(e) 水理模型実験

日本側の指導が十分でないため、技術的な成果は不十分な状況にある。しかし、実験室の検定施設を使用して、流量計の検定業務が継続的に実施されている。なお、これらの依頼業務については、エネルギー省など、かんがい局以外からの依頼も多い。

(f) 研修

各種研修が積極的に実施されており、技術者の能力向上が図られている。

研修生に対し先進かんがい技術を紹介するため、各種のかんがい方式による展示圃場がセンター内に設置されている。将来的には、これらの圃場を活用した圃場用水量等の実測試験も検討されている。

また、ITCの各種研修にラオス国のかんがい技術者を受け入れた経験もあり、研修センターとしてのITCの役割に大きな自信が持たれるに至っている。

(2) 制度的インパクト

設計部門と施工部門間での連携強化の必要性が認識され、ITCも含めた設計部職員が、現場施工管理に派遣される措置がとられるようになっている。

ITCプロジェクトの実施体制においても、関係部局間の横断的連携の重要性が認識されるようになり、現在の設計部の下部組織としての位置付けでは一定の限界があると理解され、独立した組織（部レベル）への昇格が申請されるに至った。

また、将来にわたる統一的なコンピュータ利用の推進に向けた組織の整備も検討中であるほか、技術者を養成するための組織的、系統的な研修制度の早期確立も強く認識されている。

(3) 経済的インパクト

ITCプロジェクトにより、各種試験機器、コンピューター等の機材が導入され、従来、外部機関へ委託していた特殊業務がかんがい局内で実施できるようになったことなどから、一定の経済的メリットが発生していると考えられる。実施中のかんがいプロジェクトをみると、ミャンマー国をとりまく国際情勢から多くの援助が望めない状況にあるとはいえ、従来は諸外国の援助を必要としていた大規模かんがい事業地区が、ミャンマー側で独自に実施に移されている例も見られる。

間接的なインパクトとしては、ITC周辺の地域開発効果が認められる。国道からのITCへの取り付け道路、電力線等のインフラが整備されたことにより、ITC周辺部の住宅開発がすすみ、バゴー市の高級住宅地域となりつつある。また、住宅地の西側では新国際空港の建設も準備中である。

(4) 社会的・文化的インパクト

カウンターパートの日本での研修、技術交換費による第三国の視察等を通して、ミャンマー国におけるかんがい技術の現状が明確に理解されるようになっている。特に第三国視察では、ミャンマー国における旧来からの水管理技術などについて、優位性を再認識した点も多いよう

であり、自国の伝統技術への自信が持たれるに至っている。

(5) 環境的インパクト

かんがい局が、ユニセフの提言等に基づき農業用の水源開発と併せて地域の生活用水の確保にも取り組み始めたこと、ダム事業については、都市用水の確保も含めた共同事業として実施される例が増えてきたこと等から、ミャンマー国内の水資源について質的な面にも注意が向けられつつあり、ITCの水質実験機器の積極的な活用、試験技術者の育成に対する期待が高まっている。

半乾燥地域における塩分集積についても、農業用水の水質面への影響という観点から、注意が向けられ始めている。

5．2　効果の広がりと受益者の範囲

(1) プロジェクト（ITC）レベルのインパクト

直接の受益対象者としては、カウンターパートが考えられる。カウンターパートについては、日本での研修にほぼ計画どおりの人員が受け入れられたほか、帰国後もおおむねITCでの勤務が続けられており、専門技術者の育成効果は相当程度発現していると判断される。また、短期専門家による指導についても、水理模型実験や水質試験などの一部の分野を除き順調に推移しており、各種技術の移転が円滑に進められている。

(2) セクター（かんがい局）レベルのインパクト

かんがい局内の技術者については、各種研修が積極的に実施されていることから、基礎技術の修得、新技術や先端技術の理解が十分図られていると考えられる。間接的なものとしては、ITCでの研修の場を通して技術者間の意見交換が図られ、人的交流の範囲が広がったことが上げられる。また、ITC図書室の蔵書リストの配布、ITC活動に関する成果報告セミナーの開催などを通して、かんがい技術情報の入手機会も増加している。

ミャンマー国では、かんがい事業、特にダムかんがいに非常に高い優先順位が設定されている。このような状況の中で、施工管理技術者が恒常的に不足しているという実態にあるが、ITCにおける各種委託試験の受入れ措置、ITC及び設計部からの技術者の派遣措置が講じられるようになり、施工管理面で一定の改善が見られている。

また、限られた水資源を有効に利用する観点から、完了地区における水管理にも注意を向け始めており、建設部門一辺倒の姿勢に変化の兆しも見られる。水管理部門に対するITCの今後の活動に注目が集まっている。

(3) 地域へのインパクト

ここでは、農業部門に対する効果として整理するが、かんがいプロジェクトが積極的に実施されており、1988年以降、相当の地区について事業着手がなされている。これらの事業地区については、ダムによる水源開発が主体であり、事業完了後は、受益地において多期作、多毛作

が可能となるなど農業生産の増大に大きく貢献している。事業地区数は現在も増加傾向がみられるが、これには、計画・設計技術の向上を通して、ITCプロジェクトの活動もかなり寄与していると考えられる。

(4) マクロレベルのインパクト

ここでは、ミャンマー国全体への効果として整理するが、かんがい局あるいは農業省以外の関係者、関係機関への効果としては、先に述べたITCへの委託業務の増加が上げられる。YCDC、エネルギー省等からの委託試験も多く、ITCプロジェクトがミャンマー国全体における土木技術の向上にも相当程度貢献しているものと判断される。

6．自立発展の見通し

6．1　組織的自立発展の見通し

(1) 実施機関

ITC発足段階では、設計部の下部組織としての活動で合意されており、現在でもこの組織体制には変化が無い。しかしながら、ITC組織の強化の必要性が認識され、農業省に対しかんがい局長名で「部」レベルへの昇格が申請されている。組織としての存在意義への認識が高いと伺われ、ITCの今後の活動について更なる発展が期待される。

(2) 管理運営体制

管理運営に関する内部体制については、事実上のプロジェクト発足時である1991年度から現在まで相当の改善努力が重ねられており、ほぼ完成域に達したものと考えられる。人材についても、設計部組織上のナンバー2及びナンバー3がITC所長と設計部次長（設計基準担当）に配属されている。また、ITCとしては、昨年から管理部門に専任者が配置されるようになり、体制面で充実が図られている。これにより、発足当初に比べてプロジェクト運営が飛躍的に改善されている。

(3) 組織の改善

かんがい局については、かんがい事業の積極化とともに、新規部署の設置など組織面での改善が頻繁に行われているが、ITC組織そのものの位置付けについて、大きな変化は生じていない。ITCの内部機構については、かんがい局設計部も含むコンピュータセクションが拡充され、効率的に業務が推進できる体制が整った状況にあり、1993年度には灌漑技術セクション及び研修セクションが新設され、専任カウンターパートも配属されている。今後の課題としては、昇格時期を迎えた中堅職員が、ITCにポストがないために転任を余儀なくされる点であり、対応方策の早急な検討が望まれている。

6．2　財務的自立発展の見通し

(1) 必要経費調達の見通し

必要経費調達の努力は成されており、プロジェクトを相手国側へ移管した場合、以降のプロジェクトの自立発展を確保できるだけの経費調達の可能性はあると判断される。想定される経費の大部分はメインテナンスが中心で、協力期間中を通して自助努力を基本に方策を検討してきているため、移管後もその継続の可能性は認識されている。

(2) 公的補助及びその安定性の見通し

恒常的支出のうち、人件費、施設維持管理費等に関する予算の割当ては問題ないものと思われるが、前述のとおり導入機材等のランニングコストの予算確保に不安が残される。国策としての灌漑面積拡大計画に伴い、当ITCを中心とした品質管理運動、建設材料試験、灌漑水管理、

データ管理、灌漑技術全般の重要性が農業省全体で認識されてきているため、それにかかわる財政補助は安定的に確保されると期待される。

(3) 自主財源による費用回収状況

現在までのところプロジェクトにおいて収益を産み出す部門は存在しない。しかし、建設材料試験室においては、関連機関からの委託試験も実施していることから、将来的に受託研究費の制度化などを考慮する意義はあると考えられる。

(4) リカレント・コスト負担の必要性及び妥当性

プロジェクト導入機材とその技術は、当国において非常に重要である反面、未だ特殊・希少であるという状況から、運営管理費の経費負担をすべて相手国側へ負担させるには無理があると判断されるが、ミャンマー側の努力が期待される。

6．3　物的・技術的自立発展の見通し

(1) 技術移転の内容及び技術レベルの適正度

① 専門家派遣の適切さ

長期専門家については、比較的海外経験の少ない者の派遣が多かったが、特に問題はなく、適切な派遣がなされたと考えられる。しかし、1994年度については、日本側の事情によりデータ分析分野の専門家が不在となっている。代替措置として、6ヶ月間の任期でライブラリー関係業務を担当するソフトウェア専門家が派遣されているが、かんがい技術に関する専門知識が十分ではないことから、一定の限界があるものと予想される。

専門家の交代時については、活動の連続性を確保する上から、現地での引き継ぎが望ましい。しかし、事務手続きの問題から、前任者の帰任と後任の赴任までの間に、数ヶ月のブランクを生じている。

短期専門家については、水理模型実験、水質試験、品質管理等の分野で不十分な状況が見られるものの、全般的に見て、必要な専門家が適切かつ弾力的に派遣されている。

② 移転された技術内容の適正さ

(a) かんがい技術

資料収集段階に止まり、分析技術の移転までに至っていない。

(b) 設計基準

設計基準の策定、維持改善に関する実施手順等についても指導をおこなっているが、技術面で特に大きな問題は認められない。浸透に関する有限要素法解析、フィルダム安定解析等の技術が紹介されているが、ミャンマー側にとって非常に有用な技術であると評価されており、特に問題は認められない。今後の実際の活用が課題である。

(c) データ分析

コンピューター利用技術については、特に高度すぎると考えられるものはなく、総じて

適正であると判断される。なお、これまで基礎部分の利用技術の移転に重点を置いていたため、本来の目的である各種分析技術の移転が十分にはなされていない。タンクモデルによる水文解析技術が紹介されたが、広大な流域が対象となることもあり、雨量データと流量データの相関があまり認められないという問題がある。実際の適用を図るためには、より専門的な検討が必要と考えられる。

(d) 建設材料試験

実際の業務に非常に適用性の高い技術が移転されており、特に大きな問題は認められない。今後は、試験技術の定着のための努力が自立発展のための課題である。なお、大型三軸試験については、ミャンマー側の期待は高く、十分活用されると期待できるが、使用頻度はそれ程ないため、試験技術の維持、定着面で若干問題が残ると思われる。水質試験及び品質管理については、基礎的な知識や技術の紹介に止まっている。

(e) 水理模型実験

ミャンマー国で特に必要とされている、移動床による水理模型実験技術が指導されておらず、自立発展の可能性は非常に低いと判断される。シミュレーション技術についても、基礎理論の紹介に止まっており、継続的な指導が不可欠と判断される。

(f) 研修

現在のところ、各種研修は単に実施できればよしとする傾向が見られ、より高い効果を得るための研修計画の工夫、実施結果による計画見直しなどが十分にはなされていない。研修技術の向上及び研修の質的な向上が今後の課題と考えられる。このような取り組みは、コンピューター分野で実施されているが、体系的な検討がなされるまでには至っていない。

③ C／P等の技術レベル

ミャンマー国の最高学府であるヤンゴン工科大学（YIT）を卒業したStaff OfficerがC／Pのほとんどを占めており、技術レベルの問題はほとんど考えられない。しかしながら一部の分野では経験の浅いC／Pが配属されるなど、業務の推進に支障を来す面も存在する。ミャンマー側にとってこれまでほとんど学習機会のなかったデータ分析分野については、コンピュータの操作テクニックを含む基礎的技能の向上とともに、かんがい技術に係る専門知識の向上が望まれる。

④ 施設・機材の管理運営

各種施設は管理台帳による管理がなされており、これまでの実績を考えると、ほぼ良好な管理が継続されると期待できる。ただし、物品の紛失や操作時の故障については、過失はもとより不可抗力までも管理責任者及び本人の責任が問われることから、必要以上に厳重な管理がなされ、利活用までが制限を受ける傾向もある。

なお、自立発展を考えた場合、コンピューターやソフトウェアの新規導入・更新、トナー、バッテリー、インクリボン等の比較的高価な消耗品の補給、供給電源の電圧変動に起因する

関係機器の重大損傷への対処等に課題が残る。

(2) 要員配置計画

プロジェクトの計画段階では、総勢203名の人員配置が予定されていた。現在、組織定員上はほぼこれに近いものが認められているが、職員の新規採用が中断されていたこと等もあり、空席ポストが多い状況にある。正職員は100名弱であるが、代替措置として、フラットスタッフ（月給制）、デイリーウェイジ（日給制）と呼ばれる臨時職員の雇用（約100名）が行われている。

なお、臨時雇用職員については、正職員への採用の道が開かれており、試験室のスタッフなど、実際にこの方法で正職員となった者が多数存在している。この点から判断すれば、今後の活動継続に関して現在の人員配置でも大きな支障とはならないと考えられる。

(3) 技術定着状況

① 十分な素質のC／Pの配置

プロジェクト活動の開始時点では、対応する分野での経験の無い若い技術者がC／Pの大半を占めるという状況にあった。また、自主性を育む環境に無いため、計画的なプロジェクト活動や運営に影響が見られた。しかし、配置されたC／Pは、ミャンマー国の最高学府であるヤンゴン工科大学（YIT）を卒業した技術者がほとんどであり、素質と言う点では最高の条件が準備されている。

② C／Pの定着

プロジェクト活動の開始時点では、C／Pの頻繁な配置転換が見られたが、現在はかなり減少している。しかし、C／Pが日本研修で長期不在となる場合などには、限られた技術者で各分野の活動を推進する必要があることから、ITCの各セクション間でのC／Pの再配置を行なっている状況にある。関係セクション間での連携強化には一定の効果が考えられるが、C／Pの定着という面では一つの課題として残っている。

③ 技術の維持・発展

これまでの様々な技術移転の結果、多くのC／PがITCで実施されるインサービス研修等の講師を担当するようになっており、技術の蓄積が進んでいると考えられる。一方、業務に対する各C／Pの積極性も目立つようになってきており、技術の一定の維持、発展はなされているものと判断される。コンピュータ操作の時間外研修など、職員の自主的な技術力維持・発展のための努力がなされていることは特筆される。

(4) 後継者の育成計画

日本でのC／P研修参加者による帰国報告会、水理模型実験セミナーなどプロジェクトの活動経過の報告会、自主的な勤務時間外のコンピュータ研修など、成果を広めるための様々な努力が続けられている。しかし、日常的に業務を通じて移転技術が伝達されているかについては、技術の個人財産としての蓄積傾向、職階制による技術等の伝達方向の硬直性（下位の者からは

教えを受けないこと）等があり、必ずしも順調であるとは言い難い。そのような中でも、コンピュータの利用関係では、研修や日常業務へのアドバイスなどが、本来の活動計画に支障を与えるほどの熱意を持って実施されている面もある。

6．4　その他管理運営上の制約要因

プロジェクトの運営に当たって、以下に示したような点が問題となっていたが、今後の自立発展を確保する上でも制約となる可能性がある。改善方策についてのミャンマー側の主体的な取り組みが望まれる。

(1) 事務手続きの非効率性

プロジェクト運営において、長期及び短期専門家の受け入れ確認、供与機材の通関、研修員派遣の大臣決裁等、プロジェクト活動に関するミャンマー側の事務手続に相当の日数を要する実態にあり、活動の円滑な推進に支障となる例が多かった。また、ITCで開催される研修への参加者選定に関する事務手続が遅延し、予定した者の参加が遅れたり、結果的に参加出来なかったというような例もあり、ITCのミャンマー側活動の面にも大きな影響を及ぼしている。計画性のある事務手続きの遂行が課題と考えられる。

(2) 職員の縦割り意識

調査、設計、施工、維持管理等、かんがい技術の一連の流れ（トータルエンジニアリングシステム）に対する認識度が低く、各段階からのフィードバックによって全体システムを改善するというような意識も希薄である。このため、新技術の移転による業務の改善は、限定的な範囲に止まる傾向がある。また、この理由から各種新技術の本来の意義が十分理解されない傾向も見られる。部門間の連携強化が課題と考えられる。

(3) 職員の質的問題

個々人には高い資質がみとめられるものの、極端な上意下達システムのため、業務に対する自主性、積極性を欠くきらいがある。このため、特別研修等により紹介された新技術が個人の知識に止まり、組織として活用されにくいという傾向もみられる。また、人材の育成、活用を図る面での組織的な取り組みも十分ではない。新技術の活用、定着を図るためには、今後、高級研修などの積極的な活用により、より上位の者（デシジョンメーカー）の理解を促進させる等の働きかけが重要であると考えられる。

7．フォローアップの必要性

7．1　協力期間延長の要否

各分野毎の現在のワークプランは、1993年10月に派遣された中間評価ミッションの指導により、1995年3月までに達成出来ると見込まれる内容に絞り込まれている。このため、当初のTSIあるいはワークプラン（フレームワーク）に比較すると、多くの点で未達成となる課題が生じる。以下に、各分野毎に未達成となる課題及び当該課題の技術協力の必要性について示す。

(1) かんがい技術

かんがいデータの収集分析を内容としているが、データの類型化などの分析作業が不十分なままとなる。また、1993年度の水管理分野の短期専門家により、ミャンマーの水管理には多くの課題があることが指摘されている。その原因等に関する調査、検討は本分野の一つの柱であるが、ほとんど手付かずのままとなる。かんがいに関するデータの蓄積及び分析の必要性を認識させるとともに、大きな課題である事後評価体制（特に水管理面から見た工事完成後のフォロー体制）を補強するため、継続して指導を行なう必要がある。

(2) 設計基準

本分野の活動は、当初から、基準を作ることそのものにはなく、基準を作成でき、それを将来に渡って維持改善するための体制を整える点に重点が置かれている。未達成となる主な事項は、このうち、基準原案が準備できて以降、最終案の作成に至るまでの組織的な内容吟味の過程である。この過程の指導なくしては、これまでの活動の成果である基準案は画餅に帰する恐れが高い。この点で指導の継続が不可欠である。また、プログラムライブラリーの紹介は、基準作成の進捗はもとよりデータ分析分野の活動の遅れにも影響を受け、限定的な範囲での事例紹介に止まる。基準の活用とライブラリーの利用は表裏一体の関係にあり、継続的な指導が必要である。

(3) データ分析

ケーススタディとしての水文データベースの構築、これを活用した水文解析手法の指導、パソコン通信に関する試験及びこれらの項目に関する実務利用研修が未達成となる。水文データベースは、MS-4100のデータバンクとしての活用を前提としたものであり、これに関する継続的な指導が必要である。その他の項目についても、コンピューターの有効な活用を通じ、コンピューター利用あるいは管理の自立性を高めるものであり、継続指導が必要である。

(4) 建設材料試験

各種の試験方法に関する技術移転はおおむね完了する。今後の課題である現場への適用、設計・施工への反映等については、ミャンマー側の自助努力が期待される。

(5) 水理模型実験

移動床による実験計画が作成できる段階に止まり、移動床による実験の模型制作、実験の実

施、結果の分析等の重要な課題が残される。移動床のこれらの技術が移転されない場合、水理模型実験に対する実際の現場ニーズには十分対応出来ないこととなる。なお、移動床の全体模型については、屋内実験スペースでは実施できないことから、屋外実験場の整備が必要である。このための設計、施工等に対する支援が不可欠である。

シミュレーション分析については、基礎理論の理解に止まり、実際の現場への適用能力は得られていない。典型的な課題のある少なくとも１件の現場について、具体的な技術指導を行なう必要があると判断される。

(6) 研修

上記各分野の特別研修が不十分なままとなる。また、本プロジェクトの当初目的を達成するとともに持続的な発展を確保する上では、かんがい技術者の養成が最も基本となる。このためには、研修技術の向上、研修計画の組織的な見直し体制の確立が不可欠である。

7．2　フォローアップの内容と方法

現時点のITC組織を見た場合、自立できると見込まれる分野は、コンピューターの一般ユーザーに対する研修分野と土質を中心とした材料試験分野であり、このままプロジェクト活動が終了された場合、これまでの多くの移転技術は定着しないまま終わる可能性がある。しかし、相当の規模に拡充された現在の組織体制で、各分野の連携活動に配慮した技術協力が実施されれば、非常に大きな成果を上げ得ることが十分期待できる。

各分野毎のフォローアップにおける活動内容、所要期間等を以下に示す。

(1) かんがい技術

かんがいデータの分析については１年半、水管理関係の調査検討に２年を要すると見込まれる。本分野の活動は、その他の分野における技術移転の基礎となり、また、かんがい局の１つのウィークポイントである事業の事後評価体制を強化する面から非常に重要な役割を有するが、これまで十分な成果があげられていない。

(2) 設計基準

頭首工、水路工にかかわる設計基準ドラフトの作成及び作成された設計基準ドラフトの現地へのフィードバック、技術検討委員会への諮問を通じた基準化プロセスの確立に向けた技術移転の継続に２年を要すると見込まれる。またプログラムライブラリー関係の業務に２年を要すると見込まれる。本分野は、ITC活動の成果を集大成する役割も有しており、設計基準が作成され、それが業務に活用され、さらに基準が改善されていくというサイクルが確立される（自立発展が可能となる）ためには、継続して長期専門家を派遣していく必要がある。ただし、ミャンマー側によるIDレベルでの技術委員会の設立が前提条件となる。

(3) データ分析

ケーススタディとしての水文データベースの構築、これを活用した水文解析手法の指導、水

文年表の試行及びこれら項目に関する実務利用研修の各項目とも、おおむね2年の延長を要すると見込まれる。各カウンターパートは、市販ソフトウェアの運用操作には習熟してきているが、これのみでは、持続的発展は望めない。このため、技術計算プログラムの自主開発能力及び維持管理能力の付与、データ分析能力の向上のため、引き続き専門家による指導が必要である。

(4) 水理模型実験

移動床の模型実験に1年半、シミュレーション分析技術の移転に2年を要すると見込まれる。これまでも短期専門家対応分野とされてきたが、当初の協力期間内では十分な指導が出来なかったことから、短期専門家の計画的な派遣、カウンターパートや模型製作技術者の第3国研修の活用等により、十分な指導が行なえるよう検討していく必要がある。ただし、移動床の水理模型実験についてはミャンマー側による新たな屋外実験場の整備が前提条件となる。

(5) 研修

本分野の延長期間は、上記各分野に関する特別研修を主な内容とすることから、プロジェクトの延長期間と同じ2年とすることが妥当と考えられる。本分野も短期専門家対応と位置付けられてきたが、実際には、これまで各分野の活動に付随するものとして各長期専門家が分担して実施してきている。今後、本分野の自立発展性を確立する観点から、研修計画の作成、実施後の評価に基づく研修計画の見直しなどの研修実施技術に関する指導が不可欠と考えられ、短期専門家の派遣など、計画的な指導体制の確立に配慮する必要がある。

8．評価結果総括

8．1　評価の総括

本プロジェクトは、ネ・ウィン政権によるビルマ式社会主義の末期から、ミャンマー動乱を経て、現在の軍事政権による一定の安定に達するという特殊な政治条件下で実施された。この間、1988年9月には到着後間もない長期派遣専門家の国外一斉避難、日本政府による対ミャンマー援助の凍結、軍部クーデターによる民主化運動の抑圧などの事態が続き、日本政府が継続案件に限り援助再開を表明したのは、1989年2月であった。また同年7月には国民民主連盟書記長アウンサン・スーチー女史の自宅軟禁、6月には国名のミャンマー（連合を意味する）、首都名のヤンゴンへの変更、1990年5月には総選挙などの動きがあり、人権及び選挙結果への配慮に欠ける現政権に対し、国際社会は本格的な協力を差し控えたままである。

このような政治条件の中で、ミャンマー国経済及び国民生活を支える農業の重要性についての認識は変わることなく、とくに灌漑事業については優先的に予算を配分され、全国で積極的に事業が推進されている。しかし灌漑技術については、これまでの準鎖国的な政策の影響もあり、情報・経験の不足から改善すべき事項が多く、ITCによる灌漑技術の向上には灌漑局をはじめ関係部局から大きな期待が寄せられている。このため、当初は日本の協力に不慣れなため、調査団によりいくつかの問題が指摘されたが、終了時評価の際にはその多くが解決され、ミャンマー側の熱意が強く感じられた。

本プロジェクトの評価にあたり、当初のミャンマー側の政治的な事情により、日本側の長期専門家8名、協力期間5年間の提案に対し、長期専門家5名、協力期間4年間で合意せざるをえなかったことから、6分野のうち4分野（研修の継続を含め5分野）について2年間のフォローアップ協力が必要とされた。このことについて、灌漑局長をはじめとするミャンマー側幹部は、2年間で必ず残された課題を達成する旨、表明しただけでなく、合同評価報告書への署名ののち開かれた合同委員会で以下の提案が提出され、参加者全員により合意された。

(1) 指導を受けたカウンターパートはITCで継続的に配置されること。
(2) 設計基準分野で、ドラフトを審査するためのTechnical Boardを設置すること。
(3) ミャンマー側合同評価チームは、フォローアップ期間中も半年あるいは年に1度、ITCプロジェクトの進捗について評価すること。
(4) ITCを部レベルへ昇格すること。
(5) プロジェクトにかかわる事務手続きの遅れを改善すること。
(6) ITCとヤンゴンを結ぶ電話回線を改善すること（データ通信を兼ねる）。
(7) ITCに対し将来も十分な予算措置を継続すること。

このうち、ITCの部レベルへの昇格については、すでに灌漑局から農業省へ申請されているほか、電話回線についても大臣の指示により通信省の合意がとれ、改善されることは確実となって

いる。

このように農業省、灌漑局からの十分な支援を考えると、将来にわたりITCの自立発展が期待できる。

8．2　取るべき措置

フォローアップ協力を成功させるためには、下記前提条件がミャンマー側により満足される必要がある。

(1) 設計基準分野について、基準のオーソライズのためのID及び外部知識人によるTechnical Boardの設置。

(2) 水理模型実験分野について、移動床の水理模型実験用屋外実験場のミャンマー側による新たな整備。

8．3　教訓

今後のITCプロジェクト活動あるいはJICAによる他のプロジェクト協力の推進に当たって、調査団としては、今回の評価調査を通じて下記事項への配慮が重要であると考える。

(1) 本プロジェクトは、日本側、ミャンマー側双方の努力により、限られた期間内にある程度の成果が得られたが、当初設定された協力課題に対し、ミャンマー側の都合により5名の長期専門家と4年という短い期間で対応せざるを得なかった。このため、プロジェクトが遅延する大きな要因となった。プロジェクトの形成に際し、バランスのとれたフレーム・ワークとする必要がある。

(2) 事務手続の遅延が、プロジェクト活動の円滑な推進に大きな支障となることが多い。基本的には、相手国の行政組織の問題であるが、計画的な事務手続を確保するため、JICAあるいは派遣専門家側による指導など一定の関与が望ましい。特に重要な手続きについては、遅延した場合のプロジェクト活動への影響を事前に周知させることなど、相手国の特殊性等に応じた手続き促進方策を考えていく必要がある。これら方策は、可能な限りプロジェクト計画時点から配慮しておくことが必要と考えられる。

(3) 技術移転は、カウンターパートを対象に実施されるが、特に相手国組織がトップダウンの傾向が強い場合、下部からの発意によって技術体系が改善されることはそれほど期待できないと判断される。移転された技術の円滑な定着を図るためには、各技術の有用性等についてトップの理解を得ることが、組織的な対応とする意味から重要と考えられる。相手国の組織の特性に応じ、技術移転活動を工夫していく必要があると思われる。

(4) 今回の評価に当たって、ミャンマー側は、UNDPのプロジェクト評価手法による自主評価を実施していた。JICAのPDM（JPCM）と同様、プロジェクト達成度の客観的評価を目的とした手法であり、ミャンマー国内で高い評価を得ている。継続的な評価活動も含め、プロジェクト

活動の円滑な推進を図るためには、日本側と相手国側の評価尺度を事前に統一しておくことが必要と判断される。JPCM手法の普及を促進していくことが望まれる。

8．4　提言

今後、ITCの活動を一層発展させ、ミャンマー国における灌漑技術者の能力をさらに向上させるためには、以下に留意する必要がある。

(1) ITCを部レベルへ昇格させ、組織として自立発展する基盤を強化すること。

(2) ITCとID内の他の関連する部との連携を深めること。

(3) 灌漑技術者育成のための長期計画を作成し、人材養成機関としてのITCの機能を有効に活用すること。

付属資料

1．合同評価報告書

NOTE OF UNDERSTANDING OF THE JOINT EVALUATION
ON THE JAPANESE TECHNICAL COOPERATION
FOR THE IRRIGATION TECHNOLOGY CENTER PROJECT
IN THE UNION OF MYANMAR

2．合同委員会議事録

THE MINUTES OF THE FIFTH JOINT COMMITTEE MEETING
FOR THE IRRIGATION TECHNOLOGY CENTER PROJECT

NOTE OF UNDERSTANDING OF THE JOINT EVALUATION ON THE JAPANESE TECHNICAL COOPERATION FOR THE IRRIGATION TECHNOLOGY CENTER PROJECT IN THE UNION OF MYANMAR

With about six months left until the termination of the cooperation period of the Irrigation Technology Center Project (hereinafter referred to as "the Project") on March 31, 1995, as stated in the Record of Discussions, the Japanese Evaluation Team organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Fumio Ikeda, Senior Irrigation Technical Officer, Agricultural Structure Improvement Bureau, Ministry of Agriculture, Forestry and Fisheries, visited the Union of Myanmar from September 10 to 21, 1994 in order to conduct an overall review and evaluation of the performance of the Project together with the Myanmar Evaluation Team headed by Dr. Win Thein, Professor and Head of Civil Engineering Department (retired) of Yangon Institute of Technology.

The teams conducted interviews with the Japanese experts and the Myanmar counterparts assigned to the Project, had a series of discussions with the Myanmar authorities concerned, made field surveys and exchanged view among themselves.

As a result, both teams agreed to forward to their respective Governments a summary of the evaluation and recommendation which is referred to in the document attached hereto.

Yangon, September 19, 1994

池田文雄

Mr. Fumio Ikeda
Leader
Japanese Evaluation Team

Dr. Win Thein
Leader
Myanmar Evaluation Team

SUMMARY REPORT OF THE JOINT EVALUATION ON THE IRRIGATION TECHNOLOGY CENTER PROJECT

1. INTRODUCTION

Based upon the Record of Discussions (hereinafter referred to as "the R/D") signed on December 23, 1987, the Government of Japan and the Government of the Union of Myanmar have been implementing the Technical Cooperation Program for the Irrigation Technology Center Project (hereinafter referred to as "the Project") since April 1, 1988. The Project was scheduled to be implemented for four (4) years, however, the period of the Project was extended for three years after finally having signed the amendment of the R/D on September 27, 1991 and is to be completed on March 31, 1995. The activities of the Project have been implemented in full-scale since the Tentative Schedule of Implementation (hereinafter referred to as "the TSI") was signed on November 20, 1991.

The aim of the Project is to upgrade irrigation technology through such activities as the collection and analysis of technical data, preparation of design criteria for irrigation facilities, tests and analysis on soil and construction materials, and training of irrigation engineers, etc. thus to contribute to the development of agriculture in the Union of Myanmar. The Project has been carried out in the Irrigation Technology Center (ITC) and headquarters of Irrigation Department (ID), Ministry of Agriculture, using the buildings and facilities which were provided with the Japanese grant aid under the Exchange of Notes dated in August 19, 1986. The Japanese technical cooperation has given technical guidance and advice to the Myanmar counterpert personnel (C/P) engaged at ITC in the following fields:

(1) Collection and analysis of technical data and information
(2) Preparation of design standards and criteria for irrigation facilities
(3) Tests and analysis on soil, construction materials and water quality
(4) Hydraulic model tests and analysis
(5) Development of training programs for irrigation engineers

With the cooperation period about to reach its termination, the Government of Japan and the Government of the Union of Myanmar conducted a joint evaluation on the achievement of the Project.

2. MEMBERS OF THE JOINT EVALUATION TEAM

2.1 The Japanese Evaluation Team

(1) Mr. Fumio Ikeda: Leader
Senior Irrigation Technical Officer, Design Division, Construction Department, Agricultural Structure Improvement Bureau, Ministry of Agriculture, Forestry and Fisheries (MAFF)

(2) Mr. Yasuo Takeoka: Irrigation Engineering and Data Analysis
The Third Construction Manager, Obihiro Agricultural Office, Obihiro Development and Construction Department, Hokkaido Development Bureau

(3) Mr. Yasushi Momozawa: Construction Material Tests and Analysis, Design Criteria, and Hydraulic Model Tests and Analysis
Section Chief of System Planning, Office of Construction Planning and Coordination, Design Division, Construction Department, Agricultural Structure Improvement Bureau, MAFF

(4) Mr. Takashi Shino: Evaluation on Effect of the Project
Senior Technical Officer, International Cooperation Division, Economic Affairs Bureau, MAFF
(5) Mr. Shigeki Kobayashi: Facility Evaluation
Officer, Grant Aid Division, Economic Cooperation Bureau, Ministry of Foreign Affairs
(6) Mr. Eiji Matsubara: Project Evaluation and Team Coordinator
Deputy Director, Agricultural Cooperation Division, Agricultural Development Cooperation Department, Japan International Cooperation Agency

2.2 The Myanmar Evaluation Team
(1) Dr. Win Thein: Team Leader
Professor and Head of Civil Engineering Department (retired), Yangon Institute of Technology
(2) U Maung Maung Htay: Training and Project Effects
Former Deputy Director of Irrigation Department
(3) U Chit Lwin: Construction Material Test, Design Criteria and Hydraulic Model Test
Deputy Director, Geology Branch, Irrigation Department
(4) U Cho Cho: Irrigation Engineering and Data Analysis
Assistant Director, Design Branch, Irrigation Department
(5) U Kyaw San Win: Coordinator and Project Management System
Director, Construction (6), Irrigation Department

3. OBJECTIVES OF THE EVALUATION

(1) To execute a comprehensive evaluation of the past achievement in contrast with the original plan described in R/D, TSI and Work Plan/Frame Work (hereinafter referred to as "the Original Plan") and recommendation of Technical Guidance Team dispatched by JICA in November, 1993 (hereinafter referred to as "the Guidance Team").
(2) To make recommendations and suggestions to the authorities of the two Governments concerned after the termination of the cooperation period of the Project.

4. ITEMS OF EVALUATION

The evaluation survey was conducted by the Joint Evaluation Team (hereinafter referred to as "the JET") consisting of the Japanese side and the Myanmar side. The JET surveyed such items as follows:

4.1 Input Related Items
(1) Cooperation by the Government of Japan
(a) Dispatch of Experts
(b) Provision of Equipment and Machinery
(c) Training of the Myanmar Personnel in Japan
(d) Others
(2) Measures taken by the Government of the Union of Myanmar
(a) Provision of Land, Buildings and Facilities
(b) Appointment of Counterparts and Other Personnel
(c) Allocation of Budget
(d) Others

4.2 Output Related Items

(1) Irrigation Engineering
(2) Data Analysis
(3) Design Criteria
(4) Construction Material Tests and Analysis
(5) Hydraulic Model Tests and Analysis
(6) Training Program

4.3 Project Impact

Technical and institutional impacts at the Project level and the sector level were evaluated.

4.4 Prospects for sustainability

Prospects in terms of the organizational, financial and technological sustainability were evaluated.

5. RESULTS OF THE EVALUATION

5.1 Achievement Degree

The quantitative evaluation of technical cooperation is quite difficult. As a result, it tends to depend on the subjectivity of evaluators rather than the objectivity. The JET sets up the tentative achievement degree which is not objective but less subjective to judge the output of the Project. The degree classified in the followings was used for assessing field-wise achievement of overall and main activities.

A: Very Good
B: Good
C: More or Less Acceptable
D: Unsatisfactory
E: Very Unsatisfactory

5.2 Accomplishments in Terms of the Inputs

5.2.1 Cooperation by the Government of Japan

(1) Dispatch of Experts

(a) Long-term Expert

In the R/D, five (5) experts were scheduled to be dispatched in the field of team leader, coordinator, irrigation engineering, data analysis, design criteria, and construction material tests and analysis. During cooperation period, eleven (11) experts in total with 265 man-month (planned by the end of March 1995) were dispatched. The long-term experts have been dispatched relatively on schedule. However, after restarted the Project in real terms, the dispatch of expert in design criteria delayed some months because of various reasons including the delay of procedures in Myanmar side to sign the amended R/D for three year extension. Also, the expert in data analysis should have been covered by short-term expert around four months after the expert in that field had left Myanmar.

(b) Short-term Expert

According to the R/D, short-term experts will be dispatched if the need arises. During cooperation period, twenty five (25) experts in total with 36 man-month (planned by the end of March, 1995) were dispatched. The short-term experts have been dispatched relatively on schedule except the expert in the field of hydraulic model tests and analysis which is planned originally to be

technically covered by short-term expert due to difficulty to recruit appropriate engineer for that field in Japan. The number of experts dispatched for that field was only three who stayed for less than one month each.

(2) Provision of Equipment and Machinery

The equipment and machinery valued at 186 million Yens in total (planned by the end of March 1995) were provided. The equipment is utilized, managed and maintained almost effectively by Myanmar side.

(3) Training of the Myanmar Personnel in Japan

During cooperation period, twenty (20) Myanmar personnel in total (planned by the end of March 1995) related to the Project are accepted in Japan as trainees. After completing the training, all Myanmar personnel presented their obtained information and experiences in Japan to other ID staff in seminar or other occasions and made effort to disseminate the knowledge.

(4) Others

Japanese side born the portion of the cost for training in Myanmar, 18.7 million yen in total (planned by the end of March 1995), by the middle level manpower training scheme. The technical texts in local language were provided. Furthermore, two times of technical exchange program, the one for Thailand and Singapore in 1991 and the other for Thailand and Indonesia in 1993, were successfully implemented.

5.2.2 Measures taken by the Government of the Union of Myanmar

(1) Provision of Land, Buildings and Facilities

The buildings and facilities constructed and provided by Japanese grant aid program in Bago were offered for the use of the Project. The office space in Yangon was sufficiently provided for the experts working in ID.

(2) Appointment of Counterparts and Other Personnel

At the beginning of the Project, the assignment of C/Ps was insufficient in some parts of cooperation activities. In 1993, the situation was largely improved and the vacant positions in ITC were satisfied after honoring the advice from the Guidance Team.

(3) Allocation of Budget

The fourty-seven point eight (47.8) million Kyats of running cost (currently up to July 1994) were prepared for the Project. The sum was satisfactory.

(4) Others

There are some problems such that the telephone line to be used for the data communication has not yet been improved due to delay of understanding between ID and Telecommunication Department.

5.3 Accomplishments in Terms of the Outputs

5.3.1 Irrigation Engineering ("C")

The Original Plan of this field is as follows:

(a) Collection and analysis of data and information on irrigation projects

(b) Survey and study on practice of field irrigation management (approximately ten projects will be examined)

(c) Case study on model project

The main points suggested by the Guidance Team are as follows:

(a) Much data and information have been collected. Analysis of data and information will be started immediately with supplemental collection of data and information. It is necessary to clarify the main objectives of data analysis clear for efficient implementation.

(b) It is necessary to concentrate efforts on some model areas to clarify problems and objectives concerning survey and study on practice of field irrigation management.

(c) Less priority is given to case study on model project

According to these instructions, following measures had been taken.

(a) Case study on model project was omitted from the annual work plan in 1994/95.

(b) Four projects were selected for survey and study on field irrigation management.

Overall achievement degree of this field is assumed to be "C".

The result of evaluation on this field is as follows:

(a) The collection of data and information on irrigation projects was achieved sufficiently. The greater part of their analysis will be remained.

(b) At least one out of four projects will be surveyed and studied on field irrigation management by March 1995.

5.3.2 Data Analysis ("C")

The Original Plan of this field is as follows:

(1) Case Study on System Development for Data Analysis

(2) System Development of Technical Calculation Program Library

(3) Study on Other Technical Supporting System

Overall achievement degree of this field is assumed to be "C". The detail of evaluation is described below.

(1) Case Study on System Development for Data Analysis ("D")

The Original Plan of this item is as follows:

(a) Data Base Management System (DBMS) on technical data

(b) Analysis on data stored in DBMS

(c) Study of information exchange on data stored in DBMS

The main points suggested by the Guidance Team are summarized as follows:

(a) Before starting to upgrade application activities, establishing foundation of computer utilization in ID should be given the first priority.

(b) Leading personnel for computer utilization should be trained in concerned sections. Data analysis should be implemented on case study after establishing DBMS. The C/Ps should be assigned properly and engaged in the same work continuously for a long term.

(c) After improvement of existing telephone line condition, technology of information exchange is to be introduced between ITC and ID head office as case study.

According to these instructions, the followings had been conducted.

(a) The foundation of basic computer utilization in ID was established by strengthening the training function in ITC.

(b) Two counterparts were newly assigned.

The result of evaluation on this item is as follows:

(a) The plan of DBMS utilization has been formulated. About a half of data used for case study have been collected. However, there remains the

development of file management system and data structure for HYMOS, the publication of sample yearbook for hydrological and meteorological data, and the preparation of user's guide for using HYMOS.

(b) The outline of case study analysis supposing to use DBMS in future and basic knowledge on hydro-meteorological analysis have been introduced, though collected hydro-meteorological data have not been stored in DBMS.

(c) The pre-feasibility study and the transfer of basic knowledge of data communication system supposing to use DBMS in future have been implemented. Data communication between ITC and ID head office, however, have not been operated because of inadequate present condition of telephone line.

(2) System Development of Technical Calculation Program Library ("B")

The Original Plan of this item is as follows:

(a) Study of the existing technical programs

(b) Cooperation on computer utilization

The main points suggested by the Guidance Team are as follows:

(a) Improvement of program library is to be carried out under the cooperation of other sections according to the Program Library System.

(b) It is difficult to get modern irrigation technology by using computer without fundamental elements such as "the Plan of Program Library System."

The result of evaluation on this item is as follows:

(a) Frame work of Program Library System was established as case study.

(b) Some program manuals will be prepared as case study by March 1995.

(c) Cooperation and assistance for other technical sections have been carried out basically through training courses.

(d) The establishment of hydrological data base system as case study and the guidance of hydrological analysis were insufficient.

(3) Study on Other Technical Supporting System ("A")

The following detailed activities of this item are indicated in the Annual Work Plan which was approved by the Joint Committee:

(a) Support for improvement of existing computer system.

(b) Establishment of "the Plan of Computer Utilization."

(c) Training of technical staff for operation and maintenance of computer system.

All the items above will be completed sufficiently by March 1995.

For the field of Data Analysis, the establishment of training system on computer utilization should be emphasized because the effects obtained from the training which originally belongs to the field of Training Program, has been so extensive and successful that the foundation of computer utilization in ID was improved.

5.3.3 Design Criteria ("C")

The Original Plan of this field is as follows:

(1) Study on Present Design Criteria

(2) Introduction of Japanese Technology and Standard

(3) Adaptation of Introduced Design Criteria for Site Condition in Myanmar

(4) Introduction of Technical Calculation Program through Computer Utilization

The main points suggested by the Guidance Team are as follows:

(1) The first draft of planned three subjects (fill dam, headworks and canal) on design criteria should be prepared according to the priority.

(2) The establishment of computer utilization plan in ID is expected urgently. The performance should be proceeded in close cooperation with the computer section in ITC.

Overall achievement degree of this field is assumed to be "C."

The result of evaluation on this field is as follows:

(1) Study on Present Design Criteria ("A").
The report on reviews and findings concerning design criteria in Myanmar will be prepared by March 1995.

(2) Introduction of Japanese Technology and Standard ("A").
Introduction of Japanese technology and standard on fill dam, headworks and canal will be completed by March 1995.

(3) Adaptation of Introduced Design Criteria for Site Condition in Myanmar ("C").
The preparation of design criteria consists of two stages, namely, preparation stage and authorization stage. The preparation stage is to prepare the first draft through activities of working group. This first draft must be checked finally by the Technical Board composed of experienced engineers. The first draft for fill dam will be completed by March 1995, while the work of drafting headworks and canal criteria will be remained on half way, although "the draft design criteria" of the above mentioned three subjects will not be prepared. The authorization stage can not be carried out and the whole activities in this stage will be remained. It should be noted, however, that the routine procedure of the preparation stage has been already established among C/Ps.

(4) Introduction of Technical Calculation Program through Computer Utilization ("C") Some technical calculation programs have been introduced on fill dam design, hydraulic calculation, and survey. The computer utilization plan has been prepared and authorized in cooperation with the computer section in ITC. The basis of further computer utilization has been founded. The plan of program library has been discussed with the C/Ps of this field and Data Analysis. Some program manuals will be prepared by March 1995. Further efforts to strengthen the functions of the Program Library are necessary.

5.3.4 Construction Material Test and Analysis ("A")

The Original Plan of this field is as follows:

(1) Construction Material Test
(2) Soil Test
(3) Water Quality Test
(4) Case Study of Test and Survey of Irrigation Project

Overall achievement of this field is assumed to be "A." The detail of evaluation is described below.

(1) Construction Material Test ("A")

The Original Plan of this item is as follows:

(a) Method of construction material test and handling of equipment
(b) Quality test and mix design of concrete
(c) Teaching materials and standard of quality control on construction works.

The result of evaluation on this item is as follows:

(a) Technical transfer in the planned thirty seven subjects of construction materials test including physical test of cement, aggregate test, fresh concrete test, hard concrete test, steel materials test and rock test was completed.

(b) Rock and brick as major construction materials in Myanmar were studied for establishing testing method.

(2) Soil Test ("A")

The Original Plan of this item is as follows:

(a) Introduction of geological survey
(b) Field survey and sampling
(c) Method of soil test and handling of equipment
(d) Test of foundation and soil materials for irrigation facilities
(e) Teaching materials and standard on quality control of construction work

The result of evaluation on this item is as follows:

(a) Technical transfer in the planned twenty seven subjects of soil test including physical test, soil classification, chemical test, dynamic test, and construction control test was completed.
(b) Technical transfer in the planned seventeen subjects of in-situ tests was completed.

(3) Water Quality Test ("B")

The Original Plan of this item is as follows:

(a) Method of water quality test and handling of equipment
(b) Test and survey of water quality for irrigation in Myanmar

The result of evaluation on this item is as follows:

(a) Simple testing methods of water quality were introduced.
(b) Water quality test was conducted only at five sites.

(4) Case Study of Test and Survey of Irrigation Project ("B")

The Original Plan of this item is to implement construction materials test and soil test in one or two irrigation project(s). The result of evaluation on this item is as follows:

(a) Case study on nine subjects of construction material test including effect of curing method in compressive strength, and difference of unit weight on mixing by volume in concrete test has been implemented.
(b) Case study on six subjects of soil test including analysis of relationship between density by compaction and the values like permeability, cohesive value, and angle of internal friction have been implemented.

5.3.5 Hydraulic Model Test and Analysis ("C")

The Original Plan of this field is as follows:

(1) Hydraulic Model Test
(2) Simulation Analysis through Computer Utilization

Overall achievement degree of this field is assumed to be "C." The detail of evaluation is described below.

(1) Hydraulic Model Test ("C")

The Original Plan of this item is as follows:

(a) Yin Dam Spillway model testing
(b) Sadon Dam Spillway model testing
(c) Yin Weir model testing

The main point suggested by the Guidance Team is that the C/Ps needed to be trained by the well-organized laboratory in Japan, and to make the detailed implementation plan for the experiment of mobile bed model on Yin Weir by March 1995. According to these instructions a C/P was accepted in Japan as a trainee to make the draft implementation plan of the experiment on Yin Weir. The result of evaluation on this item is as follows:

(a) The spillway model testing of Yin and Sadon dams will be completed by March 1995.
(b) Data collection and analysis for the detailed implementation plan on Yin Weir experiment will be completed by March 1995.
(c) Construction of Yin weir model and actual experiment will be remained. It will be recommended to complete the test, since model tests of mobile bed are essential in Myanmar.

(2) Simulation Analysis through Computer Utilization ("D")
The Original Plan of this item is to introduce computer simulation analysis for hydraulic problems. The main point suggested by the Guidance Team is that it is necessary for C/Ps to study the computer programming technique about this subject. According to this instruction, basic knowledge about computer simulation will be transferred to C/Ps by March 1995. The result of evaluation on this item is as follows:
(a) The introduction of unsteady flow simulation will be completed by March 1995.
(b) Case study on unsteady flow simulation will be remained. For successful implementation of simulation analysis, collection of data and making actual model should be completed.

5.3.6 Training Program ("A")
Training program is divided into the periodical training which will be implemented by Myanmar's own side and the special training implemented by Myanmar side with the advice and guidance from Japanese experts. Myanmar side put a great importance on enhancing human resources and implemented various types of training courses successfully. The output of this field is outstanding (58 courses and 1,231 trainees in total up to September 1994) and its achievement degree is assumed to be "A."

(1) Periodical Training ("A")
(a) Pre-service Training
Myanmar side trained 375 trainees in total (currently up to September 1994) who are newly graduated from universities through eight (8) courses. Japanese experts assisted and made guidance in several lectures. Though for several years there happened to discontinue the pre-service training, every new staff officer is obliged to receive the training and the institutional system of the training has been firmly established in ID.
(b) In-service Training
Myanmar side trained 526 trainees in total (currently up to September 1994) for in-service training through thirty-two (32) courses. Japanese experts assisted and made guidance mainly in computer-related lectures.

(2) Special Training ("A")
In total 330 trainees were trained (currently up to September 1994) through eighteen (18) courses on all the five cooperation fields. Almost all short-term experts made lectures and introduced vast knowledge with latest technical information through special training courses.

5.4 Project Impacts

5.4.1 Impacts

(1) Technical Impacts

(a) The importance of uniformed design idea and the necessity of feed backing the knowledge and/or experience in the fields were acknowledged.

(b) Visitors to ITC have been increased and ITC is well known as central organization for enhancing irrigation technology in Myanmar.

(c) The library in ITC was expanded and its users have been increased. Besides, data-based book list was distributed down to the lowest unit of ID organization.

(d) Various kinds of analysis methods utilizing computer were introduced and the desire for new technology has been increased.

(e) ITC engineers have become demanded more and more in the field work. For example, C/Ps in ITC were assigned to quality control of dam embankment construction.

(f) Commission tests for construction materials have been requested more and more by ID and Yangon City Development Committee (YCDC), etc.

(g) Demonstration farm with various kinds of irrigation facilities was set up and modern irrigation technology has been introduced through its utilization by trainees.

(h) Laotian engineer was accepted for various kinds of training in ITC and its function as training institute has been enlarged.

(i) It is observed that some large scale irrigation projects were implemented by Myanmar itself.

(2)Institutional Impacts

(a) The necessity of a closer relation between design field and construction field was recognized and engineers in Design Branch (including ITC) are engaged in construction quality control.

(b) To the Ministry of Agriculture, ID has requested for ITC to become an independent organization (Branch Level) for implementing smoothly the activities in ITC.

(c) Reorganization of ID for future systematic computer utilization is on due course.

(3)Others

(a) Special works, which were so far commissioned to the external agencies, are to be implemented in ID. So its expenses are saved.

(b) Multipurpose dam projects including urban usage are increased. So it is expected that equipment of water quality testing is to be utilized effectively and engineers for testing are to be trained.

5.4.2 Extent of Impacts

(1) Project Level

The abilities of C/Ps are enhanced steadily through the technical guidance by Japanese experts and training in Japan.

(2) ID level

(a) Acquisition of fundamental technology, and understanding of new technology and advanced technologies are fully accomplished through the various training courses in ITC.

(b) The opportunity to get technical information is increasing through distribution of book list in ITC library and seminar in ITC.
(c) The ability of construction management engineers, constantly insufficient, has been improved.

(3) Outside Level of ID

ITC has been implementing engineering materials tests commissioned by YCDC and Ministry of Energy, etc. In this point, ITC is providing technology beyond ID.

5.5 Prospects for Sustainability

(1) Prospects for Organizational Sustainability

(a) The effort to improve ITC organization was made considerably from 1991 and its organization almost reaches to completion at present.
(b) Judging from staff allocation plan in early stage of this Project, the number of officials in ITC is almost satisfactory. Temporary staff are given a chance to regular one.
(c) To the Ministry of Agriculture, ID has requested for ITC to be promoted to Branch level. If this is carried out, its sustainability will become more assured.

(2) Prospects for Financial Sustainability

(a) The effort to secure the necessary budget is continued by Myanmar side and its amount is increasing. So financial sustainability is very promising.
(b) The amount of operation and maintenance cost for ITC facilities will be anticipated to increase. However, the effort to cover the cost increased by Myanmar side is expected, since the promotion of irrigation projects is stressed by the Government as national policy.
(c) As independent financial resource of ITC, the collection of commission fee for testing, which is so far free of charge, is to be considered.

(3) Prospects for Physical and Technological Sustainability

(a) Highly adaptable technology has been introduced in consideration of the technological level in Myanmar. Some of C/Ps are staff officers who were graduated from Yangon Institute of Technology (YIT). So technology is easy to be accepted.
(b) In the fields of Irrigation Engineering, Design Criteria, Data Analysis and Hydraulic Model Tests and Analysis, technical transfer is behind schedule in some items. So in these fields, sustainability is assumed to be unsatisfactory.
(c) In the field of Training Program, constraints in training technology and quality in training are to be overcome.
(d) Most of the C/Ps are in charge of lectures for training at ITC. So technology is accumulated.
(e) Various facilities and equipment are well operated and maintained by means of inventory management. They are expected to be continuously operated and maintained in good condition.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary of the Evaluation

(1) Project Administration

(a) Joint Committee was held at least once a year as described in R/D and, on that occasion there discussed, reviewed and examined about the actual output of previous year, the plan of activities in next fiscal year, and problems occurred

during the foregone cooperation period. The guidance provided by the Committee was so appropriate and effective to contribute to efficient operation and management of the Project. The result approved by the Committee was properly compiled as a Project annual report and respected usefully as a guide.

(b) The joint periodical meeting of whole experts and counterparts was regularized and continued to be held two times per month from 1992 which contributes to smooth communication and coordination of the Project in spite that the project site was separated into ITC in Bago and ID in Yangon.

(c) The C/Ps who received technical guidance from experts and/or training in Japan stay firmly in ITC. In other words, the result of technical cooperation was secured in right agencies.

(2) Irrigation Engineering

Collection of technical data and information relevant to irrigation engineering was implemented in a lot of irrigation projects and a part of them was filed as a data base in computer. The analysis of those data according to objectives, however, was not established and the method thereof should be continuously transferred. The achievement degree of this field by March 1995 is assumed to be "C".

(3) Data Analysis

The ITC staff who has knowledge and experience in computer was so scarce at the beginning that technical guidance had to be focused on strengthening fundamental technical transfer before starting applied computer technology. Therefore, the establishment of hydrological data base system as a case study and the guidance of hydrological analysis by using that data base were implemented only unsatisfactorily. It is necessary to proceed technical transfer through conducting trials in model case selected in limited watershed in order for C/Ps to use the existing computer system sufficiently and be able to continue to operate and manage the hydrological data base by themselves in future. Also, there should be implemented the trials of hydrological analysis as well as making a sample year book for hydrological data. The achievement degree of this field by March 1995 is assumed to be "C."

(4) Design Criteria

From the beginning, the objective of this field is supposed not to establish design criteria with a complete version, but to put an importance on improving the institutional framework to enable to prepare and continuously upgrade them. The criteria to be dealt with during cooperation period were supposed to be fill dam, headworks and canal. The progress of draft writing of these criteria was uneven due to the different starting time. Even the first draft of fill dam will be expected to complete by March 1995. The examination of the first draft criteria, however, has been done within Design Branch of ID and it is unsatisfactory to establish sufficient feed back system between Design Branch and project site in the course of preparing draft criteria. It is necessary to set up and manage Technical Board which includes every relating Branches and the proper system for the preparation of the criteria should be fixed to make them adaptive practically to planning and design of irrigation facilities. In addition, the improvement of program library should be promoted for supporting the adaptation of the criteria. The achievement degree of this field by March 1995 is assumed to be "C".

(5) Construction Material Tests and Analysis

The technical transfer of this field has been implemented for the longest period in the six fields and it achieved outstanding output to almost satisfy the target thereof. Further in future, the methods of various tests should be applied positively to actual project sites and contribute to increase the quality of construction works by Myanmar side. The achievement degree of this field by March 1995 is assumed to be "A".

(6) Hydraulic Model Tests and Analysis

This field was regarded to be cooperated by short-term expert at the beginning of the Project. The study on Yin Weir on mobile bed will be behind the schedule while the tests on spillway model on rigid bed will be completed. The tests on Yin head works should be continued since the needs of hydraulic tests on mobile bed are quite high in Myanmar. For this purpose, the Myanmar side is required to prepare outdoor hydraulic model test facility as a precondition for continued technical cooperation. To enhance the capability of ITC technical staff in computer simulation analysis, it will be advisable to conduct trials on unsteady flow analysis in the selected one model site. The achievement degree of this field by March 1995 is assumed to be "C."

(7) Training Program

This field has been promoted positively by Myanmar side from the start of the Project and realized notable achievement. Hereafter, Myanmar side needs to make effort for implementing periodical post assessment of finished training courses, upgrading training curriculum and materials, and implementing follow-up of trained staff in order to improve training quality. Further, it will be quite effective if the special training for remaining items above is continued to be implemented. The achievement degree of this field by March 1995 is assumed to be "A."

6.2 Lesson Obtained from the Project

In the Project, both the Myanmar and Japanese sides made great effort to achieve outputs to a certain level during limited period. The activities formulated in R/D, however, were too ambitious to perform properly because the Myanmar side constrained the input from Japanese side especially in the number of dispatched long-term experts and project period when the implementation survey team was delegated. This is the main cause for the delay of Project performance.

6.3 Recommendations

(1) The follow-up program will be necessary for the five fields except the construction material tests and analysis which is assumed to mostly attain the expected output among the six fields of technical cooperation mentioned in the Original Plan. It is important to concentrate project activities on the items as shown below in order to implement the follow-up program effectively and efficiently. The necessary term of follow-up program to lift the achievement degree from "C" level to "A" level (at least "B" level) on the selected items will be estimated to be two (2) years. The final decision of follow-up program will be done by the Government of Japan and the Government of the Union of Myanmar.

(a) Irrigation Engineering

Improvement of data analysis method on irrigation data.

(b) Data Analysis

Implementation of trials in model case selected in limited watershed on hydrological data base, hydrological analysis and a sample year book for hydrological data.

(c) Design Criteria
   1) Preparation of remaining part of the first draft on headworks and canal.
   2) Implementation of standardizing process to establish draft design criteria through setting up a Technical Board on fill dam, headworks and canal.
   3) Improvement of Program Library.
   4) The precondition is for Myanmar side to set up Technical Board.

(d) Hydraulic Model Tests and Analysis
   1) Implementation of hydraulic model tests and analysis of Yin Weir on mobile bed.
   2) Implementation of trials on computer simulation analysis on unsteady flow in the selected one model site.
   3) The precondition is that the Myanmar side will prepare outdoor hydraulic model test facility in ITC.

(e) Training Program
   Implementation of special training relating to the above (a) to (d).

Note) The fields of (d) and (e) above will be covered by the short-term experts.

(2) The delay of office procedure always results in the delay of project activities directly. Necessary measures to smooth the procedure should be carefully examined.

(3) The following points should be satisfied in order to promote the activities in ITC and further enhance the technical capability of irrigation staff in Myanmar:
   (a) To raise the institutional position of ITC to Branch level and strengthen the foundation of its organizational sustainability.
   (b) To deepen the relation between ITC and other Branches concerned in ID to improve irrigation engineering technology especially at irrigation project level.
   (c) To formulate long-term training plan and assessment system for bringing up of irrigation technical staff in ID and accordingly make efficient use of ITC's training function.

ANNEX

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Table 1. Input Summary of Japanese and Myanmar Sides

Item	Unit	-1991	1991/92	Sub-total	1992/93	1993-94	1994/95	Sub-total	88-94 Total
Japanese Input									
Long-term Expert	man month	52.5	52.5	105.0	59.0	58.5	42.0	159.5	**264.5**
Shor-term Expert	man month	0.0	6.0	6.0	6.0	7.0	17.0	30.0	**36.0**
Counterpart Training	man	5.0	3.0	8.0	4.0	4.0	4.0	12.0	**20.0**
Providion of Equipment	mil yen	40.0	30.0	70.0	45.0	40.0	31.0	116.0	**186.0**
Middle-level Manpower	mil yen	0.0	6.2	6.2	4.9	4.3	3.3	12.5	**18.7**
Study Trip	mil yen	1.5	0.0	1.5	0.0	1.5	0.0	1.5	**3.0**
Text Book	mil yen	1.1	0.0	1.1	0.0	0.0	0.0	0.0	**1.1**
Grant-Aid	mil yen	2,429.0		2,429.0					
Myanma Input									
Counterpart Engineer	man month	913	720	1,633	675	828	375	1,878	**3,511**
Other Staff	man month	441	369	810	327	396	180	903	**1,713**
Current Budget	kyat	9,024,606	3,514,069	12,538,675	4,477,141	4,419,367	1,255,149	10,151,657	**22,690,332**
Capital Budget	kyat	7,046,084	2,168,516	9,214,600	1,000,000	5,443,163	252,955	6,696,118	**7,696,118**
Others	kyat	5,069,000	4,279,000	9,348,000	4,018,000	4,018,000		8,036,000	**17,384,000**

Table-2 Long-Term Expert Assignments

No.	Subject	Name	Date	
			From	To
1	Team Leader	Mr.N.Yamada	28.7.88	11.9.88
	Team Leader and Irrigation Engineering expert	Mr.N.Tamura	17.1.91	31.3.92
		"	1.4.92	27.3.93
		Mr.C.Kajiwara	19.5.93	31.3.95
2	Co-ordinator	Mr.M.Taguchi	28.7.88	11.9.88
		"	28.9.89	31.3.92
		Mr.Y.Niino	16.3.92	15.3.94
		"	16.3.94	15.3.95
3	Data Analyst, Computer	Mr.Y.Ishikawa	2.6.88	11.9.88
		Mr.M.Kashiwabara	1.4.91	31.3.93
		"	1.4.93	31.3.94
		Mr.K.Funabashi	1.8.94	27.1.95
4	Design Criteria	Mr.Y.Furuyama	2.6.88	11.9.88
		Mr.F.Ogi	18.11.91	15.11.93
		"	16.11.93	15.11.94
5	Construction Material Test Analyst	Mr.N.Murayama	2.6.88	11.9.88
		"	27.7.89	28.3.92
		Mr.M.Takahashi	1.5.92	30.4.94
		"	1.5.94	30.9.94

Table-3 Short-Term Expert Assignments at ITC

No.	Subject	Name	Date	
			Arrival	Departure
1.	Computer NEC MS 4100 (Software)	Mr.F. Mishima	20.11.89	19.12.89
2.	" (Hardware)	Mr.M. Hiraoka	20.11.89	19.12.89
3.	Fill Dam	Mr.Y.Nakayama	2.5.91	31.5.91
4.	Hydraulic Model Test	Mr.Y.Masumoto	15.6.91	11.7.91
5.	Computer NEC MS 4100	Mr.S.Homma	26.10.91	2.11.91
6.	Construction Material Test	Mr.H.Hayakawa	23.11.91	19.12.91
7.	"	Mr.K.Dohi	23.11.91	19.12.91
8	Computer NEC 4100 (Software)	Mr.S.Shimpuku	24.2.92	14.3.92
9.	" (")	"	25.2.93	19.3.93
10.	" (Hardware)	Mr.K.Ebina	25.2.93	11.3.93
11.	Engineering Geology	Dr.K.Mori	25.2.93	15.3.93
12.	Seepage Analysis	Dr.M.Yasunaka	8.3.94	22.3.93
13.	Applied Hydrology	Dr.Y.Hayase	25.3.93	8.4.93
14.	Computer simulation on Hydraulic Model Test	Mr.M.Shimazaki	25.3.93	8.4.93
15.	Hydraulic Model Test	Dr.M.Ueda	3.7.91	29.7.93
16.	Design Criteria: Structural Analysis of Concrete Dam	Dr.M.Yasunaka	27.10.93	15.11.93
17.	Construction Material Tests: Quality Control	Mr. Oono	20.11.93	11.12.93
18.	Computer Utilization on Hydrological Analysis	Dr. Y. Hayase	1.12.93	20.12.93
19.	Computer Information Exchange	Mr. Y. Goto	19.1.94	10.2.94
20.	Concrete Engineering	Dr. S. Aoyama	21.3.94	4.4.94
21.	Irrigation Water Management	Mr. M. Tajima	30.3.94	18.4.94
22.	Water Quality Test	Ms. K. Yamauchi	14.7.94	9.8.94
23.	Construction Material	Mr. Hayakawa	1.8.94	23.8.94
24.	Testing Equipment	Mr. Dohi	1.8.94	23.8.94
25.	Quality Control	Mr. S. Suzuki	11.8.94	6.9.94

Table-4 List of Counterpart Training in Japan.

Field	Name of Training Course	Name of Counterpart	Start	Finish	Remarks
Data Analysis	System Engineering Course B and NEC MS 4100 Training	U Maung Maung Than	27/9/90	28/4/91	Existing
	Personal Computer Programing Course B	Daw Htay Htay Win	26/7/90	19/11/90	〃
	Instructor (Mainframe based) Course and NEC MS 4100 Training	U Win Myint Hlaing	6/10/93	30/4/94	〃
	Instructor (Personal Computer based)	Daw Aye Aye Hlaing	20/4/94	-Still-	〃
Construction Material Test	Construction Material Test	U Ye Win	31/5/93	1/9/93	〃
	Agricultural Land and Water Resources Development	U Tin Shwe	25/5/91	14/8/91	〃
	Agricultural Land and Water Resources Development	U Zaw Htut Oo	11/5/92	3/8/92	〃
Design Critera	Irrigation and Drainage	U Soe Min	9/2/92	21/11/92	〃
	Irrigation and Drainage	U Htay Oo	7/2/93	19/11/93	〃
	Irrigation and Drainage	U Thant Zin	6/2/94	-Still-	〃
Irrigation Engineering	Irrigation Water Management	Daw Hkon Ra	22/4/90	13/10/90	Not at ITC
	Irrigation Water Management	U Myo Myint Aung	9/5/92	31/10/92	Existing
	Irrigation Water Management	U King Maung Myint	8/5/93	4/11/93	〃
Hydraulic Model Test	Hydraulic Model Test	U Cho Cho	12/9/92	19/12/92	Transfered
	Irrigation Water Management	U Hla Baw	6/5/91	5/11/91	Existing
	Hydraulic Model Test	Daw Than Than Oo	20/4/94	19/7/94	〃
Training	Attending ICID and Senior training course related to Irrigation Technology	U Ba Hnin Chit	12/10/89	26/10/89	Transfered
	Semi Senior Training Course related to Irrigation Technology	U Kyaw Myint	10/10/90	12/11/90	〃
Other	Technical Exchange Program (Thailand and Singapore)	U Kyaw San	1/12/90	13/12/90	〃
	Technical Exchange Program (Thailand and Singapore)	U San Htoo	25/2/91	7/3/91	〃
	Technical Exchange Program (Indonesia and Thailand)	U Kyaw Myint	4/10/93	16/10/93	Existing
	Technical Exchange Program (Indonesia and Thailand)	U Ohn Gaing	4/10/93	16/10/93	〃

Note: Total Counterpart training = 22 No
Existing trained Counterparts at ITC = 16 No
Trained Counterparts already transfered from ITC = 5 No
Counterpart under training in Japan = 2 No
Trained Counterpart not from ITC = 1 No
Counterpart under preparation for training in Japan = 1 No

Table-5 (a) Training Programs Conducted at ITC

(Year 1994 - 95)

No.	Training Program	Education	No. of Trainees	Date		Duration (Weeks)
				From	To	
1	Pre-Service Training Course for Staff-Officer (Civil)	10^{th} std.	48	28.3.94	22.4.94	4
2	Seminar on Water Management*	B.E,B.Sc	22	1.4.94	5.4.94	1
3	In-Service Training Course for DM(1)	10^{th} std.	33	2.5.94	8.7.94	9
4	Basic Computer Course No.(8)	B.E,A.G.T.I	10	9.5.94	20.5.94	2
5	Special Course on Water Quality Test and Analysis*	B.E,B.Sc	20	20.7.94	3.8.94	2
6	Intermediate Computer Course No.(5)	B.E,B.Sc	10	25.7.94	12.8.94	2 1/2
7	Special Course on Inspection and Maintenance of Apparatus*	B.E,B.Sc	11	9.8.94	19.8.94	1 1/2
8	Special Training on Quality Control*	B.E,B.Sc	15	16.8.94	2.9.94	2
9	Basic Computer Course No.(9)	B.E,B.Sc	10	22.8.94	2.9.94	2
10	Seminar on Design Criteria III*	B.E,B.Sc	30	5.9.94	16.9.94	2

* Training programs conducted by short - term experts

Table-5 (b) Training Programs Conducted at ITC

(Year 1993 - 94)

No.	Training Program	Education	No. of Trainees	Date		Duration (Weeks)
				From	To	
1.	Training course on applied Hydrology for Agricultural Land *	B.E.	6	29.3.93	6.4.93	1.5
2.	Training course on Computer Simulation in Hydraulic Test *	B.E.	8	29.3.93	6.4.93	1.5
3.	Basic Training course No.(2) for Surveyors	10^{th} std.	15	26.4.93	4.6.93	6
4.	Basic Computer course No.(6)	B.E.	10	26.4.93	7.5.93	2
5.	Refresher course No(2) for D.M(3)	10^{th} std.	19	17.5.93	25.6.93	6
6.	Intermediate Computer course No.(3)	B.E.	10	21.6.93	9.7.93	3
7.	Training course on Hydraulic Model Test*	B.E.	14	12.7.93	23.7.93	2
8.	Basic Training course No.(2) on Soil and Concrete Tests	10^{th} std.	14	3.8.93	27.8.93	4
9.	Special Computer course No.(2) for Survey Software	B.E, B.Sc	6	9.8.93	27.8.93	3
10.	Intermediate Training course No.(1) on Soil and Concrete Tests	10^{th} std.	14	30.8.93	24.9.93	4
11.	Basic Computer Course No. (7)	B.Sc., B.Com	10	25.10.93	5.11.93	2
12.	Training Course on Structural Analysis of Concrete Dams*	B.E., B.Sc (Geology)	35	29.10.93	12.11.93	2
13.	Training Course on Construction Material Test: Quality Control*	B.E., B.Sc (Geology)	23	24.11.93	9.12.93	2
14.	Computer Application in Hydrology(Tank Model)*	B.E.	10	6.12.93	16.12.93	1.5
15.	In-Service Training Course No.(1) for DM(1) and DM(2)	A.G.T.I	13	27.12.93	25.2.94	9
16.	Special Computer Course on Database & Data Communication *	B.E., B.Sc.	11	24.1.94	8.2.94	2
17.	Intermediate Computer Course No. (4)	B.Sc.,B.Com	10	14.2.94	4.3.94	3
18.	Concrete Engineering Course *	B.Sc.,B.E.	20	24.3.94	1.4.94	1.5

* Training programs conducted by short - term experts

Table-5 (c) Training Programs Conducted at ITC

(Year1989 - 90)

No.	Training Program	Education	No. of Trainees	Date		Duration
				From	To	(Weeks)
1.	Inservice training course No.(1) for tracer and draftsman Course.	10th std.	26	3.7.89	27.7.89	3
2.	Inservice training course No.(2) for tracer and draftsman Course.	"	29	7.8.89	31.8.89	3
3.	Computer Operator Course (1989)*	B.E.	20	23.11.89	16.12.89	3

(Year 1990 - 91)

No.	Training Program	Education	No. of Trainees	Date		Duration
				From	To	(Weeks)
1.	Basic Computer course for ITC staff personnel.	10th std.	21	14.5.90	12.6.90	4
2.	Workshop/seminar of computer section staff personnel.		8	1.8.90	31.10.90	12
	Preservice training course for Staff officer No.(1)	"				
3.	Preservice training course for Staff officer No.(2) Preservice	B.E	50	17.12.90	6.1.91	3
4.	training course for Staff officer No.(3)	"	44	14.1.91	3.2.91	3
5.		"	50	18.2.91	8.3.91	3

(Year 1991 -92)

No.	Training Program	Education	No. of Trainees	Date		Duration
				From	To	(Weeks)
1.	Preservice training course for Staff officer No.(4)	B.E.	46	22.4.91	10.5.91	3
2.	Preservice training course for Staff officer No.(5) Preservice	"	45	27.5.91	14.6.91	3
3.	training course for Staff officer No.(6)	"	44	8.7.91	26.7.91	3
4.	Basic computer course No.(1)	"	20	4.11.91	8.11.91	1
5.	Preservice training course for Staff officer No.(7)	"	48	11.11.91	29.11.91	3
6.	Computer Operator course (1992) *	"	6	2.3.92	6.3.92	1

* Training program conducted by short-term expert

Table-5 (d) Training Programs Conducted at ITC

No.	Training Program	Education	No. of Trainees	Date		Duration (Weeks)
				From	To	
1.	Basic Computer course No.(2)	B.E.	10	18.5.92	23.5.92	1
2.	Refresher course No.(3) for D.M(4)	10th std.	47	22.6.92	10.7.92	3
3.	Intermediate Computer course No.(1)	B.E.	10	20.7.92	7.8.92	3
4.	Refresher course No(4) for D.M(4)	10th std.	47	17.8.92	4.9.92	3
5.	Basic Computer course No.(3)	B.Sc.	9	28.9.92	9.10.92	2
6.	Basic Computer course No.(4)	"	10	26.10.92	6.11.92	2
7.	Special Computer Software Course	B.E., B.Sc.	12	16.11.92	20.11.92	1
8.	Basic Computer course No.(5)	B.E.	11	23.11.92	4.12.92	2
9.	Basic Training course on Soil and Concrete Tests.	10th std.	16	30.11.92	18.12.92	3
10.	Special Computer course for Survey Software No.(1)	B.E.	12	29.12.92	8.1.93	2
11.	Basic Training course No.(1) for Surveyors	10th std.	20	28.12.92	5.2.93	6
12.	Intermediate Computer course No.(2)	B.Com ,B.sc.	12	18.1.93	5.2.93	3
13.	Refersher course No.(1) for D.M(3)	10th std.	22	8.2.93	19.3.93	6
14.	Special Training course on Engineering Geology (1993)*	B.Sc(Geol.),B.E, B.Sc.	20	1.3.93	10.3.93	1.5
15.	Computer Operator Course (1993)*	B.E.	9	1.3.93	16.3.93	2.5
16.	Special Training course on Seepage Analysis (1993)*	B.E.	29	10.3.93	19.3.93	1.5

* Training program conducted by short - term expert

Table-6 List of Counterparts & Office Staff at ITC

(August 1994)

Sr. No.	DESIGNATION	PAY SCALE (KYAT)	SANC-TIONED	APPOIN-TED	VACANT
1	Deputy Director	2125	1	1	-
2	Assistant Director	1750-50-1850	1	1	-
3	Staff Officer (Civil)	1575-25-1675	20	22	+2
4	Staff Officer (Lab)	"	4	4	-
	sub-total		**26**	**28**	**+2**
5	Senior Sub.Asst.Engr (Civil)	1425-25-1525	2	-	2
6	Senior Supervisor (Lab)	"	6	5	1
7	Accountant (1)	"	1	1	-
8	Draftsman (1)	"	1	-	1
9	Branch Clerk	1250-25-1350	1	1	-
10	Sub-Asst.Engineer (Civil)	"	9	8	1
11	Supervisor (Lab)	"	23	-	23
12	Draftsman (2)	"	2	1	1
13	Senior Clerk	1100-25-1200	3	3	-
14	Accountant (3)	"	4	3	-
15	Engineering Surveyor (Civil)	"	20	11	9
16	Asst.Supervisor (Lab)	"	17	6	11
17	Technician (Mech.) (3)	"	1	-	1
18	Junior Clerk	950-25-1050	5	4	1
19	Accountant (4)	"	3	1	2
20	Sub.Asst.Supervisor (Lab)	"	17	17	-
21	Telephone operator (4)	"	1	-	1
22	Draftsman	"	4	4	-
23	Junior Typist	"	1	1	-
24	Driver (4)	"	17	4	13
25	Carpenter (4)	"	1	-	1
26	Mason (4)	"	1	-	1
27	Technician (Mechanical)(4)	"	3	-	3
28	Technician (Fitter)(4)	"	2	-	2
29	Chief Cook (4)	"	4	-	4
30	Drafty	800-25-900	1	1	-
31	Driver (5)	"	11	5	6
32	Technician (Mechanical) (5)	"	3	-	3
33	Technician (Electrical)	"	2	-	2
34	Helper	600-25-750	7	7	-
35	Labourer (Survey)	"	4	-	4
36	Watchman	"	1	-	1
	Sub-total		**178**	**83**	**95**
	Total		**204**	**111**	**93**

Table-7 (a) Counterpart List from the beginning of the ITC project

Field	Classification	Name of Counterpart	Start	Finish	Remarks
Head of the Program	Director	U Ba Hnin Chit	1.4.88	21.12.89	Transfered
	〃	U Kyaw Myint	22.12.89	17.7.91	〃
	〃	U Kyaw Sein	18.7.91	30.7.92	Retired
	〃	U Tun Aye	31.7.92	19.11.92	Transfered
	〃	U Kyaw Myint	20.11.92	14.10.93	〃
	〃	U Ohn Myint	15.10.93	Upto date	-
Head of ITC	Deputy Director	U Sao Aung Myint	12.5.88	28.2.91	Transfered
	〃	U Kyaw San	1.3.91	6.5.92	〃
	〃	U Kyaw San Win	7.5.92	31.12.92	〃
	〃	U Kyaw Myint	1.1.93	Upto date	-
Data Analysis	Staff Officer	U Maung Maung Than	1.8.88	20.4.93	Promoted at ITC
	〃	Daw Htay Htay Win	1.6.93	Upto date	-
	〃	Daw Aye Aye Hlaing	6.7.92	〃	-
	〃	U Aung Bo	25.8.93	〃	-
	〃	Daw Toe Toe Maw	6.7.92	〃	-
	〃	U Kyaw Lin Oo	8.8.94	〃	-
	〃	U Myo Aung	8.8.94	〃	-
	Asst. Programmer	U Win Myint Hlaing	1.11.89	〃	-

Table-7 (b) Counterpart List from the beginning of the ITC project

Field	Classification	Name of Counterpart	Start	Finish	Remarks
Construction Material Test and Analysis	Staff Officer	U Khin Maung Chit	3.10.89	4.10.91	Promoted & Transfered
	〃	U Win Myint	6.2.89	10.12.91	Transfered
	〃	U Zaw Htut Oo	29.5.90	12.2.94	Section Transfer
	〃	U Soe Myint	25.10.93	Upto date	-
	〃	U Soe Tint	12.11.90	〃	-
	〃	U Oo Hla Myaing	12.11.90	27.4.93	Transfered
	〃	Daw Mu Mu Myint	24.1.92	17.5.94	Section Transfer
	〃	U Oo Myint	2.9.91	Upto date	Promoted at ITC
	〃	U Aye Kyaw	1.3.94	〃	-
	Senior Supervisor	U Hla Win	10.5.91	〃	-
	〃	U Ye Win	3.5.91	〃	-
	〃	U Tin Shwe	3.5.92	〃	-
Design Criteria	Assistant Director	U Kyaw Myint	26.6.92	31.12.92	Promoted & Transfered
	〃	U Ohn Gaing	1.1.93	Upto date	Part time
	Staff Officer	U Kyaw Win	26.6.92	〃	〃
	〃	U Kyi Swe	26.6.92	〃	〃
	〃	U Soe Than	26.6.92	〃	〃
	〃	Daw Thwe Thwe	1.6.93	〃	〃
	〃	U Htay Oo	9.10.92	1.4.94	Section Transfer
	〃	U Soe Min	1.12.93	Upto date	Full time
	〃	U Thant Zin	1.4.93	〃	〃
	〃	Daw Mu Mu Myint	18.5.94	〃	〃
	〃	U Tin Maung Myint	18.6.94	〃	〃

Table-7 (c) Counterpart List from the beginning of the ITC project

Field	Classification	Name of Counterpart	Start	Finish	Remarks
Irrigation Engineering	Assistant Director	U M.D. Than Aung	11.7.91	28.9.92	Transfered
	Staff Officer	U Myo Myint Aung	2.5.93	Upto date	-
	〃	U Khin Maung Myint	5.11.93	〃	-
	〃	U Than Tin	13.12.93	〃	-
	〃	U Zaw Htut Oo	13.2.94	〃	-
Hydraulic Model Test and Analysis	Assistant Director	U Nu Maung	12.1.89	16.10.91	Resigned
	Staff Officer	U Cho Cho	15.5.89	20.4.93	Transfered
	〃	U Myo Myint Aung	29.5.90	6.12.91	Section Transfer
	〃	U Ba Tint	13.10.90	16.9.92	Transfered
	〃	U Hla Baw	6.12.91	Upto date	-
	〃	Daw Than Than Oo	21.5.92	Upto date	-
Training Program	Assistant Director	U MD Than Aung	11.7.91	28.9.92	Transfered
	〃	U Cho Cho	15.5.89	20.4.93	〃
	〃	U Maung Maung Than	21.4.93	Upto date	-
	Staff Officer	U Soe Myint	9.6.88	5.4.90	Promoted & Transfered
	〃	U Hla Kywe	6.7.88	18.4.90	〃
	〃	U Khin Maung Tint	24.5.91	7.8.92	〃
	〃	U San Htoo	23.5.88	3.12.91	Transfered
	〃	U Myo Myint Aung	7.12.91	30.10.92	Section Transfer
	〃	U Khin Maung Myint	6.12.91	4.11.93	Section Transfer
	〃	U C. Zakho	1.11.93	Upto date	-
	〃	U Soe Nyunt	12.11.93	〃	-
	〃	U Win Kyi	23.10.92	〃	-
	〃	U Thein Win	27.11.90	〃	-
	〃	U Htay Oo	12.10.92	〃	-
	S. A. E	U Ne Win	1.4.88	4.6.91	Transfered
	〃	〃	25.6.92	Upto date	-

Table-8 (a) List of Japanese Expert and Myanmar Counterparts

Japanese side (Expert)	Myanmar side (Counterpart)
Team Leader *Mr.C.Kajiwara* The Japanese Team Leader will provide necessary recommendations and advices on technical and administrative matters concerning the implementation of the Program to the Head of the Program.	**The Head of the Program** *U Ohn Myint* The Director (Design) of ID, as the Head of the Program will be responsible for the administrative and managerial matters of the Program from the Head Office.
Coordinator *Mr.Y.Niino* Coordinator will take charge of administration matters and assist Team Leader and Experts concerning the implementation of the Program.	**The Head of ITC** *U Kyaw Myint* The Deputy Director of ITC will be responsible for the close administrative and managerial matters of the program at ITC by the direct relation with the Japanese Experts wherever necessary. **Deputy Head of ITC** *U Maung Maung Than* As a Deputy Head, the Assistant Director has to assist the Head of ITC and he will be responsible for the management of counterparts from each section to be able to get proper technical transfer from concerned experts and to be able to finish the counterpart's task successfully. *U Htay Oo* (Staff Officer) Yangon ITC (H.Q) *U Ne Win* (Sub Asst. Engineer) "

Table-8 (b) List of Japanese Expert and Myanmar Counterparts

Data Analysis *Mr. K. Funabashi* Collection and analysis of technical data and information (The most fundamental past using computer in order to analyse the data on irrigation and drainage)	**Data Analysis** *Daw Htay Htay Win* (Staff Officer) *Daw Aye Aye Hlaing!!* (") *U Aung Bo* (") *Daw Toe Toe Maw* (") *U Kyaw lin Oo* (") *U Myo Aung* (") *U Win Myint Hlaing* (Asst.Programmer)
Construction Material Tests and Analysis *Mr.M.Takahashi* Test and analysis on soil, construction materials and water quality.	**Construction Material Tests and Analysis** *Head :* *U Soe Myint* (Staff Officer) *Soil :* *U Soe Tint* (") *U Oo Myint* (Supervisor) *U Hla Win* (") *U Ye Win* (") *Concrete :* *U Aye Kyaw* (Staff Officer) *U Tin Shwe* (Supervisor)
Design Criteria *Mr.F.Ogi* Preparation of design standards and criteria for irrigation facilities.	**Design Criteria** *U Ohn Gaing*** (*D . D*) *Head of Counterparts* *U Kyaw Win *** (Staff Officer) *U Kyi Swe *** (") *U Soe Than *** (") *Daw Thwe Thwe *** (") *U Soe Min* (") *U Thant Zin!!* (") *Daw Mu Mu Myint* (") *U Tin Maung Myint* (")

Table-8 (c) List of Japanese Expert and Myanmar Counterparts

Irrigation Engineering *Mr.C. Kajiwara* Collection and analysis of data / information for Irrigation and Drainage.	**Irrigation Engineering**		
	U Than Tin	(Staff Officer)	
	U Khin Maung Myint	(")	
	U Zaw Htut Oo	(")	
	U Myo Myint Aung *	(")	
Hydraulic Model Tests and Analysis *Mr.C.Kajiwara* *Hydraulic Model Tests and Analysis*	**Hydraulic Model Tests and Analysis**		
	U Hla Baw	(Staff Officer)	
	Daw Than Than Oo!!	(")	
Training Program *(Each expert)* Development of Training Programs for irrigation engineers/staff.	**Training Program**		
	U C. Za Kho	(Staff Officer)	
	U Win Kyi	(")	
	*U Soe Nyunt****	(")	Bago ITC (H.Q)
	U Thein Win!!	(")	
	*U Htay Oo****	(")	Yangon ITC (H.Q)
	U Ne Win	(S.A.E)	Yangon ITC (H.Q)

* Dual Responsibility with Mini-irrigation works.
** Part time Duty from the Design Branch.
!! Currently under counterpart training in Japan.
*** Dual Responsibility with ITC (H.Q) works.

Table-9 (a) Yearly Expenditure of the Irrigation Department on ITC Project (1988 - 1994)

Unit in Kyats

No.	Particular	Budget Year						
		1988 - 89	1989 - 90	1990 - 91	1991- 92	1992 - 93	1993 - 94	1994 - 95 (Up July)
	CURRENT BUDGET							
1	Salary of ITC staff personnel.	92,176	419,315	644,290	894,222	857,622	1,255,974	465,033
2	Internal Travel Allowance.	51,504	69,938	64,638	96,998	137,600	255,648	60,648
3	Labour and transportation charges.	-	311,639	308,285	215,474	263,944	231,496	6,357
4	Office accessaries, publication, newspaper and uniform	-	69,763	21,049	23,560	35,198	37,772	19,271
5	Electricity power charges.	-	127,234	144,266	151,583	149,997	106,052	-*
6	Telephone charges.	-	30,641	26,970	86,480	100,000	171,000	-*
7	Maintenance charges for machineries and equipments.	-	101,292	149,921	144,896	287,010	265,699	43,385
8	Maintenance charges for buildings.	-	1,183,546	377,420	223,935	439,573	211,958	139,564
9	Maintenance charges for motor vehicles.	-	479,729	602,576	525,421	550,000	548,714	127,041
10	Others.	1,052,033	1,710,461	823,518	999,960	1,245,297	851,624	141,213
11	Expenditure for training courses.	-	19,587	142,845	151,540	410,900	483,430	252,637
	Totals	1,195,713	4,523,145	3,305,778	3,514,069	4,477,141	4,419,403	1,262,674

Table-9 (b) Yearly Expenditure of the Irrigation Department on ITC Project (1988 - 1994)

Unit in Kyats

No.	Particular	Budget Year						
		1988 - 89	1989 - 90	1990 - 91	1991- 92	1992 - 93	1993 - 94	1994 - 95 (Up July)
	CAPITAL BUDGET							
1	Expenditure for residential buildings.	5,705,475	-	-	-	-	-	-
2	Technical Cooperation Program (TCP)	-	795,154	193,482	2,098,536	1,000,000	1,521,669	252,955
3	Minor Irrigation Works.	-	252,000	-	-	-	3,921,494	**
4	Study on Hydraulic Scale Model.	-	-	99,973	69,980	-	-	-
	Total	5,705,475	1,047,154	293,455	2,168,516	1,000,000	5,443,163	252,955

* Not yet claimed by concerned Department.

** Not yet counted

Figure-1 Organization of Ministry of Agriculture

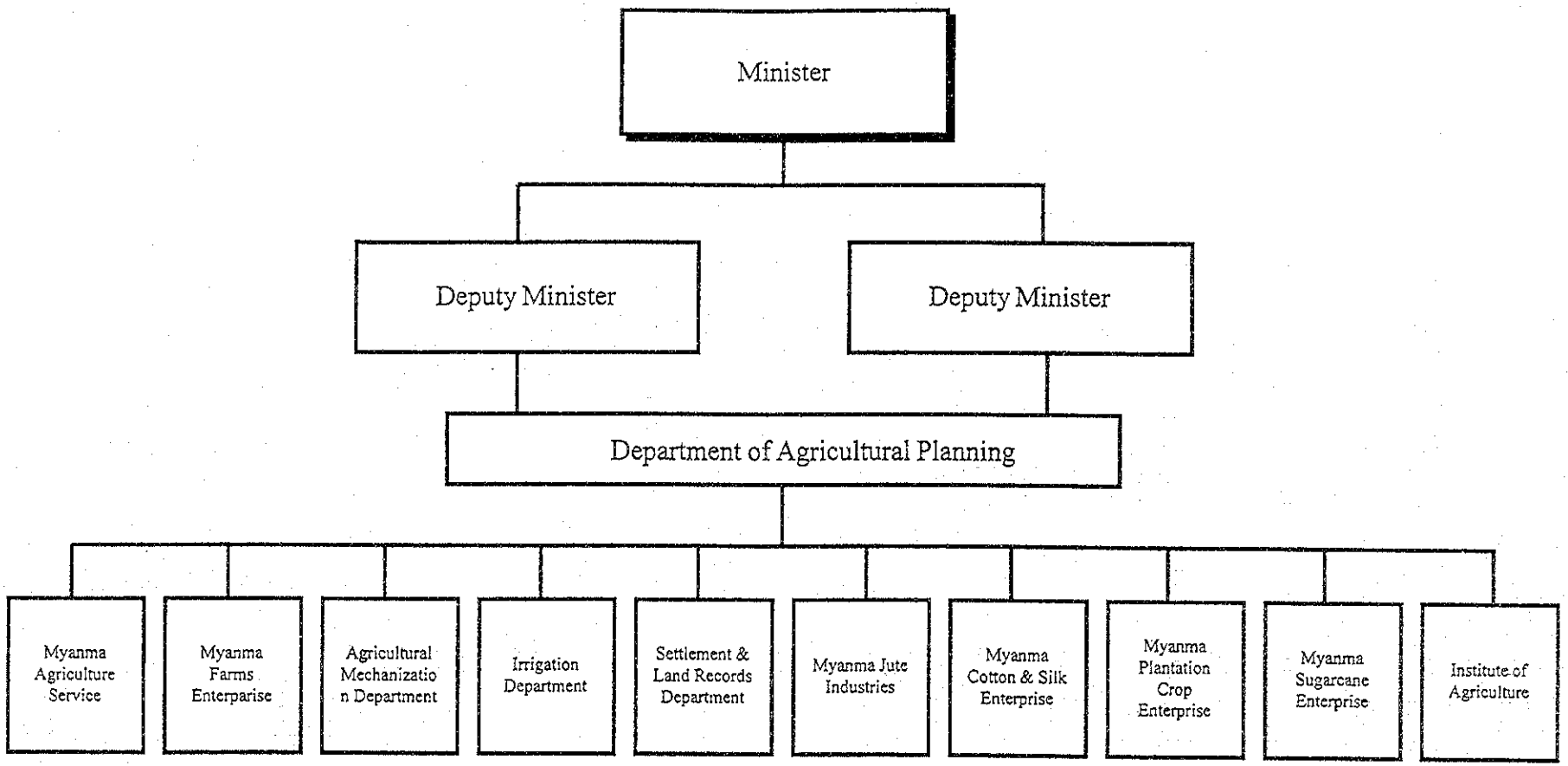
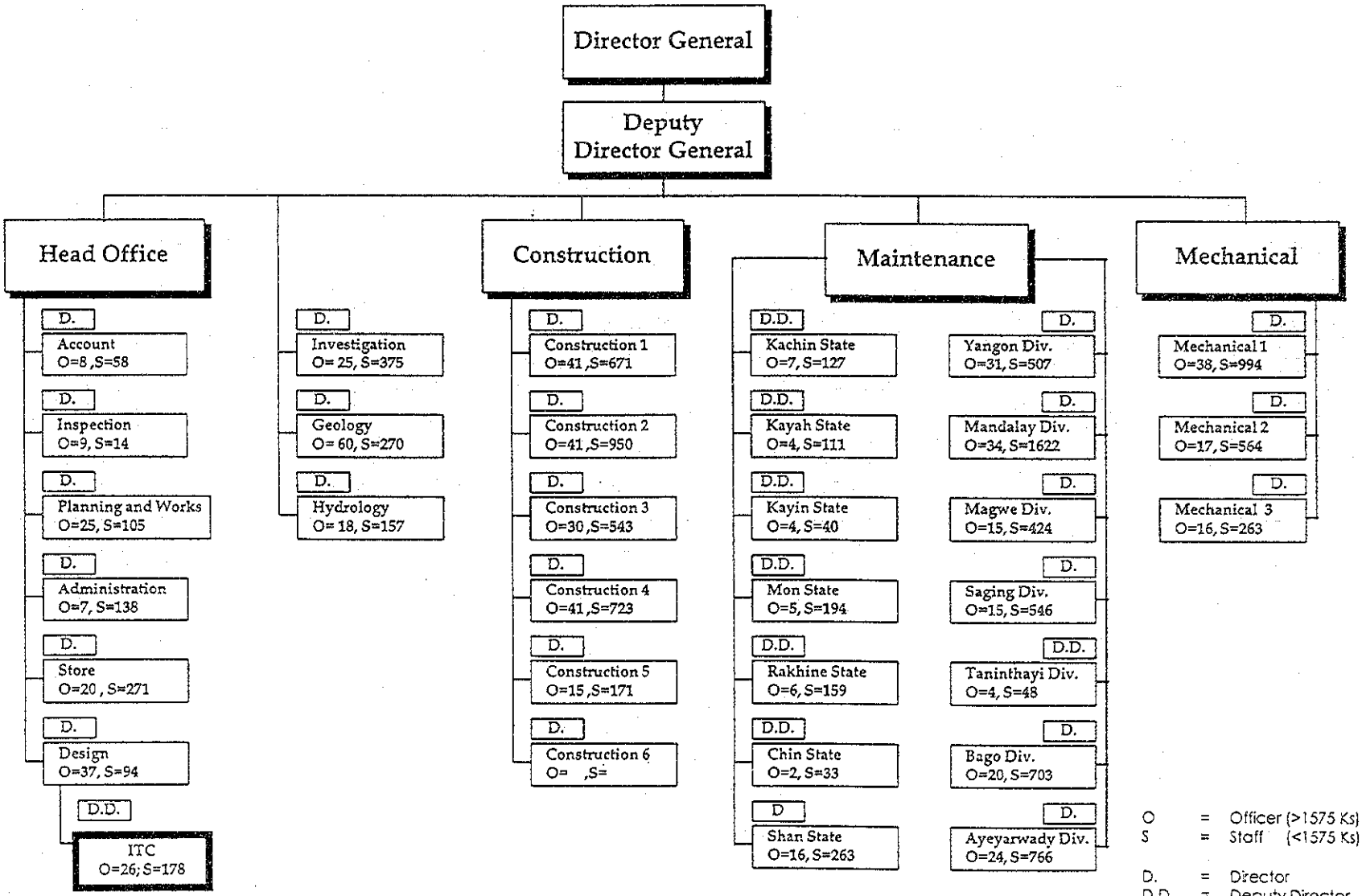
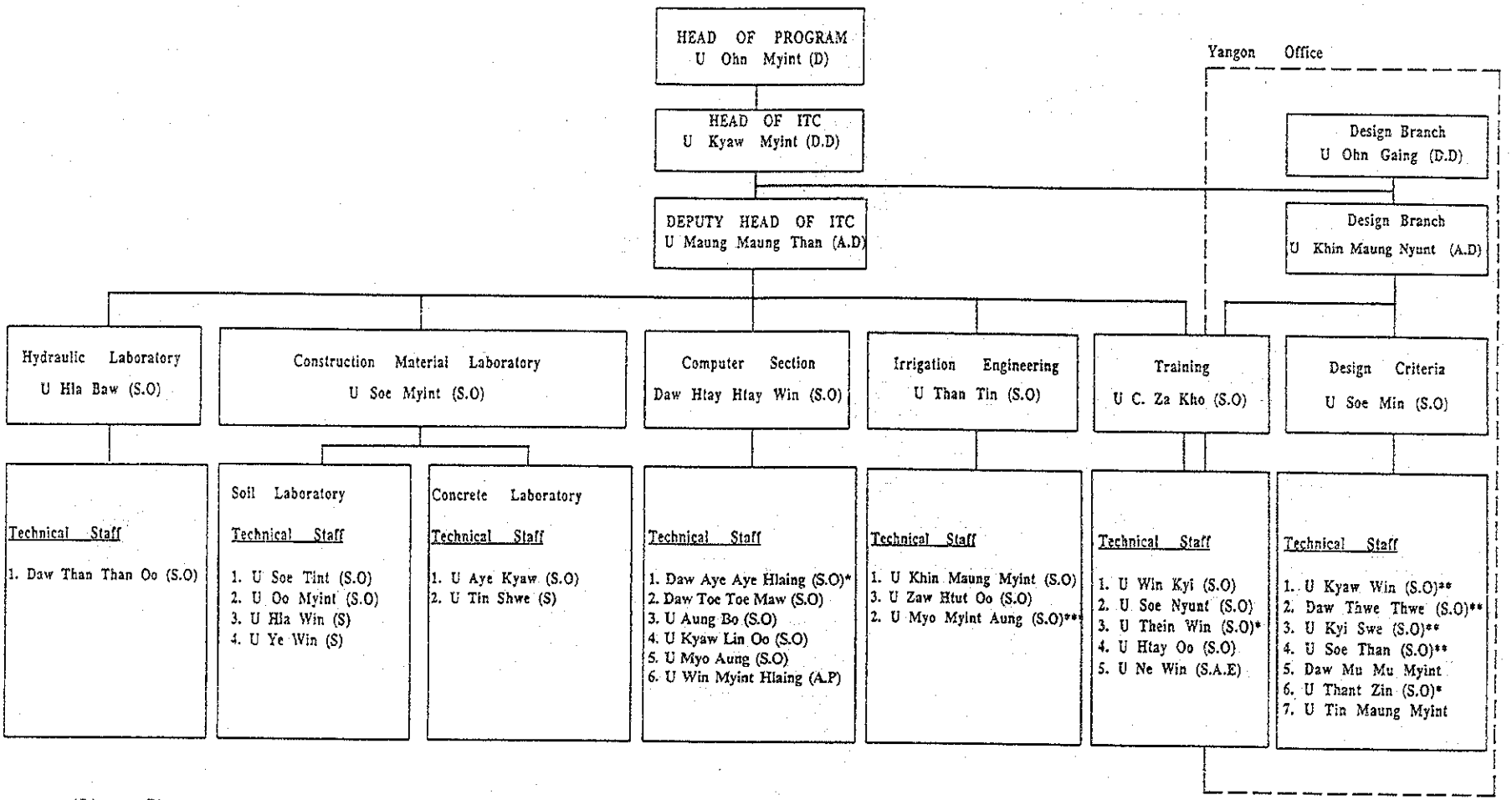


Figure-2 Present Organization Of Irrigation Department



Note: Number of staff in each branch are subject to change occasionally.

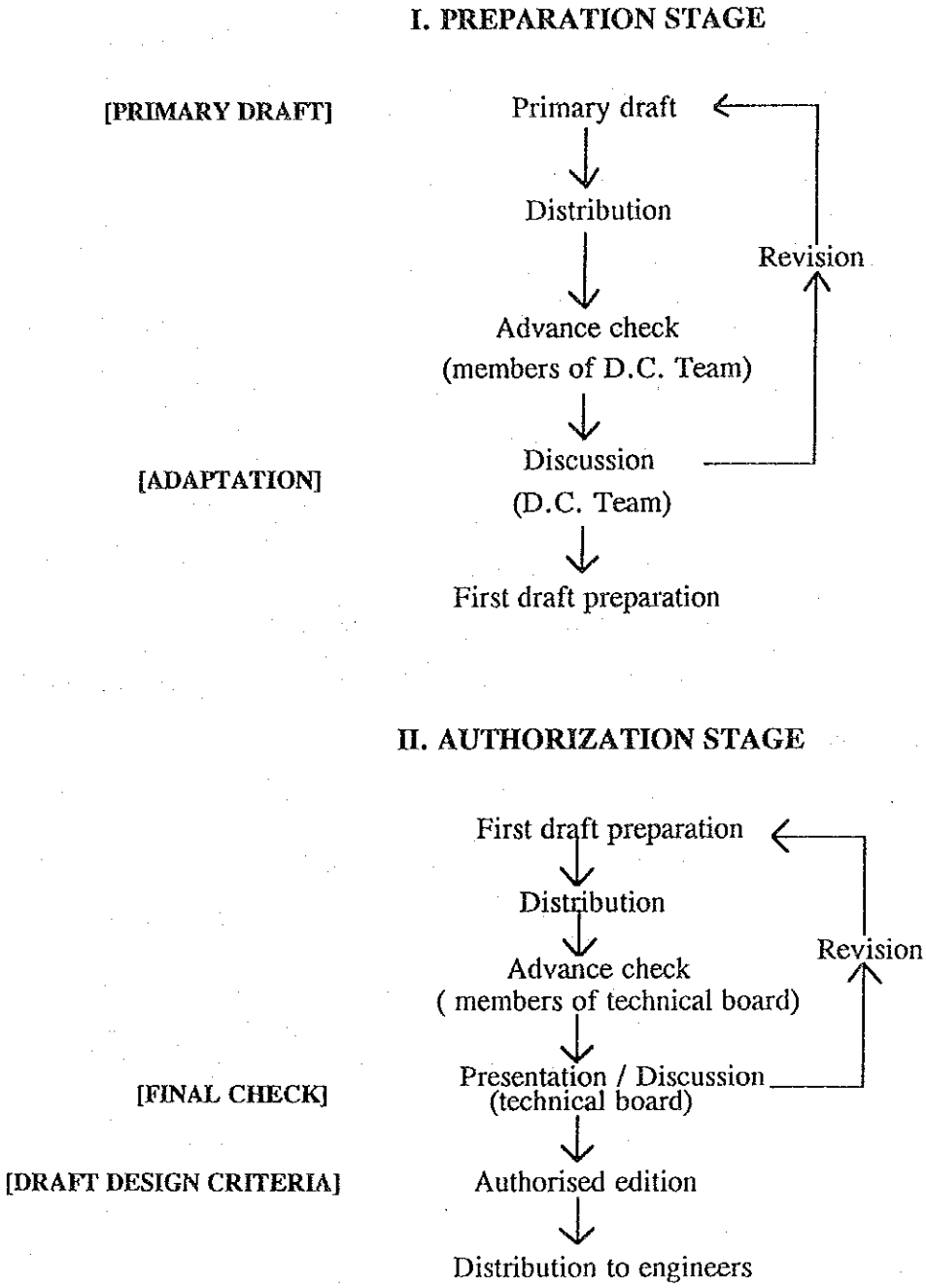
Figure-3 ORGANISATION CHART OF TECHNICAL COOPERATION SECTIONS OF ITC PROJECT (AUGUST 1994)



(D) - Director
(D.D.) - Deputy Director
(A.D.) - Assistant Director
(S.O) - Staff Officer
(S) - Supervisor (Lab.)
(A.P.) - Assistant Programmer

* Having training in Japan.
** Part time Duty from the Design Branch.
*** Part time Duty with mini-irrigation work.

Figure-4 Routine Working Procedure for Design Criteria



THE MINUTES OF THE FIFTH JOINT COMMITTEE MEETING FOR THE IRRIGATION TECHNOLOGY CENTER PROJECT

1. The comprising members of both the Myanmar side and the Japanese side agreed to accept the Final Evaluation Report prepared and submitted by the Joint Evaluation Team formed with the members of Japan International Cooperation Agency (JICA) Final Evaluation Mission and Myanmar Joint Evaluation Team (JET).

2. Both parties agreed with the proposal of the Joint Evaluation Team for two-years follow-up program of the ITC Project in five technical fields excluding the field of Construction Material Test and Analysis after termination of the current Technical Cooperation Program (TCP) at the end of March 1995.

3. It was agreed to recommend the seven points proposed in the meeting for efficient implementation of ITC Project in the remaining period and in the follow-up period as well.

Yangon, September 29, 1994

U Ohn Myint	Mr.C.Kajiwara
Director	Team Leader
Head of Program	Colombo Plan Expert

THE MINUTES OF THE FIFTH JOINT COMMITTEE MEETING FOR THE IRRIGATION TECHNOLOGY CENTER PROJECT

The Fifth Joint Committee Meeting for the Irrigation Technology Center (ITC) Project with comprising members of the Irrigation Department (ID), Japan International Cooperation Agency (JICA) Experts, the Resident Representative of JICA, the personnel from the Embassy of Japan (EOJ), the representative from the Ministry of Agriculture (MOA), the members of JICA Final Evaluation Mission, the members of the Joint Evaluation Team (Myanmar), and other concerned personnel of ITC and ID, was held on September 19, 1994 at the meeting hall of ID (Head Office) from 14:00 to 16:20. The participant list is attached.

Agenda 1. Opening Address by The chairman

On behalf of the Director General of ID, Dr.Myint Thein, the Director General of the Department of Agricultural Planning, chaired the meeting and it was opened by his opening address.

The chairman said in his address that the meeting to be successful in collaboration with all participants.

Agenda 2. Explanation of the Activities

U Ohn Myint, the Head of the Program, explained the activities of each group concerning the final evaluation of the Project as follows:

ITC

1) After getting information about the visit of JICA Final Evaluation Mission to ITC project, ITC prepared Overall Status Report including as much data and information as possible and that also covered the whole project period of 1988-1995.

2) ITC held a presentation ceremony on August 31, 1994 at the ID Head Office in Yangon at which Chief Counterpart personnel from each technical field explained their Work Plan and actual achievements to the JET members and Joint Committee Members from the ID.

3) ITC held a coordination meeting with JET and Joint Committee Members of the ID on September 1, 1994 at which JICA Experts explained about the evaluation methods and procedures and discussion among the attendants about the final evaluation points on ITC Project was made.

ID

1) The Director General of ID formed a Myanmar Joint Evaluation Team (JET) comprising with Team Leader and four other members.

2) ID also prepared the requested data and information thereafter handed over to JICA Experts.

Joint Evaluation Team of Myanmar

1) The activities of JET started on August 31, 1994 at the presentation ceremony of the ITC Counterpart Personnel and studied overall status of ITC activities and up-to-date achievements in each field.

2) JET met with the Joint Committee members of ID, the representatives of ITC, and the Experts on September 1, 1994. In the meeting, evaluation procedures and other related matters were discussed.

3) Several rounds of review and discussion with ITC personnel were held at ID Head Office to be able to understand the present conditions of ITC activities and to prepare a report.

4) JET and JICA Final Evaluation Mission formed the Joint Evaluation Team and assessed the accomplishment of the Project in each field.

JICA Final Evaluation Mission

1) The Mission met with JET (Myanmar) members and Counterpart Personnel on September 13, 1994. Counterpart Personnel made brief presentation of the status of progress in each field. Accordingly, the Joint Evaluation Team assessed and evaluated achievement in each field and project management.

2) The Mission prepared a draft evaluation report on September 14 and discussed with JET members, chief Counterparts, and administrative personnel of ITC.

3) The Team, the Mission members and Myanmar JET members, visited ITC (Bago) on September 15 and 16 and inspected the facilities of ITC. The coordination for report finalization was made.

4) Team Leader of the Mission, Mr. Ikeda, and the Team Leader of JET (Myanmar), Dr. Win Thein, signed on the Note of Understanding (NOU) on September 19.

After explanation of the activities of each group, the Head of Program proposed some important points to be recommended by the meeting in line with the facts mentioned in the Report of Final Evaluation.

Agenda 3. Presentation of the Note of Understanding

Mr. F. Ikeda briefly explained the Note of Understanding agreed by both sides and the Summary of the Evaluation (Paragraph 6.1) to make the participants understand some important points.

Agenda 4. Presentation of the Recommendation

Dr. Win Thein explained the Recommendation (Paragraph 6.3) of the Report.

U Kyaw Myint, the Head of ITC, added the Lessons from the Project (Paragraph 6.2).

Agenda 5. General Comments and Discussions

ID : U Maung Maung requested the reconsideration of the extension of the field of Construction Material Tests and Analysis in the follow-up program despite its evaluation result with "A". He suggested importance of this field for large scale dams construction, like Paunglaung Dam to be constructed by ID in near future.

ID : U Maung Maung Thwin expressed his sincere acknowledgment to JICA Experts and Counterparts for their efforts in spite of occasional shortcoming in implementation. It was understood that one of the major drawback is inappropriate allocation of counterparts by Myanmar side. He requested JICA to render cooperation with ID in future as well.

ID : U Kyaw Myint, Director of Investigation Branch, told that Myanmar engineers have to cope with general topics in various fields. Consequently, he suggested ITC to hold a training course which is objected not only for specific subject, but also for overall application of various subjects in one course.

JICA : Mr.Kajiwara, the Team Leader of JICA Expert, replied to U Maung Maung that, according to the Record of Discussion (R/D) and the Tentative Schedule of Implementation (TSI), the subject could not be implemented in present setting. It could be included in future project if the request on this subject is presented with sound reasons.

ID : U Ohn Myint suggested that, since the Note of Understanding had been signed by both sides, any proposal which is out of scope of R/D should not be raised. He appreciated their contribution rendered to ID and suggested to discuss defined seven proposed points for future implementation of ITC in the follow-up program.

Chairman : Dr. Myint Thein also urged the participants to discuss the points.

He raised the first point "To retain the trained personnel at ITC for better achievement of the Project in the follow-up program." No objection was made and the meeting agreed.

The chairman raised the second point "To form the Technical Board for the field of Design Criteria." No objection was made and the meeting agreed to propose this point to the higher authority concerned.

The third point of "To request JET members for continuous assessment of TCP Program during the follow-up program" was raised by the chairman subsequently.

JET : Dr. Win Thein proposed that the team should not be formed with fixed members, but with the available old members and other new suitable members only at the time of assessment because of uncertainty of the availability of existing JET members.

JICA : Mr. Yoshida, the Resident Representative of JICA Office in Myanmar, expressed his opinion that some points discussing are not necessarily to be decided by this meeting.

JICA : Mr. Kajiwara asked whether Myanmar Evaluation Team attend the next Joint Committee Meeting.

Chairman : The chairman and the meeting agreed to form the evaluation team which makes the assessment at every six-month and attends the Joint Committee Meeting as observer. He also replied to Mr. Yoshida that most of the issues were concerned with only Myanmar side, but, at the presence of all Joint Committee members, those should be recommended by the current meeting.

The chairman raised the fourth point "To promote ITC to the Branch Level" to the meeting.

ID : U Ohn Myint said that it would need to initiate the proposal again.

Chairman : The chairman pointed out that the issue was mentioned on page 14 of Final Evaluation Report under the Recommendation and it was agreed by both sides. Therefore, the meeting also agreed to submit this issue to the Ministry of Agriculture for its approval.

The chairman raised the fifth point of "To improve office procedures in due course." He inquired ITC personnel the details.

ID : U Maung Maung Than, the Assistant Director of ITC, explained the point by reading out the last six lines of Paragraph 5.2.1.(1)(a) and he also pointed out its criticalness of signing the revised R/D in schedule for the commencement of the follow-up program continuously at the end of March 1995.

Chairman : The chairman accepted the necessity of improvement of office procedures in future and the meeting also recommended the point to be improved to avoid unnecessary delay during follow-up program.

The chairman raised the sixth point "To improve the communication facilities at ITC." U Maung Maung Than explained to the chairman about the progress of Telephone line repair work with the collaboration of the DG Office and the Ministry.

The chairman agreed to convey the issue to the Minister of Agriculture by himself. The meeting also recommended the urgent improvement of Telephone line for Data Communication mentioned in the Report.

The Chairman raised the seventh point "To maintain sufficient budgetary allowances in future also." U Ohn Myint and U Maung Maung Than explained to the chairman about the necessity of further budgetary assistance by ID for the financial sustainability of ITC when JICA reduces its support annually.

The chairman and the meeting accepted the point and recommended ID to provide sufficient budgetary allowances in future. The chairman announced that seven points raised were all recommended by the meeting. He invited the participants to

discuss on other important matters concerned with the better achievement of ITC Project.

ID : U Kyaw Myint, the Head of ITC, proposed the meeting to consider possibility of the Phase II of ITC Project that would cover more important subjects for ID after the follow-up program concluded in the presence of JICA personnel from the Head Office.

JICA : Mr. Niino, the Coordinator of JICA Expert, replied concerning with the proposal that it should not be discussed in the meeting since the Joint Committee has specifically been formed for efficient implementation of ITC Project.

Agenda 6. Summary of recommendations made by the Joint Committee Meeting by the Head of ITC

U Kyaw Myint, the Head of ITC, read out the recommended points as follows:

The Fifth Joint Committee Meeting recommended:
1) To retain the trained personnel at ITC.
2) To form a Technical Board for Design Criteria field.
3) To form Evaluation Teams including old JET members for continuous assessment of the TCP Program in the follow-up program at every six month.
4) To propose higher authority promotion of ITC to the Branch Level.
5) To improve office procedures.
6) To improve the communication facilities at ITC for Data Communication work.
7) To maintain sufficient budgetary allowances to ITC by ID.

Agenda 7. Closing address by The chairman

The chairman commented that all suggestions and recommendation made by the Joint Committee Members and other participants would be important reference for further progress of the ITC Project and the meeting was recognized as successful. Some of the issues recommended by that meeting had to be submitted to the higher authority through proper channel for approval. Finally, he expressed his sincere appreciation to personnel from EOJ, JICA, JICA Experts and the Mission Members for their cooperation rendered in the meeting.

The meeting ended at 16:20 p.m.