

ヨルダン・ハシェミット王国
乾燥地域における
先進農業技術の導入計画プロジェクト
終了時評価調査報告書

平成 23 年 2 月
(2011年)

独立行政法人国際協力機構
ヨルダン事務所

ヨル 事
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序 文

ヨルダン・ハシェミット王国（以下、「ヨルダン」と記す）の農業は農産加工流通業を含めるとGDPの28%を占め、農業セクター開発計画（2001～2010年）では、競争力のある生産体制の整備、輸出農産物の生産、雇用機会の創出により国家経済に貢献し、地域内外との農産物の生産・流通等の連携により地域の平和構築に寄与することが期待されている。ヨルダンの一部農家は近年、農業生産の競争力を高め、ヨーロッパ市場への輸出をめざしユーロGAP認証を受ける事例もある一方で、多くの小農は施設や技術、資金もなく取り残されている。

2007年、農業省国立農業研究技術移転センター（NCARTT）は同省の普及部門と統合され、国立農業研究普及センター（NCARE）となり、先進的な農業技術を普及し、生産性向上に貢献をする責務を担うこととなった。しかしながら、研究と普及活動の連携などNCAREの組織強化や、普及員の技術向上等の課題が残されている。

こうした状況の下、ヨルダン政府は、気候等の環境条件が類似したイスラエルの最先端の乾燥地農業技術をヨルダンの普及員と研究者に習得させ、農民にそれらの技術を普及する必要があるとし、三角協力による技術協力を要請してきた。これを受けJICAとヨルダン農業省は討議議事録（Record of Discussions：R/D）を署名し、2008年6月から本プロジェクトを開始した。

本プロジェクトは、日本政府が主導する「平和と繁栄の回廊」構想のひとつの支援策として位置づけられ、本プロジェクトを通してヨルダンとイスラエルが協働することにより両者間の信頼醸成に寄与することも期待されている。

2011年5月に本プロジェクトが終了するにあたり、これまでのプロジェクトの実績及び実施プロセスを確認し、評価5項目の観点から終了時評価を実施し、プロジェクト目標達成に必要な対応につき提言を行うとともに類似プロジェクトへの教訓を取りまとめ、合同評価者の間で協議を行い、その結果を協議議事録（Minutes of Meeting：M/M）に取りまとめ、署名した。

ここに本プロジェクト実施及び本調査の実施にあたり、ご協力を頂いた内外の関係者の皆様に深謝するとともに、引き続き一層のご支援をお願いする次第である。

平成23年3月

独立行政法人国際協力機構

ヨルダン事務所長 田中 俊昭

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終了時評価調査結果要約表

1 案件の概要	
国名：ヨルダン・ハシエミット王国	案件名：ヨルダン・日本・イスラエル三角協力 ヨルダン乾燥地域における先進農業技術の導入計画プロジェクト
分野：農業一般	援助形態：技術協力プロジェクト
所轄部署：ヨルダン事務所	協力金額（評価時点）：3,608万7,000円（見込み）
協力期間	<p>(R/D)：2008年6月1日～2011年5月31日</p> <p>【先方実施機関】 ヨルダン国農業省農業研究普及センター（NCARE） イスラエル国外務省国際協力局（MASHAV） イスラエル国農業国際開発協力局（CINADCO）</p> <p>日本側協力機関：該当なし</p>
1-1 協力の背景と概要	
<p>ヨルダンの国家経済において、農業部門は農産加工流通業を含めてGDPの28%を占めている。さらに、国民の雇用確保、食料の供給、農村及び遊牧地域の開発など、重要な役割を果たしている。ヨルダン政府による農業セクター開発計画（2001～2010年）には、農業部門は競争力のある生産体系により輸出向け農産物を生産し、雇用機会を創出することにより国家経済に貢献し、さらに地域内及び地域間の農産物の生産・流通などの連携によって地域の平和構築に寄与すると記されている。特に、近年ヨルダン政府は市場を開放し、農産物の競争力を高めており、ヨーロッパ市場への輸出をめざしEUROGAP認可を受ける農家も増えつつある。一方、多くの小農は施設や技術、資金もなく取り残されているのが現状である。そのような状況の中、小農のニーズに応えるべく先進的な農業技術と知識を農民へ普及することが課題となっている。</p> <p>近年、国立農業研究技術移転センター（NCARTT）は農業省の普及部門が併合され、国立農業研究普及センター（National Center for Agricultural Research and Extension, Ministry of Agriculture：NCARE）へと生まれ変わった。この組織改正により研究センターであった同センターが100名を超える普及員を抱える組織となり、先進的な農業技術と知識を普及し、ヨルダン農民の生産性向上へ貢献をする責務を担うこととなった。しかしながら、研究と普及活動の連携などNCAREの組織強化や、普及員の技術向上などさまざまな課題が残されている。</p> <p>ヨルダン政府は、自国と類似した乾燥地域で農業技術を発展させてきたイスラエルの知識と技術をヨルダンの普及員と研究者に習得させ、農民にそれらの技術を普及する必要があるとし、三角協力による農業分野での技術協力を要請してきた。また、本プロジェクトはヨルダンの農業普及員と研究者の求める知識と技術を日本とイスラエル両国が協調して提供していくことにより、ヨルダンとイスラエル両国間の信頼を醸成し、わが国が主導する「平和と繁栄の回廊」に貢献することが期待されている。</p>	
1-2 協力内容	
<p>(1) 上位計画 NCAREにおいて、研究成果を用いた普及活動が強化される。</p> <p>(2) プロジェクト目標 NCAREにおいて研究成果を用いた業務の実践・応用能力が強化される。</p>	

<p>(3) 成果</p> <ul style="list-style-type: none"> ① 普及員と研究員によって先進農業技術が習得される。 ② 研究員による、普及・実用化のための応用研究の実施事例ができる。 ③ 応用研究が普及員に共有される事例ができる。 ④ 研究及び普及活動の連携を強化するための仕組みの土台が検討され、準備される。 <p>(4) 投入（評価時点）</p> <p><日本側></p> <ul style="list-style-type: none"> ・長期専門家派遣：1名（業務調整） ・短期専門家派遣：6名派遣（イスラエル研修講師4名、応用研究セミナー講師2名） ・機材供与：624万7,000円 ・研修実施：イスラエル研修7件、ローカル研修5件、応用研究セミナー2件、普及員を対象とした現場研修2件、農民を対象としたワークショップ2件、ハイレベルワークショップ2件。 <p><ヨルダン側></p> <ul style="list-style-type: none"> ・カウンターパート配置：21名（コーディネーター、研修講師、応用研究チーム等） ・農地、施設、執務スペース、機材、家具等提供 <p><イスラエル側></p> <ul style="list-style-type: none"> ・イスラエル専門家派遣：4名（応用研究セミナー2名、ハイレベル・ワークショップ2名） ・研修実施：8件（イスラエル研修7件、ハイレベル・ワークショップ1件） ・コストシェア：USD \$13万5,089.30 		
<p>2 評価調査団の概要</p>		
調査者	<p>（担当分野：氏名、配属先、職位）</p> <ul style="list-style-type: none"> ① 日本側 総括/団長：中林 一夫（JICA国際協力専門員 農業研究・普及） 協力計画：三好 浩樹（JICAヨルダン事務所 企画調査員） 評価分析：田中 香織（OPMAC株式会社 コンサルタント） ② ヨルダン側 合同評価者：Dr. Mohammed Jitan, JICA Coordinator ヨルダン国農業省農業研究普及センター（NCARE） ③ イスラエル側 合同評価者：Mr. Benjamin Abileah, Senior Advisor イスラエル国外務省国際協力局（MASHAV） 	
調査期間	2011年1月23日～2月3日	評価種類：終了時評価
<p>3 評価結果の概要</p>		
<p>3-1 実績の確認</p> <p>(1) 成果の達成度</p> <p>成果①の達成度は中程度である。2008年12月以降の政治情勢の変化にともない、イスラエルにおける研修事業が約1年間中断された。よって研修事業の実施にかかる指標の達成度は約7～8割となっている。一方、聞き取り・アンケート結果に基づく、研修内容への満足度は高く、職場での実用性も高いとの回答が8～9割であった。</p>		

成果②の達成度は中程度である。応用研究は「不足灌漑技術」を題材に行われており、ヨルダンの農業分野が抱える課題に直接応えるものである。試験は順調に進捗しており、定期的に進捗が報告されている。しかしながら、データの精度を高めるための機材搬入が遅延し、普及目的のための試験成果が示された最終報告書についてはプロジェクト期間中に作成することは困難である。より精緻な実証データを得るには、3作期程、試験を行う必要があり、プロジェクトが15カ月間延長された場合に、成果②は達成される見込みである。

成果③の達成度は中程度である。応用研究の成果を普及員と共有するために、ワークショップ及び研修の実施、また普及用の冊子が作成される計画となっていた。ワークショップについては100%の達成度、研修に関しては8割弱の達成度であり、おおむね計画どおりの活動が行われてはいるものの、上述のとおり、一部活動は機材搬入後に確認されるより精緻なデータを得てから実施される必要がある。冊子の作成についても同様で、プロジェクト期間内の達成は困難である。

成果④の達成度は中程度である。研究と普及活動の連携のための活動計画の策定については、調査時点で進捗しており、プロジェクト期間内に達成されることが見込まれる。研究員と普及員が合同で農民向けのワークショップを定期的に開催することもめざされており、プロジェクト期間内に4回ほど実施される予定である。しかしながらより組織だった形で戦略的にワークショップが行われるようにはなっていない。

(2) プロジェクト目標の達成度

プロジェクトは、プロジェクト目標を達成する方向に向かって順調に進捗している。しかしながら、政情による1年間の研修事業の中断、及び応用研究に必要なデータ測定機材の搬入遅延により、プロジェクト終了までにすべての活動を完了することが困難であり、調査時点では達成度は中程度と判断した。

指標：普及員が、応用研究の成果を用いた普及活動が有効であると判断する。

応用研究の成果を普及員に共有するための研修活動を中心に検証した。聞き取り・アンケート調査において同研修に参加した24名中半数以上の普及員に調査を実施したところ、ほぼ全員が同研修によって業務に用いることのできる実践的な技術・知識を得ることができたと返答し、9割が既に業務で実践しているとの回答であった。一方で、同応用研究はまだ試験途上であり、精緻なデータが取得されていず、より十全な普及活動を行うには今後試験結果が報告されるのを待つ必要がある。これに基づいて、普及員による組織だった普及活動が開始される見込みである。

3-2 評価結果の要約

(1) 妥当性

本プロジェクトの妥当性は、ヨルダンの政策、受益者及びターゲットグループのニーズ、日本政府の政策、日本及びイスラエルの技術的優位性、及びプロジェクトのアプローチ（三角協力）の観点から高いと判断する。

プロジェクト開始時より日本、ヨルダンの政策、NCARE及び受益者のニーズに変化はなく、農業分野においてイスラエル及び日本がヨルダンに技術移転をする優位性、また三角協力アプローチの妥当性についても変化はない。

特に三角協力アプローチについては、日本の中東地域における中立的立場を生かして両

国間の橋渡しをすることで、外部条件としての政情の悪化が協力期間中に起こったにもかかわらず、一定のモメンタムを維持したプロジェクト活動の継続が可能となった。この面で、日本の仲介者としての役割は両国より高く評価されており、日本の存在なくしては、本プロジェクトは実現されなかったとのコメントが多く聞かれた。

(2) 有効性（阻害要因と貢献要因）

本プロジェクトの有効性はやや高い。有効性についてはプロジェクトの成果とプロジェクト目標の達成度も含めて判断した。プロジェクトは確実にプロジェクト目標へ向かって進んでいると考えるが、現時点では成果は中程度の達成状況であり、時間的制約からプロジェクト期間中に全事業を完了することはできない。

また、プロジェクト目標と成果に対する阻害要因として、政情によるイスラエル研修の1年間の中断、研修再開後の研修員数の半減、応用研究に関する機材搬入の遅れ、2010年中のトマトの疫病による試験データ取得が困難となった点、NCAREの予算不足、また、NCARE及びJICA間において、応用研究の成果普及のための研修参加に関する日当宿泊費についてのR/D記載事項に関する認識の違いが確認された。

また貢献要因として、ヨルダン側の研修員の派遣努力、研修員の参加意欲の高さ、イスラエル側の研修実施体制や内容の充実性、全関係者・機関による事業実施・継続に関するコミットメントや各種努力が確認された。

その他、研究と普及の連携活動に関しても、研究員・普及員が各事業を一緒に行うことで、日常的な業務の連携が一層深まっている。

(3) 効率性

本プロジェクトの効率性はやや高い。本プロジェクトの実施にあたっては関係者が多く調整に時間を要するが、関係各部署の努力により、イスラエル研修の一時中断、機材搬入及び予算措置の不足による応用研究関連活動の一部縮小を除き、おおむね予定どおり実施されてきた。投入も上記2点を除き、おおむね必要量が必要時に行われた。一方、プロジェクトの進捗に大きな影響を与えるものではないが、効率性に関連する項目として以下が確認された。

日本側の投入に関して、日本人講師の講義内容が充実していたとして、今後も派遣してほしいとの要望があった。

ヨルダン側の投入に関して、予算不足による応用研究及び国内研修事業の縮小、イスラエル研修参加者の少なさと、派遣準備に多大の時間が必要とされる点、イスラエル研修後の国内における技術普及活動の少なさが確認された。

イスラエル側の投入に関して、研修施設・講師・内容・スタッフ等へのヨルダン側からの満足度が高く、充実していたと評価されている。ただし、宿泊所、講義の言語について改善要望があった。

(4) インパクト

NCAREがプロジェクト目標に従った活動を継続・拡大すれば今後インパクトが高くなることが見込まれる。プロジェクトは上位目標に向かって順調に進捗しており、プロジェクト目標の内外で既に以下の正のインパクトが確認された。

イスラエル研修参加者による技術の普及、ヨルダンにおける導入が既に実践されている事例が確認された。例えば、ヨルダン渓谷におけるハーブの有機栽培試験、また北部におけるコンポスト技術の導入等がヨルダン初の試みとして進められている。

不足灌漑試験の成果の一部が既に農民と共有され、普及活動が一部始まっている。応用

研究サイトでの学生の研修事業等も実施された。さらに、試験対象作物（トマト、ペッパー）に関して時期・地域に応じて10～30%の節水が可能であることがほぼ明らかになっている。

さらに以下の正のインパクトが確認された。イスラエル・ヨルダン間の専門家間のネットワークの発展、研修事業に関する複雑でセンシティブな調整プロセスを共有したことによる両国間の更なる地域協力の土台ができた点、またプロジェクトに関与・参加した両国間の関係者内で、和平・地域間協力に対する積極的な見方が生まれ、両国間の信頼醸成に寄与した。さらに、上記インパクトをもたらすことによって、日本政府が進める「平和と繁栄の回廊構想」に寄与しつつある。

(5) 持続性

本プロジェクトの持続性はやや高い。ヨルダンの政策との整合性、NCAREの組織としての持続性は確認されるが、財務状況が厳しく活動の多くをドナー支援に依存している現状がある。一定の予算が確保されたとしても、イスラエルにおける研修事業については現状では2国間での協力を継続するのは困難であると判断するが、研修成果の国内における普及及び、両国間の専門家のネットワークは今後も持続していくことが見込まれる。

応用研究については、試験がすべて完了した後の結果次第ではあるが、試験内容の高い妥当性から、農業省の支援も得つつ試験成果を用いた普及活動が可能となることを見込まれる。研究と普及活動の連携については、調査時点で計画が策定されている最中で判断が困難であるが、NCAREは連携のための組織改変を2009年に実施しており、かつ連携のための明瞭な政策を掲げていることから、組織課題として継続的に取り組まれていくことが見込まれる。

3-3 結論

PDMに示されたプロジェクト目標を当初計画されたプロジェクト終了時、2011年5月末までに完了することは不可能と見られる。プロジェクト目標を達成するためには、凍結期間を補償するための15カ月間が必要である。

合同評価調査団はいくつかの課題、教訓を指摘した。

(1) 評価調査の結果、プロジェクト活動はJICAによる適切な調整の下でヨルダン側とイスラエル側の関係機関の間の協調によって大きな問題もなく満足のいくように実施された。しかしながら、外部条件のための凍結期間によって当初予定された2011年5月末までにプロジェクト目標は達成できないと見られる。

(2) 延長期間の終了時までには目標は成功裏に達成される見込みである。

3-4 提言

プロジェクト目標を完了するために、合同評価調査団はプロジェクトの15カ月の延長を提案する。

延長期間を含めてプロジェクト終了時まで完了すべき課題は以下のとおりである。

(1) イスラエル研修の継続

ヨルダンの普及システムが2010年に変更された。約60名の一般の普及員に加えて、30名の研究者が普及活動の仕事に従事することとなった。すなわち、専門分野から一般の普及員を教育し、技術支援を行う課題別専門家（Subject matter specialists）である。

NCAREは特に、課題別専門家をTOT (Training of trainers) によって養成したいと望んでいる。

そこで延長期間は以下の研修コースの実施を提案する。

- ① 一般普及員向けのグループ研修 (10~15名の研修員で2週間)
- ② 課題別専門家向けのTOT研修 (2~4名の研修員で3~4週間)、

これはより先進技術を含んだ個別指導の要領で実施される。

いずれのコースも、より実践的かつヨルダンで応用可能なものであるべきである。

(2) ヨルダン国内でのローカル・トレーニングの拡充

初年時に実施された3日間のローカル・トレーニングはイスラエルでの研修コースに参加できなかった普及員にとって有益であった。しかしながら、2年次から予算の制約によって切り詰められてしまった。

ローカル・トレーニングはプロジェクト目標を達成するために不可欠な活動である。JICAとNCAREはローカル・トレーニングを実施するための費用を捻出できるよう何らかの対策を講じるべきである。

(3) 応用研究の完了

応用研究「不足灌漑 (Deficit Irrigation)」は研究結果の取りまとめに必要な3作期のデータを取るために継続すべきである。

研究と普及活動の連携を強化するためにも応用研究の試験サイトでのFarmer's Dayと普及員の On-site training は応用研究における重要な活動である。

(4) 効率的・効果的な活動の実施

CINADCOの研修施設とスタッフは満足すべきものであり、日本人講師も高い評価を得ている。

さらに、研修内容が研修員のニーズに合致するために、仕事の内容、技術的背景・経験、語学力や研修に対する期待などの研修員に関する情報を研修コースが始まる前にCINADCOに送るべきである。

効率向上のために下記を提案する。

- ① 日本人講師の派遣は比較優位のある分野に限る。
- ② 既に作られたAction Planに従ってのフォローアップ活動に集中し、ハイレベル・ワークショップはこれ以上行わない。
- ③ 応用研究セミナーは研究結果の取りまとめた後 (2012年8月頃めど) に開催する。

(5) 上位目標の達成に向けて

さらに上位目標を達成するために以下の活動が必要である。

- ① 研究者と普及員そして先進農家も加えての共同で、更なる研修と普及活動の推進
- ② 新しい技術を伝播するために、更なる応用研究の推進
- ③ 気候変動下での水の保全対策や総合的病害虫防除など、地域課題に対処する活動の準備

3-5 教訓

- (1) 理論的のみならず実践的研修が普及活動には必要である。新しい技術の伝播は特に実践

的な研修（例えば、たい肥作りなど）によって習得されたものが顕著であった。

- (2) 研修の効果は研修員のレベルの均一性に依存している。多数の研修員を確保しようとするれば、研修員のニーズとのミスマッチを招きがちであり、多人数に対する研修はより一般的なものにならざるを得ない。期待される研修効果と参加人数のバランスに留意することが重要である。
- (3) 農業分野のプロジェクトの計画と実施においては、作期を十分に考慮する必要がある。
- (4) センシティブな国際情勢下でのプロジェクトでは実施において常に注意深く政治状況を配慮する必要がある。
- (5) 三角協力、多国間協力においては、新しい情報システム（例えばTV会議システムなど）は有効であり、できるだけ活用すべきである。

第1章 評価調査の概要

1-1 協力の背景と経緯

ヨルダン・ハシェミット王国「以下、「ヨルダン」と記す」の国家経済において、農業部門は農産加工流通業を含めてGDPの28%を占めている。さらに、国民の雇用確保、食料の供給、農村及び遊牧地域の開発など、重要な役割を果たしている。ヨルダン政府による農業セクター開発計画（2001～2010年）には、農業部門は競争力のある生産体系により輸出向け農産物を生産し、雇用機会を創出することにより国家経済に貢献し、さらに地域内及び地域間の農産物の生産・流通などの連携によって地域の平和構築に寄与すると記されている。特に、近年ヨルダン政府は市場を開放し、農産物の競争力を高めており、ヨーロッパ市場への輸出をめざしEUROGAP認可を受ける農家も増えつつある。一方、多くの小農は施設や技術、資金もなく取り残されているのが現状である。そのような状況の中、小農のニーズに応えるべく先進的な農業技術と知識を農民へ普及することが課題となっている。

近年、国立農業研究技術移転センター（NCARTT）は農業省の普及部門が併合され、国立農業研究普及センター（NCARE）へと生まれ変わった。この組織改正により研究センターであった同センターが100名を超える普及員を抱える組織となり、先進的な農業技術と知識を普及し、ヨルダン農民の生産性向上へ貢献をする責務を担うこととなった。しかしながら、研究と普及活動の連携などNCAREの組織強化や、普及員の技術向上などさまざまな課題が残されている。

ヨルダン政府は、自国と類似した乾燥地域で農業技術を発展させてきたイスラエルの知識と技術をヨルダンの普及員と研究者に習得させ、農民にそれらの技術を普及する必要があるとし、三角協力による農業分野での技術協力を要請してきた。また、本プロジェクトはヨルダンの農業普及員と研究者の求める知識と技術を日本とイスラエル両国が協調して提供していくことにより、ヨルダンとイスラエル両国間の信頼を醸成し、わが国が主導する「平和と繁栄の回廊」に貢献することが期待されている。

1-2 終了時評価調査の目的

2011年5月のプロジェクト終了を控え、ヨルダン及びイスラエル関係機関と合同で、プロジェクトの活動実績を確認し、計画に対する達成度の検証を行い、さらに、評価5項目（妥当性・有効性・効率性・インパクト・持続性）の観点から評価を行い、評価結果に基づき、残りの協力期間及び協力終了後における対応方針について検討し、3カ国の関係当局に提言するとともに、本協力の実施による教訓を取りまとめることを目的とする。具体的には次のとおり。

- ① これまでの活動について当初計画に照らし、投入実績、活動実績、計画達成度を確認し、問題点を整理する。
- ② 計画達成度を踏まえて、評価5項目（特に妥当性、有効性）の観点から、ヨルダン側、イスラエル側関係機関とともに、プロジェクト評価を行う。特にプロジェクト目標、成果の達成状況を慎重に見極め、障害となっている事項への対応策や協力期間の見直しについて検討、提言する。
- ③ 評価・協議結果をヨルダン側、イスラエル側、日本側の三者間の合意事項としてミニッツに取りまとめる。

1-3 調査日程：1月23日～2月3日（12日間、移動日含まず）

1-4 調査団の構成・評価者

(1) 日本側調査団

担当業務	氏名	所属
総括/団長	中林一夫	JICA国際協力専門員（農業研究・普及）
協力企画	三好浩樹	JICAヨルダン事務所 企画調査員
評価分析	田中香織	OPMAC株式会社 コンサルタント

(2) ヨルダン側評価者

ヨルダン国農業省農業研究普及センター（NCARE）

Dr. Mohammed Jitan, JICA coordinator

(3) イスラエル側評価者

イスラエル国外務省国際協力局（MASHAV）

Mr. Benjamin Abileah, Senior Advisor

1-5 評価の方法

(1) 本調査は、「新JICA事業評価ガイドライン 第1版」に基づいて実施した。調査時期はプロジェクトの終了が予定されている2011年5月の約5カ月前である。本調査は、2010年7月に作成され同年10月の運営委員会において改訂されたプロジェクト・デザイン・マトリックス（Project Design Matrix：PDM、付属資料4.参照）に基づき、プロジェクトの実績と実施プロセス、以下の5項目について評価を行った。

<評価5項目>

① 妥当性

プロジェクトが実施される国の政策や受益者ニーズと関連づけながら、プロジェクト目標や上位目標の妥当性を確認した。

② 有効性

計画した成果がプロジェクトによりどの程度達成されたかを確認した。これらの成果がプロジェクト実施の結果として達成されたかについても検証した。

③ 効率性

実施プロセスにおいて、投入がどれだけ効率的に成果の発現に生かされたかを確認した。

④ インパクト

プロジェクトの実施により直接的または間接的に発現した、正または負のインパクトを確認した。

⑤ 持続性

プロジェクトの終了後に現地実施機関によってプロジェクト目標がどの程度発展していくかを確認した。プロジェクトの実施により発現した便益が、実施国政府の政策、技術、

システム等により継続しうるか否かも検証した。

(2) 本調査で収集・分析した情報・資料は以下のとおりである。

① 関連資料

R/D、M/M、プロジェクト実施機関・カウンターパート機関・専門家・JICA関係者等による報告書、財務関連資料等。

② アンケート調査

複数の参加者が関わるプロジェクト活動項目については、アンケートを先立って実施し、その後サンプル・インタビューを行う形を採った。

③ 聞き取り調査

アンケート調査が困難である調査対象者含め、プロジェクトに関連し聞き取りが可能あるいは適切なすべての関係機関の代表者・グループに対し聞き取り調査を実施した。

④ 質問表による調査

聞き取り調査が困難である、もしくは適当でない調査対象者に対して、また聞き取り調査に先だった形で、質問表の送付による調査を実施した。

⑤ プロジェクトサイトの視察

プロジェクトが活動を実施中の応用研究試験サイト2カ所と普及活動を実施している地域センター1カ所の計3カ所を訪問した。

第2章 プロジェクトの概要

(1) プロジェクト名

(和名) ヨルダン・日本・イスラエル三角協力：ヨルダン乾燥地域における先進農業技術の導入計画プロジェクト

(英名) Introduction of Advanced Agricultural Technology for Dryland Area in Jordan under the Trilateral Cooperation, Jordan, Japan, Israel

(2) 協力期間：2008年6月～2011年5月（3年間）

(3) 相手国機関名

ヨルダン農業省国立農業研究普及センター

National Center for Agricultural Research and Extension, Ministry of Agriculture (NCARE), the Hashemite Kingdom of Jordan

(4) その他関係機関名

イスラエル外務省国際協力局

Center for International Cooperation (MASHAV), Ministry of Foreign Affairs, State of Israel

イスラエル農業・地方開発省国際農業開発協力局

Center for International Agricultural Development Cooperation (CINADCO), Ministry of Agriculture and Rural Development, State of Israel

(5) 協力内容

【上位計画】

NCAREにおいて、研究成果を用いた普及活動が強化される。

【プロジェクト目標】

NCAREにおいて研究成果を用いた業務の実践・応用能力が強化される。

【成果】

- ① 普及員と研究員によって先進農業技術が習得される。
- ② 研究員による、普及・実用化のための応用研究の実施事例ができる。
- ③ 応用研究が普及員に共有される事例ができる。
- ④ 研究及び普及活動の連携を強化するための仕組みの土台が検討され、準備される。

【活動】

- ① イスラエル研修
- ② ヨルダン現地国内研修
- ③ 農業普及を支える応用研究
- ④ ハイレベル・ワークショップ

第3章 プロジェクトの実績

3-1 投入実績（評価時点）

<日本側>

長期専門家派遣：

- ・長期専門家1名（業務調整）が2009年11月に派遣された。当初は日本人長期専門家派遣は想定されていなかったが、関係者が多く、複雑な調整が必要になったこと、NCAREがJICAの技術協力に不慣れであったこと、本プロジェクトに加えNCAREではパレスチナ、イラク、イエメン向け第三国研修が実施されており、これらに関する調整業務も必要となったことにかんがみて業務調整員を派遣することとした。

日本人講師派遣：

- ・6名を調査団ベースにて派遣（イスラエル研修講師4名、応用研究セミナー講師2名）。イスラエル研修では堆肥づくりや、接木など、日本の比較優位がある分野での研修講師を日本より招聘。研修員や研修実施機関からは高い評価を得た。応用研究セミナーに関しては灌漑の専門家（大学の研究者）を招聘。こちらも高い評価を得た。

機材供与：

- ・624万7,000円（見込み）
- ・機材供与は主に応用研究〔不足灌漑（Deficit irrigation）試験〕実施に係る機材である。一部調達については仕様の作成に必要な情報が提供されなかったこともあり、時間を要したため遅れが生じた。

研修実施：

- ・イスラエル研修7件、ローカル研修5件、応用研究セミナー2件、普及員を対象とした現場研修2件、農民を対象としたワークショップ2件、ハイレベル・ワークショップ2件。
- ・イスラエル研修及びハイレベル・ワークショップについてはイスラエル側とコストシェアを実施、ヨルダン側の活動についてはヨルダン側とコストシェアを実施。2年次にはヨルダン側が合意していたローカルコストを負担できず、一部の活動の中止を余儀なくされた。

在外事業強化費：

- ・3,185万8,000円（見込み）

<ヨルダン側>

C/P配置：

- ・コーディネーターや研修講師、応用研究チーム等21名をNCARE側は配置。具体的なC/Pの所属部署については別添の英文合同評価報告書Attachmentを参照のこと。

農地、施設、執務スペース、機材、家具等提供：

- ・NCARE本部内に長期専門家及びプロジェクトスタッフのための執務スペース二部屋を家具や

資機材とともに提供。

- ・ 応用研究にあたっては、試験用の農地の提供（試験サイト2カ所のうち1カ所は農家からの借料をJICAが負担）、試験サイトまでの移動手段としてNCARE公用車の提供。
- ・ 研修にあたっては研修場所の提供、施設、研修用機材等の利用の許可等々。

<イスラエル側>

イスラエル人専門家派遣：

- ・ 4名（応用研究セミナー2名、ハイレベル・ワークショップ2名）
- ・ ヨルダンの死海で開催された第2回応用研究セミナーにイスラエル側から2名の研究者を招聘。また、日本からも灌漑の専門家（大学研究者）が参加。
- ・ ヨルダンのアンマンにて実施された第2回ハイレベル・ワークショップでは、普及と研究の連携をテーマに3日間のワークショップが開催され、イスラエル側からはワークショップのファシリテーターとして2名の専門家が参加した。

研修実施：

- ・ 8件（イスラエルでの研修7件、ハイレベル・ワークショップ1件）（詳細別添実績参照のこと）
- ・ キブツ・シェファイムにあるCINADCOの研修センター施設の提供。

コストシェア：

- ・ USD \$13万5,089.30
- ・ 研修経費をコスト負担。コースごとの支出額については別添英文合同評価報告書参照のこと。

3-2 プロジェクト成果の活動実績と達成状況

本プロジェクトは総じてそれぞれの成果を達成する方向で実施されてきた。しかしながら、地域の政治情勢及び応用研究のデータ測定機材の搬入が遅延したことにより、一部の活動に遅れが生じた。PDMの成果とその指標に即して調査した各成果の達成状況は、以下のとおりである。

3-2-1 成果1

「普及員と研究員によって先進農業技術が習得される」

(1) 総論

成果1の達成度は中程度である。2008年12月以降の政治情勢の変化にともない、イスラエルにおける研修事業が約1年間中断された。よって研修事業の実施にかかる指標の達成度は約7～8割となっている。一方、聞き取り・アンケート調査に基づく、研修内容への満足度は高く、職場での実用性も高いとの回答が8～9割であった。

(2) 各指標の調査結果

指標1-1：イスラエルにおいて研修が10回実施される。

2008年12月のイスラエルによるガザ侵攻以来、地域の政情が悪化し、イスラエル研修は約1年間中断された。本調査時点で、全7回のイスラエル研修が実施された。よって達成度

は70%である。

指標1-2：イスラエルにおける研修に、120名以上のNCAREスタッフが参加する。

指標1-1と同様に、研修が一時中断されたことにより、調査時点で91名がイスラエル研修に参加している。達成度は76%である。

指標1-3：ヨルダンにおいて研修が8回実施される。

本調査時点で5回の研修が実施され、2011年2月に1回研修が実施される予定である。よってプロジェクト終了時までの達成度は、75%となることが見込まれる。

指標1-4：ヨルダンにおける研修に、150名以上のNCAREスタッフが参加する。

本調査時点で、88名のNCAREスタッフがヨルダンにおける研修に参加しており、2011年2月に開催予定の研修に約20名が参加予定である。よってプロジェクト終了時までの達成度は、72%となることが見込まれる。

指標1-5：イスラエルでの研修参加者が、新たな知識を習得し、同知識が業務に重要であると判断する。

調査団はイスラエル研修に参加した研修員に対しアンケート調査及び聞き取り調査を実施した。研修員全67名のうち、14名からアンケート回答を得たところ、13名（93%）が研修は必要な技術と知識を提供するうえで満足いくものであり、11名（84%）が研修内容はそれぞれの仕事に適用できると答えている。聞き取り調査においても同様のコメントと高い満足度が確認されており、本指標の達成度は高いと判断する。

指標1-6：ヨルダン、日本、イスラエルの専門家が、少なくとも3名ヨルダンあるいはイスラエルに派遣される。

本調査時点で、イスラエル人専門家2名、日本人専門家7名、ヨルダン人専門家2名がイスラエル及びヨルダンでの研修に派遣された。本指標の達成度は高い。

3-2-2 成果2

「研究員による、普及・実用化のための応用研究の実施事例ができる」

(1) 総論

成果2の達成度は中程度である。応用研究は「不足灌漑技術」を題材に行われており、ヨルダンの農業分野が抱える課題に直接応えるものである。研究は順調に進捗しており、定期的に進捗が報告されている。しかしながら、研究レベルの精度の高いデータを得るための機材搬入が、仕様を決めるために必要な情報がNCAREより提供されなかったこと等があったため遅延し、普及目的のための研究成果が示された最終報告書についてはプロジェクト期間中に作成することは困難である。より精緻な実証データを得るには、機材を搬入してから3作期程、試験を行う必要があり、プロジェクトが15カ月間延長された場合に、成果2は達成される見込みである。ただし、実務的には不足灌漑研究試験により灌漑用水の節水

に関する実証結果が出ており、研究成果が有用であることは既に示されている。

(2) 各指標の調査結果

指標2-1：試験データに基づいた報告書が提出される。

応用研究は「不足灌漑技術」を題材に行われている。同試験の進捗状況は半年ごとに報告書の形で報告されており、試験データも示されている。しかしながら、本試験に関する研究レベルの精度のデータを得るための機材搬入が遅れ、より精緻な実証データを得るには機材を搬入してから3作期程、試験を続ける必要があり、最終的な報告書についてはプロジェクト期間終了後に提出される見込みである。

指標2-2：日本及びイスラエルの専門家の参加の下、セミナーが4回以上開催される。

本調査時点で、不足灌漑に関するセミナーが2回開催され、イスラエル人専門家2名、日本人専門家2名が参加した。本指標の達成度は50%である。

指標2-3：セミナーに60名以上のNCAREスタッフが参加する。

本調査時点で、上記セミナーに30名が参加しており、その多くはNCAREの普及員及び研究員である。本指標の達成度は50%である。

3-2-3 成果3

「応用研究が普及員に共有される事例ができる」

(1) 総論

成果3の達成度は中程度である。応用研究の成果を普及員と共有するために、ワークショップ及び研修の実施、また普及用の冊子の作成が計画されている。ワークショップについては100%の達成度、研修に関しては8割弱の達成度であり、おおむね計画どおりの活動が行われてはいるものの、上述のとおり、一部活動は機材搬入後に確認されるより精緻なデータを得てから実施される必要がある。冊子の作成についても同様で、プロジェクト期間内の達成は困難である。

(2) 各指標の調査結果

指標3-1：農家向けワークショップが4回以上開催される。

本評価時点で、農家向けワークショップは2回開催されており、今後2011年3月及び5月に2回開催見込みである。よって、本指標の達成度は100%となることが見込まれる。

指標3-2：上記ワークショップに、100名以上の農民が参加する。

本評価時点で、上記ワークショップに54名の参加者があったことが確認されており、今後開催される2度のワークショップにはそれぞれ25名の参加者を見込んでいる。よって本指標の達成度は100%となることが見込まれる。

指標3-3：普及員向けの応用研究に基づいた研修が4回以上実施される。

本評価時点で、普及員向けの不足灌漑技術に関する研修が2回実施されており、2011年2月に更なる研修が開催される見込みである。よって本指標の達成度は75%となることが見込まれる。

指標3-4：上記研修に研究員及び普及員が80名以上参加する。

本評価時点で、上記研修に43名の普及員が参加しており、今後2011年2月に開催予定の研修に約20名が参加予定である。よって本指標の達成度は78%となることが見込まれる。

指標3-5：普及用の冊子が印刷される。

応用研究の結果を取りまとめた普及用の冊子は、今後機材が搬入されて以降より精度の高い実証データが得られた後に作成される予定である。精度の高いデータを得るには、試験データを得るためにJICAプロジェクトが現在搬入中の機材を用いて、今後3作期分のデータを得る必要がある。その後冊子が作成される予定であるため、JICA事業が今後3作期分続いた場合に、本指標が達成されることが見込まれる。

3-2-4 成果4

「研究及び普及活動の連携を強化するための仕組みの土台が検討され、準備される」

(1) 総論

成果4の達成度は中程度である。研究と普及活動の連携のための活動計画の策定については、調査時点で進捗しており、プロジェクト期間内に達成されることが見込まれる。研究員と普及員が合同で農民向けのワークショップを定期的に行うこともめざされており、プロジェクト期間内に4回ほど実施される予定である。しかしながらより組織だった形で戦略的にワークショップが行われるようにはなっていない。また別途フォローアップスキームにて2011年3月に車両の搬入が予定されており、より網羅的な普及活動の実施に貢献することが計画されているため、同3月以降により組織的な普及活動が行われることが見込まれる。

(2) 指標の調査結果

指標4-1-1：研究と普及活動の連携・協調に関するワークショップ（活動4-1）において活動計画が3つ以上策定される。

研究と普及活動の連携に関する活動計画は、2011年1月に開催された第2回研究と普及活動の連携・協調に関するワークショップにおいて議論され、本評価時点で、NCAREの関連部署長が素案を作成中である。近日中に素案は取りまとめられる予定であり、本指標は達成されることが見込まれる。

指標4-1-2：上記活動計画を協議するためにNCAREマネジメントが協議を開催する。

上記活動計画素案ができ次第、2011年2月中にNCARE関連部署長が協議を開催し、最終案を策定する予定である。よって事業期間中に達成される見込みである。

指標4-1-3：NCAREが上記活動計画のいくつかを実施することを決定する。

活動計画の最終案が策定され次第、NCAREが計画のいくつかについて実施することを組織決定する予定である。現時点でプロジェクト期間中に実施されることが見込まれる。

指標4-2：成果3の結果を協議するためにNCAREマネジメントが協議を開催する。

応用研究の成果に関する協議は、今後3作期を経て応用研究チームがより精緻なデータを得、最終報告が策定された時点で開催される予定である。よって本事業期間中には達成されない。

指標4-3-1：研究員と普及員が合同で農民向けのワークショップを年6回以上開催する。

不足灌漑に関する農民向けのワークショップは、普及員の参加を得て、既に2回実施され、今後4回開催される予定である。これまでのワークショップによって、研究員及び普及員の連携がより強化されたことが確認されている。しかしながら、これらワークショップがより定期的に、組織的に実施されるまでには至っていない。

指標4-3-2：プロジェクト終了時まで30名以上の研究員が普及員となる。

NCAREは、昨年中に38名の研究員を普及員とするべく指名済みである。今後2011年2月中に同38名に対する普及員となるための研修が実施される予定である。本指標は事業期間中に達成されることが見込まれる。なお、上記によって現在60名の普及員が98名になることが見込まれ、ヨルダン内での普及員不足を一定程度解消することが期待されている。

3-3 プロジェクト目標と上位目標の達成状況

3-3-1 プロジェクト目標

「NCAREにおいて研究成果を用いた業務の実践・応用能力が強化される」

(1) 総論

プロジェクトは、プロジェクト目標を達成する方向に向かって順調に進捗している。しかしながら、政情による1年間の研修事業の中断、及び応用研究に必要とされるデータ測定機材の搬入遅延により、プロジェクト終了までにすべての活動を完了することが困難であり、達成度は中程度と判断した。

(2) 指標の調査結果

指標：普及員が、応用研究の結果を用いた普及活動の内容が有益であると判断する。

本指標について、調査団は、応用研究の結果を用いた普及員向けの研修である“On-site training”より判断した。調査団は本研修に参加した24名の普及員にアンケート調査を実施し、サンプルグループに対し聞き取り調査を行った。アンケートに回答した11名のうち、全員が研修によって各自の業務に応用できる知識・技術が得られたと回答しており、また10名が、研修から得られた知見を実際の業務に用いる予定であると回答した。

聞き取り調査においても同様に、大多数の普及員が業務に適用可能な知識・技術が得られたと回答しており、より精緻な実証データが得られることを待っているとのことであっ

た。これは、本格的に普及活動するにあたり、実証的な研究データによって実験結果を裏付けないと、NCAREあるいは農業省として、普及活動にその成果を活用することができないためである。

調査時点では、すでに実践的な内容として、いくつかの農家でパイロット的に研究成果が導入されていると同時に、普及員及び農民向けに不足灌漑に関する知識・情報の認知向上を促進している。研究成果として、実際にどの程度の節水が可能かという実験結果は既に出ており、本指標はおおむね達成されたと考えられる。今後本成果を普及活動に本格的に導入するためには組織決定する必要があり、そのためにはより精緻なデータを得る必要がある。

3-3-2 上位目標

「NCAREにおいて、研究成果を用いた普及活動が強化される」

上位目標の達成度を測るのは時期尚早ではあるが、応用研究の成果を用いた普及活動は、限られた規模・内容において既に実践されており、一定の成果を挙げている。活動の一部に遅延が見られるが、NCAREの政策、マネジメントは、研究と普及活動の連携を進める明確な方針及びイニシアチブを共有している。NCAREが今後もプロジェクト目標に沿った活動を続ければ、将来的には上位目標を達成する見込みが高い。

第4章 プロジェクトの実施プロセスにおける特記事項

本プロジェクトの実施プロセスにおいて、一定レベルでの監督及び評価が組織的に実施されてきたことが確認された。運営委員会は2009年9月、2010年3月、2010年10月、2011年2月に開催されており、ほぼ半年ごとに開催されている。同委員会では、各プロジェクト活動の進捗が報告され、主な課題等についての議論がなされてきた。各研修、セミナー、ワークショップ、研究等が終了するごとに報告書が提出されている。またイスラエル側はイスラエルで実施された各研修について講師や参加者にアンケート調査を行い、評価報告として取りまとめ、続く研修事業に生かしてきた。

本件三角協力事業には、各活動を実施するために多くの関係者・機関が関与しており、複雑な調整プロセスを経る必要があった。さらにプロジェクト実施中に、政治情勢の変化に伴う各種困難が生じたが、関係者は事業を実現するためのコミットメントを強くもち、プロジェクトを成功裏に進めてきたことは特筆される。

一方で、実施プロセスに関する課題、改善事項として、以下の点が挙げられる。多くは2008年12月以降の政治環境に関連して生じたものである。ヨルダン側では、イスラエルへの研究参加を政治的理由により希望しないか取りやめる候補者が多くおり、また既に参加した者の一部はヨルダンの国内新聞にイスラエルMASHAVの活動に協力したものとして名前が挙げられ、NCAREは議会から質問状を受ける事態ともなった。候補者選定、参加者リストへの承認、ビザの取得に関わるプロセスは、プロジェクトが当初予期していたよりも大幅に時間がかかったとともに機微な対応が必要とされることが多く、プロジェクトのスムーズな実施に負の影響を与えた。イスラエル研修の内容と参加者のニーズをより整合性のあるものとされたい旨要望もあった。こうした状況を関係者が十分認識して対応してきたが、今後とも引き続き留意が必要である。

第5章 評価5項目による評価結果

5-1 妥当性

本プロジェクトの妥当性は、ヨルダンの政策、受益者及びターゲットグループのニーズ、日本政府の政策、日本及びイスラエルの技術的優位性、及びプロジェクトのアプローチ（三角協力）の観点から高いと判断する。

(1) ヨルダンの政策との整合性

ヨルダンは「国家開発計画（Executive Development Program）2011年－2013年」において、持続的な農業開発をめざすことが示されている。本プロジェクトとの関連では、「農業生産及び質の改善を促進する」、また「農業分野に関連する研究技術の成果を広めるために、専門・応用農業研究を開発し促進する」との政策課題が示されており、整合性は高い。

(2) ターゲットグループ（NCARE普及員・研究員）及び受益者（農民）のニーズとの整合性

ヨルダン農民が抱える最大の課題の1つは、農業生産過程における労働、費用、また水利用を含む運営管理等の投入をいかにして削減するかということである。本プロジェクトは、研修や応用研究において上記課題を取り上げており、さらにNCAREの普及員及び研究員の能力を強化し両者間の連携を強めることによっても上記課題に直接応えるものとなっている。

(3) わが国の援助政策との整合性

ヨルダンに対する日本の国別援助計画の援助重点目標、及びJICAの援助重点分野との整合性は引き続き確認される。具体的には日本政府はヨルダン渓谷を中心に「平和と繁栄の回廊構想」を推し進めており、JICAヨルダン事務所の重点プログラムには「地域間協力」を掲げており、本プロジェクトは上記援助政策の下で実施されている。

(4) イスラエル及び日本の技術の比較優位性

イスラエル及び日本の農業分野における技術的比較優位性は十分に確認された。イスラエル研修参加者67名のうち、アンケート回答者14名中9名（64%）が、日本技術の比較優位性を認識している。その理由としては、主に新たな技術を学ぶことができたとの回答が多かった。聞き取り調査では、日本の専門家による「接ぎ木」、「有機肥料」、「農協」などの分野で日本の技術や知見が大変有益であったとのことで、これら講義において高い満足度が得られたことが確認された。

また、イスラエル研修参加者67名のうち、アンケート回答者14名中10名（71%）が、イスラエル技術をヨルダンに適用することの意義を認識している。その理由としては、主に気候・地域的類似性が挙げられている。聞き取り調査では、イスラエルは、半乾燥地農業に関する先進技術を有しており、その技術レベルは国際的にも認められているものであり、同様の農業条件をもつヨルダンにおいて上記技術を導入することに高い意義があることは疑いがない旨確認された。

(5) 三角協力アプローチの妥当性

本プロジェクトを三角協力アプローチによって行うことの妥当性は高い。日本は政治的に中東地域において中立的立場を維持しており、この立場を生かして両国間の橋渡しをすることが可能となっている。日本による仲介によって、政情によって大変センシティブで緊張感を帯びうる両国間協力が、継続して一定のモメンタムが維持されつつ実現されてきた。アンケート及び聞き取り調査より、日本の仲介者としての上記役割が高く評価されていることが確認された。さらに日本の仲介者としての存在なくしては、本プロジェクトは実現されなかったとのコメントが多く聞かれた。

また日本にとっては、日本に比較優位性のない半乾燥地農業の先端技術について、イスラエルを技術的パートナーとし、ヨルダンに技術移転することで、技術的に十分な事業の実施が可能となっている。

5-2 有効性

本プロジェクトの有効性は中程度である。

有効性の判断には、プロジェクト目標及び成果の達成度も含めて判断した。以下有効性の阻害・貢献要因を記す。

(1) プロジェクト目標及び成果の達成への阻害要因

2008年12月のイスラエルによるガザ侵攻以降、悪化した地域情勢により、イスラエルでの研修が約1年間中断された。その後研修は再開されたが、国内世論は引き続き厳しく、NCAREは研修員を定員分確保することができず、研修員数が半減した。政治的事由以外にも、社会的・宗教的事由により、イスラエルへの参加を希望しないスタッフが多く存在する。アンケート調査によると、イスラエルを敵とみなしている一般のヨルダン人が多いため、参加研修員に対して否定的な影響を与える旨のコメントもあった。特にイスラエルによるガザ侵攻以降はヨルダンの一般世論の目も厳しく、家族の反対等にあい、参加を途中で取りやめた例もあった。CINADCO側では参加研修員の減少によって、技術的なインパクトや費用対効果が下がる旨の負の影響があったことを報告している。

応用研究における試験データを測定するための機材の搬入が遅れ、研究成果を公表するためのデータ取得が遅れた。機材搬入の遅延の理由としては、機材の仕様の特定に際し、JICA及びNCARE側の調整に多くの時間がかかったこと、またJICAの単年度予算制度の影響による。これに関し、例えば普及用の冊子の作成等関連する活動も遅れている。また、2010年に地域的に流行ったトマトの害虫災害や異常気象による夏の高温により、有意な試験データを得ることができなかったため、研究の進捗に更なる遅延が生じた。

国内研修に関する予算手当について、R/Dでは2年次以降はNCAREが日当・宿泊費を負担することが明示されているにもかかわらず、地方からの研修員の参加費用をNCARE側が負担できず、研修活動を一部縮小せざるを得なかった。同予算項目の負担についてはR/D内に一定の記載がなされているが、NCAREとJICA間で記載事項に関する認識の相違があった。NCAREでは「応用研究の成果普及のための研修に参加する日当宿泊費は応用研究経費であり、その負担はNCAREでない」と主張。また、「R/Dに記載されているのはあくまでもローカル・トレーニングに関するものであり、R/D締結時に活動の詳細が決定していなかった応用研究には当

てはまらない」との見解であった。さらにヨルダン政府の予算自体が厳しく、それに伴い NCAREの予算事情も一般的に厳しく、応用研究関連の活動にも一定の活動を縮小する必要が生じた。

(2) プロジェクト目標及び成果の達成への貢献要因

イスラエルにおける研修事業の再開後も、ヨルダン国内における世論は厳しく、イスラエルに対する反正常化（anti-normalization）の動き等もあり、「第4章 プロジェクトの実施プロセスの検証」で記したとおりの困難な状況があった。しかしながら上記状況においても、NCAREは研修員候補者を募り派遣するための地道な努力を続けた点は高く評価される。また参加した多くの研修員は、高い学習意欲をもって研修に参加した。

CINADCOによる研修実施体制に関して、ヨルダン側はNCARE及び研修参加スタッフ含め、一般に高く評価していることが確認された。研修講師、研修内容、調整員、プログラム、研修施設等について、多くの研修員が十分な満足度を示しており、イスラエル側がヨルダン側の希望を考慮した十分な配慮を行ってきたことが確認された。

本プロジェクトは政情が不安定な地域において、緊張感のある2国間関係をもつイスラエル及びヨルダンを日本が橋渡しするという三角協力の枠組みをもつものである。このため、研修員や専門家の派遣には通常必要とされる以上の複数の関係者が関わり、複数の調整手続きを経て各活動が実施されてきた。これまで記してきたような各種センシティブで困難なリスク要因や課題を抱えつつも、イスラエル、ヨルダン双方が、お互いの立場に理解を示しつつ、一定の歩み寄りを見せつつ、忍耐強く本プロジェクトを続けてきた点は、高く評価されるべきである。特にNCARE及びCINADCOの本プロジェクト継続に関するコミットメントは大変高く保たれてきており、その下で双方の担当調整官らは各種機微な調整事業を真摯に行ってきた。これら関係者の努力により本プロジェクトは継続され、一定の成果を上げることにつながってきたといえる。

5-3 効率性

本プロジェクトの効率性はやや高い。

5-2 (2) で上述のとおり、本プロジェクトの実施には、複数の関係機関・担当官が携わっており、調整作業に多くの時間を要し、プロジェクトの実施・運営そのものに困難性をもつものである。しかしながら、関係各部署の努力により、イスラエル研修の一時中断、機材搬入及び予算措置の不足による応用研究関連活動の一部縮小を除き、おおむね予定どおりの活動が実施されてきた。投入についても、上記を除きおおむね必要量が必要時に行われた。

またプロジェクトの進捗に大きく影響を及ぼすものではないが、各投入要素について各種改善要望やコメントがあった点について、以下に列挙する。

(1) 日本による投入

日本人講師については、技術的な便益が高かったとのことで、イスラエル、ヨルダン双方より高く評価されていることが確認された。通常派遣講師は1回の派遣につき数時間の講義を行うのみであるが、ヨルダン側より費用対効果及び技術的効果の面より、例えば丸1日日本人講師による講義の時間としてほしい等、より長時間の講義を得たいとの要望があった。また、

イスラエル、ヨルダン双方より、より複数の日本人講師の派遣を行ってほしい旨要望があった。

(2) ヨルダンによる投入

5-2 (1) で記したとおりNCAREの財政事情は厳しく、プロジェクト活動に関係して生じる各種経費のうち、NCAREが当初予期していなかったと主張している項目を負担することが困難な状況とのヨルダン側の弁である。具体的には、国内研修や応用研究に関連するワークショップ、セミナー、研修への参加者の参加費用（日当、宿泊費等）の支払いができなかった。これによって、開催日程を短縮せざるを得なかったり、遠方からの参加者が参加できない等の事態が生じたと説明されている。しかしながら、国内研修についてはR/Dに明示的に2年次以降についてはNCARE側が日当宿泊等のローカルコストを負担する旨が記載されているため、NCARE側が当初予期していなかったという点については認識に齟齬がある。

5-2 (1) で記したとおり、イスラエル研修は約1年間の中断後再開されたが、NCAREからの参加者は定員の半数以下にとどまった。CINADCOからは、費用対効果及び技術的インパクトの面より効率的でないとして改善要望があった。

上述してきたとおり、イスラエル研修への派遣準備に多くの時間が費やされた。NCARE内でイスラエル研修への参加者を募り、ヨルダン政府が外国に研修員を送る際には首相府から承認を得る必要もあり、かつイスラエルのビザ取得に数週間の期間が費やされ、調整担当官はじめ関係者より多くの時間・労力を要することとなった。

イスラエル研修への参加者は、帰国後、研修の成果を広めるために、国内研修等をより組織だった形で実施することが望まれていたが、帰国後の研修員の義務は数時間のプレゼンテーションを一度行うのみである。イスラエルに行くことができない、あるいは望まない普及員・研究員も少なくないため、新たな知識を国内的に広めるためのより組織だった研修を実施してほしい旨要望があった。

(3) イスラエルによる投入

CINADCOによる研修事業の組織・調整・研修施設については、ヨルダン側から高い満足度が確認されたことは上述のとおりである。特に研修スケジュール、内容ともによく検討されており、充実していたとのコメントが多く聞かれた。

ただし、研修内容と研修ニーズに部分的にミスマッチがあったことが確認された。主な要因は、事前のコミュニケーション不足による準備不足に起因するものと思われる。イスラエル側としては、本研修はテーラーメイドの研修であるため、事前に参加者の専門分野等の背景や技術水準、研修ニーズなどの情報がなければ研修のカリキュラムを作成できないとしている。他方、NCARE側は研修員の選抜にあたり、事前に研修シラバス等の研修内容に関する情報がなければ、研修内容に即した人選ができないとしている。今後の対策としては、なるべく前広にまずはイスラエル側にてコース概要を作成し、同概要に関して何度か両機関の間でやり取りし、中身を詰めていくことが望まれる。また、各研修のフィードバックを得るために、今後、研修実施後にTV会議にて関係者間で改善点などにつき議論されることとなった。

研修施設についてもおおむね高い満足度が確認されたが、宿泊施設にキブツが使用された際には、研修員から主に心情的な点及び利便性が悪い点から強い改善要望が出され、すぐに

イスラエル側が対応し、これまでどおりテルアビブの一般商用ホテルの滞在となった。キブツが宿泊施設として用いられた背景には、MASHAVからCINADCOに対して、対費用効果の観点からキブツの研修施設の稼働率を上げるように勧告があったためである。

また通常、イスラエル側の規程により、研修員は二人部屋に宿泊することとなっており、これはヨルダンのみならず、全世界からの研修員を対象とした規程とのことである。例外的にVIPを対象としたときのみ一人部屋を割り当てており、本プロジェクト内では、意思決定レベルの参加者を対象としたハイレベル・ワークショップにおいて一人部屋が割り当てられた。しかしながら一方で、DANIDAの地域間協力プロジェクトではイスラエル側がヨルダン人研修員に一人部屋を割り当てている例もあるとのことで、NCARE側から一人部屋にしてほしい旨との要望が多くあり、イスラエル側が今後対応を検討することとなっている。

講義の言語について、当初ヨルダン側からの要請により英語での講義が実施されたが、通訳も兼任しているコースリーダーの力量によっては講義内容を十分に理解できない研修員も複数発生した。これについてはイスラエル、ヨルダン双方とも問題認識を共有しており、今後の取り扱いについて再考される予定である。具体的には、イスラエル側は、基本的にはアラビア語での研修実施が可能であるが（エジプト向け三角協力にて実施済み）、一部研修内容によっては英語でのみ実施が可能である。また、通訳をつけることは可能であるが、技術用語の正確性の問題や、逐次通訳の場合時間が2倍かかる点等から、今後の検討課題とされた。一案として、イスラエル研修には英語のできるスタッフを送り、アラビア語でしか講義を理解できないスタッフを対象に、ローカルトレーニングに注力することも提案された。また、応募書類のフォームを作成し、コースが英語で実施される場合、事前に英語能力についても確認することが合意された。応募書類のフォーマットについては、JICAのものとイスラエル側のものを参照しつつ、研修員の負担にならないよう、必要最小限の情報が得られるものとする事となった。

5-4 インパクト

本プロジェクトのインパクトは、NCAREがプロジェクト目標に従った活動を継続・拡大すれば高くなることが見込まれる。

プロジェクトは上位目標に向かって着実に進んでいるが、調査時点でインパクトの程度を測るのは時期尚早である。しかしながら、プロジェクト目標のスコープ内外で既に以下の正のインパクトが確認された。

<プロジェクト・スコープ内のインパクト>

イスラエル研修による正のインパクト：イスラエル研修に参加した研修員が新しい技術を学び、普及した事例が確認された。例えば、ハーブ有機栽培の導入、コンポスト技術の導入、農家に対してパッケージ技術の普及、オリーブの木の害虫除去技術の導入等が挙げられる。ハーブ有機栽培については、イスラエルにおける研修を通じて日本人講師より技術を習得した研修員が、ヨルダンで初めての試みとして、ヨルダン渓谷においてハーブの有機栽培試験を開始している。コンポスト技術については、国内研修においてコンポストに関するイスラエル技術を習得した女性普及員が、おそらくヨルダンで初めての試みとして、北部マフラックにおいてコンポストづくりを開始し、学校、女性グループ等で普及活動を始めている。

応用研究によるインパクト：不足灌漑の実証事例を普及員、農民に提示し、同技術の普及活動も一部始まっている。応用研究サイトでは、大学の学生が一週間の研修を実施し、女学校の視察も行われた。調査時点で、トマト、ペッパーについて、北部では野菜の成長期に応じて10～30%の節水、南部では20%の節水が可能であることがほぼ明らかになっている。

研究と普及の連携：研修に普及員・研究員と一緒に参加させること、また応用研究関連活動と一緒にすること等を通じて、両者の連携が深まり、日々の業務において、より頻繁なコミュニケーションや相互支援が行われるようになってきている。

<プロジェクト・スコープ外のインパクト>

イスラエル研修あるいはイスラエル講師が参加したヨルダン国内研修の実施後、両国の専門家間での技術的な交換が続いており、2国間の技術的ネットワークが発展しており、両国にとって大きな財産となり得る。例えば地域的に生起する課題（例えば病害虫に対する取り組み等、国境を跨ぐ課題等）に対し両国で取り組んでいく必要が生じた際等に、同ネットワークを用いて早期取り組みや地域協力に基づく取り組みが可能となり得る。

イスラエルにおける研修を実施する際にさまざまな困難があったにもかかわらず、3国間での調整業務は活動が進むにつれて改善されていった。これにより、関係者間が今後更なる協力をを行ううえでの一定の物理的また精神的土台ができたといえる。

上記より、イスラエル、ヨルダンの和平・地域間協力に個人、組織、技術面で確かな正のインパクトを与えたといえる。さらに、関係者間の信頼醸成に寄与しており、程度は限定されているものの2国間の信頼醸成にも一定のインパクトを与えたといえる。

イスラエル、ヨルダンの和平・地域間協力の土台が強化されたことによって、「平和と繁栄の回廊構想」にも正のインパクトを与えたといえる。

5-5 持続性

本プロジェクトの持続性はやや高い。

(1) 政策面

本プロジェクト目標及び活動はヨルダンの「国家開発計画（Executive Development Program）2011年～2013年」に合致しており、農業省によるNCAREへの政策的支援は今後も続くことが見込まれる。普及と研究の連携に関しては、農業省の普及部門がNCAREに合併され、組織改変も行われ、NCARE内での政策的位置づけも明確であり、持続性が確認される。

(2) 制度面

NCAREには中長期計画はないが、農業省の中長期計画に基づき、年間計画・報告書は毎年作成されている。比較的大きな組織だが、本件事業に関連する部署は自律的に意欲をもって機能しており、運営管理能力に特段の問題は見当たらない。

(3) 財政面

NCAREの予算は政府の予算減にもかかわらず年々微増しているものの、政府の緊縮財政で予算事情は厳しく、ドナー予算に依存している面がある。特に研究に関しては、その多くが

ドナー予算で賄われている。財政面からの持続性については万全でなく、今後注視していく必要がある。

(4) 技術面

イスラエルとの協力に関しては、事業期間中政情が悪化しても事業が続けられてきたが、これは日本の仲介者としての存在による面が大きい。よってイスラエル研修は、JICAの協力が終了した後に継続することは困難であろう。ただし両国間で発展した専門家ネットワークは、両者に便益がありロー・プロフィールで維持することが可能なものであり、今後も継続すると考えられる。

国内研修は事業終了後も実施可能であると見込まれる。応用研究はより精緻なデータが得られよい成果が出れば、農業省の支援を得て普及活動を中心に実施することが可能と見込まれる。研究と普及活動の連携については、NCAREがここ1年間程明確な政策を示し、連携が進展しており、組織的改変も進んだため今後の持続性も見込まれる。ただし本プロジェクトによる同活動の持続性を確保するには、研究と普及活動の連携・協調に関するワークショップにて議論された活動計画を定め、実施していく必要がある。よって、現時点で成果の発現・持続性を判断することは困難である。

5-6 結 論

PDMに示されたプロジェクト目標を当初計画されたプロジェクト終了時、2001年5月末までに完了することは不可能と思われる。プロジェクト目標を達成するためには、凍結期間を補償するため、そして応用研究の栽培試験を終了させるため15カ月間が必要である。合同評価調査団はいくつかの課題、教訓を指摘した。

評価調査の結果、プロジェクト活動はJICAによる適切な調整の下でヨルダン側とイスラエル側の関係機関の間の協調によって大きな問題もなく満足のいくように実施された。しかしながら、イスラエルによるガザ地区攻撃の影響による凍結期間があったために当初予定された2001年5月末までにプロジェクト目標を完了しないであろう。延長期間の終了時までには目標は成功裏に達成される見込みである。

第6章 提言と教訓

6-1 提言

プロジェクト目標を完了するために、合同評価調査団はプロジェクトの15カ月の延長を提案する。延長期間を含めてプロジェクト終了時まで完了すべき課題は以下のとおりである。

(1) イスラエル研修の継続

ヨルダンの普及システムが2010年に変更された。約60名の一般の普及員（プロジェクト開始当時は100名以上といわれていた）に加えて、新たに30名の研究者がこれらの普及員とともに普及活動の仕事に従事することとなった。すなわち、農民に対してホームドクターのようにすべての分野の相談にのる一般の普及員に加えて、専門分野から一般の普及員を教育し、技術支援を行う課題別専門家（Subject Matter Specialists：SMS）である。NCAREは特に、課題別専門家をイスラエルでのTOT（Training of Trainers）によって養成したいと望んでいる。

また、NCAREではイスラエル研修の研修員募集は完全に「本人の希望」ベースで行われている。これまでNCAREがなるべく多くの研修員を集めようと努力してきた事実は理解すべきである。

さらに、ヨルダンにおけるイスラエルに対する国民感情は現在冷え切った状況にあり、この状況下で多人数をイスラエルに研修とはいえ送ることは困難である。一方、少人数であれば渡航の手続きも比較的容易であることから、ともかくイスラエル研修を継続したいという意図から当面は少人数を派遣して、状況が好転した段階で10名以上のグループをイスラエルに渡航させることができるとのヨルダン側の意図を理解し、イスラエル側に説明した。

そこで延長期間は以下の研修コースの実施を提案する。

- ① 一般普及員向けのグループ研修（10～15名の研修員で2週間）
- ② 課題別専門家向けのTOT研修（2～4名の研修員で3～4週間）、これはより先進技術を含んだ個別指導の要領で実施される
- ③ いずれのコースも、より実践的かつヨルダンで応用可能なものであるべきである。

(2) イスラエルで学んだ新技術を広めるためのヨルダン国内でのローカル・トレーニングの拡充

初年時に実施された3日間のローカル・トレーニングはイスラエルでの研修コースに参加できなかった（しなかった）普及員にとって有益であった。しかしながら、2年次からはNCAREの予算の制約によって切り詰められてしまった。地域センターから遠いところ（特に南部）で働く普及員はローカル・トレーニングに参加できなかった。ローカル・トレーニングはプロジェクト目標を達成するために不可欠な活動である。JICAとNCAREはローカル・トレーニングを実施するための費用を捻出できるよう何らかの対策を講じることを検討すべきである。今後、ローカル・トレーニングはイスラエルでTOTを受けた課題別専門家による普及員への新技術の伝播を高揚するものとする。

(3) 応用研究の完了

応用研究「不足灌漑（Deficit Irrigation）」は研究結果の取りまとめに必要な3作期のデータを

取るために継続すべきである。すなわち、死海南部のゴール・サーフィ試験地では2012年6月に3作目の収穫が行われ、試験データの分析の取りまとめ期間を考慮すると2012年8月末に応用研究は完了する。

研究と普及活動の連携を強化するためにも、応用研究の試験サイトでのFarmer's Dayと普及員を対象としたOn-site training は応用研究における重要な活動であるので、延長期間も積極的に行うべきである。

(4) 限られた資金において、効率的・効果的な活動の実施

CINADCOの研修施設とスタッフは満足すべきものであり、日本人講師も高い評価を得ている。さらに、研修内容と研修員のニーズを合致させるために、仕事の内容、技術的背景・経験、語学力や研修に対する期待などの研修員に関する情報を研修コースが始まる前にCINADCOに送るべきである。さらに効率向上のために下記を提案する。

- ① 日本人講師の本協力に対する貢献度は大きいですが、これまでは派遣された日本人講師には、エジプト・日本・イスラエル三角協力によるエジプト人研修員に対する講義とパレスチナ農業技術プロジェクトのカウンターパートへの講義にも合わせて行ってもらった。現在はエジプト・日本・イスラエル三角協力とパレスチナ農業技術プロジェクトのフェーズ2が再開されていない。このような状況下では本件のみに対する日本人講師をすべての研修コースに派遣することは費用対効果の観点から不可能である。そこで、日本人講師の派遣は比較優位のある分野（たい肥作り、普及員のコミュニケーションスキル等）に限る。
- ② 既に作られたAction Plan に従ってのフォローアップ活動に集中し、ハイレベル・ワークショップはこれ以上行わない。
- ③ 応用研究セミナーは研究結果の取りまとめた後（2012年8月頃めど）に開催する。

さらに、プロジェクト終了後、上位目標を達成するために以下の活動が必要である。

- ① 研究者と普及員そして先進農家も加えての共同で、更なる研修と普及活動の推進
- ② 新しい技術を伝播するために、更なる応用研究の推進
- ③ 気候変動下での水の保全対策や総合的病虫害防除等、地域課題に対処する活動の準備

6-2 教訓

プロジェクト実施の過程でヨルダン・日本・イスラエルの3者は以下を教訓として学んだ。

- ・理論的研修のみならず実践的な研修が普及活動には必要である。すなわち、新しい技術の伝播は特に実践的な研修（例えば、たい肥作りやオリーブ樹の害虫トラップ等）によって習得されたものが顕著であった。
- ・研修の効果は研修員のレベルの均一性に大きく依存している。多数の研修員を確保しようとするれば、研修員のニーズとのミスマッチを招きがちである。したがって多人数に対する研修はより一般的なものにならざるを得ない。
- ・農業分野のプロジェクトの計画と実施においては、作期を十分に考慮する必要がある。
- ・センシティブな国際情勢下でのプロジェクトでは、実施において常に注意深く政治状況を配慮する必要がある。
- ・三角協力、多国間協力においては、新しい情報システム（例えばTV会議システムなど）は有

効な手段であり、できるだけ活用すべきである。

- ・イスラエル・ヨルダン間の専門家間のネットワークの発展、研修事業に関する複雑でセンシティブな調整プロセスを共有したことにより両国間の更なる地域協力の土台ができた。
- ・またプロジェクトに関与・参加した両国間の関係者内で、和平・地域間協力に対する積極的な見方が生まれ、両国間の信頼醸成に寄与した。さらに、日本政府が進める「平和と繁栄の回廊構想」に貢献した。
- ・イスラエル研修に参加した日本人講師からは、イスラエル、ヨルダン、パレスチナの農業事情を知ることができ、帰国後の授業に役立てており、学生、受講者の中に中東地域の事情が理解されつつある。
- ・乾燥地における先進農業技術について、イスラエルは豊富な経験と人材をもっており、特に灌漑技術、羊の飼育などでは日本からの講師も学ぶことが多かった。ヨルダンとは農業における環境、課題（限られた水資源のもとでの灌漑等）が同じであり、実践的な研修が可能である。
- ・近隣国のリソースを活用することにより経費の削減が可能である。
- ・イスラエルはヨルダンの隣国であり、農産物出荷先の競合も懸念しているため、研修内容に制限がある（花卉などのポスト・ハーベスト、流通等）。こうした点は、第三国として日本が関与することで、研修にて制限されている不足技術を補うことも可能である。
- ・イスラエルを巻き込んだ三角協力は、半乾燥地農業技術分野での比較優位性が高く、アフリカなどの半乾燥地域でも活用が可能と思われる。
- ・政治的な機微のある2国間に、中立的な日本が三角協力に介在することで、技術移転を介した協働作業を実施し、関係者の信頼関係を醸成することができる。

第7章 団長所感

2008年6月、先行する対エジプト三角協力を追う形で、イスラエルを巻き込んだ対ヨルダンの三角協力が始まった。本件は、日本政府が主導する、日本独自の中東和平貢献策である「平和と繁栄の回廊構想」に位置づけられるものである。技術協力をとおして、ヨルダンとイスラエルが協働することで、両者間の信頼醸成に寄与することが期待されている。また、純粹に技術協力の観点からは、気候等の環境条件が似ている隣国イスラエルの最先端の農業技術をヨルダンに導入することで、限られた水資源を有効活用し、かつ、農業生産性を向上することで、ヨルダンの経済発展にも資することが期待されている。このように本件は、技術協力をツールとして平和構築活動に貢献するために活動しているという、これまでにない、きわめてユニークな案件となっている。

プロジェクト進行の途中で、イスラエルのガザ侵攻などもあり、ヨルダン国内の世論が高まり、活動の一部が中断することを余儀なくされた。しかしながら、できることをできる範囲内で粛々と活動を続けてこれたのも、イスラエル側はもとより、きわめて政治的な機微のある状況下でのヨルダン側の協力継続に関する強いコミットメントがあったためであると理解している。また、パレスチナ事務所をはじめとするJICA関係者におかれても、関係者が多い中でイスラエル側、ヨルダン側の調整を地道に実施し、一丸となって本協力を継続したいという強い意志の下、一致団結して協働した成果だとの認識である。

今般、2011年5月にプロジェクトを終了するにあたり、2011年1月23日から2月3日にかけて終了時評価を実施した。関係者へのインタビューや質問紙票により情報を集め、分析し、ヨルダン側及びイスラエル側からの合同評価者を交えて評価を実施した。上述したとおり、プロジェクト期間中活動の一部が中断したこともあり、最終的に作期も勘案し15カ月の期間の延長することで、ヨルダン側、イスラエル側、日本側で合意した。本報告書は同調査を取りまとめたものであり、延長後のプロジェクトの活動に、また、さらには類似のプロジェクトにその教訓が活用されることを願うものである。

ヨルダンにおいては、親類・家族の事情、宗教上の事情によってイスラエル研修に参加できない人たち、特に女性の普及員も多い。この人たちはイスラエル研修参加者によるローカル・トレーニングを強く望んでいる。例えば、イスラエル研修で「たい肥作り」を学んだ研修員によってヨルダンで開催されたローカル・トレーニングでその技術を学び、地域の学校や農村女性グループに教えたと報告してくれた女性普及員の言葉は本三角協力がヨルダンの普及員の能力向上に貢献していることを示している。延長期間においても、実践的な研修を受けることによって、さらに多くの普及員に先進的な農業技術を学びとってほしいと願っている。

付 属 資 料

1. 調査日程
2. 主要面談者
3. ミニッツ（含む英文合同評価報告書）
4. PDM
5. 評価グリッド
6. 質問票、質問項目など
7. データ収集・分析結果

1 . 調査日程

Appendix 1

Mission Schedule

Date	Time	Visiting Place	Activities/Event	Remarks		
Jan.	23	Sun	13:00-17:00 17:00-	JICA Jordan Office Preparation Meeting		
	24	Mon	8:30-10:30 1hour	NCARE Interview with Director General of NCARE Interview with Project Coordinator of NCARE		
			12:00-13:00	Ministry of Planning Interview with Officers of Ministry of Planning and International Cooperation		
			13:30-14:30	Ministry of Agriculture Interview with Officer of Ministry of Agriculture		
			14:30-15:00		Telephone interview with Secretary of Israeli Embassy	
			25	Tue	8:30-9:30 9:30-10:30 10:30-11:30 12:00-13:00 1hour	NCARE Interview with NCARE Staff regarding Trainings Interview with Coordinator of Applied Research Group Group Interview with participants in Israeli training Group Interview with participants in training with in Jordan Interview with Project Staff of JICA
	26	Wed	9:30-10:00	Mafrag Regional Center Interview with Staff of Applied Research		
			10:00-11:00	Interview with Extension agents who attended the applied research training		
			11:00-12:00	Interview with farmers		
			12:00-13:00	Interview with Director of Extension Unit and Extension agents		
			13:00-13:30	Interview with Director of Mafrac Regional Center		
			13:30-15:00	Observing the experimental site (to check the equipments JICA provided)		
	27	Thu	10:00-13:00	Dair alla Regional Center Interview with Director of Dair alla Regional Center and Extension agents Observing Dair alla Regional Center		
	28	Fri		Report writing		
	29	Sat		Report writing		
30	Sun	10:00	JICA Jordan Office TV Conference Room/JICA Tel Aviv Office TV Conference Room Interview with Training Coordinators, the former Director of Training, CINADCO, Officers of MASHAV			
		15:00	JICA Jordan Office Reporting progress of the study and a meeting for drafting M/M			
31	Mon	10:00-11:00	Ghore al Safi Regional Station Interview with Staff of Applied Research			
		11:00-13:00	Interview with Extension agents who attended the applied research training			
		13:00-14:00	Interview with farmers			
		14:00-15:00	Interview with Extension agents and Researchers			
		15:00-15:30	Observing the experimental site			
		10:00	NCARE Reporting progress of the study and a meeting for drafting M/M			
Feb.	1	Tue	11:00	Crowne Plaza Amman Discussion on drafting M/M		
	2	Wed	9:00	Crowne Plaza Amman Discussion on drafting M/M		
	3	Thu	14:00	Crowne Plaza Amman Signing of M/M	Evaluation Team Member	
			15:00	Crowne Plaza Amman Steering Committee Meeting		

2 . 主要面談者

list of the main interviewees

Appendix 2

No.	Date	Interviewee	No.of peoples	Place	Remarks
1	24 Jan 2011	General Director of NCARE	1	NCARE HQ	
2	24 Jan 2011	Officers of Ministry of Planning and International Cooperation	4	Ministry of Planning and International Cooperation	
3	24 Jan 2011	Officers of Ministry of Agriculture	1	Ministry of Agriculture	
4	24 Jan 2011	Officer of Embassy of Israeli in Jordan	1	On phone	
5	25 Jan 2011	NCARE Staff in charge of Trainings and the Project	3	NCARE HQ	
6	25 Jan 2011	NCARE Staff in charge of Coordination of Applied Research	1	NCARE HQ	
7	25 Jan 2011	Participants of Training in Israel and Jordan	12	NCARE HQ	
8	26 Jan 2011	Applied Research Team members	6	NCARE Mafraq Regional Center	
9	26 Jan 2011	Extension Agent	5	NCARE Mafraq Regional Center	
10	26 Jan 2011	Director of Mafraq Extension Unit	1	NCARE Mafraq Regional Center	
11	26 Jan 2011	Director of Mafraq Regional Center	1	NCARE Mafraq Regional Center	
12	26 Jan 2011	Farmers	7	NCARE Mafraq Regional Center	
13	27 Jan 2011	Participants of Training in Israel and Jordan	5	NCARE Dair alla Regional Center	
14	27 Jan 2011	Director of Dair alla Regional Center	1	NCARE Dair alla Regional Center	
15	30 Jan 2011	Officers of MASHAV	2	Through TV conference system	
16	30 Jan 2011	Training Coordinators of CINADCO	2	Through TV conference system	
17	30 Jan 2011	Former Director of Training, CINADCO	1	Through TV conference system	
18	31 Jan 2011	NCARE Staff	5	NCARE Ghore al Safi Station	
19	31 Jan 2011	Farmers	9	NCARE Ghore al Safi Station	

**MINUTETES OF MEETING ON
THE 4th STEERING COMMITTEE MEETING FOR
THE TERMINAL EVALUATION REPORT
FOR
TRI-LATERAL TECHNICAL COOPERATION PROJECT
(JORDAN-JAPAN-ISRAEL) CONCERNING THE INTRODUCTION OF
ADVANCED AGRICULTURAL TECHNOLOGY IN DRYLAND**

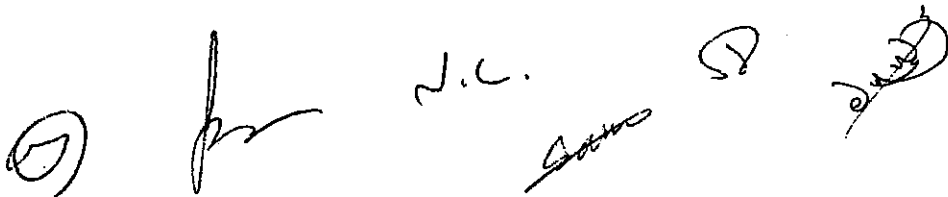
The Japanese Terminal Evaluation Team organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") visited the Hashemite Kingdom of Jordan (hereinafter referred to as "Jordan") from January 23 to March 4, 2011, for the purpose of conducting the Terminal Evaluation of the Trilateral Technical Cooperation project (Jordan-Japan-Israel) concerning the Introduction of Advanced Agricultural Technology in Dryland (hereinafter referred to as "the Project").

The Joint Evaluation Team (hereinafter referred to as "the Team"), which consists of three members from JICA and one member from the National Center for Agricultural Research and Extension of Jordan (hereinafter referred to as "NCARE") and one member from the Center for International Cooperation of Israel (hereinafter referred to as "MASHAV") was jointly organized for the purpose of conducting the terminal evaluation and preparation of necessary recommendations to the respective governments.

After intensive study, analysis, discussions of the activities and achievements of the Project, the Team prepared the Terminal Evaluation Report (hereinafter referred to as "the Report"), which was presented to the Steering Committee (hereinafter referred to as "the Committee").

The Committee discussed the major issues pointed out in the Report and agreed to recommend to the respective governments the matter attached hereto.

Amman, February 3, 2011

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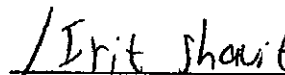
Mr. Toshiaki Tanaka
Chief Representative,
Jordan Office
Japan International Cooperation Agency



Dr. Faisal Awawdeh
Director General,
National Center for Agricultural
Research and Extension
Ministry of Agriculture of Jordan



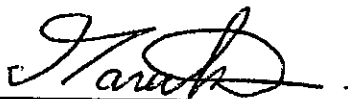
Mr. Moshe Goren,
Director,
CINADCO, Center for International
Agricultural Development Cooperation,
Ministry of Agriculture of Israel



Mr. Haim Divon
Deputy Director General,
Head of the Center for International
Cooperation
Ministry of Foreign Affairs of Israel



Ms. Samar Jmyaan
Responsible for Agricultural Sector,
Ministry of Planning and
International Cooperation of Jordan



Mr. Izumi Tanaka
Chief Representative,
Tel Aviv Office
Japan International Cooperation Agency

Dr. Malik Mahadeen
Director,
Studies and Policy Department,
Ministry of Agriculture of Jordan

d.c.
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Major Points of Discussions and Agreements in the Committee are as below;

- 1. The Team presented the Report to the Committee.**
- 2. The Committee accepted the Report.**
- 3. The Committee agreed that the Project is to be extended for fifteen months, that is, up to August, 2012.**
- 4. The Committee agreed that it is essential to accelerate dissemination of the Project outputs throughout Jordan.**

Attachment: The Terminal Evaluation Report

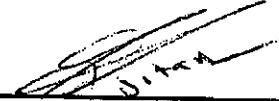
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**THE TERMINAL EVALUATION REPORT
FOR
TRILATERAL TECHNICAL COOPERATION PROJECT
(JORDAN-JAPAN-ISRAEL) CONCERNING THE
INTRODUCTION OF ADVANCED AGRICULTURAL
TECHNOLOGY IN DRYLAND**

Amman, February 2, 2011

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1. Introduction

1.1 The Objectives of the Terminal Evaluation of the Project

Japan International Cooperation Agency (JICA) in cooperation with NCARE, CINADCO, and MASHAV had a joint evaluation for the project "Introduction of Advanced Agricultural Technology for Dryland Area in Jordan under Trilateral Cooperation, Jordan-Japan-Israel" which started from June 2008 and is ending in May 2011. Before project completion, the terminal evaluation was implemented for the following objectives;

- (1) To determine to what extent the planned Outputs and Project Purpose have been achieved and expected to be achieved by the end of the project, and to examine the possibility to achieve the Overall Goal of the project after the completion of the project, based on the Project Design Matrix (PDM),
- (2) To assess the implementation process of the Project,
- (3) To evaluate the Project based on the five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability),
- (4) To clarify what must be conducted in the remaining period of the Project and make a conclusion, recommendations, and lessons learnt,
- (5) To draw lessons that would be useful for other projects in the same fields which are on-going or going to be planned.

1.2 Method of Evaluation

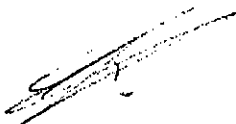
The achievements and progresses of the Project were evaluated using the latest Project Design Matrix (PDM for version 2.0)¹. The team evaluated the achievements of the Project based on the following five (5) criteria and resources:

1.2.1 Criteria of Evaluation

(1) Relevance

Relevance refers to the validity of the Project Purpose and the Overall Goal in connection with the policy direction of the government of Jordan as well as needs of beneficiaries.

¹ See Appendix 1. The PDM has been prepared in July 2010, and revised and approved by the Steering Committee held in October 2010.

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(2) Effectiveness

Effectiveness refers to the extent to which the expected benefits of the Project have been achieved as planned, and examines if the benefits were brought about as a result of the Project.

(3) Efficiency

Efficiency refers to a productivity of implementation processes, and examines if the inputs of the Project were efficiently converted into the Outputs.

(4) Impact

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

(5) Sustainability

Sustainability refers to the extent to which the Project can be further developed by the government of Jordan, and benefits generated by the Project can be sustained under the government of Jordanian policies, technologies, systems, and financial status.

1.2.2 Source of Information

- (1) Record of Discussion,
- (2) Minutes of Meetings,
- (3) Various Reports submitted by the Project,
- (4) Interviews and/or questionnaires with major stakeholders including NCARE, CINADCO, Jordanian farmers, relevant ministries and embassies in Jordan and Israel, JICA etc.

1.2.3 Members of a Joint Evaluation Team

Name	Designation	Affiliation
JAPAN		
Dr. Kazuo NAKABAYASHI	Team Leader	Senior Advisor, JICA
Mr. Hiroki MIYOSHI	Project Coordinator	Project Formulation Advisor, JICA Jordan Office
Dr. Kaori TANAKA (Ms.)	Evaluation Analyst	Consultant, OPMAC Co. Ltd

JORDAN		
Dr. Mohammad Jitan	Joint Evaluator	Coordinator for JICA, NCARE
ISRAEL		
Mr. Benjamin Abileah	Joint Evaluator	Senior Advisor, MASHAV

1.2.4 Mission schedule

JICA evaluation mission was dispatched to Jordan for 2 weeks to have the joint evaluation with the counterpart from Jordan and Israel. The schedule is attached in the annex.

2. Outline of the Project

2.1 Background of the Project

The agriculture sector is one of the pillars of the Jordanian national economy. This sector including agribusiness, contributes to about 30% of GDP and its social role is significant in securing employment, producing food and developing rural areas. In the Agricultural Sector Development Program (2001-2010), the Government of the Hashemite Kingdom of Jordan seeks to achieve:

- Agricultural sector that contributes to a significant part of the national economy through competitive and market-oriented agricultural production, foreign trade and provision of employment opportunities;
- Agricultural sector that contributes to confidence building by cooperation with the countries in the region through production, and trade of food and agricultural commodities.

Especially in recent years, the Jordanian Government has expanded its market and increased competitiveness of the agricultural products. More farmers are receiving EUROPEGAP certificates to export their products to European markets in addition to Gulf countries markets. However, most of the small farmers have no access to facilities, knowledge, technology, and resources to benefit from newly emerged

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business opportunities.

NCARE (National Center for Agricultural Research and Extension) is now responsible not only for research activities but also for extension services, with about 100 extension agents being transferred from the Directorate of Extension, Ministry of Agriculture. NCARE is keen to clarify the roles of research and extension system, and develop the capacity of human resources so that they would be able to provide technical support to the small farmers who need improvements in their agricultural practices.

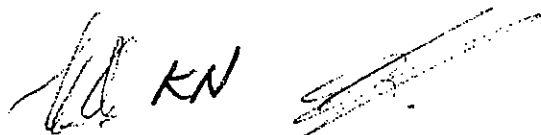
Furthermore, NCARE is expected to play an important role as *"the regional center of agricultural research and training in the Middle East"*. The capacity of the researchers of NCARE as trainers to other countries will be strengthened as well under the trilateral cooperation program.

This project is expected to contribute to confidence building between Jordan and Israel, furthermore, to the Japanese Government's initiative of "Corridor for Peace and Prosperity".

2.2 Project Design Matrix (PDM)

Narrative Summary of PDM agreed in October 2010

Overall Goal	Extension activities utilizing research outcomes are enhanced.
Project Purpose	Capacity of NCARE to apply research outcome to practical extension work is strengthened.
Output 1	Advanced agricultural knowledge and technology is acquired by researchers and extension agents.
Output 2	Good practice of extension-oriented applied research, which meets local needs, is conducted.
Output 3	Good practice of applied research which procedures, outcome and knowledge extracted from are shared and collaborated among researchers and extension agents is created.
Output 4	Mechanism to enhance collaboration between research activities and extension work in NCARE is considered and instituted.

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3. Achievement of the Project

3.1 Inputs

Details are as attached documents. Summary are as follows.

3.1.1 Japan's Contribution

1) Dispatch of experts

A long term expert has been dispatched as a project coordinator since November 2009. The expert is expected to complete the duty by May 2011.

In the original plan, dispatches of short term experts were expected to each training course in Israel and the applied research seminar. Although the exact number of these experts was not clearly mentioned in R/D, the core stakeholders on the project estimated more or less 10 experts will be dispatched during the whole period. So far, JICA dispatched 6 short term experts until January 2011. They instructed in a variety of topics such as irrigation, marketing, livestock, and so on.

2) Provision of provided equipment and materials

Equipment for the applied research is provided. Some of them are still under procurement to collect precise data at academic level. In addition, some consumable such as fertilizer, pesticide and so on have been provided for the experiment.

3) Training for counterparts and workshops for farmers

The Project conducted training programs and workshops in Israel and Jordan. The summary is as follows. Regarding the details, it should be referred to the attachment record.

① Israel Training:	7 courses, 91 participants
② Local Training:	5 courses, 112 participants
③ Applied Research Seminar:	2 times, 30 participants
④ On-site Training:	2 times, 43 participants
⑤ Farmer's day Workshop:	2 times, 54 participants
⑥ High Level Workshop:	2 times (1 in Israel, 1 in Jordan), 22 participants

3.1.2 Jordan's Contribution

1) Assignment of counterpart personnel

NCARE has assigned following personnel as counterparts

- ① Project Director: Director General, NCARE
- ② The Coordinator: Coordinator for JICA, NCARE
- ③ Counterpart staffs for training activities and the applied research

And experts were dispatched as lecturers to the Courses in Israel, Local Trainings as well as Applied Research Seminars.

2) Office space

NCARE has provided 2 office spaces for the long term expert and a project staff in the building of NCARE.

3) Equipment, furniture, facilities

NCARE has also provided some equipment and furniture for the project and project activities.

- ① Office equipment: a printer, telephone, telephone line, internet line, a desk and chair etc.
- ② Applied Research activities: Experiment site (at Ghore Al Safi), related equipment, laboratory facility for testing.
- ③ Trainings: Training venue, transportation for trainees, training materials etc.

4) Car

NCARE have provided a car to the applied research activities.

5) Daily transportation

For the project coordinator to commute to the project office in NCARE

3.1.3 Israel's Contribution

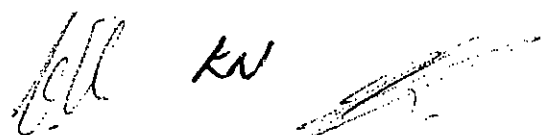
1) Holding the training courses as follows

Regarding the details, it should be referred to the attachment record.

- ① Israel Training: 7 courses, 91 participants
- ② High Level Workshop: 1 time, 6 participants

2) Dispatch of experts

- ① 2 experts for the Applied Research Seminar
- ② 2 experts for the High Level Workshop



3) Cost sharing

Year	No.	Course name	MASHAV share	JICA share
FY2008	1	Modern irrigation	14,352.25	11,786.40
	2	Marketing	18,978.55	15,723.16
	3	Soil, water data	14,200.52	11,786.40
	Sub-total		47,531.32	39,295.96
FY2009	1	High level workshop	17,631.86	12,655.39
	Sub-total		17,631.86	12,655.39
FY2010	1	Livestock	19,541.07	16,079.10
	2	Post harvest	20,738.44	16,696.00
	3	Organic agriculture	23,022.24	16,863.00
	4	Vegetable production	6,624.37	4,198.24
	Sub-total		69,926.12	53,836.34
Total (in USD)			135,089.30	105,787.69

3.2 Outputs

In general, the team confirmed that the project has been implemented in the direction of achieving each output according to the PDM revised in October 2010. However, due to the political context in the region as well as the delay of the equipment procurement, there was a delay in some of the activities.

3.2.1 Output 1: Advanced agricultural knowledge and technology is acquired by researchers and extension agents.

Indicators

1-1: Ten (10) training courses in Israel are held.

At the moment of the terminal evaluation, 7 training courses in Israel were held. Since December 2008, the training courses in Israel had been suspended for about one year due to the political context in the region. Thus, the achievement level of the indicator 1-1 is 70%.

1-2: More than one hundred twenty (120) participants attend training courses in Israel.

At the moment of the terminal evaluation, 91 participants were trained in the courses in Israel. The project suspended the training courses in Israel during 2009. The achievement level of the indicator 1-2 is 76%.

1-3: Eight (8) training courses are held in Jordan.

At the moment of the terminal evaluation, 5 training courses were held and 1 additional course is to be held in February 2011. Thus, the achievement level of the indicator 1-3 is expected to be 75%.

1-4: One hundred and fifty (150) participants attend training courses in Jordan.

At the moment of the terminal evaluation, 88 participants were trained in the courses in Jordan. 1 additional course is to be held in February 2011 with about 20 participants. Thus, the achievement level of the indicator 1-4 is expected to be 72%.

1-5: Participants of trainings in Israel judge that they gained new knowledge and those are important to their work.

The evaluation team conducted a questionnaire survey as well as interviews to the sample group. Among 67 participants to the Israeli training courses, the team received 14 answers to the questionnaires. Out of 14 answers, 13 participants (93%) answered the courses were satisfactory to provide necessary skills and knowledge and 11 (84%) answered they can apply them to the work. The team also confirmed during the interviews that most of the participants think the new knowledge obtained from the courses are applicable to their work.

1-6: At least 3 experts to be dispatched from Jordan, Japan and Israel.

At the moment of the terminal evaluation, 2 Israel experts, 7 Japanese experts, and 2 Jordanian experts were sent to give lectures in Israel and Jordan. Thus, the achievement level of the indicator 1-6 is 367%.

3.2.2 Output 2: Good practice of extension-oriented applied research, which meets local needs, is conducted.

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Indicators

2-1: Report is submitted based on experimental data.

The research team member have been conducting the deficit irrigation research, and been submitted the progress reports semi-annually based on the experimental data. However due to the delay of the procurement of a certain equipments, it has to wait for another 3 seasons after the equipment delivery to measure and confirm the experimental data. Thus, though the indicator 2-1 has been achieved in general, the final research report with the confirmed data will be published after the project period. The initial result of the research is attached hereto as a report in appendix 7.

2-2: More than four (4) seminars are held with participation of experts from Japan/Israel.

At the moment of the terminal evaluation, 2 seminars of the applied research for the deficit irrigation were held with the participation of 2 Israeli and 2 Japanese experts. The achievement level of the indicator 2-2 is 50%.

2-3: More than sixty (60) participants attend seminars.

At the moment of the terminal evaluation, 30 participants (majorities are the researchers and extension agents of NCARE) attended to the 2 seminars for the deficit irrigation. The achievement level of the indicator 2-3 is 50%.

3.2.3 Output 3: Good practice of applied research which procedures, outcome and knowledge extracted from are shared and collaborated among researchers and extension agents is created.

Indicators

3-1: At least four (4) workshops for farmers are held.

At the moment of the terminal evaluation, 2 workshops for farmers were held and another 2 workshops are to be held in March and May 2011. If the plan was realized, the achievement level of the indicator 3-1 is expected to be 100%.

3-2: At least one hundred (100) farmers attend workshops.

At the moment of the terminal evaluation, 54 farmers attended to the 2



workshops. The planned workshops in March and May 2011 expect to have about 25 farmers for each. If the plan was realized, the achievement level of the indicator 3-2 is expected to be about 100%.

3-3: At least four (4) training of applied research for extension agents are held.

At the moment of the terminal evaluation, 2 training courses were held and another course is to be held in February 2011. Thus, the achievement level of the indicator 3-3 is expected to be 75%.

3-4: At least eighty (80) extension agents and researchers attend training of applied research.

At the moment of the terminal evaluation, 43 extension agents attended to the trainings of applied research on the spot. Another training is to be held in February 2011 with about 20 participants. The achievement level of the indicator 3-4 is expected to be 78%.

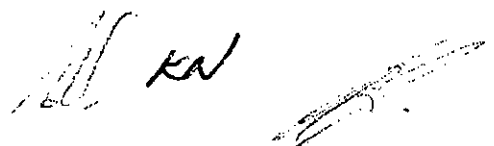
3-5: A brochure/booklet is printed.

A brochure or a booklet which summaries the experimental results of the applied research will be published after the applied research team obtained the data measured by the equipment to be procured by the JICA project. To secure the accuracy of the data which can be publicized, it needs to have at least 3 seasons to measure with the equipment, thus the brochure can be published only if the project continues to support the research unit activities for another 3 seasons.

3.2.4 Output 4: Mechanism to enhance collaboration between research activities and extension work in NCARE is considered and instituted.

4-1-1: At least three (3) action plans are made in the workshop of activities 4-1.

It was planned that action plans is to be developed as a result of the second high level workshop held in January 2011. In practice, based on the discussions made during the workshop, the NCARE relevant managers are developing action plans as a follow up activities.

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4-1-2: Meeting is held among the managers of NCARE to discuss the action plans 4-1.

The meeting among NCARE relevant managers to finalize the action plans will be held in February 2011.

4-1-3: NCARE decides to realize some of the action plans 4-1.

It is expected that NCARE will decide to realize some of the action plans by the end of the project period. As for its implementation, it is out of the scope of the project; however it is desirable that the project will take a certain measures to confirm the implementation process, so that the output 4 will help achieving the project purpose as well as the overall goal.

4-2: Meeting is held among the managers of NCARE to discuss the results of output 3.

It is planned to be held when the applied research team has produced a certain output. At the moment, it is expected that the applied research team needs to have another 3 seasons to obtain the official data. Thus, the meeting is expected to be held after the project period.

4-3-1: At least six (6) workshops for farmers by researchers and extension agents together are held every year.

The JICA project has already organized 2 workshops for farmers and another 2 workshops to be held by the end of the project term, as mentioned in the indicators 3-1 and 3-2. Those workshops had provided valuable opportunities for researcher and extension agents to show the further possibilities for their already existing collaboration activities. The project targets to have those occasions to be regular and strategic, and with the expanded capacity of NCARE staff mobility with the vehicles. The vehicles are to be procured by a JICA follow-up scheme in March 2011 (outside of the scope of this project). Thus, the periodical and systematic workshops for farmers are expected to be organized sometime after March 2011.

4-3-2: More than thirty (30) researchers become extension agents by the end of the Project.

NCARE nominated 38 researchers to let them work as an extension agents in the last quarter of 2010. It is planed that the nominees will

attend training courses to increase their capacity to be an extension agent in February. Thus, it is assumed that the indicator 4-3-2 will be achieved by the end of the project period.

3.3 Project Purpose and the Overall Goal

3.3.1 Project Purpose: Capacity of NCARE to apply research outcome to practical extension work is strengthened.

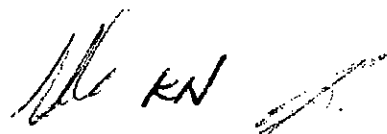
The project is generally on the track to achieve the project purpose at this moment, though some of the planned activities will not be completed during the project period due to the political context as well as the delay of the procurement of equipment.

Indicators

Extension agents evaluate that the contents of extension activities utilizing research outcomes are effective.

The team examined this indicator from the activities of "On-site training" for extension agents, which utilize the research outcomes produced by the applied research team for the deficit irrigation. Out of 24 extension agents participated to the trainings, the team received 11 answers to the questionnaires. Out of 11 answers, all (100%) answered that the training provided applicable knowledge and skills to their work and 10 (91%) answered that they plan to utilize some of the knowledge or skills obtained in the training at their work place.

During the interviews, the team also confirmed that most of the participants think the knowledge obtained from the applied research are applicable to their work though they have to wait for the data to be obtained. Thus, the indicator of the project purpose has been achieved generally, but to organize full length extension activities will be commenced only after the research unit produced the official result. At the moment, they have started already the awareness activities as well as the pilot activities at several farms.

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3.3.2 Overall Goal: Extension activities utilizing research outcomes are enhanced.

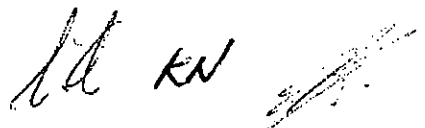
It is early to evaluate overall goal, however, the extension activities utilizing research outcomes have been already practiced even at the limited scale and contents, and there is a clear sign that the outcomes of those practices are positive enough to show the sustainability of these activities. Although there is a delay in each planned activities, NCARE policy as well as the relevant managements share the clear direction and initiative to enhance the collaboration work between research and extension activities. If NCARE continues its activities according to the plan, there is high possibility that the overall goal will be achieved in the future.

4 Implementation Process of the Project

The Project was implemented, monitored and evaluated at a certain level. The Steering Committee of the project has been held in September 2009, March 2010, October 2010, and planned to be held in February 2011. In each occasion, all project activities had been reported, and major issues had been discussed. The reports of each training courses, seminars, workshops, and researches have been submitted at the end of each activity. The training courses in Israel often reported the evaluation by the lecturers and participants which have been reflected to the succeeding courses.

It should be noted especially that this tri-lateral project involves a multiple stakeholders to coordinate to realize each project activity. Even though there were continuous political sensitivities and adversity, all the stakeholders have kept their commitments to the project and made efforts to improve the complex coordination process, which definitely contributed to the successful path of the project to date.

During interviews and discussions with stakeholders, there were several issues raised related to the project implementation process. Those are mainly related to the political environment especially since December 2008. Some of the NCARE staff chose to refrain from participating to the



training courses in Israel, and some had negative impact from the anti-normalization reactions among the public. The procedure of nominating suitable candidates, getting an approval for their dispatch, and procedure in obtaining visa affected the project implementation. There were also requests to adjust better the participants' needs with the training contents in Israel.

5. Results of the Terminal Evaluation by Five Criteria

5.1 Relevance

The relevance of the Project is High in terms of policy, needs of beneficiaries and of target group, and project approach.

(1) Consistency with the development policy of Jordan

The project is highly relevant to the development policy of the Government of Jordan as stipulated in its Executive Development Program: 2011-2013. In agriculture sector, it aims to secure sustainable agricultural development, and the government tries to realize by the following policies among others: "Enhance agricultural production and improve its quality", and "Develop and promote specialized and applied agricultural research and transferring research results technologies in those involved in the agricultural sector". It is clear that the project purpose and the overall goal directly support this governmental policy.

(2) Accordance of the needs of target group (NCARE extension agents and researchers) and beneficiaries (farmers)

The project is highly relevant to the needs of the farmers in Jordan. One of their major interests is how to reduce the input in the agricultural process, such as labor, cost, management as well as water usage. The project directly targets to tackle these issues by dealing those topics in the trainings and research activities and by increasing the capacity of the extension agents and researchers in NCARE as well as enhancing the collaboration between them.

(3) Consistency of Japanese ODA policy

The Project has been highly relevant to the Japanese ODA policy and JICA assistance policy for the Hashemite Kingdom of Jordan from the project commencement to present. The government of Japan promotes its initiative of "Corridor for Peace and Prosperity" in the region, and one

of the core programs of JICA Jordan office is "Investment for the peace and regional cooperation". The project is clearly in line with the above initiative and policy.

(4) Competitive edges of Israeli and Japanese technologies

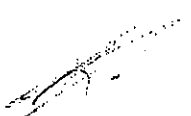
According to the questionnaire survey and interviews conducted by the evaluation team, the team judged that there are the competitive edges of both Israeli and Japanese technologies. Out of 67 NCARE staff participated to the trainings in Israel, the team received 14 answers to the questionnaires. Out of 14 answers, 10 (71%) answered that the agricultural technologies of Israel have the advantage in applying in Jordan, mainly from the point of climate and regional similarity. 9 (64%) answered that the agricultural technologies of Japan have the advantage in applying in Jordan, mainly from the point of introducing new technologies and skills. It was noted by the participants that while Israel has the advanced technologies in dry land area, Japan has the relative technological advantages in grafting, compost, agricultural cooperation etc.

(5) Relevance of Tri-lateral Cooperation Approach

The questionnaire survey as well as interviews conducted by the evaluation team confirmed the relevance of the tri-lateral cooperation approach. Japan has the special advantage in its status being politically and religiously independent from others, which provides Japan a role as a facilitator to bridge two countries. For Japan, it is beneficial to have Israel as a technical partner which has a technical advantage in the region.

5.2 Effectiveness

The effectiveness of the Project is medium. In addition to the evaluation factors shown below, the level of achievements on project purpose and outputs are also considered to judge effectiveness. Please refer to 3.2-3.3 shown above for detailed information on the project purpose and outputs.

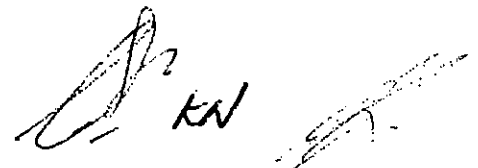
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(1) Important factors to prevent the project purpose and outputs from being achieved

- The training courses in Israel had been suspended for about a year due to the political context. After the commencing the training courses, there were less participants to join in the courses. Though NCARE has been making enough effort to collect the maximum number of the participants, it should be noted that the recruitment of trainees has been dependent on the willingness of each participant.
- The local trainings of the initial year were successful for extension agents who could not participate to the training courses in Israel. However, in later stage, the local training activities have been curtailed due to the budget constraint of NCARE. Extension agents working in governorate, particularly in the south, could not attend the training courses.
- The delay of procurement of the equipment as well as a pest for Tomato production in the region occurred in 2010, made the applied research team difficult to obtain the accurate data by the time of terminal evaluation.
- The misunderstanding on the interpretation of R/D by JICA and NCARE as well as the budget limitation by both parties provide a certain limitation to organize some of the applied research related activities with a full length.

(2) Important factors to accelerate achieving the Project purpose and outputs

- In general, the evaluation team confirmed that there had been strong efforts by Jordan side to dispatch trainers to Israel who had a strong motivation for their capacity development.
- The training facilities, lecturers, as well as staff of CINADCO have been strong contributing factors to achieving the output. There were a number of comments from the participants that they have gained new and advanced technology and skills from their counterpart in Israel.
- There has been a commitment and continuous efforts made by all the stakeholders to implement and continue the project under the difficult circumstances.



5.3 Efficiency

The efficiency of the Project is moderately high.

Although there are a number of stakeholders related to the project which made the coordination work rather complex, all the above stakeholders paid enough efforts to implement the project accordingly. In general, most of the project activities as well as inputs had been implemented as planned except the suspension of the training courses in Israel and the delayed procurement of the equipment for the applied research. However there are some comments and issues to be reflected by the end of the project period. Details are as follows:

(1) Adequacy of the inputs of Japanese

The evaluation team confirmed there were strong advantages in dispatching Japanese experts to the training courses. There were requests by Jordan side that it would be more beneficial to have a full day lecture not a few hours from the point of the cost and technical benefit. Also, there were requests by Jordanian and Israeli side to dispatch more Japanese experts in specific fields.

The delay of procurement of equipment was caused due to the several complex processes in confirming specifications as well as in ordering process according to the JICA regulations. As noted earlier, this caused negative impact in the applied research activities.

(2) Adequacy of inputs by Jordanian side

To have less number of participants in the training courses in Israel influenced negatively from the point of the cost performance and administrative arrangement in Israel.

All the participants in the training courses in Israel need to provide a presentation after their return. However, the impact of those activities might have been limited to diffuse the technologies gained from Israel. Some of NCARE staff who could not join in the courses in Israel showed their wishes to have more systematic local training courses based on the technologies gained from the courses in Israel.

NCARE could not secure enough budgets for the participants from the governorate to join in the workshops, seminars, and trainings related to

the applied research. This was partly due to the misunderstanding on the JICA regulations which could have been discussed in the earlier stage of the project preparation.

(3) Adequacy of inputs by Israeli side

In general, there was high satisfaction from the participants to the training courses in Israel by the organizational aspect. The requests from Jordan side to reconsider their accommodation in Kibutz have been reflected to the succeeding courses. Jordanian side requested also an individual room allocation, which will be reflected by Israeli side for the coming courses. As for the language in the lectures, both Jordan and Israeli side raised the issue to be discussed further for the coming courses to have the best efficiency in lectures.

5.4 Impact

The impact of the Project is expected to be high if the activities of NCARE expand according to the project purpose. Generally speaking, the project is surely heading toward the overall goal. It is still early to measure the degree of the impact at this stage; however there are several clear positive impacts as listed below:

Impact inside of the project purpose

- Positive impacts by the training in Israel: The participants in the training courses learned the new technology and disseminating them to farmers or to communities. One of the participants after their return started the experimental introduction of an organic herbal production in the Jordan valley as Jordan's first experiment. The compost making has been started in the north Jordan as one of the first experiment as well. She started the activities in the schools, women's cooperation etc. Other examples are showing slides of package and packing materials to the farmers, introducing an insect trap of olive trees etc.
- Positive impacts by the applied research: Though yet to gain the data accuracy, the applied research team has started to share some of deficit irrigation research outcomes to the extension agents as well as to the farmers nearby the experimental site. Farmers have been

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suffering from the increasing operation cost of irrigation facilities and the experiment has been attracting their interest. Some of the farmers requested to procure the tensiometers for their farms. One of the universities organized summer training for students at the research site for a week, and a girls' school as well visited the site. At the moment of the terminal evaluation, it is nearly proved that the water to be used for tomato and pepper production can be saved from 10 to 30% according to seasons and areas.

- Positive impacts by the collaboration between research and extension activities: There were a number of comments from the participants in the training in Israel as well as the member of the applied research team that their work together in the same projects let them find the way to collaborate together sharing the same purpose. This let them lead strengthening their daily collaboration work among them.

Impact outside of the project purpose

- There has been a network developed among Jordanian and Israeli professionals through the project activities. This can be a strong asset for the both side to tackle with the regional issues such as pest damage in the Jordan valley.
- There has been improving coordination as well as strengthening collaboration works among stakeholders which made the project realize despite all the adversities. This created one of the strong bases for any further collaboration work among stakeholders.
- With all the above impacts and exchanges mentioned earlier, there has been clear and strong positive impacts in the regional cooperation among individuals or between two countries in technical, professional, organizational levels, and further, a seed of trust-building between them.
- The project also contributed the Japanese initiative in Jordan valley, namely "Corridor for Peace and Prosperity". By strengthening the cooperation among three countries it surely gave a supporting impact to this initiative.

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5.5 Sustainability

The sustainability of the Project is moderately high.

(1) Policy aspects

It is expected that the ministry of agriculture in Jordan will continue its efforts in agricultural development through NCARE. The NCARE policy of collaboration between research and study seems to be enhancing and realizing in practice considering together its organizational reform merging the extension unit to the current NCARE.

(2) Institutional aspects

NCARE submits its annual plan and report every year. At the moment, it is on the process of publishing the annual plan of 2011, which is in accordance of the 5 years' agricultural development plan by Ministry of Agriculture. The JICA project has involved multiple departments inside of NCARE and each department has been actively implementing each activity by its own initiative. The evaluation team did not find any major issue which can obstruct the institutional sustainability.

(3) Financial aspects

Though the budget of NCARE has been increasing annually, the government of Jordan has been implementing the serious budget control in all the sectors. NCARE has been expanding its activities by collaborating with donor organizations. Especially for research projects, it is necessary to continue finding the collaborating organizations.

(4) Technical aspects

It can be said that the cooperation has been realized through the tri-lateral cooperation. Japanese role has been critical in this sense to make the cooperation between two countries happen. However it is expected that the local training inside of Jordan utilizing the Israeli technology will continue and can be expanded according to the policy of NCARE as well as its budget arrangement. It should be mentioned that the professional network developed by the project is expected to continue.

It is expected that the activities relating to the applied research will continue, judging from the relevancy of the topic and the needs toward them. The extension activities to defuse the research output can be



expanded after the team obtained the experimental data with more accuracy.

As for the collaboration between research and extension activities, it seems to be sustainable judging from NCARE's clear policy in this direction and organizational restructure in 2009. However to secure the sustainability of the project output, it is necessary to develop and implement action plans as an output of the high level workshop.

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6. Conclusion

The Project purpose shown in the PDM will be impossible to have been completed in May, 2011 as originally scheduled. To complete the project purpose, the period of 15 months is necessary for compensate the suspended period and several subjects, lessons learnt were pointed out by the Joint Evaluation Team.

Referring to the findings, it is concluded that the project activities have been satisfactorily implemented without any major or critical problems under good collaboration among the Jordanian and Israeli relevant organizations with appropriate coordinating efforts of JICA.

The Project will not be completed in May 2011 as originally scheduled due to the suspension period because of the external conditions; however, it is most likely that the Project will achieve its objectives successfully by the end of the extension period.

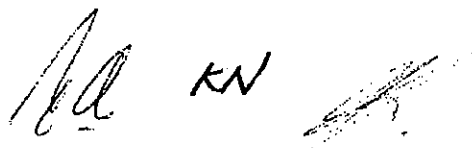
7. Recommendations

In order to complete the project purpose, the Joint Evaluation Team recommends the Project is to be extended for 15 months.

Subjects to be completed by the end of the Project are;

1) Continuing the training in Israel

The extension system in Jordan has been changed. In addition to 60 extension agents, 30 researchers are assigned to work for extension activities together with extension agents. Namely, the ordinary extension agents who give farmers all-around helping hand in any fields (as a home doctor), in addition, the subject matter specialists who train and give instructions to the ordinary extension agents in the specific field. NCARE needs the capacity building the latter specialists by training of trainers.



Recruitment of trainees for courses in Israel was fully dependent on willing base in NCARE. It should be understood that NCARE has made efforts to collect the maximum number of trainees.

- (1) Group training (10 - 15 trainees for 2 weeks) for extension agents; and
 - (2) Training of trainers (2 - 4 trainees for 3 - 4 weeks) for Subject Matter Specialists including more advanced technology as tailor-made manner.
 - (3) Both training courses should be more practical and applicable ones in Jordan.
- 2) Strengthening the local training in Jordan for technology dissemination of new technology learnt in Israel.

The 3-days local training of the initial year was useful for extension agents who could not attend the training courses in Israel. However, the local training was curtailed due to the limitation of budget. Extension agents working far from the regional centers, in particularly in the south, could not attend the training. Local training is essential for the completing the project purpose. NCARE and JICA should take into consideration for certain measures to secure the expenses to carry out the local training. It is recognized that the local training should be enhanced for the dissemination of new technology to the extension agents by subject matter specialists who are trained as trainers in Israel.

- 3) Completing the applied research, deficit irrigation, and finalizing the research results after 3 cropping seasons.

Farmer's Day and On-site training at the Applied Research site is the necessary activities in applied research as strengthening of research – extension linkage.

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- 4) Carrying out the activities more efficiently and effectively to get best outputs by the limited fund.

Training facilities and staffs of CINADCO are satisfactory and Japanese lecturers got good reputation in general. To match the training contents and trainee's needs, information of trainees such as work duties, technical background and experiences, language skills and expectations on training should be sent to CINADCO before the training course. Some points for upgrading the efficiency are as below;

- (1) Dispatching Japanese lecturers only if the fields having the comparative advantage
- (2) Suspending the High-level workshop concentrating at follow-up activities in accordance with the Action Plans
- (3) Holding the Applied Research Seminar after analysis of results (maybe in August 2012)

Furthermore, subjects to be necessary for achieving the overall goal after the Project are;

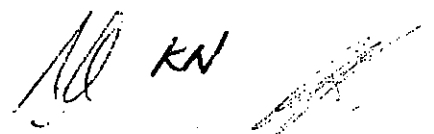
- 1) Promotion of further training and extension activities under collaboration of researchers and extension agents as well as leading farmers.
- 2) Promotion of further Applied Research to attain the finalizing new technology for dissemination.
- 3) Preparation of the necessary activities combating against the regional problems such as water conservation (quantitatively and qualitatively), countermeasures to climatic change and pest control such as *Tut abseluta* etc.

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8. Lessons Learnt

In the course of Project implementation, the three parties have learnt lessons as below;

- 1) Not only theory but also practical training is necessary for extension, namely the dissemination of technologies observed particularly in the technology acquired by practical training; for example, compost making, insect trap for olive trees etc.
- 2) The effect of training is largely dependent on the uniformity of level of trainees. Securing the large number of trainees often lead to mismatching of their training needs, therefore, training for large number of trainees should be general one.
- 3) For planning and implementation of the Projects in agriculture field, the cropping season should be carefully taken into consideration.
- 4) The Project under sensitive situation requires the careful political consideration during the implementation.
- 5) For tri-lateral and multi-lateral projects, new communication systems such as TV conference should be used as far as possible.

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The Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dryland Area"
PDM (Project Design Matrix)

Overall Goal	Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Extension activities utilizing research outcomes are enhanced.	Capacity of NCARE to apply research outcome to practical extension work is strengthened.	NCARE conducts at least 12 extension activities to farmers as a result of the project.	Interview with NCARE, Annual Report of NCARE	Interview with extension agents
Advanced agricultural knowledge and technology is acquired by researchers and extension agents.	Good practice of extension-oriented applied research, which meets local needs, is conducted.	Extension agents evaluate that the contents of extension activities utilizing research outcomes are effective.	Interview with extension agents, Interview with NCARE	NCARE strengthen its extension system according to the basic policy of merging extension and research
1	Advanced agricultural knowledge and technology is acquired by researchers and extension agents.	<ul style="list-style-type: none"> 1-1 Ten (10) training courses in Israel are held. 1-2 More than one hundred twenty (120) participants attend training courses in Israel. 1-3 Eight (8) training courses are held in Jordan. 1-4 One hundred and fifty (150) participants attend training courses in Jordan. 1-5 Participants of trainings in Israel judge that they gained new knowledge and these are important to their work. 1-6 At least 3 experts to dispatch to Jordan from Jordan, Japanese and Israeli expert. 	<ul style="list-style-type: none"> Attendance reports of the courses Attendance reports of the courses Reports of the local trainings, Records of the Project Reports of the local trainings, Records of the Project Evaluation Questionnaires of Israel trainings by ORADCO Record of the Project 	
2	Good practice of extension-oriented applied research, which meets local needs, is conducted.	<ul style="list-style-type: none"> 2-1 Report is submitted based on experimental data. 2-2 More than four (4) seminars are held with participation of experts from Japan/Israel. 2-3 More than thirty (30) participants attend seminars. 	<ul style="list-style-type: none"> Reports of the Applied Research Reports of the Applied Research Reports of the Applied Research 	
3	Good practice of applied research which procedures, outcome and knowledge extracted from are shared and collaborated among researchers and extension agents is created.	<ul style="list-style-type: none"> 3-1 At least four (4) workshops for farmers are held. 3-2 At least one hundred (100) farmers attend workshops. 3-3 At least four (4) training of applied research for extension agents are held. 3-4 At least eighty (80) extension agents and researchers attend training of applied research. 3-5 A brochure/booklet is prepared. 	<ul style="list-style-type: none"> Reports of the Applied Research Reports of the Applied Research Reports of the Applied Research Reports of the Applied Research Brochure/booklet 	
4	Mechanism to enhance collaboration between research activities and extension work in NCARE is considered and instituted.	<ul style="list-style-type: none"> 4-1-1 At least three (3) action plans are made in the workshop of activities 4-1. 4-1-2 Meeting is held among the managers of NCARE to discuss the action plans 4-1. 4-1-3 NCARE decides to realize some of the action plans 4-1. 4-2 Meeting is held among the managers of NCARE to discuss the results of output. 4-3-1 At least six (6) workshops for farmers by researchers and extension agents are held every year. 4-3-2 More than thirty (30) researchers become extension agents by the end of this project. 	<ul style="list-style-type: none"> Report of the workshop Report of NCARE, Interview with NCARE, Minutes of the meeting among managers of NCARE Report of NCARE, Interview with NCARE, Minutes of the meeting among managers of NCARE Report of NCARE, Interview with NCARE, Minutes of the meeting among managers of NCARE Report of NCARE, Interview with NCARE Report of NCARE, Interview with NCARE 	
Activities	<ul style="list-style-type: none"> 1-1 To conduct training for researchers and extension agents in Israel. 1-2 To conduct training for researchers and extension agents in Jordan aiming at dissemination of result of training in Israel. 1-3 To provide with technical advice from Jordan, Japanese and Israeli experts. 2-1 To plan, implement, summarize and report extension-oriented applied research activities from Israel experts. Or instead of it, to substitute with study tour to Israel. 2-2 To arrange opportunities to explain and share information on applied research with extension agents at stage of planning, implementation and evaluation. 3-1 To demonstrate the applied research to extension agents and farmer at NCARE. 3-2 To train managers to explain and share research outcome for extension agents. 3-3 To prepare brochure/booklet on research outcome for extension agents and farmers. 4-1 To conduct workshops on collaboration and coordination between research activities and extension work. 4-1-2 To realize action plan which is formulated in the workshops 4-1. 4-2 To report the result of output 3 so that NCARE managerial level can examine and study methodology of collaboration and coordination. 4-3 To enhance the activities to collaborate and coordinate research and extension. 	<ul style="list-style-type: none"> Japanese Side 1) Expert 2) Trainings 3) Equipments Israeli Side 1) Expert 2) Trainings 3) Facilities Jordanian Side 1) Project Coordinator 2) Researchers 3) Facilities 		<ul style="list-style-type: none"> Pre-conditions NCARE staff is able to be dispatched to Israel. Japanese experts are able to visit to Jordan and Israel.

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Record of input from Japan side

Appendix 2

No.	Name of Expert	Field	Period of Assignment		Remarks
			From	To	
1	Ms. Kazuo DAIGO	Project Coordinator	09 Nov 2009	29 May 2011	
2	Mr. Yutaka SHINOHARA	Grafting	24 Jun 2008	03 Jul 2008	
3	Ms. Sanae SAWANOBORI	Compost	25 Oct 2008	30 Oct 2008	
4	Mr. Yukio ABIE	Marketing and Extension	18 Dec 2008	24 Dec 2008	
5	Mr. Tahel YAMAMOTO	Irrigation	11 Jan 2009	19 Jan 2009	
6	Mr. Hisao ANYOJI	Irrigation	11 Jan 2010	15-Jan-Fri	
7	Mr. Masaaki HANADA	Livestock	10 Dec 2009	13 Dec 2009	

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Provision/Procurement/Maintenance of the Equipment

No.	Date of Arrival	Description		Model Number	R/P	Amount	Price	Place of Storage	Frequency of Use	Condition	Remarks
		Item	Manufacture								
1	31-Mar-09	Green House	Arab Greenhouses Manufacturing Co.Ltd	Size 5.5m x 9m x 3.2m and others	L	4	17,104.20 JD	Ghor Al-aafi, Matraq	A	A	
2	18-Mar-08	Fertilizer	AL-Fallah Agri. Est.	NITRO LEAF and others 20items	L	1 set	2,791.75 JD	NCARE HQ	C	Spent out	
3	15-Mar-08	Personal Computer (Desk top)	Lenovo	Think Center M58p	L	1	915.00 JD	NCARE HQ	A	A	
4	15-Mar-08	UPS	General Electric	EP	L	1	290.00 JD	NCARE HQ	A	A	
5	15-Mar-08	Multifunction Printer	Lexmark	Laser	L	1	450.00 JD	NCARE HQ	A	C	
6	24-Jan-11	Digital Calliper	Tresna Instrument	EC16	L	2	310.00 JD	NCARE HQ	B	A	
7	24-Jan-11	Refractometer	Bellingham & Stanley Ltd.	DR103L	L	1	650.00 JD	NCARE HQ	B	A	
8	24-Jan-11	Electronic penstrometer	Agro Technologie	Penetei DFT14	L	2	2,740.00 JD	NCARE HQ	B	A	
9	10-Nov-10	Personal Computer (Desk top)	Lenovo	ThinkCenter M58p	L	1	700.00 JD	Ghor Al-aafi	A	A	
10	10-Nov-10	Personal Computer (Lap-top)	Lenovo	Think Pad T410	L	1	1,150.00 JD	NCARE HQ	A	A	
11	31-Mar-11	Soil moisture meter	Solmoisture Equipment Corp	2725ARL24	L	24	2,641.00 JD				Under shipment
12	31-Mar-11	PH Meter	Metrohm	826 Mobile pH Meter	L	1	965.00 JD				Under shipment
13	31-Mar-11	Pressure Chamber	PMS Instruments	670	L	2	5,000.00 JD				Under shipment
14	31-Mar-11	Leaf area meter	ADC BioScientific Ltd	AM300	L	1	6,106.00 JD				Under shipment
15	31-Mar-11	Leaf area index	Decagon	LP-80	L	1	2,995.00 JD				Under shipment
16	28-Feb-11	Automatic weather station	Campbell Scientific INC	CR1000	L	1	9,668.00 JD				Under shipment

Note:

R/P: Route of Procurement (J: From Japan, L: Local, E: With Expert)
 Frequency of Use (A: Always B: Often C: Sometimes)
 Condition (A: Good B: Fair C: Bad)

Record of results of training and workshop

No.	Activity	No.	From	To	Theme	Participants	No. of participants	Place
1	Israel Training	1	22-Jun-08	3-Jul-08	Fertigation, Vegetable Production	NCARE Staff	16	MASHAV/CINADOCO international agricultural training center
		2	26-Oct-08	7-Nov-08	Organic Agriculture, Plant Protection	NCARE Staff	20	MASHAV/CINADOCO international agricultural training center
		3	15-Dec-08	24-Dec-08	Post-harvest, Marketing	NCARE Staff	19	MASHAV/CINADOCO international agricultural training center
		4	9-May-10	21-May-10	Livestock	NCARE Staff	10	MASHAV/CINADOCO international agricultural training center
		5	4-Jul-10	16-Jul-10	Soil, Water Data Analysis Evaluation	NCARE Staff	8	MASHAV/CINADOCO international agricultural training center
		6	10-Oct-10	22-Oct-10	Irrigation	NCARE Staff	6	MASHAV/CINADOCO international agricultural training center
		7	31-Oct-10	12-Nov-10	Marketing	NCARE Staff	12	MASHAV/CINADOCO international agricultural training center
						91		
2	Local training	1	15-Dec-08	17-Dec-08	Overview of the project and presentation skill	NCARE Extension agents	24	Inbid compounds
		2	20-Dec-08	22-Dec-08	Overview of the project and presentation skill	NCARE Extension agents	25	NCARE HQ
		3	5-Jan-10	7-Jan-10	Overview of the project and presentation skill	NCARE Extension agents	15	NCARE Karak (Rabba) regional center
		4	2-Feb-09	3-Feb-09	Three training courses in Israel in 2008	NCARE Extension agents	24	NCARE HQ and Dair-Alla station JORICO company
		5	2-Aug-10	2-Aug-10	Two training courses in Israel in 2010 from May to July	NCARE Extension agents	24	NCARE HQ
						112		
3	Applied research seminar	1	12-Jan-08	14-Jan-08	Deficit Irrigation and Arid land agriculture	NCARE Researchers Japanese Expert	15	NCARE HQ, Dair-Alla regional center, Karama station and Ghore Safi station
		2	12-Jan-10	13-Jan-10	Deficit Irrigation for Improving Water Productivity of Vegetables Crops	NCARE Researchers Japanese Expert, Israeli Expert	15	Movenpic Resort & Spa Dead Sea and NCARE Ghore Al Safi station
						30		

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No.	Activity	No.	From	To	Theme	Participants	No. of participants	Place
4	On-site training (Applied research)	1	26-Oct-09	27-Oct-09	Deficit Irrigation for Improving Water Productivity of Vegetables Crops	NCARE Extension agents	22	NCARE Mafrak regional center
		2	8-Feb-10	9-Feb-10	Deficit Irrigation for Improving Water Productivity of Vegetables Crops	NCARE Extension agents	21	NCARE Ghore Safi station
							43	
5	Farmers' day workshop (Applied research)	1	18-Nov-09	18-Nov-09	Deficit Irrigation for Improving Water Productivity of Vegetables Crops	Farmers NCARE Staff	28	NCARE Mafrak regional center
		2	24-Feb-10	24-Feb-10	Deficit Irrigation for Improving Water Productivity of Vegetables Crops	Farmers NCARE Staff	26	NCARE Ghore Safi station
							54	
6	High Level Workshop	1	21-Feb-10	25-Feb-10	The strengthening the Links between Research and Extension	NCARE Management class staff	6	MASHAV/CINADOCO international agricultural training center
		2	17-Jan-11	19-Jan-11	The strengthening the Links between Research and Extension	NCARE Management class staff	17	Crowne Plaza Amman
							23	

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Provision of Local Cost / Japan Unit: Yen

No.	Category	JFY.2008	JFY.2009	JFY.2010	Total
1	Administration (General Affairs), Training, Applied Research	4,395,282	7,795,344	23,895,847	36,086,473
	Total	4,395,282	7,795,344	23,895,847	36,086,473

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Assignment of Counterpart / Project Coordination

No.	Post at assignment time	Field	Employment status*	Period of Assignment as a Counterpart	
				From	To
1	Director of Soil, Water and Environment	Project Coordinator	P	20 May 2008	31 Dec 2009
2	Researcher of Soil, Water and Environment Department	Project Coordinator	P	01 Jan 2010	31 May 2011
3	Assistant of Soil, Water and Environment Department	Assistant of Project Coordinator	T	01 Jan 2010	31 May 2011
4	Assistant of Soil, Water and Environment Department	Assistant of Project Coordinator	T	01 Jan 2010	31 May 2011

*Note: Permanent (P) or Temporary (T)

Assignment of Research Staff / Applied Research

No.	Post at assignment time	Field	Employment status*	Period of Assignment as a Counterpart	
				From	To
1	Researcher of Soil, Water and Environment Department	Technical Coordinator	P	08 Jul 2008	31 May 2011
2	Researcher of Soil, Water and Environment Department	Consultant of Water Resources	P	08 Jul 2008	31 Mar 2010
3	Manager of the Irrigated Agriculture Director	Horticulture Specialist	P	01 Sep 2008	31 Mar 2010
4	Senior Researcher Fertigation	Fertigation Specialist	P	01 Nov 2008	31 May 2011
5	Researcher of Soil, Water and Environment Department	Irrigation Specialist	P	08 Sep 2008	31 May 2011
6	Researcher at Ghore Al-Safi Station.	Research at Ghore Al-Safi	P	01 Jul 2009	31 May 2011
7	Researcher at Ghore Al-Safi Station.	Research at Ghore Al-Safi	P	01 Jul 2009	31 May 2011
8	Researcher at Mafraq center	Research at Mafraq	P	01 Nov 2008	31 May 2011

No.	Post at assignment time	Field	Employment status*	Period of Assignment as a Counterpart	
				From	To
9	Researcher at Mafrag center	Research at Mafrag	P	01 Nov 2008	31 May 2011
10	Director of Extension Unit, Mafrag center	Plant Protection	P	01 Nov 2008	31 May 2011
11	Extension Unit, Mafrag center	Agriculture economics	P	01 Jul 2009	31 May 2011
12	Extension Unit, Mafrag center	Soil and Water Specialist	P	01 Oct 2009	31 May 2011
13	Mafrag center	Plant protection	P	01 Oct 2008	31 May 2011
14	Financial director	Management of Project Budget	P	01 Nov 2008	31 May 2011
15	Plant Analysis	Plant Production	T	01 Jul 2009	31 May 2011
16	Coordinator of Soil Lab	Chemical Engineering	P	01 Dec 2008	31 May 2011
17	Soil Analysis	Chemist	P	01 Dec 2008	31 May 2011

*Note: Permanent (P) or Temporary (T)

Assignment of Lecturers / Training in Israel

No.	Post at assignment time	Course title	Employment	Course Preice From	Course Preice To
1	Consultant to Director of General of NCARE, for Water & Irrigation	Ferigation & Vegetable Production	P	22 Jun 2008	03 Jul 2008
2	Researcher, NCARE	Organic Agriculture and Pest Control	P	26 Oct 2008	07 Nov 2008
3	Consultant to Director of General of NCARE, for Water & Irrigation	Organic Agriculture and Pest Control	P	28 Oct 2008	07 Nov 2008

*Note: Permanent (P) or Temporary (T)

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Provision of facilities /Jordan side

No.	Description
1	Use fees of Camera
2	Use fees of Desktop Computers
3	Daily commutation expenses
4	Use fees of Internet
5	Use fees of Telephone
6	Use fees of Offices
7	Use fees of Notebook Computers
8	Transportation cost
9	Lab Analysis cost
10	Use fees of Car
11	Use fees of Parts of Plastic house
	Total

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Assignment of Lecturer / Training in Israel

No.	Name of lecturer	Course title	Post at assignment time	Course Period From	Course Period To
1	Mr. Abraham Edery	Fertigation & Vegetable Production	Director of Training, CINADCO	22 Jun 2008	03 Jul 2008
2	Dr. Avner Zilber	Fertigation & Vegetable Production	Researcher, Institute of Soil, Water and Environmental Science, ARO	22 Jun 2008	03 Jul 2008
3	Mr. Elisha Kenig	Fertigation & Vegetable Production	Extension Specialist	22 Jun 2008	03 Jul 2008
4	Mr. Mohamed Abu Toma	Fertigation & Vegetable Production	Extension Specialist	22 Jun 2008	03 Jul 2008
5	Mr. Nabil Ganaim	Fertigation & Vegetable Production	Extension specialist	22 Jun 2008	03 Jul 2008
6	Mr. Omar Zaidan	Fertigation & Vegetable Production	Director, Vegetable Growing Department and Deputy Director of the Extension Service	22 Jun 2008	03 Jul 2008
7	Dr. Shaul Manor	Fertigation & Vegetable Production	Senior Consultant	22 Jun 2008	03 Jul 2008
8	Dr. Uri Yimiyahu	Fertigation & Vegetable Production	Researcher, GILAT R&D Station	22 Jun 2008	03 Jul 2008
9	Prof. Yehzekel Cohen	Fertigation & Vegetable Production	Researcher, Institute of Soil, Water and Environmental Science, ARO	22 Jun 2008	03 Jul 2008
10	Mr. Meir Bazelet	Fertigation & Vegetable Production	Professional Coordinator	22 Jun 2008	03 Jul 2008
11	Ms. Nina Lehmann	Fertigation & Vegetable Production	Director, Overseas Training Programmes & Research, CINADCO	22 Jun 2008	03 Jul 2008
12	Dr. Amon Dag	Organic Agriculture and Pest Control	Researcher, Gilat Research Center	26 Oct 2008	07 Nov 2008
13	Prof. Eil Falk	Organic Agriculture and Pest Control	Head-Institute of Technology and Storage of Agricultural Products, ARO	26 Oct 2008	07 Nov 2008
14	Mrs. Hedar Heler	Organic Agriculture and Pest Control	Researcher, Institute of Soil, Water and Environmental Science, ARO	26 Oct 2008	07 Nov 2008
15	Dr. Lea Tsror	Organic Agriculture and Pest Control	Head of Gilat Research Center, Plant Pathologist	26 Oct 2008	07 Nov 2008
16	Mr. Michel Issak	Organic Agriculture and Pest Control	Extension specialist	26 Oct 2008	07 Nov 2008
17	Dr. Phyllis Weintraub	Organic Agriculture and Pest Control	Entomologist, Gilat Research Center	26 Oct 2008	07 Nov 2008
18	Mrs. Pinna Oren Shnidor	Organic Agriculture and Pest Control	Head Standardization and Accreditation Department, PPIS	26 Oct 2008	07 Nov 2008

No.	Name of lecturer	Course title	Post at assignment time	Course Preface From	Course Preface To
19	Mr. Uri Adler	Organic Agriculture and Pest Control	Misc. Organic Farm Consultant	26 Oct 2008	07 Nov 2008
20	Dr. Uri Yimyahyu	Organic Agriculture and Pest Control	Researcher, Gilat Research Center	26 Oct 2008	07 Nov 2008
21	Mr. Meir Bezelet	Organic Agriculture and Pest Control	Professional Coordinator	26 Oct 2008	07 Nov 2008
22	Dr. Amnon Lichter	Postharvest and Marketing	Institute of Technology and Storage of Agricultural Projects	15 Dec 2008	24 Dec 2008
23	Mr. Dov Friedman	Postharvest and Marketing	Tour Guide	15 Dec 2008	24 Dec 2008
24	Dr. Ran Ben Daviv	Postharvest and Marketing	Plant Protection Inspection Service	15 Dec 2008	24 Dec 2008
25	Dr. Ron Porat	Postharvest and Marketing	Institution of Technology and Storage of Agricultural Projects	15 Dec 2008	24 Dec 2008
26	Dr. Victor Rodov	Postharvest and Marketing	Institute of Technology and Storage of Agricultural Projects	15 Dec 2008	24 Dec 2008
27	Dr. Ya'el Amitag	Postharvest and Marketing	Plant Protection Inspection Service	15 Dec 2008	24 Dec 2008
28	Mr. Meir Bezelet	Postharvest and Marketing	Professional Coordinator	15 Dec 2008	24 Dec 2008
29	Dr. Moshe Azencot	Workshop to strenghten the link between extension and research	Consultant	21 Feb 2010	25 Feb 2010
30	Mr. Dubi Wolfson	Workshop to strenghten the link between extension and research	Extension Officer-SHAHAM	21 Feb 2010	25 Feb 2010
31	Dr. Abraham Laizar	Workshop to strenghten the link between extension and research	Researcher- Plant Science Institute-ARO	21 Feb 2010	25 Feb 2010
32	Mr. Omar Zeidan	Workshop to strenghten the link between extension and research	Deputy Director of SHAHAM	21 Feb 2010	25 Feb 2010
33	Dr. Mordechai Cohan (Kedmon)	Workshop to strenghten the link between extension and research	SHAHAM	21 Feb 2010	25 Feb 2010
34	Mr. Itzhak Malka	Livestok	Head of Animal Production Department	09 May 2010	21 May 2010
35	Mr. Eliezer Gromsman	Livestok	Senior Extension Livestock Specialist	09 May 2010	21 May 2010
36	Mr. Gabi Adin	Livestok	Head of Dairy Cattle Production	09 May 2010	21 May 2010
37	Mr. Joseef Carasso	Livestok	Private consultant	09 May 2010	21 May 2010
38	Mr. Nevoit H'aklay	Livestok	Head of Poultry Department	09 May 2010	21 May 2010

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No.	Name of lecturer	Course title	Post at assignment time	Course Preice From	Course Preice To
39	Mr. Ilan arie	Livestok	Regional Poultry Extension Specialist	09 May 2010	21 May 2010
40	Ms. Hagit Arazi	Livestok	Poultry Extension Specialist – Layers & Economist	09 May 2010	21 May 2010
41	Mr. Hazi Cohen	Livestok	Regional Extension, Turkey Production	09 May 2010	21 May 2010
42	Mr. Israel Mestbaum	Livestok	Breeding and Hatcheries Management Specialist	09 May 2010	21 May 2010
43	Mr. Shmulk Friedman	Livestok	Open Field Grazing Specialist	09 May 2010	21 May 2010
44	Dr. Moshe Azencot	Soil and water data analysis evaluation	Consultant	04 Jul 2010	16 Jul 2010
45	Mr. Omar Zaidan	Soil and water data analysis evaluation	Deputy Director of SHAHAM	04 Jul 2010	16 Jul 2010
46	Dr. Meni Ben Hur	Soil and water data analysis evaluation	Head of Soil, Institute Water and Environmental Sciences	04 Jul 2010	16 Jul 2010
47	Dr. Ahmed Nasser	Soil and water data analysis evaluation	Institute Water and Environmental Sciences, Researcher	04 Jul 2010	16 Jul 2010
48	Dr. Shaul Manor	Soil and water data analysis evaluation	Senior Consultant	04 Jul 2010	16 Jul 2010
49	Mr. Moshe Bruner	Soil and water data analysis evaluation	Extension specialist	04 Jul 2010	16 Jul 2010
50	Mr. Meir Bazalet	Soil and water data analysis evaluation	CINADCO** (retired)	04 Jul 2010	16 Jul 2010
51	Mr. Roberto Natan	Soil and water data analysis evaluation	Extension specialist	04 Jul 2010	16 Jul 2010
52	Dr. Gadi Ritbo	Soil and water data analysis evaluation	Director of Field Service Laboratory	04 Jul 2010	16 Jul 2010
53	Dr. Michael Bortsover	Soil and water data analysis evaluation	Researcher, Soil, Water and Environmental Sciences	04 Jul 2010	16 Jul 2010
54	Dr. Mordechai Schonfëit	Soil and water data analysis evaluation	Interdepartmental Equipment Facility Department-Faculty of Agriculture	04 Jul 2010	16 Jul 2010
55	Mr. Dan Schuer	Irrigation	Consultant	10 Oct 2010	22 Oct 2010
56	Mr. David Yulles	Irrigation	Extension Officer-SHAHAM	10 Oct 2010	22 Oct 2010
57	Dr. Elisha Kenig	Irrigation	Consultant	10 Oct 2010	22 Oct 2010
58	Dr. Meni Ben Hur	Irrigation	Head of Soil, Institute Water and Environmental Sciences	10 Oct 2010	22 Oct 2010

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No.	Name of lecturer	Course title	Post at assignment time	Course Periods From	Course Periods To
59	Dr. Mohamad Gundia	Irrigation	Consultant	10 Oct 2010	22 Oct 2010
60	Mr. Alex Gurevitz	Marketing	Quality control of fresh produce, Quality Inspector	31 Oct 2010	12 Nov 2010
61	Mr. Brett Hickson	Marketing	Standardization, Senior Coordinator	31 Oct 2010	12 Nov 2010
62	Prof. Eli Falik	Marketing	Head - Institute of Technology and Storage of Agricultural Products, Researcher	31 Oct 2010	12 Nov 2010
63	Mr. Ilan Peretz	Marketing	Products Costing & Stock Manager	31 Oct 2010	12 Nov 2010
64	Ms. Pnina Oren-Shnidor	Marketing	Standardization, Head, Standardization Department	31 Oct 2010	12 Nov 2010
65	Ms. Yael Kachel	Marketing	Markets research	31 Oct 2010	12 Nov 2010

Assignment of Staff / Training in Israel

No.	Name of Staff	Course title	Post at assignment time	Course Periods From	Course Periods To
1	Mr. Meir Bazelet	Fertigation & Vegetable Production	Professional Coordinator	22 Jun 2008	03 Jul 2008
2	Ms. Nina Lehmann	Fertigation & Vegetable Production	Director, Overseas Training Programmes & Research, CINADCO	22 Jun 2008	03 Jul 2008
3	Mr. Joe Nakar	Fertigation & Vegetable Production	Tour Guide	22 Jun 2008	03 Jul 2008
4	Mr. Ovaidia Keidar	Fertigation & Vegetable Production	Director R&D Courses, CINADCO	22 Jun 2008	03 Jul 2008
5	Ms. Sigal Parson	Fertigation & Vegetable Production	Coordinator R&D Courses, CINADCO	22 Jun 2008	03 Jul 2008
6	Mr. Zvi Herman	Fertigation & Vegetable Production	Director, CINADCO	22 Jun 2008	03 Jul 2008
7	Mr. Meir Bazelet	Organic Agriculture and Pest Control	Professional Coordinator	26 Oct 2008	07 Nov 2008
8	Mr. Abraham Edery	Organic Agriculture and Pest Control	Director of Training, CINADCO	26 Oct 2008	07 Nov 2008
9	Mr. Joe Nakar	Organic Agriculture and Pest Control	Tour Guide	26 Oct 2008	07 Nov 2008
10	Mr. Ovaidia Keidar	Organic Agriculture and Pest Control	Director R&D Courses, CINADCO	26 Oct 2008	07 Nov 2008

No.	Name of lecturer	Course title	Post at assignment time	Course Preface From	Course Preface To
11	Ms. Sigal Parson	Organic Agriculture and Pest Control	Coordinator R&D Courses, CINADCO	26 Oct 2008	07 Nov 2008
12	Mr. Zvi Herman	Organic Agriculture and Pest Control	Director, CINADCO	26 Oct 2008	07 Nov 2008
13	Mr. Meir Bazelet	Postharvest and Marketing	Professional Coordinator	15 Dec 2008	24 Dec 2008
14	Mr. Abraham Edery	Postharvest and Marketing	Director of Training, CINADCO	15 Dec 2008	24 Dec 2008
15	Ms. Sigal Parson	Postharvest and Marketing	Coordinator R&D Courses, CINADCO	15 Dec 2008	24 Dec 2008
16	Mr. Zvi Herman	Postharvest and Marketing	Director, CINADCO	15 Dec 2008	24 Dec 2008
17	Mr. Abraham Edery	Workshop to strengthen the link between extension and research	Director of Training, CINADCO	21 Feb 2010	25 Feb 2010
18	Mr. Walid Mansour	Workshop to strengthen the link between extension and research	Representative of MASHAV	21 Feb 2010	25 Feb 2010
19	Mr. Ben ben Eli	Workshop to strengthen the link between extension and research	Tour Guide	21 Feb 2010	25 Feb 2010
20	Ms. Einat Tzhabari	Workshop to strengthen the link between extension and research	Director Arabic Division, CINADCO	21 Feb 2010	25 Feb 2010
21	Mr. Zvi Herman	Workshop to strengthen the link between extension and research	Director, CINADCO	21 Feb 2010	25 Feb 2010
22	Ms. Sigal Parson	Livestock	Coordinator R & D Courses, CINADCO	09 May 2010	21 May 2010
23	Ms. Rachel Brown	Livestock	Coordinator of English Courses, CINADCO	09 May 2010	21 May 2010
24	Mr. Meir Bazelet	Livestock	Professional consultant	09 May 2010	21 May 2010
25	Haim Tager	Soil and water data analysis evaluation	Director of Training, CINADCO	04 Jul 2010	16 Jul 2010
26	Walid Mansour	Soil and water data analysis evaluation	Coordinator of MFA	04 Jul 2010	16 Jul 2010
27	Einat Tzhabari	Soil and water data analysis evaluation	Director Arabic Division, CINADCO	04 Jul 2010	16 Jul 2010
28	Goren Moshe	Soil and water data analysis evaluation	Director, CINADCO	04 Jul 2010	16 Jul 2010
29	Sigal Parson	Soil and water data analysis evaluation	Coordinator of International R&D Courses, CINADCO	04 Jul 2010	16 Jul 2010
30	Daniel Werner	Soil and water data analysis evaluation	Director of Projects-CINADCO	04 Jul 2010	16 Jul 2010

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No.	Name of lecturer	Course title	Post at assignment time	Course Preioe From	Course Preioe To
31	Ilyia Ranalem	Soil and water data analysis evaluation	Tourist Guide	04 Jul 2010	16 Jul 2010
32	Joe Nakkar	Soil and water data analysis evaluation	Tourist Guide	04 Jul 2010	16 Jul 2010
33	Ms. Einat Tzabar	Irrigation	Director of Arabic Division , CINADCO	10 Oct 2010	22 Oct 2010
34	Mr. Haim Tager	Irrigation	Director of Training, CINADCO	10 Oct 2010	22 Oct 2010
35	Dr. Kuniko Takamatsu	Irrigation	Project Coordinator	10 Oct 2010	22 Oct 2010
36	Mr. Meir Bazelet	Irrigation	CINADCO** (retired)	10 Oct 2010	22 Oct 2010
37	Mr. Moshe Goren	Irrigation	Director of CINADCO	10 Oct 2010	22 Oct 2010
38	Ms. Sigal Parson	Irrigation	Coordinator of International R&D Courses, CINADCO	10 Oct 2010	22 Oct 2010
39	Mr. Yehiel Shalom	Irrigation	Guide -CINADCO	10 Oct 2010	22 Oct 2010
40	Ms. Sigal Parson	Marketing	Coordinator, R & D Courses, CINADCO	31 Oct 2010	12 Nov 2010
41	Ms. Einat Tzabar	Marketing	Coordinator, Courses in Arabic	31 Oct 2010	12 Nov 2010
42	Mr. Yehiel Shalom	Marketing	Administrative assistant	31 Oct 2010	12 Nov 2010

Assignment of Lecturer / Seminar or Workshop in Jordan

No.	Name of Lecturer	Course title	Post at assignment time	Course Preioe From	Course Preioe To
1	Mr. Moshe Broner	Applied research seminar	Neva Team Agricultural Applications Ltd.	12 Jan 2010	13 Jan 2010
2	Mr. Yoram Eisenstaa	Applied research seminar	Ministry of Agriculture and Rural Development Extension Service	12 Jan 2010	13 Jan 2010
3	Dr. Moshe Azankot	Workshop to strengn the link between research and extension	Consultant, Agricultural Extension & Rural Development	17 Jan 2011	19 Jan 2011
4	Dr. Haim Leibovich	Workshop to strengn the link between research and extension	Consultant, Small Ruminant Production Systems	17 Jan 2011	19 Jan 2011

Record of results of training and workshop

No.	Activity	No.	From	To	Theme	Participants	No. of participants	Place
1	Israel Training	1	22-Jun-08	3-Jul-08	Fertigation, Vegetable Production	NCARE Staff	18	MASHAV/CINADOCO international agricultural training center
		2	28-Oct-08	7-Nov-08	Organic Agriculture, Plant Protection	NCARE Staff	20	MASHAV/CINADOCO international agricultural training center
		3	15-Dec-08	24-Dec-08	Post-harvest, Marketing	NCARE Staff	19	MASHAV/CINADOCO international agricultural training center
		4	9-May-10	21-May-10	Livestock	NCARE Staff	10	MASHAV/CINADOCO international agricultural training center
		5	4-Jul-10	15-Jul-10	Soil, Water Data Analysis Evaluation	NCARE Staff	8	MASHAV/CINADOCO international agricultural training center
		6	10-Oct-10	22-Oct-10	Irrigation	NCARE Staff	6	MASHAV/CINADOCO international agricultural training center
		7	31-Oct-10	12-Nov-10	Marketing	NCARE Staff	12	MASHAV/CINADOCO international agricultural training center
						91		
2	High Level Workshop	1	21-Feb-10	25-Feb-10	The strengthening the Links between Research and Extension	NCARE Management class staff	6	MASHAV/CINADOCO international agricultural training center
							6	

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Unit: US \$

Provision of Training Cost /Israel		JFY.2008	JFY.2009	JFY.2010	Total
No.	Category				
1	Training	63,301.75	6,624.37	61,907.79	131,833.91
	Total	63,301.75	6,624.37	61,907.79	131,833.91

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list of the main interviewees

No.	Date	Interviewee	No of peoples	Place	Remarks
1	24 Jan 2011	General Director of NCARE	1	NCARE HQ	
2	24 Jan 2011	Officers of Ministry of Planning and International Cooperation	4	Ministry of Planning and International Cooperation	
3	24 Jan 2011	Officers of Ministry of Agriculture	1	Ministry of Agriculture	
4	24 Jan 2011	Officer of Embassy of Israeli in Jordan	1	On phone	
5	25 Jan 2011	NCARE Staff in charge of Trainings and the Project	3	NCARE HQ	
6	25 Jan 2011	NCARE Staff in charge of Coordination of Applied Research	1	NCARE HQ	
7	25 Jan 2011	Participants of Training in Israel and Jordan	12	NCARE HQ	
8	26 Jan 2011	Applied Research Team members	6	NCARE Mafrag Regional Center	
9	26 Jan 2011	Extension Agent	5	NCARE Mafrag Regional Center	
10	26 Jan 2011	Director of Mafrag Extension Unit	1	NCARE Mafrag Regional Center	
11	26 Jan 2011	Director of Mafrag Regional Center	1	NCARE Mafrag Regional Center	
12	26 Jan 2011	Farmers	7	NCARE Mafrag Regional Center	
13	27 Jan 2011	Participants of Training in Israel and Jordan	5	NCARE Dair alla Regional Center	
14	27 Jan 2011	Director of Dair alla Regional Center	1	NCARE Dair alla Regional Center	
15	30 Jan 2011	Officers of MASHAV	2	Through TV conference system	
16	30 Jan 2011	Training Coordinators of CINADCO	2	Through TV conference system	
17	30 Jan 2011	Former Director of Training, CINADCO	1	Through TV conference system	
18	31 Jan 2011	NCARE Staff	5	NCARE Ghore al Safi Station	
19	31 Jan 2011	Farmers	9	NCARE Ghore al Safi Station	

Mission Schedule

Date	Time	Visiting Place	Activities/Event	Remarks
Jan. 23	Sun 13:00-17:00	JICA Jordan Office	Preparation Meeting	
24	Mon 8:30-10:30	NCARE	Interview with Director General of NCARE	
	1hour		Interview with Project Coordinator of NCARE	
	12:00-13:00	Ministry of Planning	Interview with Officers of Ministry of Planning and International Cooperation	
	13:30-14:30	Ministry of Agriculture	Interview with Officer of Ministry of Agriculture	
	14:30-15:00		Telephone interview with Secretary of Israeli Embassy	
25	Tue 8:30-9:30	NCARE	Interview with NCARE Staff regarding Trainings	
	9:30-10:30		Interview with Coordinator of Applied Research	
	10:30-11:30		Group Interview with participants in Israeli training	
	12:00-13:00		Group Interview with participants in training with in Jordan	
	1hour		Interview with Project Staff of JICA	
26	Wed 9:30-10:00	Mafrag Regional Center	Interview with Staff of Applied Research	
	10:00-11:00		Interview with Extension agents who attended the applied research training	
	11:00-12:00		Interview with farmers	
	12:00-13:00		Interview with Director of Extension Unit and Extension agents	
	13:00-13:30		Interview with Director of Mafrac Regional Center	
	13:30-15:00		Observing the experimental site (to check the equipments JICA provided)	
27	Thu 10:00-13:00	Dair alla Regional Center	Interview with Director of Dair alla Regional Center and Extension agents Observing Dair alla Regional Center	
28	Fri		Report writing	
29	Sat		Report writing	
30	Sun 10:00	JICA Jordan Office TV Conference Room/JICA Tel Aviv Office TV Conference Room	Interview with Training Coordinators, the former Director of Training, CINADCO, Officers of MASHAV	
	15:00	JICA Jordan Office	Reporting progress of the study and a meeting for drafting M/M	
31	Mon 10:00-11:00	Ghore al Safi Regional Station	Interview with Staff of Applied Research	
	11:00-13:00		Interview with Extension agents who attended the applied research training	
	13:00-14:00		Interview with farmers	
	14:00-15:00		Interview with Extension agents and Researchers	
	15:00-15:30	Observing the experimental site		
	10:00	NCARE	Reporting progress of the study and a meeting for drafting M/M	
Feb. 1	Tue 11:00	Crowne Plaza Amman	Discussion on drafting M/M	
	2 Wed 9:00	Crowne Plaza Amman	Discussion on drafting M/M	
	3 Thu 14:00	Crowne Plaza Amman	Signing of M/M	Evaluation Team Member
		15:00	Crowne Plaza Amman	Steering Committee Meeting

Deficit irrigation for improving water productivity of vegetable crops

1. Introduction

Water shortage is a serious problem in most countries in the Middle East. Jordan is considered one of the 10 poorest countries worldwide in water resources. Farms in the highlands of Jordan are irrigated by groundwater from private wells. The northern highland area one of the large irrigated agricultural areas in the country. However, the expansion of irrigated areas is increasing the over-exploitation of water resources which have already been eroded by other agricultural sectors.

2. Deficit irrigation definition

Deficit irrigation as defined by English and Raja (1996) is an optimizing strategy under which crops are deliberately allowed to sustain some degree of water deficit and yield reduction having as limit the farmer revenues. The main objective of deficit irrigation is to increase the water use efficiency (WUE) of a crop by eliminating irrigations that have little impact on yield, compared with the benefits gained through diverting the saved water to irrigate other crops for which water would normally be insufficient under traditional irrigation practices.

3. Relevance Statement

Pepper is a high value cash crop and is commercially cultivated in the northern highland. The objective function is to maximize the net revenue from the agricultural production process subjected to limitation on water.

Tomato is considered as the most important vegetable crop in the Jordan whether grown inside plastic houses or in open field. its production is characterized by inadequate irrigation and fertilization practices, especially under open field conditions. Tomatoes, squash and eggplant represent about 42% of the irrigated vegetables grown each year. Tomatoes have a high water requirement ranging from for maximum yield, adequate water levels need to be maintained throughout fruit development. For maximal flavor, however, a slight water stress during fruit development (60 to 80 percent of the estimated requirement) is sometimes recommended.

4. Purpose/Goal

The research explores the potential for improvements in water use efficiency (WUE), and the impacts of deficit irrigation and regulated deficit irrigation treatments. Particularly regions which are dependent on groundwater aquifers for irrigation,

Specific Aims

The specific objectives are:

- I. To explore the potential for improvements in water use efficiency and the impacts of deficit irrigation and regulated deficit irrigation treatments on pepper and tomato cultivation.

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- II. To describe the relationship between revenue return and applied water using crop water requirements and sustained deficit irrigation by testing deficit irrigation strategies on crop production and quality.

5. Research Accomplishments

5.1. The effect of deficit irrigation on growth and productivity of colored pepper and tomato crops under protected cultivation-Sabha/ Mafraq (First Season)

Two field experiments were conducted, during 2009 growing season, in Sabha/ Mafraq (North of Jordan). Experiments were assigned to study the effect of deficit irrigation on growth and yield of two vegetable crops Sweet Pepper (*Capsicum annum*) and Tomato (*Solanum Lycopersicum*). Cultivation of pepper and tomato crops under 3 levels of irrigation:

- T1 -100% CWR for the entire season
- T2 -80% CWR for the entire season
- T3- 70% CWR the entire vegetative growth, 90% from beginning of flowering until the end of fruit setting and 80% until harvest. Under protected condition farming.

5.1.1. The effect of deficit irrigation on growth and productivity of colored pepper crop under protected cultivation

Uniform, 45-day old pepper seedlings variety Carmen F1 were transplanted into uncontrolled plastic house (500 m²) on April, 2009. Water treatment started three weeks from seedlings transplanting. Average irrigation water salinity was 1.3 dS m⁻¹. The experimental design was a Randomized Complete Block Design (RCBD) with four replicates. Fruits were harvested at mature yellow color stage starting from June 27, 2009. The harvested fruits were separated into exportable yield or class A (fruit weight above 120 g) and Class B (fruit weight between 80- 120 g) and class C yield (fruit weight less than 80 g), counted and weighed to determine fruit yield, number of fruit per plant and average fruit weight .

In general, results showed slight differences in yields regarding quantity and quality with irrigation rates. The highest was T3 followed by T1. However, marketable yield of class A was the highest at T1. The water use efficiency was the highest at irrigation rate T3 followed by T2 .

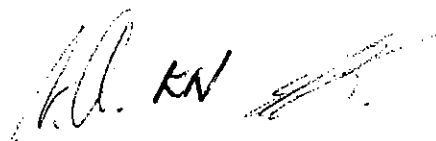
5.1.2. The effect of deficit irrigation on growth and productivity of tomato crop under protected cultivation

Uniform, 45-day old tomato seedlings variety Newton F1 were transplanted into uncontrolled plastic house (500 m²) on April, 2009. The experimental design was a Randomized Complete Block Design (RCBD) with four replicates. Fruits were harvested at mature yellow color stage starting from June 27, 2009.

Results showed that plant vegetative growth parameters (fresh and dry weights, leaf area, LAI and plant height) of tomato crop decreased with decreasing irrigation water rates. Root, stem and leaves dry weight decreased by 19, and 21% with T2 and T3 as compared with T1 treatment, respectively, as well as plant height decreased with decreasing irrigation water rates .

Results showed that tomato yield was affected regarding quantity and quality with irrigation rates. The yield has increased at T3 followed by T1 rate. However, marketable yield of class A was the highest at T1. The water use efficiency was the highest at T3 followed by T2 .

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5.2 The effect of deficit irrigation on growth and productivity of colored pepper and tomato crops under protected cultivation /Ghore Safi Station. (First Season)

Two field experiments were conducted, during 2009 growing season, in Ghore Safi station (South of Jordan). Experiments were assigned to study the effect of deficit irrigation on growth and yield of two vegetable crops Sweet Pepper (*Capsicum annum*) and Tomato (*Solanum Lycopersicum*). Cultivation of pepper and tomato crops under 3 levels of irrigation:

- T1 -100% CWR for the entire season
- T2 -80% CWR for the entire season
- T3- 70% CWR the entire vegetative growth, 90% from beginning of flowering until the end of fruit setting and 80% until harvest. Under protected condition farming.

5.2.1. The effect of deficit irrigation on growth and productivity of colored pepper crop under protected cultivation .

Uniform, 45-day old pepper seedlings variety **Carmen F1** were transplanted into uncontrolled plastic house (500 m²) on November, 2009 through May 2010. The experimental design was a Randomized Complete Block Design (RCBD) with four replicates. In general, results showed that plant vegetative growth parameters was affected with different irrigation rates. Total dry weights was the highest at T1 treatment while the highest weight of fruits was obtained at T2 followed by T1. The highest yields regarding quantity was T2 followed by T1. However, markatable yield of class A was the highest at T1 treatment. The highest water use efficiency was T2.

5.2.2. The effect of deficit irrigation on growth and productivity of tomato crop under protected cultivation.

Uniform, 45-day old tomato seedlings variety **Cecilia** were transplanted into uncontrolled plastic house (500 m²) November, 2009 through May 2010. The experimental design was a Randomized Complete Block Design (RCBD) with three replicates. In general, results showed that plant vegetative growth parameters was affected with different irrigation rates. Total dry weights was the highest at T1 treatment while the highest weight of fruits was obtained at T2, followed by T3. The highest yields regarding quantity was T2 followed by T3. However, markatable yield of class A was the highest at T2. The highest water use efficiency was T2.

5.3. The effect of deficit irrigation on growth and productivity of colored pepper and tomato crops under protected cultivation / Mafraq (Second Season)

5.4. The effect of deficit irrigation on growth and productivity of colored pepper and tomato crops under protected cultivation /Ghore Safi Station (Second Season)

5.5. Training Course for Extension Services on “Deficit Irrigation for Improving Water Productivity of Vegetables”

Objectives: Mafraq and Ghore Safi are important farming areas for the supply of fresh vegetables, fruits, and other farm products, facing rising water demand, droughts, over pumping of groundwater. The extension service in north and south Jordan should help farmers to adopt new irrigation technologies, highlighting on water use efficiency as indicator

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through the implementation new irrigation technologies, as deficit irrigation for optimum productivity of land and water in food production, enhancing irrigation efficiency. Ensuring that farmers were fully aware of how to manage their water effectively, how to cope with the effects of climate change and to be fully aware of the need to manage their water supply.

Purpose

1. Dissemination of the proposed irrigation practices and related know how and technology
2. Training and formation of irrigation specialists
3. Transfer of the irrigation technology to extension service
4. Diffusion of Irrigation Best Management Practices to extension service so they can transfer them to farmers and stakeholders.

5.5.1 Training Course for Extension Services Mafrag/October 26-27, 2009

Two days training, including one day lectures and discussions, and day field in the site where we are implementing our research experiment. In October /2009. The number of participants were as follows:

- 20 extension and researchers staff
- 5 PhD researchers from the staff of the applied research NCARE.

Activities included :

- Lectures on deficit irrigation, advantages, practices and demonstration of achieved results from the first season in Mafrag, and discussions
- Lectures on plant nutrients and fertigation program depending on the prevailing conditions. Fig.14
- A tour at the Farm we are implementing our research experiment in Sabha /Mafrag

5.5.2. Training Course for Extension Services in Ghore Safi 8-9/2/2010

Two days training, including one day lectures and discussions, and day field in the site where we are implementing our research experiment. The number of participants were as follows:

- 23 extension & researchers of NCARE staff
- 4 PhD researchers from the staff of the applied research NCARE.

Activities included :

- Lectures on deficit irrigation, advantages, practices and demonstration of achieved results from the first season in Ghore Safi and discussions
- Lectures on plant nutrients and fertigation program depending on the prevailing conditions.
- A tour at the Farm we are implementing our research experiment in Ghore Safi

5.6. Workshop on “Deficit Irrigation for Improving Water Productivity of Vegetables Crops for Farmers”

Objective: Farmer field days were selected by farmers and NCARE researchers as one of the effective tools for disseminating information on integrated irrigation management technologies to farmers and community members. The importance of the field day is an opportunity for farmers to learn by seeing the performance of recommended practices adopted by researchers and other successful farmers. The field day was used as an avenue for publicizing information and knowledge from on-farm Deficit Irrigation technology testing different irrigation rates demonstration for the ongoing experiments in the two areas.

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Purpose

1. To increase awareness on promotion of **Deficit Irrigation for Improving Water Productivity of Vegetables Crops** management strategies among farmers and community members. Thus, enhancing irrigation efficiency.
2. To facilitate sub-location, location, division, district and regional cross-visits between farmer groups and community representatives to share knowledge and exchange experiences for enhancing farmer-to-farmer technology dissemination.

5.6.1. Farmer's Day in Mafraq , November, 2009

Participants in the field day included farmer groups and local leaders from nearby locations and sub locations, researchers, division extension personnel and JICA members. The number of participants were as follows:

- 28 farmers.
- 5 PhD researchers and 3 researchers from the staff of the applied research NCARE.

Activities included :

- Lectures on deficit irrigation, advantages, practices and demonstration of achieved results from the first season of Mafraq experiments, and discussions
- Lectures on plant nutrients and fertigation program depending on the prevailing conditions.

5.6.2. Farmer's day in Ghore Safi, February, 2010

The number of participants shall be as follows:

- 25 farmers.
- 5 PhD researchers from the staff of the applied research NCARE.

Activities included :

- Lectures on deficit irrigation, advantages, practices and demonstration of achieved results from the first season in Ghore safi, and discussions
- Lectures on plant nutrients and fertigation program depending on the prevailing conditions.
- A tour at the Farm we are implementing our research experiment in Ghore safi, Fig.15

5.7. Applied Research Seminar, January, 2010/ Dead Sea

To present the concept and the results of the first season of the **Deficit Irrigation for Improving Water Productivity of Vegetables Crops** experiments, as well as lectures and presentations regarding irrigation water management and strategies .two days including one day lectures and discussions, and day field in the site where we are implementing our research experiment. participants were as follows:

- Researchers from NCARE /Jordan
- Researchers from Japan
- Researchers from Israel
- Participant from Ministry of Agriculture
- Participant from Water Authority

Activities included :

- Lectures on deficit irrigation, advantages, practices and demonstration of achieved results from the first season in Ghore Safi and discussions and feed back. Fig.16&17
- Lectures on plant nutrients and fertigation program depending on the prevailing conditions.
- A tour at the Farm, we are implementing our research experiment in Ghore Safi.

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	Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal	Extension activities utilizing research outcomes are enhanced .	NCARE conducts at least 12 extension activities to farmers as a results of the project.	Interview with NCARE, Annual Report of NCARE Interview with extension agents	
Project Purpose	Capacity of NCARE to apply research outcome to practical extension work is strengthened.	Extension agents evaluate that the contents of extension activities utilizing research outcomes are effective.	Interview with extension agents, Interview with NCARE	NCARE strengthen its extension system according to the basic policy of merging extension and research
Output	1 Advanced agricultural knowledge and technology is acquired by researchers and extension agents.	1-1 Ten (10) training courses in Israel are held. 1-2 More than one hundred twenty (120) participants attend training courses in Israel. 1-3 Eight (8) training courses are held in Jordan. 1-4 One hundred and fifty (150) participants attend training courses in Jordan. 1-5 Participants of trainings in Israel judge that they gained new knowledge and those are important to their work. 1-6 At least 3 experts to dispatch to Jordan from Jordan, Japanese and Israeli expert	Attendance reports of the courses Attendance reports of the courses Reports of the local trainings, Records of the Project Reports of the local trainings, Records of the Project Evaluation Questionnaires of Israeli trainings by CINADCO Record of the Project	
	2 Good practice of extension-oriented applied research, which meets local needs, is conducted.	2-1 Report is submitted based on experimental data. 2-2 More than four (4) seminars are held with participation of experts from Japan/Israel. 2-3 More than sixty (60) participants attend seminars.	Reports of the Applied Research Reports of the Applied Research Reports of the Applied Research	
	3 Good practice of applied research which procedures, outcome and knowledge extracted from are shared and collaborated among researchers and extension agents is created.	3-1 At least four (4) workshops for farmers are held. 3-2 At least one hundred (100) farmers attend workshops. 3-3 At least four (4) training of applied research for extension agents are held. 3-4 At least eighty (80) extension agents and researchers attend training of applied research. 3-5 A brochure/booklet is printed	Reports of the Applied Research Reports of the Applied Research Reports of the Applied Research Reports of the Applied Research Brochure/booklet	
	4 Mechanism to enhance collaboration between research activities and extension work in NCARE is considered and instituted.	4-1-1 At least three (3) action plans are made in the workshop of activities 4-1. 4-1-2 Meeting is held among the managers of NCARE to discuss the action plans 4-1 4-1-3 NCARE decides to realize some of the action plans 4-1 4-2 Meeting is held among the managers of NCARE to discuss the results of output3. 4-3-1 At least six (6) workshops for farmers by researchers and extension agents together are held every year. 4-3-2 More than thirty (30) researchers become extension agents by the end of the Project	Report of the workshop Report of NCARE, Interview with NCARE, Minutes of the meeting among managers of NCARE Report of NCARE, Interview with NCARE, Minutes of the meeting among managers of NCARE Report of NCARE, Interview with NCARE, Minutes of the meeting among managers of NCARE Report of NCARE, Interview with NCARE Report of Trainings	
Activities	1-1 To conduct training for researchers and extension agents in Israel. 1-2 To conduct training for researchers and extension agents in Jordan aiming at dissemination of result of training in Israel. 1-3 To provide with technical advices from Jordan, Japanese and Israeli experts 2-1 To plan, implement, summarize and report extension-oriented applied research 2-2 To provide advices from Israeli experts. Or instead of it, to substitute with study tour to Israel. 2-3 To arrange opportunities to explain and share information on applied research with extension agents at stage of planning, implementation and evaluation 3-1 To demonstrate the applied research to extension agents and farmer at the research site 3-2 To have meetings to explain and share research outcome for extension agents 3-3 To prepare brochure/booklet on research outcome for extension agents and farmers 4-1 To conduct workshops on collaboration and coordination between research activities and extension works 4-1-2 To realize action plan which is formulated in the workshops 4-1. 4-2 To report the result of output 3 so that NCARE managerial level can examine and study methodology of collaboration and coordination. 4-3 To enhance the activities to collaborate and coordinate research and extension	Input Japanese Side 1) Expert 2) Trainings 3) Equipments Israeli Side 1) Expert 2) Trainings 3) Facilities Jordanian Side 1) Project Coordinator 2) Researchers 3) Facilities		Pre-conditions NCARE staff is able to be dispatched to Israel. Japanese experts are able to visit to Jordan and Israel.

5. 評価グリッド

評価グリッド案(ヨルダン・日本・イスラエル三角協力「ヨルダン乾燥地域における先進農業技術の導入計画プロジェクト」終了時評価調査)
Evaluation Grid: Terminal Evaluation for "Trilateral Technical Cooperation (Jordan-Japan-Israel) concerning the Introduction of Advanced Agricultural Technology in Dryland"

ANNEX5

5項目	評価設問		必要なデータ	情報源	情報の入手先 または手段	調査結果	備考
	大項目	番号					
妥当性	ターゲットグループのニーズとの整合性	1-1	事業活動はターゲットグループ(NCARE普及員・研究員)のニーズと現在も合致しているか?	事業開始時から事業終了時までのターゲットグループのニーズの変化、また今後の見込み	①報告書 ②NCARE(マネジメント)	②聞き取りまたは質問票	
	ヨルダンの国家開発計画及び農業開発政策との整合性	1-2	ヨルダンの農業普及活動に関連する政策との整合性はあるか? また今後とも整合性は確保されるか?	事業開始時と現在のヨルダンの普及活動関連政策の変更点・整合性	①NCARE(マネジメント) ②農業分野5カ年計画 ③国家開発計画	聞き取りまたは質問票	
	日本の援助政策との整合性	1-3	日本の援助政策との整合性はあるか?	当該分野におけるプロジェクトの位置づけ	①JICA国別事業実施計画 ②国別援助実施計画 ③JICAヨルダン事務所 ④重点課題分野、ローリングプラン(JICA)	③聞き取りまたは質問票	
	事業計画の妥当性	1-4	イスラエルにおける研修の技術移転の方法(指導科目・技術レベル、現地への定着可能性・習得レベルの確認、教材等)は適切だったか?	関連資料、関係者の所感	①CINADCO(研修講師) ②NCARE(研修担当、研修参加者・所属部署長) ③関連報告書	①②聞き取りまたは質問票	
			ヨルダンにおける研修の技術移転の方法(指導科目・技術レベル、現地への定着可能性・習得レベルの確認、教材等)は適切だったか?	関連資料、関係者の所感	①NCARE(研修担当、研修参加者・所属部署長) ②関連報告書	①②聞き取りまたは質問票	
		1-6	イスラエルにおける研修成果がヨルダンにおける研修で活用できるよう計画されたか?	関連資料、関係者の所感	①CINADCO(研修講師) ②NCARE(研修担当、ヨルダン人講師・研修参加者・所属部署長) ③関連報告書	①②聞き取りまたは質問票	
		1-7	実証試験の実施方法(普及活動に有益な内容であったか、研修、セミナー、ワークショップの内容・実施方法)は適切だったか?	関連資料、関係者の所感	①NCARE(実証試験担当、研究員、セミナー・ワークショップ・研修参加者(普及員・農民)) ②CINADCO(講師)(セミナー関連のみ) ③関連報告書	①②聞き取りまたは質問票	
		1-8	日本及びイスラエルの技術的優位性はあったか?	日本・イスラエルの当該農業技術の優位性	①CINADCO(研修局長、研修講師) ②NCARE(マネジメント、研修担当、研究員、普及員) ③ヨルダン農業省	①②③聞き取りまたは質問票	
		1-9	三角協力学アプローチの妥当性	三角協力の目的と事業期間中の協力経緯	①報告書 ②ヨルダン計画省 ③農業省 ④NCARE(マネジメント) ⑤MASHAV(研修局長)及びCINADCO(局長、研修局長) ⑥JICAヨルダン・パレスチナ事務所 ⑦在イスラエル日本大使館 ⑧イスラエル大使館(在ヨルダン) ⑨在ヨルダン日本大使館	②③④⑤⑥ ⑦⑧⑨聞き取り	

有効性	プロジェクト目標の達成見込み	2-1	別グリッド(指標の確認表)で確認					
	プロジェクト成果の達成見込み	2-2	別グリッド(指標の確認表)で確認					
	プロジェクト目標の達成を阻害する外部要因と理由	2-3	NCAREスタッフのイスラエルへの派遣、日本人研修講師のイスラエル及びヨルダンへの派遣がスムーズに実施されたか？	派遣の実績、関係者所感	①報告書 ②NCARE(JICA事業担当) ③CINADCO(研修局長、研修調整員) ④JICA関係者(ヨルダン事務所、パレスチナ事務所) ⑤在ヨルダンイスラエル大使館	②③④聞き取りまたは質問票		
	プロジェクト成果がプロジェクト目標の達成に貢献しているか？	2-4	研修、実証試験、「普及と研究の連携活動」はプロジェクト目標の達成に貢献しているか？	関連資料、関係者所感	①報告書 ②NCARE(マネジメント、JICA事業担当、実証試験担当) ③JICA事務所(ヨルダン事務所) ④JICAプロジェクト(調整員)	②③聞き取りまたは質問票		
	プロジェクト目標と成果達成の阻害・貢献要因	2-5	プロジェクト目標または成果達成に正負の影響を与えた上記以外の要因はあるか？	阻害・貢献要因	①NCARE(JICA事業担当) ②CINADCO(局長、研修局長) ③JICA関係者(ヨルダン事務所、パレスチナ事務所) ④JICAプロジェクト(調整員)	①②③④聞き取りまたは質問票		

効率性	投入量の効率性	3-1	日本人講師人数、指導科目、派遣時期は適切だったか？	日本人講師人数、指導科目、派遣時期	①実績確認資料 ②研修講師報告書 ③NCARE(研修担当、研修員) ④CINADCO(調整員) ⑤JICAプロジェクト(調整員)	③④聞き取りまたは質問票		
		3-2	供与機材の種類、量、投入時期は適切だったか？	機材の供与実績、関係者所感	①実績確認資料 ②NCARE(JICA事業担当、実証試験担当) ③JICA関係者(ヨルダン事務所) ④JICAプロジェクト(調整員)	②③④聞き取りまたは質問票		
		3-3	参加研修員人数、派遣時期は適切だったか？	研修実績、関係者所感	①研修実績確認資料 ②NCARE(研修担当、研修員、研修員所属部署長) ③CINADCO(研修局長、研修講師) ④JICAプロジェクト(調整員)	②③④聞き取りまたは質問票		
		3-4	研修講師、施設、設備は適切だったか(ヨルダン及びイスラエル)？	ヨルダン及びイスラエルの研修施設・設備、イスラエル人研修講師派遣実績、関係者所感	①ヨルダン側投入実績確認資料 ②イスラエル側投入実績確認資料 ③NCARE(研修参加者(特にヨルダン人講師)、研修担当) ④プロジェクト(調整員)	③④聞き取りまたは質問票		
		3-5	実証試験にかかる投入(試験費用、セミナー、ワークショップ、研修等)は適切だったか？	投入実績、関係者所感	①報告書 ②NCARE(実証試験担当、JICA事業担当、研究員・普及員) ③JICAプロジェクト(調整員)	②③聞き取りまたは質問票		

効率性の阻害要因	3-6	ハイレベル・ワークショップにかかる投入は適正規模か？	投入計画、関係者所感	①計画書 ②NCARE(WS担当) ③CINADCO(研修局長) ④JICAプロジェクト(調整員)	②③④聞き取りまたは質問票		
	3-7	プロジェクトに係る総経費は適正規模か？	日本側投入実績総額、ヨルダン側総経費、エジプト類似案件の概要	①JICAヨルダン事務所 ②JICAエジプト事務所 ③NCARE財務報告 ④JICAプロジェクト(調整員)	①聞き取りまたは質問票		
	3-8	事業を効率的に運営する上での阻害要因はあったか？	関係者の所感	①報告書 ②NCARE(JICA事業担当、実証試験担当) ③CINADCO(研修局長、研修調整員) ④JICA関係者(ヨルダン事務所、パレスチナ事務所) ⑤JICAプロジェクト(調整員)	②③④⑤聞き取りまたは質問票		

インパクト	上位目標達成の見込み	4-1	別グリッド(指標の確認表)で確認				
	上位目標達成への貢献・阻害要因	4-2	上位目標の達成に貢献・阻害する要因は何か？	関係者の所感	①NCARE(マネジメント、JICA事業担当) ②CINADCO(局長、研修局長) ③JICA関係者(ヨルダン事務所、パレスチナ事務所) ④JICAプロジェクト(調整員)	①②③④聞き取りまたは質問票	
	その他のインパクト	4-3	想定されていた以外の正負のインパクトはあったか？	関係者の所感	①NCARE(JICA事業担当、研究員、普及員) ②CINADCO(局長、研修局長、研修講師、調整員) ③JICA関係者(ヨルダン事務所、パレスチナ事務所) ④ワークショップ参加農民 ⑤JICAプロジェクト(調整員)	①②③④⑤聞き取りまたは質問票	
	地域間協力(信頼醸成面)でのインパクト	4-4	地域間協力によるインパクトは？	関係者の所感	①NCARE(マネジメント、JICA事業担当) ②ヨルダン計画省 ③CINADCO(局長、研修局長) ④MASHAV ⑤JICA関係者(ヨルダン事務所、パレスチナ事務所) ⑥JICAプロジェクト(調整員) ⑦在ヨルダン日本大使館 ⑧在イスラエル日本大使館 ⑨イスラエル大使館(在ヨルダン)	すべて聞き取りまたは質問票	

自立発展性	政策・制度面	5-1	ヨルダン政府によるNCAREへの政策的支援は継続される見通しか？	現政策の継続性	①NCARE(マネジメント) ②ヨルダン農業分野開発計画、あるいは農業省	①②聞き取りまたは質問票	
	組織面	5-2	運営管理能力は十分か？中長期の運営計画はあるか？	運営計画	①NCAREの運営計画書 ②NCARE(マネジメント)	②聞き取りまたは質問票	
	財政面	5-3	NCAREが今後も事業活動を実施するに十分な予算を配分することが見込まれるか？	予算方針、財務表	①NCAREの財務表 ②NCARE(マネジメント)	②聞き取りまたは質問票	
	技術面	5-4	実証試験の結果が今後の普及活動に活用される計画はあるか？	実証試験の報告書、研修の教材、関係者所感	①実証試験の報告書 ②研修の教材 ③NCARE(マネジメント、実証試験・研修担当、研究員・普及員) ④JICA関係者(ヨルダン事務所)	③④聞き取りまたは質問票	
		5-5	研究と普及活動の連携は今後も継続し、強化されていくか？	NCARE内の研究及び普及活動が連携される仕組みと定着度	①NCAREの運営計画書(技術面) ②NCARE(マネジメント)	②聞き取りまたは質問票	
	自立発展性の阻害要因	5-6	事業の自立発展性に負の影響を与える阻害要因は？	関係者の所感	①報告書 ②NCARE(マネジメント、JICA事業担当) ③CINADCO(局長、研修局長) ④JICA(ヨルダン事務所) ⑤JICAプロジェクト(調整員)	②③④⑤聞き取りまたは質問票	

大項目		小項目	必要なデータ	情報源	情報の入手先 または手段	終了時評価調査結果	備考
活動の実績	6-1	活動実績の確認(別グリッド(指標の確認表)で確認)。					
マネジメント体制	6-2	ヨルダン、イスラエル側のオーナーシップは十分だったか？	報告書、関係者の所感	①各種関連報告書 ②NCARE(マネジメント) ③CINADCO(局長、研修局長) ④JICA関係者(ヨルダン事務所、パレスチナ事務所) ⑤JICAプロジェクト(調整員)	②③④⑤聞き取りまたは質問票		
モニタリング	6-3	プロジェクトの実施及びモニタリングの仕組みはよく機能していたか？	JCC報告書・参加者、各活動報告のフィードバック状況	①JCC報告書、関連報告書 ②NCARE(JICA事業担当、研修・実証試験担当) ③CINADCO(研修局長、研修調整) ④JICA関係者(ヨルダン事務所、パレスチナ事務所) ⑤JICAプロジェクト(調整員)	②③④⑤聞き取りまたは質問票		
コミュニケーション	6-4	NCARE、CINADCO、イスラエル大使館、MASHAV、JICA間のコミュニケーションはとれていたか？	報告書、関係者の所感	①各種関連報告書 ②NCARE(JICA事業担当、研修・実証試験担当) ③CINADCO(研修局長、研修調整) ④イスラエル大使館 ⑤MASHAV ⑥JICA関係者(ヨルダン事務所、パレスチナ事務所) ⑦JICAプロジェクト(調整員)	②③④⑤⑥⑦聞き取りまたは質問票		
プロジェクト実施の貢献・阻害要因	6-5	プロジェクトの実施を促進あるいは妨げた正負の要因はあったか？	報告書、関係者の所感	①各種関連報告書 ②NCARE(JICA事業担当、研修・実証試験担当) ③CINADCO(研修局長、研修調整) ④JICA関係者(ヨルダン事務所、パレスチナ事務所) ⑤JICAプロジェクト(調整員)	②③④⑤聞き取りまたは質問票		

	Narrative Summary	No.	Objectively Verifiable Indicators	Means of Verification	Achievement	Expectation of Achievement during the Project Period
Overall Goal	Extension activities utilizing research outcomes are enhanced .		NCARE conducts at least 12 extension activities to farmers as a results of the project.	Interview with NCARE, Annual Report of NCARE Interview with extension agents		
Project Purpose	Capacity of NCARE to apply research outcome to practical extension work is strengthened.		Extension agents evaluate that the contents of extension activities utilizing research outcomes are effective.	Interview with extension agents, Interview with NCARE		
Output	1. Advanced agricultural knowledge and technology is acquired by researchers and extension agents.	1-1	Ten (10) training courses in Israel are held.	Attendance reports of the courses		
		1-2	More than one hundred twenty (120) participants attend training courses in Israel.	Attendance reports of the courses		
		1-3	Eight (8) training courses are held in Jordan.	Reports of the local trainings, Records of the Project		
		1-4	One hundred and fifty (150) participants attend training courses in Jordan.	Reports of the local trainings, Records of the Project		
		1-5	Participants of trainings in Israel judge that they gained new knowledge and those are important to their work.	Evaluation Questionnaires of Israeli trainings by CINADCO		
		1-6	At least 3 experts to dispatch to Jordan from Jordan, Japanese and Israeli experts	Record of the Project		
	2. Good practice of extension-oriented applied research, which meets local needs, is conducted.	2-1	Report is submitted based on experimental data.	Reports of the Applied Research		
		2-2	More than four (4) seminars are held with participation of experts from Japan/Israel.	Reports of the Applied Research		
		2-3	More than sixty (60) participants attend seminars.	Reports of the Applied Research		
	3. Good practice of applied research which procedures, outcome and knowledge extracted from are shared and collaborated among researchers and extension agents is created.	3-1	At least four (4) workshops for farmers are held.	Reports of the Applied Research		
		3-2	At least one hundred (100) farmers attend workshops.	Reports of the Applied Research		
		3-3	At least four (4) training of applied research for extension agents are held.	Reports of the Applied Research		
		3-4	At least eighty (80) extension agents and researchers attend training of applied research.	Reports of the Applied Research		
		3-5	A brochure/booklet is printed.	Brochure/booklet		

	4. Mechanism to enhance collaboration between research activities and extension work in NCARE is considered and instituted.	4-1-1	At least three (3) action plans are made in the workshop of activities 4-1.	Report of the workshop		
		4-1-2	Meeting is held among the managers of NCARE to discuss the action plans 4-1.	Report of NCARE, Interview with NCARE, Minutes of the meeting among managers of NCARE		
		4-1-3	NCARE decides to realize some of the action plans 4-1.	Report of NCARE, Interview with NCARE, Minutes of the meeting among managers of NCARE		
		4-2	Meeting is held among the managers of NCARE to discuss the results of output3.	Report of NCARE, Interview with NCARE, Minutes of the meeting among managers of NCARE		
		4-3-1	At least six (6) workshops for farmers by researchers and extension agents together are held every year.	Report of NCARE, Interview with NCARE		
		4-3-2	More than thirty (30) researchers become extension agents by the end of the Project	Report of Trainings		

ヨルダン三角協力:調査対象及び方法(案)

	調査対象	人数	項目数	調査方法・時間	調査票
1	NCARE マネジメント	1名	14	質問表*、インタビュー (1時間)	質問表①
2	NCARE JICA 事業・研修担当	2名	24	質問表、インタビュー(2 時間)	質問表②
3	NCARE 実証試験調整担当	1名	8	質問表、インタビュー(1 時間)	質問表③
4	NCARE 研修員所属部署長	約 20 名	4	質問表、インタビューに て補足(30分程)	アンケート⑥
5	NCARE 研修参加者(普及員・研 究員) イスラエル参加者 国内研修参加者	92 名 114 名	11	アンケート*、 インタビューにて補足(グ ループ・インタビューを各 1時間)	アンケート① アンケート②
6	NCARE 実証試験参加者 試験実施研究員 セミナー参加研究員 研究参加普及員	16 名 30 名 43 名	9	アンケート、インタビュー にて補足(グループ・イン タビューを各 1 時間)	アンケート③ 同上 アンケート④
7	農民(ワークショップ参加者)	54 名	1	グループ・インタビュー (30分)	
8	ヨルダン農業省	1名	3	質問表事前送付の上、 インタビュー(20分)	質問表⑧
9	ヨルダン計画省	1名	2	質問表事前送付の上、 インタビュー(20分)	質問表⑨
10	在ヨルダンイスラエル大使館	1名	3	質問表、及び電話インタ ビュー(15分)	質問表⑩
11	CINADCO 局長	1名	7	インタビュー(TV 会議)? 質問表	質問表④
12	CINADCO 研修局長	1名	14	インタビュー(TV 会議)? 質問表	質問表⑤
13	CINADCO 研修調整員	1名	5	インタビュー(TV 会議)? 質問表	質問表⑥
14	CINADCO 研修講師	約 30 名	7	アンケート	アンケート⑤
15	MASHAV	1名	3	インタビュー(TV 会議)? あるいは質問表	質問表⑦

16	JICA プロジェクト(調整員及びC/P)	1名	16	グリッド回答(調整員)インタビュー(C/P)(1時間)	
17	在イスラエル日本大使館	1名	2	質問表	質問表⑪
18	JICA ヨルダン事務所	1名	16	グリッド回答	
19	JICA パレスチナ事務所	1名	11	グリッド回答	
20	在ヨルダン日本大使館	1名	2	質問表	質問表⑫

* 質問表は記述式の回答方法が多勢のもの(集計不要)。アンケートは対象者が複数で集計が必要となるもので、記述式の回答数を絞っているもの。

Questions to the NCARE Director General

JICA will dispatch the terminal evaluation mission to Jordan from 23rd February to 3rd March for the Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dry-land Area". The purpose of the mission is to verify the achievement of the project, to decide the duration of the project and activities after the project completed, as well as to gain lessons learnt for the similar projects in other countries. The evaluation is to be made based on the five criteria, i.e. relevancy, effectiveness, efficiency, impact, and sustainability, the definitions of which are shown in the end of this question sheet.

The series of questions shown below is necessary information for the evaluation mission. We would like to ask your kind cooperation in answering the questions.

- If you find unclear questions or irrelevant questions, please keep them blank; we will explain to you when we have an opportunity to meet you during the above mission term.
- If not mentioned otherwise, the questions cover the whole range of activities during the project term up to now.

Thank you for your cooperation.

XXth January 2011
JICA Terminal Evaluation Team

Questions regarding Relevance

1. Do the needs of NCARE staff (researchers and extension agents) remain the same since the commencement of the JICA project? Is there still good consistency between their needs and the JICA project activities? (Ref. 1-1)
2. Does the Jordanian policy relating to the agricultural extension activities still keep the consistency to the JICA project? Will the consistency continue during the project term and after? (Ref: 1-2)
3. Do you think the agricultural technologies in Japan or in Israel have the advantage in applying them to Jordan? (Ref. 1-8)
4. The JICA project has been organized based on the cooperation among Jordan, Israel

and Japan. What have been value-added factors in the trilateral cooperation approach? (Ref. 1-9)

Questions regarding Effectiveness

5. Do you think the implementation of the applied research as well as the high level workshop has contributed to the achievement of the project purpose? (Ref. 2-4)

Questions regarding Impact

6. What are the contributing factors to promote achieving the overall goal of the JICA project, i.e. "Extension activities utilizing research outcomes are enhanced"? (Ref. 4-2)
7. What are the obstructing factors to impede achieving the overall goal of the JICA project, i.e. "Extension activities utilizing research outcomes are enhanced"? (Ref. 4-2)
8. Did you notice any positive or negative impact by implementing the JICA project? (Ref. 4-3)
9. The JICA project is organized based on the regional cooperation approach as well. Did you notice any positive or negative impact to your staff, or to your section by the regional cooperation? (Ref. 4-4)

Questions regarding Sustainability

10. Will the government of Jordan continue to support NCARE by its policy? (Ref. 5-1)
11. Does NCARE have mid-term or long-term management plan? Does NCARE have a systematic management structure? (Ref. 5-2)
12. Will NCARE continue to secure the budget for its activities including the JICA project during the project term? (Ref. 5-3)
13. Is there any plan to utilize the result of the applied research to the extension activities in the future? (Ref. 5-4)

14. Will the collaboration between the research and extension activities continue to be enhanced? (Ref. 5-5)
15. What are the obstructive factors to influence the sustainability of the JICA project? (Ref. 5-6)

Questions regarding Project Process

16. Have you kept the sense of the ownership of the JICA project by NCARE? (Ref. 6-2)

Thank you for your cooperation.

JICA Terminal Evaluation Team

Cf. The Definitions of the 5 Criteria:

1. Relevance:

During the evaluation stage, examine the compliance of the project objectives with the development policy and needs of the expected beneficiaries.

2. Effectiveness:

Identify the achievement of the Project Purpose, focusing on the extent to which the project Outputs contributed to its achievement.

3. Efficiency:

Measure the efficiency with which the outputs have been achieved through Inputs, in the terms of both quantity and quality, considering the appropriateness, timing, cost, and benefit of the Inputs (the relationship between Inputs and Outputs)

4. Impact:

Assess the Project's effects, both positive and negative, inside and outside of the project, including those effects not anticipated at the project planning stage.

5. Sustainability:

Assess whether the benefits of the project will be sustained after the donor's assistance is terminated.

Questions to the NCARE Officials **in Charge of the JICA Project and the Trainings**

JICA will dispatch the terminal evaluation mission to Jordan from 23rd February to 3rd March for the Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dry-land Area". The purpose of the mission is to verify the achievement of the project, to decide the duration of the project and activities after the project completed, as well as to gain lessons learnt for the similar projects in other countries. The evaluation is to be made based on the five criteria, i.e. relevancy, effectiveness, efficiency, impact, and sustainability, the definitions of which are shown in the end of this question sheet.

The series of questions shown below is necessary information for the evaluation mission. We would like to ask your kind cooperation in answering the questions.

- If you find unclear questions or irrelevant questions, please keep them blank; we will explain to you when we have an opportunity to meet you during the above mission term.
- If not mentioned otherwise, the questions cover the whole range of activities during the project term up to now.

Thank you for your cooperation.

XXth January 2011
JICA Terminal Evaluation Team

Questions regarding Relevance

1. Do you think that the training courses in Israel satisfactory to provide necessary skills and knowledge based on NCARE staff's needs? (Ref. 1-4)
2. Do you think that the training courses in Jordan satisfactory to provide necessary skills and knowledge based on NCARE staff's needs? (Ref. 1-5)
3. Do you think that the training courses in Israel planned in the way that the knowledge acquired can be applied to the training courses in Jordan? (Ref. 1-6)
4. Do you think the agricultural technologies in Japan or in Israel have the advantage in

applying them to Jordan? (Ref. 1-8)

Questions regarding Effectiveness

5. Do you think the dispatch of NCARE staff to Israel, as well as the dispatches of Japanese lecture(s) to Israel have been done smoothly? (Ref. 2-3)
6. Do you think the implementation of the applied research as well as the high level workshop has contributed to the achievement of the project purpose? (Ref. 2-4)
7. Have you noted any important factors that influenced the achievement of the project purpose or outputs? (Ref. 2-5)

Questions regarding Efficiency

8. Do you think the Japanese lecturers have been dispatched appropriately in terms of the number, the topics provided by them, and the timing of their dispatches? (Ref. 3-1)
9. Do you think the equipment provided by Japan were appropriate in terms of the kinds, quantities, and the timing of procurements? (Ref. 3-2)
10. Do you think the number of training participants per course were appropriate? (Ref. 3-3)
11. Do you think the timing of the training courses in Israel or in Jordan held were appropriate? (Ref. 3-3)
12. Do you think the input by Jordan and by Israel have been made accordingly in terms of their lecturers, facilities, and equipments? (Ref. 3-4)
13. Do you think the input regarding the applied research (incl. seminars, workshops, and trainings) have been made accordingly to secure its smooth operation? (Ref. 3-5)
14. Do you think the input regarding the high level workshop have been made appropriately to secure its smooth operation? (Ref. 3-6)

15. Did you note any negative factors that impeded the smooth operation of the project?
(Ref. 3-8)

Questions regarding Impact

16. What are the contributing factors to promote achieving the overall goal of the JICA project, i.e. “Extension activities utilizing research outcomes are enhanced”? (Ref. 4-2)
17. What are the obstructing factors to impede achieving the overall goal of the JICA project, i.e. “Extension activities utilizing research outcomes are enhanced”? (Ref. 4-2)
18. Did you notice any positive or negative impact by implementing the JICA project? (Ref. 4-3)
19. The JICA project is organized based on the regional cooperation approach. Did you notice any positive or negative impact to your staff, or to your section by the regional cooperation? (Ref. 4-4)

Questions regarding Sustainability

20. Is there any plan to utilize the result of the applied research to the extension activities in the future? (Ref. 5-4)
21. What are the obstructive factors to influence the sustainability of the JICA project?
(Ref. 5-6)

Questions regarding Project Process

22. Have the JICA project been implemented systematically? Have there been any monitoring systems or activities? (Ref. 6-3)
23. Have there been sufficient and smooth communications among NCARE, CINADCO, the Embassy of Israel in Jordan, MASHAV, and JICA? (Ref. 6-4)
24. What are the contributing or obstructing factors to promote or impede the smooth project implementation? (Ref. 6-5)

Thank you for your cooperation.

JICA Terminal Evaluation Team

Cf. The Definitions of the 5 Criteria:

1. Relevance:

During the evaluation stage, examine the compliance of the project objectives with the development policy and needs of the expected beneficiaries.

2. Effectiveness:

Identify the achievement of the Project Purpose, focusing on the extent to which the project Outputs contributed to its achievement.

3. Efficiency:

Measure the efficiency with which the outputs have been achieved through Inputs, in the terms of both quantity and quality, considering the appropriateness, timing, cost, and benefit of the Inputs (the relationship between Inputs and Outputs)

4. Impact:

Assess the Project's effects, both positive and negative, inside and outside of the project, including those effects not anticipated at the project planning stage.

5. Sustainability:

Assess whether the benefits of the project will be sustained after the donor's assistance is terminated.

Questions to the NCARE Coordinator **for the Applied Research**

JICA will dispatch the terminal evaluation mission to Jordan from 23rd February to 3rd March for the Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dry-land Area". The purpose of the mission is to verify the achievement of the project, to decide the duration of the project and activities after the project completed, as well as to gain lessons learnt for the similar projects in other countries. The evaluation is to be made based on the five criteria, i.e. relevancy, effectiveness, efficiency, impact, and sustainability, the definitions of which are shown in the end of this question sheet.

The series of questions shown below is necessary information for the evaluation mission. We would like to ask your kind cooperation in answering the questions.

- If you find unclear questions or irrelevant questions, please keep them blank; we will explain to you when we have an opportunity to meet you during the above mission term.
- If not mentioned otherwise, the questions cover the whole range of activities during the project term up to now.

Thank you for your cooperation.

XXth January 2011
JICA Terminal Evaluation Team

Questions regarding Relevance

1. Relevance of the plan of the applied research (Ref. 1-7)
 - (1) Do you think the research contents applicable to the extension activities in the future?
 - (2) Have the research method (approach) been chosen appropriately to give an optimum result?
 - (3) Have the seminars been organized appropriately?
 - (4) Have the workshops been organized appropriately?
 - (5) Have the training for extension agents been organized appropriately?

Questions regarding Efficiency

2. Do you think the input regarding the applied research (incl. seminars, workshops, and trainings) have been made accordingly to secure its smooth operation? (Ref. 3-5)
3. Did you note any negative factors that impeded the smooth operation of the project? (Ref. 3-8)

Questions regarding Impact

4. What are the contributing factors to promote achieving the overall goal of the JICA project, i.e. "Extension activities utilizing research outcomes are enhanced"? (Ref. 4-2)
5. What are the obstructing factors to impede achieving the overall goal of the JICA project, i.e. "Extension activities utilizing research outcomes are enhanced"? (Ref. 4-2)
6. Did you notice any positive or negative impact by implementing the JICA project? (Ref. 4-3)
7. The JICA project is organized based on the regional cooperation approach. Did you notice any positive or negative impact to your staff, or to your section by the regional cooperation? (Ref. 4-4)

Questions regarding Sustainability

8. Is there any plan to utilize the result of the applied research to the extension activities in the future? (Ref. 5-4)

Questions regarding Project Process

9. Have the JICA project been implemented systematically? Have there been any monitoring systems or activities? (Ref. 6-3)
10. Have there been sufficient and smooth communications among NCARE, CINADCO, the embassy of Israel in Jordan, MASHAV, and JICA? (Ref. 6-4)

11. What are the contributing or obstructing factors to promote or impede the smooth project implementation? (Ref. 6-5)

Thank you for your cooperation.

JICA Terminal Evaluation Team

Cf. The Definitions of the 5 Criteria:

1. Relevance:

During the evaluation stage, examine the compliance of the project objectives with the development policy and needs of the expected beneficiaries.

2. Effectiveness:

Identify the achievement of the Project Purpose, focusing on the extent to which the project Outputs contributed to its achievement.

3. Efficiency:

Measure the efficiency with which the outputs have been achieved through Inputs, in the terms of both quantity and quality, considering the appropriateness, timing, cost, and benefit of the Inputs (the relationship between Inputs and Outputs)

4. Impact:

Assess the Project's effects, both positive and negative, inside and outside of the project, including those effects not anticipated at the project planning stage.

5. Sustainability:

Assess whether the benefits of the project will be sustained after the donor's assistance is terminated.

Questions to the Director General of CINADCO

JICA will dispatch the terminal evaluation mission to Jordan from 23rd February to 3rd March for the Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dry-land Area". The purpose of the mission is to verify the achievement of the project, to decide the duration of the project and activities after the project completed, as well as to gain lessons learnt for the similar projects in other countries. To this end, we would like to ask your kind cooperation in answering the following question.

Thank you for your cooperation.

XXth January 2011

JICA Terminal Evaluation Team

1. The JICA project has been organized based on the cooperation among Jordan, Israel and Japan. What have been value-added factors in the trilateral cooperation approach? (Ref. 1-9)
2. Have you noted any important factors that influenced the achievement of the project purpose or outputs? (Ref. 2-5)
3. What are the contributing factors to promote achieving the overall goal of the JICA project, i.e. "Extension activities utilizing research outcomes are enhanced"? (Ref. 4-2)
4. What are the obstructing factors to impede achieving the overall goal of the JICA project, i.e. "Extension activities utilizing research outcomes are enhanced"? (Ref. 4-2)
5. Did you notice any positive or negative impact by implementing the JICA project? (Ref. 4-3)
6. The JICA project has been organized by the regional cooperation approach as well. Did you notice any positive or negative impact inside and outside of the JICA project by the regional cooperation? (Ref. 4-4)

Question Sheet No.4

7. What are the obstructive factors to influence the sustainability of the JICA project?
(Ref. 5-6)

8. Have you kept the sense of the ownership for the JICA project by CINADCO? (Ref. 6-2)

Thank you for your cooperation.

JICA Terminal Evaluation Team

Questions to **the Director of Training in CINADCO**

JICA will dispatch the terminal evaluation mission to Jordan from 23rd February to 3rd March for the Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dry-land Area". The purpose of the mission is to verify the achievement of the project, to decide the duration of the project and activities after the project completed, as well as to gain lessons learnt for the similar projects in other countries. The evaluation is to be made based on the five criteria, i.e. relevancy, effectiveness, efficiency, impact, and sustainability, the definitions of which are shown in the end of this question sheet.

The series of questions shown below is necessary information for the evaluation mission. We would like to ask your kind cooperation in answering the questions.

- If you find unclear questions or irrelevant questions, please keep them blank; we will explain to you when we have an opportunity to meet you during the above mission term.
- If not mentioned otherwise, the questions cover the whole range of activities during the project term up to now.

Thank you for your cooperation.

XXth January 2011
JICA Terminal Evaluation Team

Questions regarding Relevance

1. Do you think the agricultural technologies in Japan or in Israel have the advantage in applying them to Jordan? (Ref. 1-8)
2. The JICA project has been organized based on the cooperation among Jordan, Israel and Japan. What have been value-added factors in the trilateral cooperation approach? (Ref. 1-9)

Questions regarding Effectiveness

3. Do you think the dispatch of NCARE staff to Israel, as well as the dispatches of

Japanese lecture(s) to Israel have been done smoothly? (Ref. 2-3)

4. Have you noted any important factors that influenced the achievement of the project purpose or outputs? (Ref. 2-5)

Questions regarding Efficiency

5. Do you think the number of training participants per course were appropriate? (Ref. 3-3)
6. Do you think the timing of the training courses in Israel or in Jordan held were appropriate? (Ref. 3-3)
7. Do you think the input regarding the high level workshop have been made appropriately to secure its smooth operation? (Ref. 3-6)
8. Did you note any negative factors that impeded the smooth operation of the project? (Ref. 3-8)

Questions regarding Impact

9. What are the contributing factors to promote achieving the overall goal of the JICA project, i.e. "Extension activities utilizing research outcomes are enhanced"? (Ref. 4-2)
10. What are the obstructing factors to impede achieving the overall goal of the JICA project, i.e. "Extension activities utilizing research outcomes are enhanced"? (Ref. 4-2)
11. Did you notice any positive or negative impact by implementing the JICA project? (Ref. 4-3)
12. The JICA project is organized based on the regional cooperation. Did you notice any positive or negative impact inside and outside the project by this regional cooperation? (Ref. 4-4)

Questions regarding Sustainability

13. What are the obstructive factors to influence the sustainability of the JICA project?
(Ref. 5-6)

Questions regarding Project Process

14. Have you kept the sense of the ownership for the JICA project by your organization?
(Ref. 6-2)
15. Have the JICA project been implemented systematically? Have there been any monitoring systems or activities? (Ref. 6-3)
16. Have there been sufficient and smooth communications among NCARE, CINADCO, the Embassy of Israel in Jordan, MASHAV, and JICA? (Ref. 6-4)
17. What are the contributing or obstructing factors to promote or impede the smooth project implementation? (Ref. 6-5)

Thank you for your cooperation.

JICA Terminal Evaluation Team

Cf. The Definitions of the 5 Criteria:

1. Relevance:

During the evaluation stage, examine the compliance of the project objectives with the development policy and needs of the expected beneficiaries.

2. Effectiveness:

Identify the achievement of the Project Purpose, focusing on the extent to which the project Outputs contributed to its achievement.

3. Efficiency:

Measure the efficiency with which the outputs have been achieved through Inputs, in the terms of both quantity and quality, considering the appropriateness, timing, cost, and benefit of the Inputs (the relationship between Inputs and Outputs)

4. Impact:

Assess the Project's effects, both positive and negative, inside and outside of the project, including those effects not anticipated at the project planning stage.

5. Sustainability:

Assess whether the benefits of the project will be sustained after the donor's assistance is terminated.

Questions to the Coordinator of CINADCO

JICA will dispatch the terminal evaluation mission to Jordan from 23rd February to 3rd March for the Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dry-land Area". The purpose of the mission is to verify the achievement of the project, to decide the duration of the project and activities after the project completed, as well as to gain lessons learnt for the similar projects in other countries. The evaluation is to be made based on the five criteria, i.e. relevancy, effectiveness, efficiency, impact, and sustainability, the definitions of which are shown in the end of this question sheet.

The series of questions shown below is necessary information for the evaluation mission. We would like to ask your kind cooperation in answering the questions.

- If you find unclear questions or irrelevant questions, please keep them blank; we will explain to you when we have an opportunity to meet you during the above mission term.
- If not mentioned otherwise, the questions cover the whole range of activities during the project term up to now.

Thank you for your cooperation.

XXth January 2011
JICA Terminal Evaluation Team

Questions regarding Effectiveness

1. Do you think the dispatch of NCARE staff to Israel, as well as the dispatches of Japanese lecture(s) to Israel have been done smoothly? (Ref. 2-3)

Questions regarding Efficiency

2. Did you note any negative factors that impeded the smooth operation of the project? (Ref. 3-8)

Questions regarding Project Process

3. Have the JICA project been implemented systematically? Have there been any

monitoring systems or activities? (Ref. 6-3)

4. Have there been sufficient and smooth communications among NCARE, CINADCO, the embassy of Israel in Jordan, MASHAV, and JICA? (Ref. 6-4)
5. What are the contributing or obstructing factors to promote or impede the smooth project implementation? (Ref. 6-5)

Thank you for your cooperation.

JICA Terminal Evaluation Team

Cf. The Definitions of the 5 Criteria:

1. Relevance:

During the evaluation stage, examine the compliance of the project objectives with the development policy and needs of the expected beneficiaries.

2. Effectiveness:

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4. Impact:

Assess the Project's effects, both positive and negative, inside and outside of the project, including those effects not anticipated at the project planning stage.

5. Sustainability:

Assess whether the benefits of the project will be sustained after the donor's assistance is terminated.

Questions to the official in charge of MASHAV

JICA will dispatch the terminal evaluation mission to Jordan from 23rd February to 3rd March for the Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dry-land Area". The purpose of the mission is to verify the achievement of the project, to decide the duration of the project and activities after the project completed, as well as to gain lessons learnt for the similar projects in other countries. To this end, we would like to ask your kind cooperation in answering the following questions.

Thank you for your cooperation.

XXth January 2011

JICA Terminal Evaluation Team

1. The JICA project has been organized based on the cooperation among Jordan, Israel and Japan. What have been value-added factors in the trilateral cooperation approach? (Ref. 1-9)
2. The JICA project has been organized by the regional cooperation approach as well. Did you notice any positive or negative impact inside and outside of the JICA project by the regional cooperation? (Ref. 4-4)
3. Have there been sufficient and smooth communications among NCARE, CINADCO, the Embassy of Israel in Jordan, MASHAV, and JICA? (Ref. 6-4)

Thank you for your cooperation.

JICA Terminal Evaluation Team

Questions to the Officials **in Ministry of Agriculture**

JICA will dispatch the terminal evaluation mission to Jordan from 23rd February to 3rd March for the Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dry-land Area". The purpose of the mission is to verify the achievement of the project, to decide the duration of the project and activities after the project completed, as well as to gain lessons learnt for the similar projects in other countries. To this end, we would like to ask your kind cooperation in answering the following questions. As we plan to visit you during the above mission term, we would like to have your answers in that occasion.

Thank you for your cooperation.

XXth January 2011
JICA Terminal Evaluation Team

Questions:

1. Do you think the agricultural technologies in Japan or in Israel have the advantage in applying them to Jordan? (Ref. 1-8)
2. The JICA project has been implemented based on the cooperation among Jordan, Israel and Japan. What have been value-added factors in the above trilateral cooperation approach? (Ref. 1-9)
3. Will the government of Jordan continue to support NCARE activities by its policy? (Ref. 5-1)

Thank you for your cooperation.

JICA Terminal Evaluation Team

Questions to the officials
in Ministry of Planning & International
Cooperation

JICA will dispatch the terminal evaluation mission to Jordan from 23rd February to 3rd March for the Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dry-land Area". The purpose of the mission is to verify the achievement of the project, to decide the duration of the project and activities after the project completed, as well as to gain lessons learnt for the similar projects in other countries. To this end, we would like to ask your kind cooperation in answering the following questions. As we plan to visit you during the above mission term, we would like to have your answers in that occasion.

Thank you for your cooperation.

XXth January 2011
JICA Terminal Evaluation Team

Questions:

1. The JICA project has been organized based on the cooperation among Jordan, Israel and Japan. What have been value-added factors in the trilateral cooperation approach? (Ref. 1-9)
2. The JICA project has been organized by the regional cooperation approach as well. Did you notice any positive or negative impact inside and outside of the JICA project by the regional cooperation? (Ref. 4-4)

Thank you for your cooperation.

JICA Terminal Evaluation Team

Questions to the Embassy of Israel in Jordan

JICA will dispatch the terminal evaluation mission to Jordan from 23rd February to 3rd March for the Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dry-land Area". The purpose of the mission is to verify the achievement of the project, to decide the duration of the project and activities after the project completed, as well as to gain lessons learnt for the similar projects in other countries. To this end, we would like to ask your kind cooperation in answering the following questions.

Thank you for your cooperation.

XXth January 2011
JICA Terminal Evaluation Team

Questions:

1. The JICA project has been organized based on the cooperation among Jordan, Israel and Japan. What have been value-added factors in the trilateral cooperation approach? (Ref. 1-9)
2. The JICA project has been organized by the regional cooperation approach as well. Did you notice any positive or negative impact inside and outside of the JICA project by the regional cooperation? (Ref. 4-4)
3. Have there been sufficient and smooth communications among NCARE, CINADCO, the Embassy of Israel in Jordan, MASHAV, and JICA? (Ref. 6-4)

Thank you for your cooperation.

JICA Terminal Evaluation Team

ヨルダン・日本・イスラエル三角協力「ヨルダン乾燥地域における先進農業技術の導入計画プロジェクト」
終了時評価

質問票

平成 23 年 1 月 XX 日

在イスラエル日本大使館 御担当書記官 殿

JICA ヨルダン事務所では、標記案件の終了時評価を平成 23 年 1 月 23 日（日）から 2 月 3 日（木）の日程で実施予定です。JICA では、終了時評価を、JICA の事業サイクルの一つとして位置づけ、「プロジェクト目標の達成度、事業の効率性、今後の自立発展性の見通しなどの観点から評価する」ために実施しています。

本質問票は、終了時評価調査団が評価報告書を作成するにあたり、事業関係機関からプロジェクトに関する情報を提供頂くとともに、プロジェクトに関する事実関係を確認するためのものです。ご多忙中誠に恐縮ながら、以下質問事項にご回答頂きますと幸いです。本事業のみならず JICA 事業の改善のために貴重な資料となりますので、忌憚の無いご意見を頂きたくよろしくお願い申し上げます。本質問表は、1 月 XX 日を目途に、JICA パレスチナ事務所までご返信頂きますと幸いです。

ご協力の程どうぞ宜しくお願い申し上げます。

JICA 終了時評価調査団

1. 本件事業は、ヨルダン、イスラエル、日本の三者間における三角協力アプローチによって実施されています。本件事業を同アプローチによって行う意義と妥当性に、事業期間を通じて何らかの変化はあったでしょうか。
2. 本件事業は、イスラエル、ヨルダン間の信頼醸成を目指した地域間協力アプローチによって実施されています。本件事業の実施によって、信頼醸成を図る上で何らかのインパクトは確認されましたでしょうか。

以上

ヨルダン・日本・イスラエル三角協力「ヨルダン乾燥地域における先進農業技術の導入計画プロジェクト」
終了時評価

質問票

平成 23 年 1 月 XX 日

在ヨルダン日本大使館 御担当書記官 殿

JICA ヨルダン事務所では、標記案件の終了時評価を平成 23 年 1 月 23 日（日）から 2 月 3 日（木）の日程で実施予定です。JICA では、終了時評価を、JICA の事業サイクルの一つとして位置づけ、「プロジェクト目標の達成度、事業の効率性、今後の自立発展性の見通しなどの観点から評価する」ために実施しています。

本質問票は、終了時評価調査団が評価報告書を作成するにあたり、事業関係機関からプロジェクトに関する情報を提供頂くとともに、プロジェクトに関する事実関係を確認するためのものです。ご多忙中誠に恐縮ながら、以下質問事項にご回答頂けますと幸いです。本事業のみならず JICA 事業の改善のために貴重な資料となりますので、忌憚の無いご意見を頂きたくよろしくお願い申し上げます。本質問表は、1 月 XX 日を目途に、JICA ヨルダン事務所までご返信頂けますと幸いです。

ご協力の程どうぞ宜しくお願い申し上げます。

JICA 終了時評価調査団

1. 本件事業は、ヨルダン、イスラエル、日本の三者間における三角協力アプローチによって実施されています。本件事業を同アプローチによって行う意義と妥当性に、事業期間を通じて何らかの変化はあったでしょうか。
2. 本件事業は、イスラエル、ヨルダン間の信頼醸成を目指した地域間協力アプローチによって実施されています。本件事業の実施によって、信頼醸成を図る上で何らかのインパクトは確認されましたでしょうか。

以上

Questions to the Embassy of Jordan in Israel

JICA will dispatch the terminal evaluation mission to Jordan from 23rd January to 3rd February for the Tri-lateral Cooperation Project on "Introduction of Advanced Agricultural Technology in Dry-land Area". The purpose of the mission is to verify the achievement of the project, to decide the duration of the project and activities after the project completed, as well as to gain lessons learnt for the similar projects in other countries. To this end, we would like to ask your kind cooperation in answering the following questions.

Thank you for your cooperation.

17th January 2011
JICA Terminal Evaluation Team

Questions:

1. The JICA project has been organized based on the cooperation among Jordan, Israel and Japan. What benefit did you identify in the trilateral cooperation compared to bilateral cooperation approach?
2. The JICA project has been organized by the regional cooperation approach as well. What positive and what negative impacts did you notice as a result of the regional cooperation of the JICA project?

Thank you for your cooperation.

JICA Terminal Evaluation Team

Questionnaire No.1 (NCARE Staff joined in the training courses in Israel)

Number of the answers collected	14	20.9%
No of target group	67	100%

		No of answers	% of Total answers	% of Total attended
1	Were the training courses in Israel satisfactory to provide necessary skills and knowledge to you? (Ref. 1-4)	14	100.0%	20.9%
	Yes, very much	1	7.1%	1.5%
	Yes	12	85.7%	17.9%
	No	1	7.1%	1.5%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	(1) Topics	13	92.9%	19.4%
	Appropriate	10	71.4%	14.9%
	Partly not appropriate	3	21.4%	4.5%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Appropriate: Israel has high technology and very good knowledge.	3		
	Partly not appropriate: More focus on the specific topics needed.	1		
	Appropriate: Many information on the topic.	1		
	Appropriate: There were theoretical as well as practical topics.	1		
	Appropriate: Directly related to my academic field.	1		
	(2) Level of the Courses	14	100.0%	20.9%
	Too difficult	0	0.0%	0.0%
	Moderate	12	85.7%	17.9%
	Too easy	2	14.3%	3.0%
	Other	0	0.0%	0.0%
	Why?			
	Moderate: Had enough background of the subject.	1		
	Moderate: Couldn't have all information needed.	1		
	Moderate: Was taught in simplified way, that I had understood.	1		
	Moderate: Some information was already known.	1		
	(3) Organization of the field trips	13	92.9%	19.4%
	Appropriate	10	71.4%	14.9%
	Partly not appropriate	3	21.4%	4.5%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Partly not appropriate: Needed more field trip.	2		
	Appropriate: Most benefit to transfer knowledge.	1		
	Partly not appropriate: Should include all practical aspects related to the subject.	1		
	(4) Applicability to their work	13	92.9%	19.4%
	Yes, very much	4	28.6%	6.0%
	Yes	7	50.0%	10.4%
	No	0	0.0%	0.0%
	Not at all	1	7.1%	1.5%
	Other	1	7.1%	1.5%
	Why?			
	Yes: Appricability to disseminate to farmers.	1		
	Yes: Implementating method differs from that of Jordan.	1		
	Yes: New information, new method to transfer the data.	1		
	Other: Not easy to apply in the personal conditions as the system in Jordan works in different way.	1		
	(5) Texts	14	100.0%	20.9%
	Too difficult	0	0.0%	0.0%
	Appropriate	12	85.7%	17.9%
	Too easy	1	7.1%	1.5%
	Other	1	7.1%	1.5%
	Why?			
	Appropriate: Easy to understand.	1		
	Appropriate: Most of the information was new.	1		

	Appropriate: Not covering all the topics.	1		
	Appropriate: Simple and short.	1		
	(6) Duration	14	100.0%	20.9%
	Too long	0	0.0%	0.0%
	Appropriate	12	85.7%	17.9%
	Too short	2	14.3%	3.0%
	Other	0	0.0%	0.0%
	Why?			
	Too short: Need more field trips and practices.	1		
	Appropriate: Covering all the data.	1		
	Too short: To cover all topics need more time.	1		
	(7) Other comments if any (e.g. suggestions for improvement)			
	More field trips than having more theoretical lectures. Especially field trips for research units and projects.	1		
	Hotel was no good, cover was not clean, food was not enough. Some lectures were long and lots of information.	1		
	Good facilities and conditions, treatment for participants were positive parts. Negative: some of long lectures, some lecturers deviated the topic.	2		
	Hope to have more specialised training course.	1		
	Positive: Good organization, treatment by the team (JICA). Negative: Some lectures were long.	1		
	Gained new information and method.	1		
	More concentration on practice.	1		
	Gain new knowledge specially from fieldtrips, learned how other work. JICA made good planning in accomodation, medical insurance, transportation.			
	Double room accomodation was not good.	1		
	The abstract on the course beforehand was short (need more detail).	1		
2	Were the training courses in Israel planned in the way that the knowledge acquired can be applied to the training courses in Jordan? (Ref. 1-6)	13	92.9%	19.4%
	Yes, very much	3	21.4%	4.5%
	Yes	5	35.7%	7.5%
	No	2	14.3%	3.0%
	Not at all	2	14.3%	3.0%
	Other	1	7.1%	1.5%
	Why?			
	Yes: Same climate, same region.	1		
	Yes: Simple training contents which can be applied to farmers.	1		
	Other: Some were not comprehensive.	1		
	Yes: We have good projects in Jordan to apply high technology.	1		
	No: As the governmental policies differ in conditions, farming inputs, and efforts. So the only application can be done through transferring basics.	1		
	Yes: Compost was good. Other projects were shared between MOAs in two countries.	1		
3	Do you think the agricultural technologies of Israel or of Japan have the advantage in applying in Jordan? (Ref. 1-8)	14	100.0%	20.9%
	(1) Advantage of Israeli technologies			
	Yes, very much	3	21.4%	4.5%
	Yes	7	50.0%	10.4%
	No	0	0.0%	0.0%
	Not at all	3	21.4%	4.5%
	Other	1	7.1%	1.5%
	Why?			
	Yes, very much: The similar conditions in both countries.	2		
	Yes: It can reduce time and labour.	1		
	Other: There are many plantations where they use similar technologies.	1		
	Yes, very much: It save time, money, labour, needs lowest management work, in terms of monitoring and evaluation.	1		
	Yes, very much: But too expensive for our farmers.	1		
	Yes: Provide extension of new skills and methods.	1		
	(2) Advantage of Japanese technologies	12	85.7%	17.9%
	Yes, very much	3	21.4%	4.5%
	Yes	6	42.9%	9.0%
	No	1	7.1%	1.5%
	Not at all	0	0.0%	0.0%
	Other	2	14.3%	3.0%

	Why?			
	Appropriate: Topics of interests and based on the needs.	1		
	Yes: Has techniques to help Jordan farmers to access new varieties.	1		
	Yes: More organized and accurate (Dr. Abe).	1		
	Other: We didn't see the Japanese agricultural technologies (but satisfied in lectures).	1		
	Yes, very much: It save time, money, labour, needs lowest management work, in terms of monitoring and evaluation.	1		
	Yes, very much: But some of knowledge was old, nobody use it now.	1		
	Yes: New methods, new skills and new technologies.	1		
4	Do you think the Japanese lecturers provided value-added lectures? (Ref. 3-1)	9	64.3%	13.4%
	Yes, very much	3	21.4%	4.5%
	Yes	5	35.7%	7.5%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other (Presentation skill)	1	7.1%	1.5%
	Why?			
	Yes, very much: The way of teaching was very good, more easier (Dr. Abe). Text was good, nothing which needs improvement in his course.	1		
	Yes: Have excellent communication skills and presentation.	2		
	Yes: Introduced advanced technologies and researches.	1		
(1)	Please mark the items that were satisfactory.		150.0%	
	Lecture topic	7	50.0%	
	Texts	2	14.3%	
	Language	3	21.4%	
	Communication	5	35.7%	
	Feedback after the lectures	3	21.4%	
	Other	1	7.1%	
(2)	Please mark the items that need improvement.		107.1%	
	Lecture topic	2	14.3%	
	Texts	6	42.9%	
	Language	4	28.6%	
	Communication	0	0.0%	
	Feedback after the lectures	3	21.4%	
	Other	0	0.0%	
5	Do you think the Israeli lecturers provided lectures satisfactory? (Ref. 3-4)	13	92.9%	
	Yes, very much	0	0.0%	
	Yes	12	85.7%	
	No	0	0.0%	
	Not at all	0	0.0%	
	Other	1	7.1%	
	Why?			
	Yes: Some had very good knowledge, some were not qualified enough to give a certain level of lectures.	2		
	Yes: Simple and important information was provided.	2		
	Other: Some were yes, some were not.	1		
	Yes: Provided to the audience the excellent topics outlined in clear texts.	1		
	Yes: Agricultural situation they have is closer.	1		
	Yes: Post harvest lectures were good.	1		
(1)	Please mark the items that were satisfactory.		221.4%	
	Lecture topic	10	71.4%	
	Texts	6	42.9%	
	Language	5	35.7%	
	Communication	7	50.0%	
	Feedback after the lectures	3	21.4%	
	Other	0	0.0%	
(2)	Please mark the items that need improvement.		157.1%	
	Lecture topic	5	35.7%	
	Texts	3	21.4%	
	Language	4	28.6%	
	Communication	4	28.6%	
	Feedback after the lectures	5	35.7%	
	Other (practical part)	1	7.1%	
6	Do you think the Jordanian lecturers provided lectures satisfactory? (Ref. 3-4)	5	35.7%	7.5%
	Yes, very much	0	0.0%	0.0%
	Yes	5	35.7%	7.5%

	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes: Strong ability to do that.	1		
(1)	Please mark the items that were satisfactory.		78.6%	
	Lecture topic	4	28.6%	
	Texts	0	0.0%	
	Language	2	14.3%	
	Communication	3	21.4%	
	Feedback after the lectures	2	14.3%	
	Other	0	0.0%	
(2)	Please mark the items that need improvement.		14.3%	
	Lecture topic	0	0.0%	
	Texts	0	0.0%	
	Language	0	0.0%	
	Communication	1	7.1%	
	Feedback after the lectures	1	7.1%	
	Other	0	0.0%	
7	Were the timings of the courses in the annual schedule appropriate? (Ref. 3-3)	10	71.4%	
	Yes, very much	3	21.4%	
	Yes	6	42.9%	
	No	1	7.1%	
	Not at all	0	0.0%	
	Other	0	0.0%	
	Why?			
	Yes, very much: For the livestock course, it was very appropriate.	1		
	Yes: Timing was compatible with actual agricultural seasons.	1		
8	Were the numbers of participants for each course appropriate? (Ref. 3-3)	10	71.4%	14.9%
	Too many	2	14.3%	3.0%
	Appropriate	8	57.1%	11.9%
	Too little	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Appropriate: 10 participants is good.	1		
	Appropriate: Enough time to make questions by everybody.	1		
	Too many: Some of participants made disturbance to others. 5 to 10 is appropriate number.	1		
9	Were the training facilities appropriate? (Ref. 3-4)	10	71.4%	14.9%
	Yes, very much	5	35.7%	7.5%
	Yes	5	35.7%	7.5%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes: Enough field trips.	1		
	Yes, very much: They had everything in the workshop.	1		
	Yes: Everything was fine.	1		
10	Did Jordanian lecturers provided lectures satisfactory? (Ref. 3-4)	6	42.9%	9.0%
	Yes, very much	0	0.0%	0.0%
	Yes	5	35.7%	7.5%
	No	1	7.1%	1.5%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes, very much: According to the needs.	1		
	Yes: Possibility to transfer every single information and applied in our society.	1		
(1)	Please mark the items that were satisfactory.		92.9%	
	Lecture topic	4	28.6%	
	Texts	1	7.1%	
	Language	4	28.6%	
	Communication	4	28.6%	
	Feedback after the lectures	0	0.0%	
	Other	0	0.0%	

(2)	Please mark the items that need improvement.		50.0%
	Lecture topic	1	7.1%
	Texts	1	7.1%
	Language	1	7.1%
	Communication	1	7.1%
	Feedback after the lectures	3	21.4%
	Other	0	0.0%
11	Did you notice any positive or negative impact by participating to the training course or to the JICA project? (Ref. 4-3)		
	Knowledge and skills gained.	1.5	
	Negative: JICA asks too much reporting, document after finishing the course (though there is enough positive impact overall).	0.5	
	Generally yes: Positively JICA is focusing on developmental issues and it is useful for extension courses especially. Negatively JICA is focusing on training extension agents only in Israel !	1	
	Positive: Enhanced my knowledge very much and saw the experiments of other countries.	1	
12	The JICA project is organized based on the regional cooperation among Jordan, Israel and Japan. Did you notice any positive or negative impact to you, to your work, or to your work place by participating to this regional cooperation? (Ref. 4-4)		
	Good relationship among three parties achieved by JICA project.	3	
	Exchanging knowledge and experience will produce very good result in raising more knowledge and experience.	1	
	New knowledge to improve our work.	1	
	They provided new and good quality of information that can be applied in Jordan, and make good relationship among the team, and exchange information between us.	1	
	To me: increased experience. To my work: facilitate my job mission. To my work place: Reduce any factors which affect my work.	1	
	I think it is good to meet people in the other side that is really interesting in peace, even they are not the majority.	1	
	Gave me knowledge in scientific issues, willingness to learn English, and sadness for Arab people in occupied area.	1	
	Yes and negatively only. Due to the Israel-Jordan relations before peace documentary held in 1994. Still, a lot of people in Jordan regard Israeli people as enemies and this will affect us negatively in different ways as mentioned in the question (personal, work, work place etc.).	1	
	Exploring new point of view of the other partners. Gaining new skills and strengthening my communication skills.	1	
	Yes, to me, increase my experience, to my work, facilitate my job mission, to my work place, increase the efficiency.	1	
	Yes, by explaining the course to my colleagues.	1	

Questionnaire No.1 (NCARE Staff joined in the training courses in Israel)

Number of the answers collected	14	20.9%
No of target group	67	100%

		No of answers	% of Total answers	% of Total attended
1	Were the training courses in Israel satisfactory to provide necessary skills and knowledge to you? (Ref. 1-4)	14	100.0%	20.9%
	Yes, very much	1	7.1%	1.5%
	Yes	12	85.7%	17.9%
	No	1	7.1%	1.5%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	(1) Topics	13	92.9%	19.4%
	Appropriate	10	71.4%	14.9%
	Partly not appropriate	3	21.4%	4.5%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Appropriate: Israel has high technology and very good knowledge.	3		
	Partly not appropriate: More focus on the specific topics needed.	1		
	Appropriate: Many information on the topic.	1		
	Appropriate: There were theoretical as well as practical topics.	1		
	Appropriate: Directly related to my academic field.	1		
	(2) Level of the Courses	14	100.0%	20.9%
	Too difficult	0	0.0%	0.0%
	Moderate	12	85.7%	17.9%
	Too easy	2	14.3%	3.0%
	Other	0	0.0%	0.0%
	Why?			
	Moderate: Had enough background of the subject.	1		
	Moderate: Couldn't have all information needed.	1		
	Moderate: Was taught in simplified way, that I had understood.	1		
	Moderate: Some information was already known.	1		
	(3) Organization of the field trips	13	92.9%	19.4%
	Appropriate	10	71.4%	14.9%
	Partly not appropriate	3	21.4%	4.5%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Partly not appropriate: Needed more field trip.	2		
	Appropriate: Most benefit to transfer knowledge.	1		
	Partly not appropriate: Should include all practical aspects related to the subject.	1		
	(4) Applicability to their work	13	92.9%	19.4%
	Yes, very much	4	28.6%	6.0%
	Yes	7	50.0%	10.4%
	No	0	0.0%	0.0%
	Not at all	1	7.1%	1.5%
	Other	1	7.1%	1.5%
	Why?			
	Yes: Appricability to disseminate to farmers.	1		
	Yes: Implementating method differs from that of Jordan.	1		
	Yes: New information, new method to transfer the data.	1		
	Other: Not easy to apply in the personal conditions as the system in Jordan works in different way.	1		
	(5) Texts	14	100.0%	20.9%
	Too difficult	0	0.0%	0.0%
	Appropriate	12	85.7%	17.9%
	Too easy	1	7.1%	1.5%
	Other	1	7.1%	1.5%
	Why?			
	Appropriate: Easy to understand.	1		
	Appropriate: Most of the information was new.	1		

	Appropriate: Not covering all the topics.	1		
	Appropriate: Simple and short.	1		
	(6) Duration	14	100.0%	20.9%
	Too long	0	0.0%	0.0%
	Appropriate	12	85.7%	17.9%
	Too short	2	14.3%	3.0%
	Other	0	0.0%	0.0%
	Why?			
	Too short: Need more field trips and practices.	1		
	Appropriate: Covering all the data.	1		
	Too short: To cover all topics need more time.	1		
	(7) Other comments if any (e.g. suggestions for improvement)			
	More field trips than having more theoretical lectures. Especially field trips for research units and projects.	1		
	Hotel was no good, cover was not clean, food was not enough. Some lectures were long and lots of information.	1		
	Good facilities and conditions, treatment for participants were positive parts. Negative: some of long lectures, some lecturers deviated the topic.	2		
	Hope to have more specialised training course.	1		
	Positive: Good organization, treatment by the team (JICA). Negative: Some lectures were long.	1		
	Gained new information and method.	1		
	More concentration on practice.	1		
	Gain new knowledge specially from fieldtrips, learned how other work. JICA made good planning in accomodation, medical insurance, transportation.			
	Double room accomodation was not good.	1		
	The abstract on the course beforehand was short (need more detail).	1		
2	Were the training courses in Israel planned in the way that the knowledge acquired can be applied to the training courses in Jordan? (Ref. 1-6)	13	92.9%	19.4%
	Yes, very much	3	21.4%	4.5%
	Yes	5	35.7%	7.5%
	No	2	14.3%	3.0%
	Not at all	2	14.3%	3.0%
	Other	1	7.1%	1.5%
	Why?			
	Yes: Same climate, same region.	1		
	Yes: Simple training contents which can be applied to farmers.	1		
	Other: Some were not comprehensive.	1		
	Yes: We have good projects in Jordan to apply high technology.	1		
	No: As the governmental policies differ in conditions, farming inputs, and efforts. So the only application can be done through transferring basics.	1		
	Yes: Compost was good. Other projects were shared between MOAs in two countries.	1		
3	Do you think the agricultural technologies of Israel or of Japan have the advantage in applying in Jordan? (Ref. 1-8)	14	100.0%	20.9%
	(1) Advantage of Israeli technologies			
	Yes, very much	3	21.4%	4.5%
	Yes	7	50.0%	10.4%
	No	0	0.0%	0.0%
	Not at all	3	21.4%	4.5%
	Other	1	7.1%	1.5%
	Why?			
	Yes, very much: The similar conditions in both countries.	2		
	Yes: It can reduce time and labour.	1		
	Other: There are many plantations where they use similar technologies.	1		
	Yes, very much: It save time, money, labour, needs lowest management work, in terms of monitoring and evaluation.	1		
	Yes, very much: But too expensive for our farmers.	1		
	Yes: Provide extension of new skills and methods.	1		
	(2) Advantage of Japanese technologies	12	85.7%	17.9%
	Yes, very much	3	21.4%	4.5%
	Yes	6	42.9%	9.0%
	No	1	7.1%	1.5%
	Not at all	0	0.0%	0.0%
	Other	2	14.3%	3.0%

	Why?			
	Appropriate: Topics of interests and based on the needs.	1		
	Yes: Has techniques to help Jordan farmers to access new varieties.	1		
	Yes: More organized and accurate (Dr. Abe).	1		
	Other: We didn't see the Japanese agricultural technologies (but satisfied in lectures).	1		
	Yes, very much: It save time, money, labour, needs lowest management work, in terms of monitoring and evaluation.	1		
	Yes, very much: But some of knowledge was old, nobody use it now.	1		
	Yes: New methods, new skills and new technologies.	1		
4	Do you think the Japanese lecturers provided value-added lectures? (Ref. 3-1)	9	64.3%	13.4%
	Yes, very much	3	21.4%	4.5%
	Yes	5	35.7%	7.5%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other (Presentation skill)	1	7.1%	1.5%
	Why?			
	Yes, very much: The way of teaching was very good, more easier (Dr. Abe). Text was good, nothing which needs improvement in his course.	1		
	Yes: Have excellent communication skills and presentation.	2		
	Yes: Introduced advanced technologies and researches.	1		
(1)	Please mark the items that were satisfactory.		150.0%	
	Lecture topic	7	50.0%	
	Texts	2	14.3%	
	Language	3	21.4%	
	Communication	5	35.7%	
	Feedback after the lectures	3	21.4%	
	Other	1	7.1%	
(2)	Please mark the items that need improvement.		107.1%	
	Lecture topic	2	14.3%	
	Texts	6	42.9%	
	Language	4	28.6%	
	Communication	0	0.0%	
	Feedback after the lectures	3	21.4%	
	Other	0	0.0%	
5	Do you think the Israeli lecturers provided lectures satisfactory? (Ref. 3-4)	13	92.9%	
	Yes, very much	0	0.0%	
	Yes	12	85.7%	
	No	0	0.0%	
	Not at all	0	0.0%	
	Other	1	7.1%	
	Why?			
	Yes: Some had very good knowledge, some were not qualified enough to give a certain level of lectures.	2		
	Yes: Simple and important information was provided.	2		
	Other: Some were yes, some were not.	1		
	Yes: Provided to the audience the excellent topics outlined in clear texts.	1		
	Yes: Agricultural situation they have is closer.	1		
	Yes: Post harvest lectures were good.	1		
(1)	Please mark the items that were satisfactory.		221.4%	
	Lecture topic	10	71.4%	
	Texts	6	42.9%	
	Language	5	35.7%	
	Communication	7	50.0%	
	Feedback after the lectures	3	21.4%	
	Other	0	0.0%	
(2)	Please mark the items that need improvement.		157.1%	
	Lecture topic	5	35.7%	
	Texts	3	21.4%	
	Language	4	28.6%	
	Communication	4	28.6%	
	Feedback after the lectures	5	35.7%	
	Other (practical part)	1	7.1%	
6	Do you think the Jordanian lecturers provided lectures satisfactory? (Ref. 3-4)	5	35.7%	7.5%
	Yes, very much	0	0.0%	0.0%
	Yes	5	35.7%	7.5%

	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes: Strong ability to do that.	1		
(1)	Please mark the items that were satisfactory.		78.6%	
	Lecture topic	4	28.6%	
	Texts	0	0.0%	
	Language	2	14.3%	
	Communication	3	21.4%	
	Feedback after the lectures	2	14.3%	
	Other	0	0.0%	
(2)	Please mark the items that need improvement.		14.3%	
	Lecture topic	0	0.0%	
	Texts	0	0.0%	
	Language	0	0.0%	
	Communication	1	7.1%	
	Feedback after the lectures	1	7.1%	
	Other	0	0.0%	
7	Were the timings of the courses in the annual schedule appropriate? (Ref. 3-3)	10	71.4%	
	Yes, very much	3	21.4%	
	Yes	6	42.9%	
	No	1	7.1%	
	Not at all	0	0.0%	
	Other	0	0.0%	
	Why?			
	Yes, very much: For the livestock course, it was very appropriate.	1		
	Yes: Timing was compatible with actual agricultural seasons.	1		
8	Were the numbers of participants for each course appropriate? (Ref. 3-3)	10	71.4%	14.9%
	Too many	2	14.3%	3.0%
	Appropriate	8	57.1%	11.9%
	Too little	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Appropriate: 10 participants is good.	1		
	Appropriate: Enough time to make questions by everybody.	1		
	Too many: Some of participants made disturbance to others. 5 to 10 is appropriate number.	1		
9	Were the training facilities appropriate? (Ref. 3-4)	10	71.4%	14.9%
	Yes, very much	5	35.7%	7.5%
	Yes	5	35.7%	7.5%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes: Enough field trips.	1		
	Yes, very much: They had everything in the workshop.	1		
	Yes: Everything was fine.	1		
10	Did Jordanian lecturers provided lectures satisfactory? (Ref. 3-4)	6	42.9%	9.0%
	Yes, very much	0	0.0%	0.0%
	Yes	5	35.7%	7.5%
	No	1	7.1%	1.5%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes, very much: According to the needs.	1		
	Yes: Possibility to transfer every single information and applied in our society.	1		
(1)	Please mark the items that were satisfactory.		92.9%	
	Lecture topic	4	28.6%	
	Texts	1	7.1%	
	Language	4	28.6%	
	Communication	4	28.6%	
	Feedback after the lectures	0	0.0%	
	Other	0	0.0%	

(2)	Please mark the items that need improvement.		50.0%
	Lecture topic	1	7.1%
	Texts	1	7.1%
	Language	1	7.1%
	Communication	1	7.1%
	Feedback after the lectures	3	21.4%
	Other	0	0.0%
11	Did you notice any positive or negative impact by participating to the training course or to the JICA project? (Ref. 4-3)		
	Knowledge and skills gained.	1.5	
	Negative: JICA asks too much reporting, document after finishing the course (though there is enough positive impact overall).	0.5	
	Generally yes: Positively JICA is focusing on developmental issues and it is useful for extension courses especially. Negatively JICA is focusing on training extension agents only in Israel !	1	
	Positive: Enhanced my knowledge very much and saw the experiments of other countries.	1	
12	The JICA project is organized based on the regional cooperation among Jordan, Israel and Japan. Did you notice any positive or negative impact to you, to your work, or to your work place by participating to this regional cooperation? (Ref. 4-4)		
	Good relationship among three parties achieved by JICA project.	3	
	Exchanging knowledge and experience will produce very good result in raising more knowledge and experience.	1	
	New knowledge to improve our work.	1	
	They provided new and good quality of information that can be applied in Jordan, and make good relationship among the team, and exchange information between us.	1	
	To me: increased experience. To my work: facilitate my job mission. To my work place: Reduce any factors which affect my work.	1	
	I think it is good to meet people in the other side that is really interesting in peace, even they are not the majority.	1	
	Gave me knowledge in scientific issues, willingness to learn English, and sadness for Arab people in occupied area.	1	
	Yes and negatively only. Due to the Israel-Jordan relations before peace documentary held in 1994. Still, a lot of people in Jordan regard Israeli people as enemies and this will affect us negatively in different ways as mentioned in the question (personal, work, work place etc.).	1	
	Exploring new point of view of the other partners. Gaining new skills and strengthening my communication skills.	1	
	Yes, to me, increase my experience, to my work, facilitate my job mission, to my work place, increase the efficiency.	1	
	Yes, by explaining the course to my colleagues.	1	

Questionnaire No.2 (NCARE Staff joined in Jordan training,

Number of the questionnaire distributed	50	
Number of the answers collected	9	8.3%
No of target group	108	100%

		No of answers	% of Total	% of Total attended
1	Were the training courses in Jordan satisfactory to provide necessary skills and knowledge to you? (Ref. 1-5, 3-3)	9	100.0%	8.3%
	Yes, very much	1	11.1%	0.9%
	Yes	8	88.9%	7.4%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	(1) Topics	9	100.0%	8.3%
	Appropriate	7	77.8%	6.5%
	Partly not appropriate	2	22.2%	1.9%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Partly not appropriate: Lack of continuity in course.	1		
	Appropriate: Directly related to the skills needed for extension agents.	1		
	Appropriate: It relates to our situation.	1.5		
	Appropriate: Good knowledge.	1		
	Appropriate: Match to the nature of my work in the field.	1		
	(2) Level of the Courses	9	100.0%	8.3%
	Too difficult	0	0.0%	0.0%
	Moderate	5	55.6%	4.6%
	Too easy	4	44.4%	3.7%
	Other	0	0.0%	0.0%
	Why?			
	Moderate, Too easy: Easy to understand.	2		
	Too easy: It was mentioned in a very good references.	1		
	Too easy: We have good background.	1		
	(3) Organization of the field trips	9	100.0%	8.3%
	Appropriate	4	44.4%	3.7%
	Partly not appropriate	4	44.4%	3.7%
	Not appropriate	1	11.1%	0.9%
	Other	0	0.0%	0.0%
	Why?			
	Partly not appropriate: Need to be more diverse.	1		
	Not appropriate: The topic related to the presentation skills, but the trip was about irrigation.	1		
	Appropriate: First time to visit Jordan valley.	1		
	(4) Applicability to their work	9	100.0%	8.3%
	Yes, very much	2	22.2%	1.9%
	Yes	6	66.7%	5.6%
	No	1	11.1%	0.9%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes: Already transferred to the farmers.	1		
	Yes: Similarity in conditions, types,... between two region.	1		
	No: Because it is research information.	1		
	(5) Texts	9	100.0%	8.3%
	Too difficult	0	0.0%	0.0%
	Appropriate	6	66.7%	5.6%
	Too easy	3	33.3%	2.8%
	Other	0	0.0%	0.0%
	Why?			
	Too easy: It simplified too much.	1		
	Appropriate: Most of the knowledge mentioned were clear.	1		
	Too easy: We have good background.	1		

	(6) Duration	9	100.0%	8.3%
	Too long	1	11.1%	0.9%
	Appropriate	5	55.6%	4.6%
	Too short	2	22.2%	1.9%
	Other	1	11.1%	0.9%
	Why?			
	Appropriate: Comprehensive (scientific topics, trips, lecturers).	1		
	Appropriate: Sufficient to understand.	1		
	Too long: Compress and shorten the time of course.	1		
	(7) Other comments if any (e.g. suggestions for improvement)			
	The courses need continuity and complete due to the modern discoveries of each year.	1		
	Extension agents need training in other topics: decision making, technical or practical writing, communication skills.	1		
	Special course for new and deep knowledge and skills are needed.	1		
	Continuity of the project with a long period.	0.5		
	Participation both by researcher and extension agents.	0.5		
	Must increase time of training. With advance information.	1		
2	If you have an opportunity to learn the agricultural technologies of Israel or of Japan through the lecturers, do you think those technologies have the advantage in applying to Jordan? (Ref. 1-8)	7	77.8%	6.5%
	(1) Advantage of Israeli technologies			
	Yes, very much	2	22.2%	1.9%
	Yes	4	44.4%	3.7%
	No	1	11.1%	0.9%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes: Modern technologies, save time, labour, money and management.	1		
	Not at all: Because Israel is enemy.	1		
	Yes: Similar environmental condition and agricultural method.	2		
	Yes, very much: Lab., technology in Israel were all type of new technologies.	1		
	(2) Advantage of Japanese technologies	8	88.9%	7.4%
	Yes, very much	3	33.3%	2.8%
	Yes	2	22.2%	1.9%
	No	1	11.1%	0.9%
	Not at all	2	22.2%	1.9%
	Other	0	0.0%	0.0%
	Why?			
	Yes: Save time, money, labour, need lowest management level.	1		
	Yes: It was direct to the point.	1		
	Other: It may need more training, attendance, field trips etc.	1		
3	Do you think the Japanese lecturers provided value-added lectures? (Ref. 3-1)	6	66.7%	5.6%
	Yes, very much	1	11.1%	0.9%
	Yes	4	44.4%	3.7%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other (Increase practical visit and feedback between Japanese technologies and Jordanian.)	1	11.1%	0.9%
	Why?			
	(1) Please mark the items that were satisfactory.			
	Lecture topic	4	44.4%	
	Texts	6	66.7%	
	Language	2	22.2%	
	Communication	4	44.4%	
	Feedback after the lectures	2	22.2%	
	Other	1	11.1%	
	(2) Please mark the items that need improvement.			
	Lecture topic	2	22.2%	
	Texts	1	11.1%	
	Language	2	22.2%	
	Communication	3	33.3%	
	Feedback after the lectures	2	22.2%	

	Other	2	22.2%	
4	Were the timings of the courses in the annual schedule appropriate? (Ref. 3-3)	6	66.7%	5.6%
	Yes, very much	0	0.0%	0.0%
	Yes	4	44.4%	3.7%
	No	2	22.2%	1.9%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	No: It was at the end of the year.	1		
5	Were the numbers of participants for each course appropriate? (Ref. 3-3)	6	66.7%	5.6%
	Too many	1	11.1%	0.9%
	Appropriate	5	55.6%	4.6%
	Too little	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes, very much: According to the needs.	1		
	Yes: Possibility to transfer every single information and applied in our society.	1		
	Applicability level was achieved by the participants. They can deal with the topics at their home country.	1		
6	Were the training facilities appropriate? (Ref. 3-4)	6	66.7%	5.6%
	Yes, very much	0	0.0%	0.0%
	Yes	5	55.6%	4.6%
	No	1	11.1%	0.9%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
7	Did Jordanian lecturers provided lectures satisfactory? (Ref. 3-4)	6	66.7%	5.6%
	Yes, very much	1	11.1%	0.9%
	Yes	4	44.4%	3.7%
	No	1	11.1%	0.9%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
(1)	Please mark the items that were satisfactory.			
	Lecture topic	3	33.3%	
	Texts	4	44.4%	
	Language	5	55.6%	
	Communication	0	0.0%	
	Feedback after the lectures	0	0.0%	
	Other (practical visit)	1	11.1%	
(2)	Please mark the items that need improvement.			
	Lecture topic	1	11.1%	
	Texts	2	22.2%	
	Language	2	22.2%	
	Communication	3	33.3%	
	Feedback after the lectures	4	44.4%	
	Other (evaluation of course, statistic design analysis)	2	22.2%	
8	Did you notice any positive or negative impact by participating to the training course or to the JICA project? (Ref. 4-3)			
	Positive: JICA supports trainers with pocket money.	0.5		
	Positive: JICA focuses on important themes and skills necessary for extension agents.	0.5		
	Positive: Improving the communication skills.	1		
	Positive: The training was very advanced.	1		
	Positive: Continuation with JICA for cooperation in agricultural extension. Negative: Focus on the training site in Israel.	1		
9	The JICA project is organized based on the regional cooperation among Jordan, Israel and Japan. Did you notice any positive or negative impact to you, to your work, or to your work place by participating to this regional cooperation? (Ref. 4-4)	8.5		
	Negative: Still in Jordan, the population and general public have inferior views toward the trainers who joined in Israeli people in formal and informal relations.	1		

There are positive impact among Jordan and Japan, but negative impact with Israel.	1	
Positive impact to take advantages of Japanese technologies.	1	
Personal: I love peace. My work: Increased my experience. My work place: Facilitate my job mission.	0.5	
Positive: Improving the communication skills.	1	
Positive: The training was very advanced.	1	
Positive: The cooperation between Japan and Jordan is very good.	1	
Yes, Israel has new technologies. If we can transfer to Jordan, it will increase productivity.	1	
The choice of the countries can be more credible, then opportunity or all workers to participates to such courses.	1	

Questionnaire No.3 (NCARE Researchers)

Number of the questionnaires distributed & collected 14
 No of target researchers: 14

		No of answers	% of Total
1.(1)	Do you think the research contents applicable to the extension activities in the future?	14	100.0%
	Yes, very much	8	57.1%
	Yes	6	42.9%
	No	0	0.0%
	Not at all	0	0.0%
	Other	0	0.0%
	Why?		
	Extention agents could easily transfer the reseach result to the farmers.	3	
	Water shortage is a big problem in the country. Huge relationship between reseach and extension activities.	5	
	water shortage is a big issue. New irrigation tools and management metnod are necessary.	2	
	Lecturers needs lots activities about the irrigation and a technology method for	1	
1.(2)	Have the research method (approach) been chosen appropriately to give an optimum result?	14	100.0%
	Yes, very much	2	14.3%
	Yes	12	85.7%
	No	0	0.0%
	Not at all	0	0.0%
	Other	0	0.0%
	Why?		
	Research method was the best.	1	
	Jordanian local contexts (water) were taken into consideration.	3	
	Using new technology in irrigation dificit and fertigation. Planting the most susceptible horticulturalplants to drought stress that have cash marketable. (?)	1	
	All the farmers needs the method to apply to their farms.	1	
	Crop selection and irrigation technologies were suitable.	1	
	Dificit irrigation technology is a new technology in water productivity.	1	
	Saving money by saving water.	1	
2	Relevance of the plan of the applied research seminars		
	(1) Have the target and agenda of the seminars been well defined?	14	100.0%
	Yes, very much	4	28.6%
	Yes	9	64.3%
	No	1	7.1%
	Not at all	0	0.0%
	Other	0	0.0%
	Why?		
	All participants shared experience of water management.	1	
	Sufficient justification.	1	
	Aims are very clear, comprehensive, understandable.	4	
	(2) Have the seminar been organized and coordinated to give an optimum result?	14	100.0%
	Yes, very much	3	21.4%
	Yes	11	78.6%
	No	0	0.0%
	Not at all	0	0.0%
	Other	0	0.0%
	Why?		
	The schedule was good. The participants have much experience.	5	
	The topic was chosen according to the issues (water scarcity) in agricultural sector	2	
	Some lectureres are very good, usefual, practical ideas, and on the schedule.	2	
	Important materials and texts.	1	
	(3) Have the field trips during the seminar been organized and coordinated to give an optimum result?	14	100.0%
	Yes, very much	5	35.7%
	Yes	9	64.3%
	No	0	0.0%
	Not at all	0	0.0%
	Other	0	0.0%

	Why?		
	The field trips closely related to the seminar subject and the water problem.	1	
	Good organization of field trip (time & topic).	4	
3	Relevance of the plan of the "On-site training for extension agents" (Ref. 1-7) (1) Have the target and agenda of the "On-site training for extension agents" been well defined?	14	100.0%
	Yes, very much	3	21.4%
	Yes	11	78.6%
	No	0	0.0%
	Not at all	0	0.0%
	Other	0	0.0%
	Why?		
	The program was organized to have lectures and on site training on deficit irrigation of fertigation.	1	
	Yes, need to transfer the new data and knowledge to them.	1	
	Aims and agendas are clear.	4	
	(2) Have the "On-site training for extension agents" been organized and coordinated to give an optimum result?	13	92.9%
	Yes, very much	3	21.4%
	Yes	10	
	No	0	0.0%
	Not at all	0	0.0%
	Other	0	0.0%
	Why?		
	The topic was relevant (water issue).	1	
	Well organized training.	2	
	Many new approaches were presented in water management.	1	
4	Relevance of the plan of the "Farmer's Day" workshops (Ref. 1-7) (1) Have the target and agenda of the "Farmer's Day" workshops been well defined?	14	100.0%
	Yes, very much	3	21.4%
	Yes	11	78.6%
	No	0	0.0%
	Not at all	0	0.0%
	Other	0	0.0%
	Why?		
	Many farmers attended.	1	
	Matching to the needs of farmers.	1	
	It achieved all the goals.	1	
	Some lecturers are good with practical aspects.	1	
	Well addressed to the farmers.	1	
	(2) Have the workshop been organized and coordinated to give an optimum result?	14	100.0%
	Yes, very much	2	14.3%
	Yes	11	78.6%
	No	1	7.1%
	Not at all	0	0.0%
	Other	0	0.0%
	Why?		
	Many farmers attended. Farmers shared their opinions at the beginning of the	7	
	Matching to the needs of farmers (water scarcity).	6	
	Matching to the needs of farmers.	1	
	It achieved all the goals.	1	
	There were discussion and feedback from the farmers.	3	
	It included useful knowledge.	2	
5	Do you think the agricultural technologies of Israel or of Japan introduced in the Applied Research Seminars have the advantage in applying to Jordan? (Ref. 1-8) (1) Advantage of Israeli technologies	14	100.0%
	Yes, very much	2	14.3%
	Yes	12	
	No	0	0.0%
	Not at all	0	0.0%
	Other	0	0.0%
	Why?		
	Israel has the same climate and problems (water).	10	
	Have experience in agriculture with comparative advantage and achieved significant economic returning (?)	1	

	(2) Advantage of Japanese technologies	13	92.9%
	Yes, very much	4	28.6%
	Yes	7	50.0%
	No	2	14.3%
	Not at all	0	0.0%
	Other	0	0.0%
	Why?		
	Applicable to Jordanian farmers.	1	
	More validity, more applicable to the Jordanian farmers.	1	
	More accuracy.	1	
	High technology in communication with farmers.	1	
6	Did you notice any positive or negative impact by conducting the applied research, seminars, outside trainings, or workshops? (Ref. 4-3)	13	92.9%
	(1) Positive or negative impact by conducting the applied research.		
	Positive. Good applicable research.	2	14.3%
	Positive.	4	28.6%
	Positive. Many farmers become interested in the topic. / Transfer of the knowledge./ New method of thinking/ Reduce the irrigation water quantity/	0.5	3.6%
	Negative: Any agricultural practise will take time before farmers practice.	0.5	3.6%
	Positive: Influenced farmers' budget values which may be reduce the cost.	0.5	3.6%
	Positive: Preserve soil plant quality	0.5	3.6%
	Positive: Increase the water productivity.	1.5	10.7%
	Positive: Reduce a huge amount of fertilizers.	0.5	3.6%
	Positive: Match with farmers' needs.	1.5	10.7%
	Positive: Done in the farm land.	0.5	3.6%
	Positive: Increase the financial support for the applied research.	1	7.1%
	(2) Positive or negative impact by conducting the Applied Research Seminars.	12	85.7%
	Positive. Seminars have been good for sharing experince and presenting results.	5	35.7%
	Positive.	5	35.7%
	Combination of theory and practice.	1	7.1%
	Transfer of the knowledge to the farmers.	1	7.1%
	(3) Positive or negative impact by conducting the "On-site training for extension agents"	12	85.7%
	Positive: Extension agents should be involved from the beginning of the research.	2	14.3%
	Positive.	4	28.6%
	Positive. Acquire new skills and experience.	2.5	17.9%
	Positive: Obtain farmers' satisfaction to the new innovation.	0.5	3.6%
	Positive: Upgrading the extension agents' knowledge.	1	7.1%
	Positive: On the ground approach.	2	14.3%
	(4) Positive or negative impact by conducting the "Farmer's Day" workshops.	12.5	89.3%
	Positive: Farmers day could share the concept of the applied research.	3	21.4%
	Positive.	4	28.6%
	Positive: Update the new technologoes.	1.5	10.7%
	Positive: Transfer the result to the farmers directly.	3	21.4%
	Positive: Farmers should join from the beginning of the research.	1	7.1%
7	The JICA project is organized based on the regional cooperation among Jordan, Israel and Japan. Did you notice any positive or negative impact to you, to your work, or to your work place by participating to this regional cooperation? (Ref. 4-4)	12	85.7%
	Positive to have regional cooperation.	10	71.4%
	Knowledge sharing (Saving time in research activities).	2	14.3%
8	After the completion of the applied research, do you plan to utilize the output of the research to the extension activities? (Ref. 5-4)	14	100.0%
	Yes, very much	5	35.7%
	Yes	9	64.3%
	No	0	0.0%
	Not at all	0	0.0%
	Other	0	0.0%

	Why?		
	Extension agents are being trained from the beginning of research to transfer this technology.	8	
	Introduce the project outputs in the extension annual plan.	0.5	
	transfer the project output using farmers's school methodology.	0.5	
	Try to spread out the output of the project among farmers.	1	
	Transfer the results to the extension agents and then farmers.	2	
	Easy applicable way to transfer the technology.	2	
9	Have you noted any negative factor to impede the sustainability of the JICA project? (Ref. 5-6)	14	100.0%
	No.	13	92.9%
	Necessity to continue the JICA project.	1	7.1%

Questionnaire No.4 (NCARE Extension Agents joined in the "On-site training")

Number of the questionnaire distributed	24	
Number of the answers collected	11	10.2%
No of target group	24	100%

		No of answers	% of Total answered	% of Total attended
1	Were the target and agenda of the "On-site training for extension agents" clear to you? (Ref. 1-7)	11	100.0%	45.8%
	Yes, very much	2	18.2%	8.3%
	Yes	9	81.8%	37.5%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes: The schedule was good, the topic was important.	1		
	Yes: Both target and agenda were obvious.	3		
2	Do you think the "On-site training" have been organized and coordinated to give an optimum result? (Ref. 1-7)	11	100.0%	45.8%
	Yes, very much	2	18.2%	8.3%
	Yes	9	81.8%	37.5%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes: The timing was good, there was an application to the equipment.	1		
	Yes, very much: The topics were new and could be applicable.	1		
	Yes: We found the outputs were very close to what we expect.	1		
	Yes, very much: The training includes well done lectures and very useful training.	1		
	Yes: The project has specific program and objects.	1		
3	Did the "On-site training" provide applicable knowledge and skills to your work? (Ref.3)	11	100.0%	45.8%
	Yes, very much	1	9.1%	4.2%
	Yes	10	90.9%	41.7%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes: Application to the equipment.	1		
	Yes: Related to the actual work.	1		
	Yes: Deficit irrigation is easy to apply.	1		
	Yes: New information about irrigation method and how to increase irrigation efficiency.	1		
	Yes: Good experience and support our ability in work.	1		
4	Did you notice any positive or negative impact by participating to the "On-site training"? (Ref. 4-3)			
	Positive: Give local information. Negative: Not open at outside experiment.	1		
	Positive: Practical applications. Close to my work field.	4		
	Negative: Short time.	1.5		
	Positive: Advisable to have more training on the subject to follow the results.	1		
	Positive: Introduced new agriculture in Jordan.	1.5		
	Positive.	1		
5	Do you utilize or do you plan to utilize some of the knowledge or skills you have obtained in the "On-site training" at your work place? (Ref. 3)	11	100.0%	45.8%
	Yes, very much	0	0.0%	0.0%
	Yes	10	90.9%	41.7%
	No	0	0.0%	0.0%
	Not at all	1	9.1%	4.2%
	Other	0	0.0%	0.0%

	Why?		
	Yes: Deficit irrigation.	3	
	Yes: The purpose is to prepare local experties.	1	
	Yes: The fertigation technique, and the deficit irrigation.	1	
	Yes: To give advices according to the results of the experiment.	1	
	Yes: To transfer the applied ideas from larger scale farmers to small scale farmers.	1	
	Yes: Advise farmers to use these new method in their own farms to reduce water losses.	1	

Questionnaire No.5 (CINADCO Lecturers)

Number of the questionnaire distributed	?	
Number of the answers collected	18	16.7%
No of target group (approx.)	32	100%

		No of answers	% of Total	% of Total attended
1	Do you think the training courses in Israel relevant to provide necessary skills and knowledge to NCARE staffs? (Ref. 1-4)	15	83.3%	46.9%
	Yes, very much	11	61.1%	34.4%
	Yes	4	22.2%	12.5%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	(1) Matching to their needs	16	88.9%	50.0%
	Appropriate	14	77.8%	43.8%
	Partly not appropriate	2	11.1%	6.3%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	There was interests by participants, had many relevant questions	1		
	Same conditions in Israel and Jordan.	1		
	Partly not appropriate: Some of the subjects were not interesting to the participants.	1		
	Partly not appropriate: Partly too theoretical and needs a prior advanced educational level.	1		
	Appropriate: Agriculture in Israel is very advanced.	1		
	Appropriate: Regional information is always useful.	1		
	(2) Matching to their level	16	88.9%	50.0%
	Too difficult	2	11.1%	6.3%
	Moderate	14	77.8%	43.8%
	Too easy	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Moderate: There seemed to have good understanding by participants	1		
	Moderate: Back ground of the participants was generally good.	1		
	Moderate: Sometime, the NCARE staff are not on the same level.	1		
	Moderate: Some had very good background and others had much less.	1		
	Lack of experience.	1		
	(3) Organization of the field trips	8	44.4%	25.0%
	Appropriate	7	38.9%	21.9%
	Partly not appropriate	1	5.6%	3.1%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	The site was chosen according to the recommendations by the professional training team and their knowledge of the Jordanian conditions.	1		
	Appropriate: Almost all the trips were interesting to them.	1		
	Appropriate: The trips were organized by professional and experienced people.	1		
	(4) Applicability to their work	15	83.3%	46.9%
	Yes, very much	6	33.3%	18.8%
	Yes	9	50.0%	28.1%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	There were practical topics that can be applied and adopted by the participants.	1		
	I have been in their country and have seen their implementation.	1		
	Applicability level was achieved by the participants. They can deal with the topics a their home country.	1		
	The organizer selected a practical subjects that are applicable to their work.	1		
	Water quality monitoring, wastewater irrigation, aquitech is of obvious relevance.	1		
	Yes: Common agricultural interests.	1		
	Yes, very much: It is very new; therefore they intend to be very accurate.	1		

	(5) Modality of the lectures	14	77.8%	43.8%
	Appropriate	13	72.2%	40.6%
	Partly not appropriate	1	5.6%	3.1%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	The lecturers were diversified but still relevant.	1		
	Lecturers and topics were chosen having up-to-date practical know-how, taking in mind that the professional needs of the participants.	1		
	Appropriate: Almost all lecturers were selected very well	1		
	(6) Other comments.			
	The requests by Jordan side to handle lectures in English presented some difficulties for some of the participants.	1		
	A lecturer in Jordan: The professional trip as well as the lectures and the interaction between the participants were very good.	1		
	Necessary to receive the list of the interesting subjects that NCARE staff want to learn and what is their proficiency.	1		
2	Were the training courses in Israel planned in the way that the knowledge acquired can be applied to the training courses in Jordan? (Ref. 1-6)	14	77.8%	43.8%
	Yes, very much	3	16.7%	9.4%
	Yes	10	55.6%	31.3%
	No	1	5.6%	3.1%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	The participants can disseminate the acquired knowledge to other stakeholders	0.5		
	Hopefully they will maintain their contacts with their Israeli colleagues	0.5		
	Yes, the idea was to share the knowledge from Israel and Japan to the different agricultural sectors in Jordan.	1		
	No: In Jordan, we can miss the field trips (?) and we can't uncover the developed agriculture in Israel.	1		
	Yes: Jordan has been improved very much in this topic lately.	1		
3	Do you think the agricultural technologies of Israel or of Japan have the advantage in applying to Jordan? (Ref. 1-8)	15	83.3%	46.9%
	(1) Advantage of Israeli technologies			
	Yes, very much	12	66.7%	37.5%
	Yes	3	16.7%	9.4%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Israel (Arava, Negev, Beka valley) and Jordan share very similar growing conditions (dry-land areas). For the obvious reasons, I think this would not be the case with Japan	1		
	Similar climate, shared lack of water, shared pests, all necessitate this development cooperation and Israel has many relevant and proven agricultural technologies that are specifically designed to overcome these shared problems.	2		
	They need these technologies.	1		
	Climate, water and mentality are similar. The possibility of using Arabic speaking lecturers though partly.	1		
	The agricultural technologies in Israel is very professional and practical.	1		
	Irrigation and fertigation. Crop growth management, analysis of soil and plant.	1		
	Yes, definitely in my field such as water analysis, spectroscopy of aquatic organic matter etc.	1		
	Yes: More advanced technologies can always have an impact.	1		
	Yes, very much: Instruments, means of applications, researches, professionalism, link between the agricultures and the ministry, system of irrigations are very progressed.	1		
	(2) Advantage of Japanese technologies	9	50.0%	28.1%
	Yes, very much	1	5.6%	3.1%
	Yes	2	11.1%	6.3%
	No	1	5.6%	3.1%
	Not at all	0	0.0%	0.0%
	Other	5	27.8%	15.6%
	Why?			
	Other: Little time was allocated for Japanese technologies in Israel training course, since the idea of JICA was to stress the regional cooperation.	1		

	The growing conditions in Japan are dissimilar to those in Jordan. Cannot see their input as being very relevant in this sense.	1	
	The agricultural technologies in Japan is very professional and practical.	1	
4	Did you notice any positive or negative impact by conducting the training course in Israel? (Ref. 4-3)	10	55.6%
	Clear positive impact resulting from the direct face-to-face meetings. Much mutual interest and willingness to learn from each other.	1	5.6%
	Positive impact. With lots of interest.	3	16.7%
	Sharing the knowledge regarding the agricultural problems in the region.	1	5.6%
	Lots of positive impact. Possibility and opportunity to see the first hand potential possibilities of development as well as regional cooperation.	1	5.6%
	Positive professionally and politically. As a nation without many natural resources, we have no choice but to make use of our intellectual resources in order to improve our image at home as well as abroad.	1	5.6%
	The participants were very queries and active. The lecturers had to introduce the newest technology and show it during the field visits.	1	5.6%
	Difficult to say as I've seen only general and partial interest and had just few specific questions/ inquiries. There might need a better link between a problem and a solving methodologies. In this sense, a list of problems/ techniques/ issues requested from the Jordan side would be helpful.	1	5.6%
	Positive: Science and information are good tools to reduce tension.	1	5.6%
	The training course was a little short. If it was longer, the benefit would have been much better.	1	5.6%
5	The JICA project is organized based on the regional cooperation among Jordan, Israel and Japan. Did you notice any positive or negative impact to you, to your work, or to your work place by participating to this regional cooperation? (Ref. 4-4)	8	44.4%
	There was a clear positive impact to me and to my workplace, at the time. The Peres Center for Peace, which has a same aim of regional cooperation.	1	5.6%
	The efforts of JICA to arrange the cooperation is of great importance to develop professional links in the region.	1	5.6%
	Definitely positive impact. By the trilateral cooperation, Israel has the opportunity to see the impact of Japane, a far country, bringing the closer specialists. Also to work with Japan together in friendship and harmony. Some of the Japanese partners cared much more than financial aspects.	1	5.6%
	Personal job satisfaction.	1	5.6%
	Only positive impact.	1	5.6%
	No impact.	2	11.1%
	It made me more pround of my activity.	1	5.6%

Questionnaire No.6 (NCARE Section Heads)

Number of the questionnaires collected **5**
 * 2 heads have staff joined in Israel course; 3 have staff joined in Both course in Jordan and in Israel.
 No of target section heads (approx.) **19**

		No of answers	% of Total	% of Total attended
1	Do you think that the training courses in Israel satisfactory to provide necessary skills and knowledge to your staff? (Ref. 1-4)	5	100.0%	26.3%
	Yes, very much	1	20.0%	5.3%
	Yes	4	80.0%	21.1%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	(1) Topics	5	100.0%	26.3%
	Appropriate	5	100.0%	26.3%
	Partly not appropriate	0	0.0%	0.0%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	According to the needs.	1		
	New techniques and skills.	1		
	New subject.	1		
	According to our requests.	1		
	(2) Level of the Courses	5	100.0%	26.3%
	Too difficult	0	0.0%	0.0%
	Moderate	5	100.0%	26.3%
	Too easy	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Moderate: Easy to understand.	2		
	Moderate: Backgrounds of the participants were not the same.	1		
	Moderate: Already have certain information.	1		
	(3) Organization of the field trips	5	100.0%	26.3%
	Appropriate	4	80.0%	21.1%
	Partly not appropriate	1	20.0%	5.3%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Appropriate: Organized to have the best benefit.	1		
	Appropriate: High quality sites. Could be applicable.	1		
	Appropriate: According to the topics.	1		
	(4) Applicability to their work	5	100.0%	26.3%
	Yes, very much	1	20.0%	5.3%
	Yes	4	80.0%	21.1%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Yes, very much: Practicability.	2		
	Yes: Implementating method differs from that of Jordan.	1		
		1		
	(5) Texts	5	100.0%	26.3%
	Too difficult	0	0.0%	0.0%
	Moderate	5	100.0%	26.3%
	Too easy	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Easy to comprehend.	1		
	Some topics have been already known.	1		
	Appropriate to the background of the participants.	1		

	(6) Duration	5	100.0%	26.3%
	Too long	0	0.0%	0.0%
	Appropriate	5	100.0%	26.3%
	Too short	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Appropriate: Comprehensive (scientific topics, trips, lecturers).	1		
	(7) Other comments if any (e.g. suggestions for improvement)			
	More topic should be considered.	1		
	To provide a course abstract to the participants beforehand.	1		
2	Do you think that the training courses in Israel planned in the way that the knowledge acquired can be applied to the training courses in Jordan? (Ref. 1-6)	5	100.0%	26.3%
	Yes, very much	0	0.0%	0.0%
	Yes	5	100.0%	26.3%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	The similar conditions in both countries.	3		
3	3. Do you think that the training courses in Jordan satisfactory to provide necessary skills and knowledge to your staff? (Ref. 1-5, 3-3)	5	100.0%	26.3%
	Yes, very much	1	20.0%	5.3%
	Yes	4	80.0%	21.1%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	(1) Topics	5	100.0%	26.3%
	Appropriate	4	80.0%	21.1%
	Partly not appropriate	1	20.0%	5.3%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Appropriate: Topics of interests and based on the needs.	1		
	(2) Level of the Courses	4	80.0%	21.1%
	Too difficult	0	0.0%	0.0%
	Moderate	4	80.0%	21.1%
	Too easy	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Moderate: Organized according to the backgrounds of the participants.	1		
	(3) Organization of the field trips	5	100.0%	26.3%
	Appropriate	5	100.0%	26.3%
	Partly not appropriate	0	0.0%	0.0%
	Not appropriate	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	The site was chosen according to the recommendations by the professional training team and their knowledge of the Jordanian conditions.	1		
	Appropriate: Almost all the trips were interesting to them.	1		
	Appropriate: The trips were organized by professional and experienced people.	1		
	(4) Applicability to their work	5	100.0%	26.3%
	Yes, very much	3	60.0%	15.8%
	Yes	2	40.0%	10.5%
	No	0	0.0%	0.0%
	Not at all	0	0.0%	0.0%
	Other	0	0.0%	0.0%

	Why?			
	Yes, very much: According to the needs.	1		
	Yes: Possibility to transfer every single information and applied in our society.	1		
	Applicability level was achieved by the participants. They can deal with the topics at their home country.	1		
	The organizer selected a practical subjects that are applicable to their work.	1		
	Water quality monitoring, wastewater irrigation, aquitech is of obvious relevance.	1		
	Yes: Common agricultural interests.	1		
	Yes, very much: It is very new; therefore they intend to be very accurate.	1		
	(5) Texts	5	100.0%	26.3%
	Too difficult	0	0.0%	0.0%
	Appropriate	5	100.0%	26.3%
	Too easy	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	Appropriate: Suitable.	1		
	(6) Duration	5	100.0%	26.3%
	Too long	0	0.0%	0.0%
	Appropriate	5	100.0%	26.3%
	Too short	0	0.0%	0.0%
	Other	0	0.0%	0.0%
	Why?			
	(7) Other comments if any (e.g. suggestions for improvement)			
	More advanced courses are needed.	1		
	Language and its translation issues should be solved.	1		
4	Did you notice any positive or negative impact to your staff or to your section by the JICA project? (Ref. 4-3)	5	100.0%	26.3%
	Positive.	3	60.0%	15.8%
	Positive: Always JICA tries to satisfy the needs we ask.	1	20.0%	5.3%
	Positive: Some of the staff were specialists in Marketing.	1	20.0%	5.3%
5	The JICA project is organized based on the regional cooperation among Jordan, Israel and Japan. Did you notice any positive or negative impact to your staff, or to your section by this regional cooperation? (Ref. 4-4)	5	100.0%	26.3%
	Positive.	3	60.0%	15.8%
	Yes, transfer of technology, cooperating in research and extension.	1	20.0%	5.3%
	Yes, most of the participants found or reached the information they need.	1	20.0%	5.3%

