Scheme (1 week) 24. Evaluation of IA Viability (1 week)</p>	
<p>IV. Operation & Maintenance Phase (About 1.5 years)</p> <p>IV-1 Preparation and Submission of Project Completion Report (5 weeks)</p> <p>• Technical Assistance to IA</p>	<p>25. Conduct of IA Workshops (3 weeks)</p> <ul style="list-style-type: none"> • Financial Management • System Management • Monitoring and Evaluation (M&E) <p>26. Firming up of O&M Plans and M&E System through Board of Directors (BOD) of IA and General Assembly (2 weeks)</p> <p>27. Conduct of Regular IA Meetings and the Following Activities (20 weeks)</p> <ul style="list-style-type: none"> • Implementation of System Management Plan • Implementation of Financial Management Plan • Education and Training • Implementation of Complete Management Mechanism • Issuance of Water Service Bill • In-Season Monitoring and Evaluation <p>28. Post-Season Evaluation through BOD and General Assembly (2 weeks)</p> <p>29. Conduct of Regular IA Meetings and the Following Activities (20 weeks)</p> <ul style="list-style-type: none"> • Implementation/Updating of System Management Plan • Implementation/Updating of Financial Management Plan • Education and Training • Implementation/Updating of Conflict Management Mechanism • Issuance of Water Service Bill • In-Season Monitoring and Evaluation <p>30. Annual Post Evaluation through BOD and General Assembly (2 weeks)</p> <p>31. Revision/Amendment of By-Laws (2 weeks) 32. Evaluation of IA Viability (1 week) 33. Pull-out of IDOs</p>	<p>IV-2 Evaluation/Registration</p>

Note: PIO: Provincial Irrigation Office, RIO: Regional Irrigation Office, IDO: Irrigation Development Officer, IA: Irrigator's Association, CO: Central Office of NIA

プレ・フィージビリティ調査対象候補案件

No.	Province	Name of sub-projects	Municipality	Designed irrigable area (ha)	Topography
<u>CISs for Rehabilitation/Improvement</u>					
1	Quezon	Pili-Tumbaga	Sariaya	121	Alluvial Plain
2	Palawan	Pulot	Brooke's Point	400	Valley
3	Iloilo	Bayunan*	San Joaguin	170	Hilly/Terrace
4	Iloilo	Camiros	Anilao	60	Alluvial Plain
5	Iloilo	Tigbanaba*	Igbaras	120	Hilly/Terrace
6	Cebu	Tag-Amakan	Asturias	51	Valley
7	Cebu	Owak-San Isidro*	Asturias/Balamban	480	Valley
8	Northern Leyte	Hambabalud	Jaro	150	Alluvial Plain
9	Northern Leyte	Hacupa*	Leyte	450	Alluvial Plain
10	Northern Leyte	Sta. Fe*	Sta. Fe	162	Alluvial Plain
<u>CIPs for New Development</u>					
1	Quezon	Kinatihan*	Candelaria	100	Alluvial Plain
2	Cavite	Sapang	Ternate	50	Alluvial Plain
3	Cavite	Layong Mabilog*	Maragondon	60	Valley
4	Cavite	Pacheco*	Magallanes	200	Valley
5	Palawan	Kulandanum-Iwahig	Bataraza	500	Valley
6	Palawan	Tarusan	Bataraza	150	Alluvial Plain
7	Iloilo	Bairan	Ajuy	64	Alluvial Plain
8	Cebu	Cabadiangan*	Compostela	200	Valley
9	Northern Leyte	Maragondong*	Dagarni	400	Valley
10	Northern Leyte	Rizal	Babatngon	100	Alluvial Plain

* : Representative sample sub-projects recommended by the JICA Study Team

追加インベントリー調査案件

Region	Province	Candidate Sub-Projects for SSIDP			Sub-Projects for Additional Inventory Survey			Sub-Projects with Returned as of June 15, 1991			
		CISs (1)	CIPs (2)	Total (3) = (1) + (2)	CISs (4)	CIPs (5)	Total (6) = (4) + (5)	CISs (7)	CIPs (8)	Total (9) = (7) + (8)	
I	1 ILOCOS NORTE	119	0	119	43	0	43	43	-	43	
	2 ABRA	37	17	54	7	1	8	7	1	8	
	3 ILOCOS SUR	70	51	121	5	11	16	5	11	16	
	4 MOUNTAIN PROVINCE	8	44	52	6	6	12	6	6	12	
	5 LA UNION	39	27	66	26	1	27	26	1	27	
	6 BENGUET	9	42	51	6	6	12	6	6	12	
	7 PANGASINAN	178	3	181	2	1	3	2	1	3	
	sub-total	460	184	644	95	26	121	95	26	121	
II	8 BATANES	0	0	0	0	0	0	-	-	-	
	9 CAGAYAN	105	66	171	48	1	49	48	1	49	
	10 KALINGA APAYAO	64	43	107	0	3	3	-	3	3	
	11 ISABELA	47	44	91	1	2	3	1	2	3	
	12 IPUGAO	35	46	81	25	3	28	23	3	26	
	13 NUEVA VISCAAYA	131	13	144	42	0	42	42	-	42	
	14 QUIRINO	29	41	70	18	2	20	18	2	20	
	sub-total	411	253	664	134	11	145	132	11	143	
III	15 NUEVA ECUA	43	1	44	4	0	4	4	-	4	
	16 TARLAC	36	3	39	12	0	12	-	-	0	
	17 ZAMBALES	10	0	10	0	0	0	-	-	-	
	18 PAMPANGA	73	20	93	0	0	0	-	-	-	
	19 BULACAN	18	4	22	0	0	0	-	-	-	
	20 BATAAN	30	0	30	0	0	0	-	-	-	
		sub-total	219	28	238	16	0	16	4	0	4
IV	21 AURORA	39	10	49	13	1	14	13	1	14	
	22 QUEZON	38	16	54	3	4	7	3	3	6	
	23 RIZAL	19	1	20	1	0	1	-	-	-	
	24 CAVITE	5	6	11	0	3	3	-	3	3	
	25 LAGUNA	25	2	27	0	0	0	-	-	-	
	26 BATANGAS	22	21	43	0	0	0	-	-	-	
	27 MARINDUQUE	5	0	5	4	0	4	4	-	4	
	28 MINDORO ORIENTAL	48	18	66	13	1	14	0	0	0	
	29 MINDORO OCCIDENTAL	54	15	69	0	0	0	-	-	-	
	30 ROMBLON	2	2	4	2	1	3	2	1	3	
	31 PALAWAN	41	96	137	9	13	22	9	13	22	
	sub-total	293	187	485	45	23	69	31	21	52	
V	32 CAMARINES NORTE	18	63	81	12	10	22	12	10	22	
	33 CAMARINES SUR	96	30	126	22	10	32	0	0	0	
	34 CATANDUANES	9	1	10	1	0	1	1	-	1	
	35 ALBAY	78	48	126	1	3	4	0	3	3	
	36 SORSOGON	34	7	41	27	5	32	27	5	32	
	37 MASBATE	19	8	27	4	1	5	4	1	5	
		sub-total	254	157	411	67	29	96	44	19	63
VI	38 AKLAN	14	2	16	11	2	13	0	0	0	
	39 CAPIZ	12	10	22	0	0	0	-	-	-	
	40 ANTIQUE	41	19	60	31	4	35	30	4	34	
	41 ILOILO	34	3	37	16	1	17	16	1	17	
	42 NEGROS OCCIDENTAL	17	34	51	2	10	12	2	10	12	
	43 NEGROS DEL NORTE	0	0	0	0	0	0	-	-	-	
		sub-total	118	68	186	60	17	77	48	15	63
VII	44 CEBU	11	5	16	4	1	5	4	1	5	
	45 NEGROS ORIENTAL	26	14	40	15	13	28	15	13	28	
	46 BOHOL	39	0	39	11	0	11	0	-	0	
	47 SIQUJOR	0	4	4	0	2	2	-	2	2	
		sub-total	76	23	99	30	16	46	19	16	35
VIII	48 NORTHERN SAMAR	13	40	53	3	3	6	3	3	6	
	49 SAMAR	10	19	29	9	3	12	0	0	0	
	50 EASTERN SAMAR	2	12	14	1	3	4	1	3	4	
	51 NORTHERN LEYTE	101	43	144	88	3	91	88	3	91	
	52 SOUTHERN LEYTE	20	4	24	15	3	18	15	3	18	
		sub-total	146	118	264	116	15	131	107	12	119
	IX	53 ZAMBOANGA DEL NORTE	15	13	28	12	4	16	12	4	16
54 ZAMBOANGA DEL SUR		51	19	70	1	0	1	-	-	1	
55 BASILAN		2	0	2	0	0	0	-	-	-	
56 SULU		0	4	4	0	0	0	-	-	-	
57 TAWI-TAWI		0	4	4	0	0	0	-	-	-	
		sub-total	68	40	108	13	4	17	13	4	17
X	58 SURIGAO DEL NORTE	22	19	41	6	2	8	6	2	8	
	59 CAMIGUIN	3	0	3	3	0	3	3	-	3	
	60 AGUSAN DEL NORTE	43	24	67	25	6	31	23	6	29	
	61 MISAMIS ORIENTAL	16	13	29	5	5	10	5	5	10	
	62 MISAMIS OCCIDENTAL	20	3	23	16	0	16	16	-	16	
	63 BUKIDNON	31	41	72	17	11	28	17	10	27	
	64 AGUSAN DEL SUR	16	26	42	9	7	16	9	7	16	
		sub-total	151	126	277	81	31	112	79	30	109
XI	65 SURIGAO DEL SUR	22	17	39	22	3	25	22	3	25	
	66 DAVAO ORIENTAL	12	14	26	3	2	5	3	2	5	
	67 DAVAO DEL NORTE	15	9	24	3	2	5	3	2	5	
	68 DAVAO DEL SUR	32	7	39	5	3	8	5	3	8	
	69 SOUTH COTABATO	31	25	56	24	3	27	24	3	27	
		sub-total	112	72	184	57	13	70	57	13	70
XII	70 LANA DEL NORTE	20	22	42	1	4	5	-	-	-	
	71 LANA DEL SUR	10	29	39	1	3	4	-	-	-	
	72 NORTH COTABATO	24	77	101	12	0	12	12	-	12	
	73 MAGUINDANAO	43	58	101	21	3	24	21	3	24	
	74 SULTAN KUDARAT	22	24	46	14	9	23	13	9	22	
		sub-total	119	210	329	49	19	68	46	12	58
	Total	2423	1466	3889	763	204	967	676	179	854	

新規案件の事業費モデル

WORKS	DEVELOPMENT SCALE			
	Small (100 ha)	Medium (255 ha)	Large (400 ha)	Average (149 ha)
Unit : 1,000 Peso				
I. Chargeable Cost				
1.1 Diversion weir with intake	1,463	1,463	1,463	1,463
1.2 Diversion channel (Earth)	294	590	582	987
1.3 Diversion channel (Lined)	500	425	236	358
1.4 Main/lateral canals (Earth)	721	1,947	3,055	1,162
1.5 Main/lateral canals (Lined)	447	519	779	412
1.6 Field ditches	94	212	378	141
1.7 Project/farm drains	10	23	41	15
1.8 Drainage ditches	16	36	64	24
1.9 Service road	43	43	43	43
Chargeable Cost	3,588 (P 35,880/ha)	5,258 (P 20,620/ha)	6,641 (P 16,603/ha)	4,605 (P 30,906/ha)
II. Non-Chargeable Cost				
2.1 Flood Protection dike	46	46	46	46
2.2 Access road	86	86	86	86
Direct Cost	3,720	5,390	6,773	4,737
2.3 Overhead (24% of direct cost)	893	1,294	1,626	1,137
Non-Chargeable Cost	1,025	1,426	1,758	1,269
PROJECT COST	4,613 (P 46,130/ha)	6,684 (P 26,211/ha)	8,399 (P 20,998/ha)	5,874 (P 39,423/ha)

建設物価及び労務単価の全国平均値

表5-03

表5-04

(Unit : Peso)

ITEM	UNIT	PRICES
I. MATERIALS		
1. Gravel	m3	325
2. Sand	m3	297
3. Cement	40 kg	118
4. Timber	board foot *	14
5. Reinforcement bar	ton	19,087
II. FUEL		
1. Gasoline	liter	15.8
2. Light oil	liter	44.4
3. Diesel oil	liter	9.3
4. Grease	kg	56.4
III. LABOUR WAGES		
1. Foreman	man-day	176
2. Common labour	man-day	106
3. Carpenter	man-day	149
4. Equipment operator	man-day	160
5. Driver	man-day	151

* : 1 foot x 1 foot x 1 inch = 0.236m3

主要工事単価の全国平均値

(Unit : Peso)

ITEM	UNIT	PRICES
I. EARTH WORKS		
1. Excavation (manpower)	m3	45.81
2. Excavation (equipment)	m3	28.22
3. Embankment (manpower)	m3	46.81
4. Embankment (equipment)	m3	34.89
II. CONCRETE WORK		
1. Class A concrete (3,000 psi or 1,046 kg/cm2)	m3	3,828
2. Class B concrete (2,400 psi or 837 kg/cm2)	m3	2,755
3. Class C concrete (2,000 psi or 697 kg/cm2)	m3	2,441
III. OTHERS		
1. Reinforcement bar work	ton	24,454
2. Concrete pipe work		
- Dia 300 mm	m	561
- Dia 450 mm	m	833
- Dia 600 mm	m	1,109
- Dia 1,000 mm	m	2,139

州別現況米収量

		CIS		CIP	
Region	Province	Wet Season	Dry Season	Wet Season	Dry Season
I	1 ILOCOS NORTE	3.00	3.11	-	-
	2 ABRA	3.40	3.16	2.56	2.27
	3 ILOCOS SUR	3.05	3.05	3.26	2.23
	4 MOUNTAIN PROVINCE	3.39	3.58	2.62	2.51
	5 LA UNION	3.77	4.14	2.91	-
	6 BENGUET	2.49	2.70	2.13	2.03
	7 PANGASINAN	3.38	3.55	2.27	-
	Sub-total	3.27	3.44	2.80	2.36
II	8 BATANES	-	-	-	-
	9 CAGAYAN	2.96	2.55	1.80	-
	10 KALINGA APAYAO	3.68	4.15	1.86	2.17
	11 ISABELA	3.43	3.72	3.06	3.14
	12 IFUGAO	1.75	1.44	2.45	2.90
	13 NUEVA VISCAYA	3.47	4.02	2.28	3.12
	14 QUIRINO	4.00	4.05	2.24	2.13
	sub-total	3.30	3.50	2.07	2.66
III	15 NUEVA ECUA	4.06	4.52	2.00	-
	16 TARLAC	4.01	4.32	2.88	4.36
	17 ZAMBALES	5.87	4.80	-	-
	18 PAMPANGA	3.91	3.73	2.77	3.59
	19 BULACAN	3.65	2.90	-	-
	20 BATAAN	4.26	4.59	-	-
	sub-total	4.10	4.28	2.78	3.96
IV	21 AURORA	2.52	3.01	2.19	2.40
	22 QUEZON	3.55	4.15	1.74	1.15
	23 RIZAL	4.10	4.59	2.77	-
	24 CAVITE	2.63	3.32	1.87	-
	25 LAGUNA	3.58	3.93	2.95	2.78
	26 BATANGAS	3.04	4.46	2.58	3.30
	27 MARINDUQUE	5.42	2.72	-	-
	28 MINDORO ORIENTAL	4.36	4.33	2.34	2.18
	29 MINDORO OCCIDENTAL	3.10	3.85	2.94	3.37
	30 ROMBLON	4.33	4.51	3.65	3.13
	31 PALAWAN	4.13	3.72	2.39	2.80
	sub-total	3.67	3.95	2.52	2.72
V	32 CAMARINES NORTE	2.63	3.01	2.82	3.11
	33 CAMARINES SUR	3.82	3.92	3.08	3.21
	34 CATANDUANES	3.12	2.80	-	2.50
	35 ALBAY	3.80	3.95	3.29	3.50
	36 SORSOGON	3.82	3.55	3.10	3.62
	37 MASBATE	3.05	2.52	2.08	-
		sub-total	3.71	3.71	3.16
VI	38 AKLAN	3.82	3.81	2.60	2.15
	39 CAPIZ	3.61	2.98	2.35	2.13
	40 ANTIQUE	3.18	3.11	2.95	2.37
	41 ILOILO	3.43	3.01	4.06	3.45
	42 NEGROS OCCIDENTAL	2.86	2.18	2.34	1.90
	43 NEGROS DEL NORTE	-	-	-	-
	sub-total	3.34	3.12	2.72	2.51
VII	44 CEBU	2.27	2.48	0.50	0.56
	45 NEGROS ORIENTAL	4.23	4.08	2.63	2.87
	46 BOHOL	3.47	3.42	-	-
	47 SIOUOR	-	-	1.00	-
	sub-total	3.69	3.60	2.53	2.48
VIII	48 NORTHERN SAMAR	2.35	3.00	1.82	-
	49 SAMAR	3.62	2.86	1.90	3.97
	50 EASTERN SAMAR	2.63	-	1.72	1.20
	51 NORTHERN LEYTE	3.40	3.03	2.74	2.03
	52 SOUTHERN LEYTE	4.04	3.90	3.25	2.85
		sub-total	3.46	3.14	2.35
IX	53 ZAMBOANGA DEL NORTE	3.78	3.99	2.92	2.11
	54 ZAMBOANGA DEL SUR	4.60	4.99	3.08	2.28
	55 BASILAN	1.36	1.43	-	-
	56 SULU	-	-	-	-
	57 TAWI-TAWI	-	-	1.00	-
		sub-total	4.38	4.76	2.94
X	58 SURIGAO DEL NORTE	3.47	3.28	2.65	2.13
	59 CAMIGUIN	3.47	3.90	-	-
	60 AGUSAN DEL NORTE	4.30	4.07	3.18	2.80
	61 MISAMIS ORIENTAL	4.23	3.81	3.21	2.92
	62 MISAMIS OCCIDENTAL	4.47	4.36	-	-
	63 BUKIDNON	4.09	3.35	2.74	2.27
	64 AGUSAN DEL SUR	2.99	2.49	2.55	2.23
	sub-total	4.05	3.70	2.80	2.30
XI	65 SURIGAO DEL SUR	3.86	3.74	3.26	2.29
	66 DAVAO ORIENTAL	3.27	3.63	3.00	2.00
	67 DAVAO DEL NORTE	3.14	3.00	4.08	3.28
	68 DAVAO DEL SUR	3.97	3.67	2.93	2.74
	69 SOUTH COTABATO	4.17	3.98	3.34	3.11
	sub-total	3.86	3.63	3.44	3.07
XII	70 LANA O DEL NORTE	3.51	3.41	2.71	2.34
	71 LANA O DEL SUR	2.68	2.77	2.47	-
	72 NORTH COTABATO	3.83	3.45	3.54	3.10
	73 MAGUINDANAO	3.46	3.84	2.89	2.80
	74 SULTAN KUDARAT	4.37	3.82	3.22	3.23
	sub-total	3.58	3.52	2.66	3.11
	Total	3.58	3.64	2.73	2.87

米及び肥料の農家庭先経済価格

Unit : Peso/kg

Region	Paddy	Corn	Urea	Potassium	TSP Phosphate
I	6.21	5.54	18	13	18
II	6.52	6.05	19	14	19
III	6.23	5.54	18	12	18
IV	5.55	4.64	17	11	17
V	6.05	5.24	17	11	17
VI	5.71	4.80	17	11	17
VII	6.05	5.34	18	12	18
VIII	6.04	5.33	18	12	18
IX	5.82	5.10	18	13	18
X	6.06	5.30	17	12	17
XI	5.95	5.17	18	12	18
XII	5.94	5.16	18	12	18
Average	6.0	5.3	18	12	18

標準米作収支

(I) Without Project

	Unit	Unit Price (peso)	Wet Season		Dry Season	
			Quantity	Amount (peso)	Quantity	Amount (peso)
I. Gross Income						
1.1	Unit Yield	ton/ha	-	2.7	-	2.9
1.2	Unit Price	peso/ton	-	-	6,000	-
1.3	Gross Income	peso	-	-	16,200	-
II. Production Cost						
2.1	Seed	kg	6	100	600	100
2.2	Fertilizer					
	a) N	kg	18	55	990	60
	b) P205	kg	18	14	252	14
	c) K20	kg	12	0	0	0
2.3	Agro-chemicals	lit.	430	1.8	774	1.8
2.4	Labor Inputs	man-day	27	85	2,295	89
2.5	Animal Power	day	54	16	864	16
2.6	Machinery	lump sum	-	-	324	-
2.7	Other Cost	lump sum	-	-	162	-
	Total Production Cost				6,261	
III. Net Return					9,939	10,905

(II) With Project

	Unit	Unit Price (peso)	Wet Season		Dry Season	
			Quantity	Amount (peso)	Quantity	Amount (peso)
I. Gross Income						
1.1	Unit Yield	ton/ha	-	3.6	-	3.6
1.2	Unit Price	peso/ton	-	-	6,000	-
1.3	Gross Income	peso	-	-	21,600	-
II. Production Cost						
2.1	Seed	kg	10	50	500	50
2.2	Fertilizer					
	a) N	kg	18	73	1,314	73
	b) P205	kg	18	28	504	28
	c) K20	kg	12	28	336	28
2.3	Agro-chemicals	lit.	430	3	1,290	3
2.4	Labor Inputs	man-day	27	94	2,538	94
2.5	Animal Power	day	54	16	864	16
2.6	Machinery	lump sum	-	-	432	-
2.7	Other Cost	lump sum	-	-	216	-
	Total Production Cost				7,994	
III. Net Return					13,606	13,606

共同灌漑事業実施に係る既存指針・基準

1. Basic Manuals and Guidelines

- (1) New and Updated Guidelines on the Communal Irrigation Development Program Implementation, May 1988
- (2) Manual of Procedures for Participatory Irrigation Projects
- (3) Communal Irrigation System Management Manual for Facilitators, 1988
- (4) ABECADE Communal Irrigation System Profile

2. Specific Guidelines given in the Above Documents

- (1) Guidelines on the Preparation of the 5-Year Communal Irrigation Development Program
- (2) Guidelines on the Preparation of Provincial Annual Program
- (3) Guidelines on the Preparation of Regional Annual Program
- (4) Guidelines on the Identification of Communal Irrigation Projects
- (5) Guidelines on the Standard Derivation of Unit Cost for Investigation and Survey
- (6) Guidelines on the Conduct of Preliminary Investigation for Communal Irrigation Project
- (7) Guidelines on the Gathering of Discharge Measurement for Communal Irrigation Projects
- (8) Guidelines on the Agro-Economic Data Gathering for Feasibility Report
- (9) Simplified Soil Texture Determination and Soil Nutrient Analysis Using Soil Kit
- (10) Guidelines on Institutional Profile Writing
- (11) Guidelines on the Recruitment of Profile Writers
- (12) Suggested Prototype Design on CIS Profile Writer's Training
- (13) Planning and Monitoring System for Profile Writers
- (14) Guidelines on the Conduct of Profile Writers Performance Evaluation
- (15) Guidelines on the Preparation on Initial Project Feasibility Report
- (16) Guidelines on the Conduct of Topographic Survey for Communal Irrigation Projects
- (17) Guidelines on the Preparation of Final Project Feasibility Report
- (18) Revised Guidelines on the Conduct of Project Selection and Prioritization Workshops
- (19) ICO (IDO) Recruitment and Selection Guidelines
- (20) Revised Guidelines on the Conduct of ICO (IDO) Performance Evaluation
- (21) Sample Joint NIA-IA Policies and Systems for Construction
- (22) Checklist of Requirements Prior to Project Construction
- (23) Revised Guidelines on IA Viability Evaluation
- (24) Guidelines on the Conduct of the Orientation and Planning Workshop on Farm Level Facilities and System Maintenance
- (25) Guidelines on the Conduct of Pre-Operation & Maintenance Conference
- (26) Guidelines on the Conduct of Test-Run for Communal Irrigation Projects
- (27) Guidelines on the Repair of Damages for Communal Irrigation Projects/Systems
- (28) Guidelines on the Turnover of Communal Irrigation System
- (29) Guidelines on the Preparation of Project Completion Report
- (30) Guidelines on the Cancellation, Deferment and Suspension of Communal Irrigation Project
- (31) Guidelines on the Reallocation of Funds
- (32) Standard Cost Basis for Institutional Development Program
- (33) Guidelines on the Preparation of the Provincial Irrigation Profile
- (34) Communal Irrigation Project Implementation Network

3. Design Standard and Criteria

- (1) Design and Preparation of Plans Shown in the Manual of Procedures for Participatory Irrigation Projects
- (2) Selection Criteria and Design Standard for Communal Irrigation Projects (For use of CIDP), December 1983

共同灌漑事業の技術基準概要 (1/2)

1. Investigation (Feasibility Study)

The following survey and investigation are conducted for feasibility studies.

- | | |
|-----------------------------|--|
| (1) Soil Survey : | When a service area is less than 500 ha, soil sampling is carried out at a density of one per 50 ha. The soil samples are tested to identify soil texture and chemical properties. Land classification shall also be made according to the guidelines prepared by DA. |
| (2) Discharge Measurement : | At the prospective diversion point, river discharge is measured by use of current meter at an interval of once a month for one year. When river discharge in dry season is insufficient to irrigate more than 1/3 of the service area, a gauging staff is established and the discharge measurement is made twice a day. |
| (3) Agro-Economic Survey : | The following items are surveyed; population, farm household, land holding, land use, cropping pattern, agricultural production, production cost, farm income, etc. |
| (4) Institutional Survey : | The following items are surveyed; project history and government assistance, needs of beneficiary farmers needs, viability of IAs, etc. |
| (5) Others : | The following items are surveyed; environmental impacts, problem on acquisition of ROW and eagerness of farmers to the implementation of CIS/CIP, etc. |

2. Detailed Survey and Design

Evaluation, selection and prioritization are made on the basis of the feasibility studies, and design and construction are conducted only for the selected and prioritized projects.

- | | |
|---|--|
| (1) Detailed Survey | |
| (i) Topographic Survey | Scale: 1/4,000 |
| (ii) Diversion Site Survey | Scale: 1/500 or 1/1,000 |
| (iii) Profile and Cross Section Survey of River | Scale of profile: H = 1/4,000, V = 1/100
Scale of cross section: 1/100 |
| (iv) Profile and Cross Section Survey of Main Canals and Laterals | Scale of profile: H = 1/4,000, V = 1/100
Scale of cross section: 1/100 |
| (v) Paddy Field Elevation Survey | One elevation per parcel |
| (vi) Flood Level Survey | Flood level is shown in the cross section of the river. |
| (vii) Foundation Investigation at Diversion Site | At least one test pit |
| (2) Design | |
| (i) Diversion Water Requirement (DWR) | Measured value is recommended. When it is not available, it is estimated by applying Modified Penman formula with 80% dependability. DWR is 1 to 3 lit/sec/ha. (mostly 1.5 lit/sec/ha) |

共同灌漑事業の技術基準概要 (2/2)

- | | |
|------------------------------------|--|
| (ii) Overall Irrigation Efficiency | Paddy field : 40 to 58%
Upland field : 33 to 45% |
| (iii) Diversion Weir | General types of weir are checkgate and ogee concrete weir. Design criteria is almost in conformity with that of Bureau of Reclamation, USA. Design flood is a probable 20 - 25 years flood. |
| (iv) Canals and Related Structures | Design criteria is almost in conformity with that of USA. |
| (v) Drainage Module | Design discharge is a run off caused by a probable 5-year daily rainfall.
Paddy field : 5 to 6 lit/sec/ha
Upland field : 7 to 8 lit/sec/ha |

3. Construction

- (1) The projects are constructed under NIA force account base or on a contract base.
- (2) Since construction works are generally small in scale and voluntary participation of farmers is promoted. Construction is generally carried out under NIA force account base in combination with Pacquiao contract.
- (3) Same technical specifications for national irrigation project is applied to communal irrigation project.
- (4) After the completion of construction work, a test-run is jointly conducted by PIO staff and IA members, and the facilities are turned over to the IA .

4. Operation and Maintenance (O&M)

- (1) Irrigation Development Officer (IDO) stays at the project site to train IA members and provide the technical guidance of O&M for a period of minimum two crop seasons.
 - (2) Major works of IDO are as follows:
 - (i) Organizational Management
 - Updating of membership of IA
 - Organization of O&M personnel
 - Revisions/amendments of By-Laws
 - (ii) System Management
 - Assessment, evaluation and planning of O&M
 - Preparation of guidelines for holding the system management workshop
 - Implementation of the system management plan
 - Monitoring and evaluation of the implementation of the system management plan
 - (iii) Financial Management
 - Irrigation fee collection
 - Amortization
 - Yearly review/audit of IA financial records
-

NIAの灌漑排水施設の設計基準概要 (1/2)

(Design criteria of NIA are generally based on those of the Bureau of Reclamation, USA.)

1. Irrigation Water Requirements

- (1) The evapotranspiration should be estimated by Modified Penman formula if relevant meteorological data are available.
- (2) The irrigation water requirements should be estimated based on the evapotranspiration, cropping pattern, requirements for land preparation and nursery, flooding for cultivation, percolation and effective rainfall, with dependability of 80%.
- (3) The diversion water requirements should be estimated considering appropriate overall irrigation efficiency. The standard overall irrigation efficiency would be 40 to 58% for paddy field and 33 to 45% for upland field.
- (4) Standard unit diversion water requirements would be 1.0 to 2.0 lit/sec/ha.

2. Drainage Water Requirements (Drainage Module)

- (1) Drainage water requirements should be a runoff caused by a 5 or 10-year probable flood. The standard requirements would be 5 to 10 lit/sec/ha.
- (2) Design discharge for drainage crossings provided under roads and highways should be a runoff caused by a 25-year probable flood.

3. Diversion Weir and Intake

- (1) The diversion weir should be generally concrete ogee type or check-gate type.
- (2) The design flood discharge should be a runoff caused by a 25 or more than 25-year probable flood, depending on local conditions.
- (3) The intake structure should be steel-gated with concrete head orifice turnout.

4. Irrigation Canals

- (1) The canal density of main and lateral canals should be more than 13 m/ha.
 - (2) The service area for a turnout should not exceed 50ha.
 - (3) Water depth above the ground surface at the terminal structure should be more than 30 cm.
-

NIAの灌漑排水施設の設計基準概要 (2/2)

(4) Earth canals are generally trapezoidal in shape and the side slope should be 1:1 or flatter depending on soil conditions.

(5) Where the soil is porous or pervious, concrete-lined canal is advisable. At mountain side locations and deep cut sections wherein it is expected that the ground water table is very much higher than the water level in the canal, the bottom of concrete-lined canal should be provided with several one-way relief valves uniformly spaced and weep holes at the side slopes. The side slope should be 1:1 or flatter depending on soil conditions.

5. Farm Roads

(1) Farm roads should be provided along one embankment of main and lateral canals at a maximum density of about 20 m per ha.

(2) In case that a water surface width of main and lateral canals is less than 9 m, a 4 m wide road having 3 m wide gravel surfacing of 20 cm thickness should be provided on either bank of the canals, to the point in canal where design discharge becomes $0.3 \text{ m}^3/\text{sec}$. After this point, a 2.5 m wide road having 1.7 m wide gravel surfacing of 20 cm thickness should be provided to the end of main and lateral canals.

6. Drains

(1) All the drains should have a side slope of 1:1 or flatter depending on the soil conditions.

(2) To facilitate O&M work, one embankment of drains should be wide enough for utilizing the excavated materials from the channels so that it can be used as a roadway.

7. Hydraulic Design of Canals and Drains

(1) Hydraulic design of canals drains should be made using Manning's formula.

(2) Coefficients of roughness (n) should be as follows:

- Main and lateral canals (earth):	0.025
- Main and lateral canals (concrete):	0.015
- Farm ditch :	0.030
- Drain :	0.040

(3) Permissible velocities should be determined using Kennedy formula. Minimum velocity should be as follows:

- Irrigation canal:	0.3m/sec
- Drain:	0.4m/sec

統一選定基準に対する非適合案件数

CISs		
Conditions		Nos. of Sub-Project Disqualified
(One Condition)		(200)
1. Years After Construction		26
2. IA's Willingness		2
3. Status of Amortizing Loan		54
4. Ceiling of Development Cost		20
5. Necessity of Rehabilitation		1
6. <u>EIRR</u>		97
(Two Conditions)		(53)
7. Years After Construction + Status of Amortizing Loan		7
8. Years After Construction + Ceiling of Development Cost		1
9. Years After Construction + Necessity of Rehabilitation		1
10. Years After Construction + <u>EIRR</u>		3
11. IA's Willingness + <u>EIRR</u>		5
12. Status of Amortizing Loan + Ceiling of Development Cost		1
13. Status of Amortizing Loan + <u>EIRR</u>		11
14. Ceiling of Development Cost + <u>EIRR</u>		23
15. Necessity of Rehabilitation + <u>EIRR</u>		1
(Three Conditions)		(18)
16. Years After Construction & Status of Amortizing Loan + Necessity of Rehabilitation		1
17. IA's Willingness + Ceiling of Development Cost + <u>EIRR</u>		11
18. Status of Amortizing Loan + Ceiling of Development Cost + <u>EIRR</u>		6
(Four Conditions)		
19. Years After Construction + Status of Amortizing Loan + Necessity of Rehabilitation + <u>EIRR</u>		1
Total		272

CIPs		
Conditions		Nos. of Sub-Project Disqualified
(One Condition)		(48)
1. Cropping Intensity		4
2. Farm Household		3
3. Average Farm Size		3
4. Farmer's Willingness		5
5. <u>Minimum Requirement of Facilities</u>		19
6. Ceiling of Development Cost		8
7. EIRR		6
(Two Conditions)		(8)
8. Farmers' Willingness + <u>Minimum Requirement of Facilities</u>		1
9. Farmers' Willingness + Ceiling of Development Cost		2
10. <u>Minimum Requirement of Facilities</u> + Ceiling of Development Cost		2
11. Development Cost + EIRR		3
(Three Conditions)		(2)
12. Farmers' Willingness + Ceiling of Development Cost + EIRR		1
13. <u>Minimum Requirement of Facilities</u> + Ceiling of Development Cost + EIRR		1
Total		58

地方灌漑事務所職員に対する10ヶ年トレーニング計画

Training Course	(Unit: no. of training slots & peso)					
	PIOs		RIOs		PIOs and RIOs	
	Training Slots	Costs*	Training Slots	Costs*	Training Slots	Costs*
Project Preparation Aspect						
Project selection and prioritization	327	784,800	79	189,600	406	974,400
Feasibility study preparation	340	816,000	93	223,200	433	1,039,200
Project design	432	1,036,800	73	175,200	505	1,212,000
Sub-total	1,099	2,637,600	245	588,000	1,344	3,225,600
Project Construction/O&M Aspect						
Contract management	346	830,400	94	225,600	440	1,056,000
Construction methods	695	1,668,000	104	249,600	799	1,917,600
Project cost accounting	268	643,200	87	208,800	355	852,000
Project monitoring and evaluation and reporting	386	926,400	120	288,000	506	1,214,400
Sub-total	1,695	4,068,000	405	972,000	2,100	5,040,000
Institutional Development/IA Aspect						
Institutional development (in general)	720	1,728,000	134	321,600	854	2,049,600
Basic leaderships development	921	2,210,400	165	396,000	1,086	2,606,400
Inter-human relationship	830	1,992,000	271	650,400	1,101	2,642,400
Financial management	828	1,987,200	149	357,600	977	2,344,800
System management	809	1,941,600	136	326,400	945	2,268,000
IA loan management, accounting, recording, monitoring and reporting	394	945,600	199	477,600	593	1,423,200
Sub-total	4,502	10,804,800	1,054	2,529,600	5,556	13,334,400
Others						
Irrigated crop diversification scheme	630	1,512,000	188	451,200	818	1,963,200
Others**	333	799,200	318	763,200	651	1,562,400
Sub-total	963	2,311,200	506	1,214,400	1,469	3,525,600
Total	8,259	19,821,600	2,210	5,304,000	10,469	25,125,600
Training Ratio (Training slots to total no. of employees)	1.5		1.1		1.4	

* Based on the average estimate of Peso 480.00 per training slot per day for 5 days for each training course.

** Include administrative and other courses.

Source of basic data: Annex Table E2-05 and interview of NIA officials.

地方灌漑事務所の主要な事務機器・調査機器・建設機械の台数

Equipment	No. of Equipment			Total (4) = (1)+(2)+(3)
	Available as of 1990 (1)	Provided under Foreign Aid (2)	Additionally Required (3)	
	I. Office Equipment			
1. Blue Printing Machine	21	24	22	67
2. Copy Machine	18	0	50	68
II. Survey Equipment				
1. Transit	100	67	306	473
2. Auto-Level	157	67	264	488
3. Current Meter	76	67	7	150
III. Construction Equipment & Vehicles				
1. Tractor Dozer/Crawler	167	0	64	231
2. Excavator	103	13	83	199
3. Dump Truck	214	67	22	303
4. Stake Truck/Ordinary Truck	58	67	58	183
5. Tanker (Water/Fuel)	5	0	62	67
6. Portable Concrete Mixer	126	67	32	225
7. Concrete Vibrator	13	28	128	169
8. Concrete Vibrator	77	23	82	182
9. Roller/Compactor	26	67	85	178
10. Water Pump	240	335	36	611
11. Generator	57	0	242	299
12. 4WD	142	0	71	213
13. Pick-up	151	80	116	347

地方灌漑事務所の新・改築費及び建設機械等購入費

(I) PIOs' Building		(Unit: Peso 1,000)		
Building	Space (sq.m)	Unit Cost (P/sq.m)	Amount	
1 Administration Office				43,150
1) New Construction	6,390	4,000		25,560
2) Rehabilitation	17,590	1,000		17,590
2 Equipment Shed				17,295
1) New Construction	15,855	1,000		15,855
2) Rehabilitation	5,760	250		1,440
Sub-Total (1)				60,445
(II) PIOs' Equipment		(Unit: Peso 1,000)		
Item	Capacity	Required Number	Unit Cost (P1,000)	Amount (P1,000)
1 Construction Equipment and Vehicles				
1.1 New Procurement				
1) Bulldozer	11 ton	64	2,380	152,320
2) Backhoe	0.45qm	83	1,960	162,680
3) Dump Truck	8 tons	22	952	20,944
4) Ordinary Truck	6 tons	58	672	38,976
5) Fuel Tank Truck	1,000 lit	62	840	52,080
6) Potable Concrete Mixer	1 bagger	32	45	1,440
7) Welding Machine	200 amps	128	118	15,104
8) Concrete Vibrator	40 mm	82	22	1,804
9) Vibrator Roller	1.0 tons	85	308	26,180
10) Water Pump	100 mm, 12 HP	36	42	1,512
11) Generator	20 KVA	242	168	40,656
12) 4-Wheel Vehicle	Diesel	71	286	20,306
13) Pick-up	4-WD	116	378	43,848
14) Spare Parts				115,570
(Sub-total)				693,420
1.2 Repair & Spare Parts for Existing Equipment				
Total (Item 1)				355,967
				1,049,387
2 Office Equipment				
1) Blue Printing Machine		22	62	1,364
2) Copying Machine		50	112	5,600
3) Calculator		95	2	190
4) Planimeter		67	14	938
Total (Item 2)				8,092
3 Survey and Hydraulic Equipment				
1) Transit		306	76	23,256
2) Automatic Level		264	28	7,392
3) Current Meter		7	84	588
4) Steel Tape	100 m	1,985	4	7,940
5) Soil Auger		76	20	1,520
Total (Item 3)				40,696
Sub-Total (2)				1,098,175
(III) Total (1) + (2)				1,158,620
(IV) Price Contingencies				218,240
(V) Ground Total				1,376,860

共同灌漑事業の開発目標 (1990-2000年)

New Development

Year	NIA Regular Program				NIA/Total	CARP & NIA
	CARP	CIDIP	CIDP-I&II	Others		
1990	9,110	14,178	1,985	3,055	19,218	28,328
1991	14,219	30,482	736	8,360	39,578	53,797
1992	16,794	15,000	2,264	2,700	19,964	36,758
1993	17,914	15,000	3,600	1,650	20,250	38,164
1994	19,593	15,000	4,400	1,700	21,100	40,693
1995	22,392	15,000	1,000	1,445	17,445	39,837
1996	39,480	15,000	0	1,250	16,250	55,730
1997	39,479	15,000	0	6,250	21,250	60,729
1998	0	15,000	0	9,365	24,365	24,365
1999	0	15,000	0	7,550	22,550	22,550
2000	0	15,000	0	4,750	19,750	19,750
Total	178,981	179,660	13,985	48,075	241,720	420,701

Rehabilitation

Year	NIA Regular Program				NIA/Total	CARP & NIA
	CARP	CIDIP	CIDP-I&II	Others		
1990	3,814	17,693	13,944	51,863	83,500	87,314
1991	4,795	17,976	3,800	18,426	40,202	44,997
1992	5,664	16,127	4,200	1,127	21,454	27,118
1993	6,041	12,591	4,200	4,209	21,000	27,041
1994	6,607	15,000	4,000	2,285	21,285	27,892
1995	7,551	15,000	0	5,350	20,350	27,901
1996	23,545	15,000	0	3,150	18,150	41,695
1997	23,544	15,000	0	7,400	22,400	45,944
1998	0	15,000	0	7,800	22,800	22,800
1999	0	15,000	0	6,600	21,600	21,600
2000	0	15,000	0	6,400	21,400	21,400
Total	81,561	169,387	30,144	114,610	314,141	395,702

Total

Year	NIA Regular Program				NIA/Total	CARP & NIA
	CARP	CIDIP	CIDP-I&II	Others		
1990	12,924	31,871	15,929	54,918	102,718	115,642
1991	19,014	48,458	4,536	26,786	79,780	98,794
1992	22,458	31,127	6,464	3,827	41,418	63,876
1993	23,955	27,591	7,800	5,859	41,250	65,205
1994	26,200	30,000	8,400	3,985	42,385	68,585
1995	29,943	30,000	1,000	6,795	37,795	67,738
1996	63,025	30,000	0	4,400	34,400	97,425
1997	63,023	30,000	0	13,650	43,650	106,673
1998	0	30,000	0	17,165	47,165	47,165
1999	0	30,000	0	14,150	44,150	44,150
2000	0	30,000	0	11,150	41,150	41,150
Total	260,542	349,047	44,129	162,685	555,861	816,403

Source: NIA Corporate Plan

州別開発目標の算定式

For CIPs (New Development)

$$PTAP = NTAP \times \{ UCAP \times (0.50 \times 1/UCAN + 0.30 \times CDRP / \sum(UCAP \times CDRP) + 0.10 \times CARP / \sum(UCAP \times CARP) + 0.10 \text{ ILP} / \sum(UCAP \times \text{ILP})) \}$$

where,

PTAP:	Provincial target area for new development (CIPs)
NTAP:	National target area for new development (CIPs)
UCAP:	Unirrigated communal area in province UCAP = PIAP - CISP
	PIAP: Potential irrigable area for CIPs in province
	CISP: Communal irrigation system area in province
UCAN:	Unirrigated communal area in the country (nationwide) UCAN = PIAN - CISN
	PIAN: Potential irrigable area for CIPs in the country (nationwide)
	CISN: Communal irrigation system area in the country
CDRP:	Rate of unirrigated area over potential irrigable area in province (CIPs) CDRP = UCAP / PIAP (communal irrigation systems/projects)
CARP:	CARP Strategic Provinces: 1, Other Provinces: 0
ILP:	Income Level in province: 1 - 6 according to the provincial income level

For CISs (Rehabilitation and Improvement)

$$PTAS = NTAS \times \{ CISP \times (0.50 \times 1/CISN + 0.30 \times RPAP / \sum(CISP \times RPAP) + 0.10 \times CARP + 0.10 \text{ ILP} / \sum(CISP \times \text{ILP})) \}$$

where,

PTAS:	Provincial target area for rehabilitation (CISs)
NTAS:	National target area for rehabilitation (CISs)
CISP:	Area under the existing communal irrigation systems in province
CISN:	Area under the existing communal irrigation systems in the country (total of CISP)
RPAP:	Repayment rate of amortization in province
CARP:	CARP Strategic Provinces: 1, Other Provinces: 0
ILP:	Income Level in province: 1 - 6 according to the provincial income level

新規案件の州別開発目標

Region	Province	CIS Service Area (ha)	CIP Unirrigated Area (ha)	CARP SOP	Income Class	Province Ratio	SSIDP Target Area (ha)
I	1 ILOCOS NORTE	29,189	17,557	0	2	0.02843	8,243
	2 ABRA	11,762	7,233	0	4	0.01287	3,732
	3 ILOCOS SUR	11,374	9,086	0	3	0.01609	4,666
	4 MOUNTAIN PROVINCE	11,999	19,504	0	5	0.04128	11,971
	5 LA UNION	6,669	3,916	0	3	0.00652	1,919
	6 BENGUET	3,310	14,057	0	3	0.03051	8,847
	7 PANGASINAN	58,856	1,630	1	1	0.00263	764
	Sub-total	133,159	72,983				40,142
II	8 BATANES	0	0	0	0	0.00000	0
	9 CAGAYAN	16,163	12,246	0	1	0.01962	5,691
	10 KALINGA APAYAO	7,937	9,344	1	4	0.02230	6,525
	11 ISABELA	10,833	15,515	1	1	0.03439	10,030
	12 IFUGAO	5,315	14,130	1	5	0.03799	11,016
	13 NUEVA VISCAYA	23,023	3,481	0	4	0.00524	1,521
	14 QUIRINO	3,857	10,298	0	5	0.02302	6,674
	sub-total	67,128	65,014				41,658
III	15 NUEVA ECUIJA	16,787	6,485	1	1	0.01226	3,555
	16 TARLAC	17,528	2,441	0	1	0.00451	1,308
	17 ZAMBALES	8,754	4,103	0	3	0.00671	1,945
	18 PAMPANGA	18,421	3,276	1	1	0.00574	1,663
	19 BULACAN	4,887	840	0	1	0.00109	315
	20 BATAAN	7,354	1,015	0	2	0.00136	395
	sub-total	73,711	19,160				9,181
IV	21 AURORA	7,347	2,942	0	5	0.00516	1,495
	22 QUEZON	6,250	2,308	1	1	0.00434	1,259
	23 RIZAL	3,372	152	0	2	0.00019	55
	24 CAVITE	347	1,735	0	2	0.00388	1,066
	25 LAGUNA	7,173	380	0	1	0.00045	131
	26 BATANGAS	2,413	3,014	1	1	0.00651	1,917
	27 MARINDUQUE	782	456	0	4	0.00081	233
	28 MINDORO ORIENTAL	11,923	4,357	0	2	0.00654	1,897
	29 MINDORO OCCIDENTAL	18,208	7,486	1	4	0.01599	4,636
	30 ROMBLON	1,508	747	0	5	0.00131	379
	31 PALAWAN	10,885	23,153	0	2	0.04519	13,105
	sub-total	70,608	46,730				26,173
V	32 CAMARINES NORTE	1,607	8,998	0	4	0.02060	5,975
	33 CAMARINES SUR	24,445	11,158	1	1	0.02152	6,240
	34 CATANDUANES	1,742	1,187	0	5	0.00223	648
	35 ALBAY	15,312	19,846	0	2	0.03623	10,506
	36 SORSOGON	7,870	4,286	1	3	0.00911	2,642
	37 MASBATE	1,819	2,350	0	3	0.00447	1,296
	sub-total	52,795	47,825				27,307
VI	38 AKLAN	2,474	510	0	4	0.00079	229
	39 CAPEZ	2,082	2,586	0	3	0.00489	1,418
	40 ANTIQUE	7,881	2,510	1	4	0.00522	1,515
	41 ILOILO	5,196	2,183	0	1	0.00318	921
	42 NEGROS OCCIDENTAL	2,041	12,341	1	1	0.03114	9,031
	43 NEGROS DEL NORTE	0	0	0		0.00000	0
	sub-total	19,674	20,120				13,114
VII	44 CEBU	3,140	2,583	0	1	0.00420	1,217
	45 NEGROS ORIENTAL	5,497	6,540	1	2	0.01476	4,280
	46 BOHOL	8,503	1,020	1	1	0.00174	504
	47 SIQUOR	0	1,100	0	6	0.00287	833
	sub-total	17,140	11,243				6,833
VIII	48 NORTHERN SAMAR	1,850	7,012	0	4	0.01562	4,529
	49 SAMAR	1,274	5,727	1	3	0.01508	4,374
	50 EASTERN SAMAR	542	5,221	0	4	0.01228	3,562
	51 NORTHERN LEYTE	19,976	10,094	1	1	0.01971	5,716
	52 SOUTHERN LEYTE	3,897	1,346	0	4	0.00221	641
	sub-total	27,539	29,400				18,824
IX	53 ZAMBOANGA DEL NORTE	4,787	3,335	0	3	0.00578	1,677
	54 ZAMBOANGA DEL SUR	10,489	11,409	1	2	0.02547	7,386
	55 BASILAN	160	205	0	5	0.00042	122
	56 SULU	0	950	0	4	0.00129	375
	57 TAWI-TAWI	0	710	0	6	0.00108	312
	sub-total	15,436	16,609				9,873
X	58 SURIGAO DEL NORTE	5,413	4,991	0	4	0.00942	2,731
	59 CAMIGUIN	562	315	0	6	0.00060	174
	60 AGUSAN DEL NORTE	10,506	4,245	0	5	0.00745	2,160
	61 MISAMIS ORIENTAL	2,744	5,142	0	2	0.00988	2,865
	62 MISAMIS OCCIDENTAL	6,146	2,884	0	5	0.00516	1,496
	63 BUKIDNON	6,214	15,482	1	2	0.03782	10,967
	64 AGUSAN DEL SUR	1,470	17,610	1	3	0.04840	14,037
	sub-total	33,055	50,669				34,430
XI	65 SURIGAO DEL SUR	3,148	3,130	0	3	0.00573	1,662
	66 DAVAO ORIENTAL	2,005	1,670	0	3	0.00298	863
	67 DAVAO DEL NORTE	8,991	4,080	1	1	0.00786	2,280
	68 DAVAO DEL SUR	9,626	3,940	0	2	0.00501	1,744
	69 SOUTH COTABATO	6,709	9,752	1	1	0.02178	6,316
	sub-total	30,479	22,572				12,864
XII	70 LANA DEL NORTE	3,437	6,566	0	4	0.01366	3,961
	71 LANA DEL SUR	1,205	13,347	0	4	0.03157	9,154
	72 NORTH COTABATO	5,126	30,520	1	2	0.07931	22,999
	73 MAGUINDANAO	9,427	14,265	1	4	0.03558	10,319
	74 SULTAN KUDARAT	20,131	7,055	0	4	0.01162	3,369
	sub-total	39,326	71,853				49,801
	Total	580,050	474,188			1.00000	290,000

改修・改良案件の州別開発目標

Region	Province	CIS Service Area (ha)	Amortization Repayment Rate (%)	CARP SOP	Income Class	Province Ratio	SSIDP Target Area (ha)
I	1 ILOCOS NORTE	29,189	9.11	0	2	0.05312	14,875
	2 ABRA	11,762	1.04	0	4	0.01467	4,108
	3 ILOCOS SUR	11,374	2.64	0	3	0.01498	4,193
	4 MOUNTAIN PROVINCE	11,999	5.44	0	5	0.02055	5,754
	5 LA UNION	6,669	2.11	0	3	0.00847	2,371
	6 BENGUET	3,310	3.12	0	3	0.00450	1,260
	7 PANGASINAN	58,856	7.98	1	1	0.11863	33,218
	sub-total	133,139					65,779
II	8 BATANES	0	0.00	0	0	0.00000	0
	9 CAGAYAN	16,163	7.22	0	1	0.02552	7,145
	10 KALINGA APAYAO	7,937	3.10	1	4	0.01429	4,001
	11 ISABELA	10,833	4.32	1	1	0.01830	5,123
	12 IFUGAO	5,315	3.06	1	5	0.00994	2,783
	13 NUEVA VISCAAYA	23,023	13.17	0	3	0.05361	15,011
	14 QUIRINO	3,857	3.41	0	5	0.00591	1,655
	sub-total	67,128					35,718
III	15 NUEVA ECIIJA	16,787	14.49	1	1	0.04357	12,200
	16 TARLAC	17,528	2.63	0	1	0.02050	5,741
	17 ZAMBALES	8,754	2.57	0	3	0.01147	3,212
	18 PAMPANGA	18,421	6.45	1	1	0.03461	9,691
	19 BULACAN	4,867	2.64	0	1	0.00570	1,595
	20 BATAAN	7,354	10.21	0	2	0.01410	3,949
	sub-total	73,711					36,388
IV	21 AURORA	7,347	0.45	0	5	0.00932	2,609
	22 QUEZON	6,250	4.49	1	1	0.01065	2,982
	23 RIZAL	3,372	4.29	0	2	0.00469	1,313
	24 CAVITE	347	2.02	0	2	0.00041	115
	25 LAGUNA	7,173	12.61	0	1	0.01477	4,136
	26 BATANGAS	2,413	1.63	1	1	0.00350	980
	27 MARINDUQUE	782	4.38	0	4	0.00121	338
	28 MINDORO ORIENTAL	11,923	5.00	0	2	0.01734	4,855
	29 MINDORO OCCIDENTAL	18,208	6.43	1	4	0.03819	10,693
	30 ROMBLON	1,908	4.29	0	5	0.00307	860
	31 PALAWAN	10,885	0.93	0	2	0.01188	3,325
	sub-total	70,608					32,206
V	32 CAMARINES NORTE	1,607	4.08	0	4	0.00344	683
	33 CAMARINES SUR	24,445	4.82	1	1	0.04239	11,870
	34 CATANDUANES	1,742	0.20	0	5	0.00217	608
	35 ALBAY	15,312	2.30	0	2	0.01858	5,204
	36 SORSOGON	7,870	3.83	1	3	0.01411	3,949
	37 MASBATE	1,819	10.14	0	3	0.00361	1,011
	sub-total	57,795					23,325
VI	38 AKLAN	2,474	6.56	0	4	0.00430	1,205
	39 CAPEZ	2,082	2.83	0	3	0.00278	778
	40 ANTIQUE	7,881	9.53	1	4	0.01870	5,236
	41 ILOILO	5,196	2.54	0	1	0.00604	1,690
	42 NEGROS OCCIDENTAL	2,041	3.99	1	1	0.00339	948
	43 NEGROS DEL NORTE	0	0.00	0	0	0.00000	0
	sub-total	19,674					9,857
VII	44 CEBU	3,140	2.40	0	1	0.00361	1,010
	45 NEGROS ORIENTAL	5,497	3.44	1	2	0.00926	2,591
	46 BOHOL	8,503	4.55	1	1	0.01453	4,070
	47 SIQUJOR	0	4.55	0	6	0.00000	0
	sub-total	17,140					7,671
VIII	48 NORTHERN SAMAR	1,850	0.57	0	4	0.00223	625
	49 SAMAR	1,274	0.50	1	3	0.00191	534
	50 EASTERN SAMAR	542	0.00	0	4	0.00063	175
	51 NORTHERN LEYTE	19,976	2.46	1	1	0.03043	8,520
	52 SOUTHERN LEYTE	3,897	2.57	0	4	0.00540	1,511
	sub-total	27,539					11,365
IX	53 ZAMBOANGA DEL NORTE	4,787	2.06	0	3	0.00606	1,666
	54 ZAMBOANGA DEL SUR	10,489	5.57	1	2	0.01965	5,503
	55 BASILAN	160	5.57	0	5	0.00028	77
	56 SULU	0	0.00	0	4	0.00000	0
	57 TAWI-TAWI	0	0.00	0	6	0.00000	0
	sub-total	15,436					7,276
X	58 SURIGAO DEL NORTE	5,413	6.09	0	4	0.00919	2,573
	59 CAMIGUIN	562	1.47	0	6	0.00080	225
	60 AGUSAN DEL NORTE	10,506	2.53	0	5	0.01527	4,276
	61 MISAMIS ORIENTAL	2,744	1.87	0	2	0.00322	903
	62 MISAMIS OCCIDENTAL	6,146	6.51	0	5	0.01111	3,112
	63 BUKIDNON	6,214	5.14	1	2	0.01141	3,194
	64 AGUSAN DEL SUR	1,470	9.12	1	3	0.00333	931
	sub-total	33,055					15,214
XI	65 SURIGAO DEL SUR	3,148	2.49	0	3	0.00410	1,149
	66 DAVAO ORIENTAL	2,005	4.21	0	3	0.00292	818
	67 DAVAO DEL NORTE	8,991	7.86	1	1	0.01802	5,047
	68 DAVAO DEL SUR	9,626	9.88	0	2	0.01818	5,091
	69 SOUTH COTABATO	6,709	5.53	1	1	0.01205	3,375
	sub-total	30,479					15,480
XII	70 LANA DEL NORTE	3,437	10.62	0	4	0.00722	2,022
	71 LANA DEL SUR	1,205	3.37	0	4	0.00175	491
	72 NORTH COTABATO	5,126	9.29	1	2	0.01131	3,166
	73 MAGUINDANAO	9,427	8.28	1	4	0.02132	5,971
	74 SULTAN KUDARAT	20,131	3.11	0	4	0.02863	8,071
	sub-total	39,326					19,721
	Total	580,050				1.00000	280,000

SSIDPの新規案件における州別開発目標

Region	Province	CIP Potential Area 1	SSIDP Target Area 2	Area Identified by SSIDP			Total 6=3+4+5	Unit-ha BALANCE 7=2-6
				Group-A 3	Group-B 4	Group-C 5		
I	1 ILOCOS NORTE	17,557	8,243	0	0	0	0	8,243
	2 ABRA	7,233	3,732	0	350	1,456	1,806	1,926
	3 ILOCOS SUR	9,084	4,666	801	290	3,990	5,081	-415
	4 MOUNTAIN PROVINCE	19,504	11,971	595	0	6,525	7,120	4,851
	5 LA UNION	3,916	1,919	0	280	2,433	2,713	-794
	6 BENGUET	14,057	8,847	167	283	2,403	2,833	5,994
	7 PANGASINAN	1,630	764	55	0	175	230	534
	sub-total	72,983	40,142	1,618	1,203	16,982	19,803	20,339
II	8 BATANES	0	0	0	0	0	0	0
	9 CAGAYAN	12,246	5,691	0	392	9,070	9,462	-3,771
	10 KALINGA APAYAO	9,344	6,525	456	250	4,856	5,562	963
	11 ISABELA	15,515	10,030	0	180	6,640	6,820	3,210
	12 IFUGAO	14,130	11,016	275	250	4,455	4,980	6,036
	13 NUEVA VISCAYA	3,481	1,521	0	0	1,980	1,980	-459
	14 QUIRINO	10,298	6,674	0	125	4,445	4,570	2,104
	sub-total	65,014	41,457	731	1,197	31,446	33,374	8,083
III	15 NUEVA ECUA	6,485	3,555	0	0	153	153	3,402
	16 TARLAC	3,441	1,308	0	0	514	514	794
	17 ZAMBALES	4,103	1,945	0	0	0	0	1,945
	18 PAMPANGA	3,276	1,663	0	0	3,050	3,050	-1,387
	19 BULACAN	840	315	0	0	420	420	-105
	20 BATAAN	1,015	395	0	0	0	0	395
		sub-total	19,160	9,181	0	0	4,137	4,137
IV	21 AURORA	2,942	1,495	200	0	1,221	1,421	74
	22 QUEZON	2,308	1,259	347	84	945	1,376	-117
	23 RIZAL	152	55	0	0	75	75	-20
	24 CAVITE	1,735	1,066	222	60	285	567	499
	25 LAGUNA	380	131	0	0	170	170	-39
	26 BATANGAS	3,014	1,917	0	0	2,017	2,017	-100
	27 MARINDUQUE	456	233	0	0	0	0	233
	28 MINDORO ORIENTAL	4,357	1,897	85	0	2,357	2,442	-545
	29 MINDORO OCCIDENTAL	7,486	4,636	0	0	2,668	2,668	1,968
	30 ROMBLON	747	379	70	0	50	120	259
	31 PALAWAN	23,153	13,105	1,080	1,365	13,773	16,218	-3,113
	sub-total	46,730	26,173	2,004	1,509	23,561	27,074	-901
V	32 CAMARINES NORTE	8,998	5,975	580	235	5,871	6,686	-711
	33 CAMARINES SUR	11,158	6,240	1,033	291	3,219	4,545	1,695
	34 CATANDUANES	1,187	648	0	0	90	90	558
	35 ALBAY	19,846	10,506	380	0	7,058	7,438	3,068
	36 SORSOGON	4,286	2,642	216	236	272	724	1,918
	37 MASBATE	2,350	1,296	0	376	755	1,131	165
		sub-total	47,825	27,307	2,209	1,140	17,265	20,614
VI	38 AKLAN	510	229	100	100	0	200	29
	39 CAPIZ	2,586	1,418	0	0	845	845	573
	40 ANTIQUE	2,510	1,515	590	100	1,006	1,696	-181
	41 ILOILO	2,183	921	64	0	700	764	157
	42 NEGROS OCCIDENTAL	12,341	9,031	1,110	70	3,410	4,590	4,441
	43 NEGROS DEL NORTE	0	0	0	0	0	0	0
	sub-total	20,130	13,114	1,864	270	5,961	8,095	5,012
VII	44 CEBU	2,583	1,217	200	0	530	730	487
	45 NEGROS ORIENTAL	6,540	4,280	2,260	200	180	2,640	1,640
	46 BOHOL	1,020	504	0	0	0	0	504
	47 SIQUOR	1,100	833	200	150	260	610	223
	sub-total	11,243	6,834	2,660	350	970	3,980	2,854
VIII	48 NORTHERN SAMAR	7,012	4,529	345	50	4,065	4,460	69
	49 SAMAR	5,727	4,374	465	0	2,498	2,963	1,411
	50 EASTERN SAMAR	5,221	3,562	145	50	862	1,057	2,505
	51 NORTHERN LEYTE	10,094	5,716	540	0	5,820	6,360	-644
	52 SOUTHERN LEYTE	1,346	641	208	0	140	348	293
		sub-total	29,400	18,822	1,703	100	13,385	15,188
IX	53 ZAMBOANGA DEL NORTE	3,355	1,677	290	185	1,460	1,935	-258
	54 ZAMBOANGA DEL SUR	11,409	7,386	0	0	2,274	2,274	5,112
	55 BASHAN	205	122	0	0	0	0	122
	56 SULU	950	375	0	0	950	950	-575
	57 TAWI-TAWI	710	312	0	0	710	710	-398
		sub-total	16,609	9,872	290	185	5,394	5,869
X	58 SURIGAO DEL NORTE	4,991	2,731	320	0	1,329	1,649	1,082
	59 CAMIGUIN	315	174	0	0	0	0	174
	60 AGUSAN DEL NORTE	4,245	2,160	602	100	2,055	2,757	-597
	61 MISAMIS ORIENTAL	5,142	2,865	250	145	755	1,150	1,715
	62 MISAMIS OCCIDENTAL	2,884	1,496	0	0	729	729	767
	63 BUKIDNON	15,482	10,967	1,750	140	6,380	8,270	2,697
	64 AGUSAN DEL SUR	17,610	14,037	1,020	700	4,675	6,395	7,842
	sub-total	50,669	34,430	3,942	1,095	15,923	20,950	13,480
XI	65 SURIGAO DEL SUR	3,130	1,662	0	670	2,460	3,130	-1,468
	66 DAVAO ORIENTAL	1,670	863	150	50	840	1,040	-177
	67 DAVAO DEL NORTE	4,080	2,280	830	0	996	1,826	454
	68 DAVAO DEL SUR	3,940	1,744	390	0	910	1,300	444
	69 SOUTH COTABATO	9,752	6,316	480	60	4,546	5,086	1,230
	sub-total	22,572	12,865	1,850	780	9,732	12,382	483
XII	70 LANA O DEL NORTE	6,566	3,961	455	100	1,690	2,245	1,716
	71 LANA O DEL SUR	13,347	9,154	444	0	5,203	5,647	3,507
	72 NORTH COTABATO	30,520	23,000	0	0	18,299	18,299	4,701
	73 MAGUINDANAO	14,365	10,319	607	80	9,887	10,574	-255
	74 SULTAN KUDARAT	7,055	3,369	1,430	0	2,040	3,470	-101
	sub-total	71,853	49,803	2,936	180	37,119	40,235	9,568
	Total	474,188	290,000	21,807	7,999	181,895	211,701	78,299

NIAの灌漑事業開発目標と実績

(1) NIA's DEVELOPMENT TARGET FOR 1990-2000

	New Development	Rehabilitation	Total
(1) <u>NIA Regular Program (x 1,000 ha)</u>			
NIS/NIP	289.2 (18%)	788.9 (48%)	1,078.1 (66%)
CIS/CIP	<u>241.7 (15%)</u>	<u>314.1 (19%)</u>	<u>555.8 (34%)</u>
Total	530.9 (33%)	1,103.0 (67%)	1,633.9 (100%)
(2) <u>CARP-IC (x 1,000 ha)</u>			
NIS/NIP	44.8 (12%)	48.0 (14%)	92.8 (27%)
CIS/CIP	<u>179.0 (51%)</u>	<u>81.6 (23%)</u>	<u>260.6 (74%)</u>
Total	223.8 (63%)	129.6 (37%)	353.4 (100%)
(3) <u>Total (x 1,000 ha), above (1) + (2)</u>			
NIS/NIP	334.0 (17%)	836.9 (42%)	1,170.9 (59%)
CIS/CIP	<u>420.7 (21%)</u>	<u>395.7 (20%)</u>	<u>816.4 (41%)</u>
Total	754.7 (38%)	1,232.6 (62%)	1,987.3 (100%)

(2) ACTUAL ACCOMPLISHMENT :1980 - 1989

(Unit: 1,000 ha)

	New Development	Rehabilitation	Total
NIS/NIP	145.9	553.3	699.2
CIS/CIP	<u>143.9</u>	<u>189.7</u>	<u>333.6</u>
Total	289.8	743.0	1,0032.8

(3) COMPARISON BETWEEN ACTUAL ACCOMPLISHMENT (1980 - 1989) AND DEVELOPMENT TARGET (1990 - 2000)

(Unit: ha/year)

	Actual Accomplishment (1980 - 1989) (1)	Development Target (1990 - 2000) (2)	Ratio (%) (2)/(1)
<u>New Development</u>			
NIS/NIP	14,600 ha	30,400 ha	208 %
CIS/CIP	<u>14,400 ha</u>	<u>38,200 ha</u>	<u>265 %</u>
<u>Rehabilitation</u>			
NIS/NIP	55,300 ha	78,800 ha	142 %
CIS/CIP	<u>19,000 ha</u>	<u>36,000 ha</u>	<u>189 %</u>
Total	103,300 ha	183,400 ha	178 %

管区別年次開発面積 ("A"グループ案件対象)

CIPs

Unit:ha

Region	First 5 Years					Second 5 Years					Total
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Region I	632	809	177	0	0	0	0	0	0	0	1,618
Region II	344	366	21	0	0	0	0	0	0	0	731
Region III	0	0	0	0	0	0	0	0	0	0	0
Region IV	243	925	758	78	0	0	0	0	0	0	2,004
Region V	145	694	960	410	0	0	0	0	0	0	2,209
Region VI	202	800	730	132	0	0	0	0	0	0	1,864
Region VII	181	698	788	631	362	0	0	0	0	0	2,660
Region VIII	370	852	481	0	0	0	0	0	0	0	1,703
Region IX	145	145	0	0	0	0	0	0	0	0	290
Region X	579	1,496	1,391	476	0	0	0	0	0	0	3,942
Region XI	354	804	572	120	0	0	0	0	0	0	1,850
Region XII	463	1,102	858	367	146	0	0	0	0	0	2,936
Total	3,658	8,691	6,736	2,214	508	0	0	0	0	0	21,807
(%)	(17%)	(40%)	(31%)	(10%)	(2%)	(0%)	(0%)	(0%)	(0%)	(0%)	(100%)

CISs

Unit:ha

Region	First 5 Years					Second 5 Years					Total
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Region I	488	767	1,243	988	209	209	209	209	128	0	4,450
Region II	139	149	1,301	1,802	511	0	0	0	0	0	3,902
Region III	249	249	305	595	305	0	0	0	0	0	1,703
Region IV	185	918	1,080	572	226	0	0	0	0	0	2,981
Region V	358	747	1,344	1,485	538	0	0	0	0	0	4,472
Region VI	224	825	1,168	873	354	94	47	0	0	0	3,585
Region VII	527	527	948	1,082	278	230	96	0	0	0	3,688
Region VIII	166	673	1,706	1,957	1,304	1,089	1,089	1,172	666	42	9,864
Region IX	582	807	442	217	0	0	0	0	0	0	2,048
Region X	0	226	1,278	1,936	1,354	470	0	0	0	0	5,264
Region XI	254	762	1,149	1,057	833	417	0	0	0	0	4,472
Region XII	60	60	1,237	1,238	0	0	0	0	0	0	2,595
Total	3,232	6,710	13,201	13,802	5,912	2,509	1,441	1,381	794	42	49,024
(%)	(7%)	(14%)	(27%)	(28%)	(12%)	(5%)	(3%)	(3%)	(1%)	(0%)	(100%)

管區別年次開發灌溉面積 (全案件対象)

CIPs

Unit:ha

Region	First 5 Years					Second 5 Years					Total
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Region I	632	809	2,481	4,679	4,968	5,539	5,958	6,031	6,031	3,014	40,142
Region II	344	366	2,241	5,027	5,612	5,612	5,876	6,356	6,657	3,366	41,457
Region III	0	0	823	1,573	1,464	1,319	1,200	1,200	1,102	500	9,181
Region IV	243	925	1,513	2,608	3,880	4,005	3,799	3,767	3,649	1,784	26,173
Region V	145	694	2,460	3,683	3,471	3,337	3,337	4,126	4,192	1,862	27,307
Region VI	202	800	1,551	1,762	1,603	1,562	1,634	1,643	1,568	789	13,114
Region VII	181	698	1,140	1,349	1,112	714	564	439	439	198	6,834
Region VIII	370	852	1,322	2,155	2,657	2,669	2,908	2,837	2,166	886	18,822
Region IX	145	145	895	1,634	1,404	1,322	1,322	1,322	1,172	511	9,872
Region X	579	1,496	3,743	4,802	4,016	4,263	4,467	4,510	4,424	2,130	34,430
Region XI	354	804	1,133	1,521	1,649	1,663	1,663	1,957	1,589	532	12,865
Region XII	463	1,102	3,703	6,399	6,533	6,387	7,006	8,206	7,034	2,970	49,803
Total	3,658	8,691	23,005	37,192	38,369	38,392	39,734	42,394	40,023	18,542	290,000
(%)	(1%)	(3%)	(8%)	(13%)	(13%)	(13%)	(14%)	(15%)	(14%)	(6%)	(100%)

CISs

Unit:ha

Region	First 5 Years					Second 5 Years					Total
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Region I	488	767	5,076	9,043	9,001	9,447	9,132	8,938	9,252	4,635	65,779
Region II	139	149	1,927	4,309	4,863	5,145	5,412	5,458	5,513	2,803	35,718
Region III	249	249	1,965	4,180	4,921	5,407	5,480	5,573	5,573	2,791	36,388
Region IV	185	918	2,157	3,262	4,215	4,744	4,707	4,780	4,844	2,394	32,206
Region V	358	747	1,795	3,647	3,687	2,965	3,131	3,216	2,636	1,143	23,325
Region VI	224	825	1,352	1,499	1,284	1,061	1,004	938	1,056	614	9,857
Region VII	527	527	948	1,442	1,008	875	721	708	637	278	7,671
Region VIII	166	673	1,834	2,121	1,459	1,346	1,374	1,384	1,106	417	11,880
Region IX	582	807	837	961	708	708	746	766	766	397	7,278
Region X	0	226	1,278	2,204	2,395	2,239	1,964	1,963	1,970	975	15,214
Region XI	254	762	1,981	2,641	2,378	2,120	1,795	1,557	1,374	618	15,480
Region XII	60	60	1,910	3,044	2,589	2,890	2,759	2,656	2,542	1,211	19,721
Total	3,232	6,710	23,060	38,353	38,508	38,947	38,225	37,937	37,269	18,276	280,517
(%)	(1%)	(2%)	(8%)	(14%)	(14%)	(14%)	(14%)	(13%)	(13%)	(7%)	(100%)

10ヶ年開発計画の総事業費 (1993-2002年)

	(Unit: P million)		
Priority Group/Cost Items	CISs	CIPs	Total
"A" Group Sub-projects			
Nos. of sub-projects (nos.)	313	146	459
Designed irrigable areas (ha)	49,000	21,800	70,800
(1) Feasibility studies	52.5	0.0	52.5
(2) Engineering Designs	20.0	6.7	26.7
(3) Institutional activities	46.9	52.2	99.1
(4) Project costs	532.0	950.9	1,482.9
<u>Sub-total (1)</u>	<u>651.4</u>	<u>1,009.8</u>	<u>1,661.2</u>
"B" Group Sub-projects			
Nos. of sub-projects (nos.)	365	58	423
Designed irrigable areas (ha)	50,600	8,000	58,600
(1) Feasibility studies	75.8	12.2	88.0
(2) Engineering Designs	25.8	4.0	29.8
(3) Institutional activities	55.2	16.7	71.9
(4) Project costs	549.0	353.6	902.6
<u>Sub-total (2)</u>	<u>705.8</u>	<u>386.5</u>	<u>1,092.3</u>
"C" Group Sub-projects			
Nos. of sub-projects (nos.)	537	1,148	1,685
Designed irrigable areas (ha)	75,200	165,700	240,900
(1) Feasibility studies	113.5	249.2	362.7
(2) Engineering Designs	37.9	81.0	118.9
(3) Institutional activities	80.6	345.1	425.7
(4) Project costs	816.0	7,288.8	8,104.8
<u>Sub-total (3)</u>	<u>1,048.0</u>	<u>7,964.1</u>	<u>9,012.1</u>
Total (4)=(1)+(2)+(3)			
	2,405.2	9,360.4	11,765.6
"D" Group Sub-projects			
Nos. of sub-projects (nos.)	760	710	1,470
Designed irrigable areas (ha)	105,700	94,500	200,200
(1) Feasibility studies	159.0	142.4	301.4
(2) Engineering Designs	53.6	50.2	103.8
(3) Institutional activities	135.5	214.2	349.7
(4) Project costs	1,126.7	4,157.7	5,284.4
<u>Sub-total (5)</u>	<u>1,474.8</u>	<u>4,564.5</u>	<u>6,039.3</u>
Total (6)=(4)+(5)			
	3,880.0	13,924.9	17,804.9
Price Contingencies (7)	1,633.0	6,034.6	7,667.6
Grand Total (8)=(6)+(7)			
	5,513.0	19,959.5	25,472.5

10ヶ年開発計画の管区別総事業費（1993-2002年）

(Unit : Million Pesos)

REGION NO.	CISs (%)	CIPs (%)	Total (%)
REGION I	913.2 (23)	1,960.5 (14)	2,873.7 (17)
REGION II	499.7 (13)	2,018.3 (14)	2,518.0 (15)
REGION III	492.0 (13)	440.6 (3)	932.6 (5)
REGION IV	450.7 (11)	1,286.4 (9)	1,737.1 (10)
REGION V	335.3 (9)	1,300.9 (9)	1,636.2 (9)
REGION VI	129.8 (3)	620.2 (4)	750.0 (4)
REGION VII	103.4 (3)	322.3 (2)	425.7 (2)
REGION VIII	196.7 (5)	923.6 (7)	1,120.3 (6)
REGION IX	104.2 (3)	477.6 (3)	581.8 (3)
REGION X	183.4 (5)	1,638.0 (13)	1,821.4 (10)
REGION XI	204.0 (5)	584.8 (4)	788.8 (4)
REGION XII	267.6 (7)	2,351.7 (18)	2,619.3 (15)
Sub-total	3,880.0 (100)	13,924.9 (100)	17,804.9 (100)
Price Contingencies	1,633.0	6,034.6	7,667.6
Total	5,513.0	19,959.5	25,472.5

年次別事業資金 (管區別)

(Unit : Million Pesos)

REGION	First 5Years					Second 5Years					Total
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
REGION I	55.2 ¹	75.6 ¹	201.3 ¹	348.4 ¹	367.5 ¹	403.5 ¹	419.1 ¹	398.0 ¹	388.3 ¹	216.8 ¹	2,873.7
REGION II	36.1 ¹	46.6 ¹	147.8 ¹	300.8 ¹	337.6 ¹	345.5 ¹	362.5 ¹	366.6 ¹	370.3 ¹	204.2 ¹	2,518.0
REGION III	10.4 ¹	14.8 ¹	72.4 ¹	130.1 ¹	135.8 ¹	137.3 ¹	132.4 ¹	123.5 ¹	114.8 ¹	61.1 ¹	932.6
REGION IV	25.9 ¹	82.2 ¹	124.9 ¹	177.0 ¹	243.8 ¹	256.6 ¹	248.0 ¹	234.9 ¹	223.5 ¹	120.3 ¹	1,737.1
REGION V	23.2 ¹	53.9 ¹	142.4 ¹	223.6 ¹	217.8 ¹	206.4 ¹	206.1 ¹	231.2 ¹	222.5 ¹	109.1 ¹	1,636.2
REGION VI	15.2 ¹	45.4 ¹	84.6 ¹	100.9 ¹	94.5 ¹	91.1 ¹	94.0 ¹	90.5 ¹	85.1 ¹	48.7 ¹	750.0
REGION VII	18.2 ¹	41.6 ¹	66.2 ¹	80.4 ¹	65.1 ¹	46.0 ¹	37.2 ¹	29.6 ¹	27.8 ¹	13.6 ¹	425.7
REGION VIII	29.3 ¹	63.8 ¹	99.9 ¹	139.0 ¹	153.4 ¹	152.5 ¹	161.3 ¹	153.4 ¹	115.8 ¹	51.9 ¹	1,120.3
REGION IX	19.6 ¹	24.3 ¹	56.5 ¹	90.2 ¹	77.2 ¹	74.5 ¹	74.1 ¹	71.3 ¹	62.9 ¹	31.2 ¹	581.8
REGION X	39.0 ¹	85.4 ¹	190.7 ¹	244.8 ¹	216.6 ¹	232.0 ¹	239.9 ¹	232.6 ¹	224.0 ¹	116.4 ¹	1,821.4
REGION XI	20.8 ¹	41.9 ¹	73.1 ¹	103.8 ¹	108.5 ¹	107.5 ¹	102.6 ¹	108.3 ¹	88.1 ¹	34.2 ¹	788.8
REGION XII	35.2 ¹	65.6 ¹	205.9 ¹	339.8 ¹	344.5 ¹	345.5 ¹	366.6 ¹	404.9 ¹	346.0 ¹	165.3 ¹	2,619.3
Sub-total	328.1 ¹	641.1 ¹	1,465.7 ¹	2,278.8 ¹	2,362.3 ¹	2,398.4 ¹	2,443.8 ¹	2,444.8 ¹	2,269.1 ¹	1,172.8 ¹	17,804.9
Price contingencies	45.3 ¹	120.8 ¹	352.9 ¹	673.4 ¹	833.2 ¹	988.9 ¹	1,159.8 ¹	1,319.2 ¹	1,378.5 ¹	795.6 ¹	7,667.6
Total	373.4 ¹	761.9 ¹	1,818.6 ¹	2,952.2 ¹	3,195.5 ¹	3,387.3 ¹	3,603.6 ¹	3,764.0 ¹	3,647.6 ¹	1,968.4 ¹	25,472.5

事業実施計画及び年次別事業資金 (全体)

SSIDP Target Area (1993-2002) : 280,000 ha for CISS & 290,000 ha for CIPs													(Unit : Million Pesos)	
Sub-Projects	No. of Sub-Projects	Designed Irrigable Area (ha)	First 5 Years					Second 5 Years					Total	
			1993	1994	1995	1996	1997	1998	1999	2000	2001	2002		
CISS														
I "A" Group														
F/S	227	34,856	26.0	13.3	5.2	3.0	2.3	2.5	0.2					52.5
Design	280	41,913	2.9	8.6	4.4	1.6	0.9	0.7	0.8	0.1				20.0
Inst.Activities	313	49,024	3.1	5.9	7.7	8.2	7.9	6.9	3.4	1.8	1.0	1.0		46.9
Construction	313	49,024	35.9	74.5	141.5	144.3	59.6	27.3	18.9	18.7	10.7	0.6		532.0
Sub-Total (1)	313	49,024	67.9	102.3	158.8	157.1	70.7	37.4	23.3	20.6	11.7	1.6		651.4
II "B" Group														
Re-Study	365	50,583	9.9	15.5	19.6	12.0	8.8	5.4	4.6					75.8
Design	365	50,583		3.3	5.8	6.5	3.9	2.9	1.8	1.6				25.8
Inst.Activities	365	50,583		1.5	3.9	6.6	8.3	9.5	8.7	7.3	4.6	4.8		55.2
Construction	365	50,583			35.8	91.6	127.2	114.6	75.1	51.4	36.3	17.0		549.0
Sub-Total (2)	365	50,583	9.9	20.3	65.1	116.7	148.2	132.4	90.2	60.3	40.9	21.8		705.8
III "C" Group														
F/S	537	75,162	19.6	23.4	18.4	21.2	11.6	11.0	8.3					113.5
Design	537	75,162		6.2	7.7	5.8	7.2	4.5	4.0	2.5				37.9
Inst.Activities	537	75,162		2.6	6.0	8.4	11.5	13.4	12.4	10.2	7.7	8.4		80.6
Construction	537	75,162			70.5	154.9	149.9	141.5	117.9	82.0	69.2	30.1		816.0
Sub-Total (3)	537	75,162	19.6	32.2	102.6	190.3	180.2	170.4	142.6	94.7	76.9	38.5		1,048.0
IV "D" Group														
F/S	760	105,748	0.2	5.5	15.8	22.1	34.6	38.8	42.0					159.0
Design	760	105,748		0.1	1.9	5.4	7.5	11.2	12.8	14.7				53.6
Inst.Activities	760	105,748		0.1	0.8	3.1	6.3	12.6	19.4	25.3	41.7			135.5
Construction	760	105,748			0.8	20.1	76.7	137.1	201.6	258.0	284.5	147.9		1,126.7
Sub-Total (4)	760	105,748	0.2	5.7	19.3	50.7	125.1	199.7	275.8	298.9	309.8	189.6		1,474.8
Total (1)	1,975	280,517	97.6	160.5	345.8	514.8	524.2	539.9	531.9	474.5	439.3	251.5		3,880.0
CIPs														
V "A" Group														
Design	97	13,376	4.8	1.5	0.4									6.7
Inst.Activities	146	21,807	12.0	10.2	10.5	10.5	7.0		1.7	0.3				52.2
Construction	146	21,807	165.1	384.1	288.2	91.4	22.1							950.9
Sub-Total (5)	146	21,807	181.9	395.8	299.1	101.9	29.1		1.7	0.3				1,009.8
VI "B" Group														
Re-Study	58	8,028	8.5	3.7										12.2
Design	58	8,028		2.8	1.2									4.0
Inst.Activities	58	8,028		2.5	3.3	3.3	3.3	3.3	1.0					16.7
Construction	58	8,028			123.7	176.8	53.1							353.6
Sub-Total (6)	58	8,028	8.5	9.0	128.2	180.1	56.4	3.3	1.0					386.5
VII "C" Group														
F/S	1,148	165,665	35.9	47.4	50.0	41.9	35.0	25.5	13.5					249.2
Design	1,148	165,665		11.2	15.6	16.5	13.5	11.3	8.1	4.8				81.0
Inst.Activities	1,148	165,665		9.8	23.6	37.5	48.7	58.1	55.2	45.6	31.3	35.3		345.1
Construction	1,148	165,665			533.6	1,236.1	1,435.5	1,345.8	1,124.0	878.3	540.1	195.4		7,288.8
Sub-Total (7)	1,148	165,665	35.9	68.4	622.8	1,332.0	1,532.7	1,440.7	1,200.8	928.7	571.4	230.7		7,964.1
VIII "D" Group														
F/S	710	94,500	4.2	4.7	7.3	16.1	26.5	41.0	42.6					142.4
Design	710	94,500		1.4	1.6	2.9	6.1	9.9	13.8	14.5				50.2
Inst.Activities	710	94,500		1.3	2.4	4.9	10.1	18.5	29.3	40.0	37.5	70.2		214.2
Construction	710	94,500			58.5	126.1	177.2	343.4	624.1	987.1	1,220.9	620.4		4,157.7
Sub-Total (8)	710	94,500	4.2	7.4	69.8	150.0	219.9	412.8	709.8	1,041.6	1,258.4	690.6		4,564.5
Total (2)	2,062	290,000	230.5	480.6	1,119.9	1,764.0	1,838.1	1,858.5	1,911.9	1,970.3	1,829.8	921.3		13,924.9
Total (1)+(2)	4,037	570,517	328.1	641.1	1,465.7	2,278.8	2,362.3	2,398.4	2,443.8	2,444.8	2,269.1	1,172.8		17,804.9
Price Contingencies			45.3	120.8	352.9	673.4	833.2	988.9	1,159.8	1,319.2	1,378.5	795.0		7,667.6
Grand Total	4,037	570,517	373.4	761.9	1,818.6	2,952.2	3,195.5	3,387.3	3,603.6	3,764.0	3,647.6	1,968.4		25,472.5

事業を実施しない場合と実施する場合の灌漑面積

I. Without Project Condition (unit:ha)										
Region	"A" Group					10 Year Program				
	Irrigated Area			Rainfed	Total	Irrigated Area			Rainfed	Total
	Wet Season	Dry Season	Sub-Total			Wet Season	Dry Season	Sub-Total		
Region I	3,671	2,300	5,971	2,397	8,368	54,268	41,562	95,830	51,653	147,483
Region II	2,833	2,527	5,360	1,800	7,160	25,931	21,657	47,588	51,244	98,832
Region III	1,245	1,272	2,517	458	2,975	26,600	23,920	50,520	18,969	69,489
Region IV	2,316	2,040	4,356	2,669	7,025	25,024	21,312	46,336	33,355	79,691
Region V	3,537	2,837	6,374	3,144	9,518	18,450	14,963	33,413	32,182	65,595
Region VI	2,603	2,544	5,147	2,846	7,993	7,156	6,549	13,705	15,815	29,520
Region VII	2,659	2,068	4,727	3,689	8,416	5,531	4,070	9,601	8,974	18,575
Region VIII	6,313	4,847	11,160	5,254	16,414	7,603	6,189	13,792	23,099	36,891
Region IX	1,657	1,395	3,052	681	3,733	5,888	4,407	10,295	11,262	21,557
Region X	3,316	2,759	6,075	5,890	11,965	9,585	7,886	17,471	40,059	57,530
Region XI	3,157	2,782	5,939	3,165	9,104	10,929	9,113	20,042	17,416	37,458
Region XII	2,011	1,521	3,532	3,520	7,052	15,284	11,558	26,842	54,240	81,082
Total	35,318	28,892	64,210	35,513	99,723	212,249	173,186	385,435	358,268	743,703

II. With Project Condition (unit:ha)										
Region	"A" Group					10 Year Program				
	Irrigated Area			Rainfed	Total	Irrigated Area			Rainfed	Total
	Wet Season	Dry Season	Sub-Total			Wet Season	Dry Season	Sub-Total		
Region I	6,068	4,693	10,761	0	10,761	105,921	93,211	199,132	0	199,132
Region II	4,633	4,260	8,893	0	8,893	77,175	67,914	145,089	0	145,089
Region III	1,703	1,703	3,406	0	3,406	45,569	40,100	85,669	0	85,669
Region IV	4,985	4,156	9,141	0	9,141	58,379	51,373	109,752	0	109,752
Region V	6,681	5,879	12,560	0	12,560	50,632	44,556	95,188	0	95,188
Region VI	5,449	5,029	10,478	0	10,478	22,971	20,214	43,185	0	43,185
Region VII	6,348	5,744	12,092	0	12,092	14,505	12,764	27,269	0	27,269
Region VIII	11,567	9,771	21,338	0	21,338	30,702	27,017	57,719	0	57,719
Region IX	2,338	2,318	4,656	0	4,656	17,150	15,092	32,242	0	32,242
Region X	9,206	8,272	17,478	0	17,478	49,644	43,686	93,330	0	93,330
Region XI	6,322	6,009	12,331	0	12,331	28,345	24,943	53,288	0	53,288
Region XII	5,531	5,103	10,634	0	10,634	69,524	61,181	130,705	0	130,705
Total	70,831	62,937	133,768	0	133,768	570,517	502,051	1,072,568	0	1,072,568

事業を実施しない場合と実施する場合の水稲生産量

I. Without Project Condition											(unit:ton)
Region	"A" Group					10 Year Program					
	Irrigated Area			Rainfed	Total	Irrigated Area			Rainfed	Total	
	Wet Season	Dry Season	Sub-Total			Wet Season	Dry Season	Sub-Total			
Region I	12,004	7,912	19,916	6,711	26,627	177,456	142,973	320,429	144,629	465,058	
Region II	9,349	8,845	18,194	3,726	21,920	85,572	75,800	161,372	106,075	267,447	
Region III	5,105	5,444	10,549	1,273	11,822	109,060	102,378	211,438	52,734	264,172	
Region IV	8,500	8,058	16,558	6,726	23,284	91,838	84,182	176,020	84,055	260,075	
Region V	13,122	10,525	23,647	9,935	33,582	68,450	55,513	123,963	101,695	225,658	
Region VI	8,694	7,937	16,631	7,741	24,372	23,901	20,433	44,334	43,017	87,351	
Region VII	9,812	7,445	17,257	9,333	26,590	20,409	14,652	35,061	22,704	57,765	
Region VIII	21,843	15,220	37,063	12,347	49,410	26,306	19,433	45,739	54,283	100,022	
Region IX	7,258	6,640	13,898	2,003	15,901	25,789	20,977	46,766	33,111	79,877	
Region X	13,430	10,208	23,638	16,492	40,130	38,819	29,178	67,997	112,165	180,162	
Region XI	12,186	10,099	22,285	10,888	33,173	42,186	33,080	75,266	59,911	135,177	
Region XII	7,199	5,354	12,553	9,363	21,916	54,717	40,684	95,401	144,278	239,679	
Total	128,502	103,687	232,189	96,538	328,727	764,503	639,283	1,403,786	958,657	2,362,443	

II. With Project Condition											(unit:ton)
Region	"A" Group					10 Year Program					
	Irrigated Area			Rainfed	Total	Irrigated Area			Rainfed	Total	
	Wet Season	Dry Season	Sub-Total			Wet Season	Dry Season	Sub-Total			
Region I	19,843	16,144	35,987	0	35,987	346,361	320,646	667,007	0	667,007	
Region II	15,289	14,910	30,199	0	30,199	254,677	237,699	492,376	0	492,376	
Region III	6,982	7,289	14,271	0	14,271	186,833	171,628	358,461	0	358,461	
Region IV	18,295	16,416	34,711	0	34,711	214,251	202,923	417,174	0	417,174	
Region V	24,786	21,811	46,597	0	46,597	187,845	165,302	353,147	0	353,147	
Region VI	18,200	15,690	33,890	0	33,890	76,723	63,068	139,791	0	139,791	
Region VII	23,424	20,678	44,102	0	44,102	53,523	45,950	99,473	0	99,473	
Region VIII	40,021	30,681	70,702	0	70,702	106,229	84,834	191,063	0	191,063	
Region IX	10,240	11,033	21,273	0	21,273	75,117	71,838	146,955	0	146,955	
Region X	37,284	30,607	67,891	0	67,891	201,059	161,639	362,698	0	362,698	
Region XI	24,403	21,813	46,216	0	46,216	109,412	90,543	199,955	0	199,955	
Region XII	19,801	17,963	37,764	0	37,764	248,896	215,357	464,253	0	464,253	
Total	258,568	225,035	483,603	0	483,603	2,060,926	1,831,427	3,892,353	0	3,892,353	

水稻の経済的価格予測

Items	Region												National Average
	1	2	3	4	5	6	7	8	9	10	11	12	
A. Projected rice price for 2000, FOB Bangkok, value in 1990 (US\$/ton)	280	280	280	280	280	280	280	280	280	280	280	280	280
B. Quality adjustment for Philippines rice (x 0.8)	224	224	224	224	224	224	224	224	224	224	224	224	224
C. Ocean freight from Bangkok to MNL port (US\$)	19	19	19	19	19	19	19	19	19	19	19	19	19
D. Port handling, storage and other costs (pesos)	100	100	100	100	100	100	100	100	100	100	100	100	100
E. Trading margin (10% of CIF Price, US\$)	24	24	24	24	24	24	24	24	24	24	24	24	24
F. Transport cost from port to market (pesos)	702	1,264	562	0	281	0	577	577	562	406	374	374	473
G. Wholesale price of rice (1\$=27.5 x 1.25 pesos)	10,147	10,709	10,007	9,445	9,726	9,445	10,022	10,022	10,007	9,851	9,819	9,819	9,918
H. Equivalent paddy price (x 0.65)	6,596	6,961	6,505	6,139	6,322	6,139	6,514	6,514	6,505	6,403	6,382	6,382	6,447
I. Milling cost (financial value x 0.82)	450	450	450	450	450	450	450	450	450	450	450	450	450
J. By-products value (financial value x 0.82)	350	350	350	350	350	350	350	350	350	350	350	350	350
K. Distance between farm to wholesaler (km) (financial value x 0.78)	62	73	33	104	36	71	78	80	126	51	70	73	71
L. Transport cost from farm to wholesaler (6 peso/km/ton) (financial value x 0.78)	290	342	154	487	168	332	365	374	590	239	328	342	334
M. Farm gate price of paddy (import parity, peso/ton)	6,206	6,519	6,251	5,552	6,054	5,707	6,049	6,040	5,815	6,064	5,954	5,940	6,013

Sources:

A : The World Bank, 1990, Price Prospects for Major Primary Commodities, 1988-2000, 4th Quarter 1990

B : does, Staff Appraisal Report on Second Communal Irrigation Development Project

C : National Food Authority

D : does

E : estimate by the team

F : Fertilizer and Pesticide Authority, 1990, assumed to be the same as the transport cost of fertilizers.

H, I, J : Estimated by the team.

K : based on the SSIDP inventory survey, assumed the NIA office to be situated near the wholesale market.

L : estimate by the team

事業を実施しない場合と実施する場合の農業純生産額

I. Without Project Condition

	"A" Group				10 Year Program			
	Total	Gross	Total	Net	Total	Gross	Total	Net
	Production	Production	Production	Production	Production	Production	Production	Production
	Value	Costs	Value		Value	Costs	Value	
	(tons)	('000 peso)	('000 peso)	('000 peso)	(tons)	('000 peso)	('000 peso)	('000 peso)
Region I	26,627	159,762	63,905	95,857	465,058	2,790,348	1,116,139	1,674,209
Region II	21,920	131,520	52,608	78,912	267,447	1,604,682	641,873	962,809
Region III	11,822	70,932	28,373	42,559	264,172	1,585,032	634,013	951,019
Region IV	23,284	139,704	55,882	83,822	260,075	1,560,450	624,180	936,270
Region V	33,582	201,492	80,597	120,895	225,658	1,353,948	541,579	812,369
Region VI	24,372	146,232	58,493	87,739	87,351	524,106	209,642	314,464
Region VII	26,590	159,540	63,816	95,724	57,765	346,590	138,636	207,954
Region VIII	49,410	296,460	118,584	177,876	100,022	600,132	240,053	360,079
Region IX	15,901	95,406	38,162	57,244	79,877	479,262	191,705	287,557
Region X	40,130	240,780	96,312	144,468	180,162	1,080,972	432,389	648,583
Region XI	33,173	199,038	79,615	119,423	135,177	811,062	324,425	486,637
Region XII	21,916	131,496	52,598	78,898	239,679	1,438,074	575,230	862,844
Total	328,727	1,972,362	788,945	1,183,417	2,362,443	14,174,658	5,669,864	8,504,794

II. With Project Condition

	"A" Group				10 Year Program			
	Total	Gross	Total	Net	Total	Gross	Total	Net
	Production	Production	Production	Production	Production	Production	Production	Production
	Value	Costs	Value		Value	Costs	Value	
	(tons)	('000 peso)	('000 peso)	('000 peso)	(tons)	('000 peso)	('000 peso)	('000 peso)
Region I	35,987	215,922	86,369	129,553	667,007	4,002,042	1,600,817	2,401,225
Region II	30,199	181,194	72,478	108,716	492,376	2,954,256	1,181,702	1,772,554
Region III	14,271	85,626	34,250	51,376	358,461	2,150,766	860,306	1,290,460
Region IV	34,711	208,266	83,306	124,960	417,174	2,503,044	1,001,218	1,501,826
Region V	46,597	279,582	111,833	167,749	353,147	2,118,882	847,553	1,271,329
Region VI	33,890	203,340	81,336	122,004	139,791	838,746	335,498	503,248
Region VII	44,102	264,612	105,845	158,767	99,473	596,838	238,735	358,103
Region VIII	70,702	424,212	169,685	254,527	191,063	1,146,378	458,551	687,827
Region IX	21,273	127,638	51,055	76,583	146,955	881,730	352,692	529,038
Region X	67,891	407,346	162,938	244,408	362,698	2,176,188	870,475	1,305,713
Region XI	46,216	277,296	110,918	166,378	199,955	1,199,730	479,892	719,838
Region XII	37,764	226,584	90,634	135,950	464,253	2,785,518	1,114,207	1,671,311
Total	483,603	2,901,618	1,160,647	1,740,971	3,892,353	23,354,118	9,341,646	14,012,472

I. CIsSs and CIPs (Unit: MILLION PESOS)

Year in Order	Year	Costs			Gross Benefit (B)	Balance (B-C)
		Construction	O&M	Total (C)		
1	1993	209	0	209	0	-209
2	1994	416	1	417	22	-395
3	1995	383	5	388	92	-296
4	1996	216	11	227	218	-9
5	1997	83	18	101	361	260
6	1998	32	23	55	466	411
7	1999	19	26	45	518	473
8	2000	17	27	44	538	494
9	2001	10	27	37	547	510
10	2002	1	28	29	553	524
11	2003	0	28	28	558	530
:						
50	2042	0	28	28	558	530

ECONOMIC INTERNAL RATE OF RETURN

EIRR 29.04%

1) NPV OF COST (EIRR%) 705

2) NPV OF BENEFIT (EIRR%) 742

3) B-C(10%), million peso 2,728

4) B/C(10%) 3.571

SENSITIVITY DATA

Cost (%)	Benefit(%)				
	-20	-10	0	10	20
-20	29.04%	32.11%	35.07%	37.95%	40.75%
-10	26.22%	29.04%	31.77%	34.42%	37.00%
0	23.89%	26.51%	29.04%	31.50%	33.90%
10	21.93%	24.37%	26.74%	29.04%	31.28%
20	20.26%	22.53%	24.77%	26.94%	29.04%

II. CIsSs

(Unit: MILLION PESOS)

Year in Order	Year	Costs			Gross Benefit (B)	Balance (B-C)
		Construction	O&M	Total (C)		
1	1993	57	0	57	0	-57
2	1994	85	0	85	5	-80
3	1995	133	1	134	20	-114
4	1996	131	3	134	55	-79
5	1997	59	5	64	106	42
6	1998	31	7	38	159	121
7	1999	19	9	28	197	169
8	2000	17	10	27	214	187
9	2001	10	10	20	223	203
10	2002	1	11	12	229	217
11	2003	0	11	11	234	223
:						
50	2042	0	11	11	234	223

ECONOMIC INTERNAL RATE OF RETURN

EIRR 30.45%

1) NPV OF COST (EIRR%) 227

2) NPV OF BENEFIT (EIRR%) 238

3) B-C(10%), million peso 1,090

4) B/C(10%) 3.811

SENSITIVITY DATA

Cost (%)	Benefit(%)				
	-20	-10	0	10	20
-20	30.45%	33.57%	36.58%	39.49%	42.31%
-10	27.65%	30.45%	33.23%	35.92%	38.53%
0	25.17%	27.86%	30.45%	32.96%	35.39%
10	23.15%	25.67%	28.10%	30.45%	32.73%
20	21.42%	23.79%	26.08%	28.30%	30.45%

III. CIPs

Year in Order	Year	Costs			Gross Benefit (B)	Balance (B-C)
		Construction	O&M	Total (C)		
1	1993	152	0	152	0	-152
2	1994	331	1	332	17	-315
3	1995	250	4	254	72	-182
4	1996	85	8	93	163	70
5	1997	24	13	37	255	218
6	1998	1	16	17	307	290
7	1999	0	17	17	321	304
8	2000	0	17	17	324	307
9	2001	0	17	17	324	307
10	2002	0	17	17	324	307
11	2003	0	17	17	324	307
:						
50	2042	0	17	17	324	307

ECONOMIC INTERNAL RATE OF RETURN

EIRR 28.31%

1) NPV OF COST (EIRR%) 476

2) NPV OF BENEFIT (EIRR%) 503

3) B-C(10%), million peso 1,638

4) B/C(10%) 3.433

SENSITIVITY DATA

Cost (%)	Benefit(%)				
	-20	-10	0	10	20
-20	28.31%	31.36%	34.31%	37.18%	39.98%
-10	25.51%	28.31%	31.02%	33.66%	36.23%
0	23.21%	25.80%	28.31%	30.76%	33.14%
10	21.27%	23.69%	26.03%	28.31%	30.54%
20	19.62%	21.88%	24.08%	26.22%	28.31%

経済費用・便益フロー (10年開発計画)

表11-06

I. CISs and CIPs (Unit: MILLION PESOS)

Year in Order	Year	Const- ruction	Costs O&M	Total (C)	Gross Benefit (B)	Balance (B-C)
1	1993	275	0	275	0	-275
2	1994	535	1	536	22	-514
3	1995	1,224	5	1,229	92	-1,137
4	1996	1,903	15	1,918	279	-1,639
5	1997	1,973	38	2,011	691	-1,320
6	1998	2,003	70	2,073	1,305	-768
7	1999	2,041	109	2,150	2,032	-118
8	2000	2,042	149	2,191	2,773	582
9	2001	1,895	192	2,087	3,540	1,453
10	2002	980	233	1,213	4,320	3,107
11	2003	0	269	269	4,976	4,707
12	2004	0	291	291	5,383	5,092
13	2005	0	298	298	5,507	5,209
:						
50	2042	0	298	298	5,507	5,209

ECONOMIC INTERNAL RATE OF RETURN

EIRR	26.66%
1)NPV OF COST (EIRR%)	3,999
2)NPV OF BENEFIT (EIRR%)	4,227
3)B-C(10%), million peso	19,035
4)B/C(10%)	3.253

SENSITIVITY DATA

Cost (%)	Benefit(%)				
	-20	-10	0	10	20
-20	26.66%	29.47%	32.17%	37.49%	37.32%
-10	24.08%	26.66%	29.16%	31.58%	33.92%
0	21.93%	24.34%	26.66%	28.91%	31.10%
10	20.13%	22.38%	24.55%	26.66%	28.71%
20	18.38%	20.70%	22.74%	24.73%	26.66%

H. CISs (Unit: MILLION PESOS)

Year in Order	Year	Const- ruction	Costs O&M	Total (C)	Gross Benefit (B)	Balance (B-C)
1	1993	82	0	82	0	-82
2	1994	134	0	134	5	-129
3	1995	289	1	290	20	-270
4	1996	430	3	433	55	-378
5	1997	438	8	446	145	-301
6	1998	451	15	466	285	-181
7	1999	444	24	468	453	-15
8	2000	396	33	429	622	193
9	2001	367	43	410	791	381
10	2002	210	51	261	956	695
11	2003	0	59	59	1,096	1,037
12	2004	0	64	64	1,184	1,120
13	2005	0	65	65	1,206	1,141
:						
50	2042	0	65	65	1,206	1,141

ECONOMIC INTERNAL RATE OF RETURN

EIRR	25.96%
1)NPV OF COST (EIRR%)	934
2)NPV OF BENEFIT (EIRR%)	986
3)B-C(10%), million peso	4,164
4)B/C(10%)	3.224

SENSITIVITY DATA

Cost (%)	Benefit(%)				
	-20	-10	0	10	20
-20	25.96%	28.60%	31.14%	33.58%	35.94%
-10	23.51%	25.96%	28.32%	30.59%	32.78%
0	21.47%	23.76%	25.96%	28.08%	30.14%
10	19.74%	21.89%	23.96%	25.96%	27.89%
20	18.26%	20.29%	22.24%	24.13%	25.96%

III. CIPs (Unit: MILLION PESOS)

Year in Order	Year	Const- ruction	Costs O&M	Total (C)	Gross Benefit (B)	Balance (B-C)
1	1993	193	0	193	0	-193
2	1994	401	1	402	17	-385
3	1995	935	4	939	72	-867
4	1996	1,473	12	1,485	224	-1,261
5	1997	1,535	30	1,565	546	-1,019
6	1998	1,532	55	1,607	1,020	-587
7	1999	1,597	85	1,682	1,579	-103
8	2000	1,646	116	1,762	2,151	389
9	2001	1,528	149	1,677	2,749	1,072
10	2002	770	182	952	3,364	2,412
11	2003	0	210	210	3,880	3,670
12	2004	0	227	227	4,199	3,972
13	2005	0	233	233	4,301	4,068
:						
50	2042	0	233	233	4,301	4,068

ECONOMIC INTERNAL RATE OF RETURN

EIRR	26.88%
1)NPV OF COST (EIRR%)	3,064
2)NPV OF BENEFIT (EIRR%)	3,239
3)B-C(10%), million peso	14,871
4)B/C(10%)	3.261

SENSITIVITY DATA

Cost (%)	Benefit(%)				
	-20	-10	0	10	20
-20	26.88%	29.73%	32.49%	35.16%	37.76%
-10	24.25%	26.88%	29.42%	31.88%	34.28%
0	22.07%	24.51%	26.88%	29.17%	31.40%
10	20.24%	22.52%	24.73%	26.88%	28.96%
20	18.68%	20.82%	22.90%	24.91%	26.88%

事業を実施しない場合と実施する場合の単位面積当り農家純収支

I. Without Project Condition

Items		Irrigated														
		Rainfed					Wet Season					Dry Season				
		Unit Yield (ton/ha)	Cultivated Area (ha)	Unit Price (peso)	Q'ty	Amount (pesos)	Cultivated Area (ha)	Unit Price (peso)	Q'ty	Amount (pesos)	Cultivated Area (ha)	Unit Price (peso)	Q'ty	Amount (pesos)		
I. Gross Farm Income																
1.1 Irrigated Paddy																
a) Wet Season	ton	3.6	0.0	4,920	0	1.0	4,920	17,712	0.0	4,920	0	1.0	4,920	17,712		
b) Dry Season	ton	3.6	0.0	4,920	0	0.0	4,920	0	0.0	4,920	0	0.0	4,920	17,712		
1.2 Rainfed Paddy	ton	2.7	1.0	4,920	13,284	0.0	4,920	0	0.0	4,920	0	0.0	4,920	0		
					13,284			17,712						17,712		
II. Production Cost																
2.1 Seed	kg			5	100	500		5	80	400		5	80	400		
2.2 Fertilizer																
a) N	kg			15	55	825		15	73	1,095		15	73	1,095		
b) P2O5	kg			17	14	238		17	28	476		17	28	476		
c) K2O	kg			8	0	0		8	28	224		8	28	224		
2.3 Agro-chemicals	lit.			368	1.8	662		368	3	1,104		368	3	1,104		
2.4 Hired Labor	man-day			45	43	1,935		45	47	2,115		45	47	2,115		
2.5 Hired Animal	day			54	8	432		54	8	432		54	8	432		
2.6 Machinery	L.S.			-	0	266		-	-	354		-	-	354		
2.7 Interest	L.S.			-	-	339		-	-	339		-	-	339		
2.8 Land Tax	L.S.			-	-	45		-	-	45		-	-	45		
2.9 Land Rent	L.S.			-	-	586		-	-	586		-	-	586		
2.10 Others	L.S.			-	-	133		-	-	177		-	-	177		
Sub-Total						5,961				7,347				7,347		
III. O & M Costs						0				150				150		
IV. Amortization Fee						0				0				0		
V. Net Farm Income						7,323				10,215				10,215		

II. With Project Condition

Items		Irrigated														
		Rainfed					CIS (Wet/Dry Season)					CIP (Wet/Dry Season)				
		Unit Yield (ton/ha)	Cultivated Area (ha)	Unit Price (peso)	Q'ty	Amount (pesos)	Cultivated Area (ha)	Unit Price (peso)	Q'ty	Amount (pesos)	Cultivated Area (ha)	Unit Price (peso)	Q'ty	Amount (pesos)		
I. Gross Farm Income																
1.1 Irrigated Paddy	ton	3.6	0.0	4,920	0	1.0	4,920	17,712	1.0	4,920	17,712	0.0	4,920	0		
1.2 Rainfed Paddy	ton	2.7	1.0	4,920	13,284	0.0	4,920	0	0.0	4,920	0	0.0	4,920	0		
					13,284			17,712						17,712		
II. Production Cost																
2.1 Seed	kg			5	100	500		10	50	500		10	50	500		
2.2 Fertilizer																
a) N	kg			15	55	825		15	73	1,095		15	73	1,095		
b) P2O5	kg			17	14	238		17	28	476		17	28	476		
c) K2O	kg			8	0	0		8	28	224		8	28	224		
2.3 Agro-chemicals	lit.			368	1.8	662		368	3	1,104		368	3	1,104		
2.4 Hired Labor	man-day			45	43	1,935		45	47	2,115		45	47	2,115		
2.5 Hired Animal	day			54	8	432		54	8	432		54	8	432		
2.6 Machinery	L.S.			-	0	266		-	-	354		-	-	354		
2.7 Interest	L.S.			-	-	339		-	-	362		-	-	362		
2.8 Land Tax	L.S.			-	-	45		-	-	45		-	-	45		
2.9 Land Rent	L.S.			-	-	586		-	-	586		-	-	586		
2.10 Others	L.S.			-	-	133		-	-	177		-	-	177		
Sub-Total						5,961				7,470				7,470		
III. O & M Costs						0				334				334		
IV. Amortization Fee						0				73				300		
V. Net Farm Income						7,323				9,835				9,608		

代表的農家規模の農家収支分析 (CIS)

I. Without Project Condition

Items	Unit Amount (peso/ha)	Small (0.50 ha)		Average (1.25 ha)		Large (2.00 ha)	
		Cultivated Area (ha)	Total Amount (peso)	Cultivated Area (ha)	Total Amount (peso)	Cultivated Area (ha)	Total Amount (peso)
1. Gross Farm Income							
1) Irrigated Paddy							
a. Wet Season	17,712	0.38	6,731	0.95	16,826	1.52	26,922
b. Dry Season	17,712	0.31	5,491	0.78	13,727	1.24	21,963
2) Rainfed Paddy	13,284	0.12	1,594	0.30	3,985	0.48	6,376
sub-total			13,816		34,538		55,261
2. Crop Production Cost							
1) Irrigated Paddy							
a. Wet Season	7,347	0.38	2,792	0.95	6,980	1.52	11,167
b. Dry Season	7,347	0.31	2,278	0.78	5,694	1.24	9,110
2) Rainfed Paddy	5,961	0.12	715	0.30	1,788	0.48	2,861
sub-total			5,785		14,462		23,138
3. O & M Costs							
1) Irrigated Paddy	150	0.69	104	1.73	259	2.76	414
2) Rainfed Paddy	0	0.00	0	0.00	0	0.00	0
sub-total			104		259		414
4. Amortization Costs							
1) Irrigated Paddy	0	0.69	0	1.73	0	2.76	0
2) Rainfed Paddy	0	0.00	0	0.00	0	0.00	0
sub-total			0		0		0
5. Living Expenses							
			24,000		24,000		24,000
6. Net Farm Reserve							
			-16,073		-4,183		7,709

II. With Project Condition

Items	Unit Amount (peso/ha)	Small (0.50 ha)		Average (1.25 ha)		Large (2.00 ha)	
		Cultivated Area (ha)	Total Amount (peso)	Cultivated Area (ha)	Total Amount (peso)	Cultivated Area (ha)	Total Amount (peso)
1. Gross Farm Income							
1) Irrigated Paddy							
a. Wet Season	17,712	0.50	8,856	1.25	22,140	2.00	35,424
b. Dry Season	17,712	0.45	7,970	1.13	19,926	1.80	31,882
2) Rainfed Paddy	13,284	0.00	0	0.00	0	0.00	0
sub-total			16,826		42,066		67,306
2. Crop Production Cost							
1) Irrigated Paddy							
a. Wet Season	7,470	0.50	3,735	1.25	9,338	2.00	14,940
b. Dry Season	7,470	0.45	3,362	1.13	8,404	1.80	13,446
2) Rainfed Paddy	5,961	0.00	0	0.00	0	0.00	0
sub-total			7,097		17,742		28,386
3. O & M Costs							
1) Irrigated Paddy	334	0.95	317	2.38	793	3.80	1,269
2) Rainfed Paddy	0	0.00	0	0.00	0	0.00	0
sub-total			317		793		1,269
4. Amortization Costs							
1) Irrigated Paddy	73	0.95	69	2.38	173	3.80	277
2) Rainfed Paddy	0	0.00	0	0.00	0	0.00	0
sub-total			69		173		277
5. Living Expenses							
			24,000		24,000		24,000
6. Net Farm Reserve							
			-14,657		-642		13,374

代表的農家規模の農家収支分析 (CIP)

I. Without Project Condition

Items	Unit Amount (peso/ha)	Small (0.50 ha)		Average (1.50 ha)		Large (2.00 ha)	
		Cultivated Area (ha)	Total Amount (peso)	Cultivated Area (ha)	Total Amount (peso)	Cultivated Area (ha)	Total Amount (peso)
1. Gross Farm Income							
1) Irrigated Paddy							
a. Wet Season	17,712	0.00	0	0.00	0	0.00	0
b. Dry Season	17,712	0.00	0	0.00	0	0.00	0
2) Rainfed Paddy	13,284	0.50	6,642	1.50	19,926	2.00	26,568
sub-total			6,642		19,926		26,568
2. Crop Production Cost							
1) Irrigated Paddy							
a. Wet Season	7,347	0.00	0	0.00	0	0.00	0
b. Dry Season	7,347	0.00	0	0.00	0	0.00	0
2) Rainfed Paddy	5,961	0.50	2,981	1.50	8,942	2.00	11,922
sub-total			2,981		8,942		11,922
3. O & M Costs							
1) Irrigated Paddy	150	0.00	0	0.00	0	0.00	0
2) Rainfed Paddy	0	0.50	0	1.50	0	2.00	0
sub-total			0		0		0
4. Amortization Costs							
1) Irrigated Paddy	0	0.00	0	0.00	0	0.00	0
2) Rainfed Paddy	0	2.00	0	2.00	0	2.00	0
sub-total			0		0		0
5. Living Expenses			24,000		24,000		24,000
6. Net Farm Reserve			-20,339		-13,016		-9,354

II. With Project Condition

Items	Unit Amount (peso/ha)	Small (0.50 ha)		Average (1.50 ha)		Large (2.00 ha)	
		Cultivated Area (ha)	Total Amount (peso)	Cultivated Area (ha)	Total Amount (peso)	Cultivated Area (ha)	Total Amount (peso)
1. Gross Farm Income							
1) Irrigated Paddy							
a. Wet Season	17,712	0.50	8,856	1.50	26,568	2.00	35,424
b. Dry Season	17,712	0.45	7,970	1.35	23,911	1.80	31,882
2) Rainfed Paddy	13,284	0.00	0	0.00	0	0.00	0
sub-total			16,826		50,479		67,306
2. Crop Production Cost							
1) Irrigated Paddy							
a. Wet Season	7,470	0.50	3,735	1.50	11,205	2.00	14,940
b. Dry Season	7,470	0.45	3,362	1.35	10,085	1.80	13,446
2) Rainfed Paddy	5,961	0.00	0	0.00	0	0.00	0
sub-total			7,097		21,290		28,386
3. O & M Costs							
1) Irrigated Paddy	334	0.95	317	2.85	952	3.80	1,269
2) Rainfed Paddy	0	0.00	0	0.00	0	0.00	0
sub-total			317		952		1,269
4. Amortization Costs							
1) Irrigated Paddy	600	0.95	285	2.85	855	3.80	1,140
2) Rainfed Paddy	0	0.00	0	0.00	0	0.00	0
sub-total			285		855		1,140
5. Living Expenses			24,000		24,000		24,000
6. Net Farm Reserve			-14,873		3,382		12,511

米の需給バランス

Rice: Supply and Demand Situations (1980-1989)

(Unit: '000 tons)

Year	Beginning Stock	Production	Net Import	Total Supply	Food Use		Other Uses	Total Demand	Ending Stock
					Total	Per Capita (kg)			
1980	1,885	4,801	-261	6,425	4,467	92.9	312	4,779	1,646
1981	1,646	4,975	-82	6,539	4,605	93.0	323	4,928	1,611
1982	1,611	5,270	-1	6,880	4,671	92.0	343	5,014	1,866
1983	1,866	4,621	-40	6,447	4,655	89.4	300	4,956	1,491
1984	1,491	4,965	187	6,643	5,173	97.0	323	5,496	1,147
1985	1,147	5,597	538	7,282	5,163	94.4	364	5,527	1,755
1986	1,755	5,887	2	7,644	5,245	93.3	382	5,627	2,017
1987	2,017	5,396	-112	7,301	5,371	93.2	350	5,721	1,580
1988	1,580	5,667	119	7,366	5,480	92.7	368	5,848	1,558
1989	1,518	6,186	220	7,924	5,881	97.9	402	6,454	1,470

Source: Bureau of Agricultural Statistics, Department of Agriculture

Rice: Supply and Demand Forecast

Year	Cultivated Area	Unit Yield	Paddy Production	Seeds & Wastes	Rice Production	Population	Per capita Demand	Total Demand	Balance
	('000 ha)	(tons/ha)	('000 tons)	('000 tons)	('000 tons)	(million)	(kg)	('000 tons)	('000 tons)
1990	3,339	2.83	9,457	898	5,734	61.48	98.12	6,032	-298
1991	3,352	2.96	9,907	941	6,007	62.87	98.55	6,196	-189
1992	3,370	3.05	10,290	978	6,239	64.26	98.99	6,361	-122
1993	3,378	3.13	10,562	1,003	6,404	65.65	99.42	6,527	-123
1994	3,398	3.20	10,879	1,034	6,596	67.04	99.86	6,695	-98
1995	3,401	3.31	11,251	1,069	6,822	68.42	100.30	6,863	-40
1996	3,412	3.41	11,630	1,105	7,052	69.80	100.74	7,032	20
1997	3,423	3.52	12,036	1,143	7,298	71.17	101.18	7,201	97
1998	3,442	3.63	12,484	1,186	7,570	72.54	101.63	7,372	197
1999	3,464	3.75	12,977	1,233	7,869	73.89	102.07	7,542	327
2000	3,489	3.84	13,409	1,274	8,131	75.22	102.52	7,712	419
2001	3,603	3.94	14,196	1,349	8,608	76.54	102.97	7,881	726
2002	3,706	4.04	14,972	1,422	9,078	77.84	103.42	8,050	1,028
2003	3,810	4.16	15,850	1,506	9,610	79.12	103.83	8,215	1,395
2004	3,916	4.28	16,760	1,592	10,163	80.37	104.25	8,379	1,784
2005	4,026	4.41	17,755	1,687	10,766	81.59	104.67	8,540	2,226

Source: Corporate Plan: 1990-2000, National Irrigation Administration (NIA)

労働需給・失業率予測

(Unit: thousand)

Year	Labor		Unemployment	Target	Target Jobs to be
	Force	Employment		Unemployment	Created to Reduce
				Rate (%)	Unemployment
1990	24,970	22,698	2,272	9.1	790
1991	25,844	23,621	2,223	8.6	923
1992	26,749	24,609	2,140	8.0	988
1993	27,685	25,664	2,021	7.3	1,055
1994	28,654	26,820	1,834	6.4	1,156
1995	29,657	28,085	1,572	5.3	1,265
1996	30,695	29,406	1,289	4.2	1,321
1997	31,769	30,816	953	3.0	1,410
1998	32,881	31,960	921	2.8	1,531
1999	34,032	33,147	885	2.6	1,663
2000	35,189	34,345	844	2.4	1,806
2001	36,413	35,612	801	2.2	1,961
2002	37,680	36,926	754	2.0	2,130

Source: 1990-1997 Projections based on the data from National Statistics Office,
Institute of Labor Studies and Bureau of Labor and Employment Statistics;
1998-2002 Projections based on 1990-1997 Projections.

国内資源コストの算定

表 11-12

Year	Foreign Exchange Component				Domestic Currency Component		
	Value of Production (million US\$)	Investment Cost (million US\$)	Production Cost (million US\$)	Incremental Saving (million US\$)	Investment Cost (million peso)	Production Cost (million peso)	Incremental Cost (million peso)
1993	515	4	88	423	515	3,231	3,746
1994	516	7	88	421	516	3,237	3,753
1995	520	16	89	414	520	3,261	3,780
1996	532	26	91	415	532	3,337	3,868
1997	558	27	96	436	558	3,505	4,064
1998	595	27	102	466	595	3,738	4,332
1999	638	27	109	501	638	4,012	4,650
2000	681	27	117	537	681	4,287	4,968
2001	727	25	125	577	727	4,582	5,310
2002	774	13	133	628	774	4,878	5,652
2003	814	0	140	674	814	5,131	5,945
2004	840	0	145	696	840	5,300	6,140
2005	849	0	146	703	849	5,342	6,191
2006	849	0	146	703	849	5,342	6,191
2007	849	0	146	703	849	5,342	6,191
2008	849	0	146	703	849	5,342	6,191
2009	849	0	146	703	849	5,342	6,191
2010	849	0	146	703	849	5,342	6,191
2011	849	0	146	703	849	5,342	6,191
2012	849	0	146	703	849	5,342	6,191
2013	849	0	146	703	849	5,342	6,191
2014	849	0	146	703	849	5,342	6,191
2015	849	0	146	703	849	5,342	6,191
2016	849	0	146	703	849	5,342	6,191
2017	849	0	146	703	849	5,342	6,191
2018	849	0	146	703	849	5,342	6,191
2019	849	0	146	703	849	5,342	6,191
2020	849	0	146	703	849	5,342	6,191
2021	849	0	146	703	849	5,342	6,191
2022	849	0	146	703	849	5,342	6,191
2023	849	0	146	703	849	5,342	6,191
2024	849	0	146	703	849	5,342	6,191
2025	849	0	146	703	849	5,342	6,191
2026	849	0	146	703	849	5,342	6,191
2027	849	0	146	703	849	5,342	6,191
2028	849	0	146	703	849	5,342	6,191
2029	849	0	146	703	849	5,342	6,191
2030	849	0	146	703	849	5,342	6,191
2031	849	0	146	703	849	5,342	6,191
2032	849	0	146	703	849	5,342	6,191
2033	849	0	146	703	849	5,342	6,191
2034	849	0	146	703	849	5,342	6,191
2035	849	0	146	703	849	5,342	6,191
2036	849	0	146	703	849	5,342	6,191
2037	849	0	146	703	849	5,342	6,191
2038	849	0	146	703	849	5,342	6,191
2039	849	0	146	703	849	5,342	6,191
2040	849	0	146	703	849	5,342	6,191
2041	849	0	146	703	849	5,342	6,191
2042	849	0	146	703	849	5,342	6,191

Note:

- 1) Present worth of net foreign exchange saving = 3,443 millions of US \$
 2) Present worth of domestic currency cost of realizing foreign exchange saving = 31,980 millions of pesos
 3) Domestic resource cost = 9.29 peso=1.0 US\$

管区別貧困發生率 (1985年,1988年,1991年)

Region	1985		1988		Annual Average	
	Poverty	Poverty	Poverty	Poverty	Increase Ratio	1991
	Threshold (peso/month)<1	Incidence (%)<2	Threshold (peso/month)<1	Incidence (%)<2	(%) of Poverty Threshold (1985-88)	Poverty Threshold (peso/month)<3
Philippines	2,381	59.0	2,709	49.5	4.4	3,083
NCR	3,282	43.9	4,037	31.8	7.1	4,959
Region I (Ilocos)	2,389	51.6	2,597	47.5	2.8	2,821
Region II (Cagayan Valley)	2,201	55.7	2,576	48.9	5.4	3,016
Region III (Central Luzon)	2,552	43.5	2,881	39.6	4.1	3,250
Region IV (Southern Tagalog)	2,471	55.2	2,832	49.3	4.7	3,250
Region V (Bicol)	2,143	73.5	2,443	65.3	4.5	2,788
Region VI (Western Visayas)	2,453	73.4	2,654	61.8	2.7	2,875
Region VII (Central Visayas)	1,987	69.9	2,173	54.6	3.0	2,374
Region VIII (Eastern Visayas)	2,015	70.2	2,263	60.5	3.9	2,538
Region IX (Western Mindanao)	2,119	63.0	2,289	52.0	2.6	2,472
Region X (Northern Mindanao)	2,249	65.6	2,439	51.5	2.7	2,642
Region XI (Central Mindanao)	2,389	60.2	2,763	52.2	5.0	3,199
Region XII (Central Mindanao)	2,212	63.6	2,468	47.1	3.7	2,752

Notes: <1 Minimum average monthly income that a family of 6 members should receive to be considered above poverty.
For 1988, the poverty threshold levels were derived using 1985 levels inflated to 1988 prices.

<2 Proportion of families below poverty level.

<3 Estimated by applying the annual average increase ratio of poverty threshold (1985-1988).

Source: 1985 FIES Final results and 1988 FIES preliminary results.