No.

モロッコ王国
農業機械化研修センター計画
終了時評価報告書

平成 18 年 12 月

（2006 年）

独立行政法人　国際協力機構

農村開発部

農　村
J　R
06-71

モロッコ王国
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序　　文

独立行政法人国際協力機構は、モロッコ王国と締結した討議議事録（Record of Discussion：R/D）に基づき、技術協力プロジェクト「農業機械化研修センター計画」を、2000 年 9 月 1 日から 5 年間の予定で実施しています。

この度、プロジェクトの協力期間終了を約 6 カ月後に控え、協力期間中の活動実績等について、モロッコ王国側と合同で総合的な評価を行うとともに、今後の対応策等を協議するため、2004 年（平成 16 年）3 月 6 日から同年 3 月 26 日まで、当機構農村開発協力部第三グループ 乾燥畑作地帯第一チーム長　佐藤 仁を団長とする終了時評価調査団を現地に派遣しました。

本報告書は、同調査団によるモロッコ王国政府関係者との協議及び評価調査結果などを取りまとめたものであり、本プロジェクト並びに関連する国際協力の推進に活用されることを願うものです。

終わりに、この調査にご協力とご支援をいただいた内外の関係各位に対し、心から感謝の意を表します。

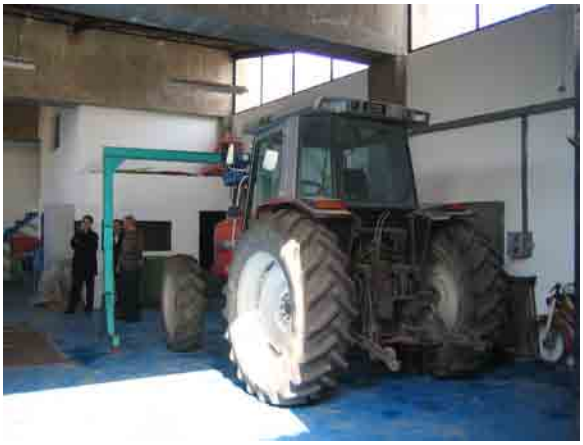
平成 18 年 12 月

独立行政法人国際協力機構
農 村 開 発 部
部　長　　松　田　　教　男

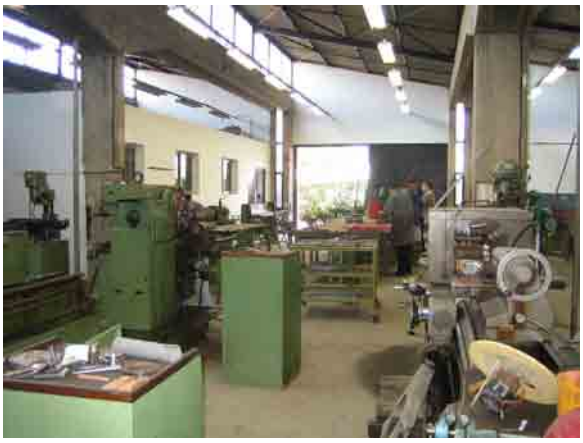
目　　　　次

写　　真

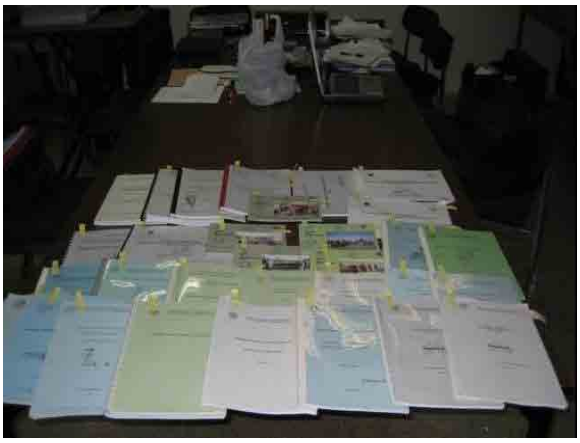
農業機械化研修センター（CFMA）



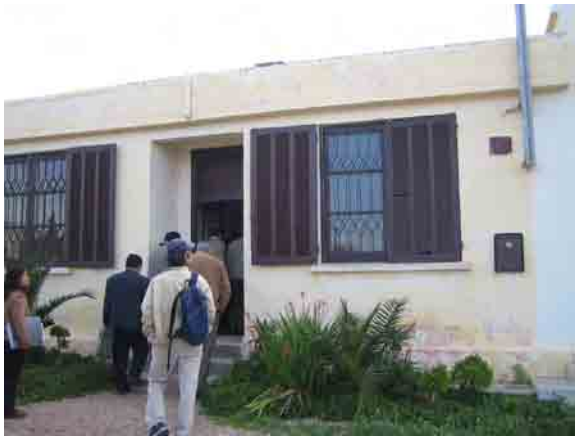
CFMA 内部：研修用農業機械



CFMA 内部：改良実習室

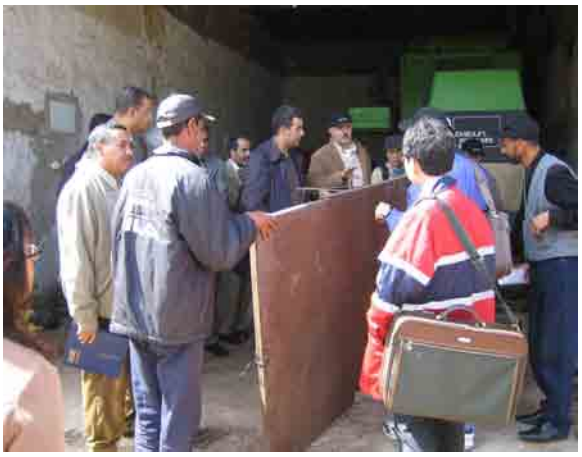


作成された研修テキスト



現地調査：TIFLLET 普及所

現地調査：普及所内部



現地調査：近隣農家（TIFLLET）

現地調査：民間の修理工

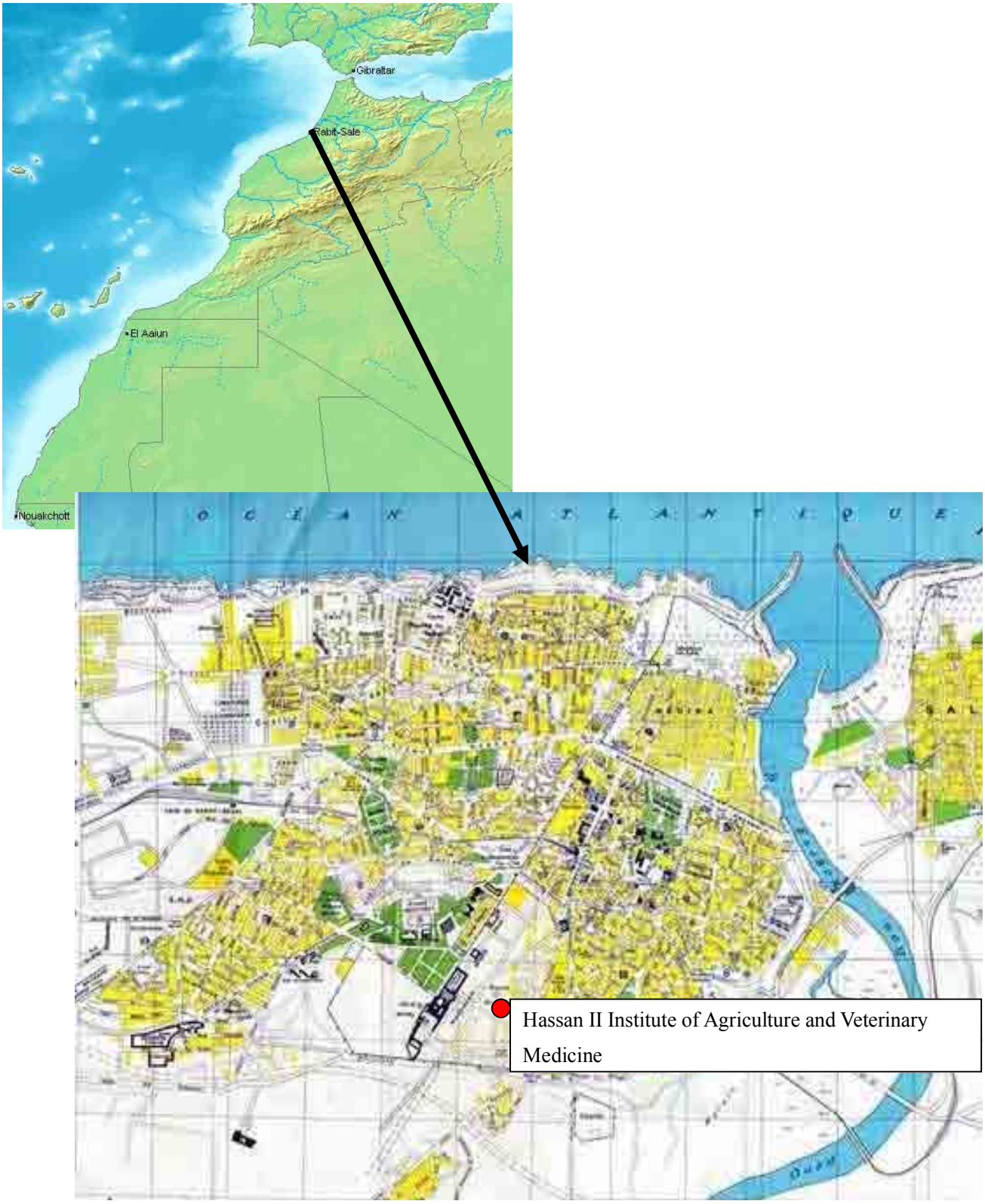
現地調査：修理工により作成された唐蓑

合同評価委員会

合同評価報告書署名

合同調整委員会

プロジェクト位置図


Gibraltar
Rabit-Sale
El Aaiun
Nouakchott
OCEAN ATLANTIQUE
Hassan II Institute of Agriculture and Veterinary Medicine

略　語　表

C/P	カウンターパート
CEFMA	農業機械化研修センター
CQA	農業高等学校
CT	普及所
DERD	農業農村開発漁業省　教育研究開発局
DPA	地方農業普及局
DPV	農業農村開発漁業省　作物生産局
DRH	農業農村開発漁業省　人材局
ENA	国立農業学校
IAV	王立ハッサンII世農獣医大学
INRA	国立農業試験場
ITA	農業専門学校
JCC	合同調整委員会
M/M	議事録
MADRPM	農業農村開発漁業省
PCM	プロジェクト・サイクル・マネージメント
P/D	プロジェクト・ダイレクター
PDM	プロジェクト・デザイン・マトリックス
P/M	プロジェクト・マネージャー
PO	活動計画
R/D	討議議事録

評価調査結果要約表

1．案件の概要		
国名：モロッコ王国		案件名：農業機械化研修センター計画
分野：農業開発		援助形態：技術協力プロジェクト
所轄部署：農村開発部　第三 G 乾燥畑作地帯第一 T		協力金額（評価時点見込み）：5 億円
協力期間	2000/9/1-2005/8/31 ~~(延長)~~ ~~(F/U)~~ ~~(E/N)（無償）~~	先方関係機関：ハッサン二世農獣医大学 日本国側協力機関：農林水産省 他の関連協力：生物系特定産業技術研究支援センター

1－1　協力の背景と概要

モロッコ王国（以下、「モ」国）における農業分野は国民総生産の 20%を占め、国家経済の重要な役割を果たしている。これまで、「モ」国の食糧生産は人口増加に伴い順調に伸びてきたが、未だ自給に達していない。このため「モ」国政府は農業の近代化、生産性の向上による食糧自給達成を目指すべく、農業機械化を最も重要な基盤と位置付け、中小規模農家への機械導入を推進している。しかし、農業機械の利用についての経験が少なく、また適切な技術指導を行うことのできる普及職員が不足している現状にある。

この様な状況下、中小規模農家における農業機械化を推進するための普及職員等の育成及び知識の向上を目的とする技術協力プロジェクトが「モ」国より要請されたことを受け、農業農村開発漁業省ハッサン II 世農獣医大学（IAV）内に農業機械化研修センター（CFMA）を設立し、2000 年 9 月から農業機械化研修センター計画プロジェクトを実施している。この技術協力プロジェクトで農業機械の利用・維持管理、試験評価及び改良に関して、研修の計画と実施を通じて技術移転を行っている。

1－2　協力内容

1）上位目標
中小規模農家が普及活動を通じて農業機械に関する理解を深める。

2）プロジェクト目標
農業機械に関わる専門技術を有する十分な数の普及職員等が育成される。

3）成果
(1) 調査分析に基づき、IAV において普及職員等を対象とした包括的な研修プログラムが創設される。
(2) 普及職員等を対象とした農業機械の利用・維持管理に関わる研修が実施される。
(3) 普及職員等を対象とした農業機械の試験評価に関わる研修が実施される。
(4) 普及職員等を対象とした農業機械の改良に関わる研修が実施される。

4）投入（評価時点実績）

日本国側：

長期専門家派遣	8 名	機材供与	0.40 億円
短期専門家派遣	15 名（延べ人数）	ローカルコスト負担	0.23 億円
研修員受入	13 名		

相手国側：

カウンターパート（以下、C/P）配置	26 名
ローカルコスト負担	0.30 億円

2．評価調査団の概要		
調査団員	（担当分野：氏名、職位）	
	総括　：佐藤　仁	JICA 農村開発部第三グループ 乾燥畑作地帯第一チーム　チーム長
	農業機械研修：久保田　興太郎	農業・生物系特定産業技術研究機構生物系特定産業技術研究支援センター　園芸工学研究部　次長
	評価管理　：荒木　亜礼譜	JICA 農村開発部第三グループ 乾燥畑作地帯第一チーム　職員
	評価分析　：高沢　正幸	株式会社レックス・インターナショナル
調査期間	2005 年 3 月 6 日～2005 年 3 月 26 日　評価種類：終了時評価	

３．評価結果の概要

実績の確認（成果に対する達成度）及び 5 項目評価の 2 つの視点から評価した結果、プロジェクト目標は概ね達成された。しかし、改良に関する研修については、指導教官及び研修修了者が、修得した技術を実際の改良に適用させるには、更に多くの経験が必要であることを確認した。また、主たる対象である普及職員が修得すべき技術を確認し、それを基にプロジェクト終了時までに C/P の技術の向上を図る具体的な活動計画を作成し、プロジェクト終了までに不足する部分については、プロジェクト終了後、主に C/P を対象とした国別研修による補完を検討することを「モ」国側に提案した。

３－１　実績の確認

(1) 包括的な研修プログラムの設立に関して設定された「15 コース以上の研修コースが創設される」についての指標は、23 コースを創設していることを確認した結果、達成したと判断した。また、成果の質を評価するために設定した「指導教官が、農民、普及職員等の裨益対象者のニーズを汲み取るモニタリング手法を修得し、研修プログラムに反映して創設、運営することができる」については、ローカルコンサルタントが CFMA での研修を修了した普及職員へ実施した調査の結果により、普及職員が修得した技術を活用して普及活動を行っていることを確認し、普及職員等のニーズを汲み取った研修が創設・運営されたと判断した。

(2) 「利用維持管理」、「試験評価」、「改良」に関する研修についてそれぞれ設定された「各研修コースにおいて理論並びに実技に係るテキストの数、指導教官の役割を担えるスタッフの数」の指標は、各研修コースについて、テキスト数、育成されたスタッフ数を確認した結果、達成したと判断した。また、成果の質を評価するために設定した「指導教官が、各研修に関して研修テキストを作成し、研修を企画・運営することができる」との視点については、利用・維持管理及び試験評価に関する研修は、アンケート、インタビュー、研修テキストから判断して、達成していることを確認した。しかし、「改良」に関する研修については、指導教官が修得した技術を実際の改良に適用させるためには、更に多くの経験が必要であることを確認した。

３－２　評価結果の要約

(1) 妥当性：本プロジェクトは中小規模農家が機械化を推進するための指導を行う普及職員の育成をすることが目的であり、「モ」国側の社会開発計画（1999 年～2003 年）、地方開発戦略（2020 年）に整合すること、JICA の国別援助実施計画に一致することを確認した。

(2) 有効性：プロジェクト目標は、指標を CFMA の研修コース受講者の人数が述べ 500 人以上に達すると設定し、現在において 826 人の研修生が受講したことを確認した。また、研修受講前後に行ったテストの結果、受講後の点数が受講前と比べ 1.9 倍に向上していることを確認した。
しかし「改良」に関わる研修については、研修修了者は改良技術の知識については修得しているが、修得した技術を実際の改良に適用させるには更に多くの経験が必要であることを確認した。

(3) 効率性：長期専門家の専門性、能力、派遣期間、派遣のタイミングについては、C/P、専門家へのアンケート及びインタビューを通じて概ね適当であったことを確認した。また、数名の短期専門家について語学の点でコミュニケーションが困難であったと C/P から指摘があったが、成果の達成に重要な影響を与えるものではなかったことを確認した。また、試験評価及び改良に関する研修については、農業省で実施のための予算措置の調整に時間を要したため、当初の予定より研修の開始が遅れ、この結果、成果の円滑な達成に影響を及ぼした。

(4) インパクト：研修を修了した普及職員及び同普及職員から農業機械に関する技術指導を受けた農民を対象にローカルコンサルタントを活用して行った調査の結果、21 名の普及職員が延べ 5,000 人以上の農民に対して、研修の成果を基に技術指導を行っていることを確認した。なお現時点で研修を修了した普及職員は 800 人以上になっており、上位目標は今後十分に達成が可能であると判断する。

(5) 自立発展性：実施機関である IAV 内の組織規程に基づき農業機械化継続研修センターとして発足したことを確認した。本規程で IAV が CFMA の運営について必要な手段及び予算を手配することが定められている。これにより財政面及び組織面での自立発展性については担保されていると判断する。

４．今後の課題：

(1) プロジェクトより提出された、プロジェクト完了までの活動計画に基づいて活動を遂行する。

(2) 合同調整委員会がプロジェクト進捗について定期的なモニタリングや提言を行う。

(3) 農業機械化委員会（NCAM）が農業機械セクターに関連する他の機関との調整役を務める。

(4) 「モ」国側のプロジェクトの進捗状況及び成果に照らし合わせ、また実施体制が確立されることを前提に、第三国研修の実施を検討する。

(5) JICA モロッコ事務所に対して、農業省次官の署名を取り付け、JICA 本部を含む関係機関に送付することを依頼する。

第１章　終了時評価調査の概要

１－１　調査団派遣の経緯と目的

モロッコ王国（以下、「モ」国）における農業分野は国民総生産の 20%を占め、国家経済の重要な役割を果たしている。これまで、「モ」国の食糧生産は人口増加に伴い順調に伸びてきたが、未だ自給に達していない。このため「モ」国政府は農業の近代化、生産性の向上による食糧自給達成を目指すべく、特に農業機械化を最も重要な基盤と位置付け、中小規模農家への機械導入を推進している。しかし、農業機械利用についての経験が少なく、また適切な技術指導を行える普及職員が不足している現状にある。

この様な状況下、中小規模農家向けに農業機械化を推進するための普及職員等の育成・知識の向上を目的とする技術協力プロジェクトが「モ」国より要請された事を受け、独立行政法人国際協力機構（以下、JICA）は、農業農村開発漁業省（以下、農業省）ハッサン II 世農獣医大学（以下、IAV）内に農業機械化研修センター（以下、CFMA）を設立し、2000 年 9 月から農業機械化研修センター計画プロジェクトを実施し、農業機械の利用・維持管理、試験評価、改良技術の 3 分野に関する研修の計画と実施を通じて技術移転を行っている。

本調査では、2005 年 8 月のプロジェクト終了を控え、事前評価、短期調査、実施協議（R/D、ミニッツ）、PDM、運営指導（計画打合せ）、運営指導（中間評価）調査団合同評価報告書を踏まえ、「モ」国側と合同でプロジェクトの実績や実施プロセスを確認し、計画に対する達成度を検証すると共に、評価 5 項目（妥当性、有効性、効率性、インパクト、自立発展性）の観点から評価を行う。また評価結果を踏まえて、協力終了後のプロジェクトの方向性について「モ」国側と協議し、提言及び教訓を含む合同評価報告書を取りまとめることを目的とする。

１－２　調査団の構成及び業務所掌

１－２－１　調査団の構成

佐藤　仁	総括	JICA 農村開発部 第三グループ　乾燥畑作地帯第一チーム　チーム長
久保田　興太郎	農業機械研修	農業・生物系特定産業技術研究機構 生物系特定産業技術研究支援センター 園芸工学研究部　次長
荒木　亜礼譜	評価管理	JICA 農村開発部 第三グループ　乾燥畑作地帯第一チーム　職員
高沢　正幸	評価分析	株式会社　レックス・インターナショナル 開発計画コンサルタント

１－２－２　業務所掌

(1) 総括

①当該調査の目的、調査範囲等について、調査団を代表して「モ」国側関係者に説明するとともに、各種会議及び合同委員会の会議にあたっては、調査団の代表として発言する。

②計画段階から現時点までのプロジェクトの実施状況を総合的に調査・評価し、「モ」国側評価チームと協議の上、その結果を合同評価報告書にまとめ、合同調整委員会（JCC）で

報告・提言を行い、ミニッツに署名する。

③帰国後、関係各省及び JICA に調査結果を報告するとともに、他の団員と協力して調査報告書を取りまとめる。

(2) 農業機械研修

①調査計画に基づいた協議と調査、成果とプロジェクト目標の達成状況を整理・分析する。また、現地において情報収集が必要な項目をリストアップし、現地でのインタビュー項目を含む調査計画を作成する。

②既存資料の分析、調査計画に基づいた協議と調査、プロジェクトサイトでの現地調査で得られた結果を総合的に判断し、PDM に掲げられた成果の達成度について「JICA 事業評価ガイドライン改訂版」を踏まえた評価を行い、「モ」国側評価チームと協議の上、合同評価報告書に取りまとめる。特に、「モ」国における農業機械化政策面及び技術的見地から、本プロジェクトから得られた教訓を導く。

③帰国後、調査結果を専門的見地から整理・検討し、関係各省及び JICA に調査結果を報告するとともに、他の団員と協力して調査報告書を取りまとめに協力する。

(3) 評価管理

①プロジェクトの上位目標・プロジェクト目標の妥当性について評価するとともに、プロジェクト終了後の実施体制に関して、予算、組織及び制度面の観点から自立発展性を「モ」国側評価チームと協議の上、合同評価報告書に取りまとめる。

②調査及び協議を効率的・効果的に実施するため、各団員の業務を調整する。

③帰国後、調査結果を整理・検討し、関係各省及び JICA に調査結果を報告するとともに、他の団員と協力して調査報告書を取りまとめる。

(4) 評価分析

①PDM に基づき、プロジェクトの実績、実施プロセス及び評価 5 項目毎のデータ収集方法、調査方法等を検討の上、「評価グリッド（案）」（英文、和文）を本邦において作成する。

②「モ」国側評価チームに対し、「JICA 事業評価ガイドライン改訂版」を用いた評価方法について説明を行う。また、「評価グリッド」に従ってデータの収集・整理を行い、他団員とともに総合的判断の下、評価 5 項目の観点から評価し、担当分野の「合同評価報告書」（英文/案）、「ミニッツ」（英文/案）及び「現地調査報告書」（和文/案）を作成する。

③帰国後、「評価調査結果要約表」（案）（英文、和文）を作成し、関係各省及び JICA に担当分野に係る調査結果を報告するとともに、調査報告書の取りまとめに協力する。

１－３　調査期間

2005 年 3 月 14 日～2005 年 3 月 26 日（13 日間)、(但し、評価分析団員は 3 月 6 日～3 月 26 日まで 21 日間)

<table>
<tr><td colspan="2" rowspan="2">月　日</td><td colspan="2">団員</td></tr>
<tr><td>総括・農業機械研修・評価管理</td><td>評価分析</td></tr>
<tr><td>3/6</td><td>日</td><td rowspan="7"></td><td>成田（11:10）→パリ（15:45）
パリ→オルリー
オルリー（20:20）→ラバト（22:05）</td></tr>
<tr><td>3/7</td><td>月</td><td>JICA 事務所打合せ
農業省表敬
ハッサンⅡ世農獣医大学（IAV）表敬
合同評価委員との協議（調査方針説明）</td></tr>
<tr><td>3/8</td><td>火</td><td rowspan="6">専門家へのヒアリング調査
C/P へのヒアリング調査
情報整理・分析と評価資料作成
普及職員へのヒアリング（3/11 CFMA にて）
農民へのヒアリング（3/12）</td></tr>
<tr><td>3/9</td><td>水</td></tr>
<tr><td>3/10</td><td>木</td></tr>
<tr><td>3/11</td><td>金</td></tr>
<tr><td>3/12</td><td>土</td></tr>
<tr><td>3/13</td><td>日</td></tr>
<tr><td>3/14</td><td>月</td><td>成田（11:10）→パリ（15:45）
パリ→オルリー
オルリー（20:20）→ラバト（22:05）</td></tr>
<tr><td>3/15</td><td>火</td><td colspan="2">JICA 事務所打合せ
在モロッコ日本国大使館表敬
農業省、IAV 表敬
専門家との打合せ
プロジェクト専門家打合せ</td></tr>
<tr><td>3/16</td><td>水</td><td colspan="2">現地調査</td></tr>
<tr><td>3/17</td><td>木</td><td colspan="2">プロジェクトへのヒアリング調査
合同評価委員打合せ</td></tr>
<tr><td>3/18</td><td>金</td><td colspan="2">IAV、プロジェクトとの協議
第 1 回合同評価委員会</td></tr>
<tr><td>3/19</td><td>土</td><td colspan="2">団内打合せ
合同評価報告書作成</td></tr>
<tr><td>3/20</td><td>日</td><td colspan="2">資料整理
団内打合せ
合同評価報告書作成</td></tr>
<tr><td>3/21</td><td>月</td><td colspan="2">第 2 回合同評価委員会
合同評価報告書作成</td></tr>
<tr><td>3/22</td><td>火</td><td colspan="2">第 3 回合同評価委員会</td></tr>
<tr><td>3/23</td><td>水</td><td colspan="2">第 4 回合同評価委員会（合同評価報告書ドラフト確認）
農業省次官表敬（合同評価報告書説明）</td></tr>
<tr><td>3/24</td><td>木</td><td colspan="2">合同評価報告書及びミニッツ署名・交換（合同調整委員会）
JICA 事務所報告
在モロッコ日本国大使館報告</td></tr>
<tr><td>3/25</td><td>金</td><td colspan="2">ラバト（11:15）→パリ（15:10）
パリ（18:05）→</td></tr>
<tr><td>3/26</td><td>土</td><td colspan="2">成田（14:00）</td></tr>
</table>

１－４　主要面談者

氏　　名	役職名等
・農業農村開発省	
Moha Marghi	General Sectary of Ministry of Agriculture, Rural Development and Maritime Fisheries（MADRPM）
AZLAL Mohamed　＊	Director of Division Education Technique and Professional Training, Direction Education Research and Development（DERD）, MADRPM
EL Aissaoui Asdelleah ＊	National Institute of Agricultural Reserch（INRA）
HAMMADA Lahsen	National Agricultural Education School（ENA）
OUASSIF Moustafa　＊	Regional Office of Agricultural Development（ORMVA）
・合同評価委員会メンバー	
HAMMOUTOU　El Mekki　＊	Director of Crop Production Directory, MADRPM
LAAYATTI Lahcen	Division Education Technique and Professional Training, DERD, MADRPM
RAMAH Mohamed	Extension Center of Khemisset, Provincial Direction of Agriculture of Khemisset, MADRPM
KALAI TLAMSANI Noura	Division of Agriculture Extension ,DERD, MADRPM
CHAALI Allal	Division of Cooperation, MADRPM
ABOUHARB Amjad	Division of Cooperation, MADRPM
・カウンターパート	
GUESSOUS Fouad　＊	General Sectary of IAV（Project Director）
HOUMY Karim　＊	Use and Maintenance（Project Manager）
BAALI EL-Houssain	Testing and Evaluation
BOURARACH EL Hassan	Improvement
EL-BAGGARI Mohammed	Use and Maintenance
BOUZRARI Benaissa	Testing and Evaluation
KASMI Abdellah	Improvement
AZOUGGAGH Mohammed	Improvement
SBAI Abdelaziz	Use and Maintenance
EL-HIMDY Badre	Use and Maintenance
BEKKAOUI Ahmed	Testing and Evaluation
（日本国側関係者）	
・在モロッコ日本国大使館	
八角　幸雄	一等書記官
・JICA モロッコ事務所	
辻岡　政男　＊	所長
小畑　永彦	次長
中川　直人	企画調査員
・プロジェクト専門家	
長木　司　＊	チーフアドバイザー/試験評価
綿引　忠	改良
龍澤　直樹	利用・維持管理
太田　恵美	業務調整員

＊合同調整委員会メンバー

１－５　プロジェクトの概要

１－５－１　概要

プロジェクト名称　：農業機械化研修センター計画
協力期間　　：2000 年 9 月 1 日～2005 年 8 月 31 日（5 年間）
プロジェクトサイト：ラバト
「モ」国側実施機関：王立ハッサン II 世農獣医大学（IAV）
日本国側協力機関　：農林水産省、生物系特定産業技術研究支援センター

- 上位目標
  中小規模農家が普及活動を通じて、農業機械に関する理解を深める

- プロジェクト目標
  農業機械に関わる専門技術を有する十分な数の普及職員等が育成される

- 成果
  (1) 調査分析に基づき、IAV において普及職員等を対象とした包括的な研修プログラムが創設される
  (2) 普及職員等を対象とした農業機械の利用・維持管理に関わる研修が実施される
  (3) 普及職員等を対象とした農業機械の試験評価に関わる研修が実施される
  (4) 普及職員等を対象とした農業機械の改良に関わる研修が実施される

１－５－２　協力プロセス

これまでの各種調査の結果は以下の通り。

(1) 事前調査（1999 年 10 月 25 日～11 月 6 日）

先に「モ」国より要請のあった、技術協力プロジェクト「農業機械化研修センター計画」の①要請背景、②国家開発計画における本プロジェクトの位置付け、③「モ」国における農業機械化の現状と課題、④「モ」国側の実施体制（政策的位置付け、予算、人員）、⑤技術協力プロジェクトの実施妥当性を検証した結果、「モ」国の農業事情に適した農業機械を中小規模農家へ普及し、生産性の向上、労働環境の改善を図る必要性が高いことを確認した。同調査結果を踏まえて、関係機関との協議の結果、IAV に普及職員等を対象とした農業機械に関わる知識・技術の向上を図る拠点として CFMA を開設し、研修運営技術を指導する技術協力プロジェクトの基本計画案を作成し M/M に取りまとめ、「モ」国側と署名を取り交わした。

(2) 短期調査（2000 年 5 月 28 日～6 月 9 日）

事前調査の結果を基に、実施機関との協議を行い、本プロジェクトの基本コンセプトとして、CFMA において、「モ」国の農業機械化に関わる包括的な研修プログラムを策定し、①農業機械の利用・維持管理、②農業機械の試験評価、③農業機械の改良の 3 分野を柱とした研修を実施することを確定した。また同結果を踏まえて、詳細なプロジェクトの基本計画案、暫定 PDM 案を作成し、M/M に取りまとめ「モ」国側と署名を取り交わした。

その後、合意事項を検討し、討議議事録（Record of Discussions：R/D）、暫定実施計画（Tentative Schedule of Implementation：TSI）及び M/M を作成した上で、JICA モロッコ事務所長とプロジェクト・ダイレクター（P/D）である IAV 学長との間で署名を取り交わし（2000 年 7 月 24 日）、2000 年 9 月 1 日から 5 年間にわたって技術協力プロジェクトを実施することが確定した。

(3) 運営指導（計画打合せ）調査（2001 年 6 月 4 日～6 月 16 日）

協力開始後 1 年を経たプロジェクトの進捗状況の確認を行うとともに、具体的なプロジェクト活動、運営計画を「モ」国側関係機関と協議し、暫定 PDM の見直し及び TIS を基にした活動計画（Plan of Operation：PO）の作成を行い、M/M に取りまとめて「モ」国側と署名を取り交わした。この結果、プロジェクトの成果を定量的に評価する指標を設定し、プロジェクト目標の指標の設定は中間評価の際に決定することとした。

(4) 中間評価調査（2003 年 4 月 7 日～2003 年 4 月 17 日）

協力開始後 2 年を経たプロジェクトの進捗状況の確認を行うとともに、運営指導（計画打合せ）の結果を踏まえて修正された PDM について、定義が不明確な部分や、成果の達成度を定量的に評価する指標の数値目標を設定する改訂を行った。同 PDM は JCC にて承認を了し、M/M に取りまとめて「モ」国側と署名を取り交わした。

第２章　終了時評価の方法

２－１　合同評価調査団の結成

日本国側は本調査団、「モ」国側は下記メンバーにより合同評価調査団を構成し、評価にあたった。なお、「モ」国側評価チームは、日本国側調査団構成に準じた構成とし、客観的評価を行うためカウンターパート（以下、C/P）等のプロジェクト関係者は評価チームに参加せず、合同評価調査団の要請に応じて報告を行うものとした。

氏名	担当	所属先／役職名
Mr. HAMMOUTOU El Mekki	生産要素供給課長	農業農村開発漁業省 作物生産局
Mr. LAAYATTI Lahcen	職業訓練課長	農業農村開発漁業省 教育研究開発局
Mr. RAMAH Mohamed	Kemisset 普及所長	農業農村開発漁業省 教育研究開発局
Ms. KALAI TLAMSANI Noura	研修担当室長	農業農村開発漁業省 教育研究開発局
Mr. CHAALI Allal	二国間協力課長	外務協力省　国際協力部
Mr. ABOUHARB Amjad	二国間協力課日本国担当官	外務協力省　国際協力部

２－２　主な調査項目と情報・データ収集方法

プロジェクト・サイクル・マネージメント（PCM）の評価手法を取り入れた。PCM を用いた評価は、①プロジェクト・デザイン・マトリックス（PDM）に基づいた評価のデザイン、②プロジェクト実績や実施プロセスを中心とした必要情報の収集、③評価 5 項目（妥当性、効率性、有効性、インパクト、自立発展性）という観点からの収集データの分析、④分析結果からの提言・教訓の導き出し及び報告という流れになっている。具体的には以下の通り。

(1) 評価のデザイン

事前評価、短期調査、実施協議（R/D、M/M、PDM）、運営指導（計画打合せ）、運営指導（中間評価）調査団合同評価報告書、終了時評価に係る事前資料、各種プロジェクト報告書等を踏まえ、終了時評価の実施項目と調査項目をまとめた評価グリッド（付属資料 1 M/M Annex 2）を作成した。また計画に対する達成度を評価するにあたっては、中間評価の際に、定量的に評価する指標を見直して設定したが、本調査にあたっては、同指標を補完し、プロジェクト目標や成果の達成度を定性的に評価するための「視点」を設定した。

(2) 情報収集

1) R/D、PDM、PO 等のプロジェクト計画に係る文書及び資料

2) 各種報告書

事前評価報告書、短期調査報告書、運営指導調査（計画打合せ）報告書、運営指導（中間評価）報告書、事業進捗報告書、終了時評価に係る事前資料等の資料

3）ローカルコンサルタントによる研修修了者へのインパクト調査
（CFMA での研修を修了した普及職員 21 名を対象：付属資料 2 及び 3）
4）ローカルコンサルタントによる農家へのインパクト調査
（ティフレット、セタット、タザ 3 市の農民 97 名を対象：付属資料 2 及び 3）
5）日本人専門家、C/P へのインタビュー及び質問表による調査

⑶ 情報分析

収集した情報を踏まえ、評価グリッド（付属資料 1 M/M Annex 2）の主な調査項目について、上記の情報源から収集した情報に基に、成果に対する達成度及び 5 項目評価の 2 つの観点に沿って分析した。

上記の分析結果及びそれに基づく提言や教訓を「モ」国側評価委員と確認の上、合同評価報告書に取りまとめ、両政府に対して提言を行った。また、評価報告書の提言を受け、両政府で今後取るべき措置について M/M にまとめた後、署名・交換を行った。

第３章 プロジェクトの実績

３－１　投入実績

(1) 日本国側投入

1) 専門家

1)-1 長期専門家

累計で4分野8名の専門家（チーフ･アドバイザー/農業機械試験評価、業務調整員、農業機械利用・維持管理、農業機械改良）を派遣した。専門家氏名、指導分野、派遣期間は、付属資料1 Annex 3の通り。

1)-2 短期専門家

累計で13名の短期専門家が派遣された。派遣期間は各々3～6週間。専門家氏名、指導分野、派遣期間は、付属資料1 Annex 3の通り。

2) 機材供与

①農業機械利用･維持管理研修のための機材、②農業機械試験評価研修のための機材、③農業機械改良研修のための機材、④研修用教材、⑤視聴覚機材、⑥車両、⑦その他必要な機材等、予定した機材は全て供与された。供与された機材リストは、付属資料 1 Annex 4 の通り。

3) 現地業務費

現地業務費として、傭人費（運転手 1 名、警備員傭上等)、資機材費（研修等で使用する資機材)、印刷費（教材・パンフレット)、出張旅費（地方研修・調査等)、消耗品費（文房具等小額資材、燃料代）等を支出した。内訳は、付属資料 1 M/M Annex 5 の通り。

4) C/P 研修

14 名のスタッフが受講した。研修分野は、①農業機械及び農業普及、②試験評価、③農業機械改良、④農業機械化システム、⑤家畜飼養技術、⑥農業機械利用・維持管理及び施策技術、⑦農業機械化行政である。研修員氏名及び派遣期間は、付属資料 1 M/M Annex 6 の通り。

(2)「モ」国側投入：

1) 長期専門家に対する C/P の配置

農業機械利用･維持管理分野に 4 名、試験評価分野に 3 名、改良分野に 3 名の C/P が配置された。プロジェクトに配置された C/P の氏名と派遣期間及び担当分野は、付属資料 1 M/M Annex 6 の通り（プロジェクト・ダイレクター(P/D)、9 名の技術指導スタッフ[1]、秘書は、上記 C/P の人数に含めない)。

[1] 本プロジェクトでは、研修指導にあたる指導教官は C/P と技術指導スタッフに分かれており、C/P は大学卒で、主に講義・技術指導を行い、技術指導スタッフは、高等技術専門学校卒で、主に実技、実習を担当する。

2）短期専門家に対する C/P の配置

短期専門家が派遣される毎に、プロジェクト活動を通じて長期専門家から技術指導を受けている C/P の一部が各短期専門家に対して配置された。配置された C/P の氏名と派遣期間及び担当分野は、付属資料 1 M/M Annex 6 の通り。

3）ローカル･コスト負担

「モ」国側が負担したローカル・コストの内訳は、付属資料 1 M/M Annex 7 の通り。本プロジェクトの研修費用（研修生の旅費、宿泊費、食費等、研修に必要な経費）は「モ」国側予算から支出されている。しかし、2003 年に試験評価、改良研修を開始するにあたり、農業省内で経費負担を行う部署間の調整に時間がかかったために、研修の開始が 1 年近く遅れた。その後、専門家及び JICA 事務所から農業省へ働きかけを行い、予算措置がなされた。その他事務所光熱費、公用車保険、地方での研修時の燃料代、作業場の改修工事費用はプロジェクト開始当初より「モ」国側予算から支出されている。

4）その他必要人員

プロジェクト要員の支援スタッフとして、秘書が 1 名雇用・配置された。

5）施設

①各専門家の執務室、②農業機械研修に係る演習室、③会議・講義室、④実習のための演習用圃場等、プロジェクト実施に必要な施設は全て提供された。

３－２　成果の達成度

本評価では、成果の達成度を定量的に評価するための指標に加えて、同指標を補完し、定性的に評価するための「視点」を追加して設定し、指標、視点の両面から評価することとした。

(1) 包括的な農業機械化研修プログラム作成に向けての調査分析分野

成果 1	調査分析に基づき、IAV において普及職員等を対象とした農業機械化の包括的な研修プログラムが創設される
指標	15 以上の研修コースが創設される
視点	C/P が、農民、普及職員等の裨益対象者のニーズを汲み取るモニタリング手法を修得し、研修プログラムに反映して創設、運営することができる

達成度：

創設研修コース数は、2001 年には、利用・維持管理研修のみ 6 コース（基礎研修と特別研修灌漑コース）で開始されたが、農家、農業組織、農業機械作業の請負業者、普及職員等を中心にアンケート調査を行った結果を基に、研修を追加しており、現在までに 23 コースを創設したことから指標は全て達成した（付属資料 1 M/M Annex 8）。

創設研修コース

研修分野		研修コース名
利用・維持管理	基礎研修	①エンジン・トラクタ、②収穫・ポストハーベスト、③耕耘・播種、④防除・管理、⑤機械化経営
	特別研修	⑥灌漑、⑦家畜生産、⑧機械調整

	ガイド&キット研修	⑨耕耘、⑩施肥播種、⑪防除、⑫収穫、⑬ポテト、⑭脱穀
試験評価	基礎研修	①収穫、②耕耘・播種
改良	基礎研修	①基礎 I、②基礎 II、③実践基礎 I、④実践基礎 II
	特別研修 （油圧制御）	⑤基礎技術、⑥基礎技術の応用、⑦応用技術

視点については、各研修の運営・指導にあたる指導教官の育成が行われ（現在までに延べ 27 名 [2]、利用・維持管理研修、試験評価研修は、C/P で自主的な運営を進めていくことが可能である。しかし、改良分野の C/P については、より適切な研修プログラムを創設･運営する上で改良技術の実務経験が更に必要と考えられる。この視点について 6 名の C/P へ質問票による調査を行ったところ、3 名（利用･維持管理と試験評価分野の C/P）が、研修プログラムを作成する技術について「十分に評価できる」、2 人が（改良分野の C/P）、「中程度に評価できる」と評価した。なお、本評価について日本人専門家と C/P へのインタビュー調査を行った結果、同様の評価を得た。

(2) 農業機械の利用･維持管理分野

成果 2	普及職員等を対象とした農業機械の利用･維持管理に関わる研修が実施される
指標	・理論並びに実技に係わるテキストが 14 種類以上開発される ・8 名以上のスタッフが指導教官としての役割を担えるようになる
視点	C/P が、農業機械の利用･維持管理研修に関して研修テキストを作成し、研修を企画･運営をすることができる

達成度：

本研修は 2001 年より開始されており、現在まで継続して行われている。現在までに 10 名の指導教官、9 コースの研修を創設し、32 種類のテキストの作成を行った（付属資料 1 M/M Annex 8）。また、2003 年よりプロジェクトの上位目標である「中小規模農家が普及活動を通じて農業機械に関する理解を深める。」を達成するべく、中小規模農家を対象に、普及職員等とともに現場で農業機械の利用方法をデモンストレーション形式により指導する Guide & Kit 研修 を行っている（付属資料 1 M/M Annex 9）ことから、指標は全て達成した。

視点については、作成された教材、日本人専門家と C/P とのインタビュー調査から判断して、本研修に関わる全ての指導教官が利用･維持管理研修の企画･運営に必要な技術を修得したと考える。

この分野の 3 名の C/P に対する質問票による調査によれば、全ての C/P が、研修コースを企画・運営する技術について「十分に評価する」と評価している。本評価について日本人専門家と C/P へのインタビュー調査を行った結果、同様の評価を得た。

[2] 本プロジェクトで育成された C/P や技術指導スタッフは、指導分野が複数にわたることがあり、延べ人数として、利用・維持管理分野が 10 名（C/P が 8 名、技術指導スタッフが 2 名）、試験評価分野が 9 名（C/P が 6 名、技術指導スタッフが 3 名）、改良分野が 8 名（C/P が 4 名、技術指導スタッフが 4 名）となっており、計 27 名である。

(3) 農業機械の試験評価分野

成果 3	普及職員等を対象とした農業機械の評価試験に関わる研修が実施される
指標	・理論並びに実技に係るテキストが 6 種類以上開発される ・6 名以上のスタッフが指導教官としての役割を担えるようになる
視点	C/P が、農業機械の試験評価研修に関して研修テキストを作成し、研修を企画･運営をすることができる

達成度：

本研修については、農業省内で予算措置を行う部署間の調整の遅れにより、2003 年 6 月に本格的に開始された。しかし、研修が開始される前から技術指導にあたるスタッフの育成を継続してきており、現在までに 9 名の指導教官、2 コースの研修を創設し（付属資料 1 M/M Annex8）、10 種類のテキストを作成した（付属資料 1 M/M Annex 9）ことから、上記の指標は全て達成した。

視点については、作成された教材、専門家と C/P へのインタビュー調査の結果、本研修に関わる全ての指導教官は、試験評価訓練コースの企画･運営に必要な知識・技術を修得したと判断する。この分野の 3 名の C/P に対する質問票による調査によれば、全ての C/P が、研修コースを企画・運営する技術について「十分評価する」と評価している。本評価について、日本人専門家及び C/P にインタビュー調査を行った結果、同様の評価を得た。

(4) 農業機械の改良分野

成果 4	普及職員等を対象とした農業機械の改良に関わる研修が実施される
指標	・理論並びに実技に係るテキストが 5 種類以上開発される。 ・4 名以上のスタッフが指導教官としての役割を担えるようになる
視点	C/P が、農業機械の改良研修に関して研修テキストを作成し、研修を企画･運営をすることができる

達成度：

本研修については、農業省内で予算措置を行う部署間の調整の遅れにより、2004 年 5 月に本格的に開始された。しかし、「試験評価分野」と同様に研修が開始される前から技術指導にあたるスタッフの育成を継続してきており、その結果、現在までに 8 名の指導教官、7 コースの研修を創設し（付属資料 1 M/M Annex 8）、8 種類のテキストを作成したため（付属資料 1 M/M Annex 9）、上記の指標は全て達成した。

視点については、作成された教材、日本人専門家と C/P とのインタビュー調査の結果、本分野に関わる全ての指導教官が改良に関する知識を十分に修得したと見られるが、実際に改良を行った経験に乏しく、今後、修得した知識を改良研修に活用するための更なる経験が必要であると考える。

また、本分野の 3 名の C/P に対する質問票調査によれば、2 名の C/P が研修コースを企画・運営する技術について「概ね評価する」と評価している。但し、当初計画における工作技術や設計技術分野の達成度は、目標の 50～60％程度に留まっている（付属資料 1 M/M Annex 1）。これより、同項目についてプロジェクト終了までに指導教官の技術レベル向上を図る具体的な活動計画を作成し（付属資料 1 M/M Annex 14）、引き続き技術指導を実施することで達成度を 60～70％程度まで引き上げることとした。

３－３　プロジェクト目標の達成度

プロジェクト目標	農業機械に関わる専門技術を有する十分な数の普及職員等が育成される
指標	CFMA の研修コース受講者が 5 年間で 500 人･コース以上になる（各コースの参加者の累計であり、同一人物が複数のコースに参加した場合は、参加したコースの数全てを数える)
視点	CFMA の研修コースを修了した普及職員等が、研修で修得した技術を活用できる

プロジェクト目標達成度：プロジェクトで育成された普及職員等の合計数は述べ 826 人（付属資料 1 M/M Annex 8）であり、上記指標は全て達成したと判断できる。内訳は以下の通り。

研修コース別受講者人数実績（*予定人数）

研修分野		研修コース名	受講人数（名）			
			2001 年	2002 年	2003 年	2004 年
利用・維持管理	基礎研修	エンジン・トラクタ	19	25	9	*10
		収穫・ポストハーベスト	16	25	10	*10
		耕耘・播種	17	28	8	*10
		防除・管理	14	26	9	8
		機械化経営	17	27	10	6
	特別研修	灌漑	6	11		81
		家畜生産				45
		機械調整			45	
	ガイド&キット研修	耕耘、施肥播種、防除、収穫、ポテト、脱穀			86	203
試験評価	基礎研修	収穫			10	10
		耕耘・播種				10
改良	基礎研修	基礎 I				10
		基礎 II				10
		実践基礎 I				8
		実践基礎 II				8
	特別研修（油圧制御）	基礎技術		4		
		基礎技術の応用		2		
		応用技術		3		
合計 826 名（利用・維持管理分野 751 名、試験評価分野 30 名、改良分野 45 名）						

視点については、研修受講者に対して研修の前後に実施した試験の獲得点数を比較した結果、約 1.9 倍向上したことが確認されており、研修受講者の農業機械に関わる知識は十分に向上したと判断される。

更に、日本人専門家と C/P へのインタビュー調査の結果から判断すると、利用･維持管理と試験評価コースの参加者は、訓練コースで修得した技術を活用する技術については目標レベルまで修得したと考えられる。

一方、改良コースの参加者については、目標レベルである実際の現場で改良技術の相談・指導を実施するためには、実践での更なる改良技術の活用経験が必要であると考える。

３－４　上位目標の達成見込み

上位目標	中小規模農家が普及活動を通じて農業機械に関する理解を深める
指標	CFMA の訓練コースの参加者による農業機械化分野の普及活動（セミナー、実演会）に、10,000 人以上の農民が参加する

上位目標の達成度：ローカルコンサルタントへの委託調査による CFMA での研修を修了した普及職員 21 名に対して行ったプロジェクトのインパクト調査結果（付属資料 2 及び 3）によれば、同普及職員 21 名により 5,293 名の農民に対して普及活動が行われていることを確認した（①利用・維持管理分野：4,988 名、②試験評価分野：280 名、③改良分野：25 名）。このことから、研修を修了した普及職員 1 人当たり平均 252 人の農民へ農業機械に関わる技術指導が行われていると考えられる。

研修を修了した普及職員は、少なくとも 100 名程度であるため、同普及職員により農業機械に関わる技術指導を受けた農民は 25,200 名程度になると予測できることから、上位目標は十分に達成可能と判断する。

また同様に、委託調査による、研修修了者によって技術指導を受けた農民 97 名に対して行ったプロジェクトのインパクト調査（以下、農民に対するインパクト調査 付属資料 2 及び 3）によれば、調査対象農家の約 9 割が、農業機械の調整方法、農業機械のメンテナンス・修理方法について知識が向上したと回答しており、8 割～9 割が、今後農業機械の調整やメンテナンスを行うと回答している。また約 7 割が、CFMA の研修終了者から農業機械に関わる技術指導を受けたことにより、良好な状態で農業機械を利用することができ、その結果収穫ロスを減少させることができたと回答している。

第４章　評価５項目の評価結果

４－１　妥当性

本プロジェクトの妥当性は以下の理由から高いと判断される。

(1) 政策との整合性

本プロジェクトは、「モ」国の 3 つの国家開発計画、①経済社会開発計画（1999 年～2003 年）（Plan de Development Economique et Social 1999-2003）、②農村開発戦略 2020（Rural Development Strategy 2020）、③「モ」国農業の状況 2001（Situation de l' Agriculture Marocaine 2001）に合致していることを確認した。①では、農業機械化の促進、農業機械化に関わる普及職員等の育成、②では農業生産性の向上と農業普及技術に携わる人材の育成、③では、農業機械化政策の方針として研究と人材育成、現場での農業機械の導入を促進することが重要であると記されている。

また、JICA 国別事業実施計画では、援助重点分野を「地方部を中心とした開発が遅れている地域の開発支援」、開発課題を「零細農民･漁民に対する資金的･技術的支援」としており、この開発課題を満たすための開発プログラムとして「小規模零細農業振興プログラム」を設定し、本プロジェクトを位置付けている。

上述より、本プロジェクトは日本国・「モ」国双方の政策に十分に合致している。

(2) 必要性

「モ」国における農業分野の生産高は、国内総生産の 20%に達し、「モ」国経済に占める割合が最も高い主要産業である。「モ」国政府は農業の近代化、生産性の向上による食糧生産量の増大を目標として農業機械化を最も重要な基盤と位置付け、中小農家への農業機械導入を推進するために、農業資機材購入時の補助金制度等を導入してきた。

しかし、中小規模農家は農業機械の適切な利用方法についての経験が少なく、また、適切な技術指導を行える普及職員が不足していることから、普及職員の知識・技術の向上を図る目的で、本プロジェクトが要請・実施されており、「モ」国にとって本プロジェクトの必要性は高い。

更に、日本人専門家と C/P とのインタビュー調査の結果から、プロジェクトで実施された 3 つの訓練コース（農業機械利用・維持管理、試験評価、改良）は、いずれも「モ」国側の農業機械化推進に係る課題を解決する上で必要性は高い。

(3) ターゲットグループの適切性

ターゲットグループである普及職員等は、農業機械を専門とする割合が低く、農家の農業機械に関する知識・技術のニーズに対して的確に応えることが困難であった。しかし、ローカルコンサルタントへの委託調査による CFMA での研修を修了した普及職員 21 名に対して行ったプロジェクトのインパクト調査結果（付属資料 2 及び 3）によれば、普及職員の 80%が、研修は有効であったと回答し、内 70%が CFMA で修得した技術を現場で活用し普及活動を行っていると回答している。

上述より、ターゲットグループの選定は適切であり、ターゲットグループのニーズに合致している。

４－２　有効性

本プロジェクトの有効性はある程度高かったと判断されるが、C/P のプロジェクトへの関わりについて不十分な点があった。

プロジェクト目標は、当初の指標「CFMA の研修コースの受講者が 500 人・コース以上になる」から判断すれば達成していると判断できる。

また、追加する視点である「CFMA の研修コースを修了した普及職員等が、研修で収得した技術を活用できる」については、研修を修了した普及職員の向けインパクト調査の結果（付属資料 2 及び 3)、利用・維持管理、試験評価研修を修了した普及職員は、現場で修得した技術を活用して農民へ技術指導を行っていることを確認した。

しかし、改良コースの研修修了者については、研修修了者の 60%が、現場における農業機械の改良ニーズを汲み取るための情報収集を行っているものの、実際の改良技術に関する指導を行っている普及職員は 20%に留まっている。

本分野について、日本国・「モ」国双方による合同評価委員会で、普及職員に求められる改良技術レベル（付属資料 1 M/M Annex 13）について再度確認した結果、改良分野における普及職員の役割は、①農家から農業機械に関する問題点を収集・把握して、行政、国立研究機関、メーカー等に伝える、②行政、国立研究機関やメーカー等から得られた情報を適切に理解し農家に伝えること、である。これより、同役割を果たすため必要な技術は、普及職員が自ら改良を行う技術ではなく、改良に関わる設計や製作に関する基本的知識の修得であると定義した。

これを踏まえて、日本人専門家と C/P とのインタビューを行った結果、改良研修を修了した普及職員は、設計や製作に関する基本的知識の修得は十分ではなく、農家から農業機械に関する問題点を収集・把握し適切な機関へ伝達するためには、実際の改良を行う経験が更に必要であることを確認した。

また、プロジェクトで育成された指導教官の多くが兼任であったために、プロジェクトへ割く時間的制約があり、特に改良分野に関わる指導教官は、改良研修に携わる時間を、利用･維持管理や試験評価のコースの計画･運営に時間を多く割かれたことから、改良分野の成果及びプロジェクト目標を円滑に達成させる上で影響を及ぼした。

４－３　効率性

達成された成果から考え、投入はほぼ効率的に行われたと判断される。

(1) 専門家

日本人専門家と C/P とのインタビュー調査の結果から判断すると、全般的に、日本人長期専門家の数、専門性、能力、派遣期間、派遣時期は適切であったことを確認した。但し、利用･維持管理分野及び試験評価分野について、C/P より一部の短期専門家についてコミュニケーション能力に問題があり、技術修得に支障があったとの指摘を受けた。

(2) 国別研修

国別研修には合計 14 名の C/P が参加した（分野は、①農業機械化と普及、②試験評価と利用技術、③農業機械化システム、④農業機械化の経済、⑤資料作物生産、⑥農業機械試験評価、⑦利用･維持管理と実地生産手法)。これに関し、C/P とのインタビュー調査を行った結果、全ての C/P が研修の成果を認めると回答している。

特に、農業生産の現場の課題を、研修にフィードバックする方法や農業機械の研究員が直接普及職員の指導に関わるシステム等を学ぶことができ、同システムを、「モ」国へいかに適応させるかについて、検討する経験を持てたことを高く評価している。

(3) 「モ」国側による研修経費の負担

R/D において、農業省は CFMA の研修生に対し、旅費、宿泊費、食費を負担するとしており、プロジェクト開始当初より利用維持管理研修については、研修生への必要経費を負担していた。しかし、試験･評価と改良の研修生への必要経費の負担は 2004 年まで行われなかった。

その理由として、同省庁内での予算負担を行う部署間の調整に時間を要したことが挙げられるが、この結果、試験評価分野、改良分野の成果を円滑に達成させる上で影響を及ぼした。

４－４　インパクト

前述した様に、上位目標は、プロジェクト終了後の早期に達成が見込まれる。また、プロジェクト関係者へのインタビュー調査の結果、以下の正のインパクトが認められる。

(1) プロジェクトで開発したテキストや供与された機材は、IAV の学生向け講義でも活用されており、座学中心の講義による指導から実技を伴う演習による指導の必要性が、指導教官及び IAV の学生にも理解されている。

(2) これまでは、IAV のような大学の教員が、実際の現場に赴き調査や指導を行うことは稀であったが、プロジェクトを契機として実際の現場で課題・ニーズ調査や、研修プログラムを作成し始めることとなり、その活動を通じて実践的手法の有用性を認識することができた。

(3) 今まで研修受講者からの評価を受けることが無かった C/P にとって、研修のフィードバックを通じて課題を把握し、次回の研修へ反映させることが可能となった。また、実施にあたっては、研修の分野別に研修員の指導法、テキスト作成等について議論を行った。これまで、C/P は大学教授ということから他の教授と協同で作業を行い、意見交換を行う機会は少なかったが、本プロジェクトを通じて C/P 間の連携が強化された。

(4) 「モ」国は、農業機械の運転免許制度や点検制度を持たないため、農業機械に関わる事故が多いことから、短期専門家により農業機械の安全利用セミナーを実施した。同セミナーは、「モ」国における農業機械利用に関わる安全意識を向上させる上で役に立った。

(5) プロジェクトを通じて、関係省庁の部局や、民間セクター、研究・開発機関等と密接に協

力した経験は、関係機関の連携の強化に役立った。

(6) 農民レベルのインパクトとしては、プロジェクトで研修を修了した普及職員により、農民へ播種機の指導が行われた結果、労働力の軽減及び生産量の向上を図ることができた。

４－５　自立発展性

本プロジェクトの自立発展性は以下の理由により高いと判断される。

(1) 組織・制度面

プロジェクト終了後、IAV は、CFMA を IAV 内の正式な一機関として位置付け、組織の定義、役割、研修運営、研修施設、予算及び人員配置について規定した文書を 2005 年 2 月 28 日に作成し（付属資料 1 M/M Annex 11 及び 12）IAV 学長が承認した。同文書に基づいて、プロジェクト及び CFMA が継続して運営されることが期待される。

また、「モ」国の国家開発計画である「農村開発戦略 2020」（Rural Development Strategy 2020）では、農業生産性向上のための農業機械の導入及び農業機械に係る人材育成を重点としており、今後とも政策面での支援が継続することが期待できる。

(2) プロジェクト終了後の実施体制

プロジェクト終了後の CFMA の自立発展性を確保すべく、プロジェクトが主体となって、上述 CFMA の規定文書と同時に、プロジェクト終了後の 3 カ年計画を策定し IAV 学長の承認を得た（Plan d'action du CFMA après l'achevement du Projet 付属資料 1 M/M Annex 11 及び 12）。

本計画は、農業機械利用・維持管理、試験評価、改良の 3 分野の研修を継続して実施し、研修コースの追加・改善を行うことを挙げている。例えば利用・維持管理研修に関して、研修対象者を普及職員に限らず、農業専門学校（ITA）や農業高等学校（CQA）の講師等へ拡大すること、試験評価研修に関しては、農業省、教育研究開発局（DERD）と協同で、農業機械の試験評価の結果をデータベース化して他の研究機関へ情報の提供を行うこと、また改良研修では、実践的な改良の経験を修得するため、現在 4 週間で行われている研修期間を必要に応じて延長することを挙げている。

(3) 財政面

CFMA のプロジェクト終了後の 3 カ年計画によれば、今後、受け入れる研修生の人数を順次増加させる予定であり、そのため農業省から受託する研修費の増加が見込まれることから、財政面において自立することが期待できる。

また上述の計画は、農業省次官が承認しており、研修に必要な予算については、引き続き農業省及び IAV から予算措置を行うことを承認する文書が作成されている（付属資料 1 M/M Annex 11 及び 12）。

(4) 技術面

技術面においては、研修を担当する指導教官が、自ら研修を企画・運営するために必要とされる知識・技術を概ね修得している。

しかし、改良分野に関わる指導教官は、知識は十分に修得しているが実際に改良を行った実践に乏しく、更なる経験が必要である。また、モニタリング、評価、フィードバックという一連の活動を終了していない研修分野もあるため、プロジェクト終了までに同活動を完了させ、その結果を踏まえ、研修生のニーズ及び必要とされる技術を、適切に研修教材や研修コースへフィードバックすることが求められる。

更に、各々の指導教官がプロジェクトで修得した知識・技術を、他の CFMA 指導教官へ指導・普及させる仕組みが構築されていないことから、プロジェクト終了までに、知識・技術の普及体制の構築及び運用を行うことを「モ」国側と確認した。また機材の管理について、管理台帳の作成は行っているが、責任体制が明確にされていないため、プロジェクト終了までに管理台帳の更新及び責任体制の明確化を図ることとした。

４－６　結論

日本国・「モ」国合同評価委員会による終了時評価の結果を踏まえて、合同評価報告書を取りまとめ、以下の通り合同調整委員会にて報告した。

(1) プロジェクト目標は、当初の指標から判断すれば達成していると判断する。また、追加する視点に照らした場合は、研修を修了した普及職員を対象としたインパクト調査の結果（付属資料 2 及び 3)、利用・維持管理及び試験評価の研修の修了者は、現場で修得した技術を活用して農家へ効果的に技術指導を行っている。しかし、改良研修の修了者は、農家から農業機械に関する問題点を収集・把握し、適切な機関へとの橋渡しを行うためには、実践的な改良について更なる経験が必要であることを確認した。

(2) 上記のインパクト調査の結果、現在までに、約 100 名の普及職員等が育成されており、その普及職員 1 人当たり約 350 人の農民に指導を行っていることから、プロジェクト終了後の 3 カ年計画が農業省の主体性と責任において確実に実行に移されれば、プロジェクト終了後、早期に上位目標の達成が見込まれる。

(3) 試験･評価及び改良分野の研修生への農業省による必要経費は 2004 年まで負担されなかった。これは、同省において予算配分を行う部署間の調整に時間を要したことが理由であるが、これは試験評価分野、改良分野の成果を円滑に達成させる上で影響を及ぼした。

(4) 改良分野について、日本国・「モ」国双方による合同評価委員会で、普及職員に求められる改良技術レベル（付属資料 1 M/M Annex 13）について再度検討した結果、「農家から農業機械に関する問題点を収集・把握して、適切な機関へ伝えること及び農業機械に係る情報を理解し農家に伝えることである」との確認を行った。

(5) (4)を踏まえて、普及職員に求められる改良技術を指導するために指導教官が修得すべき技術については、現時点で当初目標の 50～60%程度に留まっており、プロジェクト終了までに更に効率的かつ効果的な技術指導を行い、達成度を向上させる必要がある。また、実際の現場の課題を汲み上げ、農業機械の改良に応用する実践経験が不足していることを確認した。

なお、本評価結果を農業省次官に報告した際に、以下の発言があった。

・「モ」国において、農業機械化の促進は生産性の向上に寄与するために必要不可欠であり、農業省も支援している。それには、農業機械化を推進する人材の育成が重要であり、本プロジェクトが果たした役割は大きい。

・本プロジェクトの目標及び成果を達成したとの評価に基づき、プロジェクトの延長は無いとの合同評価委員会の決定を尊重するが、今後も CFMA の運営及び「モ」国の農業分野における日本国の継続した支援・協力を要請したい。

また、合同調整委員会においてプロジェクト・ダイレクター（P/D）より以下の発言があった。

・IAV は普及職員等への継続教育を実施する機関であり、農業機械を専門分野とする普及職員等の育成を目的とした本プロジェクトは非常に有益であった。今後も IAV が CFMA に対し必要な予算措置を継続する。

・本プロジェクトは終了するのではなく、今後は「モ」国側で CFMA の運営を行うが、「モ」国側で不足する技術等について、日本国側の継続した支援・協力を要請する。

・IAV は、これまで近隣アフリカ諸国に対して、留学生の受入れや研修を実施しており、南南協力の経験を十分に有している。本調査の結果、農業機械の利用・維持管理及び試験評価分野については、C/P が研修を企画運営する技術を十分に修得していることから、近隣アフリカ諸国を対象とした第三国研修の実施について、日本国側に協力を願いたい。

第５章　提言と教訓

５－１　提言

本プロジェクトにおいて蓄積された知識・技術を継続的に発展させ、普及させるため以下の事項を提案する。

(1) 改良研修において、指導教官育成にかかる工作技術及び設計技術等の未達成の項目に　ついて、プロジェクト終了までに、可能な限り達成度を向上させ、技術の定着を図る具体的な活動計画を C/P と協議して作成し、プロジェクト終了まで技術指導を継続する（付属資料 1 M/M Annex 14）。

(2) 改良分野について、(1)の活動計画に沿って C/P へ継続して技術指導を行った上で、知識・技術が不足する部分については、C/P が自身で改良研修の企画・運営を実施し、実践的な改良の経験を重ねることを目的に、国別研修の実施を提案する。また、同分野の研修を要請するにあたっては、プロジェクト専門家及び JICA モロッコ事務所と十分に協議を行い、研修対象者、期間及び本研修に求める成果を明確にし、要請を行う。

(3) プロジェクト関係者は、本プロジェクトを自らの努力によって継続させ、CFMA を「モ」国のみならず、近隣諸国における農業機械化に係る技術拠点とする。

(4) プロジェクト終了後は、IAV 学長（P/D）を中心とした合同調整委員会（JCC）を定期的に開催し、プロジェクトの進捗及び課題、問題点について適宜モニタリングを実施し、必要に応じて提言を行い、対策を講じる。

(5) 同モニタリングの結果、CFMA に農業機械に関わる十分な知識・技術が蓄積され、研修指導教官も自ら研修を企画・運営が可能と判断される場合、JICA モロッコ事務所と十分な協議・検討の上、近隣諸国を対象に農業機械に関わる第三国研修の実施を検討する。

(6) CFMA において蓄積された経験、知識、技術を「モ」国の政策へ反映させ、普及展開させるために、「モ」国の農業機械化政策に関わる政府諮問機関である農業機械化委員会は、CFMA と他の関連機関との調整役を果たす。

５－２　教訓

(1) プロジェクト開始時の基本計画作成にあたっては、プロジェクトの円滑な運営を担保するために、プロジェクト関係機関の法的位置付け、プロジェクトへの協力関係の確認及び予算・実施体制の確認を行い、各々の機関の所掌業務、責任、役割の分担を定義し、関係者間で共有を図る。

(2) 各種運営指導調査時に問題点が顕在化している場合は、同問題について JCC 等の関係機関との協議の場で共有認識を醸成し、その対策を M/M で確認して合意形成を図ることが重要である。

(3) 本件の様なプロジェクトの拠点としてセンターを設けた上で、普及職員等へ研修を通じた技術移転を行う形態のプロジェクトでは、研修を行い養成する普及員の数を増やすことがプロジェクトの目的と化してしまう危険性がある。そこで本来の目的を明確にするために、プロジェクト目標や成果の指標を定量的に評価できる数値を設定するとともに、定性的に質を図る指標を設定することが必要である（研修プログラムの質、教材の質、研修生のテストでの評価、関係者への満足度当のインタビュー調査等)。

(4) 研修プログラムは、現場での普及職員及び農家のニーズと課題を特定・分析して開発を行うことが重要であり、モニタリング、評価、フィードバックを通じた研修プログラムの改良を継続することが重要である。

(5) 農業機械に関わる分野は、IAV の様な研究・教育機関だけではなく、その他の関連する行政機関、研究・開発機関、民間セクター等多岐にわたるため、関係者間で情報の交換や連携関係の構築が重要である。

付　属　資　料

1. ミニッツ

2. プロジェクトのインパクト調査結果（原文）

3. プロジェクトのインパクト調査結果（抄訳）

4. 合同調整委員会報告資料

MINUTES OF MEETING
BETWEEN THE JAPANESE TERMINAL EVALUATION TEAM AND THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE KINGDOM OF MOROCCO ON JAPANESE TECHNICAL COOPERATION FOR THE TRAINING CENTER PROJECT FOR AGRICULTURAL MECHANIZATION IN MOROCCO

The Japanese Terminal Evaluation Team (hereinafter referred to as "the Japanese Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Hitoshi SATO, visited the Kingdom of Morocco from March 14 to 25, 2005 for the purpose of conducting Terminal evaluation of the Training Center Project for Agricultural Mechanization in Morocco (hereinafter referred to as "the Project").

For this purpose, the Japanese Team and the Moroccan authorities concerned formed the Joint Evaluation Team (hereinafter referred to as "the Team"). The Team evaluated performance and achievements of the Project through field visits, interviews, and had a series of discussions in respect of desirable measures to be taken by both Governments for the successful implementation of the Project.

The Team agreed on the contents of the Evaluation Report (hereinafter referred to as "the Report") attached, which was accepted by the Joint Coordinating Committee. As a result of the discussions, the Team agreed to recommend to their respective Governments the matters referred to in the attached evaluation report.

Rabat, March 24 2005

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(Attachment)

1. The Team has presented the Evaluation Report to the Joint Coordinating Committee (hereinafter referred to as "JCC") formulated by both Japanese side and Moroccan side.
2. In order to enhance and sustain the achievement of the Project, the Team has proposed the recommendations that:
   1). The Project team perform the activity until the end of termination period according to "Activity Plan for Termination of the Project" attached to the Report,
   2). The Improvement course be conducted more practically based on concrete and applicable plan referring to the "Outline of Technique which Extension Personnel should obtain in 'Improvement' course in CFMA" attached to the Report,
   3). The personnel concerned always keep in mind the impact and sustainability of the Project, and make an effort to obtain effect as much as possible,
   4). JCC monitor the activity and progress of the Project regularly, and take a necessary action or advice for smooth and successful implementation of the Project,
   5). CFMA and department or division concerned in the Ministry of Agriculture, Rural Development and Maritime Fisheries cooperate with each other and manage to sustain the Project and CFMA according to the "Definitions of CFMA" attached to the Report,
   6). National Committee for Agricultural Mechanization is expected to function as a coordinator between CFMA and organizations involved in agricultural machinery sector,
   7). In order to enhance and secure the effect the Project, country-focused training in Japan be considered to be conducted in accordance with progress of activity through the consultation with Japanese experts or JICA Morocco Office,
   8). After confirming the sustainability of the Project by CFMA and JCC, third country training program for African countries be considered to be conducted.
3. JCC has agreed to the afore-mentioned recommendations, and has promised to make a role of supervising the Project.

THE JOINT EVALUATION REPORT

OF

TERMINAL EVALUATION STUDY

ON

THE TRAINING CENTER PROJECT

FOR

AGRICULTURAL MECHANIZATION IN THE KINGDOM OF MOROCCO

Rabat, March 24, 2005

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Table of contents

ANNEXES

1. Progress of Project Activities
2. Evaluation Grid
3. List of Japanese Experts
4. Provision/ Procurement/ Maintenance of the Equipment
5. Project Implementation Cost (Japan)
6. Assignment of Counterpart and Staff/ Training in Japan
7. Application of Budget/ Morocco
8. Number of Participants to CFMA Training
9. List of Texts Developed by the Project
10. List of Trained Instructors
11. Definitions of CFMA (decided on February 28, 2005)(French Version)
12. Definitions of CFMA (Japanese Version)
13. Outline of Technique which Extension Personnel should obtain in "Improvement" Course in CFMA
14. Activity Plan for Termination of the Project (August, 2005)
15. PDM_2 (revised and confirmed on April 11, 2003)
16. Organization Chart of the Ministry of Agriculture, Rural Development and Maritime Fisheries
17. Guide to the Project Site

1. Evaluation of the Project

1-1. Objectives of Evaluation

1) To evaluate the degree of achievement based on the Record of Discussions signed on July 24, 2000, Project Design Matrix (hereinafter referred to as "the PDM") and the Plan of Operations (hereinafter referred to as "the PO").
2) To evaluate the Project in terms of the five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability).
3) To make recommendations regarding the measures to be taken for improvement of the Project, as well as to draw the lessons for the improvement in planning and implementation of similar technical cooperation projects.

1-2. Methodology of Evaluation

For the purpose of the evaluation study, the Joint Evaluation Team consisting of both the Moroccan side and the Japanese side has conducted the hearing of the presentation made by the counterparts of the Project, field visit to the project site and a series of discussion within the Evaluation Team. The evaluation was made based on the findings from the above activities.

1) The degree of achievement of the Project Plan was assessed, using the Achievement of the Project Plan (Result and Process), which was attached in ANNEX 1.
2) Analysis was made for the Five Evaluation criteria described below, based on the Evaluation Grid attached in ANNEX 2.

a) Relevance

Relevance refers to the validity of the Project Purpose and the overall goal in connection with the development policy of The Kingdom of Morocco as well as the needs of beneficiaries.

b) Effectiveness

Effectiveness refers to the extent to which the expected benefits of the Project have been achieved as planned, and examines if the benefit was brought about as a result of the Project (not of external factors).

c) Efficiency

Efficiency refers to the productivity of the implementation process, examining if the input of the Project was efficiently convert into the output.

d) Impact

Impact refers to direct and indirect, positive and negative impacts caused by implementing the Project, including the extent to which the overall goal has been attained.

e) Sustainability

Sustainability refers to the extent to which the Project can be further developed by the recipient country, and the benefits generated by the Project can be sustained under the recipient country's policies, technology, systems, and financial state.

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1-3. Members of the Evaluation Teams

1) The Japanese Team

No.	Name	Job title	Occupation	Period (arr. – dep.)
1	Mr. SATO Hitoshi	Leader	Team Director, Arid and Semi-Arid Farming Area Team I, Group III, Rural Development Department, JICA	14/Mar-26/Mar
2	Mr. KUBOTA Koutarou	Training for Agricultural Mechanization	Vice-Director, Horticultural Engineering Department, Institute of Agricultural Machinery (IAM), Bio-oriented Technology Research Advancement Institution (BRAIN)	14/Mar-26/Mar
3	Mr. TAKAZAWA Masayuki	Evaluation Analysis	Development and Planning Consultant, RECS International Inc.	6/Mar-26/Mar
4	Mr. ARAKI Arefu	Evaluation Management	Staff, Arid and Semi-Arid Farming Area Team I, Group III, Rural Development Department, JICA	14/Mar-26/Mar

2) The Moroccan Team

No.	Name	Job title	Occupation
1	Mr. HAMMOUTOU El Mekki	Chief of Input Supply Service	Crop Production Directory, Ministry of Agriculture, Rural Development and Maritime Fisheries (MADRPM)
2	Mr. LAAYATTI Lahcen	Chief of Service	Division Education Technique and Professional Training, Direction Education Research and Development, MADRPM
3	Mr. RAMAH Mohamed	Director	Extension Center of Khemisset, Provincial Direction of Agriculture of Khemisset, MADRPM
4	Ms. KALAI TLAMSANI Noura	Chief of Training Office	Division of Agriculture Extension Direction Education Research and Development, MADRPM
5	Mr. CHAALI Allal	Chief of Bilateral Cooperation Service	Division of Cooperation, MADRPM
6	Mr. ABOUHARB Amjad	Program Officer of Cooperation Service in charge of Japan	Division of Cooperation, MADRPM

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2. Outline of the Project

2-1 Background of the Project

The Government of the Kingdom of Morocco has been promoting agricultural mechanization to farmers in order to improve productivity through such means as tax exemptions and subsidies. Nevertheless, agricultural mechanization has not progressed as expected. This is due not only to a shortage of funds among small and middle-size farmers, a lack of leading associations for common use of agricultural machinery, and an unsuitable subsidy system, but also to insufficiently qualified agricultural extension personnel.

In line with its Economic and Social Development Plan 2000-2004, the Moroccan Government has allocated a budget for the training of extension personnel in agricultural mechanization. This training is intended to provide appropriate advice and technology transfer to farmers in the field of agricultural machinery.

The training of extension personnel is expected to promote agricultural mechanization among small and middle-size farmers; however, the training of extension personnel has not been enough for enhancing their technical skills in agricultural mechanization. The capacity building of extension personnel by training will eventually allow more productive agriculture and will thus contribute to improvement of food sufficiency and poverty alleviation in the Kingdom of Morocco.

The Moroccan Government submitted the request for technical cooperation to the Government of Japan. The purpose of the said request is to strengthen the training capability of IAV in agricultural mechanization for extension personnel, etc.

In response to the above-mentioned proposal, JICA dispatched the Preparatory Study Team to confirm assistance needs and to discuss details of the Project on October 25, 1999. With regard to the Minutes of Meeting of the Preparatory Study Team, JICA signed the Record of Discussions for the Project on July 24, 2000. The Project started on September 1, 2000 for a five-year period that will end on August 31, 2005.

2-2 Summary of the Project

Objective of the Project is "A sufficient number of extension personnel, etc. with agricultural machinery expertise are made available."

The outputs of the Project are confirmed as follows,

1) Comprehensive training program for agricultural mechanization targeting agricultural extension personnel, etc., is established in IAV through survey and analysis.
2) Course(s) on agricultural machinery use and maintenance for agricultural extension personnel, etc., is developed and implemented in IAV.
3) Course(s) on agricultural machinery testing and evaluation for agricultural extension

personnel, etc., is developed and implemented in IAV.

4) Course(s) on agricultural machinery improvement for agricultural extension personnel, etc.

3. Achievement of the Project Plan

3-1 Achievement of the Inputs

(1)Inputs from the Japanese Side

1) Experts:

1)-1.Long-term Experts

4 experts (chief advisor, coordinator, and other two long-term experts) were/ are always assigned. Dispatch term of them extends approximately 2 to 3 years. Experts' names, fields, exact terms assigned to the Project are shown in ANNEX 3.

1)-2. Short –term Experts

15 short-term experts (cumulative) have been dispatched. Their dispatch term extends approximately 3 to 6 weeks. Experts' names, fields, exact terms assigned to the Project are shown in ANNEX 3.

2) Machinery and Equipment: i) Agricultural machinery and equipment for the course on agricultural machinery use and maintenance; ii) Instruments and equipment for the course on agricultural machinery testing and evaluation; iii) Instruments and equipment for the course on agricultural machinery improvement; iv) Equipment for didactic materials; v) Audio-visual materials; vi) Vehicles; and vii) Other equipment and materials necessary for the implementation of the Project

All items of above i) to vi) provided during the years of 2000 to 2004 are listed in ANNEX 4. Item vii) corresponds to the Project implementation cost including administration (general affairs), field applicable cost, and technical exchange program (see ANNEX 5 for detail).

3) Training of Moroccan C/P in Japan

14 staff in the fields of i) agricultural mechanization and extension, ii) testing and evaluation and utilization technique, iii) agricultural mechanization systems, iv) economy of agricultural mechanization, v) forage crop producing, vi) agricultural machinery test and evaluation, and vii) use and maintenance and trial production method participated in this training. Their names and exact terms participated in this program are shown in ANNEX 6.

(2)Inputs from the Moroccan Side

1) Counterparts for Japanese Long-term Experts

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4 C/Ps in the field of "machinery and maintenance", 3 C/Ps in the field of "testing and evaluation", and 3 C/Ps in the field of "improvement" worked for course development with the Japanese long-term experts. Their names and terms assigned are shown in ANNEX 6 (*P/D: Project Director, P/M: Project Manager, 9 technicians, and a secretary are not included in the afore-mentioned C/Ps.)

2) Counterpart for Japanese Short-term Experts (when necessity arises.)
Every time a short-term expert was dispatched, some of the C/Ps allocated to the long-term experts worked with a short-term expert.

3) Local cost
The cost spent for the Project is detailed in ANNEX 7.

4) Necessary staff
One staff was employed as a secretary assisting the Project staff.

5) Facilities: i) Office and working rooms for Japanese experts; ii) Laboratories for the Project; iii) Lecture rooms of IAV; iv) Experimentation fields for practice in the use of agricultural machinery; and v) Others necessary for the implementation for the Project

All above facilities are provided for the Project.

3-2 Achievement of the Outputs
1) Output 1:
Comprehensive training program for agricultural mechanization targeting agricultural extension personnel, etc., is established in IAV through survey and analysis.

Indicators:
- Number of courses developed; not less than 15

Additional aspect for evaluation (additional indicator for measuring quality of this output):
- C/Ps acquire the monitoring skill of conducting a survey of the needs of beneficiaries including farmers and extension personnel, etc., and they can establish and manage the training programs based on the result of the survey.

Achievement of Output 1:
23 training courses were developed (ANNEX 8): i) 14 courses in "use and maintenance", ii) 2

courses in "testing and evaluation", and iii) 7 courses in "improvement" were developed, and all indicators of this Output have been achieved.

Concerning the additional aspect, all concerned personnel including C/Ps and technicians in the fields of "use and maintenance" and "testing and evaluation" have acquired the required skill. It is considered that they can establish and manage the training courses on "use and maintenance" and "testing and evaluation" by themselves. But, the personnel in the field of "improvement" need more experience of adaptation of improvement technique in order to establish and manage more appropriate training programs. According to a questionnaire survey to the six C/Ps concerned in this Output, three C/Ps in the fields of "use and maintenance" and "testing and evaluation" evaluated their skills of formulating a training program as "evaluate very much", and two C/Ps in the field of "improvement" evaluated the skills as "evaluate just fair".

2) Output 2:
Course(s) on agricultural machinery use and maintenance for agricultural extension personnel, etc., is developed and implemented in IAV.

Indicators:
-Number of texts for theory and practice; not less than 14
-Number of persons who fill the role of teaching; not less than 8

Additional aspect for evaluation (additional indicator for measuring quality of this output):
- C/Ps can prepare the teaching materials on agricultural machinery use and maintenance, and plan and manage the training course.

Achievement of Output 2:
32 texts for the course were developed (ANNEX 9) and 10 Instructors including C/Ps and technicians were trained and acquired skill of instructing other personnel (ANNEX 10), and all indicators of this Output have been achieved.

Concerning the additional aspect, judging from the teaching materials prepared and interviews with the Japanese experts and C/Ps, all concerned personnel including C/Ps and technicians are considered to have acquired the skill of planning and managing the training course on "use and maintenance" at the required level. In addition, according to a questionnaire survey to the three C/Ps in this field, all the C/Ps evaluated their skills of formulating a course as "evaluate very much".

3) Output 3:
Course(s) on agricultural machinery testing and evaluation for agricultural extension personnel, etc., is developed and implemented in IAV.

Indicators:
-Number of texts for theory and practice; not less than 6
-Number of persons who fill the role of teaching; not less than 6

Additional aspect for evaluation (additional indicator for measuring quality of this output):
- C/Ps can prepare the teaching materials on agricultural machinery testing and evaluation, and plan and manage the training course.

Achievement of Output 3:
10 texts for the course were developed (ANNEX 9) and 9 Instructors including C/Ps and technicians were trained and acquired the skill of instructing other personnel (ANNEX 10), and all indicators of this Output have been achieved.

Concerning the additional aspect, judging from the teaching materials prepared and interviews with the Japanese experts and C/Ps, all the concerned personnel are considered to have acquired the skill of planning and managing the training course on "testing and evaluation" at the required level. In addition, according to a questionnaire survey to the three C/Ps in this field, all the C/Ps evaluated their skills of formulating a course as "evaluate very much".

4) Output 4:
Course(s) on agricultural machinery improvement for agricultural extension personnel, etc., is developed and implemented in IAV.

Indicators:
-Number of texts for theory and practice; not less than 5
-Number of persons who fill the role of teaching; not less than 4

Additional aspect for evaluation (additional indicator for measuring quality of this output):
- C/Ps can prepare the teaching materials on agricultural machinery, and plan and manage the training course.

Achievement of Output 4:
8 texts for the course were developed (ANNEX 9) and 8 Instructors including C/Ps and

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technicians were trained and acquired basic skill of instructing other personnel (ANNEX 10), and all indicators of this Output have been achieved.

Concerning the additional aspect, judging from the teaching materials prepared and interviews with the Japanese experts and C/Ps, all the concerned personnel may need more experience of adaptation of improvement technique. In addition, according to a questionnaire survey to the three C/Ps in this field, two C/Ps evaluated their skills of formulating a course as "evaluate just fair". As following two activities: "4-4-1.Workshop technology" and "4-4-2.Designing technology" have not completely finished (ANNEX 1), it is expected that these activities are completed as much as possible until the Project terminates. Then, the concerned personnel are expected to prepare more appropriate teaching materials for the trainees, and plan and manage the training course at the required level.

3-3 Achievement of the Project Purpose

Project Purpose:

A sufficient number of extension personnel, etc., with agricultural machinery expertise are made available.

Indicators:

Total number of participants to the training courses of CFMA for 5 years: not less than 500 man courses

Additional aspect for evaluation (additional indicator for measuring quality of this output):

- Extension personnel, etc. trained in the Project can adapt the technique learned from the training courses.

Achievement of Project Purpose:

Total number of the extension personnel, etc. trained in the Project is 826 (ANNEX 8): i) 751 personnel participated in "use and maintenance" course, ii) 30 participated in "testing and evaluation" course, and iii) 45 participated in "improvement" course.

Concerning the additional aspect, judging from the result of the test done to the extension personnel, etc. before and after they participate in the training course, their knowledge level has much increased. 107 personnel took the test and their test scores has increased up to 90 percent. And, judging from the interviews with the Japanese experts and C/Ps, participants of "use and maintenance" and "testing and evaluation" courses are considered to have acquired the skill of adapting the technique learned from the training courses at the required level. But, participants of

"improvement" course may need more experience in adapting improvement technique.

3-4 Achievement of the Overall Goal

Overall Goal:

Small and middle-size farmers gain understanding of agricultural machinery through extension activities.

Indicators:

Number of farmers that attended the extension activities (such as seminars, demonstrations, etc.) in the agricultural mechanization field, conducted by participant(s) of CFMA training course(s):not less than 10,000

Achievement of Overall Goal:

According to the impact survey by a local consultant, which was conducted to 21 personnel trained in the Project, the 21 trained personnel conducted extension activities and 5,293 farmers in total attended the activities: i) 4,988 attended the activities by the personnel trained in the "use and maintenance" course, ii) 280 attended the activities by the personnel trained in "testing and evaluation", and iii) 25 attended the activities by the personnel trained in "improvement". Therefore, ratio of the trained personnel to the farmers is 1 to 252. As total number of the trained personnel is considered to exceed at least 100, it is expected that 25,200 farmers participated the extension activities. There is a possibility of having satisfied Overall Goal.

4. Results of the Evaluation with Five Criteria

4-1 Relevance

The evaluation teams noted that the framework of the Project was much in line with national level policies of the both Japanese and Moroccan sides. The Project was implemented in line with three national level development policies of the Moroccan side: i) Plan de Development Economique et Social 1999-2003, ii) Rural Development Strategy 2020, and iii) Situation de l' Agriculture Marocaine 2001 and the country development policy of the Japanese side, stating that i) "Support in Rural Development of Less Developed Area Specializing in Local Area" is an important field for country assistance, ii) in order to satisfy this important field "Financial and Technical Supports to the Petty and Small-sized Farmers" is indicated as one of the required development subjects, and iii) in order to satisfy the development subject "Promotion Program for the Petty and Small-sized Farmers" is indicated as one of the required development programs.

The evaluation teams also noted that the Project had established three training courses and they

were required for solving the problem addressed by the Moroccan side, referring to the lack of extension personnel who had a technical skill of machinery and equipment. The Moroccan side was satisfied with the three established courses.

4-2 Effectiveness

Project Purpose had been achieved as long as it is judged from its verifiable indicator. The participants of "improvement" course may need more experience in adapting improvement technique. All concerned instructors including C/Ps and technicians in the "improvement" course need more experience in the technique.

The Project staff including the instructors concerned in the "improvement course" spared time for planning and managing "use and maintenance" and "testing and evaluation" courses more than "improvement" course. This factor may have affected to the smooth achievement of Project Purpose.

4-3 Efficiency

Generally speaking, number, specialization, capability, length of stay, and timing of dispatch of the Japanese long-term experts were appropriate. Some C/Ps in the fields of "use and maintenance" and "testing and evaluation" pointed out that they had difficulty of communicating with and learning from some short-term experts.

"Training of Moroccan C/P in Japan" contributed to producing Outputs. 14 C/Ps in the fields of i) agricultural mechanization and extension, ii) testing and evaluation and utilization technique, iii) agricultural mechanization systems, iv) economy of agricultural mechanization, v) forage crop producing, v) agricultural machinery test and evaluation, vii) use and maintenance and trial production method participated in this training, and this training contributed to directly informing the C/Ps of the training system for extension personnel in Japan (e.g.: i) training system for the field of "improvement", which had not been established in Morocco, ii) system in which laboratory staff directly relates to instruction of extension personnel). They were able to examine directly to what extent the training system in Japan was available in Morocco. This training program was well planned and assessed well by the participants.

The fact that MADRPM needed time to provide the expenses of "testing and evaluation" and "improvement" courses for the trainees affected to smooth achievement of Outputs 3 and 4. Traveling, lodging, and board expenses were provided to trainees by MADRPM, but in 2003 the expenses for some courses in the fields of "testing and evaluation" and "improvement" were not provided regularly. The provision was delayed about one year. This factor especially affected to

smooth actions of PDM Activities 4-5 and 4-6, and as a result the Project team could not smoothly establish "improvement" course.

4-4 Impact

As explained in 3-4, the number of farmers that attended the extension activities is increasing. There is a possibility of having satisfied Overall Goal.

In addition, other impact on the beneficiaries-i.e. C/P and trained extension personnel was confirmed. Following points may be pointed out as examples of positive impacts.

1) Textbooks, machinery and equipment developed by the Project have been utilized in other courses of IAV. They are also used by IAV students.
2) Experience of C/Ps' field survey affected positively to their way of lecturing to students in IAV. It was not common that university teaching staff such as C/Ps and technicians of IAV directly related to training of extension personnel, etc through the field survey, but this experience affected positively to their way of lecturing. It enabled to the C/Ps, who had been taking lectures by theoretical approach, to notice about availability of teaching students by practical approach.
3) C/Ps got interested in "monitoring, evaluation and revising courses" described in PDM Activities. This was a new experience for them and affected positively to their methods of training course development. They also got interested in group working. They worked in three groups (i) use and maintenance, ii) testing and evaluation, and iii) improvement) and discussed method of instructing trainees, preparation of textbook, etc within each group. It was uncommon for them to work in group, but most C/Ps felt working in group positively.
4) "Work Safety" seminar by a short-term expert affected positively to a greater extent to the Moroccan side. This seminar contributed to increasing awareness of safety to the Moroccan side that did not have a driving license system for agricultural machinery and its inspection system.
5) The Project involved DERD, DPV, DRH, ORMVAs/DPA, Associations, IAV, etc. and contributed to more closely working with each other for one project. The joint work affected positively to the Moroccan side.

The impact on the farmers is also evident. Following points may be pointed out as examples of positive effects that expanded to a farmer from extension personnel.

1) One of trained extension personnel learned about a seeder from the Project, and then instructed utility and method of using a seeder to a farmer. As a result, the farmer noticed the utility of using it and could make more crop production increase in less labor cost.
2) This trained personnel learned how to explain about a seeder to the farmers who did not

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understood its utility from the Project, and he made success in making such farmers understood the utility by the method learned from the Project.

4-5 Sustainability

After the Project termination IAV will formally establish the Project operation system as a unit of IAV. The unit is called CFMA, and IAV prepared a document stating CFMA's definition, training activities, place of the activities, method of its operation, budget and staff allocation to CFMA (ANNEXES 11 and 12). And, the Project activities would be supported by "Rural Development Strategy 2020". Moreover, the MADRPM recognizes the importance of the agricultural mechanization and training of extension personnel in the field of agricultural machinery improvement, and the Project activities are expected to be supported by some regulations or laws.

The Project had prepared a plan on the further activities that should be done in three years after the Project terminated (Plan d'action du CFMA après l'achevement du Projet (Septembre 2005 to aout 2008 (plan de 3 ans)). This plan states to continue its training activities and to more enhance the three training courses established in the Project. For example, the plan states: i) in the course of "use and maintenance", target group of trainees includes not only extension personnel but also ITA and CQA lecturers; ii) in the course of "testing and evaluation", CFMA enhances "monitoring" work together with DERD; and iii) in the course of "improvement", training term is lengthened and number of lecturers is increased.

In the financial aspect, according to the afore-mentioned three years plan CFMA plans to increase the number of trainees more than one in 2004. Income from the training activities is expected to be increased to the level that CFMA financially becomes independent. Furthermore DERD will continue to provide the expenses (e.g. lodging, board traveling expenses) for extension personnel and teaching staff of its agricultural institutes. IAV also plans to allocate necessary budget to CFMA. In addition to that, DERD and DPV allocate budget so that the trained personnel in the field of "improvement" at CFMA can do extension in the provinces and moreover allocate budget necessary for purchasing testing machinery required for the extension. The evaluation teams noted there were not issues on sustainability from institutional and financial aspects.

However, there were some issues on sustainability from technical aspect. Instructors trained in the "improvement" field need more experience of adaptation of improvement technique. As they have not completely finished an activity of "monitoring, evaluation and revising a course", it is expected that they complete this activity until the Project terminates. Then, they are expected to

prepare more appropriate teaching materials for the trainees, and plan and manage the training course at the required level. Moreover, the Project has not yet established a system which the trained instructors disseminate their acquired knowledge and method of teaching to other staff of CFMA. In addition to that the Project has not yet established a management system for maintenance of machinery and equipment.

5.Conclusion

(1)Project Purpose had been achieved. Judging from the test results and interviews with the Japanese experts and C/Ps, most of the personnel trained in the "use and maintenance" and "testing and evaluation" courses are considered to have acquired the skill of adapting the technique learned at satisfactory level. However, the personnel trained in the "improvement" course need more experience of adaptation of improvement technique. Moreover, judging from the impact survey by a local consultant, it is considered that Overall Goal had also been achieved.

(2)The fact that MADRPM needed time to provide the budget for "testing and evaluation" and "improvement" courses for the trainees affected to efficient achievement of Outputs 3 and 4.

(3)There were some issues on sustainability from technical aspect. All instructors including C/Ps and technicians trained in the "use and maintenance" and "testing and evaluation" fields have acquired the skill of adapting the technique at satisfactory level. But, the instructors trained in the "improvement" field need more experience of adaptation of improvement technique which can be actually utilized for field work.

(4) Technique which extension personnel should obtain in the "improvement" course, which has been an important issue since the course started in 2004, was clarified and confirmed by the both evaluation teams. The outline is shown in ANNEX 13.

(5)The both evaluation teams confirmed that an authorized document stating CFMA's definition, training activities, place of the activities, method of its operation, budget and staff allocation was prepared on February 28, 2005.

6.Recommendations

(1) In order to conduct "improvement" course more practically, concrete and applicable plan and approach should be constructed. Activity Plan for Termination of the Project (August, 2005) and approach are shown in ANNEX 14.

(2) The budget for conducting of trainings in CFMA should be continuously covered by IAV and MADRPM from a sustainable point of view.

(3) Country-focused training in Japan is recommended to be conducted in order that the C/Ps and others can more effectively acquire the skill of adapting improvement technique.

(4) It is suggested that CFMA shall function as a key training center for extension personnel, etc.,

with agricultural machinery expertise of the especially countries in Africa in cooperation with JICA when necessity arises.

7.Lessons Learned

(1) In a project that concerns development of training course, which organization provides budget for managing the course have to be defined before the project starts. Moreover, while the Project is implemented, it is necessary to keep disseminating the budget plan to the provider.

(2) When PDM of such a project is designed, the project purpose and/or outputs need to be planned with the verifiable indicators measuring these qualities (e.g.: qualities of curriculum, teaching materials, test, interview with beneficiaries, etc.).

(3) In addition to training of the trainees by instructors, information and idea in field level should be raised and reflected to contents of training for further improvement of courses.

(4) It is important to strengthen the relationship between the research & development and educational organizations and to facilitate the participation from private sector and research & development organization and to exchange and accumulate the technical information. This facilitates effective and efficient activity in the sector.

(5) In preparation stage before implementation of trainings, grand design including annual plan and curriculum of each training should be examined and established, and they should be revised timely according to the needs and issues on training.

ANNEX 1. Progress of Project Activities

Main activities mentioned in the PO							Progress of the Project		Final target level(B)	Level of achievement A/B (%)	Perspective achievement in Aug. 05 (%)
Activities	Period 1	2	3	4	5	In-charge(s)	Activities	Results/Outputs(A)			
1. Survey and analysis for the comprehensive training program for agricultural mechanization									・The inclusive, agricultural mechanization training program which assumes three training (Use & Maintenance, Test & Evaluation and Improvement) to be a content is completed based on the Moroccan agricultural mechanization survey report. ・Mutual relation between three above-mentioned training is monitored, and the improvement of an inclusive program is continued.		
1-1.Conducting continuous survey and analysis on overall circumstances of agricultural mechanization in the Kingdom of Morocco											
1-1-1. The execution of the questionnaire survey	.....	.....	.....			Pro.Bourarach	The questionnaire survey of the agricultural mechanization was executed.	The Moroccan agricultural mechanization survey reports (Japanese and English versions) were made.		100%	100%
1-1-2. Continuous survey and analysis of agricultural mechanization in Morocco	.....	.....	.....	.....	.....	Pro.Bourarach	Information from farmers, extension personnel and so on were obtained.	Based on the survey report and the information, outline of the Moroccan agricultural mechanization was grasped.		80%	90%
1-2.Defining the need for agricultural machinery training											
1-2-1.The execution of the survey	.....	.....	.....			Pro.Bourarach	The investigation concerning the mechanization training needs was included in the questionnaire survey.	Based on the survey report and the monitoring survey, needs of the training (Use & Maintenance, Test & Evaluation and Improvement) were obtained.		100%	100%
1-2-2.Continuous survey and analysis of machinery training in Morocco	.....	.....	.....	.....	.....	Pro.Bourarach	The monitoring survey related to Use & Maintenance training was executed, and the survey of the training needs was excuted continuously.			80%	90%
1-3.Planning the overall schedule											
1-3-1.Making of overall training program	.....	.....	.....	.....	.....	Pro.Houmy	Based on the training needs, training programs of Use & Maintenance, Test & Evaluation and Improvement were discussed and made	The overall schadule of the trainings was made.		100%	100%
1-3-2.Supporting the training	.....	.....	.....	.....	.....	Pro.Houmy	Based on the training programs, overall schadule of the trainings was discussed.			100%	100%
1-4.3Monitoring corelation of the three courses											
1-4-1.3Verification of the three courses			.....	.....	.....	Pro.Houmy	Information of corelation of the three training courses was exchanged.	Based on the information and the evaluation, improvement points for the training courses and the results for feed back to another training courses were obtained.		70%	90%
1-4-2.3Evaluation of the three courses			.....	.....	.....	Pro.Houmy	Corelation of the three training courses was evaluated.			70%	90%
Prospective of Sustainability	Based on the results of Moroccan agricultural mechanization survey, the overall schadule of the three training courses was made and the trainings were implemented. The sutainability of the trainings are expected because C/P could get knowledge and experience through the implementaion and evaluation of the trainings.										

Notes: Plan ..... Actual ——

Progress of Project Activities

Main activities mentioned in the PO							Progress of the Project		Final target level (B)	Level of achievement A/B (%)	Perspective achievement in Aug. 05 (%)
Activities	Period 1	2	3	4	5	In-charge(s)	Activities	Results/Outputs (A)			
2.Course on agricultural machienary Use and Maintenance									・With considering the results of the survey, overall Use & Maintenance training program will be created.		
2-1. Identifying course training											
2-1-1. Preparation						Pro.Houmy	Qualification of the trainee was identified. The publicities by pamphlet, promotion-video, homepage etc were implemented.	Sufficient number of the trainees participated in the training.	・According to the training program, after recruiting and selecting trainees, each training will be done on schedue surely.	100%	100%
2-1-2. Selecting trainees						Pro.Houmy	Based on the above activities, the trainees were selected.			100%	100%
2-2. Defining the training program									・Exteneison activities by the extension staff graduated from CFMA will be monitored and evaluated, and overall use & maintenance training program will be improved continuously following results of the above monitoring and evaluation.		
2-2-1. Defining the courses						Pro.Houmy	Subject, name, duration and number of trainees, etc of the coueses were discussed.	Training contents of 5 basic courses and 9 special courses were defined.		100%	100%
2-1-2. Defining training course curriculums						Pro.Houmy	14 training course curriculums were discussed.	14 training course curriculums were defined.		100%	100%
2-3. Preparing teaching materials											
2-3-1. Preparing practice fields						Pro.Houmy	1ha of practical field was prepared.	The field was used for the training.	(Overall goal) ・Small and middle-size farmers gain understanding of agricultural machinery through extension activities.	100%	100%
2-3-2. Making texts						Pro.Houmy	Texts were made for the training.	32 kinds of text were used for the training.		100%	100%
2-3-3. Preparing training materials						Pro.Houmy	Several agricultural machines and scale models, etc were prepared.	The teaching materials were used for the training.		100%	100%
2-3-4. Preparing audio-visual materials						Pro.Houmy	Several OHP sheets for the explanation of function of engine etc were prepared.			100%	100%
2-4. Training instructors											
2-4-1. Practice technology						Pro.Houmy	Improtance of practice, grouping and training methods etc were guided.	10 instructors implemented the training.		100%	100%
2-4-2. Machine using technology						Pro.Houmy	Using technology of tractor, combine, etc and work safety were guided.			100%	100%
2-4-3. Machine maintenance technology						Pro.Houmy	Maintenance technology of engine, tractor and combine, etc were guided.			100%	100%
2-5. Implementing the course											
2-5-1. Conducting the training course						Pro.Houmy	5 basic training courses and 9 special training courses were implemented.	The total number of the trainees was 727 man-course. (10/12/2004)		100%	100%
2-6. Monitoring,evaluation and revising the course											

Progress of Project Activities

Main activities mentioned in the PO							Progress of the Project		Final target level (B)	Level of achievement A/B (%)	Perspective achievement in Aug. 05 (%)
Activities	Period 1	2	3	4	5	In-charge(s)	Activities	Results/Outputs (A)			
2-6-1. Identification & evaluation test for trainees (before & after training)						Pro.Houmy	The test for the trainnees was implemented. (Except for Guide & Kit training course)	Effectiveness of the training is recognized.		100%	100%
2-6-2. Course and instructor evaluations by trainees (after training)						Pro.Houmy	The evaluations were implemented. (Except for Guide & Kit training course)	Almost trainees were satisfied.		100%	100%
2-6-3. Management evaluation by trainees (after training)						Pro.Houmy	The evaluation was implemented. (Except for Guide & Kit training course)	Improvement of management(meal etc) were requested.		100%	100%
2-6-4. Training report from instructors						Pro.Houmy	The reports were made.	The reports were submited to the related organization.		100%	100%
2-6-5. Evaluation after training (follow-up of trainees activitiy in their working place)						Pro.Houmy	Monitoring for 15 extension personnel after the training was implemented.	As the results of monitoring, it was recognized that they organaized 207times extension activities and guided more than 1,800 farmers etc.		100%	100%
Prospect of Sustainability	Use & Maintenance training was almost implemented on schedule and many trainees attended. The sutainability of the training is expected because C/P could get knowledge and experience through the implementaion and evaluation of the training.										

Notes: Plan ..... Actual ——

Progress of Project Activities

Main activities mentioned in the PO							Progress of the Project		Final target level(B)	Level of achievement A/B (%)	Perspective achievement in Aug. 05 (%)
Activities	Period 1	2	3	4	5	In-charge(s)	Activities	Results/Outputs(A)			
3. Course on agricultural machinery testing and evaluation											
3-1.Identifying course trainees											
3-1-1.Preparation						Pro.Baali	Qualification of the trainees were identified. The publicity by pamphlet, promotion-video, homepage etc was implemented.	Sufficient number of trainee participated in the training.	・Suitable trainees who should attend the test and evaluation training are selected and specified.	100%	100%
3-1-2. Selecting trainees						Pro.Baali	Based on the above activities, the trainees were selected.			100%	100%
3-2.Defining the training program									・The testing methods and the contents of training are decided based on the training needs from the extension staff and the results of verification field tests about test methods.		
3-2-1.Regulating test & evaluation methods						Pro.Baali	Simple test & evaluation methods of tillage & seeding machine and harvesting machine were discussed.	Based on the results of the discussions and pre-field tests, the simple test & evaluation methods of tillage & seeding machine and harvesting machine were decided.		100%	100%
3-2-2. Verification of test & evaluation						Pro.Baali	To verify the test & evaluation methods, pre-field tests were implemented.			100%	100%
3-2-3.Defining the courses & course curriculum						Pro.Baali	Based on the the methods, the training courses and the curriculums of tillage & seeding machine and harvesting machine were discussed.	The training courses and the curriculums were defined.	・The test and evaluation training program is made, and each training is executed steadily.	100%	100%
3-3. Preparing teaching materials											
3-3-1.Preparing testing fields						Pro.Baali	For the training of tillage & seeding machine, the field was prepared in IAV. For the training of harvesting machine, the field of farmer was rented.	For the training of tillage & seeding machine, the field in IAV was used. For the training of harvesting machine, the field of farmer was used.	・The testing methods and the contents of training are reviewed through the monitoring after training etc.	100%	100%
3-3-2. Making texts						Pro.Baali	Texts were made for the training.	10 kinds of text were used for the training.		100%	100%
3-3-3.Preparing testing rooms						Pro.Baali	For the training of tillage & seeding machine, the facilities were prepared in IAV. For the training of harvesting machine, the facilities in ITA were rented.	The facilitis in IAV and ITA were used.	(Overall goal) ・After the extension staff graduated from the Test and Evaluation training, they come to be able to plan and execute the test of the farm machinery by themselves, and come to be able to report to the agricultural ministry etc. in each area	100%	100%
3-3-4. Preparing testing materials						Pro.Baali	To implement the simple test & evaluation methods, corrugated contaners, plastic containers and plastic sheets, etc were prepared.	The testing materials were used for the training.		100%	100%
3-4. Training instructors											
3-4-1. Machine testing technology						Pro.Baali	The simple testing methods of tillage & seeding machine and harvesting machine were guided	9 instructors implemented the training.	・CFMA come to be able to arrange and use the data obtained as a report of the test results by the extension staff graduated from CFMA.	100%	100%
3-4-2. Machine evaluation technology						Pro.Baali	The evaluation technique for simple test & evaluation methods of tillage & seeding machine and harvesting machine were guided.			100%	100%
3-5. Implementing the course											

Progress of Project Activities

Main activities mentioned in the PO							Progress of the Project		Final target level(B)	Level of achievement A/B (%)	Perspective achievement in Aug. 05 (%)
Activities	Period 1	2	3	4	5	In-charge(s)	Activities	Results/Outputs(A)			
3-5-1. Conducting the training course			.....	.....	.....	Pro.Baali	The training courses of tillage & seeding machine and harvesting machine were implemented.	The total number of participants was 30 man-course. (10/12/2004)		90%	95%
3-6. Monitoring, evaluating and revising the course											
3-6-1. Identification & evaluation test for trainees (before & after training)			.....	.....	.....	Pro.Baali	The test for the trainnees was implemented.	Effectiveness of the training is recognized.		100%	100%
3-6-2. Course and instructor evaluation by trainees (after training)			.....	.....	.....	Pro.Baali	The evaluations were implemented.	Almost trainees were satisfied.		100%	100%
3-6-3. Management evaluation by trainees (after training)			.....	.....	.....	Pro.Baali	The evaluation was implemented.	Improvement of management(meal etc) were requested.		100%	100%
3-6-4. Training report from instructors			.....	.....	.....	Pro.Baali	The reports were made.	The reports were submited to the related organization.		100%	100%
3-6-5. Evaluation after training (follow-up of participants activity in their working place)			.....	.....	.....	Pro.Baali	The monitoring methods were guided.	The monitoring is planned.		50%	80%
Prospective of Sustainability	Many types of machines were adopted in the trainings, therefore, the sutainability of the training is expected because C/P could get knowledge and experience through the implementaion and evaluation of the training. Based on the monitoring, the training										

Notes: Plan ..... Actual ——

Progress of Project Activities

Plan of operation: Subject	Period 1	2	3	4	5	In-charge(s)	Progress of the Project: Activities	Results/Outputs(A)	Final target level(B)	Level of achievement A/B (%)	Perspective achievement in Aug. 05 (%)
4. Course on agricultural machinery improvement									・Those who attend the Improvement course are select and specified.		
4-1. Identifying course trainee											
4-1-1. Preparation		.....	.....	.....	.....	Pro. Bourarach	Qualification of the trainees were identified. The publicity by pamphlet, promotion-video, homepage etc was implemented.	Sufficient number of trainees from CT, ORMVA, private companies and agricultural shools, etc participated in the training.	・Based on the training needs from extension personnel, the Improvement training program is founded. And, each training is steadily excuted.	100%	100%
4-1-2. Selecting trainees		.....	.....	.....	.....	Pro. Bourarach	Based on the above activities, the trainees were selected.			100%	100%
4-2. Defining the training program									・Through the monitorings after trainings, Improvement course is continously improved examining the review of the contents of the training.		
4-2-1. Defining the courses	.....	.....	.....	.....	.....	Pro. Bourarach	Subject, name, duration and number of trainees, etc of the coueses were discussed.	Training contents of 3 hydraulic training courses and 4 improvement training courses were defined.		100%	100%
4-2-2. Defining course curriculums		.....	.....	.....	.....	Pro. Bourarach	7 training course curriculums were discussed.	7 training course curriculums were defined.	(Overal goal) ・Extension personnel etc who completed the improvement course improve the farm machineries together with the farmer and the local artisan in each area of responsibilty.	100%	100%
4-3. Preparing teaching materials											
4-3-1. Making texts		.....	.....	.....	.....	Pro. Bourarach	Texts were made for the training.	・2 kinds of texts were used for the hydraulic training course. ・6 kinds of texts were used for the improvement training course.		100%	100%
4-3-2. Preparing workshop		.....	.....	.....	.....	Pro. Bourarach	・Hydraulic practice room was prepared. ・IAV workshop was prepared for the practical training space and introduced several machine tools such as welders and shearing machine, etc.	The facilities were used for the training.	・The Proto-type farm machineries are produced in various places with the activities of the extension staff.	100%	100%
4-3-3. Preparing drawing materials		.....	.....	.....	.....	Pro. Bourarach	・Teaching materials for hydraulic training course were prepared. ・Eqipments for drawing practice were prepared.	The teaching materials and the equipments were used for the training.		100%	100%
4-3-4. Preparing Trial-making (Proto-type)	.....	.....	.....	.....	.....	Pro. Bourarach	Animal traction plows, winnowers, manual broadcaster etc were prepared.	2 kinds of winnower were used for the training.		100%	100%
4-4. Training instructors											
4-4-1. Workshop technology	.....	.....	.....	.....	.....	Pro. Bourarach	・Basic technology for hydraulic control was guided. ・Testing method, fabrication technology such as machine tools and welding, etc were guided.	8 instructors implmented the training. However, the fabrication technique and designing technology should be improved to be conducting the practical level improvement training.		60%	70%
4-4-2. Designing technology	.....	.....	.....	.....	.....	Pro. Bourarach	・Basic design technology for hydraulic control was guided. ・Basic design technology for machine was guided.			50%	60%
4-5. Implementing the course											

Progress of Project Activities

Plan of operation: Subject	Period 1	2	3	4	5	In-charge(s)	Progress of the Project: Activities	Results/Outputs(A)	Final target level(B)	Level of achievement A/B (%)	Perspective achievement in Aug. 05 (%)
4-5-1. Conducting the training course						Pro. Bourarach	3 hydraulic training courses and 4 improvement training courses were implemented.	The total number of the trainees was 45 man-course. (10/12/2004)		80%	90%
4-6. Monitoring, evaluationing and revising the course											
4-6-1. Identification & evaluation test for trainees (before & after training)						Pro. Bourarach	The test for the trainnees was implemented.	Effectiveness of the training is recognized.		100%	100%
4-6-2. Course and instructor evaluation by trainees (after training)						Pro. Bourarach	The evaluations were implemented.	Almost trainees were satisfied.		100%	100%
4-6-3. Management evaluation by trainees (after training)						Pro. Bourarach	The evaluation was implemented.	Improvement of management(meal etc) were requested.		100%	100%
4-6-4. Training report from instructors						Pro. Bourarach	The reports were made.	The reports were submited to the related organization.		100%	100%
4-6-5. Evaluation after training (follow-up of participants activity in their working place)						Pro. Bourarach	・ The evaluation of hydraulic training course was implemented. ・The monitoring methods were guided.	The monitoring is planned.		50%	80%
Prospect of sustainability	The extension personnel etc who completed the CFMA improvement training course should be the core person in rural area for improving the agricultural machinery. However, their experiences for practical improvement were insufficient. Therefore, the improv										

Notes: Plan ---------- Actual ——————

ANNEX 2. Evaluation Grid

1.Relevance

Inquiry Items		Information, Data	Source of Information or Data	Means of Verification	Comment
Inquiry Item	**Sub-Inquiry Item**				
Needs	Has the Project been implemented in line with the contents addressed in some concerned development policies of Morocco?	1)Plan de Development Economique et Social 1999-2003, 2)Rural Development Strategy 2020, 3)Situation de l' Agriculture Marocaine 2001	1)Plan de Development Economique et Social 1999-2003, 2)Rural Development Strategy 2020, 3)Situation de l' Agriculture Marocaine 2001	Review of the policies	"1)" states promotions of i) agricultural mechanization and ii) training of personnel who use agricultural machine and extension personnel as important matters, "2)" states that expansion of agricultural products and capacity building for the concerned personnel are required matters, and "3)" , in its section of "mechanization", states that practical policy on research, capacity building, and promotion in the field of agricultural mechanization is required. These documents are relevant to the Project.
	Has the Moroccan side been satisfied with the selected training courses, the Project term (5 years), and number of target group (C/Ps)?	P/M's and DERD personnel comments on 1)Selected training courses 2)Project term (5 years) 3)Number of C/Ps	P/M, DERD personnel	Questionnaire or Interview Survey	1)-The Moroccan side was satisfied with the three courses, established in the Project. The three courses were required in order to solve a problem addressed, referring to lack of extension personnel who had a technical skill of machinery and equipment. -"Improvement" was pointed out to be the most important field of the fields that should be implemented after the Project termination. 2)The Project term was appropriate, if course on "improvement" was implemented as scheduled. 3)3 to 4 C/Ps were assigned to each training course. The number of C/Ps was appropriate.
	Was the Project implemented in line with country development policy of Japan?	Country development policy of JICA to Morocco	JICA	Review of the policy	JICA's country development policy to Morocco, which was prepared in 2004 and based on the Moroccan side's Plan de Development Economique et Social (2000-2004) states that i) "Support in Rural Development of Less Developed Area Specializing in Local Area" is an important field for country assistance, ii) in order to satisfy this important field "Financial and Technical Supports to the Petty and Small-sized Farmers" is indicated as one of the required development subjects, and iii) in order to satisfy the development subject "Promotion Program for the Petty and Small-sized Farmers" is indicated as one of the required development programs. The statement about the promotion program closely relates to the Project, because agricultural mechanization contributes to improvement in agricultural production of the rural area.
Relevance of the Project planning	Were the number of target group (trained extension personnel), ratio of number of extension personnel trained in the Project to	1)Ratio of number of extension personnel trained in the Project to all extension personnel in Morocco 2)Male-female ratio of the	1)&2)P/M	Questionnaire or Interview Survey	1)About 100 personnel are considered to have been trained in this Project. As the total number of extension personnel is considered to be 2,500, the ratio is 1 to 25. 2)Target group was a group of extension personnel whose expertise was mechanical engineering. This field was popular among males in Morocco. Therefore, most of trained personnel were males. In the

	all extension personnel in Morocco, and male-female ratio of the target group appropriate?	target group			Project two women were trained.
	Has the Project activities contributed to solving the problems addressed by the Moroccan side?	Comparison of the problems addressed in the preliminary study report and result of the Project	Preliminary study report and the Project activities reports	Review of the reports	At the stage of the preliminary study the Moroccan side had a problem on the lack of extension personnel who had a technical skill of machinery and equipment. As this Project focused on preparing the training courses for such extension personnel, the Project contributed to solution of the above-addressed problem.
	To what extent has the Project related to other agencies' projects or programs?	Comments of P/M	P/M	Questionnaire or interview survey	-The Project invited some external lecturers.
	Was the technical level of Japan in the field of agricultural extension appropriate?	Experience of technical transfer on the field relating to the Project	JICA	Review of the materials issued by JICA	As mentioned above, this Project closely relates to field of rural development. If JICA's activities on this field are looked at, JICA has implemented a lot of technical cooperation projects of this field. The number of the project is very large, and even if it is limited to the number of projects that "have been being implemented" as of March 2005, 16 projects including this Project have been being implemented. Value of the experience of these projects should be assessed well.

Note. P/M: Project Manager

2.Effectiveness

Inquiry Items		Information, Data	Source of Information or Data	Means of Verification	Comment
Inquiry Item	**Sub-Inquiry Item**				
Level of achievement of Project Purpose	Has Project Purpose been achieved?	1)Test result of the participants 2)Comments of the Japanese experts 3)Comments of C/Ps	1)Test result of the participants 2)Japanese experts 3)C/Ps	1)Review of the materials 2)&3)Questionnaire or interview survey	Total number of participants is 826 and Project Purpose had been achieved at the time of final evaluation. Judging from the result of the test done to the extension personnel, etc. before and after they participate in the training course, their knowledge level has much increased. 107 personnel took the test and their test scores has increased up to 90 percent. And, judging from the interviews with the Japanese experts and C/Ps, participants of "use and maintenance" and "testing and evaluation" courses are considered to have acquired the skill of adapting the technique learned from the training courses at the required level. But, participants of "improvement" course may need more experience in adapting improvement technique.
To what extent have Outputs contributed to the achievement of Project Purpose	Output 1	1)Comments of the Japanese experts 2)Comments of C/Ps	1)Japanese experts 2)C/Ps	1)&2)Questionnaire or interview survey	Verifiable indicators of this Output have been achieved. All concerned personnel including C/Ps and technicians in the fields of "use and maintenance" and "testing and evaluation" have acquired the required skill. It is considered that they can establish and manage the training courses on "use and maintenance" and "testing and evaluation" by themselves. But, the personnel in the field of "improvement" need more experience of adaptation

					of improvement technique in order to establish and manage more appropriate training programs.
	Output 2	1)Teaching materials 2)Comments of the Japanese experts 3)Comments of C/Ps	1)Teaching materials 2)Japanese experts 3)C/Ps	1)Review of the materials 2)&3)Questionnaire or interview survey	Verifiable indicators of this Output have been achieved. Judging from the teaching materials prepared and interviews with the Japanese experts and C/Ps, the level of the skills that all concerned personnel including C/Ps and technicians are considered to have acquired the skill of developing training course on "use and maintenance", which includes a series of works: i) identifying course trainees, ii) defining the training program, iii) preparing teaching materials, iv) implementing the course, and v) monitoring, evaluation and revising the course. This Output has well contributed to the achievement of Project Purpose.
	Output 3	1)Teaching materials 2)Comments of the Japanese experts 3)Comments of C/Ps	1)Teaching materials 2)Japanese experts 3)C/Ps	1)Review of the materials 2)&3)Questionnaire or interview survey	Verifiable indicators of this Output have been achieved. Judging from the teaching materials prepared and interviews with the Japanese experts and C/Ps, the level of the skills that all concerned personnel including C/Ps and technicians are considered to have acquired the skill of developing training course on "use and maintenance", which includes a series of works: i) identifying course trainees, ii) defining the training program, iii) preparing teaching materials, iv) implementing the course, and v) monitoring, evaluation and revising the course. This Output has well contributed to the achievement of Project Purpose.
	Output 4	1)Teaching materials 2)Comments of the Japanese experts 3)Comments of C/Ps	1)Teaching materials 2)Japanese experts 3)C/Ps	1)Review of the materials 2)&3)Questionnaire or interview survey	Verifiable indicators of this Output have been achieved. Judging from the teaching materials prepared and interviews with the Japanese experts and C/Ps, all the concerned personnel may need more experience of adaptation of improvement technique.
To what extent Important Assumptions have disturbed the Project activities	While appropriate number of C/Ps was not assigned to the Project, to what extent this factor has disturbed the Project activities?	Comments of the Japanese experts	Japanese experts	Questionnaire or interview survey	Number of the C/Ps assigned to the Project is considered to be appropriate.
	If the training program is not integrated into the policies of MADRPM, to what extent has this factor disturbed the achievement of Project Purpose?	Comments of P/M	P/M	Questionnaire or interview survey	The training program prepared by the Project has not yet integrated into the policies of MADRPM (Ministry of Agriculture, Rural Development and Maritime Fisheries). However, this factor has not disturbed the achievement of Project Purpose. As MADRPM recognizes the importance of the agricultural mechanization and training of extension personnel in the field of agricultural machinery improvement, the Project activities are considered to be supported by MADRPM.

Note. P/M: Project Manager, C/P: Counterpart Personnel

3.Efficiency

Inquiry Items		Information, Data	Source of Information or Data	Means of Verification	Comment
Inquiry Item	**Sub-Inquiry Item**				
Were Inputs provided enough to do Activities?	Were number, specialization, capability, length of stay, and timing of dispatch of the Japanese experts appropriate?	1)ANNEX 3 2)Comments of C/Ps	1) ANNEX 3 2)C/Ps	1)Review of the material 2)Questionnaire or interview survey	-Long-term expert: Generally speaking, number, specialization, capability, length of stay, and timing of dispatch of the Japanese experts dispatched during the Project term were appropriate. -Short-term expert: C/Ps in the fields of "use and maintenance" and "testing and evaluation" pointed out that they had difficulty of communicating with some short-term experts. They feel that they could not efficiently learn from such experts very well.
	Were type, amount, timing of installation of machinery and equipment appropriate?	1)Annex 4 2)Comments of the Japanese experts	1)Annex 4 2)Japanese experts	1)Review of the material 2)Questionnaire or interview survey	All machinery and equipment were equipped in line with a procurement plan. Some items (e.g.: standards of some testing kits were pointed out to be inappropriate.) were pointed out to be inappropriate, and some items were not utilized very much. However, other measures to utilize such items were taken and they had been utilized afterwards.
	Were number and capacity of C/Ps appropriate?	1) Annex 6 2)Comments of the Japanese experts	1)Annex 6 2)Japanese experts	1)Review of the material 2)Questionnaire or interview survey	Almost appropriate number of C/Ps was assigned to each field (i. use and maintenance, ii. testing and evaluation, and iii. improvement). Current P/M well contributed to organizing a group of the Moroccan side.
	Were amount and timing of provision of local cost appropriate?	1) Annex 7 2)Comments of the Japanese experts	1) Annex 7 2)Japanese experts	1)Review of the material 2)Questionnaire or interview survey	Traveling, lodging, and board expenses were provided to trainees by MADRPM. But, in 2003 the expenses for some courses in the fields of "testing and evaluation" and "improvement" were not provided regularly. The provision was delayed about one year. MADRPM needed time to consider what division of DERD provided to the trainees.
	Was necessary staff allocated appropriately?	1)Comments of the Japanese experts	2)Japanese experts	1)Questionnaire or interview survey	One secretary was allocated, but her task in the Project was limited. Therefore, the Japanese experts and P/M sometimes had to do secretary works.
	Were necessary facilities provided to the Project?	1)Comments of the Japanese experts	1) Japanese experts	1) Questionnaire or interview survey	Necessary facilities were provided to the Project. No factors hindering the Project activities were found out.
	Were timing of traveling, length of stay, and curriculum of C/P training in Japan appropriate?	1) Annex 6 2)Comments of the Japanese experts and C/Ps	1)Annex 6 2)C/Ps	1)Review of the material 2)Questionnaire or interview survey	14 C/Ps in the fields of i) agricultural mechanization and extension, ii) testing and evaluation and utilization technique, iii) agricultural mechanization systems, iv)economy of agricultural mechanization, v) forage crop producing, v)agricultural machinery test and evaluation, vii) use and maintenance and trial production method participated in this training (see Annex 2 for detail). This training contributed to directly informing the C/Ps of the training system for extension personnel in Japan (e.g.: i) training system for the field of "improvement", which had not been established in Morocco, ii) system in which laboratory staff directly relates to instruction of extension personnel). The participants were able to examine directly to what extent the training system in Japan was available in Morocco. This training program was generally assessed well by the participants.
Was	Activity 1	1)Result of the	1)Project activities	1)Review of the	Activities 1-1 to 1-4 have been appropriately arranged. Especially, "monitoring" of

arrangement of Activities appropriate for producing Outputs?		Activities 1-1 to 1-4 2)Comments of the Japanese experts and C/Ps	report 2)Japanese experts and C/Ps	report 2)Questionnaire or interview survey	Activity 1-4 was a new experience for the C/Ps and they assessed this activity well.
	Activities 2-1 to 2-6, 3-1 to 3-6, and 4-1 to 4-6	1)Result of the Activities 2-1, 3-1, or 4-1 to 2-6, 3-6, or 4-6 2)Comments of the Japanese experts and C/Ps	1)Project activities report 2)Japanese experts, C/Ps	1)Review of the report 2)Questionnaire or interview survey	-Activities 2-1 to 2-6 and 3-1 to 3-6: All Activities have been appropriately arranged. Especially "monitoring" of Activities 2-6 and 3-6 was new experience for the C/Ps and they assessed these activities well. -Activity 4-1 to 4-6: All Activities have been appropriately arranged, but Activities 4-5 and 4-6 have not yet been done.
Was cost for the Project operation appropriate?	Was the Project cost appropriate? Or was unit cost of developing a training course appropriate?	Comparison with other similar projects in terms of total cost, project purpose, number of beneficiaries	JICA	Review of material	JICA has an experience of having implemented a project which is similar to this Project from 1999 to 2004 in Mexico. Compared to the project in Mexico, unit cost of training a C/P in this Project (CFMA) may be high. But number of beneficiaries (C/Ps and extension personnel, etc.) in this Project (CFMA) is large. Beneficiary of the project in Mexico was limited to C/Ps. It did not include extension personnel as beneficiary.
Did Important Assumptions necessary for attaining Outputs from Activities disturbed the achievement of Outputs?	Were supports of DERD, DPV, ORMVA, etc. enough? If the support is not enough, to what extent has this factor disturbed the achievement of Outputs?	Comments of the Japanese experts	Japanese experts	Questionnaire or interview survey	-What MADRPM needed time to provide the expenses of "testing and evaluation" and "improvement" courses for the trainees disturbed smooth achievement of Outputs 3 and 4. -DERD started to provide the expenses in April 2004, and it plans to continue providing them for three years after the Project termination.
	While budget for extension personnel training was not allocated to the Project, to what extent has this factor disturbed the achievement of Outputs?	Budget allocated to the Project	Annex 7	Review of the material	Amount of the budget was enough. But, as described above, what the expenses for extension personnel had not been regularly allocated by MADRPM affected to smooth achievements of Outputs 3 and 4.
	Are there any other factors disturbing the achievement of Outputs?	1)Project activities report 2)Comments of the Japanese experts	1)Project activities report 2)Japanese experts	1)Review of the report 2)Questionnaire or interview survey	No factors were found out.

Note. C/P: Counterpart Personnel

4.Impact

Inquiry Items		Information, Data	Source of Information or Data	Means of Verification	Comment
Inquiry Item	**Sub-Inquiry Item**				
Availability of the achievement of Overall Goal	Is the number of farmers that attended the extension activities increasing? And is it possible to verify the increased number after the Project termination?	Impact survey report by a local consultant	Impact survey report by a local consultant	Review of the report	-The number is increasing. According to the impact survey by a local consultant, which was conducted to 21 personnel trained in the Project, the 21 trained personnel conducted extension activities and 5,293 farmers in total attended the activities: i) 4,988 attended the activities by the personnel trained in the "use and maintenance" course, ii) 280 attended the activities by the personnel trained in "testing and evaluation", and iii) 25 attended the activities by the personnel trained in "improvement". Therefore, ratio of the trained personnel to the farmers is 1 to 252. As total number of the trained personnel is considered to exceed at least 100, it is expected that 25,200 farmers participated the extension activities. There is a possibility of having satisfied Overall Goal. -It would be possible to ask a local consultant to verify the number.
Other effects caused by the Project	Has the Project affected to development or amendment of some agricultural development policies of Morocco?	Comments of P/M	P/M	Questionnaire or interview survey	The Project has not yet affected to development or amendment of some agricultural development policies.
	Has the Project affected positively or negatively on the aspects of gender, ethnicity, social rank, socio-culture, environment, etc.?	Project activities report	Project activities report	Review of the report	This Project is a technical cooperation project by which capacity of extension personnel etc. with agricultural machinery expertise are strengthened. Target group is limited to a group of extension personnel etc. with agricultural machinery expertise and not a group of general citizens including a variety of people in the aspects of gender, ethnicity, social rank. Therefore, the Project has not affected positively or negatively to a greater extent on these aspects (e.g. widening of gap between rich and poor, lowering of status of women, etc.). Furthermore, it did not affect positively or negatively to a greater extent on natural environment.
	How did the Project contribute to other related organizations' activities? Or how did the other organizations' activities contribute to the Project?	Comments of P/M	P/M	Questionnaire or interview survey	The Project invited some external lectures.
	Is there any difference in salary or position between personnel who are trained in the Project and personnel who are not trained?	Comments of trained personnel	Trained personnel	Questionnaire or interview survey	There was not any difference in salary or position between personnel who were trained in any training courses including the three courses established by the Project and personnel who were not trained
	Other effects	Comments of C/Ps and trained personnel	C/Ps and trained personnel	Questionnaire or interview survey	Following points may be pointed out as positive impacts. -Textbooks, machinery and equipment developed by the Project have been utilized in other courses of IAV. They are also used by IAV students.

					-Experience of C/Ps' field survey affected positively to their way of lecturing to students in IAV. This experience enabled to the C/Ps, who had been taking lectures by theoretical approach, to notice about availability of teaching students by practical approach. -C/Ps got interested in "monitoring, evaluation and revising courses" described in PDM Activities. This was a new experience for them and affected positively to their methods of training course development. -C/Ps got interested in group working. They worked in three groups (i) use and maintenance, ii) testing and evaluation, and iii) improvement) and discussed method of instructing trainees, preparation of textbook, etc. It was uncommon for them to work in group. But, most C/Ps felt working in group positively. -"Work Safety" seminar by a short-term expert affected positively to a greater extent to the Moroccan side. This seminar contributed to increasing awareness of safety to the Moroccan side that did not have a driving license system for agricultural machinery and its inspection system. -The Project involved DRED, IAV, and ORMVA. In Morocco, it was not common that two or more organizations work with each other to do one project. But working with each other for one project affected positively to the Moroccan side. -University teaching staff such as C/Ps and technicians of IAV directly related to training of extension personnel, etc through the field survey. It was not common that such teaching staff directly related to training extension personnel, but this affected positively to them. -A trained extension personnel learned about a seeder from the Project, and then instructed utility and method of using a seeder to a farmer. The farmer noticed the utility of using it and could make more crop production increase in less labor cost. This is an example of the positive Project effect that expanded to a farmer from extension personnel. -The above trained personnel learned how to explain about a seeder to the farmers who did not understood its utility from the Project, and he made success in making such farmers understood the utility by the method learned from the Project.
Any factors disturbing the achievement of Overall Goal?	Are trained personnel continuing extension activities? If they did not continue, why did they not continue?	Comments of trained personnel	Trained personnel	Questionnaire or interview survey	The trained personnel would be continuing extension activities. No special factors that make them quit extension activities were found out.

Note. P/M: Project Manager, C/P: Counterpart Personnel

5.Sustanablity

Inquiry Items		Information, Data	Source of Information or Data	Means of Verification	Comment
Inquiry Item	**Sub-Inquiry Item**				
Policy aspect	Are the Project activities supported by some national policies? If they are supported, are the supports expected to be continued after the Project termination?	Comments of P/M	P/M	Questionnaire or interview survey	-The Project activities would be supported by the afore-mentioned "Rural Development Strategy 2020". -MADRPM (Ministry of Agriculture, Rural Development and Maritime Fisheries) recognizes the importance of the agricultural mechanization and training of extension personnel in the field of agricultural machinery improvement.
	Are the Project activities supported by some regulations/ laws?	Comments of P/M	P/M	Questionnaire or interview survey	There are not any regulations/ laws supporting the Project activities. But, as mentioned above, as the Secretary General of MADRPM recognizes the importance of the Project activity, it is expected to be supported by some regulations/ laws.
Organizational and financial aspects	Was the Project operation system established appropriately?	Comments of the Japanese experts, P/M	Japanese experts, P/M	Questionnaire or interview survey	After the Project termination IAV will formally establish the Project operation system as a unit of IAV. The unit is called CFMA, and IAV prepared a document stating CFMA's definition, training activities, place of the activities, method of its operation, budget and staff allocation to CFMA.
	Is there a plan for continuing the Project activities prepared?	Comments of P/M	P/M	Questionnaire or interview survey	-The Project had prepared a plan on the further activities that should be done in three years after the Project terminated (Plan d'action du CFMA après l'achevement du Projet (Septembre 2005 to aout 2008 (plan de 3 ans)). This plan states to continue its training activities and to more enhance the three training courses established in the Project. For example, the plan states: i) in the course of "use and maintenance", target group of trainees includes not only extension personnel but also ITA and CQA lecturers; ii) in the course of "testing and evaluation", CFMA enhances "monitoring" work together with DERD; iii) in the course of "improvement", training term is lengthened from 4 to 12 weeks and number of lecturers is increased 2 to 6. -The Project was planning to train at least two extension personnel from each CT (Technical Center). As there were 120 CT all over the country, 240 personnel of CT were planned to be trained in the three years after the Project terminated.
	How is budget provided for post-Project activities?	1)Plan d'action du CFMA après l'achevement du Projet (Septembre 2005 to aout 2008 (plan de 3 ans) 2)Comments of P/M	1)Plan d'action du CFMA après l'achevement du Projet (Septembre 2005 to aout 2008 (plan de 3 ans) 2)P/M	1)Review of the material 2)Questionnaire or interview survey	-DERD plans to provide expenses (e.g. lodging, board traveling expenses) for extension personnel and teaching staff of its agricultural institutes. -The three years plan states that CFMA plans to increase the number of trainees more than one in 2004. Income from the training activities is expected to be increased to the level that CFMA financially becomes independent. Moreover IAV plans to allocate necessary budget to CFMA.
Technical aspect	To what extent has the capacity of C/Ps improved?	1)Project activities report	1)Project activities report	1)Review of the report	-C/Ps had acquired a skill of series of activities for establishing the "use and maintenance" and "testing and evaluation" courses.

		2)Comments of the Japanese experts and C/Ps	2)Japanese experts and C/Ps	2)Questionnaire or interview survey	
	Are the skills that C/P acquired through the Project disseminated to other staff?	1)Dissemination plan 2)Comments of P/M	1)Dissemination plan 2)P/M	1)Review of material 2)Questionnaire or interview survey	The Project has not yet established a system which the trained instructors including C/Ps and technicians disseminate their acquired knowledge and method of teaching to other staff of CFMA.
	Are machinery and equipment maintained appropriately after the Project termination?	1)Plan of maintenance for machinery and equipment 2)Comments of the Japanese experts	1)Plan of maintenance for machinery and equipment 2)Japanese experts	1)Review of material 2)Questionnaire or interview survey	All machinery and equipment were equipped in line with a procurement plan. However, the Project has not yet established an accountability system for maintenance of machinery and equipment.
	Was technical level of C/P enough to do the technology transfer?	Comments of the Japanese experts	Japanese expert	Questionnaire or interview survey	In the "use and maintenance" and "testing and evaluation" fields there was not a wide difference in the Japanese and Moroccan sides' technical levels.
Socio-culture and environmental aspects	Has lack of consideration of groups of women, poor and socially-low ranked people affected to sustainability?		Project activities report	Review of the report	Target group of this Project is extension personnel, etc., and not a group of general citizens including a variety of people in the aspects of gender, ethnicity, social rank. Therefore, the Project did not affect positively or negatively to a greater extent on these aspects (e.g. widening of gap between rich and poor, lowering of status of women, etc.). Furthermore, it did not affect positively or negatively to a greater extent on natural environment. No factors hindering sustainability from these aspects were found out.
	To what extent do the trained personnel expect the Project activities?	Comments of the trained personnel	Trained personnel	Questionnaire or interview survey	The personnel are expecting the Project activities, because there is not a training center implementing courses on agricultural machinery in Morocco.
Others	Are there any other factors disturbing sustainability?	Comments of the Japanese experts	Japanese expert	Questionnaire or Interview Survey	No factors were found out.

Note. P/M: Project Manager, C/P: Counterpart Personnel

3.Efficiency

Inquiry Items		Information, Data	Source of Information or Data	Means of Verification	Comment
Inquiry Item	**Sub-Inquiry Item**				
Were Inputs provided enough to do Activities?	Were number, specialization, capability, length of stay, and timing of dispatch of the Japanese experts appropriate?	1)ANNEX 3 2)Comments of C/Ps	1) ANNEX 3 2)C/Ps	1)Review of the material 2)Questionnaire or interview survey	-Long-term expert: Generally speaking, number, specialization, capability, length of stay, and timing of dispatch of the Japanese experts dispatched during the Project term were appropriate. -Short-term expert: C/Ps in the fields of "use and maintenance" and "testing and evaluation" pointed out that they had difficulty of communicating with some short-term experts. They feel that they could not efficiently learn from such experts very well.
	Were type, amount, timing of installation of machinery and equipment appropriate?	1)Annex 4 2)Comments of the Japanese experts	1)Annex 4 2)Japanese experts	1)Review of the material 2)Questionnaire or interview survey	All machinery and equipment were equipped in line with a procurement plan. Some items (e.g.: standards of some testing kits were pointed out to be inappropriate.) were pointed out to be inappropriate, and some items were not utilized very much. However, other measures to utilize such items were taken and they had been utilized afterwards.
	Were number and capacity of C/Ps appropriate?	1) Annex 6 2)Comments of the Japanese experts	1)Annex 6 2)Japanese experts	1)Review of the material 2)Questionnaire or interview survey	Almost appropriate number of C/Ps was assigned to each field (i. use and maintenance, ii. testing and evaluation, and iii. improvement). Current P/M well contributed to organizing a group of the Moroccan side.
	Were amount and timing of provision of local cost appropriate?	1) Annex 7 2)Comments of the Japanese experts	1) Annex 7 2)Japanese experts	1)Review of the material 2)Questionnaire or interview survey	Traveling, lodging, and board expenses were provided to trainees by MADRPM. But, in 2003 the expenses for some courses in the fields of "testing and evaluation" and "improvement" were not provided regularly. The provision was delayed about one year. MADRPM needed time to consider what division of DERD provided to the trainees.
	Was necessary staff allocated appropriately?	1)Comments of the Japanese experts	2)Japanese experts	1)Questionnaire or interview survey	One secretary was allocated, but her task in the Project was limited. Therefore, the Japanese experts and P/M sometimes had to do secretary works.
	Were necessary facilities provided to the Project?	1)Comments of the Japanese experts	1) Japanese experts	1) Questionnaire or interview survey	Necessary facilities were provided to the Project. No factors hindering the Project activities were found out.
	Were timing of traveling, length of stay, and curriculum of C/P training in Japan appropriate?	1) Annex 6 2)Comments of the Japanese experts and C/Ps	1)Annex 6 2)C/Ps	1)Review of the material 2)Questionnaire or interview survey	14 C/Ps in the fields of i) agricultural mechanization and extension, ii) testing and evaluation and utilization technique, iii) agricultural mechanization systems, iv)economy of agricultural mechanization, v) forage crop producing, v)agricultural machinery test and evaluation, vii) use and maintenance and trial production method participated in this training (see Annex 2 for detail). This training contributed to directly informing the C/Ps of the training system for extension personnel in Japan (e.g.: i) training system for the field of "improvement", which had not been established in Morocco, ii) system in which laboratory staff directly relates to instruction of extension personnel). The participants were able to examine directly to what extent the training system in Japan was available in Morocco. This training program was generally assessed well by the participants.
Was	Activity 1	1)Result of the	1)Project activities	1)Review of the	Activities 1-1 to 1-4 have been appropriately arranged. Especially, "monitoring" of

arrangement of Activities appropriate for producing Outputs?		Activities 1-1 to 1-4 2)Comments of the Japanese experts and C/Ps	report 2)Japanese experts and C/Ps	report 2)Questionnaire or interview survey	Activity 1-4 was a new experience for the C/Ps and they assessed this activity well.
	Activities 2-1 to 2-6, 3-1 to 3-6, and 4-1 to 4-6	1)Result of the Activities 2-1, 3-1, or 4-1 to 2-6, 3-6, or 4-6 2)Comments of the Japanese experts and C/Ps	1)Project activities report 2)Japanese experts, C/Ps	1)Review of the report 2)Questionnaire or interview survey	-Activities 2-1 to 2-6 and 3-1 to 3-6: All Activities have been appropriately arranged. Especially "monitoring" of Activities 2-6 and 3-6 was new experience for the C/Ps and they assessed these activities well. -Activity 4-1 to 4-6: All Activities have been appropriately arranged, but Activities 4-5 and 4-6 have not yet been done.
Was cost for the Project operation appropriate?	Was the Project cost appropriate? Or was unit cost of developing a training course appropriate?	Comparison with other similar projects in terms of total cost, project purpose, number of beneficiaries	JICA	Review of material	JICA has an experience of having implemented a project which is similar to this Project from 1999 to 2004 in Mexico. Compared to the project in Mexico, unit cost of training a C/P in this Project (CFMA) may be high. But number of beneficiaries (C/Ps and extension personnel, etc.) in this Project (CFMA) is large. Beneficiary of the project in Mexico was limited to C/Ps. It did not include extension personnel as beneficiary.
Did Important Assumptions necessary for attaining Outputs from Activities disturbed the achievement of Outputs?	Were supports of DERD, DPV, ORMVA, etc. enough? If the support is not enough, to what extent has this factor disturbed the achievement of Outputs?	Comments of the Japanese experts	Japanese experts	Questionnaire or interview survey	-What MADRPM needed time to provide the expenses of "testing and evaluation" and "improvement" courses for the trainees disturbed smooth achievement of Outputs 3 and 4. -DERD started to provide the expenses in April 2004, and it plans to continue providing them for three years after the Project termination.
	While budget for extension personnel training was not allocated to the Project, to what extent has this factor disturbed the achievement of Outputs?	Budget allocated to the Project	Annex 7	Review of the material	Amount of the budget was enough. But, as described above, what the expenses for extension personnel had not been regularly allocated by MADRPM affected to smooth achievements of Outputs 3 and 4.
	Are there any other factors disturbing the achievement of Outputs?	1)Project activities report 2)Comments of the Japanese experts	1)Project activities report 2)Japanese experts	1)Review of the report 2)Questionnaire or interview survey	No factors were found out.

Note. C/P: Counterpart Personnel