

スーダン共和国
「農業再活性化計画」
実施能力強化プロジェクト
終了時評価（２）調査報告書

平成 28 年 1 月
(2016 年)

独立行政法人国際協力機構
スーダン事務所

スー事
J R
16-001

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序 文

スーダン共和国（以下、「スーダン」と記す）の農業は国民総生産の35%、労働力の6割を占めており、南スーダンの分離独立により石油収入が激減した後はとりわけ、最も重要な産業のひとつです。しかしながら、スーダンの農業国生産は過去20年間にわたり停滞傾向にあり、その再興が喫緊の課題となっています。スーダン国政府は農産品の輸出促進、貧困削減、食料の安全保障の確保を目的とした「農業再活性化計画」を策定、推進していますが、その成功のためには、計画、実施、モニタリング能力の強化が必須です。こうした課題に対応するため、独立行政法人国際協力機構は、技術協力プロジェクト「『農業再活性化計画』実施能力強化プロジェクト」を2010年3月より開始しました。

本プロジェクトの期間は当初4年間でしたが、2013年9月～10月に実施された終了時評価において、一部の成果指標が未達成と評価され、2014年3月から更に2年間の期間延長を行うこととなりました。今般、本プロジェクト延長期間の終了を迎え、2015年10月11日から27日の期間で、終了時評価調査団を派遣しました。これまでのプロジェクト活動実績・成果を評価し、評価結果から提言・教訓を導き、今後の協力のあり方への提言を行うことを目的として、同調査を実施しました。

この報告書は、本プロジェクト延長期間について、スーダン側との合同評価の結果に基づき取りまとめたものであり、今後の技術協力事業を効果的かつ効率的に実施していくための参考として、広く活用されることを願うものです。

ここに、本調査にご協力とご支援を頂いた関係各位に対し、心より感謝申し上げます。

平成27年11月

独立行政法人国際協力機構

スーダン事務所長 小池 誠一

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プロジェクト対象地区 位置図



成果 1. (連邦農業省の人材育成及び組織能力強化のモデルシステム) :

首都ハルツーム

成果 2. (適正稲作技術の開発の計画・実施・モニタリング) :

連邦農業省、及び、北部州・リバーナイル州・ゲダレフ州・センナール州・
ジャジーラ州・白ナイル州の各州農業省

写



ジャジーラ州試験栽培圃場（担当普及員の説明）

真



ジャジーラ州種子生産圃場（担当普及員の説明）



ジャジーラ州デモ圃場（生育良好）



ゲダレフ州デモ圃場（異品種除去指導）



センナール州デモ圃場（生育ムラ顕著）



白ナイル州 ARC 陸稲試験圃場（品種試験等）



北部州デモ圃場（ダイアリーによる活動記録）



ミニッツ署名（連邦農業省）

略 語 表

略語	英語名称	日本語名称
ARC	Agricultural Research Corporation	農業研究機構
C/P	Counterpart	カウンターパート
DG	Director General	局長
EPAR	Executive Programme for Agricultural Revival	農業再活性化計画
FMoA	Federal Ministry of Agriculture (Name changed from Ministry of Agriculture and Irrigation to Ministry of Agriculture and Forestry in May 2015)	連邦農業省 (2015 年 5 月に連邦農業灌漑省から連邦農業林野省に改編・改称)
GOJ	Government of Japan	日本国政府
GOS	Government of Sudan	スーダン国政府
JCC	Joint Coordinating Committee	合同調整委員会
JICA	Japan International Cooperation Agency	独立行政法人国際協力機構
M&E	Monitoring & Evaluation	モニタリング・評価
M/M	Minutes of Meeting	ミニッツ（協議議事録）
NRD	Natural Resources Directorate	自然資源局
NRDS	National Rice Development Strategy	国家コメ開発戦略
NRP	National Rice Project	国家コメプロジェクト
OJT	On-the-Job-Training	オンザジョブ・トレーニング
PDM	Project Design Matrix	プロジェクト・デザイン・マトリックス
PO	Plan of Operation	活動計画
R/D	Record of Discussions	討議議事録
SDG	Sudan Pound	スーダン・ポンド
SMoA	State Ministry of Agriculture	州農業省

評価調査結果要約表

1. 案件の概要		
国名：スーダン共和国		案件名：「農業再活性化計画」実施能力強化プロジェクト
分野：計画・行政 - 行政 - 行政一般		援助形態：技術協力プロジェクト
所轄部署：スーダン事務所		協力金額（評価時点）：約 9.4 億円
協力期間	【当初期間】2010 年 3 月 29 日～2014 年 3 月 28 日	先方関係機関：連邦農業省、プロジェクト対象州の州農業省（ジャジーラ州、白ナイル州、センナール州、ゲダレフ州、北部州、リバーナイル州）
	【延長期間】2014 年 3 月 29 日～2016 年 3 月 28 日	日本側協力機関：なし
		他の関連協力：なし
<p>1-1 協力の背景と概要</p> <p>スーダン共和国（以下、「スーダン」と記す）では農業セクターの再活性化が喫緊の課題となっている。農業は GDP の 35% を占め、労働力の 62% を雇用しているが、過去 20 年間にわたり、主要作物であるソルガム、コムギ、綿花、落花生の生産は停滞している。一方、年 2% の人口増加に伴い食料の国内消費量が急速に伸びているため、スーダンは現在、食料の純輸入国である。1990 年代以降、スーダンは経済成長と対外収支バランスを石油収入に依存してきたが、2011 年 7 月の南スーダン分離後は石油収入が激減したため、経済成長率が低下、対外収支・財政収支も大幅に悪化した。</p> <p>こうした状況に対処するため、スーダン国政府は 2008 年に、農産物輸出振興、貧困削減、食料自給達成を目的として、「農業再活性化計画（EPAR）」を策定した。EPAR は、副大統領が直轄する、連邦農業灌漑省（当時。2015 年に連邦農業林野省へ再編。以下、「連邦農業省」と記す）を含む 8 つの省にわたる省庁横断プログラムである。EPAR は、ダムや灌漑水路の建設、作付面積の倍増、園芸作物生産の拡大等を通じて、農業の生産性向上と国際競争力の強化をめざすものである。EPAR の実施期間は、当初 2008 年から 2011 年までであったが、その後延長されている。さらに、連邦農業省は、政府の国家目標を達成するために、自身の 5 カ年計画（2012～2016 年）を策定している。また、連邦農業省は、2005 年に「国家コメプロジェクト（NRP）」を開始、コメ開発計画の策定、適地への稲作導入、マーケティング・販売の支援を通じて、国内需要にも追いついていないコメ生産の拡大を推進している。</p> <p>EPAR 及び NRP を成功させるためには計画、実施、モニタリング能力の強化が鍵となることから、スーダン国政府は、わが国政府に対して、連邦農業省及び関連機関の能力強化についての技術協力を要請、日本政府は 2009 年 12 月にこれを採択した。続いて、連邦農業省と JICA が本プロジェクトの枠組みを議論し、2010 年 1 月 21 日に R/D を署名、2010 年 3 月にプロジェクトを開始した。プロジェクト期間は当初、2014 年 3 月までの 4 年間であった。</p> <p>2013 年 9 月から 10 月にかけて、本プロジェクトの当初期間を対象とした終了時評価が実施された。その結果、プロジェクト目標と成果の大半は達成されたものの、①適正稲作栽培技術の開発、及び、②ジャジーラ州以外の対象 5 州（白ナイル、センナール、ゲダレフ、北部、リバーナイル）における普及員能力強化の 2 つの成果指標が未達成のため、2 年間の期間延長が提言された。これを受けて連邦農業省と JICA は提言された期間延長に係る協議を行い、2014 年 3 月から 2016 年 3 月までの延長期間を対象とする R/D を 2014 年 2 月 12 日に新たに署名した。</p>		

1-2 協力内容

本プロジェクトは、実施機関である連邦農業省及び州の農業省の開発計画策定能力及び実施能力の強化を図るため、連邦農業省においては人材育成・組織能力強化を行うとともに、州の農業省においてはスーダンにおいてコムギに次ぐ戦略作物と位置づけられているコメの国内生産の定着・拡大のため、陸稲栽培の導入・普及とその陸稲開発を通じた人材育成を支援することを目的として開始された。

(1) 上位目標：

スーダン共和国における農業行政サービスの質が向上する。

(2) プロジェクト目標：

「農業再活性化計画」の実現に必要な連邦政府農業省及び関係機関のキャパシティが向上する。

(3) 成果

成果 1. プロジェクトの実証的な活動を通じ、農業省の人材育成及び組織能力強化に関するモデルシステムが開発される。

成果 2. 適正稲作技術の開発に係る計画・実施・モニタリングが促進される。

延長期間においては、当初期間において未達成であった成果 2 に係る以下 2 つの成果指標を達成するための活動が継続された。

指標 2-4 陸稲栽培に関する実践的・技術的なハンドブックが作成される。

指標 2-6 ジャジーラ州以外の対象 5 州における研修参加者のうち 2 名が、適正稲作栽培技術に関するトレーナーとして合格水準に達する。

(4) 投入（評価時点）

日本側総投入額：9.4 億円

	項目	当初期間	延長期間	合計
日本	専門家派遣	長期 4 名 短期 10 名	短期 6 名	長期 4 名 短期 16 名
	本邦研修	45 名	18 名	63 名
	第三国研修（ウガンダ）	129 名	27 名	156 名
	第三国研修（エジプト）	50 名	109 名	159 名
	機材供与	1.0 億円	0.1 億円	1.1 億円
	現地経費	0.7 億円	0.4 億円	1.1 億円
スーダン	ローカルコスト	0.3 億円	0.2 億円	0.5 億円
	カウンターパート配置	（評価時点） 管理職 24 名、普及員 120 名、研究者 11 名		
	事務スペースの提供	（評価時点）連邦農業省、ジャジーラ州農業省		

2. 評価調査団の概要				
調査者	総括	大竹 茂	JICA スーダン事務所 次長	
	稲作開発	伊藤 耕三	JICA 農村開発部 第二グループ第五チーム 専任参事	
	協力企画	塩見 正裕	JICA スーダン事務所 企画調査員	
	評価分析	西谷 光生	NTC インターナショナル株式会社 取締役技術管理本部長	
調査期間	2015 年 10 月 11 日～2015 年 10 月 27 日		評価種類：終了時評価調査	
3. 評価結果の概要				
<p>本終了時評価は、「延長期間」における取り組み事項に絞って達成状況を測るべく、5 項目評価を実施した。</p>				
3－1 実績の確認				
<p>成果 2：適正稲作技術の開発に係る計画・実施・モニタリングが促進される。</p> <p>プロジェクト目標：「農業再活性化計画」の実現に必要な農業省及び関係機関のキャパシティが向上する。</p>				
<実績>				
<p>連邦農業省のキャパシティ向上については当初期間中に大変に満足できる水準であると判断された。延長期間においては、対象 6 州の農業省の能力向上に焦点があてられた。結論として、州農業省職員の、特に陸稲栽培に係る計画、実施、モニタリング・評価に関する能力が、プロジェクト終了までに満足できるレベルに到達すると判断される。</p>				
3－2 評価結果の要約				
(1) 妥当性：高い				
<p>本プロジェクト〔案件名：「農業再活性化計画」実施能力強化プロジェクト、協力期間（延長期間）：2014 年 3 月 29 日～2016 年 3 月 28 日〕は、連邦農業省職員の能力強化のニーズに合致し、また、収益性の高い代替作物や夏作が可能な作物を導入したいという農民のニーズにも合致している。スーダン国政府は、2008 年に農産物輸出振興、貧困削減、食料自給達成を目的として策定した「農業再活性化計画（EPAR）」において、政府機関の能力強化を優先政策のひとつに掲げており、また、連邦農業省は、政府の国家目標を達成するために、自身の 5 カ年計画（2012～2016 年）を策定している。さらに、連邦農業省は、2005 年に「国家コメプロジェクト（NRP）」を開始し、コメを戦略作物のひとつに位置づけている。以上のことから、本プロジェクトは対象国の政策との整合性がある。一方、わが国の対スーダン国別援助方針（2012 年）においても、農業開発並びに行政サービスの向上を重点課題としており、農業省の政策策定・実施能力強化に取り組み、また現場ではコメ等の生産性向上を図ることによりスーダン国の貧困削減及び食料安全保障実現の支援をめざす本事業は、わが国の援助方針とも整合性がある。</p> <p>プロジェクトアプローチについては、プロジェクト延長期間は、2014 年 2 月に改訂された PDM バージョン 5.0 において、①州農業省職員の能力強化、②陸稲栽培技術の開発の 2 点に焦点があてられた。全体的には、プロジェクトアプローチは適正化されたと判断される。</p>				

(2) 有効性：高い

州農業省の能力強化は満足できる水準に達するものと期待される。プロジェクトは、重大な障害がなく、PDM バージョン 5.0 (2014 年 2 月改定版) の重点事項に沿って、適正に実施された。このため、有効性は高いと判断する。

(3) 効率性：おおむね高い

日本側投入は成果を出すうえでおおむね適切であった。特に多くの普及員が稲作の発達した国において研修を受けた。また、2 名の稲作専門家のみで距離の離れた 6 州における稲作技術指導を担当した。一部の機材（稲用コンバインハーベスタ）を除き、延長期間における投入はおおむね計画どおり実施された。

延長期間においては、州農業省は多くの職員をプロジェクト活動に参加させ、一定規模のローカルコストを支出している。

プロジェクトマネジメントについては、プロジェクト活動進捗に応じた柔軟な対応が図られるとともに、定期的かつ適切な合同調整委員会（JCC）会議の開催・運営が行われてきた。

ただし、連邦・関係州農業大臣をはじめとする高官が、特に延長期間において頻繁に交代したため、プロジェクト予算の執行やリソースの調整などの面において遅延や不足が生じた。

(4) インパクト

1) 上位目標（「スーダン共和国における農業行政サービスの質が向上する。」）達成の見通し

終了時評価時点で、この指標の達成見込みを予想するに適した定量的データがないため、プロジェクト終了後 3～5 年以内に上位目標が達成されるかどうかを見通すことは困難である。

2) その他のインパクトとして、以下の事項が認められた。

- ・ 州農業省の相互訪問により、参加した関係者の知識・意欲が非常に向上した。
- ・ 稲作に関心をもつ農家数が増加した。
- ・ メディアによる報道によりスーダンにおける陸稲生産への認知度が向上した。

(5) 持続性：中程度

政策面での持続性は確保されている。組織面・財政面の持続性を確保することもおおむね可能と見込まれる。技術面では、プロジェクトは導入期における基礎を確立することに成功したといえるが、さらに外部からの継続的な支援が必要であると思われる。

1) 政策面

スーダン政府は、組織能力強化、農業近代化・生産性向上を重要視している。コメは、戦略作物のひとつである。したがって、政府職員の能力強化や稲作振興に関する政策面の持続性は確保される。

2) 組織面

対象 6 州の農業省は稲作課を設置し、数多くの普及員を配置した。また州農業省の大臣や総局長は、陸稲を輪作体系に取り込む候補作物として重要視している。稲作振興に関して州農業省と国家稲作プロジェクトとの連携も図られている。そのため、対象 6 州

の農業省は稲作振興に対する適切な体制をとっていると考えられる。

3) 財政面

対象 6 州の州農業省は、プロジェクトの活動に対して費用を負担してきた。予算確保に向けて、年間活動計画や稲作開発 5 カ年計画も策定されている。国家稲作プロジェクトは稲作振興のための予算確保のために十分な支援を行っている。したがって、連邦農業省と州農業省は稲作振興に向けて能力強化を継続していくことができると思われる。

4) 技術面

州農業省の普及員については、各種の研修参加や圃場での OJT を通じて年々能力が向上している。陸稲栽培ハンドブックは普及員のテキストブックとして発行される見通しである。したがって、プロジェクトは陸稲栽培を開始するために良好に機能したといえる。しかしながら、稲作普及期に向けては、特に圃場均平化や除草などの事項において、技術的検討や継続的研修が必要であると考えられる。稲の商業的生産のためには高品質種子の生産が重要課題として残されている。また、収穫後処理技術やマーケティングに関しても検討しなければならない。結論として、プロジェクトは稲作導入期の基礎を築いたものの、さらに外部からの継続的な支援が必要と考えられる。

5) 当初期間中に達成された成果の継続性

成果 1 は、当初期間終了後、活用されておらず、プロジェクトの持続性の観点から大きな懸念となっている。成果 2 も、一部は継続されていない。(ただし、本件については、連邦農業省に問題提起し成果の継続的な活用を提言したところ、先方がこれに合意し、合同評価レポートにも記載した。)

a) 成果 1

人的資源開発と組織能力開発のためにプロジェクトが実証し提案した運営体制はまだ設立されていない。2014 年 2 月に研修ユニットが連邦農業省の全部局に対し、プロジェクトが作成した能力開発ガイドライン・マニュアルに沿って能力開発計画を提出するようレターを発出したが、どの部局もキャパシティアセスメントやニーズアセスメントを行わず、また、プロジェクトが導入した **Learning by Doing** アプローチを採用せず、従来どおりのやり方で研修を計画・管理している。したがって、実施マニュアルは連邦農業省に意図したとおりの便益をもたらさなかった。連邦農業省のトップ・中間管理職の頻繁な交代が、このようなプロジェクト成果に対する関心が薄れた主な理由である。

b) 成果 2

国家コメ開発戦略 (NRDS) は現在も有効で、連邦農業省の現マネジメントもこれを重視している。稲作セクター開発フォーラムは 2013 年と 2014 年に開催されて以降、中断しているが、主要課題はプロジェクトの年次ワークショップにおいて議論されている。稲作開発年間活動計画は、州農業省により引き続き作成され、実施、モニタリング・評価されている。州農業省、特にジャジーラ州の農業省においては、種子生産圃場において異品種の抜き取りにより稲種子の品質維持のために努力を払っている。デモ圃場においておおむね良好な結果が得られているため、農民の稲作に対する意欲は引き続き高い。

3-3 効果発現に貢献した要因

(1) 計画内容に関すること

特になし。

(2) 実施プロセスに関すること

各州農業省に対して、①陸稲栽培の導入に対する政策意思の確認、②行政面での強いリーダーシップの発揮、③関係普及員、農民、JICA 専門家の密接な協力と連携を、常に必要条件として求めてきた結果、研修やデモ圃場活動への積極的な参加が行われた。

また、本邦研修及び第三国研修への参加者が増加したことにより、稲作振興に係る理解が次第に深まり、プロジェクトの効果発現に貢献してきている。

3-4 問題点及び問題点を惹起した要因

(1) 計画内容に関すること

特になし。

(2) 実施プロセスに関すること

連邦政府と各州政府の連携が不十分な時期があったことや、幹部職員が頻繁に交代したことが、プロジェクトの運営に若干の支障を与えた。また、スーダン側の予算の執行にも多少の遅延や不足が生じた。州農業省内の部署間連携・調整が不十分で、収穫適期にコンバインハーベスタが使えないなどの問題も発生した。

3-5 結 論

プロジェクト活動に関わった人たちは、本プロジェクトの目標達成に向けて多大な努力を傾注した。延長期間においては、対象 6 州の農業省において、陸稲栽培振興に向けた能力が向上した。陸稲栽培に関しては、デモ圃場において高い収量・収益性が得られたこと、政府職員や農民が稲作実施の準備ができたことなどの成果が得られた。したがって、プロジェクトは予定どおり終了することと結論する。

ただし、陸稲に関する普及員の能力強化が必要であり、また、陸稲栽培における技術的課題に対応するための開発を更に進めていかなければならない。

4. 提言

4-1 プロジェクト終了時までに達成すべき提言

<日本人専門家・カウンターパート>

①陸稲栽培ハンドブック最新版の作成

②対象 6 州（特にジャジーラ州以外の 5 州）の普及員能力評価の完了

<連邦農業省・各州農業省>

③翌年度以降の稲作振興予算の承認

4-2 プロジェクト成果持続のための提言

<連邦農業省>

①稲作開発フォーラム（または別形態の関係者協議の場）の再開

<連邦農業省・各州農業省>

②コメ生産に取り組む民間セクターへの必要かつ適切な技術的支援の提供

③稲作推進に係る計画策定、実施、モニタリング・評価のための十分な予算の配分・執行

<連邦農業省・ARC>

④稲作に係る試験研究の実施、それに基づく陸稲栽培ハンドブックの正式承認と一般農家へ

の配布

⑤イネ用選択性除草剤の試験実施及び承認

<各州農業省>

⑥プロジェクトで導入された精米機の十分な活用

⑦種子生産農家が純度の高い種子を生産するための訓練の徹底

⑧リーダー普及員による一般普及員向け国内研修の実施

⑨すべての普及員に対する、作業日誌の活用による知識・技能自己研鑽の奨励

<連邦農業省>

⑩人材育成・組織能力強化のために本プロジェクトが提案したプロセス（特に「実践による学習」）及び運営体制の再確認・実施

4-3 更なるコメ生産振興のための提言

<連邦農業省>

①連邦農業省 **National Rice Project** の強化

②民間セクターによる、より活発な取り組みの奨励

<連邦農業省・各州農業省>

③コメ生産者のための販路開拓

④コメ専門農民組合の組織化

⑤適切なコメ貯蔵・収穫後処理サービスの確保

< ARC >

⑥対象全州における稲作研究開発の実施

< ARC・連邦農業省・各州農業省>

⑦イネ品種の維持及び純系種子の生産のための既存体制の強化

<連邦農業省・各州農業省>

⑧スーダンでの稲作に適した農業機械の調査・試験・導入の継続

<各州農業省>

⑨ **Center of Excellence** 設立による、既存の技術普及体制の強化

⑩より多くの農家のニーズに応えるための普及網の拡大・再活性化

5. 教訓

① 延長期間中においても、当初期間中に達成された成果に関するフォローアップをある程度は行うことが可能かつ望ましい。

② 地理的な範囲拡大は、利用可能な資源・投入にかんがみて、非常に慎重な検討を要する。

③ 本プロジェクト全体を通じてすべての能力強化活動に用いられた「実践による学習」アプローチは非常に有効である。

Summary of Terminal Evaluation

1. Outline of the Project		
Country: The Republic of the Sudan		Project title: Capacity Building Project for the Implementation of “The Executive Programme for the Agricultural Revival”
Issue/Sector: Planning/ Government – Government - Government/ General		Cooperation scheme: Technical Cooperation Project
Division in charge: JICA Sudan Office		Total cost (estimated at completion of the Project): approximately 0.94 billion Yen
Period of Cooperation	[Original Period] From March 29, 2010 to March 28, 2014	Partner Country’s Implementing Organization: Federal Ministry of Agriculture and Irrigation, State Ministry of Agriculture of the target area (Gezira, White Nile, Sennar, Gedaref, Northern, and River Nile)
	[Extended Period] From March 29, 2014 to March 28, 2016	

1-1. Background of the Project

The Republic of the Sudan is in urgent need to revive the agriculture sector. The agricultural production, comprising 35% of Gross Domestic Product and 62% of labor force in 2007, has been stagnant in the last two decades, particularly in major crops such as sorghum, wheat, sesame, cotton and ground nuts. Sudan is a net importer of food because of the rapid increase in domestic consumption due to the population growth at 2% per annum. Sudan had been dependent on oil revenues to achieve economic growth and balance external accounts, which significantly decreased due to the Secession of South Sudan.

To tackle this imminent challenge, the Government of Sudan (GOS) formulated the “Executive Programme for Agricultural Revival” (EPAR) in April 2008 to promote agricultural exports, eradicate poverty, and attain food security. EPAR is an across-the-board program under direct supervision of Vice President of Sudan and encompassing eight ministries including the Federal Ministry of Agriculture and Irrigation, which was reorganized into Federal Ministry of Agriculture and Forestry in 2015 (FMoA). EPAR aims at improving agricultural productivity and export competitiveness through constructing/rehabilitating dams and irrigation canals, doubling cultivated areas and growing horticulture production. EPAR was extended after the end of its original term from 2008 to 2011, and FMoA itself formed its own Five-Year Plan 2012-2016 to play its roles to achieve the overall national goals.

FMoA also established the National Rice Project (NRP) in 2005 to promote the production of rice, which also lags behind the growing domestic demand, by formulating rice development plans, introducing rice cultivation to suitable areas, and facilitating marketing and sales.

In view that capacity development for action planning, implementation, and monitoring is the key to the success of EPAR and NRP, GOS requested the Government of Japan (GOJ) for Technical Cooperation to develop capacity of FMoA and related organizations. GOJ accepted the request of GOS in December 2009. Subsequently FMoA and JICA entered discussion on the framework of the Project, signed the Record of Discussions on 21st January, 2010, and the Project started in March 2010. The original duration of the Project was four years until March 2014.

From September to October 2013, the Terminal Evaluation in the original Project period was conducted. It concluded that, while most of the Project Purpose and Outputs were achieved, two Output indicators regarding

(i) appropriate upland rice cultivation technology development and (ii) capacity development of extension officers in five participating States (White Nile, Sennar, Gedaref, Northern and River Nile) other than Gezira were not fulfilled, and thus recommended two-year extension of the Project period. Subsequently FMoA and JICA discussed the recommended period extension, and signed a new R/D for the extended duration from March 2014 to March 2016 on 12th February, 2014.

1-2. Project Overview

This Project aims to strengthen human and institutional capacity of the Ministry of Agriculture and the organizations concerned to materialize "The Executive Programme for the Agricultural Revival". There are 2 main pillars in the project. The first one is for development of human resources and institutional capacity development to enforce FMoA's capacity for planning, implementation, and monitoring. The second pillar is for promotion of upland rice production which is regarded as one of the strategic crops, and for human resource development through the introduction and extension of its production. The latter is implemented in the state level.

(1) Overall Goal

The quality of public services provided by the Ministry of Agriculture and the organizations concerned are improved through their capacity development.

(2) Project Purpose

Human and organizational capacity of the Ministry of Agriculture and the organizations concerned is strengthened to materialize "The Executive Programme for the Agricultural Revival."

(3) Outputs

- 1) Through the experimental activities of the Project, a model system of human resource development and organizational capacity development of the Ministry of Agriculture has been developed.
- 2) Planning, implementation, monitoring & evaluation for promotion of rice production are enhanced.

In the extended period, the Project continues the activities to achieve the following two Output Indicators of the Output 2), which were not fulfilled in the original period.

- Indicator 2-4 A practical/technical handbook on upland rice cultivation is prepared.
- Indicator 2-6 Two of trained participants respectively in five States excluding Gezira State are qualified as trainers on appropriate rice cultivation technique.

(4) Inputs

Total Inputs of Japan: USD9.4 million

	Item	Original Period	Extended Period	Total
Japan	Experts	Long-term: 4 Short-term: 10	Short-term: 6	Long-term: 4 Short-term: 16
	Training in Japan	45	18	63
	Training in Uganda	129	27	156
	Training in Egypt	50	109	159
	Provision of equipment	USD 0.9 million	USD 0.06 million	USD 0.96 million
	Local Cost	USD 0.6 million	USD 0.3 million	USD 0.9 million

Sudan	Local Cost	USD 0.2 million	USD 0.2 million	USD 0.4 million
	Counterpart	Management: 24, Extensionists: 120, Reserachers: 11 (as in October 2015)		
	Provision of office space	FMoA, Gezira State Minitsry of Agriculture (as in October 2015)		

2. Evaluation Team

Members of Evaluation Team	1) Team Leader: Mr. Shigeru Otake, Senior Representative, JICA Sudan Office			
	2) Rice Development: Mr. Kozo Ito, Advisor to Director General, Team 5, Group 2, Rural Development Department, JICA Headquarters			
	2) Cooperation Planning: Mr. Masahiro Shiomi, Project Formulation Advisor, JICA Sudan Office			
	3) Evaluation and Analysis: Mr. Mistuo Nishiya, Director, Engineering Management Department, NTC International Co., Ltd.			
Period of Evaluation	From October 11, 2015 to October 27, 2015		Type of Evaluation: Terminal	

3. Results of Evaluation

3-1. Achievement

This terminal evaluation is mainly focused on the extended period to review inputs, implementation management, and to assess progress and achievements by the five criteria in accordance with the Development Assistance Committie (DAC) criteria for Evaluating Development Assistance.

Output 2:

“Planning, implementation, monitoring & evaluation for promotion of rice production are enhanced.”

Achievement:

The Project focused on the development of upland cultivation method and capacity development of the extension officers of the 6 target SMoAs during the extension period. The Project will finalize the "Handbook of Upland Rice Cultivation" by the end of the Project period. The capacity of the extension officers is expected to reach at satisfactory level.

Project Purpose:

“Human and organizational capacity of the Ministry of Agriculture and the organizations concerned is strengthened to materialize "The Executive Programme for the Agricultural Revival."”

Achievement:

It was judged that the capacity of FMoA was improved enough during the original period. During the extension period, the Project has focused on only the SMoAs in the target 6 States. In conclusion, the capacity of the SMoA officers, especially in planning, implementation, monitoring and evaluation aspects, regarding upland rice cultivation, is improved at a satisfactory level by the end of the Project period.

3-2. Summary of Evaluation Results

(1) Relevance: High

The Project (Project title; Capacity Building Project for the implementation of the Exective Programme for the Agricultural Revival, Extended project period; From March 29, 2014 to March 28, 2016) addresses the need of capacity building of officers in FMoA as well as the need of farmers to introduce profitable

alternative crops or additional summer crops. The Project is well consistent with the policies of GOS, GOS puts higher priority on institutional capacity building of governmental organizations, in “Executive Programme for Agricultural Revival (EPAR)” which was formulated 2008 for the purpose of promoting agricultural exports, reducing poverty, and fulfill food self-sufficiency. FMOA carries out its own Five-Years Plan 2012-2016 to achieve the objectives of EPAR. SMOAs have also started “National Rice Project (NRP)” since 2005 to regard rice as one of the strategic crops. The objectives of the Project, which supports to reduce poverty and establish food security through MoAs’ capacity development in their policy making and its enforcement, simultaneously to improve the productivity and enhancement of rice in the target states, are also consistent with priority of Japan's ODA policy to Sudan (2012), which states that agricultural development and improvement of the governmental services are the priority areas of assistance. There were two main components in the extended period of the Project: 1) capacity development of SMOA staff; and 2) development of upland rice production techniques in the PDM version 5.0, which was prepared in February 2014. To conclude, it may be said that the project approach is appropriate in general.

(2) Effectiveness: High

The strengthened capacity of the SMOAs is expected to be at a satisfactory level. The Project has been properly implemented without any serious obstacles by focusing on particular parts of PDM (version 5.0, revised in February, 2014) during the extension period. Therefore, we may conclude that the effectiveness of the Project is high during the extension period.

(3) Efficiency: Relatively high

The inputs made by the Japanese side are appropriate for producing outcomes. Especially, a large number of extension officers have received trainings in rice-developed countries. Only 2 Japanese experts are in charge of instructing upland rice cultivation in as many as 6 States with long distance away from each other. The input of equipments was approximately as scheduled except some combine-harvesters.

A large number of staff of the SMOAs of the target 6 States has been involved in the project activities and a substantial amount of local cost has been borne by the SMOAs of the target 6 States during the extension period.

As for project management, Project activities are conducted in a flexible manner based on their progress, and the Joint Coordinating Committee meetings are held regularly and properly.

As high-level officers, including Ministers, of FMOA and the relevant SMOAs have been changed many times during the Project extended duration, the execution of the local budget for the Project and arrangement of resources was sometimes delayed or insufficient.

(4) Impact:

1) Prospect on achieving the Overall Goal in future: “The quality of public services provided by the Ministry of Agriculture and the organizations concerned are improved through their capacity development.”

Quantitative data for assessing the degree of achievement of this indicator are not available at the moment of the Terminal Evaluation. Therefore, it is difficult to judge whether this indicator can be achieved within 3-5 years after the completion of the Project.

2) Other impact

- Exchange visit of the relevant SMOA officers improved the knowledge and morale of the visit

participants to a great extent

- Number of farmers who are interesting in rice cultivation has been increased
- Public Relationship through media made the Sudanese people aware of upland rice development in Sudan

(5) Sustainability: Moderate

Policy sustainability will be secured. Organizational sustainability will be secured in general. Financial sustainability might be secured. As for technical issues in upland rice cultivation, the Project successfully developed basis for introduction stage but continuous assistance from outside of the country seems to be necessary.

1) Policy sustainability

The Government of Sudan considers that institutional capacity building, modernization of agriculture, and improvement of productivity are important. Rice has become one of the strategic crops. Therefore, policy sustainability on capacity building of officers of the government and promotion of rice cultivation will be secured.

2) Institutional/organizational sustainability

The SMOAs in the target 6 States have created rice promotion/production unit by assigning relatively a large number of extension officers. The Ministers and Director Generals in the SMOAs are committed to upland rice promotion as a potential crop in the crop rotation. The coordination between the SMOAs and National Rice Project is kept well in terms of rice promotion. Therefore, it can be said that the SMOAs in the 6 States have appropriate organizational setup for promoting rice cultivation.

3) Financial sustainability

The SMOAs in the target 6 States have allocated local cost for the project activities during the extension period. The annual action plans and 5-year rice development plan have been prepared to request necessary budget for the implementation. The National Rice Project is fully supporting budget allocation to rice promotion. Therefore, it is possible for the FMOA and SMOAs to continue capacity building mainly for upland rice production.

4) Technical sustainability

As for extension officers in the SMOAs concerned, their capacity has improved year by year by participating in various trainings and the OJT at the fields. The technical/practical handbook on upland rice cultivation will be issued as a textbook for the extension officers. Therefore, it can be said that the Project has performed well to start upland rice production. However, upland rice cultivation in Sudan is still at an introduction stage. Further technical investigation and continuous trainings, especially in land leveling and weed control, are necessary to shift it to expansion stage. In addition, production of quality rice seeds remains the key issue for commercial production of rice. The post-harvest handling techniques and marketing issue also need to be studied. In summary, the Project successfully developed basis for introduction stage but continuous assistance from outside of the country seems to be necessary.

5) Sustainability of Outputs achieved in the original Project period

The achievements in Output 1 are mostly buried in oblivion since the end of the original duration of the Project, raising substantial concern about the sustainability of the Project. Activities to sustain what was attained in Output 2 have declined partially, too.

Output 1:

The Management System verified and proposed by the Project for human resource development and organizational capacity development has not been established yet. Despite the letter from the Training Unit in February 2014 requesting all the directorates in FMoA to prepare capacity building plan for the coming years based on the Capacity Development Guideline/Manual developed in the Project, all the directorates have returned to their old practices of training planning and management, not conducting Capacity Assessment or Need Assessment nor, more importantly, applying the “Learning by Doing” approach introduced by the Project. Therefore the Implementation Manual has not provided the intended benefit for FMoA. The continuous changes in the top & middle management of FMoA are the major reason for such a diminishing interest in the achievements of the Project.

Output 2:

The National Rice Development Strategy (NRDS) still remains valid and is drawing refreshed attention from the new management of FMoA. The Rice Sector Development Forum, which was initiated in 2013 and 2014 as the Structure to Implement and Review NRDS, was discontinued, although the discussions on the bottleneck issues are continued in the annual workshop of the Project in the extended period. Annual Action Plans for Rice Development are still formed, implemented, monitored and evaluated by participating SMOAs every year. SMOAs, particularly Gezira State, are also paying good efforts to maintain the Quality of Rice Seeds by thoroughly removing off-types in the seed production farms. The Willingness of Farmers to Grow Rice is kept high as farmers are exposed to the mostly positive results in the demonstration farms.

3-3. Factors that promoted realization of effects

(1) Regarding project plan

None.

(2) Regarding implementation process

SMOAs have always been required to show 1) assured political will to introduce upland rice, 2) strong administrative leadership and 3) close cooperation and collaboration among extension officers, farmers and Japanese experts. As a result, proactive participation took place in training and demonstration farm activities.

The increased number of participants in training in Japan and third countries is contributing to deepening the understanding of rice promotion and to realizing the effects of the Project.

3-4. Factors that impeded realization of effects

(1) Regarding project plan

None.

(2) Regarding implementation process

The implementation of the Project was adversely affected to some extent by insufficient coordination between Federal Government and State Governments for a certain period, and by frequent change of management.

Some delay or shortage of budget execution on the Sudanese side was observed, too. Insufficient coordination and arrangement among departments in SMOAs caused some problems such as combine harvesters were not available at the optimal time of harvesting.

3-5. Conclusion

Persons involved in the project activities have made a lot of efforts for achieving objectives of the Project. Their capacity in promotion of upland rice cultivation has been strengthened well at the SMOAs in the 6 States during the extension period. As for rice cultivation, there are good outcomes, for example, results of higher yield at the demonstration farms, that indicate profitability of rice cultivation, and governmental officials and farmers are ready for rice cultivation. Therefore, it can be concluded that the Project shall be terminated on schedule.

However, further capacity strengthening of the extension officers on upland rice cultivation is necessary and there are several technical issues on upland cultivation to be addressed by further development.

4. Recommendations

4-1. Recommendations by the end of the Project

For Japanese experts and counterpart organizations

- (1) Prepare the latest Technical Handbook on Upland Rice Cultivation
- (2) Complete the capacity assessment of the extension officers of the participating six States, especially in those States of White Nile, Sennar, Gedaref, Northern and River Nile

For FMoA and SMOAs

- (3) Approve plans and budgets to promote rice production for the next year(s)

4-2. Recommendations for sustaining the Project achievements after the end of the Project

For FMoA

- (1) Reactivate the Rice Sector Development Forum or any other form of stakeholder meeting

For FMoA and SMOAs

- (2) Provide necessary and adequate technical support for the rice production activities of the private sector
- (3) Allocate and disburse sufficient budget for annual planning, implementation, monitoring and evaluation of rice promotion

For FMoA and ARC

- (4) Conduct research, and draft, authorize and release official Technical Handbook for use of farmers
- (5) Test and approve herbicides having selective effect on weeds in rice field

For SMOAs

- (6) Fully utilize the rice milling machines provided in the Project
- (7) Train seed-producing farmers thoroughly to keep purity of rice seeds
- (8) Conduct in-country training of extension officers by the most competent leader extension officers
- (9) Encourage all extension officers to continue refining their knowledge and skills through the usage of the field record diary

For FMoA

- (10) Review the procedures, especially the “Learning by Doing” practices, and the management system proposed by the Project for human resource development and organizational capacity development, and

re-adopt them where possible and applicable

4-3. Recommendations for further promotion of rice production

For FMoA

- (1) Strengthen the capacity of National Rice Project in FMoA
- (2) Encourage the private sector to be involved more actively

For FMoA and SMoAs

- (3) Open commercial trade opportunities and channels for rice producers
- (4) Form farmer cooperatives specialized in rice
- (5) Ensure that proper storage and post-harvest processing services are available for rice producers

For ARC

- (6) Conduct research and development on rice in all targeted States

For ARC, FMoA and SMoAs

- (7) Strengthen the existing systems for maintaining varieties and propagating pure rice seeds

For FMoA and SMoAs

- (8) Continue searching, testing and introducing agricultural machineries suitable to rice farming in Sudan

For SMoAs

- (9) Strengthen the existing system for technology transfer and extension by establishing a Center of Excellence
- (10) Expand / revive the extension network to serve the need of more farmers

5. Lessons Learned

- (1) During the extended Project period, follow-up activities should/could have been conducted to some extent for those Outputs achieved in the original duration of the Project.
- (2) Geographical expansion needs to be planned really deliberately in light of available resources and inputs.
- (3) The “Learning by Doing” approach applied in all the capacity development activities throughout the Project has proved to be quite effective.

第1章 概 要

1-1 終了時評価の概要

1-1-1 プロジェクトの背景

スーダン共和国（以下、「スーダン」と記す）では農業セクターの再活性化が喫緊の課題となっている。農業はGDPの35%を占め、労働力の62%を雇用しているが、過去20年間にわたり、主要作物であるソルガム、コムギ、綿花、落花生の生産は停滞している。一方、年2%の人口増加に伴い食料の国内消費量が急速に伸びているため、スーダンは現在、食料の純輸入国である。1990年代以降、スーダンは経済成長と対外収支バランスを石油収入に依存してきたが、2011年7月の南スーダン分離後は石油収入が激減したため、経済成長率が低下、対外収支・財政収支も大幅に悪化した。

こうした状況に対処するため、スーダン国政府は2008年に、農産物輸出振興、貧困削減、食料自給達成を目的として、「農業再活性化計画（EPAR）」を策定した。EPARは、副大統領が直轄する、連邦農業灌漑省（当時。2015年に連邦農業林野省へ再編。以下、「連邦農業省」と記す）を含む8つの省にわたる省庁横断プログラムである。EPARは、ダムや灌漑水路の建設、作付面積の倍増、園芸作物生産の拡大等を通じて、農業の生産性向上と国際競争力の強化をめざすものである。EPARの実施期間は、当初2008年から2011年までであったが、その後延長されている。さらに、連邦農業省は、政府の国家目標を達成するために、自身の5カ年計画（2012～2016年）を策定している。また、連邦農業省は、2005年に「国家コメプロジェクト（NRP）」を開始、コメ開発計画の策定、適地への稲作導入、マーケティング・販売の支援を通じて、国内需要にも追いついていないコメ生産の拡大を推進している。

EPAR及びNRPを成功させるためには計画、実施、モニタリング能力の強化が鍵となることから、スーダン国政府は、わが国政府に対して、連邦農業省及び関連機関の能力強化についての技術協力を要請、日本政府は2009年12月にこれを採択した。続いて、連邦農業省とJICAが本プロジェクトの枠組みを議論し、2010年1月21日に討議議事録（R/D）を署名、2010年3月にプロジェクトを開始した。プロジェクト期間は当初、2014年3月までの4年間であった。

2013年9月から10月にかけて、本プロジェクトの当初期間を対象とした終了時評価が実施された。その結果、プロジェクト目標と成果の大半は達成されたものの、①適正稲作栽培技術の開発、及び、②ジャジーラ州以外の対象5州（白ナイル、センナール、ゲダレフ、北部、リバーナイル）における普及員能力強化の2つの成果指標が未達成のため、2年間の期間延長が提言された。これを受けて連邦農業省とJICAは提言された期間延長に係る協議を行い、2014年3月から2016年3月までの延長期間を対象とするR/Dを2014年2月12日に新たに署名した。

1-1-2 終了時評価の目的

- ① プロジェクトへの投入実績のレビュー、プロジェクト・デザイン・マトリックス（PDM）及び活動計画（PO）に基づきプロジェクト活動の進捗状況と成果のレビュー、並びにプロジェクト実施サイトの訪問を通じてスーダン側関係者との意見交換を行う。
- ② 評価5項目（妥当性、有効性、効率性、インパクト、持続性）の観点からプロジェクトを評価する。
- ③ プロジェクト期間中及びプロジェクト終了後に取り組むべき活動に関する提言事項を含む

合同終了時評価報告書を作成する。

- ④ 合同調整委員会（JCC）等において合同終了時評価報告書の内容に関する説明と議論を行い、ミニッツ（協議議事録；M/M）に署名する。

1-1-3 合同評価チームの構成

本終了時調査は、以下の合同調査チームにより実施した。

<日本側>

	分野	氏名	所属
1	総括	大竹 茂	JICA スーダン事務所 次長
2	稲作開発	伊藤 耕三	JICA 農村開発部 第二グループ第五チーム 専任参事
3	協力企画	塩見 正裕	JICA スーダン事務所 企画調査員
4	評価分析	西谷 光生	NTC インターナショナル株式会社 取締役技術管理本部長

<スーダン側>

		氏名	所属
1	メンバー	Mr. Mohieldin Ail Mohamed Bakheet	National Rice Coordinator, Federal Ministry of Agriculture and Forestry (FMoA)
2	メンバー	Prof. Ahmed Abdelgadir Elsiddig	National Rice Research Coordinator, Agricultural Research Corporation (ARC)
3	メンバー	Ms. Fatima Rahma	Director, Bilateral Cooperation, General Directorate of International Cooperation, FMoA
4	メンバー	Mr. Houssain El Shareef	JICA Desk, Bilateral Cooperation, General Directorate of International Cooperation, FMoA

1-1-4 調査日程

終了時評価調査は、2015年10月11日（日）から10月27日（火）までの約2週間半をかけて、連邦農業省の関係者インタビュー、6州（ジャジーラ州、白ナイル州、ゲダレフ州、センナール州、北部州、リバーナイル州）の州農業省関係者インタビュー、稲作デモンストレーション圃場視察、普及員及び農家へのインタビューを実施し、それらを踏まえて、合同評価報告書を作成し、JCCの会議で評価結果を説明した。詳細日程は、M/MのAnnex 2を参照のこと。

1-1-5 評価方法

「新 JICA 事業評価ガイドライン第 1 版」に従い、最新の PDM に沿ってプロジェクト活動の進捗状況、実施プロセス確認、成果及びプロジェクト目標の達成度とプロジェクト活動との因果関係を確認し、次項に示す評価 5 項目の観点からプロジェクトを評価した。情報収集の主な方法は、進捗報告書等の既存資料のレビュー、関係者への質問票調査及びインタビュー調査、現場視察（稲作デモンストレーション圃場など）である。本評価では、以下の評価 5 項目の観点から評価した。

① 妥当性

プロジェクト目標及び上位目標がスーダン国政府及び日本国政府の政策や優先事項と合致しているか、更には受益者のニーズに合致しているかなどプロジェクトの正当性・必要性を問う。

② 有効性

プロジェクトがもたらす便益、すなわちプロジェクト目標がどの程度達成されたか、またプロジェクト目標の達成が成果の達成によるものか否かについて検証する。本調査では、プロジェクト目標が達成される見込み、プロジェクト目標の達成に影響を与える要因について確認する。

③ 効率性

活動を行うために過不足ない質・量の投入がタイミングよく行われているかを成果の達成度合いと照らし合わせて検証する。

④ インパクト

プロジェクトの実施がもたらす波及効果を検証する。上位目標の達成見込み、上位目標達成に対するプロジェクトの貢献のほか、直接的・間接的な変化、予期した・予期しなかった正負の変化を政策、技術、環境、社会・制度など横断的な視点から確認する。

⑤ 持続性

プロジェクト終了後にプロジェクト実施による便益が維持される可能性について検証する。具体的には、効果を上げるための活動を実施するために必要な組織体制・能力が整っているか、政策的支援は継続されるか、予算は確保されるか、プロジェクトで用いられる技術移転手法が受容されているかについても確認する。

1-2 プロジェクトの概要

1-2-1 プロジェクトのデザイン

本終了時評価においては、最新の PDM (Version 5.0 : 2014 年 2 月 12 日に署名されたプロジェクト期間延長に関する R/D に添付のもの) を用いた。当該 R/D 及び PDM は M/M の Annex 1 を参照のこと。その要約部分は、下記のとおりである。

<上位目標>

スーダン共和国における農業行政サービスの質が向上する。

<プロジェクト目標>

「農業再活性化計画」の実現に必要な連邦政府農業省及び関係機関のキャパシティが向上する。

<成果>

1. プロジェクトの実証的な活動を通じ、連邦農業省の人材育成及び組織能力強化に関するモデルシステムが開発される。
2. 適正稲作技術の開発に係る計画・実施・モニタリングが促進される。

当初期間において成果 2 に係る以下 2 つの成果指標が未達成であったため、延長期間においては、これらの指標を達成することがめざされた。

- ・陸稲栽培に関する実践的・技術的なハンドブックが作成される。
- ・ジャジーラ州以外の対象 5 州における研修参加者のうち 2 名が、適正稲作栽培技術に関するトレーナーとして合格水準に達する。

<主な活動>

- 1.1 連邦農業省の人材育成のモデルシステムを開発する。
- 1.2 連邦農業省の組織能力強化のモデルシステムを開発する。
- 1.3 能力強化活動におけるモニタリング・評価とマネジメントシステムを構築する。
- 1.4 活動 1.1 ～ 1.3 のレビュー及び次年度活動への提言を取りまとめた年間報告書を作成する。
- 2.1 稲作推進のための計画及びモニタリング・評価を行う。
- 2.2 適正稲作技術を開発する。
- 2.3 稲種子生産に係る改良技術を確立する。
- 2.4 農業普及員を適正陸稲栽培の指導者として訓練する。
- 2.5 適正陸稲栽培技術を農民に普及するために、陸稲デモ栽培を行う。
- 2.6 活動 2.2 ～ 2.5 の結果を基に、陸稲栽培技術ハンドブックを作成する。
- 2.7 稲作開発の計画、モニタリング・評価を定期的に実施する。

上記のうち、未達成の成果指標を達成するために延長期間において継続された活動は、2.2、2.4、2.5 の一部、及び 2.6 である。

1－2－2 プロジェクト期間

2010 年 3 月 29 日から 2016 年 3 月 28 日まで（6 年間）。うち、延長期間は 2014 年 3 月 29 日から 2016 年 3 月 28 日まで（2 年間）。

1－2－3 プロジェクト対象地域、受益者

延長期間における活動の主たる対象者は、対象 6 州（ジャジーラ州、白ナイル州、ゲダレフ州、センナール州、北部州、リバーナイル州）の州農業省の稲作普及に関わる職員（普及員等）と農家である。

1－2－4 プロジェクト実施機関

延長期間におけるプロジェクト実施機関は、連邦農業省及び 6 州（ジャジーラ州、白ナイル州、ゲダレフ州、センナール州、北部州、リバーナイル州）の州農業省である。

第2章 終了時評価結果

2-1 プロジェクトの実績

2-1-1 日本側の投入実績

(1) JICA 専門家派遣

プロジェクト延長期間の2014年3月から2016年3月までには、①総括／稲作開発プログラム、②副総括／稲作栽培1、③稲作栽培2、④稲収穫・収穫後処理、⑤栽培環境分析・雑草防除、⑥業務調整／陸稲栽培モニタリング・評価、の6名の日本人専門家が派遣されている。当初期間の4年間の投入量が212.24人月であったのに対し、延長期間の投入量は終了までに41.37人月となる見込みである。JICA 専門家の派遣実績詳細は、M/M のAnnex 3を参照のこと。

(2) 本邦研修及び第三国研修

プロジェクト延長期間の2014年3月から2016年3月までに、合計154名のカウンターパート（C/P）が本邦研修及び第三国研修・視察（ウガンダ、エジプト）に参加した。研修コースごとの参加者数は、表2-1のとおりである。研修実施と参加者に関する詳細データは、M/M のAnnex 4を参照のこと。

表2-1 本邦研修及び第三国研修の参加者数

研修コース名	当初期間 (2010年3月～ 2014年3月)	延長期間 (2014年3月～ 2016年3月)	合計
本邦研修（技術）	34	14	48
ウガンダ研修（基礎コース）	101	-	101
ウガンダ研修（上級コース）	22	27	49
エジプト研修（農業機械）	15	-	15
エジプト研修（灌漑水管理）	-	30	30
エジプト研修（雑草防除）	20	28	48
エジプト研修（収穫後処理）	15	20	35
本邦研修（政策）	11	4	15
エジプト視察（政策）	-	23	23
ウガンダ視察（試験研究）	6	-	6
エジプト視察（試験研究）	-	8	8
計	224	154	378

(3) 機材供与

プロジェクト延長期間の2014年3月から2016年3月までに、農業研究機構（ARC）の試験用資機材一式、石抜き機1台、車両1台、計7,541,463円（62,847ドル）の投入を行っ

た。プロジェクト期間全体では、108,556,987 円（904,641 ドル）の投入となる。供与機材の詳細は、M/M の Annex 5 を参照のこと。

（４）日本側現地経費負担

プロジェクト活動実施のために JICA が負担する経費（支出予定を含む）は、プロジェクト延長期間の 2014 年 3 月から 2016 年 3 月までの 2 年間に、210 万スーダン・ポンド（SDG）（約 6,800 万円、1 SDG = 19.85 円）である。当初期間の 4 年間に 340 万 SDG（約 4,200 万円）が負担されたことに比べると、額が増大しているといえる。詳細は、M/M の Annex 6 を参照のこと。

表 2－2 日本側経費負担額

（単位：SDG）

費目	当初期間 (2010 年 3 月～ 2014 年 3 月)	延長期間 (2014 年 3 月～ 2016 年 3 月)	合計
人件費	624,662	431,833	1,056,495
研修費	527,731	25,718	553,449
農業資機材	881,637	546,638	1,428,275
出張・交通費	678,921	296,886	975,807
会議費	164,420	119,332	283,752
消耗品等	569,501	676,153	1,245,654
計	3,446,872	2,096,560	5,543,432

2－1－2 スーダン側の投入実績

（１）スーダン側 C/P の配置

2015 年 10 月（終了時評価）時点で、管理職として連邦農業省から 2 名、ジャジーラ州農業省 5 名、白ナイル州農業省 4 名、ゲダレフ州農業省 3 名、センナール州農業省 3 名、リバーナイル州農業省 3 名、北部州農業省 4 名の、計 24 名の C/P がプロジェクトに関わっている。詳細は、M/M の Annex 7 を参照のこと。

関係州においては稲作振興のために稲作課（Rice Production Unit あるいは Rice Promotion Unit）を設置している。この稲作課に所属する普及員数は、ジャジーラ州農業省 35 名、白ナイル州農業省 15 名、ゲダレフ州農業省 12 名、センナール州農業省 36 名、リバーナイル州農業省 13 名、北部州農業省 9 名の、計 120 名である（必ずしも稲作専門ではなく、他作物と兼務の場合もある）。ほかに、ARC では 11 名の研究者がプロジェクトに関連している。

（２）スーダン側経費負担

連邦農業省及び対象 6 州の農業省がプロジェクト活動のために負担した経費は、当初期間中の経費負担額が約 170 万 SDG（約 3,300 万円）であったのに対し、プロジェクト延長

期間の 2014 年 3 月から 2016 年 3 月までは約 100 万 SDG（約 2,000 万円）である。表 2－3 に実施機関ごとの負担額を示す。詳細は、M/M の Annex 8 を参照のこと。

表 2－3 スーダン側経費負担額

（単位：SDG）

機関名	当初期間 (2010 年 3 月～ 2014 年 3 月)	延長期間 (2014 年 3 月～ 2016 年 3 月)	合計
連邦農業省	50,500	-	50,500
ジャジーラ州農業省	1,422,712	285,500	1,708,212
白ナイル州農業省	4,804	104,905	109,709
ゲダレフ州農業省	18,790	158,100	176,890
センナール州農業省	101,460	375,825	477,285
リバーナイル州農業省	34,550	37,982	72,532
北部州農業省	41,765	33,040	74,805
計	1,674,581	995,352	2,669,933

（3）プロジェクト施設、機材の提供

連邦農業省及びジャジーラ州農業省は、日本人専門家の執務スペース（事務所）を提供するとともに、事務所の電気代を負担している。

2－1－3 成果の達成状況

（1）成果 1：プロジェクトの実証的な活動を通じ、農業省の人材育成及び組織能力強化に関するモデルシステムが開発される。

前回の終了時評価において、アウトプット 1 の 3 つの指標が当初期間中にほぼ達成されたことが確認され、延長期間ではこれに係る活動は C/P 機関が継続することとされた。

（2）成果 2：適正稲作技術の開発に係る計画・実施・モニタリングが促進される。

前回の終了時評価において、アウトプット 2 の 7 つの指標のうち 5 つについては満足できるレベルに達していると判断された。延長期間を対象とする今回終了時評価においては、残る 2 つの指標 2-4 と 2-6 について評価を行った。

指標 2-4：陸稲栽培に関する実践的・技術的なハンドブックが作成される。

当初期間中に作成された陸稲栽培ハンドブック（案）は、2014 年稲作シーズン終了後に必要な修正を加えた改訂版が作成された。ハンドブックの主要内容は、陸稲の一般作付けカレンダー、純度の高い種子、圃場準備作業、施肥、播種方法、播種時期、除草技術、灌漑、適時の収穫である。このハンドブックは、試験栽培、デモンストレーション圃場、種子栽培圃での陸稲栽培活動や研修活動のすべての結果を反映しつつ、プロジェクト終了までに最新版が作成される予定である。

プロジェクトでは、陸稲栽培技術の検討・検証を行う目的で、ジャジーラ州農業省園芸試験場の圃場において、州農業省普及員などと協力して、圃場試験を継続している。2014 年は、①灌漑頻度試験、②播種間隔試験、③播種量試験、④施肥試験（窒素量）を実施した。2015 年には、①播種間隔試験×播種量試験、②窒素源試験、③堆肥試験を実施している。また、ARC が実施している雑草防除試験、灌漑頻度試験、施肥試験等に関して助言を与えている。

また、収穫・収穫後処理に関しては、本プロジェクトで供与したコンバインハーベスタや精米機（各州に設置）を用いて技術検討を進めているが、機材の面でさまざまな課題が発生し、技術検討・指導の効果的な実施に悪影響を与えたため、適切な技術が現場に浸透するには、もう少し時間を要するものと見込まれる。収穫に関しては、本プロジェクトで導入・使用している汎用コンバインハーベスタが乾燥した状態で収穫するコムギに合わせて設計されているため、水分含量が比較的高いイネの収穫適期に収穫作業を行うと、ジャミングや故障が頻発することが問題となっている。延長期間中にイネ専用コンバインハーベスタの供与を行う計画であったが、メーカーがアフリカ向け販売に消極的なため、これを断念した。ただし今年、ジャジーラ州がスーダン国内で日本メーカー製のイネ専用コンバインハーベスタの中古品を入手し、利用を開始している。また、精米機を 2012 年度に調達し、各州に配置したが、機械の組立て（第三国調達した中国製品につき、部品の欠品が多かった）、設置場所の準備、三相電源の整備に想定以上の時間を要し、その一部はプロジェクト最終年度になってようやく稼動している。

これらの技術開発成果については、専門家の投入量や圃場環境など、本格的な試験研究を実施するには困難な環境であったため、厳密な意味での科学的根拠を提示することには限界があるものの、こうした活動の結果を整理・分析し、できる限りスーダン国内で検証された技術をハンドブックに反映していくこととなる。

表 2－4 栽培試験の概要

試験	処理内容	結果概要
2014 年		
灌漑頻度試験 (灌漑間隔日数)	4 日、4 日→2 日、7 日、 7 日→4 日、10 日、10 日→4 日	降雨の影響により処理区別の厳密な水管理が困難。
播種間隔試験	20cm、30cm、40cm、50cm	統計的な有意差が認められない。一般的に 30～40cm 程度が妥当。
播種量試験	30 kg/ha、40 kg/ha、50 kg/ha、 60 kg/ha	反復処理間での生育差の変動が大きく、処理間の生育比較が困難。
施肥試験	0.0 Nkg/fed、18 Nkg/fed、 37 Nkg/fed、55 Nkg/fed	窒素量 37 kg/fed が適量である可能性が高い。
2015 年		
播種間隔×量試験	播種量：10、20、30 kg/ha 播種間隔：30、40、50cm これらの組み合わせ 9 処理	調査結果解析中

窒素源試験	無施肥、 尿素：313 kg/ha、469 kg/ha、 硫安：313 kg/ha、469 kg/ha	調査結果解析中
堆肥試験	0 kg/9m ² 、50 kg/9m ² 、100 kg/9m ²	調査結果解析中

注) 1 フェダン (feddan/fed) = 4,200m² = 0.42ha

なお、ハンドブックの最終化にあたっては、以下の点を考慮することが望まれる。

- ・ハンドブックの主たる利用者（普及員なのか農家なのか）を明確にし、利用者が使いやすい体裁とする。
- ・技術の適用条件・範囲（灌漑、気象条件 等）を説明する。
- ・ハンドブック記載技術の適用により達成できるイネの収量目標・ポテンシャルを、プロジェクト期間中にデモ圃場等で得られた成果などを用いて説明する。

陸稲栽培ハンドブックは英語版とアラビア語版で作成され、プロジェクト終了後に研修や普及活動に利用できるよう、関係政府職員に配布される予定である。

指標 2-6：ジャジーラ州の研修参加者の 80%以上、及び他の 5 州では 2 名の研修参加者が稲作技術のトレーナーとして認定される。

本指標は、プロジェクト延長の R/D（2014 年 2 月 12 日署名）において PDM がバージョン 5.0 に改定され、プロジェクトの主対象であるジャジーラ州のほかに 5 州においても一定の到達度をめざすよう再設定された。本プロジェクトにおける「トレーナー」とは、「各種研修を通じて陸稲栽培における重要技術ポイントを習得し、実際の圃場において、その知識・技術を活用して一定の収量水準を実現することができ、さらには、他の普及員や農民に技術を指導できる人材」を意味する。

プロジェクトでは、各種研修に加えて、デモ圃場を陸稲栽培に係る普及員が知識・技術・経験を習得する場として展開してきた。表 2－5 に示すように、当初 2 年間はジャジーラ州と白ナイル州のみで実施し、それ以降の 4 年間は 6 州で実施している。特に延長期間においては、1 カ所当りの面積を管理のしやすい 2 フェダン程度に抑えること、1 カ所当りの担当普及員数を 5 名以上とすることなどを原則として、2014 年は 23 カ所で 47.0 フェダン、2015 年は 26 カ所で 56.5 フェダンという規模で実施している。なお、陸稲の種子については、初年度に NERICA 4 を対象州農業省に供与した後、各州内で次年度に必要な種子を確保するよう指導してきた。

表 2－5 デモ圃場の実施規模と最高収量

州	2010 年	2011 年	2012 年	2013 年	2014 年	2015 年
ジャジーラ州	4 カ所 19.0 fed	8 カ所 28.6 fed 3.6 t/ha	12 カ所 110.5 fed 3.4 t/ha	11 カ所 58.9 fed 4.0 t/ha	8 カ所 18.5 fed 5.5 t/ha	12 カ所 32.5 fed

センナール州			2 カ所 5.0 fed 0.4 t/ha	5 カ所 12.5 fed 1.1 t/ha	5 カ所 11.5 fed 1.6 t/ha	3 カ所 7.0 fed
ゲダレフ州			2 カ所 2.9 fed 0.2 t/ha	2 カ所 5.0 fed 1.0 t/ha	3 カ所 6.0 fed 2.0 t/ha	4 カ所 8.0 fed
リバーナイル州			3 カ所 5.0 fed 0.7 t/ha	2 カ所 4.0 fed 0.6 t/ha	3 カ所 3.0 fed 1.2 t/ha	3 カ所 3.0 fed
北部州			1 カ所 2.0 fed	2 カ所 2.0 fed 2.8 t/ha	2 カ所 2.0 fed 1.1 t/ha	2 カ所 2.0 fed
白ナイル州	3 カ所 12.0 fed	2 カ所 5 fed 0.3 t/ha	2 カ所 10.0 fed	2 カ所 4.0 fed 1.7 t/ha	2 カ所 6.0 fed 0.6 t/ha	2 カ所 4.0 fed
計	7 カ所 31.0 fed	10 カ所 33.6 fed 3.6 t/ha	22 カ所 135.4 fed 3.4 t/ha	24 カ所 86.4 fed 4.0 t/ha	23 カ所 47.0 fed 5.5 t/ha	26 カ所 56.5 fed

注) 上段：設置圃場数、中段：合計圃場面積、下段：最高収量
 デモ圃場は、試験圃場や種子生産圃場、及びそれらを兼ねる圃場を含む。
 2010 年と 2011 年は、夏作とそれに続く冬作を含む。

普及員がトレーナーとして適切な能力を有しているかどうかは、以下の点を総合的に勘案して判断される。

- ①基礎的稲作技術をマスターしている
- ②高い収量を上げた実績がある
- ③普及員としての能力が高い（農民との信頼関係、普及への取り組み姿勢・態度、活動計画の策定、デモ圃場等の実施管理、モニタリング・評価）

2014 年作付け終了後、対象 6 州の稲作普及員を対象に評価が実施された。①については、稲作技術の筆記試験（基礎と応用のうち基礎のみを対象）の結果、②については 2014 年の担当デモ圃場における収量調査結果、③については、州農業省の稲作課長とプロジェクト専門家等の観察評価に基づき、総合点 100 点満点で、70 点以上を得た者をトレーナーとしての合格水準とした。

評価の結果、ジャジーラ州では、34 名の稲作普及員のうち、国外研修参加等で評価を受けられなかった 9 名を除く 25 名が評価対象となり、その 76%に当たる 19 名が 70 点以上の評価を得た。現時点では、目標の 80%に到達していないが、前年度合格水準に達した 3 名が評価を受けられなかったことや、他の 1 名が合格水準に近いことなどを勘案すると、2015 年末には指標を達成できると見込まれる。

他の 5 州については、2 名以上の合格を目標としているが、リバーナイル州を除く 4 州において、3 名から 7 名の稲作普及員が 2014 年末時点で 70 点以上の評価を得た。リバー

ナイル州においては合格水準の普及員が稲作課長に昇進したこと、他の普及員も合格水準に近いことなどから、2015 年末には指標を達成することが期待される。

なお、各州の平均点は、ジャジーラ州が 76.1 点で 6 州中最高であり、北部州がこれに続く。リバーナイル州は 54.5 点で最も低いと判断された。

2015 年栽培シーズン終了後に、再び評価を行う予定であるが、認定トレーナーの数が更に増加することが期待される。

表 2－6 関係普及員の総合キャパシティ・アセスメント結果（2014 年末時点）

州	関係普及員数	評価対象普及員数	合格普及員数	合格率 (%)	平均得点	達成度
ジャジーラ州	34	25	19	76	76.1	ほぼ達成
センナール州	24	20	7	35	66.5	達成
ゲダレフ州	11	9	3	33	66.4	達成
リバーナイル州	13	7	0	0	54.5	未達成
北部州	9	7	6	86	72.7	達成
白ナイル州	20	10	5	50	64.8	達成
計	111	78	40	51	68.8	

しかしながら、スーダンにおいては、陸稲栽培に係る技術開発を進めている段階であるため、トレーナーとして認定される能力水準といっても、基礎レベルにおける合格水準であることを十分に認識することが求められる。

以上をまとめると、ジャジーラ州及び他の 5 州の普及員の稲作振興に係る能力強化については、一定の成果が認められ、プロジェクト終了までには指標を達成することが見込まれる。

<補足：当初期間（4 年間）で達成された指標の現状>

前回の終了時評価において当初期間中に達成されたと評価された事項・指標について、今回の調査時点における状況を調査した。これらは当初期間終了後 C/P 機関によって継続していくことが確認されていたが、表 2－7 に示すように、特に成果 1 に関しては関連活動が停滞していることが認められた。

表 2－7 当初期間で達成された指標の現状

指標	現状
1-1: The appropriateness of the experimental management system is verified.	職員・組織能力開発のためにプロジェクトが実証し提案した運営体制は、まだ設立されていない。

1-2: The appropriateness of a series of procedures from CA and NA to the completion of training is verified.	連邦農業省の各部局はプロジェクトが提案したキャパシティ・アセスメントやニーズ・アセスメント、 Learning by Doing アプローチを採用せず、従来どおりの研修計画・管理のやり方を踏襲している。
1-3: An implementation manual is compiled including verified management system and procedures from CA and NA to the completion of training.	上記のとおり体制・プロセスが整っていないため、実施マニュアルも意図したとおりの便益をもたらしていない。
2-1: The NRDS draft is formulated.	制定された国家コメ開発戦略（NRDS）は現在も重視されている。
2-2: A structure to implement and review (monitoring and evaluating progress and reflecting evaluation results to the next plan) the NRDS is recommended.	稲作セクター開発フォーラムは2013年と2014年に開催されて以降、中断されている。ただし主要課題については、プロジェクトの年次ワークショップにおいて議論されている。
2-3: Annual action plans for rice development (analysis, planning, monitoring & evaluation, technical development, seed production, and extension) is formulated.	稲作開発（デモ圃場活動等）年間活動計画は、州農業省により引き続き作成され、実施、モニタリング・評価されている。各担当普及員は、プロジェクトが作成した作業日誌を用いて日々の活動・観察の記録を取っている。
2-5: Quality of rice seed is improved.	ジャージーラ州農業省においては、種子生産圃場においてイネ種子の品質維持のために努力を払っている。他州においてはデモ圃場内で種子生産を行っているものの、異品種の比率が高く、純度の確保には更なる努力が必要である。
2-7: More than 60% of farmers who grew upland rice in demonstration farms show a willingness to grow rice again.	デモ圃場においておおむね良好な結果が得られているため、担当農民及び周辺農民の稲作に対する意欲は引き続き高い。

2-1-4 プロジェクト目標の達成状況

プロジェクト目標：「農業再活性化計画」の実現に必要な連邦政府農業省及び関係機関のキャパシティが向上する。

連邦農業省職員の能力向上については、当初4年間の終了時（2014年2月）において、達成されたことが確認された。そのため延長期間においては対象州の州農業省普及員がプロジェクトの対象となり、主としてその能力向上について評価した。

結論としては、陸稲栽培に関わる州農業局普及員の能力強化については一定レベルで達成されたと判断される。ただし、それは陸稲栽培分野の初級レベルに限定されると指摘される。

指標 1：プロジェクト終了時まで、プロジェクト活動に関わった連邦農業省職員、対象州農業省の主要職員、関係組織の職員のうち 60%が、「農業再活性化計画」の計画、実施、モニタリング・評価の実施において改善点を示す。

連邦農業省の次官と総局長、及び州農業省の総局長と稲作課長は、エジプトにおいてモニタリング・評価に焦点をあてた政策に関する視察研修に参加し、計画策定・管理能力の向上を見せた。その成果があり、2015 年の陸稲開発活動計画や 2015～2019 年の 5 カ年計画が策定され、現在その実施管理中である。

プロジェクトでは延長期間においてアクションプラン策定やモニタリング・評価を活動に取り込んでおり、対象州農業省では浸透しつつある。

2015 年の夏作シーズンにおいては、ジャジーラ州をはじめとする州農業省はデモ圃場や試験圃場の活動計画を策定している。さらに、2014 年からは、デモ圃場の管理を担当する 6 州の稲作普及員は、プロジェクトが作成・供与した日誌を用いて、活動記録を取る習慣が身に付いている。

また、上述のように、2014 年の収穫後各州において実施したキャパシティ・アセスメントの結果（表 2－8 参照）によれば、各州農業省の稲作普及員の能力は、計画、実施、モニタリング・評価面において満足できる水準まで向上しつつあることが確認されている。計画策定能力については、リバーナイル州、北部州、白ナイル州の 3 州において低く評価された。これに対して 2015 年には年間活動計画及び 5 カ年計画の策定を各州で指導している。また、モニタリング・評価の能力が全体的に低く評価されたが、2015 年にはプロジェクトが作成したダイアリーを用いた記録・モニタリングを強く指導している。このような活動により、2015 年末には普及員の能力の底上げが期待される。

表 2－8 関係普及員の能力評価結果（2014 年末時点）

州	活動計画 作成能力	活動実施 運営能力	現場対応 能力	モニタリング・ 評価能力
ジャジーラ州	2.7	3.2	3.1	2.9
センナール州	3.0	2.7	2.6	2.1
ゲダレフ州	2.6	3.1	2.5	1.4
リバーナイル州	1.0	2.0	2.1	1.7
北部州	1.0	3.4	3.4	2.6
白ナイル州	1.0	3.3	2.7	1.9

注) 1. 各州の関係普及員数は、ジャジーラ州 34 名、センナール州 24 名、ゲダレフ州 11 名、リバーナイル州 13 名、北部州 9 名、白ナイル州 20 名である。

2. 表は、州農業省稲作課、プロジェクトチーム等により、稲作普及員の各能力評価項目をそれぞれ 5 点満点で評価した平均点を示す。

評価基準：「5」優れている、「4」良い、「3」普通、「2」やや乏しい、「1」乏しい

指標 2：プロジェクト終了時まで、連邦農業省と関係組織の職員で研修を受講した職員の 80%が、自己能力評価のスコアにおいて改善を見せる。

ウガンダやエジプト及び本邦における研修や稲作圃場における OJT により、普及員は陸稲栽培に関する知識や技術面の改善が認められる。2014 年の収穫後、各州において、自己評価 (self-evaluation) を実施した。必要な能力 5 項目 (①活動計画策定、②業務実施・管理、③技術的課題解決、④現場対応、⑤モニタリング・評価) について 5 点満点、25 点満点で評価し、プロジェクトの支援を受けた時点と 2014 年シーズン後の比較を行った。表 2-9 のように評価を行った 73 名全員が支援の当初から能力が向上したと評価した結果となった。ジャジーラ州では 25 名が評価し、当初の 7.8 点から 16.6 点に向上したと評価した。センナール州と北部州ではこれを上回る高い評価をした。したがって、各州の主要なスタッフの能力改善が認められたと思料される。

表 2-9 関係普及員の自己能力評価結果 (2014 年末時点)

州	関係普及員数	評価対象普及員数	能力向上普及員数	初年次評価点 (25 点満点)	2014 年評価点 (25 点満点)
ジャジーラ州	34	25	25	7.8	16.6
センナール州	24	16	16	6.9	18.0
ゲダレフ州	11	9	9	6.1	16.2
リバーナイル州	13	7	7	7.9	16.4
北部州	9	7	7	6.9	17.7
白ナイル州	20	9	9	6.9	13.3

しかしながら、陸稲栽培の初級レベルにおける能力向上であり、まだ中・上級レベルに至っているとはいえないことに留意する必要がある。

2-2 計画及び実施プロセス

2-2-1 効果発現に貢献した要因

各州農業省に対して、①陸稲栽培の導入に対する政策意思の確認、②行政面での強いリーダーシップの発揮、③関係普及員、農民、JICA 専門家の密接な協力と連携を、常に必要条件として求めてきた結果、研修やデモ圃場活動への積極的な参加が行われた。

また、本邦研修及び第三国研修への参加者が増加したことにより、稲作振興に係る理解が次第に深まり、プロジェクトの効果発現に貢献してきている。

2-2-2 問題点及び問題を惹起した要因

連邦政府と各州政府の連携が不十分な時期があったことや、幹部職員が頻繁に交代したことが、プロジェクトの運営に若干の支障を与えた。また、スーダン側の予算の執行にも多少の遅延や不足が生じた。州農業省内の部署間連携・調整が不十分で、収穫適期にコンバインハーベスタが使えないなどの問題も発生した。

第3章 5項目評価及び結論

3-1 妥当性

以下に述べるように、本プロジェクトの妥当性は高いと判断される。

(1) 連邦農業省、州農業省や関連組織が提供する行政サービスの質を向上させる必要性と稲作振興のニーズとの整合性

農業再活性化計画では、農業セクターの発展が低迷している原因のひとつを、政府機関の行政能力・政策実施能力が十分でないことであると指摘している。本プロジェクトでは、連邦農業省各局のマンデート確認、キャパシティ・アセスメント、ニーズ分析を経て、職員個人並びに組織としてのキャパシティ向上の優先度が高い事項について、能力向上を進めてきた。

稲作振興に関しては、連邦農業省は国家コメ開発戦略（NRDS）を策定した。対象6州の農業省はいずれも陸稲生産に優先度を置いており、陸稲の作付け面積や収量の目標などを定めた稲作振興5カ年計画を策定している。多くの農家は、より収益性の高い作物並びに栽培ローテーション中の夏期作として適した作物の導入を希望している。そして、陸稲栽培技術が確立されれば、ソルガムや綿花などの伝統的な作物より収益性が高くなるポテンシャルを有することから、陸稲栽培技術の確立に向けた活動と州農業省普及員の陸稲栽培に係る能力向上を進めている。

農業研究機構（ARC）はジャジーラ州のワドメダニ試験場と白ナイル州のコスティ試験場、ゲダレフ州のラハド試験場において、稲作の試験を2014年より本格的に開始し、2015年は一定の成果を収められる見込みである。ARCは対象6州すべてにおいてこの試験を実施・強化する計画であり、また今後は収穫後処理技術や流通面の研究も行う計画である。

以上から判断して、本プロジェクトがめざしている行政サービス向上や稲作開発は、農業関連政府機関並びに農家のニーズに合致しているといえる。

(2) スーダンの国家開発計画やその他の関連計画との整合性

上記のとおり、農業再活性化プログラム実施を担う行政機関の行政能力及び政策実施能力の不足が指摘されており、キャパシティ・ビルディングに高いニーズがある。組織能力強化、農業近代化、生産性向上は、スーダン国国家開発計画（2012～2016年）において重要視されている。

稲作については、スーダン国政府は、コメを戦略作物のひとつとして重要視しており、2012年11月に国家コメ開発戦略（NRDS）を制定した。連邦農業省には国家コメプロジェクト（NRP）部署が置かれ、2016年度は陸稲（NERICA 4等）作付けを1,000フェダン（うち600フェダンはジャジーラ州）、水稻（Basmati等）作付け計画を1,000フェダン、デモ圃場60フェダン（10フェダン×6州）、種子生産圃場500フェダンなどと具体的計画を策定している。ARCもワドメダニ試験場やコスティ試験場などで実施している稲作試験の拡大を計画している。研究者、農業普及員、農民リーダーを対象とした技術研修、そして、フィールド活動（デモンストレーション圃場）を通じての農家への技術普及の実施が重要視されている。

以上から、本プロジェクトの目的は、スーダン国政府の開発計画に沿ったものであり、整合性があるといえる。

(3) わが国の援助方針との整合性

日本国政府のスーダンに対する援助の重点分野のひとつは、農業開発支援である。貧困削減や食料安全保障に寄与することが期待される農業分野の開発を支援する方針である。別の重点分野には、「平和の定着」があり、行政サービスの強化・普及についても支援する方針となっている。さらに 2013 年の第 5 回アフリカ開発会議 (TICAD V) における横浜宣言には、「強固な平和、安定、良い統治」と「経済の主役としての農家のエンパワーメント」がキーとなる戦略アプローチに位置づけられている。したがって、本プロジェクトの目的は、日本国の援助方針並びに TICAD V のアプローチとの整合性があるといえる。

(4) プロジェクトアプローチの適切さ

本プロジェクトの主要コンポーネントは、①連邦農業省における人材育成モデルシステムの構築、及び②陸稲栽培技術の開発である。前回 2013 年 10 月に実施された終了時評価において、プロジェクト開始以前にスーダンには稲作の経験や技術者がほとんどなかったことから、陸稲栽培に係るいくつかの事項に関しては JICA の更なる支援が必要であると判断された。そして、残された課題に対処するために 2 年間の期間延長が決定された。当初期間の終了間際の 2014 年 2 月には、延長期間のプロジェクトの内容を精査し、PDM バージョン 5.0 が JICA と連邦農業省の間で策定・確認された。このようなプロジェクトの実施手続きやアプローチに関しては、おおむね適切であったと判断される。

3-2 有効性

有効性は、「高い」と判断される。

第 2 章 [2-1-4 プロジェクト目標の達成状況] で述べたように、州農業省の能力強化は満足できる水準に達する見込みであり、陸稲栽培技術についてもその成果を取りまとめられつつある。プロジェクトは延長期間中、PDM バージョン 5.0 で特定された事項に焦点をあて、外部条件の重大な影響を受けず、適切に実施された。したがって、プロジェクトの延長期間における有効性は高いものといえることができる。

3-3 効率性

以下に述べるように、効率性は「おおむね高い」といえることができる。

(1) 日本側の投入

日本人派遣専門家、機材供与、本邦研修及び第三国（ウガンダ、エジプト）研修、現地活動費負担は、全体として非常に適切であると思われる。特に数多くの普及員が稲作先進国での研修を受講した。調達された機材については、一部の州では稲作課と機材を管理する技術課との調整に課題が認められたものの、全体的には有効に活用されている。一部の機材（稲用コンバインハーベスタ）を除き、延長期間における投入はおおむね計画どおり実施された。プロジェクトはシャトル型の稲作栽培専門家 2 名で 6 州という広大な範囲をカバーして

おり、頻繁に長距離移動を行うなど、極めて繁忙かつ体力的に厳しい活動となっている。

(2) スーダン側の投入

延長期間においては、対象 6 州の農業省の数多くの職員がプロジェクト活動に参画している。また、対象 6 州の農業省すべてが、プロジェクト活動実施のためにローカルコストを支出している。特にジャジーラ州農業省はプロジェクト全期間を通して陸稲栽培関連プロジェクト活動に極めて大きな予算を支出している。

(3) プロジェクト活動実施とプロジェクトマネジメント

プロジェクト活動は、活動の進捗状況に柔軟に対応しつつ効果的に進められてきた。プロジェクト延長期間の枠組みは、当初期間の終了時に PDM Version 5.0 として設定された。プロジェクトの実施内容は、当初期間で達成に至らなかった、陸稲栽培技術の確立と州農業局の稲作振興に係る各種能力向上に焦点があてられた。

合同調整委員会（JCC）会議は、ほぼ年 2 回の頻度で開催されている。会議では、活動の進捗状況と次期の活動計画の説明が行われ、重要事項についての議論も行われている。プロジェクトの進捗報告書も定期的に英語と日本語で作成されている。

しかしながら、特に延長期間において、連邦・州農業省の大臣や総局長などの高官の交代が頻繁に行われた。そのため、プロジェクトチームは新任の政策担当者に対してプロジェクトのコンセプトや進捗を繰り返し報告する必要性が生じた。また、本プロジェクトに対する予算の執行に遅れや不足が生じたこともあった。さらに、関係州農業省内において、デモ圃場活動に関して機材の適時利用や普及員への交通手段の提供などに支障が生じたこともあった。

このようにいくつかの課題が認められたものの、プロジェクトマネジメントはおおむねよく行われてきたと思われる。

3-4 インパクト

上位目標が将来達成するかどうか予測することは困難である。複数のポジティブなインパクトが確認された。

3-4-1 上位目標の達成見込み

上位目標：スーダン共和国における農業行政サービスの質が向上する。

指標：農業関係者（作物生産、投資家、農産物販売者など）の 50% が、公共農業サービスの質向上を認識する。

州農業省のプロジェクト関係者に対する質問票の回答では、おおむねサービス向上に対してポジティブな見解が示された（有効回答者数 21 名中 20 名）。しかしながら、終了時評価時点ではこの指標の達成見込みを予想するに適した数値データがない。そのため、プロジェクトが終了してから 3～5 年後に上位目標の数値指標が達成されるかどうかを見通すことは困難である。

3-4-2 その他のインパクト

今回終了時評価において、以下のような正のインパクトが観察された。負のインパクトは認められていない。

(1) 州農業省の相互訪問によるインパクト

各州における進捗や達成度に関する情報は、JCC などの定期的な会合やプロジェクトのニュースレターなどにより共有されている。また、2015 年 9 月 16 日にはセンナール州農業省の関係者 20 名以上が、自身の予算を用いて、ジャジーラ州の試験圃場やデモ圃場を訪問した。自主的に、比較的技術水準の高い稲作圃場を直接視察し、関係者間で意見交換を行った経験は、参加者に対して強い刺激を与えるとともに知識・意欲の向上に寄与し、また同時に、受入れ側も自信をもつなど、良好な影響を生じさせた。

(2) 稲作に関心をもつ農家の増加

ジャジーラ州農業省職員の話では、約 200 名の農家が州農業省のオフィスを訪れ、イネの種子を提供するよう要望したとのことである。稲作の日本人専門家が頻繁に圃場を訪れ、活発な現場活動を行っている様子を実際に見せたことが、農家の稲作への関心を高めることにつながっている。現在、日本人専門家の存在は、ジャジーラ州の農家によく知られており、農家と普及員・州農業省との間の橋渡しの役割を担っている。

(3) メディアによる取材・報道の増加

テレビ局、新聞社、ラジオ局など各種のメディアが、陸稲栽培に関するフィールドデー、収穫祭、日本人などの各種専門家の訪問などの機会をとらえて、稲作の報道を行う例が増加している。このようなメディアの活用によって、スーダン人に国内における稲作開発の進捗に関する認知度を高める効果があった。

3-5 持続性

全体としてプロジェクトの持続性は「中程度」とであると判断される。政策面での持続性は確保されている。組織面・財政面の持続性を確保することもおおむね可能と見込まれる。稲作に関する技術面では、プロジェクトは稲作導入期の基礎を築くことができたものの、普及拡大に向けてはまだ国外からの支援が必要であると思われる。また、当初期間中に達成された事項に関して、その後継続がなされていない例も認められた。

(1) 政策面

妥当性の項で述べたように、スーダン国政府は、組織能力強化、農業近代化・生産性向上を重要視している。また、コメは、戦略作物のひとつに位置づけられている。したがって、政府職員の能力強化や稲作振興に関する政策面の持続性は確保される見通しである。

(2) 組織面

対象 6 州の農業省には、稲作振興に向けて、稲作課（Rice Promotion Unit または Rice Production Unit）が設置され、数多くの普及員が配置されている。各州農業省の大臣や総局

長は、陸稲を作付けローテーションに組み込む有望作物として認知している。稲作振興のため、各州農業省と連邦農業省の国家稲作プロジェクトとの連携も良好に維持されている。このように、対象 6 州には稲作振興に向けた体制ができていると考えられる。

一方、稲作開発フォーラムについては、フォーラム及びそのワーキング・グループの会議を継続的に開催していく必要がある。

(3) 財政面

プロジェクト延長期間中、対象 6 州の農業省は、比較的、積極的にプロジェクト活動費用を負担してきている。また、稲作開発の年間活動計画や 5 カ年計画を作成し、必要な予算の確保に努めている。国家稲作プロジェクトは、そのための予算措置を全面的に支援している。したがって、連邦農業省及び州農業省は、今後も稲作振興に対し、適切な予算措置を行うことが期待される。

(4) 技術面

州農業省の普及員については、各種研修への参加や圃場における OJT を通じて年々能力が向上している。陸稲栽培ハンドブックは普及員のテキストブックとして発行される見通しである。したがって、プロジェクトは陸稲栽培を開始するために良好に機能したといえる。しかしながら、稲作普及期に向けては、特に圃場均平化や除草などの事項において、技術的検討や継続的研修が必要であると考えられる。

さらに、陸稲の商業的生産のためには高品質種子の生産が重要課題として残されている。現状では各州農業省が、プロジェクトの熱心な指導を受けて、種子生産圃場やデモンストレーション圃場において次年度のための純度の高い種子の生産に努めているが、ジャージーラ州以外ではまだ十分なレベルに達していない。陸稲栽培の拡大のためにはイネ種子の認証制度の確立・強化が必要である。また、収穫後処理技術やマーケティングに関しても検討しなければならない。

結論として、プロジェクトは稲作導入期の基礎を築いたものの、さらに外部からの継続的な支援が必要と考えられる。

(5) 当初期間中に達成された成果の継続性

成果 1 は、当初期間終了後、ほとんど忘れ去られた状態にあり、プロジェクトの持続性の観点から大きな懸念となっている。成果 2 も、一部は継続されていない。

a) 成果 1

人的資源開発と組織能力開発のためにプロジェクトが実証し提案した運営体制はまだ設立されていない。2014 年 2 月に研修ユニットが連邦農業省の全部局に対し、プロジェクトが作成した能力開発ガイドライン・マニュアルに沿って能力開発計画を提出するようレターを発出したが、どの部局もキャパシティ・アセスメントやニーズ・アセスメントを行わず、また、プロジェクトが導入した Learning by Doing アプローチを採用せず、従来どおりの方法で研修を計画・管理している。したがって、実施マニュアルは連邦農業省に意図したとおりの便益をもたらさなかった。連邦農業省のトップ・中間管理職の頻繁な交代

が、このようなプロジェクト成果に対する関心が薄れた主な理由である。

b) 成果 2

国家コメ開発戦略（NRDS）は現在も有効で、連邦農業省の現マネジメントもこれを重視している。稲作セクター開発フォーラムは 2013 年と 2014 年に開催されて以降中断しているが、主要課題はプロジェクトの年次ワークショップにおいて議論されている。稲作開発年間活動計画は、州農業省により引き続き作成され、実施、モニタリング・評価されている。州農業省、特にジャジーラ州の農業省においては、種子生産圃場において異品種の抜き取りにより稲種子の品質維持のために努力を払っている。デモ圃場においておおむね良好な結果が得られているため、農民の稲作に対する意欲は引き続き高い。

3-6 結 論

プロジェクト活動に関わった人たちは、本プロジェクトの目標達成に向けて多大な努力を傾注した。延長期間においては、対象 6 州の農業省において、陸稲栽培振興に向けた能力が向上した。陸稲栽培に関しては、デモ圃場において高い収量・収益性が得られたこと、政府職員や農民が稲作実施の準備ができたことなどの成果が得られた。したがって、プロジェクトは予定どおり終了することと結論する。

ただし、陸稲に関する普及員の能力強化が必要であり、また、陸稲栽培における技術的課題に対応するための開発を更に進めていかなければならない。

第4章 提言・教訓及び団長所感

4-1 提言

4-1-1 プロジェクト終了時まで達成すべき提言

＜日本人専門家・カウンターパート（C/P）＞

① 陸稲栽培ハンドブック最新版の作成

作成にあたっては、以下を行う。

- ・2015年作期中の圃場適用試験及びデモンストレーション圃場において得られた知見・教訓を反映させる。
- ・前提となる灌漑条件や気候条件など、栽培技術の適用範囲を明記する。本ハンドブックが灌漑農地における陸稲栽培のみに適用されるものであり、湿地浮稲や水田水稻または天水農地を対象としない旨を明記する。NERICA 4以外の品種を用いる際は、栽培法についてある程度の調節が必要となる可能性がある。本ハンドブックは、圃場適用試験が主として行われたジャジーラ州だけでなく、対象6州すべてにおけるデモンストレーション圃場から得られた知見・教訓を網羅しているが、地域ごとに栽培条件が異なることに慎重な配慮が必要。
- ・プロジェクト期間中にデモンストレーション圃場で実際に達成された単位収量を記載することにより、本ハンドブックに記載の栽培法を用いて圃場を適切に管理し、それ以外の障害となる要因がない場合にめざすことができる（または達成できる可能性のある）単位収量を示す。

なお、本ハンドブックに関しては、スーダン側合同評価団メンバーが「国内法に基づき、科学的な試験研究を行ったうえで国家栽培技術承認委員会で承認されるまで、一般農家に配布すべきでない」と主張し、ミニッツ（M/M）署名者である連邦農業省国際協力局長もこれに同意したため、英文評価レポート（付属資料1）においては、配布を州農業省普及員及び農業研究機構（ARC）研究者に限定することとし、M/Mに署名した。

しかしながら、M/M署名翌日に行われた合同調整委員会（JCC）において、スーダン側出席者のすべてが、本ハンドブックを一般農家に配布することに同意したため（付属資料2の議事録を参照）、連邦農業省国際協力局長から、あらためて一般農家への配布を認めるレターが発出された（付属資料3）。

② 対象6州（特にジャジーラ州以外の5州）の普及員能力評価の完了

特にジャジーラ州以外の白ナイル州、センナール州、ゲダレフ州、北部州及びリバーナイル州の5州において、少なくとも中核となる2名の普及員が他の一般普及員を指導するに足る基礎的な能力を獲得したかどうか、念入りな評価が必要。

＜連邦農業省・各州農業省＞

③ 翌年度以降の稲作振興予算の承認

連邦農業省及び各州農業省において、次年度及び今後5年間の計画・予算が作成されているが、まだドラフト段階のものも多いため、各州農業省幹部、及び、最終的には連邦農業省により、これらの計画・予算が検討・承認され、活動が継続されるようにすることが

必要。

4-1-2 プロジェクト成果持続のための提言

<連邦農業省>

① 稲作開発フォーラム（または別形態の関係者協議の場）の再開

陸稲栽培振興のため、過去の稲作セクター開発フォーラムにおいて特定されたボトルネック 이슈や、これに対する対応策や担当機関について議論を行うことが必要。幅広い関係者、特に農民や民間企業を巻き込むことが極めて肝要。

<連邦農業省・各州農業省>

② コメ生産に取り組む民間セクターへの必要かつ適切な技術的支援の提供

特に、本プロジェクトと連携するかたちで種子生産を始めた Arab Sudanese Seed Company への支援が必要。民間企業はまだ稲作に関する技術的課題を抱えており、これらが撤退してしまわないよう、可能な限りの支援が行われるべきである。

③ 稲作推進に係る計画策定、実施、モニタリング・評価のための十分な予算の配分・執行

連邦農業省による適切な財政支援と、モニタリング・指導が必要。特に、生産米買い上げにおける農家への支払い、農業資材・機械の提供、及び、普及員の活動費（とりわけ移動・交通手段）に留意すべき。

<連邦農業省・ARC>

④ 稲作に係る試験研究の実施、それに基づく陸稲栽培ハンドブックの正式承認と一般農家への配布

陸稲栽培ハンドブックの取扱いについては、上記 4-1-1 ①を参照。

⑤ イネ用選択性除草剤の試験実施及び承認

可能な限り早期に試験を完了、承認を得ることが必要。

<各州農業省>

⑥ プロジェクトで導入された精米機の十分な活用

稲作の商業的可能性につき農家に納得してもらうには、その眼前に、販売可能な精米済み白米を示すことが肝要。

⑦ 種子生産農家が純度の高い種子を生産するための訓練の徹底

種子生産圃場における異品種の除去については、毎年欠かさず、最大限の努力を払うことが必要。イネは自家受粉性のため、種子生産を農家自身が行うことが可能。高品質な種子の生産を奨励するため、異品種混入率が低く純度の高い種子を生産した農家からは高い価格で種子を買い上げることが望ましい。

⑧ リーダー普及員による一般普及員向け国内研修の実施

本プロジェクトにおいて育成されたなかで最も能力の高いリーダー普及員により、他の一般普及員向けの研修・再研修を行うことが必要。普及員の間で、圃場作業日誌を用いた情報共有を行うことが望ましい。

⑨ すべての普及員に対する、作業日誌の活用による知識・技能自己研鑽の奨励

<連邦農業省>

- ⑩ 人材育成・組織能力強化のために本プロジェクトが提案したプロセス（特に「実践による学習」）及び運営体制の再確認・実施

効果的な能力強化のためには、研修のみでは不十分。能力強化のための活動を、実務の改善につなげるための実践的なアクションを行うことが必要であり、これを怠る組織を支援の対象とすることは難しい。

4-1-3 更なるコメ生産振興のための提言

<連邦農業省>

- ① 連邦農業省 National Rice Project の強化

州農業省との緊密な連携により、全国における稲作推進を主導することが必要。スーダンの多くの地域においてイネはいまだに新規作物であるため、連邦農業省が、通常求められる調整機能以上の積極的なリーダーシップを発揮しなければならない。

- ② 民間セクターによる、より活発な取り組みの奨励

稲作栽培だけでなく、農業資材・機械の供給、種子生産、収穫後処理、貯蔵、流通等の役割を担ってもらうため、補助金や免税等の優遇措置により、民間企業の参入を奨励することが必要。また、民間主体の取り組みを進めるうえで、稲作セクター全体の開発を導く官の役割がどのようなものであるべきか、どのような役割を果たすことができるかについては、慎重な検討が必要。

<連邦農業省・各州農業省>

- ③ コメ生産者のための販路開拓

コメ生産者が国内及び輸出市場の双方で販売するための機会・流通路を開拓することが必要。販売・利益に関する有望な見通しがなければ、農家が稲作に取り組むことは期待できない。既存のコメ流通市場に参入するためには、市場が求める品質、生産量や価格を提供できるよう、生産農家の育成を行うことが必要。

- ④ コメ専門農民組合の組織化

農家の組織化により、十分な生産量を達成し、高い品質を保ち、有利な販売価格を獲得し、農業資機材を有利な条件で調達し、農業金融サービスにアクセスすることが可能となる。

- ⑤ 適切なコメ貯蔵・収穫後処理サービスの確保

公的機関または民間事業者により、適切な施設・設備・運営による貯蔵・収穫後処理サービスが提供されることが必要。本プロジェクトにより導入された精米機が既に稼働済みであるが、市場の需要を満たすため、より高品質・多量の精米済み白米を生産するための投資が必要である。

< ARC >

- ⑥ 対象全州における稲作研究開発の実施

スーダン各地の異なる条件に適合するさまざまな形質をもった新品種の試験・開発、収穫後処理、社会経済分析等を含む研究が必要。自国のリソースが限られるなか、国際稲研

究所（IRRI）などの国際機関との協業を進めることが望ましい。また、ARC と普及組織との間で、密接な連携と知見の共有を図り、研究開発と技術普及の統合を強化すべきである。

< ARC ・ 連邦農業省 ・ 各州農業省 >

⑦ イネ品種の維持及び純系種子の生産のための既存体制の強化

民間セクターによる種子生産を奨励することが必要。認定種子（Certified Seed）の生産は、十分な技能と機材を有する個別農家（自家使用分に限った種子更新）及び民間企業に委ねてよい。

< 連邦農業省 ・ 各州農業省 >

⑧ スーダンでの稲作に適した農業機械の調査・試験・導入の継続

圃場準備（耕起・均平化）、播種、肥料・農薬散布、機械除草、収穫、収穫後処理のための農業機械につき、調査・試験・導入を推進することが必要。農業機械や農業機械化サービスを、農家に対して低廉な価格で手広く提供するため、農業機械利用者組合の組織化や、支援金融サービスの整備を進めることが望ましい。

< 各州農業省 >

⑨ Center of Excellence 設立による、既存の技術普及体制の強化

Center of Excellence は、イネ栽培・収穫後処理に係る実践的なコメ生産技術を蓄積・改良すること、及び、これらの技術をマスタートレーナーから一般普及員、農家、試験研究作業員、農業機械オペレーターに対して教導すべく、研修・再研修・技術的助言を行うことを任務とする。現時点においては、ほかのどのような要素よりもはるかに、現場における圃場管理や収穫・収穫後処理の良し悪しが、生産性に大きな影響を与える。スーダン国全土において一様に適用可能な「技術パッケージ」を確立することは難しいため、それぞれの栽培環境に応じて、やり方を柔軟に工夫することのできる技術人材の育成が、稲作振興を成功させるための鍵である。

⑩ より多くの農家のニーズに応えるための普及網の拡大・再活性化

十分な普及用教材、機材、及び移動手段を備えた普及サービスが必須である。政府の予算・人員は限られることから、先進農家による小規模・高水準のデモンストレーションまたはパイロット農場を通じて、農家から農家へ伝えるかたちで稲作普及を図ることが、効果的かつ効率的な手段になると考えられる。また、普及員の地理的配置に空白が生じないよう、必要かつ可能な範囲で、各州の稲作ユニットの下に地方サブユニットを設置することも検討すべきである。

4-2 教 訓

- ① 延長期間中においても、当初期間中に達成された成果に関するフォローアップを、ある程度は行うことが可能かつ望ましい。プロジェクト終了時点において持続性確保のために最大限の努力を払っても、その後に C/P 幹部が交代した場合、継続的な取り組みのための関心やコミットメントに大きな影響が生じる。

- ② 地理的な範囲拡大は、利用可能な資源・投入にかんがみて、非常に慎重な検討を要する。本プロジェクトにおいて日本人専門家が常に「ステップ・バイ・ステップ」で進めることを強調してきたのは、それなりに理由があつてのことである。限られた投入リソースで広いエリアをカバーするにはおのずと限界があり、また、各州がそれぞれの環境に応じた栽培技術を確立するには時間を要する。
- ③ 本プロジェクトにおいては、あらゆる能力強化のための活動に「実践による学習」アプローチを用いてきた。その結果、C/Pの職務遂行能力が目に見えて改善したことからも、本アプローチはプロジェクト期間中においては非常に有効であつたといえる。ただし、連邦農業省のトップ・中間管理職の頻繁な交代などにより、このアプローチが継続されているとは言い難い。

4-3 団長所感

本プロジェクトは、2年間の延長期間を経て、その目標を達成する見込みである。その間における、各専門家の粘り強い努力と、C/Pの自主的・積極的な取り組みに、多大な敬意を表したい。

稲作については、農家や民間企業が強い関心・意欲を示すとともに、連邦・各州政府の関係者が高い主体性をもって取り組み始めており、今後の発展に大きな期待をもつことができる。ただし、スーダンの稲作振興はまだ緒についたばかりであり、政府・民間の各関係者が密接な協力関係を築き、引き続き着実な努力を積み重ねることが不可欠である。外部から更なる技術支援を得る必要性も高いと思われるが、陸稲栽培ハンドブックの一般農家への配布の是非をめぐる議論を受けて、移転技術の取扱いについてスーダン国政府と開発協力機関の間でよく確認・調整しつつ進めることが肝要である。

また、連邦農業省において、本プロジェクトによって実証・提案された、人材育成・組織能力強化のための組織だった取り組みが中断しているのは、大変残念なことである。スーダン側関係者が、能力強化は実践を通じて行われるべきであることを再認識し、そのための取り組みを再活性化することを、特に促すものである。

付 属 資 料

1. ミニッツ及び評価レポート（英文）
2. 第 11 回合同調整委員会（JCC）議事録
3. 陸稲栽培ハンドブックに関する連邦農業省レター

**MINUTES OF MEETING
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
MINISTRY OF AGRICULTURE AND FORESTRY,
THE GOVERNMENT OF THE REPUBLIC OF THE SUDAN
ON
THE TERMINAL EVALUATION FOR
CAPACITY BUILDING FOR THE IMPLEMENTATION OF “THE EXECUTIVE
PROGRAMME FOR THE AGRICULTURAL REVIVAL”**

The Joint Terminal Evaluation for the extended period (two years from March 2014 to March 2016) of the Capacity Building Project for the Implementation of “The Executive Programme for the Agricultural Revival” (hereinafter referred to as “the Project”) was conducted from 11th to 27th October 21, 2015 by the Joint Evaluation Team (hereinafter referred to as “the Team”) organized by the Federal Ministry of Agriculture and Forestry, the Government of the Republic of the Sudan (hereinafter referred to as “FMoA”) and the Japan International Cooperation Agency (hereinafter referred to as “JICA”).

After intensive study and analysis of the outputs and achievements of the Project, the Team prepared the Terminal Evaluation Report (hereinafter referred to as “the Report”) on the Project achievements and recommendations to concerned parties, and had a series of discussions on the Report with concerned officials and the Joint Coordinating Committee of the Project.

As a result of the study and discussions, both sides agreed upon the matters referred to in the document attached hereto, subject to approvals of higher authorities of both sides and subsequent mutual agreement, especially with respect to the planning and implementation of the recommendations in the Report.

Khartoum, 26th October, 2015



Dr. Adel Yousif Eltayeb
Director General
International Cooperation
Ministry of Agriculture and Forestry
The Republic of the Sudan



Shigeru Otake
Senior Representative
JICA Sudan Office

THE JOINT TERMINAL EVALUATION REPORT
ON CAPACITY BUILDING PROJECT FOR THE IMPLEMENTATION OF
“THE EXECUTIVE PROGRAMME FOR THE AGRICULTURAL REVIVAL”
IN SUDAN

26th October, 2015

JOINT TERMINAL EVALUATION TEAM

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Abbreviation

ARC	Agricultural Research Corporation
C/P	Counterpart
DG	Director General
EPAR	Executive Programme for Agricultural Revival
FMoA	Federal Ministry of Agriculture and Forestry (formerly Federal Ministry of Agriculture and Irrigation)
GOJ	Government of Japan
GOS	Government of Sudan
JCC	Joint Coordinating Committee
JICA	Japan International Cooperation Agency
M&E	Monitoring & Evaluation
NRDS	National Rice Development Strategy
NRP	National Rice Project
OJT	On-the-Job-Training
PDM	Project Design Matrix
PO	Plan of Operation
R/D	Record of Discussions
SDG	Sudanese Pound
SMoA	State Ministry of Agriculture
ToT	Training of Trainers




1. Introduction

1-1 Objectives of Terminal Evaluation

The Terminal Evaluation of the Capacity Building Project for the Implementation of “The Executive Programme for the Agricultural Revival” (herein after referred to as “the Project”), a Technical Cooperation Project between Federal Ministry of Agriculture and Forestry (FMoA) of the Republic of the Sudan and Japan International Cooperation Agency (JICA), is conducted when there remain six months prior to the end of the Project (March 2016), which has been extended for two years (March 2014 – March 2016) from its original duration (March 2010 – March 2014). The Terminal Evaluation intends to:

- (1) Review inputs and implementation management of the Project;
- (2) Assess progress and achievements of the Project, that are measured by Outputs, Project Purpose and Overall Goal defined in the Project Design Matrix (PDM);
- (3) Evaluate the Project from the viewpoints of five criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability), and;
- (4) Make recommendations for the Project, and gain lessons learned that can be applied to other projects.

This Terminal Evaluation mainly focuses on the extended period of two years from March 2014 to March 2016, but also briefly revisits the Outputs that had been achieved in the original duration from March 2010 to March 2014 from the viewpoint of sustainability.

This Joint Terminal Evaluation Report is drafted by the Joint Evaluation Team consisting of both Sudanese and Japanese, is to be presented to Joint Coordinating Committee (JCC) for discussion by concerned parties, and is to be agreed upon by FMoA and JICA.

1-2 Joint Terminal Evaluation Team

1-2-1 Sudanese Members

Name	Present Occupation
Mr. Mohieldin Ail Mohamed Bakheet	National Rice Coordinator, FMoA
Prof. Ahmed Abdelgadir Elsiddig	National Rice Research Coordinator, Agricultural Research Corporation (ARC)
Ms. Fatima Rahma	Director, Bilateral Cooperation, General Directorate of International Cooperation, FMoA
Mr. Houssain El Shareef	JICA Desk, Bilateral Cooperation, General Directorate of International Cooperation, FMoA

1-2-2 Japanese Members

Name	Position and organization
Mr. Shigeru Otake	Senior Representative, JICA Sudan Office
Mr. Masahiro Shiomi	Project Formulation Advisor, JICA Sudan Office
Mr. Mitsuo Nishiya	Evaluation and Analysis Consultant, NTC International Co.,Ltd.

1-3 Evaluation Methodology

1-3-1 Review of inputs and implementation management, and assessment of progress and achievements

Record of Discussions (R/D) (with attached Project Design Matrix (PDM), Plan of Operation (PO), and Organization Chart. See Annex 1), which was signed on 12th February 2014 to agree on the extension of the Project duration for two years, defines Overall Goal, Project Purpose and Outputs with objectively verifiable indicators. It also lists required Activities, Inputs and the institutional structure for Project implementation. According to this Project design documents, the Joint Evaluation Team collected data and information through interviews, questionnaires and field visits, and analyzed findings to review inputs and implementation management, and to assess progress and achievements.

1-3-2 Evaluation Criteria

Based on the review and assessment as above, the Project is evaluated by the following five criteria in accordance with the Development Assistance Committee (DAC) Criteria for Evaluating Development Assistance.

(1) Relevance

Relevance refers to the validity of the Project Purpose and the Overall Goal in connection with the development policy of the authorities concerned of Sudan as well as the needs of beneficiaries and assistance policy of Japan.

(2) Effectiveness

Effectiveness refers to the extent to which the expected benefits of the Project have been achieved as planned. It also examines whether these benefits have been brought about as a result of the Project.

(3) Efficiency

Efficiency refers to the productivity of the implementation process. It examines whether the inputs of the Project have been efficiently converted into outputs.

(4) Impact

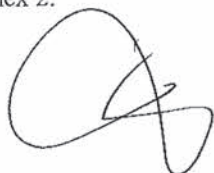
Impact refers to direct and indirect, positive and negative impacts caused by the implementation of the Project, including the extent to which the overall goal has been attained.

(5) Sustainability

Sustainability refers to the extent to which the Project can be further developed by the authorities concerned of Sudan and the extent to which the benefits generated by the Project can be sustained under national policies, technology, systems and financial state.

1-4 Evaluation Activities and Schedule

The Joint Terminal Evaluation Team worked from 11th to 27th October, 2015 in Khartoum, Gezira, White Nile, Gedaref, Sennar, River Nile and Northern States. The detailed activities and schedule is attached as Annex 2.



2. Outline of the Project

2-1 Background of the Project

The Republic of the Sudan is in urgent need to revive the agriculture sector. The agricultural production, comprising 35% of Gross Domestic Product and 62% of labor force in 2007, has been stagnant in the last two decades, particularly in major crops such as sorghum, wheat, sesame, cotton and ground nuts. Sudan is a net importer of food because of the rapid increase in domestic consumption due to the population growth at 2% per annum.

Sudan had been dependent on oil revenues to achieve economic growth and balance external accounts, which significantly decreased due to the Secession of South Sudan. To tackle this imminent challenge, the Government of Sudan (GOS) formulated the “Executive Programme for Agricultural Revival” (EPAR) in April 2008 to promote agricultural exports, eradicate poverty, and attain food security. EPAR is an across-the-board program under direct supervision of Vice President of Sudan and encompassing eight ministries including the Federal Ministry of Agriculture and Irrigation, which was recently reorganized into Federal Ministry of Agriculture and Forestry (FMoA). EPAR aims at improving agricultural productivity and export competitiveness through constructing/rehabilitating dams and irrigation canals, doubling cultivated areas and growing horticulture production. EPAR was extended after the end of its original term from 2008 to 2011, and FMoA itself formed its own Five-Year Plan 2012-2016 to play its roles to achieve the overall national goals.

FMoA also established the National Rice Project (NRP) in 2005 to promote the production of rice, which also lags behind the growing domestic demand, by formulating rice development plans, introducing rice cultivation to suitable areas, and facilitating marketing and sales.

In view that capacity development for action planning, implementation, and monitoring is the key to the success of EPAR and NRP, GOS requested the Government of Japan (GOJ) for Technical Cooperation to develop capacity of FMoA and related organizations. GOJ accepted the request of GOS in December 2009. Subsequently FMoA and JICA entered discussion on the framework of the Project, and signed the Record of Discussions on 21st January, 2010. The Project started in March 2010, and the original duration was four years until March 2014.

From September to October 2013, the Terminal Evaluation in the original Project period was conducted. It concluded that, while most of the Project Purpose and Outputs were achieved, two Output indicators regarding (i) appropriate upland rice cultivation technology development and (ii) capacity development of extension officers in five participating States (White Nile, Sennar, Gedaref, Northern and River Nile) other than Gezira were not fulfilled, and thus recommended two-year extension of the Project period. Subsequently FMoA and JICA discussed the recommended period extension, and signed a new R/D for the extended duration from March 2014 to March 2016 on 12th February, 2014.

2-2 Summary of the Project

The framework of the Project is defined in the R/D signed on 12th February, 2014 (see Annex 1). In particular, Project Design Matrix (PDM) (ver. 5.0) represents the design of the Project.



(1) Overall Goal

The quality of public services provided by the Ministry of Agriculture and the organizations concerned are improved through their capacity development.

(2) Project Purpose

Human and organizational capacity of the Ministry of Agriculture and the organizations concerned is strengthened to materialize "The Executive Programme for the Agricultural Revival."

(3) Outputs

- Output 1: Through the experimental activities of the Project, a model system of human resource development and organizational capacity development of the Ministry of Agriculture has been developed.
- Output 2: Planning, implementation, monitoring & evaluation for promotion of rice production are enhanced.

(4) Main Activities

- 1.1 To develop a model system of human resource development for the Ministry of Agriculture
- 1.2 To develop a model system of organizational capacity development of the Ministry of Agriculture
- 1.3 To establish a monitoring and evaluation (M&E) and management system of capacity development activities
- 1.4 To prepare annual reports compiling review of Activities in 1.1, 1.2 and 1.3 and recommendation for plans in next year on human resource development, organizational capacity development, and the M&E and management system
- 2.1 To carry out planning, monitoring and evaluation for promotion of rice production in Sudan
- 2.2 To develop appropriate upland rice cultivation technique
- 2.3 To improve upland rice seed production technique
- 2.4 To train agricultural extension workers to be trainers on appropriate upland rice cultivation
- 2.5 To demonstrate rice cultivation to expose farmers to appropriate upland rice cultivation technique
- 2.6 To prepare a handbook on rice cultivation technique based on results of activities in 2.2 together with those in 2.3, 2.4 and 2.5.
- 2.7 To conduct planning, monitoring and evaluation of rice development on a regular basis

(5) Target Group

The target groups (beneficiaries) for Output 1 are the following directorates and unit of FMOA

- 1) Planning and Agricultural Economics Directorate
- 2) Horticulture Sector Administration
- 3) International Cooperation and Investment Directorate
- 4) Technology Transfer and Extension Administration
- 5) Training Unit

and the State Ministries of Agriculture (SMoAs) of Gezira and White Nile.

The target groups (beneficiaries) for Output 2 are the following 6 SMoAs and farmers in the target States;



Gezira, White Nile, Gedaref, Sennar, River Nile and Northern.

(6) Output pursued and Activities conducted in the extended period

Following two Output Indicators in PDM (ver. 5.0) were not achieved in the original duration, and are being pursued during the extended period.

Indicator 2-4: A practical/technical handbook on upland rice cultivation is prepared.

Indicator 2-6: More than 80% of training participants in Gezira State, and two of trained participants respectively in five States excluding Gezira State, are qualified as trainers on appropriate rice cultivation technique.

To fulfill these Indicators, following activities are being continued.

- 2.2 To develop appropriate upland rice cultivation technique
- 2.4 To train agricultural extension workers to be trainers on appropriate upland rice cultivation
- 2.5 To demonstrate rice cultivation to expose farmers to appropriate upland rice cultivation technique (except for 2.5.3 (farmer field school) and 2.5.4 (rice field day))
- 2.6 To prepare a handbook on rice cultivation technique based on results of activities in 2.2 together with those in 2.3, 2.4 and 2.5.



3. Achievement of the Project

3-1 Inputs

3-1-1 Japanese Side

(1) Dispatch of Experts

For the extended duration of the Project from March 2014 to March 2016, six Japanese experts, (i) Chief Advisor / Rice Development Programme, (ii) Deputy Chief Advisor / Rice Cultivation 1, (iii) Rice Cultivation 2, (iv) Rice harvest / Post harvest, (v) Cultivation Environment Analysis & Weed Control, and (vi) Project Coordinator / Monitoring & Evaluation of Upland Rice Cultivation have been / are being dispatched. In total, 41.37 man-months of work will be taken by Japanese Experts for the extended period of two years, while the original period of four years required 212.24 man-months. For details, see Annex 3.

(2) Overseas Training and Observation Visits

For the extended duration of the Project from March 2014 to March 2016, 157 counterpart persons participated in overseas training and observation visits in Japan, Uganda and Egypt as shown in the following table. For more details of overseas training, see Annex 4.

Number of participants in overseas training and observation visits

Themes	Original Period (Mar 2010 – Mar 2014)	Extended Period (Mar 2014 – Mar 2016)	Total
Training in Japan (technical)	34	14	48
Training in Uganda (basic course)	101	-	101
Training in Uganda (advanced course)	22	27	49
Training in Egypt (machinery)	15	-	15
Training in Egypt (water & irrigation)	-	30	30
Training in Egypt (weed control)	20	28	48
Training in Egypt (post-harvest)	15	20	35
Training in Japan (policy)	11	4	15
Observation in Egypt (policy)	-	23	23
Observation in Uganda (research)	6	-	6
Observation in Egypt (research)	-	8	8
Total	224	154	378

(3) Provision of Equipment

For the extended duration of the Project from March 2014 to March 2016, testing/measurement instrument, equipment for post-harvest processing, and one vehicle were provided, in the amount of JPY 7,541,463 (USD 62,847 <USD 1 = JPY 120>). The total amount of equipment provided in the whole Project is JPY 108,556,987 (USD 904,641 <USD 1 = JPY 120>). For details, see Annex 5.

(4) Local Cost Allocated by Japanese Side

For the extended duration of the Project from March 2014 to March 2016, local cost allocated by JICA for the implementation of the project activities is 2.1 million SDG (including planned cost by the end of the Project), while 3.4 million SDG was spent in the original period of the Project. For details, see Annex 6.

3-1-2 Sudanese Side

(1) Assignment of Sudanese Counterpart Personnel

Currently, 24 counterpart personnel in managerial positions are involved in the Project, i.e. 2 persons of FMoA, 5 persons of Gezira SMOA, 4 persons of White Nile SMOA, 3 persons of Gedaref SMOA, 3 persons of Sennar SMOA, 3 persons of River Nile SMOA and 4 person of Northern SMOA. For details, see Annex 7. Respective States also has units dedicated for rice promotion (called Rice Production Unit or Rice Promotion Unit). The numbers of extension officers belonging to these units are 120 in total, 35 in Gezira SMOA, 15 in White Nile SMOA, 12 in Gedaref SMOA, 36 in Sennar SMOA, 13 in River Nile SMOA and 9 in Northern SMOA respectively, while some extension officers are in charge of other crops, too. In ARC, 11 scientists are involved in rice research.

(2) Project Operation Cost Allocated by Sudanese Side

Local cost for the project activities has been allocated by FMoA and SMOAs in target six States. For the extended duration of the Project from March 2014 to March 2016, the total amount of local cost borne by the Sudanese side is around 1.0 million SDG, while 1.7 million SDG was spent in the original period, as is shown in the table below. For details, see Annex 8.

Local cost borne by Sudanese side (in SDG)

Organization	Original Period (Mar 2010 – Mar 2014)	Extended Period (Mar 2014 – Mar 2016)	Total
FMoA	50,500	-	50,500
Gezira SMOA	1,422,712	285,500	1,708,212
White Nile SMOA	4,804	104,905	109,709
Gedaref SMOA	18,790	158,100	176,890
Sennar SMOA	101,460	375,825	477,285
River Nile SMOA	34,550	37,982	72,532
Northern SMOA	41,765	33,040	74,805
Total	1,674,581	995,352	2,669,933

(3) Provision of Facilities

Office spaces for Japanese experts are facilitated at the FMoA and Gezira SMOA. Expenses of electricity for the offices for the Japanese experts have been born by the FMoA and Gezira SMOA.

3-2 Outputs

Output 2:

Planning, implementation, monitoring & evaluation for promotion of rice production are enhanced.

The Project focused on the development of upland cultivation method and capacity development of the extension officers of the 6 target SMOAs during the extension period. The Project will finalize the "Handbook of Upland Rice Cultivation" by the end of the Project period. The capacity of the extension officers is expected to reach at satisfactory level.

Indicator 2-4: A practical/technical handbook on upland rice cultivation is prepared.

The "Handbook on Upland Rice Cultivation", which was prepared at the end of the original period, was



modified and compiled as the revised version (draft) after the 2014 cropping season. The major contents of the Handbook are; general cropping calendar for upland rice, using pure seed, good land preparation, fertilizer application, proper sowing operation, sowing at optimum time, effective weed control, appropriate irrigation, and harvesting at proper time. The Handbook will be finalized based on all results of the field trials, demonstration farms and trainings at the fields during the project period.

It is better to consider the following points in finalization of the Handbook.

- Describe main user of the Handbook (rice extension officers or farmers) and compile it as user-friendly form.
- Describe applicable conditions of the technique, for example, condition of irrigation, variation of climate, etc.
- Describe target or potential level of rice yield by using the techniques written in the Handbook under specific conditions, showing achieved yield in the demonstration farms during the Project period.

The Handbook of English and Arabic version will be printed and distributed to relevant government officers to be utilized for training and extension activities after the Project.

Indicator 2-6: More than 80% of training participants in Gezira State, and two of trained participants respectively in five States excluding Gezira State, are qualified as trainers on appropriate rice cultivation technique.

The word of trainers in this indicator means extension officers who have the following capacity.

Extension officers who have acquired important technical points on upland rice cultivation through participating in various trainings and who have ability to obtain certain higher yield of rice at real rice field utilizing learned knowledge and skills. And also extension officers who can instruct upland rice cultivation techniques to other extension officers and farmers properly.

It is determined whether extension officers have appropriate capacity as trainer by assessing their capabilities comprehensively, taking into account the following points.

- 1) Degree of mastering basic rice cultivation techniques
- 2) Yield record of rice in the field managed by them
- 3) Rate of capability in the aspects of reliability from the viewpoint of farmers, working attitude, formulation of action plan, management and response in case of unexpected emergencies in the field, and monitoring and evaluation

In the State Ministry of Agriculture in Gezira, an assessment of capacity of 25 extension officers out of 34 officers concerned was conducted at the end of September 2014. Extension officers, who get more than 70 points in the 100-point scale, are qualified as trainer. Evaluators are the Head of Rice Production Unit, monitoring team and Japanese experts. As a result of the assessment, 19 out of 25 extension officers obtained more than 70 points. The success rate is 76 %, while the target rate is more than 80 %. Considering that 3 extension officers qualified in the previous year could not be evaluated at this time and some extension officers are close to 70 points, the capacity level of the extension officers in Gezira State is



expected to reach the satisfactory level at the end of 2015.

Summary of capacity assessment of rice extension officers by State after 2014 cropping season

State	Total No. of Extension Officers Concerned	Total No. of Extension Officers Evaluated	No. of Extension Officers Qualified	Rate of Qualified Extension Officers	Average Score	Achievement
Gezira	34	25	19	76%	76.1	Nearly achieved
Sennar	24	20	7	35%	66.5	Achieved
Gedaref	11	9	3	33%	66.4	Achieved
River Nile	13	7	0	0%	54.5	Not achieved
Northern	9	7	6	86%	72.7	Achieved
White Nile	20	10	5	50%	64.8	Achieved
Total	111	78	40	51%		

In the other 5 States, the same assessment was conducted, but the target is to have more than 2 extension officers in each State who are qualified as trainer. The table above shows that the indicator was achieved in the 4 States of Sennar, Gedaref, Northern and White Nile at the end of the 2014 cropping season. In River Nile State, a qualified extension officer was appointed as the Head of Rice Promotion Unit and another extension officer is nearly at the satisfactory level. Therefore, it can be said that the indicator is expected to be achieved by the end of the 2015 season.

In summary, this indicator is expected to be achieved by the end of the Project.

3-3 Project Purpose

Human and organizational capacity of the Ministry of Agriculture and the organizations concerned is strengthened to materialize "The Executive Programme for the Agricultural Revival."

It was judged that the capacity of FMOA was improved enough during the original period. During the extension period, the Project has focused on only the SMOAs in the target 6 States. In this section, the capacity of the SMOAs is evaluated on the indicators.

In conclusion, the capacity of the SMOA officers, especially in planning, implementation, monitoring and evaluation aspects, regarding upland rice cultivation, is improved at a satisfactory level by the end of the Project period.

Indicator 1: By the end of the project period, 60% of the staff members of the Federal Ministry of Agriculture, and core staff of State Ministries of Agriculture and other organizations concerned, involved in the Project Activities, demonstrate improvements in action planning, implementation, monitoring & evaluation relating to the "Executive Programme for the Agricultural Revival".

Undersecretary and DG of FMOA and DGs and managers of rice units of SMOAs participated in the policy oriented observation training in Egypt, focusing on planning, monitoring and evaluation. As a fruitful result of the training, they have formulated annual upland rice development plan in 2015 and 5-year agriculture development plan 2015 – 2019.



The capacity of the rice extension officers of the SMOAs is going to reach a satisfactory level in planning, implementation, monitoring and evaluation, according to the capacity assessment mentioned above.

In the 2015 season, the action plans on the demonstration farm and trial farm were prepared by the extension officers in Gezira State. As well, the extension officers of the 6 States in charge of the demonstration farms have kept record using the Diary provided by the Project.

Indicator 2: By the end of the project period, 80% of the staff of the Federal Ministry of Agriculture, and core staff of State Ministries of Agriculture and other organizations concerned, who received training, show improvement in the score of the self capacity evaluation.

By participating trainings in Uganda, Egypt, and Japan, and also On-the-Job-Training at rice cultivation fields, the extension officers have been improving their knowledge and skills on upland rice cultivation through being engaged in rice cultivation promotion.

Self-evaluation on capacity improvement was carried out by the extension officers of the relevant 6 SMOAs after the 2014 cropping season. The officers evaluated themselves on the following 5 aspects both in the first year to participate in the Project and in 2014 again.

- Ability of formulating action plan (including experimental plan)
- Ability of managing and working (implementation ability of each operation)
- Ability of identifying and solving technical problem
- Ability of responding to emergencies in field
- Ability of monitoring (including utilizing the diary) and evaluating field activities

All extension officers answered that they have improved their capacity in the course of the participation in the Project.

At the same time, the monitoring team, rice promotion unit and Project team jointly evaluated the current level of the extension offices in each State by similar criteria. Each criterion was rated at 5-point scale system and the average points are shown in the following table (refer to Annex 9). The ability of formulating action plan was still poor in 3 States, and the ability of monitoring and evaluating ability was still low in the last season. The Project has continuously assisted to prepare annual plan and 5-year plan and to monitor field activities using the Diary provided by the Project in the 2015 cropping season, in order to improve the capacity of these aspects.

Average evaluation rate of ability of rice extension officers by State

State	Formulation Ability of Action Plan	Management and Working Ability	Emergence Response Ability in Field	Monitoring and Evaluation Ability
Gezira	2.7	3.2	3.1	2.9
Sennar	3.0	2.7	2.6	2.1
Gedaref	2.6	3.1	2.5	1.4
River Nile	1.0	2.0	2.1	1.7
Northern	1.0	3.4	3.4	2.6
White Nile	1.0	3.3	2.7	1.9



In summary, this indicator 2 is expected to be achieved at a satisfactory level by the end of the Project period.



4. Results of Review

4-1 Relevance

Relevance of the Project is high, judging from the following viewpoints.

(1) Conformity to the needs for improving quality of public services provided by the FMoA, SMOA and organizations concerned, and needs for promoting rice cultivation

According to the Agricultural Revival Programme, it is pointed out that one of the causes of slow development of the agricultural sector is insufficiency of administrative capacity and policy implementing capacity of the governmental organizations. In this Project, capacity building for officers has been conducted, especially for individual and organizational capacities which have higher priority for enhancement in consideration of the results of capacity assessment, needs analysis on capacity building, and mandates of each directorate or unit of the FMoA.

As for rice promotion, FMoA issued National Rice Development Strategy (NRDS). All SMOAs concerned put high priority on upland rice cultivation and prepared 5-year rice development plan, which showed target cropped area and yield of upland rice. Most farmers want to introduce more profitable crop, and also seek suitable summary crop as part of crop rotation. When upland rice cultivation techniques are well established, upland rice cultivation has good potential for providing higher profit as compared to other traditional crops like wheat and sorghum.

Agricultural Research Corporation (ARC) has started the research on rice in Wad Medani Station in Gezira State, Rahad Station in Gedaref State and Kosti Station in White Nile State since 2014. ARC plans to enhance the activity in the 6 relevant States and expand research subjects such as post-harvest handling techniques and marketing.

Considering above, the project objectives such as improvement of quality of public services provided by the FMoA, and development of rice cultivation, are consistent with the need of governmental organizations in charge of agricultural development and service for farmers.

(2) Relevance to the national development plan and other related plans of Sudan

As mentioned above, it is pointed out that insufficiency of administrative capacity and policy implementing capacity of the governmental organizations is one of the major issues in the Agricultural Revival Programme, thus urgently necessitating capacity building. Institutional capacity building, modernization of agriculture, and improvement of productivity are considered important in the National Development Plan (2012-2016) of Sudan.

As for rice cultivation, the Government of Sudan considers rice one of strategic crops. National Rice Development Strategy (NRDS) was authorized by FMoA in November 2012. For promotion of rice production, National Rice Project has been initiated. ARC has started research on upland rice cultivation in Wad Medani in Gezira State and Kosti in White Nile State. Technical trainings for researchers, extension officers and farmer leaders, and extension of rice cultivation techniques to farmers through conducting field activities are considered important.



Therefore, the objectives of the Project are consistent with the development plans of the Government of Sudan.

(3) Conformity to ODA policy of Japan

One of the priority assistance subjects of the Government of Japan for Sudan is agricultural development. Assistances of agricultural development which contribute poverty reduction and food security are considered important. Consolidation of peace is also a priority assistance subject and assistance for strengthening public services are regarded important. According to the Yokohama Declaration 2013 of TICAD¹ V, “Consolidating Peace, Stability and Good Governance” and “Empowering Farmers as Mainstream Economic Actors” are key strategic approaches. Therefore, the objectives of the Project are consistent with the Official Development Assistance of Japan and approaches of TICAD V.

(4) Appropriateness of the project approach

There were two main components in the Project, i.e., 1) establishment of a model system for human resource development in the FMoA, and 2) development of upland rice production techniques. The previous Terminal Evaluation carried out in late 2013 pointed out that some issues regarding upland rice production needed to be further supported by JICA, because of lack of experience and specialized experts of rice in Sudan before the start of the Project. As a result, the Project was extended for 2 years to continue addressing remaining issues. Then, the PDM version 5.0 was prepared in February 2014. To conclude, it may be said that the project approach is appropriate in general.

4-2 Effectiveness

As mentioned in the clause on the Project Purpose, the strengthened capacity of the SMOAs is expected to be at a satisfactory level. The Project has been properly implemented without any serious obstacles by focusing on particular parts of PDM (version 5.0) during the extension period. Therefore, we may conclude that the effectiveness of the Project is high during the extension period.

4-3 Efficiency

Efficiency of the Project is relatively high, judging from the following viewpoints.

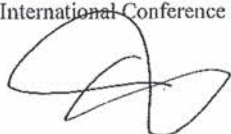
4-3-1 Inputs by Japanese Side

It seems that dispatch of Japanese experts, provision of equipment, trainings in third countries (Uganda and Egypt) and Japan, and local cost expenditures are very appropriate in general. Especially, a large number of extension officers have received trainings in rice-developed countries. It seems that most of equipment procured by the Project is utilized fully, while some difficulty is observed in coordination between rice unit and technical section responsible for management of the machines at SMOA level. The Project has only 2 Japanese experts in charge of instructing upland rice cultivation in as many as 6 States with long distance away from each other.

4-3-2 Inputs by Sudanese Side

A large number of staff of the SMOAs of the target 6 States has been involved in the project activities during the extension period. A substantial amount of local cost for the project activities have been borne by

¹ Tokyo International Conference on African Development



the SMOAs of the target 6 States. Especially, the SMOA of Gezira has allocated a significant amount of budget for the Project activities related to upland rice cultivation.

4-3-3 Implementation of the project activities and project management

The project activities have been carried out effectively, responding to the progress of activities in a flexible manner. The Project framework for the extension period was established as PDM version 5.0 at the end of the original Project period. The activities in this period were focused on the remaining parts of the previous PDM, i.e., development of upland rice cultivation method and capacity development of the SMOAs on rice.

The Joint Coordinating Committee meeting has been held at a frequency of twice a year. At the meeting, explanation on the progress of the project activities and the plan of activities in next term, and discussions on important issues have been done. The progress reports on the Project have been produced periodically in English and Japanese.

The Ministers, Director Generals and other officers of the relevant SMOAs have been changed many times during the Project period, especially in the extended duration. The Project team needed to explain the Project concept and progress to the new decision makers again and again. For this reason, the execution of the local budget for the Project was sometimes delayed or insufficient.

In addition, SMOAs sometimes failed to make timely arrangement of farm machinery and to provide transportation means for extension officers in demonstration farm activities.

In general, it seems that the project management has been done relatively well.

4-4 Impact

It is difficult to prospect achievability of the Overall Goal in future. Several positive impacts are observed. No negative impact is observed in this Terminal Evaluation.

4-4-1 Prospect for Achieving the Overall Goal

Overall Goal: "The quality of public services provided by the Ministry of Agriculture and the organizations concerned are improved through their capacity development."

Indicator 1: 50% of relevant agricultural parties (Production coop, Investors, Agricultural product vendors etc.) recognized increases in quality of the public agricultural services.

Quantitative data and information for assessing the degree of achievement of this indicator is not yet available. Therefore, it is difficult to judge the prospect whether this indicator will be achieved within 3-5 years after the completion of the project.

4-4-2 Other Impacts

(1) Exchange visit of the relevant SMOA officers (positive)

Information on the progress and achievement in each State has been shared by periodical meetings and the Project newsletter. More than 20 officers of SMOA of Sennar visited the trial field and demonstration farms in Gezira State on 16th September 2015, using its own budget. The direct observation of the relatively

developed rice fields and dialogues among the officers concerned may provide great impact to the visitors.

(2) Increase of number of farmers who are interesting in rice cultivation (positive)

Many farmers showed interest in upland rice cultivation and requested provision of rice seeds, as a result of the multi-year demonstration farm activities with very active field works carried out by the Japanese experts. Now, the Japanese experts are well known among farmers, and their presence has become a bridge among farmers, extension officers and the SMOAs.

(3) Public Relationship through media (positive)

Various media, including TV, newspaper, radio, etc. have taken up rice cultivation a lot of times at the occasions such as the rice field day, harvesting day, field visits by the Japanese experts and other persons concerned in the relevant States. It is assumed that Sudanese people have become aware on the progress of upland rice development in Sudan.

4-5 Sustainability

Overall sustainability of the Project is assessed as moderate level. Policy sustainability will be secured. Organizational sustainability will be secured in general. Financial sustainability might be secured. As for technical issues in upland rice cultivation, the Project successfully developed basis for introduction stage but continuous assistance from outside of the country seems to be necessary.

(1) Policy Aspect

As mentioned in 4-1 on Relevance in this report, the Government of Sudan considers that institutional capacity building, modernization of agriculture, and improvement of productivity are important. Rice has become one of the strategic crops. Therefore, policy sustainability on capacity building of officers of the government and promotion of rice cultivation will be secured.

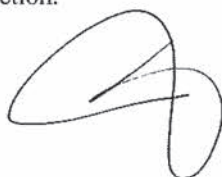
(2) Institutional/Organizational Aspect

The SMOAs in the target 6 States have created rice promotion/production unit by assigning relatively a large number of extension officers. The Ministers and Director Generals in the SMOAs are committed to upland rice promotion as a potential crop in the crop rotation. The coordination between the SMOAs and National Rice Project is kept well in terms of rice promotion. Therefore, it can be said that the SMOAs in the 6 States have appropriate organizational setup for promoting rice cultivation.

As for the Rice Sector Development Forum, continuation of meetings of the forum and the working group is necessary.

(3) Financial Aspect

The SMOAs in the target 6 States have allocated local cost for the project activities during the extension period. The annual action plans and 5-year rice development plan have been prepared to request necessary budget for the implementation. The National Rice Project is fully supporting budget allocation to rice promotion. Therefore, it is possible for the FMOA and SMOAs to continue capacity building mainly for upland rice production.



(4) Technical Aspect

As for extension officers in the SMOAs concerned, their capacity has improved year by year by participating in various trainings and the OJT at the fields. The technical/practical handbook on upland rice cultivation will be issued as a textbook for the extension officers. Therefore, it can be said that the Project has performed well to start upland rice production. However, upland rice cultivation in Sudan is still at an introduction stage. Further technical investigation and continuous trainings, especially in land leveling and weed control, are necessary to shift it to expansion stage.

In addition, production of quality rice seeds remains the key issue for commercial production of rice. Although the SMOAs concerned have tried to produce pure seeds of rice in the seed production farms or the demonstration farms under earnest assistance of the Project, the seed production is still far from a satisfactory level in terms of quality and quantity. To start commercial rice production, it is necessary to set up supply system of certified rice seeds. There also remain post-harvest handling techniques and marketing issue.

In summary, the Project successfully developed basis for introduction stage but continuous assistance from outside of the country seems to be necessary.

(5) Sustainability of Outputs achieved in the original Project period

The achievements in Output 1 are mostly buried in oblivion since the end of the original duration of the Project, raising substantial concern about the sustainability of the Project. Activities to sustain what was attained in Output 2 have declined partially, too.

Output 1

The Management System verified and proposed by the Project for human resource development and organizational capacity development has not been established yet. No department in FMOA is capacitated sufficiently to take over the role to lead human resource development and organizational capacity development as was played by the Project Team. The Procedures from Capacity Assessment and Need Assessment to the completion of training have not been applied by the directorates in FMOA that were involved in the Project. Despite the letter from the Training Unit in February 2014 requesting all the directorates in FMOA to prepare capacity building plan for the coming years based on the Capacity Development Guideline/Manual developed in the Project, all the directorates have returned to their old practices of training planning and management, not conducting Capacity Assessment or Need Assessment nor, more importantly, applying the "Learning by Doing" approach introduced by the Project. Therefore the Implementation Manual has not provided the intended benefit for FMOA. The continuous changes in the top & middle management of FMOA are the major reason for such a diminishing interest in the achievements of the Project.

Output 2

The National Rice Development Strategy (NRDS) still remains valid and is drawing refreshed attention from the new management of FMOA. The Rice Sector Development Forum, which was initiated in 2013 and 2014 as the Structure to Implement and Review NRDS, was discontinued, although the discussions on the bottleneck issues are continued in the annual workshop of the Project in the extended period.



Annual Action Plans for Rice Development are still formed, implemented, monitored and evaluated by participating SMOAs every year. SMOAs, particularly Gezira State, are also paying good efforts to maintain the Quality of Rice Seeds by thoroughly removing off-types in the seed production farms. The Willingness of Farmers to Grow Rice is kept high as farmers are exposed to the mostly positive results in the demonstration farms through attending such opportunities as field supervision (though not regarded as Farmers Field School) by SMOA / Japanese Experts and Rice Field Days.

4-6 Conclusions

Persons involved in the project activities have made a lot of efforts for achieving objectives of the Project. Their capacity in promotion of upland rice cultivation has been strengthened well at the SMOAs in the 6 States during the extension period. As for rice cultivation, there are good outcomes, for example, results of higher yield at the demonstration farms, that indicate profitability of rice cultivation, and governmental officials and farmers are ready for rice cultivation. Therefore, it can be concluded that the Project shall be terminated on schedule.

However, further capacity strengthening of the extension officers on upland rice cultivation is necessary and there are several technical issues on upland cultivation to be further developed.



5. Recommendations

5-1 Recommendations by the end of the Project

For Japanese experts and counterpart organizations

- (1) Prepare the latest Technical Handbook on Upland Rice Cultivation by:
 - Adding new findings and lessons gained in the technical trials and demonstration farm activities in 2015 season;
 - Describing the Technical Handbook is to be distributed only to Rice Units in SMOAs for its demonstration activities and ARC for its research activities;
 - Describing applicable conditions of the technique, for example, condition of irrigation, variation of climate, etc. It needs to clarify that the Handbook can be applied only for upland rice cultivation in irrigated farms (i.e. not for submerged/flooded rice or low land/paddy rice, nor for the rain-fed area). Some adjustment might be required if other varieties than NERICA 4 are planted. Although the Handbook includes lessons gained in demonstration activities in all six participating States, not only in Gezira where major technical trials are conducted, careful consideration should be paid to different conditions varying from area to area, and;
 - Describing target or potential level of rice yield if the field is managed well under the techniques written in the Handbook and there is no external hampering factor, showing achieved yield in the demonstration farms during the Project period.
- (2) Complete the capacity assessment of the extension officers of the participating six States, especially in those States of White Nile, Sennar, Gedaref, Northern and River Nile. In these five States, in particular, it needs to be carefully assessed whether at least two core staff members are capable enough to be basic-level trainer for other peer extension officers.

For FMOA and SMOAs

- (3) Approve plans and budgets to promote rice production for the next year(s) by FMOA and respective SMOAs. As most of the participating States have at least drafted their five-year plans, these plans and budgets should be reviewed and approved by the management of respective SMOAs and, ultimately, by FMOA to ensure the continuity of the effort.

5-2 Recommendations for sustaining the Project achievements after the end of the Project

For FMOA

- (1) Reactivate the Rice Sector Development Forum or any other form of stakeholder meeting to discuss bottleneck issues and suggest solutions and responsible parties for promoting rice production in Sudan. The involvement of various players, especially farmers and the private sector, is highly crucial.

For FMOA and SMOAs

- (2) Provide necessary and adequate technical support for the rice production activities of the private sector, particularly Arab Sudanese Seed Company. The private sector players are struggling with technical challenges, and any possible support should be offered so as to keep them on board.
- (3) Allocate and disburse sufficient budget for annual planning, implementation, monitoring and evaluation of rice promotion in respective States with adequate financial support and



monitoring/supervision from FMoA. Special attention should be paid to the payment to farmers for the purchase of harvest, mobilization of agricultural inputs and machineries, and activity costs for extension officers, in particular to provide transportation for them.

For FMoA and ARC

- (4) Conduct research, and draft, authorize and release official Technical Handbook for distribution to farmers.
- (5) Test and approve herbicides having selective effect on weeds in rice field as soon as possible.

For SMOAs

- (6) Fully utilize the rice milling machines provided in the Project. In order to convince more farmers of the commercial viability of rice production, it is crucial to present marketable white rice as the final product to the eyes of farmers.
- (7) Train seed-producing farmers thoroughly to keep purity of rice seeds by making the utmost effort EVERY YEAR to rogue (remove off-types). Farmers can reproduce seeds for themselves as rice is self-pollinated. It is also highly recommended to pay farmers higher price based on grade of seed purity (e.g. ratio of off-type) in order to appreciate and encourage high quality seed production.
- (8) Conduct in-country training, including refresh training, of extension officers by the most competent leader extension officers capacitated in the Project. Knowledge sharing by using field record diaries is also recommended.
- (9) Encourage all extension officers to continue refining their knowledge and skills by self-learning and self-reflection through the usage of the field record diary.
- (10) Review the procedures, especially the "Learning by Doing" practices, and the management system proposed by the Project for human resource development and organizational capacity development, and re-adopt them where possible and applicable. Training alone is not sufficient at all for effective capacity development. No further cooperation can be considered with any counterpart organization demonstrating no action to actually harness capacity development to improve its daily work.

5-3 Recommendations for further promotion of rice production

For FMoA

- (1) Strengthen the capacity of National Rice Project in FMoA to lead the national initiative in close cooperation with States. As rice is still a new crop in most parts of Sudan, the Federal Government should take a more leading and proactive role than ordinary coordination.
- (2) Encourage the private sector to be involved more actively, not only for rice production but also for supply of agricultural inputs and machineries, seed production, post-harvest processing, storage and distribution, through preferential policies such as subsidies and tax exemptions. It should be carefully planned what roles should/can be played by the public sector as the pilot to navigate the whole rice



sector development.

For FMoA and SMoAs

- (3) Open commercial trade opportunities and channels for rice producers both in the domestic market and for exporting. Without a good prospect of sales (i.e. profits), no farmer will be convinced to start cultivating rice. Farmers should be capacitated to meet the quality, quantity and price required to enter the existing marketplace through opening commercial trade opportunities and channels for rice producers.
- (4) Forming farmer cooperatives specialized in rice can help them provide sufficient quantity, keep quality standards, negotiate better price for their produce, procure inputs at favorable terms, and receive financing.
- (5) Ensure that proper storage and post-harvest processing services with appropriate facilities, equipment and operations, either by public agencies or private operators, are available for rice producers. While rice milling machines are now in operation in the targeted States in the Project, further investment is needed to produce milled white rice in good quality and larger quantity to meet the market requirement.

For ARC

- (6) Conduct research and development on rice in all targeted States, including verifying and developing new varieties with a broader range of traits adaptable to different conditions in various parts of Sudan, post-harvest processing and socio-economic aspects. While Sudan has limited resources, partnerships with international organizations like International Rice Research Institute (IRRI) should be pursued. Close collaboration and mutual learning between ARC and extension organizations should be enhanced to integrate research and technology transfer.

For ARC, FMoA and SMoAs

- (7) Strengthen the existing systems for maintaining varieties and propagating pure rice seeds. Encourage private sector players to produce pure rice seeds. Production of certified seeds can be taken by individual farmers (to reproduce seeds only for their own use) and private firms well trained and equipped.

For FMoA and SMoAs

- (8) Continue searching, testing and introducing agricultural machineries suitable to rice farming in Sudan, for preparing land, sowing, applying fertilizer and pesticides, weeding mechanically, harvesting, and post-harvest processing. Encourage forming machinery user associations or providing supportive financing to make agricultural machineries, or, more importantly, agricultural machinery services, affordable and accessible for farmers.

For FMoA

- (9) Strengthen the existing system for technology transfer and extension by establishing a Center of Excellence to accumulate and refine practical rice production technologies for cultivation and



post-harvest processing, and transfer these technologies from master trainers to extension officers, farmers, research technicians and machine operators through training, refresh training and technical advisory. It should be noted that, at the moment, field practices in farm management, harvesting and post-harvest processing have the largest impact on productivity, far more than any other factors. As it is quite difficult to design a “technical package” uniformly applicable in Sudan as a whole, capable human resources who can adjust rice production practices properly in various given environments are the indispensable key to success.

- (10) Expand / revive the extension network to serve the need of more farmers interested in rice cultivation. Extension services should be equipped with sufficient materials, equipment and transportation means. Given that the government has limited resources, however, relatively small-scale and high-standard demonstration / pilot farms managed by leading farmers would be an effective and efficient measure to promote rice production on a farmer-to-farmer basis. State Rice Production / Promotion Units can also fill regional void by placing sub units where needed and possible.

6. Lessons Learned

- (1) During the extended Project period, follow-up activities should/could have been conducted to some extent for those Outputs achieved in the original duration of the Project. Even though the best effort is made to ensure sustainability at the end of the original period, subsequent changes in top management of counterpart organization can affect its interest and commitment positively or negatively.
- (2) Geographical expansion needs to be planned really deliberately in light of available resources and inputs. The Japanese experts have consistently insisted on “step-by-step” approach, and they have a good reason. There is a definite limit to stretch the available resources, and each State would take time to develop its own variation of rice production technologies.
- (3) The Project has applied the “Learning by Doing” approach in all the capacity development activities throughout the Project. Judging from the improved performance demonstrated by the counterpart persons in fulfilling their own duties, this approach has proved quite effective.



RECORD OF DISCUSSIONS
ON
THE EXTENSION OF THE PROJECT DURATION
OF
THE CAPACITY BUILDING PROJECT FOR THE
IMPLEMENTATION OF “THE EXECUTIVE PROGRAMME FOR
THE AGRICULTURAL REVIVAL”
IN
THE REPUBLIC OF THE SUDAN
AGREED UPON BETWEEN
THE MINISTRY OF AGRICULTURE AND IRRIGATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Khartoum, 12 February, 2014



Mr. Hiroyuki Mori
Chief Representative
JICA Sudan Office



Mr. Baha Eldin Mohamed Khamis
Undersecretary
Ministry of Agriculture and Irrigation

Based on the Minutes of Meetings on Terminal Evaluation on the Capacity Building Project for the Implementation of “The Executive Programme for the Agricultural Revival” (hereinafter referred to as “the Project”) signed on 22nd October, 2013 between the Ministry of Agriculture and Irrigation, the Government of Sudan (hereinafter referred to as “MOAI”) and the Japan International Cooperation Agency (hereinafter referred to as “JICA”), JICA held a series of discussions with MOAI and relevant organizations to develop a detailed plan of the two-year extension of the duration of the Project.

Both parties agreed to the details of the Project and main points discussed as described in the Appendix 1 and the Appendix 2, respectively, and to request their respective governments to proceed with the necessary procedures for implementation of the Project.

Both parties also agreed that MoAI, the counterpart to JICA, will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the extended implementation period in order to contribute toward social and economic development of Sudan.

The Project will be implemented within the framework of the Note Verbales to be exchanged between the Government of Japan (hereinafter referred to as “GOJ”) and the Government of Sudan (hereinafter referred to as “GOS”).

The effectiveness of the record of discussions is subject to the exchange of the Note Verbales.

Appendix 1: Project Description

Appendix 2: Main Points Discussed

Appendix 3: Minutes of Meetings on Terminal Evaluation

PROJECT DESCRIPTION

I. BACKGROUND

In accordance with the R/D signed on 21 January, 2010, the Project for the Implementation of the Executive Programme for the Agricultural Revival has been implemented since March 2010 up to March 2014. The Terminal Evaluation for the Project was conducted in October 2013 and concluded that the Project has been implemented successfully and will achieve most of its Project Purpose and Outputs. However, based on the recommendations provided by the Terminal Evaluation, the Project is in need of extension of the duration for additional two years to achieve the unfulfilled part of the Project Purpose, mainly to develop the capacity of extension officers for promoting production of upland rice and to address remaining technical issues for producing upland rice.

II. OUTLINE OF THE PROJECT

Details of the Project during the extended duration are described in the Logical Framework (Project Design Matrix: PDM) (Annex 1) and the tentative Plan of Operation (Annex 2).

1. Revision of PDM

PDM is revised from Ver. 4.1 to Ver. 5.0 to be narrowed down to those Outputs and Activities related to the unfulfilled part of the Project Purpose as described in the Terminal Evaluation Report.

(1) Overall Goal

No change. Verification needs to be implemented by the end of the extended duration of the Project.

(2) Project Purpose

No change to the Narrative Summary. The Objectively Verifiable Indicators are modified to reflect the changes made to the Output Indicators described in (3) as below. The Means of Verification of the Project Purpose 1 is revised to be based on more objective capacity assessment by JICA Experts and counterpart managers rather than self-assessment survey of the counterpart staff.

(3) Outputs

While the Output 1 was successfully completed, the Output 2 has the Indicators 2.4 and 2.6 of the revised PDM that should to be tackled

continuously.

With respect to the Indicator 2.6, the Project will focus on core group of two extension officers respectively in five States other than Gezira State.

(4) Activities in the Narrative Summary

The Activities 2.2, 2.4, 2.5.1, 2.5.2 and 2.6 are continued to fulfill the Output Indicators 2.4 and 2.6. The other activities are completed, but need to be continued by the Sudanese side to ensure sustainability. Japanese experts, however, may give advice if necessary to the activities to be continued by the Sudanese side.

2. Input

(1) Input by JICA

(a) Dispatch of Experts

- One team leader / rice development program
- Two rice cultivation experts
- Short-term experts if necessary
- One project coordinator / monitoring and evaluation

(b) Training

- Training in Japan and other countries

(c) Machinery and Equipment

- Vehicles
- Soil analysis equipment
- Post-harvest processing equipment

In case of importation, the machinery, equipment and other materials under II-2 (1) (c) above will become the property of the GOS upon being delivered C.I.F. (cost, insurance and freight) to the Sudanese authorities concerned at the ports and/or airports of disembarkation.

Input other than indicated above will be determined through mutual consultations between JICA and MOAI during the implementation of the Project, as necessary.

(2) Input by MOAI and relevant organizations

MOAI and relevant organizations as referred to in II-3 will take necessary measures to provide at its own expense:

- (a) Services of counterpart personnel and administrative personnel in MOAI and relevant organizations as referred to in II-3;
- (b) Retention of trained counterpart personnel in present position to improve the capacity on rice cultivation at least during the extended duration of the Project;
- (c) Suitable office space with necessary equipment;
- (d) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by

- JICA;
- (e) Information as well as support in obtaining medical service;
- (f) Credentials or identification cards;
- (g) Available data (including maps and photographs) and information related to the Project;
- (h) Running expenses necessary for the implementation of the Project;
- (i) Expenses necessary for transportation within Sudan of the equipment referred to in II-2 (1) as well as for the installation, operation and maintenance thereof; and
- (j) Necessary facilities to the JICA experts for the remittance as well as utilization of the funds introduced into Sudan from Japan in connection with the implementation of the Project

3. Implementation Structure

The Project organization chart is given in the Annex 3. The roles and assignments of relevant organizations are as follows:

- (1) MOAI
 - (a) Director General, General Directorate for International Cooperation and Investment, will be responsible for overall administration and implementation of the Project.
 - (b) National Rice Coordinator, National Rice Project, Rehabilitation Unit, will be primarily responsible for planning and implementation of the Project activities on the Sudanese side.
- (2) State Ministries of Agriculture of participating States (hereinafter referred to as "SMOAs")

Director Generals in respective SMOAs will be responsible for implementation of the Project activities on the Sudanese side in respective States.
- (3) Agriculture Research Corporation (hereinafter referred to as "ARC")

National Rice Research Coordinator, ARC will be engaged in technology development activities in collaboration with the Project.
- (4) JICA Experts

The JICA experts will give necessary technical guidance, advice and recommendations to MOAI and relevant organizations on any matters pertaining to the implementation of the Project.
- (5) Joint Coordinating Committee

The current Joint Coordinating Committee (hereinafter referred to as "JCC") will remain to be held in order to facilitate inter-organizational coordination. JCC will be held at least once a year and whenever deemed as necessary. JCC will approve an annual work plan, review overall progress, conduct monitoring and evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. The list of the

current members of JCC is shown in the Annex 4.

4. Project Sites and Beneficiaries

(1) Project Sites

Based primarily in Gezira State, providing training for Sennar, White Nile, Gedaref, Northern and River Nile States

(2) Beneficiaries

Direct beneficiaries are the extension officers in SMOAs. Indirect beneficiaries include farmers participating in demonstration farm activities and other training/publicity opportunities, and other stakeholders such as private companies participating in the Rice Sector Development Forum activities.

5. Duration of Extension

From 29th March, 2014 to 28th March, 2016 (two-year extension)

6. Reports

Following reports will be prepared and submitted the following reports to JICA and MOAI in English.

- (1) Annual Work Plans at the commencement of work in respective years in Sudan
- (2) Progress Reports at the time of five months after the commencement of work in respective years in Sudan
- (3) Final Report at the completion of the Project

7. Environmental and Social Considerations

MOAI agreed to abide by 'JICA Guidelines for Environmental and Social Considerations' in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project.

III. UNDERTAKINGS OF MOAI AND GOS

1. MOAI and GOS will take necessary measures to:

- (1) ensure that the technologies and knowledge acquired by the Sudanese nationals as a result of Japanese technical cooperation contributes to the economic and social development of Sudan, and that the knowledge and experience acquired by the personnel of Sudan from technical training as

well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and

- (2) grant privileges, exemptions and benefits to the JICA experts referred to in II-2 (1) above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in Sudan.

2. MOAI and GOS will take necessary measures to:

- (1) provide security-related information as well as measures to ensure the safety of the JICA experts;
- (2) permit the JICA experts to enter, leave and sojourn in Sudan for the duration of their assignments therein and exempt them from foreign registration requirements and consular fees.
- (3) exempt the JICA experts from taxes and any other charges on the equipment, machinery and other material necessary for the implementation of the Project;
- (4) exempt the JICA experts from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to them and/or remitted to them from abroad for their services in connection with the implementation of the Project; and
- (5) meet taxes and any other charges on the equipment, machinery and other material, referred to in II-3 above, necessary for the implementation of the Project.

3. MOAI will bear claims, if any arises, against the JICA experts resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Project, except when such claims arise from gross negligence or willful misconduct on the part of the JICA experts.

IV. EVALUATION

JICA and MOAI will jointly conduct the following evaluations and reviews.

1. Terminal evaluation during the last six (6) months of the extended cooperation term

JICA will conduct the following evaluations and surveys to mainly verify sustainability and impact of the Project and draw lessons. MOAI is required to provide necessary support for them.

1. Ex-post evaluation three (3) years after the project completion, in principle
2. Follow-up surveys on necessity basis

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, MOAI will take appropriate measures to make the Project widely known to the people of Sudan.

VI. MUTUAL CONSULTATION

JICA and MOAI will consult each other whenever any major issues arise in the course of Project implementation.

VII. AMENDMENTS

The Record of Discussions may be amended by the minutes of meetings between JICA and MOAI.

The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the record of discussions.

- Annex 1 Logical Framework (Project Design Matrix: PDM)
- Annex 2 Tentative Plan of Operation
- Annex 3 Project Organization Chart
- Annex 4 List of Members of Joint Coordinating Committee

MAIN POINTS DISCUSSED

Activities to be Continued

1. Only those Activities (i.e. 2.2, 2.4, 2.5.1, 2.5.2, and 2.6), which are linked to the unfulfilled Output Indicators 2.4 (capacity development of extension officers) and 2.6 (upland rice technology development), will be continued under the direct technical support of the JICA Experts.
2. Other Activities, including those related to Output 2 such as policy planning, rice seed production, and extension services to farmers, are to be continued by the Sudanese side to ensure sustainability. The JICA Experts, however, may provide advice with respect to these Activities where possible and necessary.

Capacity Development of Extension Officers

3. The available technical resources, particularly the JICA Experts, are stretched thin in developing the capacity of the rapidly expanding force of extension officers engaged in upland rice promotion in all the participating States. More focused approach in terms of the scope of the Project is required to attain appropriate achievements within the limitations of time frame and available resources.
4. JICA is concerned about the broad geographical scope of the Project to cover six States, including Sennar, Gedaref, White Nile, Northern and Rive Nile where the original Output Indicator 2.6 was not achieved. However, all the six States will stay in the Project during the extended period. The States other than Gezira, while participating in the Project for a relative short period, demonstrated significant improvement in their commitment and performance in the last year of the original Project period, and thus hold good prospects of successful capacity development.
5. The capacity development of extension officers will be directed in the five States excluding Gezira State where the Output Indicator 2.6 was achieved.
6. In light of 3. and 4. above, it is needed to change the Output Indicator 2.6 to limit the number of target extension officers to be trained to be qualified as trainer to TWO core persons, not 80% of all training participants, respectively in the five States other than Gezira State.
7. The participating States will take necessary measures to transfer upland rice production technologies from the core staff as mentioned above to other extension officers engaged in promotion of upland rice cultivation in respective States.
8. On-the-Job Training (OJT) for the extension officers by the JICA Experts in

the demonstration farm activities in the participating States will be conducted only on pre-planned occasions to harness the limited technical resources most efficiently.

9. Gezira State, with its technical human resources developed by the Project to date, will play a crucial role in providing technical support for other participating States for the sustainable rice cultivation. In this regard, the qualified trainers in Gezira State will be provided with necessary support for the technology transfer by the JICA Experts.

Upland Rice Technology Development

10. Upland rice technology development activities will be conducted mainly in Gezira State with its experimental trial field, demonstration farms, and trained staff.
11. It is needed to involve ARC more closely in the upland rice production technology development activities. While comprehensive capacity development of ARC is beyond the scope of the Project, it is needed to develop rice production technologies jointly with ARC, and to transfer rice production technologies as much as possible to ARC through joint research and development activities.
12. By the end of the extended period of the Project, following achievements shall be made.
 - (1) Clear measurable and/or visual guidelines to conduct work and observation in the field are described in the Technical Handbook and learned by the “trainer”
 - (2) Practical guidelines and know-how of land plotting (farm size), land leveling, and irrigation timing and quantity are described in the Technical Handbook and learned by the “trainer”
 - (3) Basic soil/water analysis methods using pH meter and EC meter are described in the Technical Handbook and learned by the “trainer”
 - (4) Daily records are kept by extension officers on plant growth conditions, works in the field (particularly irrigation and application of fertilizer/manure), and soil/water analysis if any
 - (5) Basic guidelines and precautions for application of fertilizer/manure are described in the Technical Handbook and learned by the “trainer”
 - (6) Wider plant spacing and weed control tools/machines are recommended in the Technical Handbook
 - (7) Two to three effective chemical herbicides are recommended for regulatory approval
 - (8) Basic plant protection measures against pests and birds are described in the Technical Handbook and learned by the “trainer”
 - (9) Practical instructions for identifying and removing off-types in the field are visually described in the Technical Handbook and learned by the “trainer”
 - (10) Practical instructions to judge proper timing of harvesting (water

content is more than 20%) in the field are described in the Technical Handbook and learned by the “trainer”

- (11) Tentative marketable standards of milled rice are proposed in the Technical Handbook based on analysis of consumption behaviors
- (12) Practical instructions for treating and storing brown rice and milling work to produce rice with tentative standard/target quality are described in the Technical Handbook and learned by the “trainer”
- (13) Basic work calendar as reference for annual planning is prepared and included in Technical Handbook

Project Design Matrix (PDM) [Ver. 5.0] (for extended duration)

Project Title: Capacity Building Project for the Implementation of "The Executive Programme for the Agricultural Revival"

Project Period: March 2014 – March 2016 (two-year extension on top of the original duration from March 2010 to March 2014)

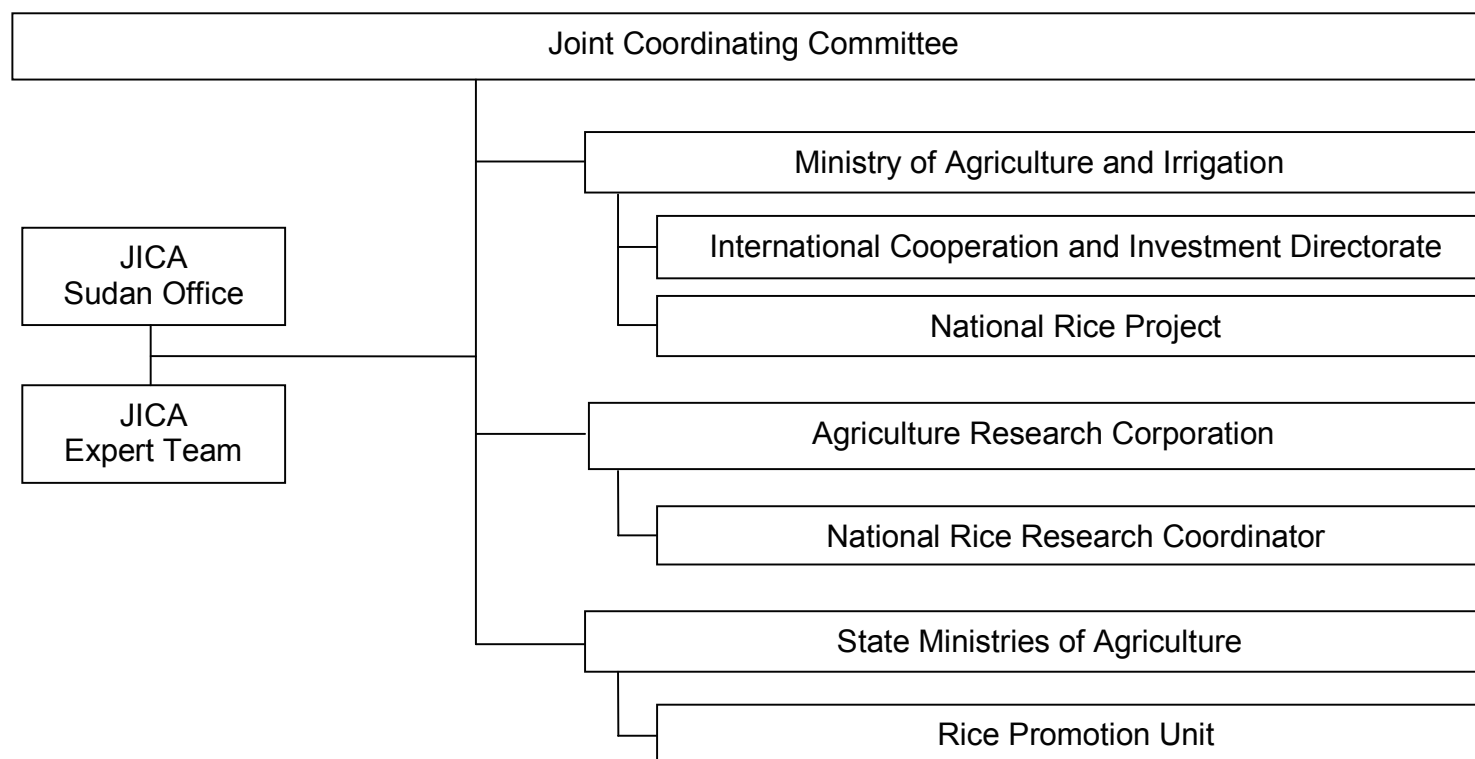
Narrative Summary	Objectively Verifiable Indicators (Baseline in 2010 and Target in 2013)	Means of Verification	Progress at Feb 2014	Important Assumptions
Overall Goal: The quality of public services provided by the Ministry of Agriculture and the organizations concerned are improved through their capacity development.	1. 50% of relevant agricultural parties (Production coop, Investors, Agricultural product vendors etc.) recognized increases in quality of the public agricultural services.	Questionnaire survey to stakeholders	Yet to be verified	Political stability, economic policy stability
Project Purpose: Human and organizational capacity of the Ministry of Agriculture and the organizations concerned is strengthened to materialize "The Executive Programme for the Agricultural Revival."	1. By the end of the project period, 60% of the staff members of the Federal Ministry of Agriculture, and core staff of State Ministries of Agriculture and other organizations concerned, involved in the Project Activities, demonstrate improvements in action planning, implementation, monitoring & evaluation relating to the "Executive Programme for the Agricultural Revival".	Result of capacity assessment by JICA Experts and counterpart managers	Achieved for Output 1, but not achieved for Output 2	
	2. By the end of the project period, 80% of the staff of the Federal Ministry of Agriculture, and core staff of State Ministries of Agriculture and other organizations concerned, who received training, show improvement in the score of the self capacity evaluation.	Result of self-assessment survey of counterpart staff	Achieved for Output 1, but not achieved for Output 2	
Outputs: 1. Through the experimental activities of the Project, a model system of human resource development and organizational capacity development of the Ministry of Agriculture has been developed. Development of a model system should include recommendation on the following issues. ✓ An appropriate implementation system ✓ Procedures of the capacity assessment (CA) and needs analysis (NA) ✓ Procedures of making an annual training plan based on the CA and NA (including theme selection and design of training content). ✓ An appropriate preparation for trainings ✓ Procedures of training implementation ✓ Appropriate methods of supervision and monitoring during training ✓ An appropriate evaluation method of trainings is recommended (including the analysis method of feedback sheets from the participants)	1.1 The appropriateness of the experimental management system is verified.	✓ Mandate and member list of the Working Group for human resource development and organizational capacity development ✓ Attendance rates of the Working Group members at regular meetings ✓ Attendance rates of trainees who the Working Group selected ✓ Feedback sheets which trainees filled in	Achieved	Training policy of the Federal Ministry of Agriculture is sustained [PRECONDITION] Sudanese counterparts of the Project are not shifted frequently. Participants of the trainings provided by the Project continue taking charge of the present work Delivery of the equipment procured by the Project is not delayed much
	1.2 The appropriateness of a series of procedures from CA and NA to the completion of training is verified.	Feedback sheets which trainees filled in	Achieved	
	1.3 An implementation manual is compiled including verified management system and procedures from CA and NA to the completion of training	Implementation manual	Achieved	
	2.1 The NRDS draft is formulated	Draft NRDS	Achieved	
	2.2 A structure to implement and review (monitoring and evaluating progress and reflecting evaluation results to the next plan) the NRDS is recommended.	Document on recommendation	Achieved	
	2.3 Annual action plans for rice development (analysis, planning, monitoring & evaluation, technical development, seed production, and extension) is formulated.	Annual action plans in annual reports	Achieved	
	2.4 A practical/technical handbook on upland rice cultivation is prepared	Practical/technical manual	Some issues remain	
(*) Qualifications of the "trainer" in Indicator 2.6 are measured based on: 1) Degree of mastering basic rice cultivation techniques 2) Ability to respond properly when problems on rice cultivation happen in field by utilizing basic rice cultivation techniques 3) Persons who recorded higher yield of rice 4) Effort and working attitude on rice cultivation activity 5) Relationship of mutual trust between extension officer and farmer	2.5 Quality of rice seed is improved.	Inspection record(s) of rice seed cultivated in rice production fields	Achieved	
	2.6 More than 80% of training participants in Gezira State, and two of trained participants respectively in five States excluding Gezira State, are qualified as trainers(*) on appropriate rice cultivation technique.	Evaluation by JICA experts and Sudanese counterparts	Not achieved	
	2.7 More than 60% of farmers who grew upland rice in demonstration farms show a willingness to grow rice again.	Result of questionnaire survey	Achieved	

Narrative Summary	Status at February 2014	Input from Sudanese Side	Input from Japanese Side	Important Assumptions
Activities: Human resource & organizational development	Completed and to be continued by the counterparts or Sudanese side			
1.1 To develop a model system of human resource development for the Ministry of Agriculture				
1.1.1 To conduct training needs assessment based on the mandate of each directorate of the Ministry of Agriculture				
1.1.2 To design trainings based on the assessment results				
1.1.3 To conduct trainings based on the training plans formulated through 1.1.1 and 1.1.2				
1.1.4 To prepare an implementation manual in which experiences and lessons learnt are compiled				
1.2 To develop a model system of organizational capacity development of the Ministry of Agriculture	Completed and to be continued by the counterparts or Sudanese side			
1.2.1 To establish Task Teams composed of staff of the target directorates/units which formulate and implement action plans				
1.2.2 To set up criteria to select Task Team members				
1.2.3 To conduct workshops to enhance the understanding of the Task Teams about their activities				
1.2.4 To assist the Task Teams to formulate action plans (PDM and PO)				
1.2.5 To assist the Task Teams to implement planned actions in respective directorates/units				
1.2.6 To monitor the progress of Task Team activities				
1.2.7 To support the arrangement of presentation by the Task Teams conducted at the end of their activities				
1.2.8 To formulate an action plan to improve overall information management & infrastructure management in the Ministry of Agriculture				
1.3 To establish a monitoring and evaluation (M&E) and management system of capacity development activities	Completed, and to be continued by the counterparts or Sudanese side			
1.3.1 To organize a working group (WG) for capacity development composed of representatives from target directorates/units				
1.3.2 To formulate TOR and regulations of the WG				
1.3.3 To set up agenda and hold meetings regularly				
1.3.4 To establish a M&E framework				
1.3.5 To enhance the commitment of working group members to Task Team activities				
1.3.6 To enhance the WG's capacity to supervise, monitor and evaluate all capacity development activities				
1.4 To prepare annual reports compiling review of Activities in 1.1, 1.2 and 1.3 and recommendation for plans in next year on human resource development, organizational capacity development, and the M& E and management system	Completed and to be continued by the counterparts or Sudanese side			

Narrative Summary		Status at February 2014	Input from Sudanese Side	Input from Japanese Side	Important Assumptions
<u>Rice development</u>		Completed and to be continued by the counterparts or Sudanese side	As specified in the Record of Discussions between JICA and Ministry of Agriculture and Irrigation as of XX February 2014.	As specified in the Record of Discussions between JICA and Ministry of Agriculture and Irrigation as of XX February 2014.	
2.1.	To carry out planning, monitoring and evaluation for promotion of rice production in Sudan				
2.1.1	To collect and analyze information on rice cultivation development (review of rice cultivation development, data collection and analysis on current regulations and environment, and market analysis [value chain analysis])				
2.1.2	To assist the Federal Ministry of Agriculture to formulate the National Rice Development Strategy (incl. holding workshops on the NRDS formulation process)				
2.2.	To develop appropriate upland rice cultivation technique	Some issues remain to be addressed			
2.2.1	To conduct field experiments (seed rate trial, irrigation interval trial, fertilizer trial, weed control trial, etc.) in Gezira				
2.2.2	To collaborate with Agricultural Research Corporation in developing rice cultivation technique such as weed control (herbicide trial)				
2.2.3	To identify issues of the current harvest & post-harvest process				
2.2.4	To discuss and propose appropriate harvest & post-harvest technique				
2.3	To improve upland rice seed production technique	Completed and to be continued by the counterparts or Sudanese side			
2.3.1	To provide technical advices on seed production for Ministry of Agriculture and Irrigation and State Ministries of Agriculture				
2.3.2	To conduct model cultivation on seed production at demonstration farms in Gezira				
2.4	To train agricultural extension workers to be trainers on appropriate upland rice cultivation	Not fully completed			
2.4.1	To conduct TOT (in country) to transfer appropriate technique on upland rice cultivation				
2.4.2	To conduct training in third country/Japan to transfer appropriate technique on upland rice cultivation				
2.5	To demonstrate rice cultivation to expose farmers to appropriate upland rice cultivation technique	To be continued by utilizing the results of 2.2 and 2.3			
2.5.1	To grow upland rice in demonstration farms in Gezira, White Nile, Sennar, Gedaref, River Nile and Northern States				
2.5.2	To transfer appropriate upland rice cultivation technique to farmers through cultivation in demonstration farms				
2.5.3	To hold Farmers Field Schools to transfer appropriate upland rice cultivation technique	Completed and to be continued by the counterparts or Sudanese side			
2.5.4	To conduct Rice Field Day events to raise awareness of farmers and the private sector, etc. on upland rice cultivation and marketing				
2.6	To prepare a handbook on rice cultivation technique based on results of activities in 2.2 together with those in 2.3, 2.4 and 2.5.	To be revised based on the results of 2.2 and 2.3			
2.7	To conduct planning, monitoring and evaluation of rice development on a regular basis	Completed and to be continued by the counterparts or Sudanese side			
2.7.1	To prepare annual reports on rice cultivation development which present plans and progress/results on various issues (analysis, planning, monitoring & evaluation, technical development, seed production, and extension)				
2.7.2	To hold wrap-up workshops to present results of the year, lessons learnt and plans for the next year				
2.7.3	To hold forums for national rice promotion to share information on rice cultivation development				

ANNEX 2 TENTATIVE PLAN OF OPERATION

	2014										2015										2016			
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
[COMPLETED] 2.1 To carry out planning, monitoring and evaluation for promotion of rice production in Sudan																								
Annual planning, monitoring and evaluation by the Sudanese side																								
2.2 To develop appropriate upland rice cultivation technique																								
2.2.1 To conduct field experiments (seed rate trial, irrigation interval trial, fertilizer trial, weed control trial, etc.) in Gezira																								
2.2.2 To collaborate with Agricultural Research Corporation in developing rice cultivation technique such as weed control (herbicide trial)																								
2.2.3 To identify issues of the current harvest & post-harvest process																								
2.2.4 To discuss and propose appropriate harvest & post-harvest technique																								
[COMPLETED] 2.3 To improve upland rice seed production technique																								
Seed production by the Sudanese side																								
2.4 To train agricultural extension workers to be trainers on appropriate upland rice cultivation																								
2.4.1 To conduct TOT (in country) to transfer appropriate technique on upland rice cultivation																								
2.4.2 To conduct training in third country/Japan to transfer appropriate technique on upland rice cultivation																								
2.5 To demonstrate rice cultivation to expose farmers to appropriate upland rice cultivation technique																								
2.5.1 To grow upland rice in demonstration farms in Gezira, White Nile, Sennar, Gedaref, River Nile and Northern States																								
2.5.2 To transfer appropriate upland rice cultivation technique to farmers through cultivation in demonstration farms																								
[COMPLETED] Farmers field schools by the Sudanese side																								
[COMPLETED] Rice Field Day by the Sudane side																								
2.6 To prepare a handbook on rice cultivation technique based on results of activities in 2.2 together with those in 2.3, 2.4 and 2.5																								
2.6 To prepare a handbook on rice cultivation technique based on results of activities in 2.2 together with those in 2.3, 2.4 and 2.5.																								
[COMPLETED] 2.7 To conduct planning, monitoring and evaluation of rice development on a regular basis																								
Rice Sector Development Forum and Working Group by the Sudanese side																								

Project Organization Chart

LIST OF MEMBERS OF JOINT COORDINATING COMMITTEE (JCC)

Chairperson:

- Undersecretary, MOAI

Members:

- Director General, General Directorate of International Cooperation and Investment
- National Rice Coordinator
- Representative of Agriculture Research Corporation (ARC)
- Director Generals of State Ministries of Agriculture (Gezira, Sennar, Gedaref, White Nile, River Nile and Northern)
- Leader of Japanese Expert Team
- Japanese Experts for the Project
- Representative of Ministry of Finance and National Economy
- Representative of JICA Sudan Office
- Others appointed by the Chairpersons

Observers:

- Representative of Ministry of Foreign Affairs
- Representative of Embassy of Japan in Sudan

Annex 2 Activities and Schedule of the Terminal Evaluation

Date	Day	Time	Activities
11-Oct	Sun	11:00-12:00	Meeting with DG, International Cooperation, Ministry of Agriculture and Forestry
		13:00-14:00	Joint Evaluation Team Meeting
12-Oct	Mon	09:00-10:00	Interview with National Rice Coordinator
		10:00-11:00	Interview with Arab Authority
		11:30-12:30	Interview with National Rice Research Coordinator
		14:00-14:30	Interview with Directorate of International Cooperation, Ministry of Agriculture and Forestry
		14:30-15:30	Interview with Training Unit on follow-up of Output 1
13-Oct	Tue	10:00-12:00	Interview with JICA Experts
		12:00-13:00	Interview with Directorate of International Cooperation, Ministry of Agriculture and Forestry
14-Oct	Wed	AM	Move from Khartoum to Wad Medani, Gezira State and breakfast
		11:00-12:30	Interview with Minister and DG, Gezira State Ministry of Agriculture
		12:30-14:00	Visit to trial site in Um Barona
		14:30-15:30	Interview and site visit in Agricultural Research Corporation
15-Oct	Thu	09:00-11:00	Interview with Rice Production Unit, Gezira State Ministry of Agriculture
		11:30-12:30	Visit to demonstration farm in Rahad Scheme
		13:00-14:30	Interview with JICA Experts
16-Oct	Fri		Documentation in Khartoum
17-Oct	Sat	AM	Move from Khartoum to Wad Medani (Gezira State)
		11:00-12:00	Site visit to demonstration farm in Wad Al Naim, Gezira State
		13:00-15:00	Site visit to demonstration farm and seed production farm in Wad Alasha, Gezira State
18-Oct	Sun	AM	Move from Wad Medani to Al Fau
		10:00-11:00	Site visit to a demonstration farm in Al Fau, Gedaref State
		13:00-14:00	Interview with Minister, DG & Rice Promotion Unit, Gedaref State Ministry of Agriculture
		PM	Move from Gedaref to Wad Medani
19-Oct	Mon	AM	Move from Wad Medani to Sennar
		09:30-11:30	Interview with Minister & Rice Promotion Unit, Sennar State Ministry of Agriculture
		13:00-16:00	Site visit to a demonstration farms in Maiuruno Almergani, and Almahlaj, Sennar State
		PM	Move from Sennar to Kosti
20-Oct	Tue	09:30-10:30	Interview with Minister, DG & Rice Promotion Unit, White Nile State Ministry of Agriculture
		12:00-13:00	Visit to ARC Kosti Research Station
		13:00-14:00	Site visit to a demonstration farm in Elfados 1&2, White Nile State
		PM	Move from Kosti to Khartoum
21-Oct	Wed	AM-PM	Move from Khartoum to Dongola (Northern State)
		15:00-16:00	Interview with DG & Rice Promotion Unit, Northern State Ministry of Agriculture
		16:00-17:00	Site visit to a demonstration farms in Zawrat and Dongola Island, Northern State
22-Oct	Thu	AM	Move from Dongola to Ed Damar (River Nile State)
		14:00-15:00	Interview with DG & Rice Promotion Unit, River Nile State Ministry of Agriculture
		15:30-17:00	Site visit to a demonstration farms in Atbara 1&2, River Nile State
23-Oct	Fri		Move from Atbara (River Nile State) to Khartoum Draft Evaluation Report
24-Oct	Sat		Draft Evaluation Report
25-Oct	Sun	11:00-12:30	Joint Evaluation Team Meeting
		13:00-14:00	Meeting with DG, International Cooperation, Ministry of Agriculture and Forests
26-Oct	Mon		Finalize Evaluation Report
27-Oct	Tue	11:00-13:00	Report to JCC and signing of Minutes of Meetings

Annex 3 List of Japanese Experts Dispatched

(including planned schedule)

Remark: M/M= Man-Month

Name of Expert	Field of Expert	Period of stay in Sudan			in Japan Days	Total M/M	Y2014			Y2015				Y2016
		Start	Finish	Days			2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q
Mr. Osamu Nakagaki	Chief Advisor / Rice Development Programme	2014/6/16	2014/7/26	41	4	1.57		■						
		2014/9/8	2014/11/14	68		2.27		■	■					
		2015/1/5	2015/1/24	20	4	0.87				■				
		2015/5/22	2015/6/13	23	2	0.87					■			
		2015/8/20	2015/9/16	28		0.93						■		
		2015/10/5	2015/11/7	34		1.13							■	
		2015/11/15	2015/11/22	8		0.27							■	
Mr. Takeshi Matsuda	Project Coordinator / Monitoring & Evaluation of Upland Rice Cultivation	2016/1/4	2016/1/30	27	4	1.10								■
		2014/6/16	2014/7/19	34	4	1.33		■						
		2014/9/8	2014/11/11	65		2.17		■	■					
		2015/1/4	2015/1/24	21	4	0.90				■				
		2015/5/18	2015/6/9	23	2	0.87					■			
		2015/8/14	2015/9/16	34		1.13						■		
		2015/10/2	2015/11/12	42		1.40							■	
Mr. Akio Goto	Deputy Chief Advisor / Rice Cultivation 1	2016/1/8	2016/2/9	33	4	1.30								■
		2014/6/16	2014/8/15	61		2.03		■	■					
		2014/8/24	2014/10/4	42		1.40			■					
		2014/10/17	2015/1/31	107	2	3.63			■	■				
		2015/5/18	2015/7/4	48	2	1.67					■			
		2015/7/18	2015/9/18	63		2.10						■		
		2015/10/1	2015/12/12	73		2.43							■	
Mr. Takamasa Ando	Rice Cultivation 2	2016/1/4	2016/1/29	26	2	0.93								■
		2015/5/18	2015/6/30	44	2	1.53					■			
		2015/8/18	2015/9/18	32		1.07						■		
		2015/9/28	2015/11/26	60		2.00							■	
Mr. Osamu Tokumoto	Rice harvest/ Post harvest	2016/1/5	2016/1/27	23	2	0.83								■
		2014/10/24	2014/12/7	45		1.50			■					
Dr. Ryoichi Ikeda	Cultivation Environment Analysis & Weed Control	2015/10/16	2015/11/29	45		1.50							■	
		2014/9/12	2014/9/26	15		0.50			■					
		2015/8/21	2015/9/4	15		0.50						■		

Annex 4 Counterpart Trainings in Japan and Third Countries

(Including planned training)

(1) Training in Japan

	Course title	Place	Period		Name of participants	Organization
1	Rice cultivation development/Policy making for leaders		12 - 25 Dec, 2010	1	Ahmed Mohamed Mustafa	National Rice Research Coordinator, Agriculture Research Cooperation, Federal MoA
				2	Ali Alhay Abood	Director, Extension Department, Gezira State MoA
				3	Abla Malik Osman	Director, International & Regional Cooperation, International Cooperation and Investment Directorate, Federal MoA
2	Soil Diagnosis Technology for Sustainable Agricultural Production and Environmental Conservation	JICA Hokkaido (Obihiro)	9 May - 29 July, 2011	4	Elsadig Mohammed Hassan	Agricultural Research Cooperation, Federal MoA
3	Integrated Pest Management for Plant Protection	JICA Hyogo	6 June - 3 Sep, 2011	5	Bashir Mohamed Elamin	Plant Protection Directorate, Federal MoA
4	Upland Rice Variety Selection for Africa	JICA Tsukuba	19 July - 2 Nov, 2011	6	Awadalla Mohammed Awadalla	Seed Propagation, White Nile State MoA
5	Planning of Agricultural Policy	JICA Tsukuba	28 Aug - 23 Sep, 2011	7	Leila Salih Mohamed Ali	Planning Office, Gezira State MoA
6	Agricultural Extension Planning and Management	JICA Tsukuba	4 Sep - 12 Nov, 2011	8	Islam Mohammed Khier Osman	National Rice Project, Federal MoA
7	Appropriate Management of Land and Water Resources for Effective Utilization in Arid/Semi-arid Regions	JICA Chugoku, Egypt	6 Sep 2011 - 13 Jan, 2012	9	Mujtaba Mohammed Awadalla	Management of Technology Transfer and Extension, White Nile State MoA
8	Integrated Agriculture & Rural Development through the Participation of Local Farmers	JICA Tsukuba	13 Nov - 17 Dec, 2011	10	Alfadiil Ali Alfadiil Khalid	General Agricultural Administration, Gezira State MoA
9	Improvement of Agricultural Machinery and Equipment for the Growth in Agricultural Productivity for African Countries	JICA Hokkaido (Obihiro)	9 Jan - 2 Mar, 2012	11	Hesham Mohamed Abdelgani Osamn	General Agricultural Administration and Agricultural Engineering Administration, Gezira State MoA
				12	Ashraf Abdalkhalig Abdalnasear Serag	General Agricultural Administration, Gezira State MoA
				13	Hashim Alasad Abdalgader Ahmed	General Agricultural Administration, Gezira State MoA
10	ICT (Information and communication technology) for Agricultural Information use	JICA Hokkaido (Obihiro)	16 Jan - 21 Apr, 2012	14	Hana Hashim Salih Babiker	Technology Transfer and Extension Administration, Federal MoA
11	Rice cultivation techniques development	JICA Tsukuba	26 Feb - 23 Nov, 2012	15	Mubarak Abdelrahman Yagoub Ahmed	General Agricultural Administration, Gezira State MoA
12	Soil Diagnosis Technology for Sustainable Agricultural Production and Environmental Conservation	JICA Hokkaido (Obihiro)	7 May - 27 July, 2012	16	Mohammed Abdalla Eltayeb Elobaid	Land Use, Gezira State MoA
13	Agricultural Infrastructure Improvement in Upland Crop Farming Areas for Rural Development	JICA Hokkaido (Obihiro)	14 May - 3 Aug, 2012	17	Noureldin Awadalla Mohamed Alzain	National Rice Project, Federal MoA
14	Integrated Pest Management for Plant Protection	JICA Kansai	4 June - 1 Sep, 2012	18	Ahmed Ibrahim Balla Abdallah	Rice Promotion Unit, Gezira State MoA
15	Agricultural Extension Planning and Management	JICA Tsukuba	24 June - 1 Sep, 2012	19	Igbal Osman Mohhereh	Technology Transfer and Extension Administration, Federal MoA
16	Development of Core Agricultural Researchers for Rice Promotion in Sub-Sahara Africa	JICA Chubu	3 July - 4 Aug, 2012	20	Hassan Khalid Ali	Agricultural Research Cooperation, Federal MoA
17	Appropriate Management of Land and Water Resources for Sustainable Agriculture in Arid/Semi-arid Regions	JICA Chugoku, Egypt	15 Aug - 25 Dec, 2012	21	Hussein Ahmed Fadol Elmola Mohamed	General Administration of Agriculture, Gezira State MoA
18	Planning of Agricultural Policy	JICA Tsukuba	19 Aug - 15 Sep, 2012	22	Suad Ibrahim Abdalla Gamaldin	Planning and Agricultural Economics Directorate, Federal MoA
19	Integrated Agriculture & Rural Development through the Participation of Local Farmers	JICA Hokkaido (Sapporo)	29 Aug - 29 Sep, 2012	23	Nzar Omar Abd Elmagid Magbol	Rice Promotion Unit, Gezira State MoA

Annex 4 Counterpart Trainings in Japan and Third Countries

(Including planned training)

(1) Training in Japan

	Course title	Place	Period		Name of participants	Organization
20	Training (by observation) in Japan for the Top-management (Fed. & State Min. Agri.) for Rice Sector Development in Sudan	JICA Kansai	28 Oct - 4 Nov 2012	24	Abdelwahid Abbas Mohamed	Director General, International Cooperation and Investment Directorate, Federal Ministry of Agriculture
				25	Mohieldin Ali Mohamed Bakheet	National Rice Coordinator, National Rice Project, Federal Ministry of Agriculture
				26	Abdalla Mohamed Osman Mohieldin	Minister of Agriculture, Gezira State of Ministry of Agriculture
				27	Mohamed Osman Mohamed Nour	Minister of Agriculture, Gadarif State of Ministry of Agriculture
				28	Rodwan Mohamed Ahmed Morgan	Minister of Agriculture, Sennar State of Ministry of Agriculture
				29	Omer Mohamed Eltom Elshami	Minister of Agriculture, White Nile State of Ministry of Agriculture
				30	Hassan Abdelazeim Elgorashi	Director General, River Nile State of Ministry of Agriculture
				31	Adel Gafar Ebrahim Arbab	Minister of Agriculture, Northern State of Ministry of Agriculture
21	ICT (Information and Communication Technology) for Agricultural Information Use	JICA Hokkaido (Obihiro)	14 Jan - 20 Apr, 2013	32	Hind Musa Ibrahim Mohamed	Horticultural Sector Administration, Federal MoA
22	Upland Rice Cultivation and Variety Selection Techniques for Africa	JICA Tsukuba	17 Mar - 2 Nov, 2013	33	Siddig Hassan Ahmed Abdella	Rice Promotion Unit, Gezira State MoA
23	Soil Diagnosis Technology for Sustainable Agricultural Production and Environmental Conservation	JICA Hokkaido (Obihiro)	7 May - 26 Jul 2013	34	Fathelrahman Ahmed Abdelrahman Omer	General Administration of Agriculture, Gezira State MoA
24	Agricultural Infrastructure Improvement in Upland Crop Farming Areas for Rural Development	JICA Hokkaido (Obihiro)	14 May - 3 Aug 2013	35	Abobida Ahmed Gafer Elmahi	Rice Promotion Unit, Gezira State MoA
25	Integrated Pest Management for Plant Protection	JICA Kansai	3 Jun - 31 Aug 2013	36	Abdelghadir Bakri Derweesh Elsaddig	Rice Promotion Unit, Gezira State MoA
26	Agricultural Extension Planning and Management	JICA Tsukuba	15 Jul - 14 Sep 2013	37	Sawsan Ali Abd Elmageed	Technology Transfer and Extension Administration, Federal MoA
27	Appropriate Management of Land and Water Resources for Sustainable Agriculture in Arid/Semi-arid Regions	JICA Chugoku, Egypt	12 Aug - 25 Dec 2013	38	Yassen Elsadig Yassen Alem	Rice Promotion Unit, Gezira State MoA
28	Post-harvest Rice Processing for English Speaking African Countries	JICA Tohoku	14 Aug - 28 Sep 2013	39	Omer Badi Mohammed Badi	Rice Promotion Unit, Gezira State MoA
29	Integrated Agriculture & Rural Development through the Participation of Local Farmers	JICA Hokkaido (Sapporo)	19 Aug - 28 Sep 2013	40	Osama Hajmusa Abdelrahman Hajmusa	Rice Promotion Unit, Gezira State MoA
30	Planning of Agricultural Policy	JICA Tsukuba	22 Aug - 21 Sep 2013	41	Etimad Hamadelneel Aljak Mohamed	International Cooperation and Investment Directorate, Federal MoA
31	Planning and Designing of Agricultural Statistics for Food Security Policy Making	JICA Tsukuba	25 Aug - 19 Oct 2013	42	Sumia Ibrahim Elamin	Planning and Agricultural Economics Directorate, Federal MoA
32	Rice Cultivation Techniques Development	JICA Tsukuba	16 Feb - 15 Nov 2014	43	Mohammed Elseamani Mohammed Abdelgadir	Rice Promotion Unit, Gezira State MoA
33	ICT (Information and Communication Technology) for Agricultural Information Use	JICA Hokkaido (Obihiro)	16 Feb - 24 May 2014	44	Ekhlas Salih Mohamed Ali Elamairi	Planning and Agricultural Economics Directorate, Federal MoA
34	Upland Rice Cultivation and Variety Selection Techniques for Africa	JICA Tsukuba	16 Mar - 1 Nov 2014	45	Fadlelmola Ali Eldow Elzeibar	Rice Promotion Unit, Gezira State MoA

Annex 4 Counterpart Trainings in Japan and Third Countries

(Including planned training)

(1) Training in Japan

	Course title	Place	Period		Name of participants	Organization
35	Development of Agricultural Cooperative and Improvement of Management Capacity	JICA Tsukuba	11 May - 19 Jul 2014	46	Tarig Osman Awad Elseid	Rice Promotion Unit, Gezira State MoA
36	Agricultural Infrastructure Improvement in Upland Crop Farming Areas for Rural Development	JICA Hokkaido (Obihiro)	13 May - 2 Aug 2014	47	Ibrahim Mohammed Hassan Ibrahim	Department of Extension, Gezira State MoA
37	Development of core Agricultural Researchers for Rice Promotion in Sub- Saharan Africa	JICA Chubu	24 Jun - 2 Aug 2014	48	Khalid Abdalla Osman Adam	Agricultural Research Corporation, Federal MoA
38	Promotion of African Rice Development through strengthening coordination between CARD and CAADP for sub-Sahara African Countries (A)	JICA Tsukuba	27 Jul - 2 Aug 2014	49	Elamin Mohamed Elamin Hassan	DG, International Cooperation and Investment Directorate, Federal MoA
				50	Mohyeldin Abdalla Mohamed Osman	Former Minister, Gezira State MoA
39	Appropriate Management of Land and Water Resources for Sustainable Agriculture in Arid/Semi-arid Regions	JICA Chugoku, Egypt	29 Jul - 12 Nov 2014	51	Khalid Saeed Ibrahim Mohamed	Rice Promotion Unit, White Nile State MoA
40	Integrated Agriculture and Rural Development through the Participation of Local Farmers (A)	JICA Hokkaido (Sapporo)	5 Aug - 13 Sep 2014	52	Malik Ezelden Ibrahim	Rice Promotion Unit, River Nile State MoA
41	Post-harvest Rice Processing for English Speaking African Countries	JICA Tohoku	13 Aug - 27 Sep 2014	53	Salma Elamin Mohamed Ali	Rice Promotion Unit, Sennar State MoA
42	Improvement of Rice Cultivation Techniques	JICA Tsukuba	9 Mar - 31 Oct 2015	54	Abuobeida Hasabelrasoul Ahmed	Rice Promotion Unit, Gedaref State MoA
43	Upland Rice Cultivation and Variety Selection Techniques for Africa	JICA Tsukuba	15 Mar - 31 Oct 2015	55	Elzein Mohammed Hamid Mohammed	Rice Promotion Unit, Sennar State MoA
44	Development of Agricultural Cooperatives and Improvement of Management Capacity	JICA Tsukuba	10 May - 18 Jul 2015	56	Abdalla Mohammed Ali Eljenay	Technology Transfer and Extension Administration, Federal MoA
45	Agricultural Extension Planning and Management	JICA Tsukuba	5 Jul - 5 Sep 2015	57	Sania Alseemat Fadulalmola	Technology Transfer and Extension Administration, Federal MoA
46	Development of Core Agricultural Researcher for Promotion of Rice Production in Sub-Saharan Africa	JICA Chubu	9 Jul - 13 Aug 2015	58	Amna Ahmed Abdalla Eltahir	Agricultural Research Corporation, Federal MoA
47	Appropriate Management of Land and Water Resources for Sustainable Agriculture in Arid/Semi-arid Regions	JICA Chugoku, Egypt	2 Aug - 25 Dec 2015	59	Alhadi Fadul Abdallah Yagoub	Rice Promotion Unit, Sennar State MoA
48	Post-harvest Rice Processing for English Speaking African Countries	JICA Tohoku	12 Aug - 27 Sep 2015	60	Khalid Abdallah Ahemad Alzein	Rice Promotion Unit, Gedaref State MoA
49	Promotion of African Rice Development through strengthening coordination between CARD and CAADP for Sub-Sahara African Countries (A)	JICA Tsukuba	16 - 27 Aug 2015	61	Mohieldin Ali Mohamed Bakheet	National Rice Coordinator, National Rice Project, Federal MoA
				62	Ahmed Abdelgadir Elsiddig	National Rice Research Coordinator, Agricultural Research Corporation, Federal MoA
50	Farmer-Led Extension Method (B)	JICA Hokkaido (Obihiro)	5 Jan - 6 Feb 2016	63	to be nominated	to be nominated

(2) Training in Third Countries (Uganda and Egypt)

	State	Name	Period of Training in Uganda		Period of Training in Egypt			
			Basic	Advanced	Agricultural Machinery	Weed Control	Post-Harvest Processing	Irrigation and Water Management
1	Gezira State	Osman Dafaalla Ombabi Mohamed	6 - 10 Dec 2010					
2	Gezira State	Mohamed Ahmed Omer Mohamed	6 - 10 Dec 2010					
3	Gezira State	Osman Ali Mohamed Obaid	6 - 10 Dec 2010					
4	Gezira State	Mohamed Hassan Adam Mohamed	6 - 10 Dec 2010	4 - 22 June 2012				
5	Gezira State	Elfadil Ali Elfadil Khalid	6 - 10 Dec 2010	19 May - 8 June 2011				
6	Gezira State	Abdelgahadir Bakri Derweesh Elsaddig	6 - 10 Dec 2010	4 - 22 June 2012		22 August - 5 September 2015		
7	Gezira State	Aamir Mohammed Hussein Algaly	13 - 18 June 2011					
8	Gezira State	Ahmed Elamien Abbas Ahmed	13 - 18 June 2011					
9	Gezira State	Asma Ahmed Khalid Abdalla	13 - 18 June 2011					
10	Gezira State	Mubark Abdelrahman Yagoub Ahmed	13 - 18 June 2011					1 - 15 August 2014
11	Gezira State	Elbasher Abdalla Elbasher Abdelfadeel	13 - 18 June 2011					
12	Gezira State	Safeeldien Ibrahim Hassan Mohammed	13 - 18 June 2011					
13	Gezira State	Sidig Hassan Ahmed Abdella	13 - 18 June 2011	9 - 27 Jan 2012				
14	Gezira State	Khabab Yousif Dafallah Ahmed	13 - 18 June 2011	9 - 27 Jan 2012				
15	Gezira State	Nafissa Abdalmounem Ramadhane Salim	13 - 18 June 2011					
16	Gezira State	Osama HajMusa Abdelrahman Hajmusa	13 - 18 June 2011	4 - 22 June 2012		19 April - 3 May 2013		
17	Gezira State	Abobida Ahmed Gafer	5 - 10 Feb 2012				22 August - 5 September 2015	
18	Gezira State	Yassen Elsadiq Yassen	5 - 10 Feb 2012	23 June - 4 July 2014	19 April - 3 May 2013		22 August - 5 September 2015	
19	Gezira State	Tarig Osman Awad	5 - 10 Feb 2012	15 - 26 April 2013		22 August - 5 September 2015		
20	Gezira State	Manal Mohmed Tom	5 - 10 Feb 2012					
21	Gezira State	Fayza Osman Ahmed Ali	5 - 10 Feb 2012					
22	Gezira State	Fadleimola Ali Eidow	5 - 10 Feb 2012			19 April - 3 May 2013	21 Oct - 4 Nov 2013	
23	Gezira State	Mohamed Elsamani Mohamed	5 - 10 Feb 2012	4 - 22 June 2012		19 April - 3 May 2013		
24	Gezira State	Nzar Omar Abdelmagid	5 - 10 Feb 2012	4 - 22 June 2012		19 April - 3 May 2013		
25	Gezira State	Ahmed Ibrahim Balla Abdalla	5 - 10 Feb 2012			19 April - 3 May 2013		
26	Gezira State	Rasael Abdelkarag Balal Saeed	5 - 10 Feb 2012					
27	Gezira State	Omer Badi Mohammed Badi	5 - 10 Feb 2012	15 - 26 April 2013			1 -15 September 2014	
28	Gezira State	Elgaili Mustafa Ahmed Ali	5 - 10 Feb 2012					
29	Gezira State	Ashraf Abdalkhalig Abdalnaseah Serag	20 - 25 May 2012	23 June - 4 July 2014	19 April - 3 May 2013		21 Oct - 4 Nov 2013	
30	Gezira State	Saifaldin Osman Mustafa Elhaj	20 - 25 May 2012			1 - 15 August 2014		
31	Gezira State	Hatim Gafar Mohammed Bakheit	20 - 25 May 2012					
32	Gezira State	Fathelrahman Ahmed Abdelrahman Omer	20 - 25 May 2012					22 August - 5 September 2015
33	Gezira State	Awad Elkarim Ibrahim Hamid Omer	20 - 25 May 2012			1 - 15 August 2014		
34	Gezira State	Hashim Alasad Abdalgader Ahmed	20 - 25 May 2012		19 April - 3 May 2013		21 Oct - 4 Nov 2013	
35	Gezira State	Mohamed Anwr Gasim Mohamed	20 - 25 May 2012					
36	Gezira State	Abdalahim Mohamed Tom Elhag	20 - 25 May 2012					
37	Gezira State	Bashir Ahmed	20 - 25 May 2012	15 - 26 April 2013				
38	Gezira State	Hussein Ahmed Fadol El Mola Mohamed	9 - 15 June 2013					
39	Gezira State	Alsiddig Mohammed Altayeb Osman	9 - 15 June 2013	23 June - 4 July 2014			21 Oct - 4 Nov 2013	
40	Gezira State	Kholud Elnouir Eltimam Ahmed	9 - 15 June 2013	23 June - 4 July 2014				22 August - 5 September 2015
41	Gezira State	Mohamed Abdalla Eltayeb Elobid	9 - 15 June 2013					22 August - 5 September 2015
42	Gezira State	Hesham Abdelgani			19 April - 3 May 2013			
43	Gezira State	Husein Eltayeb Yousif			19 April - 3 May 2013			
44	Gezira State	Rehab Ali Tajelser Elkhalifa				19 April - 3 May 2013		
45	Gezira State	Mohamed Mohammed Ali Mohammed		13 - 24 July 2015		19 April - 3 May 2013		
46	Gezira State	Aisha Ahmed Yousif Haj Edrees				19 April - 3 May 2013		

(2) Training in Third Countries (Uganda and Egypt)

	State	Name	Period of Training in Uganda		Period of Training in Egypt			
			Basic	Advanced	Agricultural Machinery	Weed Control	Post-Harvest Processing	Irrigation and Water Management
47	Gezira State	Marwa Ibrahim Ali Mohamed Ali					21 Oct - 4 Nov 2013	
48	Gezira State	Akram Ali Mohammed Hamdalneel		13 - 24 July 2015		1 - 15 August 2014		
49	Gezira State	Ayman Adam Siddig Adam				1 - 15 August 2014		
50	Gezira State	Khalid Hassan Mohagir Babiker					1 -15 September 2014	
51	Gezira State	Amir Bashir Abdelwahid Bashir					1 -15 September 2014	
52	Gezira State	Sara Ahmed Mohammed Krar					1 -15 September 2014	
53	Gezira State	Amin Ahmed Elaagib		13 - 24 July 2015				1 - 15 August 2014
54	Gezira State	Sarah Abdallah Alryah						1 - 15 August 2014
55	Gezira State	Sama Hassan Elhadi Alamin						1 - 15 August 2014
56	Gezira State	Faiga Abdo Ibrahim Alomary						1 - 15 August 2014
57	White Nile State	IzzEldeen Gafar Ahmed Koko	6 - 10 Dec 2010					
58	White Nile State	Khalid Said Abraham Mohamed	6 - 10 Dec 2010	19 May - 8 June 2011		19 April - 3 May 2013		
59	White Nile State	Mujtaba Mohamed Awadalla Mohamed	6 - 10 Dec 2010					
60	White Nile State	Osama Mohamed Musa Noreldaim	6 - 10 Dec 2010				21 Oct - 4 Nov 2013	
61	White Nile State	Ahmed Mamoun Hassan Ali	6 - 10 Dec 2010					
62	White Nile State	Elsadig Adam Osman Madani	6 - 10 Dec 2010	13 - 24 July 2015	19 April - 3 May 2013			
63	White Nile State	Abdalkarem Musa Abdalla	13 - 18 June 2011					
64	White Nile State	Egbal Ali Doka Mursai	13 - 18 June 2011					
65	White Nile State	Wisal Abdelrahman Ishag Mohamed	13 - 18 June 2011					
66	White Nile State	Elhadi Mekki Moniem Maala	13 - 18 June 2011					
67	White Nile State	Ibrahim Abdelkarim Abbekar Adam	13 - 18 June 2011					
68	White Nile State	Mustafa Hasaballa Ahmed Abdalla	13 - 18 June 2011					
69	White Nile State	Suhir Kheiri Abdelgalil Mohamed	13 - 18 June 2011					
70	White Nile State	Tahani Omer Ibrahim Babekir	13 - 18 June 2011					
71	White Nile State	Mohammed Ahmed Mohammed Rahma	13 - 18 June 2011					
72	White Nile State	Amir Mohamed Ahmed Mohamed-Hamad	13 - 18 June 2011					
73	White Nile State	Salah Ahmed Idress Mohamed	5 - 10 Feb 2012	4 - 22 June 2012				1 - 15 August 2014
74	White Nile State	Mousa Abdalla Alobid Adam	5 - 10 Feb 2012	15 - 26 April 2013				
75	White Nile State	Hayat Musa Farah Gobara	9 - 15 June 2013					
76	White Nile State	Dafaalla Elzakir Elmekki Eltahir	9 - 15 June 2013	23 June - 4 July 2014				
77	White Nile State	Hitham Ibrahim Mohammed		13 - 24 July 2015	19 April - 3 May 2013		21 Oct - 4 Nov 2013	
78	White Nile State	Elbasher Elkhalifa Elzain				19 April - 3 May 2013		
79	White Nile State	Elmahi Ageed Elmahi				1 - 15 August 2014		
80	White Nile State	Nedal Abdalh Abdelsamad Mhamad					1 -15 September 2014	
81	White Nile State	Ellaimon Ali Suliman Elbushari				22 August - 5 September 2015		
82	White Nile State	May Mohamed Gabir Yasin				22 August - 5 September 2015		
83	White Nile State	Gafaar Hassan Hussien Sabil					22 August - 5 September 2015	
84	White Nile State	Motasim Abdalla Babkr Mohamed						22 August - 5 September 2015
85	White Nile State	Zainab Adam Abakar Idris						22 August - 5 September 2015
86	Gedaref State	Umkalthom Abdelrazig Fadleimola Mansor	5 - 10 Feb 2012	4 - 22 June 2012				
87	Gedaref State	ElGnaid Ali Ahmed Ali	5 - 10 Feb 2012					
88	Gedaref State	Babekir Ahmed Mohamed Ali	20 - 25 May 2012					
89	Gedaref State	AbuAbeida Hasabelrasoul Ahmed Eldow	20 - 25 May 2012	23 June - 4 July 2014		19 April - 3 May 2013	1 -15 September 2014	
90	Gedaref State	Mubark Omar Mohamed Asad	20 - 25 May 2012	15 - 26 April 2013		1 - 15 August 2014		22 August -5 September 2015
91	Gedaref State	Elhussein Elsafi Ali Abudulla	9 - 15 June 2013	13 - 24 July 2015		19 April - 3 May 2013	22 August -5 September 2015	
92	Gedaref State	Mustafa Ismail Mohammed Abdelrahman	9 - 15 June 2013	23 June - 4 July 2014		19 April - 3 May 2013	1 -15 September 2014	

(2) Training in Third Countries (Uganda and Egypt)

	State	Name	Period of Training in Uganda		Period of Training in Egypt			
			Basic	Advanced	Agricultural Machinery	Weed Control	Post-Harvest Processing	Irrigation and Water Management
93	Gedaref State	Khalid Abdallah Ahemad Alzein	9 - 15 June 2013	13 - 24 July 2015	19 April - 3 May 2013		21 Oct - 4 Nov 2013	
94	Gedaref State	Mohammed Abdelhameed Abdalla Tebin	9 - 15 June 2013		19 April - 3 May 2013		21 Oct - 4 Nov 2013	
95	Gedaref State	Mkram Osman Musa Edris				1 - 15 August 2014		22 August - 5 September 2015
96	Gedaref State	Muna Abdelmutalab Hussian				22 August - 5 September 2015		1 - 15 August 2014
97	Gedaref State	Mohamed Osman Aidaw Ibrahim				22 August - 5 September 2015		1 - 15 August 2014
98	Gedaref State	Ashraf Ahmed Mohammed				22 August - 5 September 2015		
99	Gedaref State	Elhaga Elsamani Omer Mohamad						22 August - 5 September 2015
100	Sennar State	Babekir Ali Hamad Fadlalla	5 - 10 Feb 2012		19 April - 3 May 2013		21 Oct - 4 Nov 2013	
101	Sennar State	Elmoghira Mohieldian Ibrahim Boshara	5 - 10 Feb 2012	4 - 22 June 2012			1 - 15 September 2014	
102	Sennar State	Mohammed Badraldein Altahir Aesa	20 - 25 May 2012			1 - 15 August 2014		
103	Sennar State	Einaiem Hassan Bella Rabh	20 - 25 May 2012					
104	Sennar State	Elzein Mohammed Hamed Mohammed	20 - 25 May 2012	15 - 26 April 2013				
105	Sennar State	Altoun Yagoob Mohammed Eisa	9 - 15 June 2013			22 August - 5 September 2015		
106	Sennar State	Talal Gepreel	9 - 15 June 2013	23 June - 4 July 2014				
107	Sennar State	Nehad Fadul Elseed Ishag	9 - 15 June 2013					
108	Sennar State	Mohamed Elamin Babiker Omer Mohamed	9 - 15 June 2013					
109	Sennar State	Lubna Mohammed Abdalrahman		13 - 24 July 2015	19 April - 3 May 2013		21 Oct - 4 Nov 2013	
110	Sennar State	Faisal Goma Hamid Gibreel				19 April - 3 May 2013		
111	Sennar State	Mohamed Hamoda Hamid Naway				19 April - 3 May 2013		
112	Sennar State	Hashim Eltom Ibrahim Gangary				19 April - 3 May 2013	22 August - 5 September 2015	
113	Sennar State	Hala Salih Hussein Ibrahim		23 June - 4 July 2014		22 August - 5 September 2015		
114	Sennar State	Alhadi Fadul Abdallah Yagoub		23 June - 4 July 2014			1 - 15 September 2014	
115	Sennar State	Emtenan Mohammed Mohammed Ahmed		23 June - 4 July 2014			22 August - 5 September 2015	
116	Sennar State	Jwahir Alfiadill Elbagir Ahmed				1 - 15 August 2014		
117	Sennar State	Ibrahim Omer Hussin Omer				1 - 15 August 2014		22 August - 5 September 2015
118	Sennar State	Khalda Ahmed Khilil Mohammed				1 - 15 August 2014		22 August - 5 September 2015
119	Sennar State	Elhindi Omer Elmadani Mohammed		13 - 24 July 2015				1 - 15 August 2014
120	Sennar State	Negood Ahmed Mohammed Ahmed						1 - 15 August 2014
121	Sennar State	Almahady Adam Mohammed Khalil		13 - 24 July 2015				1 - 15 August 2014
122	Sennar State	Osman Ahmed Hassan Osman				22 August - 5 September 2015		
123	Sennar State	Sueliman Adam Gama Hamid						22 August - 5 September 2015
124	River Nile State	Ali Ahmed Ali Taha	13 - 18 June 2011					
125	River Nile State	Nour Eldin Awadalla Mohamed Alzain	5 - 10 Feb 2012	15 - 26 April 2013			1 - 15 September 2014	
126	River Nile State	Ali Yousef Eldoma Eltaher	5 - 10 Feb 2012	4 - 22 June 2012				
127	River Nile State	Elgaali Abdallah Mohammed Ahmed Abraham	20 - 25 May 2012					
128	River Nile State	Tarig Ibrahim Mohammed Mustafa	20 - 25 May 2012					
129	River Nile State	Magda Malik Mahgoub Sideeg	20 - 25 May 2012					
130	River Nile State	Malik Ezelden Ibrahim Elkhail	9 - 15 June 2013	23 June - 4 July 2014				
131	River Nile State	Bashir Mohamed Osman Ali	9 - 15 June 2013			19 April - 3 May 2013		
132	River Nile State	Amal Osman Babikir Ibrahim	9 - 15 June 2013			19 April - 3 May 2013		
133	River Nile State	Hagir Mohamed Ahmed Saad	9 - 15 June 2013	23 June - 4 July 2014	19 April - 3 May 2013		21 Oct - 4 Nov 2013	
134	River Nile State	Nimat Hashim Ali Osman		13 - 24 July 2015	19 April - 3 May 2013		21 Oct - 4 Nov 2013	
135	River Nile State	Madina Ali Mousa Ali				1 - 15 August 2014		22 August - 5 September 2015
136	River Nile State	Hussein Abdelhamied Satti				1 - 15 August 2014		
137	River Nile State	Fatima Mohamed Abd Elfatah Osman				22 August - 5 September 2015	1 - 15 September 2014	

(2) Training in Third Countries (Uganda and Egypt)

	State	Name	Period of Training in Uganda		Period of Training in Egypt			
			Basic	Advanced	Agricultural Machinery	Weed Control	Post-Harvest Processing	Irrigation and Water Management
138	River Nile State	Aboobeida Ali Mohammed Hussain					22 August - 5 September 2015	1 - 15 August 2014
139	River Nile State	Mohamed Ahmed Abdalmohsin						1 - 15 August 2014
140	River Nile State	Areeg Elawad Elsheikh Mohamed				22 August - 5 September 2015		
141	River Nile State	Faigah Alhadi Hassan Magzob						22 August -5 September 2015
142	Northern State	Yasin Hassan Mohamed Salih	6 - 10 Dec 2010					
143	Northern State	Osman Galal Osman Satti	13 - 18 June 2011	15 - 26 April 2013				
144	Northern State	Mohamed Hassan Abdeen Elhassan	5 - 10 Feb 2012	4 - 22 June 2012		19 April - 3 May 2013		
145	Northern State	Alaeldin Idris Farah Idris	5 - 10 Feb 2012			19 April - 3 May 2013		
146	Northern State	IsamEldin Idris Abdelhalim Idris	20 - 25 May 2012			22 August - 5 September 2015		1 - 15 August 2014
147	Northern State	Mohamed AbdElrahim Hamza Mohamed	20 - 25 May 2012					
148	Northern State	Elkheir Mohamed Joma Dafe	20 - 25 May 2012					
149	Northern State	Mohammed Elaid Nuri Salih Abdoon	9 - 15 June 2013	23 June - 4 July 2014	19 April - 3 May 2013		21 Oct - 4 Nov 2013	
150	Northern State	Baha Eldeen Abdalla Hamed Haj	9 - 15 June 2013	23 June - 4 July 2014	19 April - 3 May 2013		21 Oct - 4 Nov 2013	
151	Northern State	Mandor Tufieg Mohamed Elkgir	9 - 15 June 2013	13 - 24 July 2015			1 -15 September 2014	
152	Northern State	Waleed Osman Hussien Saleem	9 - 15 June 2013					
153	Northern State	Fowzy Mohamed Ali Ahmed				1 - 15 August 2014		
154	Northern State	Mohamed Alamin Ibrahim Mohamed				1 - 15 August 2014		
155	Northern State	Safwat Bakri Osman Mohamed						1 - 15 August 2014
156	Northern State	Nagi Abdelnbi Mohammed Hussein					22 August - 5 September 2015	
157	Northern State	Abd Elrahman Abdalla Khider						22 August - 5 September 2015
158	Northern State	Amar Osman Mohmmmedzien						22 August - 5 September 2015
159	National Rice Project	Yasir Hussein Mohammed	20 - 25 May 2012					

Annex 5 List of Equipment Procured by Japanese Side

As of end of October 2015

SDG: Sudan Pound, JPY: Japanese Yen, US\$: US dollar, KES: Kenyan Shilling

(items above 1,500 SDG)

No.	Date of Procurement (YYYY-MM-DD)	Equipment	Manufacturer	Model, Main Specification	Dealer	Q'ty	Currency	Unit Price	Unit Price converted in JPY	Amount Equivalent in JPY	Location of use and quantity										
											Khartoum Project Office	Gezira Project Office	Kassala Project Office	Kosti Project Office	Federal MoAF	White Nile State MoA	Gezira State MoA	River Nile State MoA	Northern State MoA	Sennar State MoA	Gedaref State MoA
1	2010-3-10 and 28	Desktop computer	DELL	DELL Screen, Optiplex780	ACC	9	SDG	3,022	118,160	1,063,442	5	2	2								
2	2010-03-10	Copy/Printer (Color)	RICOH	Afficio MP2050	Systems Technology	1	SDG	17,200	672,520	672,520	1										
3	2010-03-28	Copy/Printer (Color)	RICOH	Afficio MP2050	Systems Technology	1	SDG	18,000	703,800	703,800			1								
4	2010-3-10 and 28	Copy/Printer	RICOH	Afficio MP2000	Systems Technology	2	SDG	10,450	408,595	817,190	1		1								
5	2010-06-30	Desktop computer	DELL	DELL Screen, Optiplex780		1	SDG	2,800	115,318	115,318	1										
6	2010-08-01	Small pump		5 inch	Local Market (Rabak)	1	SDG	2,500	93,040	93,040						1					
7	2010-08-02	Seed Drill	SONMEZLER	Baldan precision 4 Row Planter Seed/ Fertilizer Hopper Capacity 700Lt or more	Mohamed Ikhwan Group LTD.	1	SDG	37,000	1,376,992	1,376,992						1					
8	2010-08-15	Air conditioning		Split Unit Wall Type Capacity of 18 Kbtu/Hour	Digitech	2	SDG	3,100	115,370	230,739			2								
9	2010-08-17	Generator		KDE7000T 5KVA, 220V, 50HZ, Diesel, Aircooler	Kurdiesel Company Ltd.	1	SDG	4,485	166,914	166,914			1								
10	2010-09-08	Projector	SONY	Projector S7	F.M. Computer Service	1	SDG	1,700	61,841	61,841						1					
11	2010-10-12	Copy/Printer (Color)	RICOH	Afficio MP2030	System Technology	1	SDG	16,830	693,144	693,144		1									
12	2010-10-28	Video camera	SONY	Handy Cam Video Camera, DCR-SR47E, HDD 60GB	Al Gadi	1	SDG	1,650	58,798	58,798		1									
13	2010-10-28	Digital camera	SONY	Digital Camera DSC-HX1.9 MegaPixel	Al Gadi	1	SDG	1,600	57,016	57,016		1									
14	2010-10-28	Projector	SONY	Projector S7	F.M. Computer Service	1	SDG	1,700	60,580	60,580	1										
15	2010-11-09	Seed Drill	SONMEZLER	Baldan precision 4 Row Planter Seed/ Fertilizer Hopper Capacity 700Lt or more	Mohamed Ikhwan Group LTD.	1	SDG	44,000	1,525,040	1,525,040							1				
16	2010-12-29	Video camera	SONY	Handy Cam Video Camera, DCR-SR47E, HDD 60GB	Al Gadi	2	SDG	1,750	62,094	124,187	1						1				
17	2010-12-29	Digital camera	SONY	Digital Camera DSC-HX1.9 MegaPixel	Al Gadi	2	SDG	1,750	62,094	124,187	1						1				
18	2011-01-12	Handy GPS set	Garmin	GPSMAP62S	AFRICORP	11	SDG	2,550	85,657	942,228		11									
19	2011-01-12	pH meter	HANNA	HI991300, pH, EC, TDC, Temperature Meter	AFRICORP	1	SDG	2,806	94,265	94,265		1									
20	2011-02-21	Tractor	Massey Ferguson	385 85HP	Crown Engineering Company	6	SDG	70,000	2,308,390	13,850,340						3	3				
21	2011-02-21	Spray Boam		(Crown Engineering Company)	Crown Engineering Company	2	SDG	15,000	494,655	989,310						1	1				
22	2011-02-22	Chisel Plough		(Crown Engineering Company)	Crown Engineering Company	3	SDG	5,000	164,885	494,655						2	1				
23	2011-02-23	Disk Harrow		(Crown Engineering Company)	Crown Engineering Company	3	SDG	16,560	546,099	1,638,297							3				
24	2011-02-23	Disk Harrow		(Crown Engineering Company)	Crown Engineering Company	2	SDG	13,000	428,701	857,402						2	1				
25	2011-02-24	Disk Plough		(Crown Engineering Company)	Crown Engineering Company	3	SDG	8,400	277,007	831,020							3				
26	2011-02-24	Disk Plough		(Crown Engineering Company)	Crown Engineering Company	3	SDG	6,500	214,351	643,052						2	1				
27	2011-02-25	Ridger 4 rows		(Crown Engineering Company)	Crown Engineering Company	3	SDG	5,520	182,033	546,099							3				
28	2011-02-25	Ridger 4 rows		(Crown Engineering Company)	Crown Engineering Company	3	SDG	4,750	156,641	469,922						2	1				
29	2011-02-26	Ditcher		(Crown Engineering Company)	Crown Engineering Company	3	SDG	4,500	148,397	445,190						2	1				
30	2011-02-27	Rear Blade (Leveler)		(Crown Engineering Company)	Crown Engineering Company	3	SDG	4,000	131,908	395,724						2	1				
31	2011-02-28	Trailer		(Crown Engineering Company)	Crown Engineering Company	3	SDG	25,000	824,425	2,473,275						2	1				

Annex 5 List of Equipment Procured by Japanese Side

As of end of October 2015

SDG: Sudan Pound, JPY: Japanese Yen, US\$: US dollar, KES: Kenyan Shilling

(items above 1,500 SDG)

No.	Date of Procurement (YYYY-MM-DD)	Equipment	Manufacturer	Model, Main Specification	Dealer	Q'ty	Currency	Unit Price	Unit Price converted in JPY	Amount Equivalent in JPY	Location of use and quantity										
											Khartoum Project Office	Gezira Project Office	Kassala Project Office	Kosti Project Office	Federal MoAF	White Nile State MoA	Gezira State MoA	River Nile State MoA	Northern State MoA	Sennar State MoA	Gedaref State MoA
32	2011-03-01	Computers	DELL	Optiplex DX 780, Windows 7 Professional 32 Bits English Edition	CTX for Computer	25	SDG	2,689	83,063	2,076,580					25						
33	2011-03-10	Small pump		4 inch	Local Market (Wad Medani)	1	SDG	3,100	95,759	95,759											
34	2011-03-11	Generator		10KVA, 220V, 50HZ	Local Market (Rabak)	1	SDG	4,300	132,827	132,827				1							
35	2011-03-15	Air conditioning	LG	Split Unit Wall Type Capacity of 18 Kbtu/Hour	Local Market (Kosti)	1	SDG	3,700	114,293	114,293				1							
36	2011-03-21	Automatic Level B40	SOKKIA	Automatic Level B40	AFRICORP	4	SDG	4,150	128,194	512,774		4									
37	2011-03-21	Hygrometer	HANNA	HI9064	AFRICORP	4	SDG	2,355	72,746	290,984		4									
38	2011-03-21	Platform Balance (0~150 kg) Digital		Measurable 0-150 kg/ Digital display	AFRICORP	3	SDG	2,310	71,356	214,068		3									
39	2011-05-22	Notebook Computer	Toshiba	Satlite L630, Intel Core I3, Processor 2.4GHz, 2MB	Gabani	1	SDG	4,050	125,190	125,190	1										
40	2011-06-21	Small pump		5 inch	Local Market (Rabak)	1	SDG	4,890	150,172	150,172						1					
41	2011-08-24	Pop rice machine	Tatibanakikou	No.11	(Japan)	2	JPY	365,000	365,000	730,000							2				
42	2011-08-24	Rice bread cooker	SANYO	SPM-RB1000		2	JPY	54,300	54,300	108,600	2										
43	2011-09-07	Small pump		4 inch	Local Market (Wad Medani)	1	SDG	4,300	124,175	124,175							1				
44	2011-09-22	Small pump		4 inch	Local Market (Wad Medani)	1	SDG	4,179	120,681	120,681							1				
45	2011-10-16	Combine harvester			Crown Engineering Company	1	SDG	110,000	3,178,340	3,178,340							1				
46	2011-10-16	Combine harvester			Crown Engineering Company	2	SDG	115,000	3,322,810	6,645,620							2				
47	2012-01-01	Seed Drill	SONMEZLER	Baldan precision 4 Row Planter Seed	Mohamed Ikhwan Group LTD.	1	SDG	50,000	1,473,100	1,473,100											
48	2012-01-01	Copy/Printer (Color)	RICOH	Afficio MP2030	System Technology	1	SDG	25,700	757,173	757,173		1									
49	2012-03-05	Rice milling machine		SB30	Flying house (Kenya)	2	KES	240,000	198,960	397,920							2				
50	2012-03-15	Seed Drill	SONMEZLER	34	Mohamed Ikhwan Group LTD.	3	SDG	50,000	1,512,600	4,537,800						1	1		1		
51	2012-03-18	Sprayer				3	SDG	8,500	257,142	771,426							3				
52	2012-03-22	Tractor	Massey Ferguson	440 85HP	ELNILEIN	3	SDG	145,000	4,386,540	13,159,620							3				
53	2012-03-22	Chisel Plough		(Crown Engineering Company)	Crown Engineering Company	3	SDG	9,720	294,049	882,148							3				
54	2012-03-22	Ditcher		(Crown Engineering Company)	Crown Engineering Company	3	SDG	5,400	163,361	490,082							3				
55	2012-03-22	Rear Blade (Leveler)		(Crown Engineering Company)	Crown Engineering Company	3	SDG	4,800	145,210	435,629							3				
56	2012-03-22	Trailer		(Crown Engineering Company)	Crown Engineering Company	3	SDG	27,000	816,804	2,450,412							3				
57	2012-03-22	Seed Drill	SONMEZLER	Baldan precision 4 Row Planter Seed/ Fertilizer Hopper Capacity 700Lt or more	Mohamed Ikhwan Group LTD.	4	SDG	14,250	1,146,840	4,587,360							2			1	1
58	2012-03-22	Laser Leveler			Crown Engineering Company	1	SDG	45,000	1,361,340	1,361,340							1				
59	2012-07-04	Laptop PC	HP	ProBook 6560b/CT, Office Home and Business 2010	Otsuka Shokai	1	JPY	181,200	181,200	181,200	1										
60	2012-07-04	Projector		POWER PROJECTOR LV-8320 (J) 5320B001	Otsuka Shokai	1	JPY	97,000	97,000	97,000	1										
61	2012-07-04	Video camera		HDR-CX720V/B	Otsuka Shokai	1	JPY	82,000	82,000	82,000	1										
62	2012-10-02	Combine harvester		JULONG 4LZ-3.5	Crown Engineering Company	1	SDG	125,000	2,217,750	2,217,750							1				
63	2012-11-18	Rice milling machine		SB30	Oriental General Stores Ltd. (Kenya)	20	USD	2,600	207,090	4,141,800						2	10	2	2	2	2

Annex 5 List of Equipment Procured by Japanese Side

As of end of October 2015

SDG: Sudan Pound, JPY: Japanese Yen, US\$: US dollar, KES: Kenyan Shilling

(items above 1,500 SDG)

No.	Date of Procurement (YYYY-MM-DD)	Equipment	Manufacturer	Model, Main Specification	Dealer	Q'ty	Currency	Unit Price	Unit Price converted in JPY	Amount Equivalent in JPY	Location of use and quantity										
											Khartoum Project Office	Gezira Project Office	Kassala Project Office	Kosti Project Office	Federal MoAF	White Nile State MoA	Gezira State MoA	River Nile State MoA	Northern State MoA	Sennar State MoA	Gedaref State MoA
64	2013-02-07	Regulator		ST 2000W	Local Market (Khartoum)	2	SDG	5,500	114,076	228,151	2										
65	2013-05-27	Laser Leveler			Crown Engineering Company	1	SDG	75,000	1,318,500	1,318,500							1				
66	2013-09-19	Grain Rigidity Tester		043019-C	OCS Co., Ltd. (Japan)	1	JPY	186,000	186,000	186,000		1									
67	2013-09-19	pH Tester		pH Spear	OCS Co., Ltd. (Japan)	1	JPY	171,720	171,720	171,720		1									
68	2013-09-19	Stone remover	Hosokawa Works	HS101E	OCS Co., Ltd. (Japan)	1	JPY	104,800	104,800	104,800		1									
69	2015-01-20	Electric weight balance		FCE 30K10N	Prime	3	SDG	2,964	62,949	188,848					3						
70	2015-03-04	Soil Nutrent Tester	Fujihiira Industry	Dr. Soil BF-225	Nissei Trading Co., Ltd.	2	JPY	73,500	73,500	147,000		1			1						
71	2015-03-04	Awner	Tiger Kawashima	TDS-100	Nissei Trading Co., Ltd.	1	JPY	183,000	183,000	183,000		1									
72	2015-03-04	Drying Chamber	As One	KLO-30M	Nissei Trading Co., Ltd.	1	JPY	198,000	198,000	198,000					1						
73	2015-03-04	Tensiometer	Fujihiira Industry	DIK-3043	Nissei Trading Co., Ltd.	1	JPY	180,000	180,000	180,000					1						
74	2015-03-04	Electrical Current-meter	Dentan	CMT-10B	Nissei Trading Co., Ltd.	1	JPY	385,000	385,000	385,000					1						
75	2015-10-31	Stone remover	Hosokawa Works	HS101E	Nissei Trading Co., Ltd.	6	JPY	78,900	78,900	473,400						1	1	1	1	1	1
76	2010-02-08	Vehicle	Nissan	Patrol, Chassis No. 0572604, Engine No. 208648, (Plate No.114/9)	Bashir Motor	1	SDG	103,500	3,407,945	3,407,945	1										
77	2010-02-08	Vehicle	Nissan	Patrol, Chassis No. 0573003, Engine No. 209511 (Plate No.114/10)	Bashir Motor	1	SDG	103,500	3,407,945	3,407,945		1									
78	2011-10-04	Vehicle	Toyota	Hilux, Double cabin, Diesel Engine, 4WD, Chassis No. #MR0FR22G4C0599383, Engine No. #5431181 (Plate No. 114/43)	Golden Arrow	1	USD	27,000	2,073,330	2,073,330		1									
79	2010-09-14	Vehicle	Mitsubishi	L200, Double Cab, Diesel Engine, 4WD, Chassis No. MMBJBK40AD048898, Engine No. 4D56UCCCC1666, White Color (Plate No. 114/22)	DAL Motors	1	SDG	66,770	2,428,892	2,428,892						1					
80	2010-09-14	Vehicle	Mitsubishi	L200, Double Cab, Diesel Engine, 4WD, Chassis No. MMBJBK40AD049264, Engine No. 4D56UCCCC2291, White Color (Plate No. 114/21)	DAL Motors	1	SDG	66,770	2,428,892	2,428,892					1						
81	2014-09-21	Vehicle	Toyota	Land Cruiser, Diesel Engine, 4WD, Chassis NO. JTMHV09J5E4138665, Engine No. 0244124, White Color (handed over without I.O. registration)	Golden Arrow	1	USD	55,760	5,786,215	5,786,215					1						
								Total	(whole period)	108,556,987	JPY										
								Total	(extended period)	7,541,463	JPY										

Annex 6 Local cost allocated by Japanese Side

(Unit: SDG)

Description	2010	2011	2012	2013	2014	2015	Total
	APR 2010 - MAR 2011	APR 2011 - MAR 2012	APR 2012 - MAR 2013	APR 2013 - MAR 2014	APR 2014 - MAR 2015	APR 2015 - MAR 2016	
1 Personnel Expenses	109,929	99,795	226,959	187,979	146,068	285,765	1,056,495
2 Training Expenses	107,438	180,621	171,372	68,300	6,000	19,718	553,449
3 Agricultural Inputs and Facilities/Tools	133,349	56,458	242,701	449,129	344,416	202,222	1,428,275
4 Travel and Transportation Expenses	160,131	98,841	186,891	233,058	112,064	184,822	975,807
5 Meeting and Event Expenses	2,408	14,306	76,067	71,639	29,332	90,000	283,752
6 Supplies and Other Expenses	51,758	52,581	223,760	241,402	447,707	228,446	1,245,654
Total	565,012	502,601	1,127,750	1,251,507	1,085,587	1,010,973	5,543,430

Annex 7 Assignment of Sudanese Counterpart Personnel

No.	Organization	Name of Counterpart Personnel	Present Post	Role for the Project	Period of Assignment to the Project		2010				2011				2012				2013				2014				2015				2016
			Post at assignment time		From	To	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q			
1	ICI, FMoAF	Abdelrahman Mohamed Salih	Acting Director General	CB Advisory Committee	May 2013	Dec. 2013																									
2	ICI, FMoAF	Elamin Hassan Elamin Mohamed	Director General	CB Advisory Committee	Jan. 2014	Mar. 2015																									
3	ICI, FMoAF	Dr. Adel Yousif Altayeb Babiker	Director General		Mar. 2015	At present																									
4	HSA, FMoAF	Badreldin Eishikh M. El Hassan	Director General	CB Advisory Committee	Mar. 2010	Mar. 2014																									
5	TTE, FMoAF	Izzeldin Hassan	Director General	CB Advisory Committee	beginning of 2012	Dec. 2013																									
6	TTE, FMoAF	Ibrahim Mohamed Abuzed	Director General	CB Advisory Committee	Jan. 2014	Mar. 2014																									
7	PAE, FMoAF	Nabil Ahmed Saad	Director General	CB Advisory Committee	Mar. 2010	Dec. 2013																									
8	PAE, FMoAF	Babiker Hag Hassan	Director General	CB Advisory Committee	Jan. 2014	Mar. 2014																									
9	PAE, FMoAF	Elamin Hassan Elamin Mohamed	Director General / Advisor of the Minister		Mar. 2015	At present																									
10	TU, FMoAF	Salah Salih	Director	CB Advisory Committee	Mar. 2010	Dec. 2013																									
11	TU, FMoAF	Mr. Elgalli Ibrahim	Director	CB Advisory Committee	Jan. 2014	Mar. 2014																									
12	TTE, FMoAF	Ibrahim Ahmed Abu Zied	Director of Capacity Building	CB Working Group	Apr. 2011	Mar. 2014																									
13	TTE, FMoAF	Nagla Ali Mohammed	Agriculture Engineer, Capacity Building	CB Working Group	Apr. 2011	Mar. 2014																									
14	HSA, FMoAF	Aisha Elgili Mohamed Elamam	Agricultural Engineer, Biotechnology Tissue Culture	CB Working Group	Apr. 2011	Mar. 2014																									
15	PAE, FMoAF	Suad Abdalla Ali	Head of Gender Mainstreaming	CB Working Group	Jun. 2010	Mar. 2014																									
16	PAE, FMoAF	Sumia AbdAllah Gurtoby	Policy Planning Officer, Gender Mainstreaming	CB Working Group	Apr. 2011	Mar. 2014																									
17	TU, FMoAF	Nawal Mohamed Rahamtalla	Director of Technical Office	Director of Technical Office of IM Working Group	May 2013 (CB) Sep. 2012 (IM)	Mar. 2014																									
18	TU, FMoAF	Eiman Musa Ahmed	Agriculture Engineer	CB Working Group	Jun. 2010	Mar. 2014																									
19	ITU, FMoAF	Bahaa Aldin Khamis	Director	Head of IM Working Group	May 2013	Dec. 2013																									
20	HSA, FMoAF	Mohamed Yahia	Director of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
21	HSA, FMoAF	Hind Musa Ibrahim	Staff of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
22	NRD, FMoAF	Amna Jubara Ali	Director of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
23	NRD, FMoAF	Tayseer Ismail Idrees	Staff of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
24	NRD, FMoAF	Amna Issa Mohammed Ahmed	Staff of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
25	PPD, FMoAF	Mohamed Ahmed Abdelmoti	Director of IT Unit	IM Working Group	Apr. 2011	Mar. 2014																									
26	PPD, FMoAF	Ahmed Hamza Suleiman	Staff of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
27	PPD, FMoAF	Kamal Suliman Obeid	Staff of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
28	PPD, FMoAF	Hassien Osman Abaker	Staff of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
29	PPD, FMoAF	Abtisam Mohamed Hamed	Staff of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
30	PPD, FMoAF	Bashir Mohamed Elamin	Staff of IT Unit	IM Working Group	Sep. 2013	Mar. 2014																									
31	TTE, FMoAF	Igbal Osman Mofferah Salm	Head of Information, Researches and Studies section	IM Working Group	Sep. 2012	Mar. 2014																									
32	TTE, FMoAF	Hanaa Hashim Salih Babiker	Information Officer, Information, Researches and Studies section	Focal Point of IM Working Group	Apr. 2011	Mar. 2014																									
33	TTE, FMoAF	Eiman Ismail Abdalla Younis	Staff of Mechanization	IM Working Group	Sep. 2012	Mar. 2014																									
34	TTE, FMoAF	Ishraga Omer Mustafa Mohmad	Staff of Extension	IM Working Group	Sep. 2012	Mar. 2014																									
35	TTE, FMoAF	Sally Ali Nureldaim	Agriculture Inspector, Information	IM Working Group	Sep. 2013	Mar. 2014																									
36	ICI, FMoAF	Etimad Hamad Elneel Eljack	Agriculture Inspector, Investment Department	IM Working Group	Sep. 2013	Mar. 2014																									
37	ICI, FMoAF	Narges Hassan Sayed Ahmal	Agriculture Inspector, Investment Department	IM Working Group	Sep. 2013	Mar. 2014																									
38	ICI, FMoAF	Amal Mohamed Ali	Agriculture Inspector, Investment Department	IM Working Group	Sep. 2013	Mar. 2014																									
39	PAE, FMoAF	Ekhlas Salih Mohamed Ali Elomiry	Director of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
40	PAE, FMoAF	Badria M. Morgan	Staff of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
41	PAE, FMoAF	Musab Elmutasim Hassan Gindeel	Staff of IT Unit	IM Working Group	Sep. 2012	Mar. 2014																									
42	PAE, FMoAF	Soheir Ali Hamed	Staff of IT Unit	IM Working Group	Sep. 2013	Mar. 2014																									
43	ITU, FMoAF	Mohanad Haydar Dasougi Abdelaziz	Staff of ITU	IM Working Group	Sep. 2012	Mar. 2014																									
44	ITU, FMoAF	Nisreen Fkritoahir	Staff of ITU	IM Working Group	Sep. 2013	Mar. 2014																									
45	ITU, FMoAF	Ahmad Hamdi Allagabo	Staff of ITU	IM Working Group	Sep. 2013	Mar. 2014																									
46	ITU, FMoAF	Kawther Hassan	Staff of ITU	IM Working Group	Sep. 2013	Mar. 2014																									
47	ITU, FMoAF	Sahara	Staff of ITU	IM Working Group	Sep. 2013	Mar. 2014																									

Annex 7 Assignment of Sudanese Counterpart Personnel

No.	Organization	Name of Counterpart Personnel	Present Post	Role for the Project	Period of Assignment to the Project		2010				2011				2012				2013				2014				2015				2016	
			Post at assignment time		From	To	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
48	NRP, FMoAF	Mohieldin Ali Mohamed Bakheet	National Rice Coordinator		Mar. 2010	At present																										
49	ARC, FMoAF	Ahmed Abdelgadir Elsidig	National Rice Research Coordinator		Jun. 2013	At present																										
50	Gezira SMOA	Abdalla Mohamed Osman Mohieldin	Minister (former Director General)		Mar. 2010	May 2014																										
51	Gezira SMOA	Azhari Khalif Alla	Minister		May 2014	Jul. 2015																										
52	Gezira SMOA	Ahmed Suliman Ahmed Mohamed	Minister		Aug. 2015	At present																										
53	Gezira SMOA	Safeldeen H. Abood	Director General		Mar. 2010	Jun. 2014																										
54	Gezira SMOA	Eid Allah Mohamed Youssef	Director General		Jul. 2014	Jul. 2015																										
55	Gezira SMOA	Safeldeen H. Abood	Director General		Aug. 2015	At present																										
56	Gezira SMOA	Osman Dafaalla Ombabi Mohamed Salih	Advisor (former Director)		Mar. 2010	At present																										
57	Gezira SMOA	Elfadil Abdelmotalib Abdelkarim	Director		Jul. 2015	At present																										
58	Gezira SMOA	Ahmed Elamien Abbas	Head of Rice Promotion Unit		Jan. 2011	Aug. 2014																										
59	Gezira SMOA	Abdelmunim Majzoub Elhasan	Head of Rice Promotion Unit		Aug. 2014	At present																										
60	White Nile SMOA	Omer Mohamed Eltom Elshami	Minister		Feb. 2012	Dec. 2013																										
61	White Nile SMOA	Ahmed Albashir	Minister		Jan. 2014	Jul. 2015																										
62	White Nile SMOA	Mohamed Abdalla Omer Abdalla	Minister		Aug. 2015	At present																										
63	White Nile SMOA	Bashir Mohamed Elamin Ibrahim	General Manager		Mar. 2013	Jul. 2015																										
64	White Nile SMOA	Ahmed Mohamed Youssef Ahmed	General Manager		Jul. 2015	At present																										
65	White Nile SMOA	Mohammed Osman Mohamed Ahmed Basha	Director, Department of Technology transfer & Extension		Mar. 2010	At present																										
66	White Nile SMOA	Abdalla Nasir Elkalifa	Head of Rice Promotion Unit		Jul. 2013	Dec. 2014																										
67	White Nile SMOA	Khalid Saeed Ibrahim Mohamed	Head of Rice Promotion Unit		Dec. 2014	At present																										
68	Gedaref SMOA	Mohamed Osman Mohamed Nour	Minister (former Director General)		Jan. 2012	Jun. 2015																										
69	Gedaref SMOA	Abdalla Suliman Abdalla Suliman	Minister		Jul. 2015	At present																										
70	Gedaref SMOA	Abdalla Mudawi Elamin	Director General		Jan. 2012	May 2013																										
71	Gedaref SMOA	Nafesa Noah Mohamed	Director General		Jun. 2013	At present																										
72	Gedaref SMOA	Abdelmonim Ahmed Mohamad Zein	Head of Horticulture Department		Jan. 2012	Mar. 2013																										
73	Gedaref SMOA	Alhussein Elsafi Ali	Manager of Rice Promotion Unit		Jan. 2013	At present																										
74	Sennar SMOA	Rodwan Mohamed Ahmed Morgan	Minister		Jan. 2012	May 2015																										
75	Sennar SMOA	Baha Aldeen Ahmed Alhaj	Minister		May 2015	At present																										
76	Sennar SMOA	Babikir Osman Mohamed	General Manager		Jan. 2012	At present																										
77	Sennar SMOA	Gamal Adel Ellatif Elkhalfa	Manager of Rice Promotion Unit		Jan. 2012	At present																										
78	River Nile SMOA	Ali Ahmed Hamid	Minister of Agriculture		Jan. 2012	Dec. 2013																										
79	River Nile SMOA	Omer Ahmed Alshaikh	Minister of Agriculture		Mar. 2014	Jul. 2015																										
80	River Nile SMOA	Bashir Bosati	Minister of Agriculture		Jul. 2015	At present																										
81	River Nile SMOA	Hassan Abdelazeim Elgorashi	Director General		Jan. 2012	Nov. 2013																										
82	River Nile SMOA	Hag Attwa Tag Elsir	Director General		Nov. 2013	At present																										
83	River Nile SMOA	Nour Eldin Awadalla	Head of Rice Promotion Unit		Jan. 2012	Jun. 2014																										
84	River Nile SMOA	Hager Mohamed Ahmed	Head of Rice Promotion Unit		Jun. 2014	At present																										
85	Northern SMOA	Adel Gafar Ebrahim Arbab	Minister		Jun. 2012	Jun. 2015																										
86	Northern SMOA	Talal Issa Osman Abdul Rahman	Minister		Jun. 2015	At present																										
87	Northern SMOA	Mohammed Khidir Taha	General Manager		Jan. 2012	Sep. 2014																										
88	Northern SMOA	Emadeldeen Mohammed Ali	General Manager		Dec. 2014	Sep. 2015																										
89	Northern SMOA	Abdelhadi Alhaj Mohammed Altoom	General Manager		Oct. 2015	At present																										
90	Northern SMOA	Malik Mohammed Ibraheem Musa	Acting General Manager		Jan. 2012	At present																										
91	Northern SMOA	Osman Galal Osman Satti	Head of Rice Promotion Unit		Mar. 2015	At present																										

FMoAF = Federal Ministry of Agriculture and Forestry, NRP = National Rice Project, ARC = Agricultural Research Corporation, SMOA = State Ministry of Agriculture, HSA = Horticulture Sector Administration, TTE = Technology Transfer and Extension Administration, ICI = International Cooperation and Investment Directorate, PAE = Planning and Agricultural Economics Directorate, NRD = Natural Resources Directorate, PPD = Plant Protection Directorates, TU = Training Unit, ITU = Technical Unit for Coordination, Information and Follow-up.

Annex 8 Local Cost Allocated by Sudanese Side

(Unit: SDG)

(1) Original Period (March 2010 - March 2014)

Description		2010	2011	2012	2013	Total
Output 1						
Federal Ministry of Agriculture and Irrigation						
1	Expense for IM working group (Establishment of Website, seminar)		20,000			20,000
2	Expense for Task Team Activity		1,500	19,000		20,500
3	Allowance of the participants	10,000				10,000
Sub-Total		10,000	21,500	19,000	0	50,500
Output 2						
1) Gezira State						
1	Land rent	1,200	16,500	43,200	35,500	96,400
2	Labor cost	800	67,000	93,722	71,850	233,372
3	Fertilizer for JICA sites	0	0	0	0	0
4	Herbicide for JICA sites	0	0	0	0	0
5	Rental fee of storage in Malinjan	0	18,000	18,000	18,000	54,000
6	Rental fee of agricultural machinery	0	0	0	0	0
7	Transportation of extensionists (from Gezira to others, from others to Gezira)	2,400	20,800	20,800	31,200	75,200
8	Field Day	0	18,000	25,000	0	43,000
9	Forum (banner exhibition, transportation, signboard)	0	7,500	18,700	15,200	41,400
10	Fuel (tractor and generator)	4,300	25,480	66,720	51,830	148,330
11	Repair and maintenance of agricultural machinery	0	0	57,810	23,700	81,510
12	Milling fee in Duem	0	0	85,700	0	85,700
13	3 phase electricity for rice milling machine	0	0	68,000	0	68,000
14	Rice packaging fee (Gezira Promise)	0	0	12,750	0	12,750
15	Electricity (irrigation in Barona)	0	0	4,500	4,500	9,000
16	Electricity (irrigation in office)	0	0	2,500	2,750	5,250
17	Computer and stationary	0	8,000	6,000	5,700	19,700
18	Purchasing rice from farmers	0	37,150	112,000	0	149,150
19	Training allowance	18,000	28,000	51,000	47,000	144,000
20	Workshops	12,000	25,000	21,000	15,700	73,700
21	Building (establishment of rice unit)	0	47,000	0	0	47,000
22	Others	750	12,500	7,000	15,000	35,250
Sub-Total		39,450	330,930	714,402	337,930	1,422,712
2) White Nile State						
(Exact amount on local cost was not obtained)						
Remarks: The White Nile SMOA has expended local cost from 2010. However, exact amount of cost used for the project activities is not well calculated yet. The amount of local cost in 2013 is an estimated one based on unit rice cultivation cost.						
Sub-Total		0	0	0	4,804	4,804
3) Gedaref State						
1	Land preparation automatically (three peasant processes)				750	750
2	Graders, rows, and basins manually				700	700
3	Cultivation in Elfao automatically and manually in Elshoak				650	650
4	Compost sowing and pesticide spraying, and irrigation workers manually				650	650
5	Weeding manually (six processes)				7,950	7,950

Annex 8 Local Cost Allocated by Sudanese Side

(Unit: SDG)

(1) Original Period (March 2010 - March 2014)

Description		2010	2011	2012	2013	Total
6	Travel incentives and local ticket and visa fees for trainings in Egypt and Uganda (six trainees)				5,690	5,690
7	Subsistence of trainees on agriculture in FAO				600	600
8	Salary of temporary field workers				1,800	1,800
Sub-Total					18,790	18,790
4) Sennar State						
1	Chisel plow			200	520	720
2	Disk harrow			275	715	990
3	Leveling			250	650	900
4	Sowing			150	390	540
5	Canals and terrace			1,260	3,150	4,410
6	Irrigation costs			2,000	5,000	7,000
7	Weeding (5 times)			3,000	18,750	21,750
8	Rental of agricultural machines			400	1,500	1,900
9	Labor cost			350	3,000	3,350
10	Fuel			2,000	5,000	7,000
11	Harvest			4,400	-	4,400
12	Purchasing rice from farmers			3,000	-	3,000
13	Computer and stationary			-	-	0
14	Training local cost			5,500	1,600	7,100
15	Visits			400	2,000	2,400
16	Hospitality			2,000	7,000	9,000
17	Office maintenance completion			-	3,000	3,000
18	office furniture			-	11,000	11,000
19	Workshops			1,500	4,000	5,500
20	Field day			2,000	-	2,000
21	Others			1,900	3,600	5,500
Sub-Total				30,585	70,875	101,460
5) River Nile State						
1	Cost of land preparation			300	3,100	3,400
2	Cost of weeding (including herbicide)			1,000	5,850	6,850
3	Harvesting cost			5,000		5,000
4	Cost of field day			3,000		3,000
5	Cost of trainings in Uganda and Egypt			8,400	6,400	14,800
6	Cost for field covering with net				1,500	1,500
(remark: fuel cost for transportation is not included)						0
Sub-Total				17,700	16,850	34,550
6) Northern State						
1	Expense on land rent			600	600	1,200
2	Expense on workers			5,340	5,340	10,680
3	Expense on agricultural operation (plowing, harrowing, etc.)			1,020	1,020	2,040
4	Expense related to rice milling machine			15,765		15,765
5	Expense on irrigation			2,640	2,640	5,280
6	Expense on trainings			6,800		6,800
Sub-Total				32,165	9,600	41,765
Grand Total		49,450	352,430	813,852	458,849	1,674,581

(Unit: SDG)

(2) Extended Period (March 2014 - March 2016)

Description	2014	2015	Total
1) Gezira State			
1 Land rent	10,000	-	10,000
2 Workers	23,000	16,000	39,000
3 Agricultural machinery (fuel, maintenance)	20,000	25,000	45,000
4 Rice milling machine	9,000	-	9,000
5 Other input (irrigation)	4,500	3,000	7,500
6 Training	24,000	11,000	35,000
7 Field Day	40,000	-	40,000
8 Transportation (car, fuel)	5,000	7,000	12,000
9 Travel (Workshop, JCC meeting)	2,000	-	2,000
10 Others (car maintenance, conveyance, expenses)	38,000	48,000	86,000
Sub-Total	175,500	110,000	285,500
2) White Nile State			
1 Land rent	1,200	800	2,000
2 Worker	9,000	1,950	10,950
3 Agriculture machinery (fuel)	2,640	660	3,300
4 Agriculture machinery maintains	6,000	6,000	12,000
5 Cultivation	600	600	1,200
6 Irrigation	1,095	320	1,415
7 Seeds	-	5,040	5,040
8 Extensionist training	-	20,000	20,000
9 Farmer school	-	10,000	10,000
10 Field Day	10,000	20,000	30,000
11 Harvest	3,000	3,000	6,000
12 Milling	2,000	-	2,000
13 Workshop and Campaigning	1,000	-	1,000
Sub-Total	36,535	68,370	104,905
3) Gedaref State			
1 Expense on land rent	820	1,250	2,070
2 Expense on workers	12,500	14,000	26,500
3 Expense on agricultural Machinery (fuel, maintenance, etc.)	2,000	3,000	5,000
4 Expense related to rice milling machine	300	-	300
5 Expense on input to field (only irrigaiton cost)	4,000	5,000	9,000
6 Expense of training (transportation of trainer and trainee, etc.)	23,700	46,530	70,230
7 Expense on event (Rice Field Day, etc.)	20,000	-	20,000
8 Expense on transportation (car, fuel, etc.)	10,000	12,000	22,000
9 Expense on travel (workshop, JCC meeting, etc.)	3,000	-	3,000
Sub-Total	76,320	81,780	158,100
4) Sennar State			
1 Chisel plough	1,750	1,125	2,875
2 Harrow	875	600	1,475
3 Organic fertilizer (application)	625	562.5	1,188

(Unit: SDG)

(2) Extended Period (March 2014 - March 2016)

Description	2014	2015	Total
4 TSP fertilizer (application)	625	562.5	1,188
5 Leveling	2,500	1,875	4,375
6 Sowing	1,875	1,200	3,075
7 Pre-herbicide+application	2,250	1,425	3,675
8 Terrace and canal	1,500	1,200	2,700
9 Re-sowing	1,250	750	2,000
10 Weeding (4 times)	25,000	18,750	43,750
11 Fertilizer (application 3 dose)	3,750	2,250	6,000
12 Herbicide (application 2 times)	1,250	900	2,150
13 Irrigation (15 times)	3,750	2,625	6,375
14 Field Day	60,000	100,000	160,000
15 Visits	20,000	30,000	50,000
16 Labor	15,000	25,000	40,000
17 Others	20,000	25,000	45,000
Sub-Total	162,000	213,825	375,825
5) River Nile State			
1 Workers	300	400	700
2 Land preparation	860	1,000	1,860
3 Irrigation	400	500	900
4 Event (Rice Field Day) (up to 21/10/2015)	2,300	5,700	8,000
5 Transportation	11,000	12,000	23,000
6 Travel (Workshop, JCC meeting)	-	200	200
7 Others	1,900	1,422	3,322
Sub-Total	16,760	21,222	37,982
6) Northern State			
1 Expense on land rent	600	600	1,200
2 Expense on workers	10,660	10,660	21,320
3 Expense on input to field (irrigation)	480	480	960
4 Expense on transportation (car, fuel, etc.)	1,380	1,380	2,760
5 Expense on travel (workshop, JCC meeting, etc.)	3,400	3,400	6,800
Sub-Total	16,520	16,520	33,040
Grand Total	483,635	511,717	995,352

Annex 9 Capacity Assessment of Rice Extension Officers after 2014 Cropping Season

(1) Gezira State

Name	Examination			Self Evaluation		Yield Rating	Reliability with farmers				Working Attitude, Effort				Formulation Ability of Action Plan			Management and Working Ability			Emergence Response Ability in Field			Monitoring and Evaluation Ability				Total	Total, Adjust (100)	Overall Score
	Basic (100)	IM&Ad (100)	Total (200)	1st yr (25)	2015 (25)		Rice Unit	Monitoring team	Goto	Ando	Rice Unit	Monitoring team	Goto	Ando	Monitoring team	Goto	Ando	Rice Unit	Goto	Ando	Rice Unit	Goto	Ando	Rice Unit	Monitoring team	Goto	Ando			
Mr. A	97.5	41.0	138.5	8	20	3	4	4	3	3	4	4	4	3	3	3	3	4	3	3	4	3	3	4	3	3	3	74	67.3	82.4
Mr. B	95.0	55.0	150.0	9	20	5	-	-	-	-	5	-	3	3	-	3	3	4	3	3	4	3	3	4	-	3	3	52	69.3	82.2
Mr. C	80.0	45.0	125.0	9	15	5	2	-	3	3	2	-	3	3	-	3	3	3	2	2	3	2	2	1	-	2	3	47	52.2	66.1
Mr. D	-	-	-	-	-	5	5	-	4	5	5	-	4	5	-	3	3	5	4	5	4	4	5	3	-	4	4	77	85.6	-
Mr. E	82.5	39.0	121.5	5	11	1	1	3	3	3	2	3	4	4	3	3	3	3	4	4	4	4	5	4	4	4	4	73	66.4	74.4
Mr. F	97.5	72.0	169.5	10	19	2	5	4	5	3	5	4	4	4	4	4	4	5	4	4	4	4	4	4	3	4	3	87	79.1	88.3
Mr. G	-	-	-	-	-	2	3	3	2	2	4	3	1	1	2	2	2	3	1	1	3	1	1	3	3	1	1	45	40.9	-
Mr. H	50.0	28.0	78.0	10	15	5	2	-	3	3	2	-	3	3	-	3	3	3	2	2	3	2	2	1	-	2	2	46	51.1	50.6
Mr. I	-	-	-	-	-	2	3	3	2	2	3	2	3	3	3	3	3	3	4	4	4	4	5	3	3	3	4	69	62.7	-
Mr. J	95.0	54.0	149.0	9	21	-	-	-	-	-	-	-	-	3	3	-	-	-	3	3	-	3	3	-	-	-	-	18	60.0	77.5
Mr. K	97.5	47.0	144.5	9	18	3	5	5	4	4	5	4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	4	91	82.7	90.1
Mr. L	87.5	43.0	130.5	5	14	2	5	5	4	4	5	4	4	5	3	4	4	4	4	4	4	4	4	4	3	4	4	88	80.0	83.8
Mr. M	92.5	61.0	153.5	10	23	5	-	-	3	3	4	-	3	3	-	3	3	4	3	3	4	3	3	3	-	3	3	56	65.9	79.2
Mr. N	95.0	31.0	126.0	7	19	-	-	-	-	-	-	-	3	3	-	-	-	-	3	3	-	3	3	-	-	-	-	18	60.0	77.5
Mr. O	97.5	56.0	153.5	6	12	2	3	3	3	3	2	3	3	3	2	3	3	3	3	3	3	3	3	3	2	3	3	62	56.4	76.9
Mr. P	85.0	32.0	117.0	15	22	3	5	5	4	4	5	5	5	5	4	4	4	5	5	5	4	5	5	5	4	4	4	99	90.0	87.5
Mr. Q	-	-	-	-	-	5	-	-	-	-	-	-	4	5	-	4	4	-	4	5	-	5	5	-	-	4	4	49	98.0	-
Mr. R	100.0	72.0	172.0	8	20	5	5	5	5	5	5	4	4	3	4	4	4	5	4	4	4	4	3	4	3	3	3	90	81.8	90.9
Mr. S	90.0	39.0	129.0	11	24	5	-	-	-	-	5	-	4	4	-	3	3	4	4	4	4	4	4	4	-	4	4	60	80.0	85.0
Mr. T	90.0	20.0	110.0	7	17	1	1	2	3	3	5	3	3	4	4	3	4	4	3	4	4	3	3	4	2	2	2	67	60.9	75.5
Mr. U	-	-	-	-	-	-	-	-	4	4	5	-	4	4	-	4	4	5	4	4	4	4	3	4	-	3	3	63	78.8	-
Mr. V	90.0	36.0	126.0	8	18	2	3	3	2	2	3	3	3	3	3	3	3	3	4	4	3	4	5	4	1	3	4	68	61.8	75.9
Mr. W	90.0	37.0	127.0	5	12	-	4	-	-	-	3	-	2	2	-	3	3	4	2	3	3	3	3	3	-	2	2	42	56.0	73.0
Mr. X	97.5	29.0	126.5	7	17	2	5	5	3	3	5	4	3	3	4	3	3	4	3	3	4	3	3	4	2	2	2	73	66.4	81.9
Ms. A	82.5	25.0	107.5	5	11	5	-	-	-	-	3	-	2	2	-	1	1	4	2	2	3	2	2	4	-	2	2	37	49.3	65.9
Ms. B	-	-	-	-	-	3	3	3	2	2	3	4	2	2	2	1	1	3	2	2	3	2	2	1	3	3	3	52	47.3	-
Ms. C	-	-	-	-	-	2	2	1	2	2	1	1	2	2	1	1	1	3	2	2	2	2	2	1	1	1	1	35	31.8	-
Ms. D	97.5	65.0	162.5	5	17	5	-	-	-	-	4	-	2	2	-	3	3	3	2	2	3	2	2	3	-	3	3	42	56.0	76.8
Ms. E	-	-	-	-	-	3	4	3	2	2	3	3	2	2	2	1	1	3	2	2	3	2	2	1	3	3	3	52	47.3	-
Ms. F	77.5	36.0	113.5	6	12	2	3	3	2	2	4	3	1	1	2	1	1	4	1	1	3	1	1	3	3	1	1	44	40.0	58.8
Ms. G	85.0	62.0	147.0	9	19	2	2	3	2	2	3	3	1	2	2	1	1	3	1	2	3	1	1	1	3	1	2	42	38.2	61.6
Ms. H	92.5	29.0	121.5	5	9	5	-	-	-	-	4	-	2	2	-	1	1	4	2	2	3	1	1	3	-	2	2	35	46.7	69.6
Ms. I	-	-	-	-	-	5	-	-	-	-	1	-	2	2	-	1	1	3	2	2	3	2	2	3	-	2	2	33	44.0	-
Ms. J	92.5	39.0	131.5	6	11	5	-	-	-	-	4	-	2	2	-	1	1	4	2	2	3	2	2	3	-	2	2	37	49.3	70.9
Average	89.5	43.7	133.2	7.8	16.6	3.4				3.2				3.2		2.7				3.2		3.1					2.9	61.9	76.1	

- Note
- 1) Yield Rating: 5 = more than 3.5t/ha, 4 = 3.0-3.5t/ha, 3 = 2.5-3.0t/ha, 2 = 2.0-2.5t/ha, 1 = less than 2.0t/ha
 - 2) Capacity Rating: 5 = Excellent, 4 = Good, 3 = Moderate, 2 = Relatively Poor, 1 = Poor
 - 3) Total = Points from Yield Rating to Monitoring and Evaluation Ability
 - 4) Total, Adjust = Total score ÷ Max score x 100
 - 5) Overall Score = (Basic examination score) + (Total, Adjust) ÷ 2

Annex 9 Capacity Assessment of Rice Extension Officers after 2014 Cropping Season

(2) Sennar State

Name	Examination			Self Evaluation		Yield Rating	Reliability with farmers			Working Attitude, Effort			Formulation Ability of Action Plan			Management and Working		Emergence Response Ability		Monitoring and Evaluation Ability			Total	Total, Adjust (100)	Overall Score
	Basic (100)	IM&Ad (100)	Total (200)	1st yr (25)	2015 (25)		Rice Unit	Monitor ing team	Goto	Rice Unit	MT	Goto	Rice Unit	Monitor ing team	Goto	Rice Unit	Goto	Rice Unit	Goto	Rice Unit	Monitor ing team	Goto			
Mr. A	55.0	32.0	87.0	5	17	1	5	-	3	4	-	4	4	2	2	4	3	3	3	4	-	2	44	62.9	58.9
Mr. B	57.5	0.0	57.5	-	-	1	3	-	2	3	-	2	3	2	2	3	2	3	1	3	-	1	31	44.3	50.9
Mr. C	87.5	55.0	142.5	12	21	1	5	-	3	5	-	4	5	3	3	4	3	4	3	4	-	2	49	70.0	78.8
Mr. D	87.5	33.0	120.5	-	-	1	5	-	3	5	-	4	5	3	3	4	3	4	3	4	-	1	48	68.6	78.0
Ms. A	85.0	29.0	114.0	5	20	1	5	-	3	5	-	3	5	3	3	4	2	4	2	4	-	2	46	65.7	75.4
Mr. E	82.5	45.0	127.5	14	22	1	4	-	3	4	-	3	3	3	3	3	3	3	3	2	-	1	39	55.7	69.1
Ms. B	72.5	26.0	98.5	5	17	1	4	-	3	4	-	3	4	3	3	4	2	4	2	4	-	1	42	60.0	66.3
Mr. F	85.0	38.0	123.0	7	12	1	2	-	2	2	-	2	1	2	2	1	2	2	2	2	-	1	24	34.3	59.6
Mr. G	-	-	-	-	-	1	4	-	3	3	-	2	3	2	2	3	2	3	2	3	-	1	34	48.6	-
Mr. H	-	-	-	-	-	1	2	-	3	2	-	2	1	2	2	1	2	1	2	1	-	1	23	32.9	-
Ms. C	85.0	56.0	141.0	10	20	1	4	-	2	3	-	3	4	3	3	3	2	3	2	3	-	1	37	52.9	68.9
Mr. I	77.5	35.0	112.5	5	20	1	5	-	3	5	-	4	5	4	4	4	3	4	3	4	-	2	51	72.9	75.2
Ms. D	82.5	30.0	112.5	5	16	1	3	-	2	2	-	3	3	3	3	2	2	2	2	3	-	1	32	45.7	64.1
Mr. J	-	-	-	-	-	1	3	-	3	3	-	3	3	2	2	3	2	3	2	3	-	1	34	48.6	-
Mr. K	85.0	53.0	138.0	5	20	1	5	-	4	5	-	4	5	4	4	4	4	3	4	4	-	2	53	75.7	80.4
Mr. L	60.0	31.0	91.0	6	17	1	3	-	3	2	-	3	2	3	3	3	2	2	2	2	-	1	32	45.7	52.9
Ms. E	67.5	29.0	96.5	5	17	1	3	-	2	3	-	2	3	3	3	3	2	3	2	3	-	1	34	48.6	58.0
Ms. F	72.5	26.0	98.5	-	-	1	3	-	2	2	-	2	3	3	3	3	2	3	2	3	-	1	33	47.1	59.8
Ms. G	80.0	44.0	124.0	6	13	1	2	-	2	2	-	2	2	3	3	2	1	2	1	1	-	1	25	35.7	57.9
Mr. M	-	-	-	-	-	1	2	-	2	1	-	1	1	3	3	1	1	1	1	1	-	1	20	28.6	-
Mr. N	75.0	19.0	94.0	-	-	1	4	-	3	4	-	4	4	2	3	4	3	4	3	4	-	1	44	62.9	68.9
Ms. H	72.5	47.0	119.5	9	16	1	3	-	2	3	-	2	3	3	3	3	2	3	2	3	-	1	34	48.6	60.5
Ms. I	97.5	41.0	138.5	5	20	1	4	-	2	3	-	2	4	3	3	4	2	3	2	4	-	1	38	54.3	75.9
Mr. O	82.5	48.0	130.5	7	20	1	4	-	2	4	-	3	4	3	3	4	3	3	3	4	-	1	42	60.0	71.3
Average	77.5	35.9	113.4	6.9	18.0	1.0	3.1			3.0			3.0			2.7		2.6		2.1			52.9	66.5	

Note 1) Yield Rating: 5 = more than 3.5t/ha, 4 = 3.0-3.5t/ha, 3 = 2.5-3.0t/ha, 2 = 2.0-2.5t/ha, 1 = less than 2.0t/ha

2) Capacity Rating: 5 = Excellent, 4 = Good, 3 = Moderate, 2 = Relatively Poor, 1 = Poor

3) Total = Points from Yield Rating to Monitoring and Evaluation Ability

4) Total, Adjust = Total score ÷ Max score x 100

5) Overall Score = (Basic examination score) + (Total, Adjust) ÷ 2

Annex 9 Capacity Assessment of Rice Extension Officers after 2014 Cropping Season

(3) Gedaref State

Name	Examination			Self Evaluation		Yield Rating	Reliability with farmers			Working Attitude, Effort			Formulation Ability of Action Plan			Management and Working		Emergence Response Ability		Monitoring and Evaluation Ability			Total, Adjust (100)		Overall Score
	Basic (100)	IM&Ad (100)	Total (200)	1st yr (25)	2015 (25)		Rice Unit	Monitor ing team	Goto	Rice Unit	Monitor ing team	Goto	Rice Unit	Monitor ing team	Goto	Rice Unit	Goto	Rice Unit	Goto	Rice Unit	Monitor ing team	Goto	Total	Adjust (100)	
Mr. A	82.5	43.0	125.5	8	21	1	-	-	-	5	-	4	4	4	3	4	4	4	3	3	-	2	41	68.3	75.4
Ms. A	80.0	27.0	107.0	6	19	1	-	-	-	3	-	2	2	2	2	3	2	2	1	1	-	1	22	36.7	58.3
Ms. B	70.0	23.0	93.0	6	17	1	-	-	-	4	-	3	2	2	2	3	3	2	2	1	-	1	26	43.3	56.7
Mr. B	87.5	34.0	121.5	7	17	1	5	-	4	5	-	4	4	3	3	4	4	4	3	3	-	2	49	70.0	78.8
Mr. C	72.5	40.0	112.5	5	22	1	5	-	4	5	-	4	4	3	3	4	4	4	3	1	-	1	46	65.7	69.1
Ms. C	-	-	-	-	-	1	4	-	3	4	-	3	2	2	3	3	3	3	2	1	-	1	35	50.0	-
Ms. D	-	-	-	-	-	1	3	-	2	4	-	2	2	2	2	3	2	2	1	1	-	1	28	40.0	-
Mr. D	90.0	37.0	127.0	7	18	1	-	-	-	5	-	4	4	3	4	4	4	4	3	3	-	2	41	68.3	79.2
Mr. E	87.5	26.0	113.5	5	11	1	-	-	-	4	-	2	2	2	2	3	2	3	1	1	-	1	24	40.0	63.8
Mr. F	67.5	18.0	85.5	6	10	1	-	-	-	4	-	3	2	2	2	3	2	3	1	1	-	1	25	41.7	54.6
Mr. G	82.5	21.0	103.5	5	11	1	-	-	-	5	-	2	2	2	2	3	2	3	1	1	-	1	25	41.7	62.1
Average	80.0	29.9	109.9	6.1	16.2	1.0	3.8			3.7			2.6			3.1		2.5		1.4			51.4	66.4	

Note 1) Yield Rating: 5 = more than 3.5t/ha, 4 = 3.0-3.5t/ha, 3 = 2.5-3.0t/ha, 2 = 2.0-2.5t/ha, 1 = less than 2.0t/ha

2) Capacity Rating: 5 = Excellent, 4 = Good, 3 = Moderate, 2 = Relatively Poor, 1 = Poor

3) Total = Points from Yield Rating to Monitoring and Evaluation Ability

4) Total, Adjust = Total score ÷ Max score x 100

5) Overall Score = (Basic examination score) + (Total, Adjust) ÷ 2

Annex 9 Capacity Assessment of Rice Extension Officers after 2014 Cropping Season

(4) River Nile State

Name	Examination			Self Evaluation		Yield Rating	Reliability with farmers			Working Attitude, Effort			Formulation Ability of Action Plan			Management and Working		Emergence Response Ability		Monitoring and Evaluation Ability			Total	Total, Adjust (100)	Overall Score
	Basic (100)	IM&Ad (100)	Total (200)	1st yr (25)	2015 (25)		Rice Unit	Monitoring team	Goto	Rice Unit	Monitoring team	Goto	Rice Unit	Monitoring team	Goto	Rice Unit	Goto	Rice Unit	Goto	Rice Unit	Monitoring team	Goto			
Ms. A	72.5	37.0	109.5	10	16	1	3	-	4	4	-	4	1	-	1	3	3	3	3	2	-	2	34	52.3	62.4
Ms. B	77.5	34.0	111.5	6	16	1	3	-	4	4	-	4	1	-	1	3	3	3	3	2	-	2	34	52.3	64.9
Mr. A	-	-	-	-	-	1	3	-	2	3	-	2	1	-	1	3	2	3	2	2	-	1	26	40.0	-
Ms. C	-	-	-	-	-	1	1	-	1	1	-	2	1	-	1	1	1	1	1	2	-	1	15	23.1	-
Ms. D	62.5	43.0	105.5	14	18	1	3	-	3	4	-	4	1	-	1	3	3	3	3	2	-	2	33	50.8	56.6
Mr. B	-	-	-	-	-	1	3	-	3	1	-	1	1	-	1	1	1	1	1	2	-	1	18	27.7	-
Ms. E	-	-	-	-	-	1	2	-	2	1	-	1	1	-	1	1	1	1	1	2	-	1	16	24.6	-
Mr. C	60.0	34.0	94.0	5	17	1	2	-	2	2	-	2	1	-	1	2	2	3	2	2	-	1	23	35.4	47.7
Ms. F	-	-	-	-	-	1	1	-	1	1	-	1	1	-	1	1	1	1	1	2	-	1	14	21.5	-
Mr. D	85.0	39.0	124.0	9	14	1	3	-	4	4	-	4	1	-	1	3	3	3	3	2	-	2	34	52.3	68.7
Ms. G	-	-	-	-	-	1	1	-	1	1	-	1	1	-	1	1	1	1	1	2	-	1	14	21.5	-
Mr. E	50.0	33.0	83.0	5	17	1	3	-	2	2	-	3	1	-	1	2	2	3	2	2	-	1	25	38.5	44.2
Ms. H	37.5	20.0	57.5	6	17	1	3	-	2	2	-	2	1	-	1	2	2	3	2	2	-	1	24	36.9	37.2
Average	63.6	34.3	97.9	7.9	16.4	1.0	2.4			2.3			1.0			2.0		2.1		1.7			36.7	54.5	

Note 1) Yield Rating: 5 = more than 3.5t/ha, 4 = 3.0-3.5t/ha, 3 = 2.5-3.0t/ha, 2 = 2.0-2.5t/ha, 1 = less than 2.0t/ha

2) Capacity Rating: 5 = Excellent, 4 = Good, 3 = Moderate, 2 = Relatively Poor, 1 = Poor

3) Total = Points from Yield Rating to Monitoring and Evaluation Ability

4) Total, Adjust = Total score ÷ Max score x 100

5) Overall Score = (Basic examination score) + (Total, Adjust) ÷ 2

Annex 9 Capacity Assessment of Rice Extension Officers after 2014 Cropping Season

(5) Northern State

Name	Examination			Self Evaluation		Yield Rating	Reliability with farmers			Working Attitude, Effort			Formulation Ability of Action Plan			Management and Working		Emergence Response Ability		Monitoring and Evaluation Ability			Total	Total, Adjust (100)	Overall Score
	Basic (100)	IM&Ad (100)	Total (200)	1st yr (25)	2015 (25)		DG	Monitor ing team	Goto	DG	Monitor ing team	Goto	DG	Monitor ing team	Goto	DG	Goto	DG	Goto	DG	Monitor ing team	Goto			
Mr. A	90.0	40.0	130.0	5	24	1	5	-	4	5	-	4	1	-	1	5	4	5	4	4	-	2	45	69.2	79.6
Mr. B	-	-	-	-	-	1	5	-	2	5	-	1	1	-	1	5	1	5	1	4	-	1	33	50.8	-
Mr. C	92.5	39.0	131.5	6	18	1	4	-	3	3	-	4	1	-	1	3	3	4	3	4	-	2	36	55.4	73.9
Mr. D	87.5	49.0	136.5	6	18	1	4	-	3	4	-	4	1	-	1	4	3	4	3	4	-	2	38	58.5	73.0
Mr. E	92.5	55.0	147.5	15	23	1	5	-	3	5	-	4	1	-	1	5	3	5	3	3	-	2	41	63.1	77.8
Mr. F	-	-	-	-	-	1	4	-	2	3	-	3	1	-	1	4	3	4	3	3	-	2	34	52.3	-
Mr. G	90.0	49.0	139.0	6	20	1	4	-	4	3	-	4	1	-	1	3	4	3	4	3	-	2	37	56.9	73.5
Mr. H	92.5	36.0	128.5	5	12	1	4	-	2	3	-	3	1	-	1	4	2	3	2	3	-	2	31	47.7	70.1
Mr. I	77.5	54.0	131.5	5	9	1	4	-	2	3	-	3	1	-	1	3	2	3	2	3	-	1	29	44.6	61.1
Average	88.9	46.0	134.9	6.9	17.7	1.0			3.6			3.6			1.0		3.4		3.4			2.6		55.4	72.7

Note

1) Yield Rating: 5 = more than 3.5t/ha, 4 = 3.0-3.5t/ha, 3 = 2.5-3.0t/ha, 2 = 2.0-2.5t/ha, 1 = less than 2.0t/ha

2) Capacity Rating: 5 = Excellent, 4 = Good, 3 = Moderate, 2 = Relatively Poor, 1 = Poor

3) Total = Points from Yield Rating to Monitoring and Evaluation Ability

4) Total, Adjust = Total score ÷ Max score x 100

5) Overall Score = (Basic examination score) + (Total, Adjust) ÷ 2

Annex 9 Capacity Assessment of Rice Extension Officers after 2014 Cropping Season

(6) White Nile State

Name	Examination			Self Evaluation		Yield Rating	Reliability with farmers			Working Attitude, Effort			Formulation Ability of Action Plan			Management and Working		Emergence Response Ability		Monitoring and Evaluation Ability			Total	Total, Adjust (100)	Overall Score
	Basic (100)	IM&Ad (100)	Total (200)	1st yr (25)	2015 (25)		Rice Unit	Monitoring team	Goto	Rice Unit	MT	Goto	Rice Unit	Monitoring team	Goto	Rice Unit	Goto	Rice Unit	Goto	Rice Unit	Monitoring team	Goto			
Mr. A	-	-	-	-	-	-	-	-	-	5	-	5	1	-	1	5	4	4	4	-	-	-	29	72.5	-
Mr. B	92.5	32.0	124.5	-	-	1	5	-	3	5	-	3	1	-	1	5	2	4	2	4	-	1	37	56.9	74.7
Mr. C	70.0	26.0	96.0	6	19	1	4	-	2	4	-	3	1	-	1	5	2	3	2	3	-	1	32	49.2	59.6
Mr. D	-	-	-	-	-	1	3	-	2	4	-	2	1	-	1	4	2	3	2	2	-	1	28	43.1	-
Mr. E	90.0	36.0	126.0	9	16	1	4	-	3	4	-	4	1	-	1	4	3	3	2	3	-	1	34	52.3	71.2
Ms. A	-	-	-	-	-	1	4	-	2	4	-	2	1	-	1	5	2	3	2	3	-	1	31	47.7	-
Ms. B	-	-	-	-	-	1	3	-	2	3	-	2	1	-	1	3	2	2	2	2	-	1	25	38.5	-
Ms. C	52.5	7.0	59.5	6	11	1	3	-	2	3	-	2	1	-	1	4	2	2	2	3	-	1	27	41.5	47.0
Ms. D	-	-	-	-	-	1	2	-	2	2	-	2	1	-	1	3	2	1	2	1	-	1	21	32.3	-
Ms. E	82.5	41.0	123.5	12	17	1	3	-	2	3	-	2	1	-	1	4	2	3	2	2	-	1	27	41.5	62.0
Mr. F	-	-	-	-	-	1	3	-	2	4	-	2	1	-	1	5	2	3	2	3	-	1	30	46.2	-
Mr. G	-	-	-	-	-	1	5	-	3	5	-	4	1	-	1	5	3	4	3	3	-	1	39	60.0	-
Ms. F	100.0	88.0	188.0	8	9	1	5	-	3	5	-	4	1	-	1	5	3	4	3	3	-	1	39	60.0	80.0
Mr. H	92.5	55.0	147.5	5	19	1	5	-	3	5	-	4	1	-	1	5	3	4	3	3	-	1	39	60.0	76.3
Mr. I	95.0	54.0	149.0	6	13	1	4	-	3	4	-	3	1	-	1	4	2	3	2	4	-	1	33	50.8	72.9
Mr. J	-	-	-	-	-	1	3	-	2	4	-	2	1	-	1	3	2	3	2	3	-	1	28	43.1	-
Mr. K	-	-	-	-	-	1	4	-	2	4	-	2	1	-	1	4	2	3	2	3	-	1	30	46.2	-
Mr. L	-	-	-	-	-	1	4	-	2	4	-	2	1	-	1	4	2	3	2	3	-	1	30	46.2	-
Ms. G	65.0	19.0	84.0	5	8	1	3	-	2	4	-	2	1	-	1	4	2	3	2	2	-	1	28	43.1	54.0
Mr. M	57.5	30.0	87.5	5	8	1	3	-	2	4	-	2	1	-	1	4	2	3	2	2	-	1	28	43.1	50.3
Average	79.8	38.8	118.6	6.9	13.3	1.0			3.0			3.4			1.0		3.3		2.7			1.9		48.7	64.8

Note 1) Yield Rating: 5 = more than 3.5t/ha, 4 = 3.0-3.5t/ha, 3 = 2.5-3.0t/ha, 2 = 2.0-2.5t/ha, 1 = less than 2.0t/ha

2) Capacity Rating: 5 = Excellent, 4 = Good, 3 = Moderate, 2 = Relatively Poor, 1 = Poor

3) Total = Points from Yield Rating to Monitoring and Evaluation Ability

4) Total, Adjust = Total score ÷ Max score x 100

5) Overall Score = (Basic examination score) + (Total, Adjust) ÷ 2

2. 第 11 回合同調整委員会（JCC）議事録

MINUTES OF THE MEETING
11th JOINT COORDINATING COMMITTEE MEETING
BETWEEN
MINISTRY OF AGRICULTURE & IRRIGATION
AND
THE PROJECT TEAM
FOR THE CAPACITY BUILDING PROJECT FOR THE IMPLEMENTATION OF THE EXECUTIVE
PROGRAMME FOR AGRICULTURAL REVIVAL

11th Joint Coordinating Committee (hereinafter referred to as “JCC”) Meeting was held on 27 October 2015 hosted by the Ministry of Agriculture and Forestry (Hereinafter referred to as “MoAF”) and the Project Team for “Capacity Building Project for the Implementation of the Executive Programme for Agricultural Revival” (hereinafter referred to as “the Project”) at the meeting hall in MoAF. The major topics were progress of the Project activities in the first half of the Project Year 6, plan for the second half of Year 6, Report on terminal evaluation and outstanding issues. As a result of the discussion, JCC members had a mutual understanding on these topics.

Khartoum, Sudan, 27 October 2015

Ms. Igbal Abdel Elmagid
Acting Director General
International Cooperation Directorate
Ministry of Agriculture & Forestry
Republic of the Sudan

Mr. Osamu Nakagaki
Chief Advisor
Capacity Building Project for the
Implementation of the Executive
Programme for the Agricultural Revival

witnessed by

Mr. Shigeru Otake
Senior Representative
Sudan Office
Japan International Cooperation Agency

ATTACHMENT

Introduction

The chairman, Ms. Igbal Abdel Elmagid (Acting Director General, International Cooperation Directorate, MoAF), welcomed all participants and opened the 11th JCC meeting. After the members introduced themselves, Ms. Igbal explained the agenda of the meeting. The Project started the presentation of the progress of the Project Activity as follows:

1. Progress of the Project Activities from April to September 2015

1.1 Field Trial and Post-Harvest

Mr. Takamasa Ando (Rice Cultivation Expert of the Project) presented the 3 field trials such as Seed Rate x Plant Spacing Trial (Two-factor experiment), Nitrogen Source Trial and Organic Fertilizer Trial (Nitrogen). He explained the objective of 3 trials and contents of treatment. He also presented expected results of 3 trials.

With regard to the activity of post-harvest processing, Mr. Ando requested the MoA to install power unit to run rice milling unit because it haven't been installed yet at 10 locations in 6 states.

1.2 Cooperation with ARC Research Activity

Prof. Ahmed Abdelgadir Elsiddig (National Rice Research Coordinator, ARC, MoAF) explained what trials ARC conducts in 2015.

After his presentation, Mr. Akio Goto (Deputy Chief Advisor / Rice Cultivation Expert of the Project) presented the ceremony of handing over equipment to ARC and the activity of Dr. Ryoichi Ikeda (Expert of the Project on Cultivation Environment Analysis / Weed Control). He visited 3 ARC stations (Rahad, Kosti and Medani [HQ]) and discussed with researchers. He also conducted a lecture on rice in the ARC HQ for researchers.

1.3 Training for Extensionists in Country and Abroad

Mr. Takeshi Matsuda (Project Coordinator / Monitoring and Evaluation of Upland Rice Cultivation) presented training activity for extensionists.

<Training in Sudan>

Japanese experts conducted OJT for extensionists in the cultivation field, for example OJT on field preparation in May. The Project also invited Mr. Tsuboi from Uganda to give technical advice to extensionists and to follow up trainees in Uganda.

<Training in Uganda>

The Project conducted 1 advanced course for 12 extensionists for 12 days from 13 to 24 June 2015.

<Training in Egypt>

The Project conducted 3 courses on weed control (13 participants), water management (15 participants) and post-harvest technology (8 participants) from 22 August to 5 September. In addition, Observation Programme for High Officials (9 participants) and Technical Exchange for ARC researchers (8 participants) were carried out. High Officials deepened the understanding of rice cultivation and rice promotion activities in Egypt and researchers exchanged views with Egyptian rice researchers. It is expected to develop rice sector in Sudan through these programmes.

<Training in Japan>

The Project provided 7 courses for 8 participants from MoA in 2015.

In the end, Mr. Matsuda stressed the importance of application of skills and knowledge which participants gained, in their work place.

1.4 - Demonstration Farms

Mr. Ando presented the activity of demonstration farms in Gezira State (11 sites, 31 feddans) with pictures and explanation of important technical points. After Gezira State, Mr. Goto presented the activity in other 5 states (14 sites, 24.5 feddans). He showed actual conditions of all sites with pictures and explained problems which they faced, such as non-uniform growth, inappropriate irrigation management, too much seed rate, observation off-type, etc.

1.5 - Monitoring & Evaluation

Dr. Hassan Ali Elobied (National Consultant of the Project) explained the purpose of the system of Monitoring & Evaluation. There are 3 targets (Performance of team leader, extensionists and farmer) to monitor. The summary of monitoring activities was shown and the observations by monitoring activity were presented.

After his presentation, Mr. Goto explained the progress of revising the handbook on Upland Rice Cultivation and indicators to evaluate the progress of Output 2.

[The contents of their presentation is as per the attached as appendix III.]

2. Plan of the Project Activities in 2015

Mr. Goto explained the plan of the latter half of the FY2015. Field day would be conducted in Gedaref, Gezira and Sennar State. Post-harvest activity would be assisted by Mr. Osamu Tokumoto (Post-harvest Processing Expert). The Project would hold a workshop to summarize this year's activity and next year planning.

After the presentation from the Project finished, JCC members had an open discussion about the progress and the plan.

Mr. Mohamed Ali Salama (National Wheat Project, Northern State) made a comment on trial activity by JICA and ARC;

These results of trials should be utilized in a combined manner. Two efforts should be well coordinated and be integrated in the future.

Prof. Ahmed (ARC) replied this comment;

ARC started cooperation with JICA Project 2 years ago. That's why the Project did their trials by themselves. ARC appreciates JICA's trial.

Mr. Osamu Nakagaki (Chief Advisor of the Project) added the comment of Prof. Ahmed;

ARC was involved in the Project activity at later stage of the Project. Achievement by the Project will be released as a Handbook. In the future, ARC will use the Handbook. Both sides should be combined. JICA and ARC will not work independently from each other.

Ms. Igbal (Chairperson, Acting DG, IC, MoAF) made a comment on this topic;

Upland rice is new crop in Sudan. Achievement done by JICA is highly appreciated. ARC and JICA will be integrated to enlarge rice development. In future, ARC and JICA go together and this handbook will be accepted by the Ministry of Agriculture and to use for rice development in Sudan.

Mr. Gamal Abdel Latif (Head of Rice Promotion Unit, Sennar SMoA) made a comment on the monitoring system;

Sennar SMoA appreciates the monitoring system. We are improving upland rice cultivation step by step. We need monitoring evaluation system more in the field.

Ms. Nafisa Noah Mohamed (DG, Gedaref SMoA) made a comment on ARC research;

ARC research is done in certain state. Applied research for future is hoped to do in other states, too.

Dr. Saifaldeen Hassan Aboud (DG, Gezira SMoA) made a comment;

Gezira SMoA appreciates JICA's effort to introduce this strategic crop (upland rice). Gezira state has gained benefit so much. It is chance now to promote upland rice in Gezira and other state. To use this strategic crop, Gezira has land and capable farmers. It is sure that Gezira State is ready to continue and sustain this activity. We have knowledge and trained extensionists.

3. Report on Terminal Evaluation

Mr. Mitsuo Nishiya (Joint Terminal Evaluation Team member, NTC International Corp) started their presentation of the report of Joint Terminal Evaluation. Firstly, he explained the objective of the Terminal Evaluation, evaluation activities and inputs. After that he showed the confirmation of achievement of Output and Project Purpose. Joint Terminal Evaluation Team expected that all indicators would be satisfied by the end of Project. He also explained the evaluation by 5 criteria (Relevance: High, Effectiveness: High, Efficiency: Relatively High, Impact: Positive, Sustainability: Moderate).

Mr. Masahiro Shiomi (Joint Terminal Evaluation Team member, Project Formulation Advisor, JICA Sudan Office) explained the reason why the team evaluated the Sustainability as Moderate. After that, he showed the Recommendations by the end of the Project period, the ones for sustainability and the ones for further rice promotion.

[The contents of their presentation is as per the attached as appendix III.]

After the presentation by JICA, JCC members had an open discussion about the report on Terminal Evaluation.

Ms. Igbal made a comment on their recommendation about Technical Handbook distribution;

To use Technical Handbook, an approval by Technology Committee is not necessary. In Sudan, we don't have enough information of rice. This handbook is appreciated and accepted by Ministry of Agriculture.

Mr. Shiomi replied;

Our understanding is different. DG of IC (Dr. Adel) confirmed that the approval is necessary. It will be very hard for JICA to work in Sudan under such conditions.

Prof. Ahmed replied;

Agricultural research on upland rice will be conducted by ARC. However, the Handbook can be used by farmers without any approval by Technology Committee. There is no regulation to stop it in Sudan.

Ms. Igbal added to Prof. Ahmed;

This is not a big problem. The Handbook can be used by farmers.

Dr. Saifaldeen added to Ms. Igbal;

Gezira SMoA will use the Handbook to farmers. We look for more cooperation with JICA. We are fully engaged in this upland rice promotion activity.

Ms. Igbal added to Dr. Saifaldeen;

Cooperation with JICA is highly appreciated. This is genuine cooperation.

Mr. Shiomi replied to Sudanese side;

Please discuss with DG of IC. He didn't say "the approval is not necessary. This is not a small problem. It is a big issue for JICA. JICA cannot continue further technical cooperation with Sudan if the technology produced by the Project needs to go through such approval process.

Mr. Kozo Ito (Senior Assistant Director, JICA HQ) added to Mr. Shiomi;

There is a big issue behind the Handbook. Technology transfer has done day by day by the Project. The Project trained extensionists and sent extensionists to training in other countries. Those things will not be utilized by Technology Committee. This is JICA's understandings. All JICA's cooperation should be technology transfer. This is purely MoA's internal matter. Official response is waited to JICA Sudan Office or to Japanese Embassy. I already reported to JICA HQ the cancellation of consideration of new project.

Mr. Ibrahim Hassan Abuzied (DG, Technology Transfer and Extension Administration, MoAF) replied;

In Sudan, we can use the technique without approval by Technology Committee. Technology Committee is concerned only with ARC scientific aspect (research result).

Mr. Ito replied to Sudanese side;

We are waiting for your response.

Dr. Saifaldeen made a comment;

We cannot wait the approval by Technology committee. Gezira SMoA has been using and will use the Handbook by the extensionists and farmers.

Mr. Hussain Abdella Elsharif (Joint Terminal Evaluation Team member, Bilateral Cooperation, IC, MoAF) made a comment;

As a Joint Terminal Evaluation Team, we didn't agree to the idea of "no distribution of the Handbook to farmers". There is no limitation to use handbook in the field by extensionists and farmers.

Mr. Shiomi replied to Mr. Hussain;

In the Joint Terminal Evaluation Report, it is written only to extensionist and ARC. It is different from the conclusion of the report. It will be regulated since the Evaluation Report is signed by DG of IC (Dr. Adel).

Mr. Nakagaki replied to Mr. Shiomi;

From the beginning of the Project until now, there has not been any disturbance whatsoever to use our technique at all.

Dr. Hassan proposed the members of JCC;

To solve this issue, MoA will issue the official letter to JICA, which mentioned to accept the technology developed by the Project and to use it.

Ms. Igbal replied to Dr. Hassan;

This JCC meeting agreed to use handbook for farmers without approval by Technology Committee. MoA will issue official letter to JICA.

Mr. Shiomi added to Ms. Igbal;

In the letter, every technology made by JICA should be accepted.

4. Outstanding Issues

There are 2 outstanding issues which the Project raised such as 1) Coordination between Federal MoAF (NRP) & State MoAs, and 2) Development of Upland Rice (Activity on National Rice Council, etc.).

Mr. Nakagaki explained each issue;

Nation Rice Project (NRP) is not properly managed. It is important for good sustainability. Federal MoAF should consider this.

National Rice council is not moving yet. Federal MoAF should put more care of implementation of this regard.

Mr. Nakagaki raised another issue;

Federal MoAF requested SMOAs to make rice development plan and 6 SMOAs provided 1 year plan and 5 year plan. Then Federal MoAF was allocated budget from Ministry of Finance. However no support from Federal MoAF for rice development, no allocation budget to 6 States. Federal Minister and Undersecretary promised but no implementation.

After Mr. Nakagaki raised 3 issues, JCC members had an open discussion.

Ms. Igbal made a comment on the issue of no allocation budget;

The reason of no allocation to states will be clarified. This is the issue of coordination between Federal and States. International Cooperation Directorate will mobilize the coordination.

Dr. Hassan added to Ms. Igbal;

Federal MoAF was allocated 10 million SDG from Ministry of Finance as budget for rice development.

Dr. Saifaldeen made a comment;

There is no budget disbursement from Federal MoAF to Gezira SMOA. Gezira SMOA conducted their activity from their limited own budget.

At the end of the meeting, Ms. Igbal summarized what members discussed;

The official letter regarding the handbook will be issued by Federal MoAF to JICA.

IC will take responsibility of coordination between federal and states.

Recommendations from 11th JCC meeting;

1. The human resource system in the Federal MoAF should be implemented, and the need assessments should be considered.

2. The states should prepare the plan for 2016 in order to capture the national budget preparation.
3. The National Rice Project should be capacitated (Human, physical wise).
4. National Rice Council should be mobilized.
5. Coordination between the Federal and the States should be in place.

APPENDIX

APPENDIX I. List of Participants

APPENDIX II. Agenda

APPENDIX III. Presentation documents

3. 陸稻栽培ハンドブックに関する連邦農業省レター

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Date/5/11/2015

Chief Representative
JICA Sudan Office
Dear Sir,

**Subject: Capacity Building Project for the Implementation of the
executive program for the Agricultural Revival**

The Ministry of Agriculture and Forestry avails this opportunity to presents to your esteemed institution its compliments and acknowledgement for all your efforts in raising capacity of the Sudanese cadres in agricultural sector and specifically in rice production techniques.

We highly appreciated the technical handbook on upland Rice cultivation prepared in the on going technical Cooperation project.

We affirm that it will be applied as a basic pillar for our research, future work and plans and that it will be applied in the field and disseminated to the end beneficiaries, and it can be improved according to the situation by the different stakeholders of the project collaboratively.

The Ministry and JICA will consult with each other to reach a mutually satisfactory agreement in case a particular introduced technology or techniques need to be further searched and developed in compliance with national regulations and standards.

The Ministry assures its highest considerations

Sincerely yours,

Dr. Adel Yousif Eltayeb
General Director of International Cooperation



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