ザンビア共和国
コメを中心とした作物多様化推進プロジェクト
中間レビュー調査報告書

平成 26 年 7 月
（2014 年）

独立行政法人国際協力機構
農村開発部

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序　　文

独立行政法人国際協力機構（JICA）は、ザンビア共和国関係機関との討議議事録（R/D）等に基づき、2012 年 6 月から 2015 年 6 月までの予定で、「コメを中心とした作物多様化推進プロジェクト」を実施しています。

今般、プロジェクトの中間時点にあたり、プロジェクト開始後の活動状況を確認し、その情報に基づいて、評価 5 項目（妥当性、有効性、効率性、インパクト、持続性）の観点から日本・ザンビア共和国側双方で総合的な評価を行うとともに、今後の協力の枠組みについても協議を行うことを目的として、2014 年 2 月に中間レビュー調査団を現地に派遣しました。

本調査団は、ザンビア共和国側評価委員と合同評価委員会を結成し、評価結果を合同評価報告書に取りまとめました。

本報告書は、同調査団による協議結果、評価結果を取りまとめたものであり、今後広く関係者に活用され、日本・ザンビア共和国両国の親善及び国際協力の推進に寄与することを願うものです。

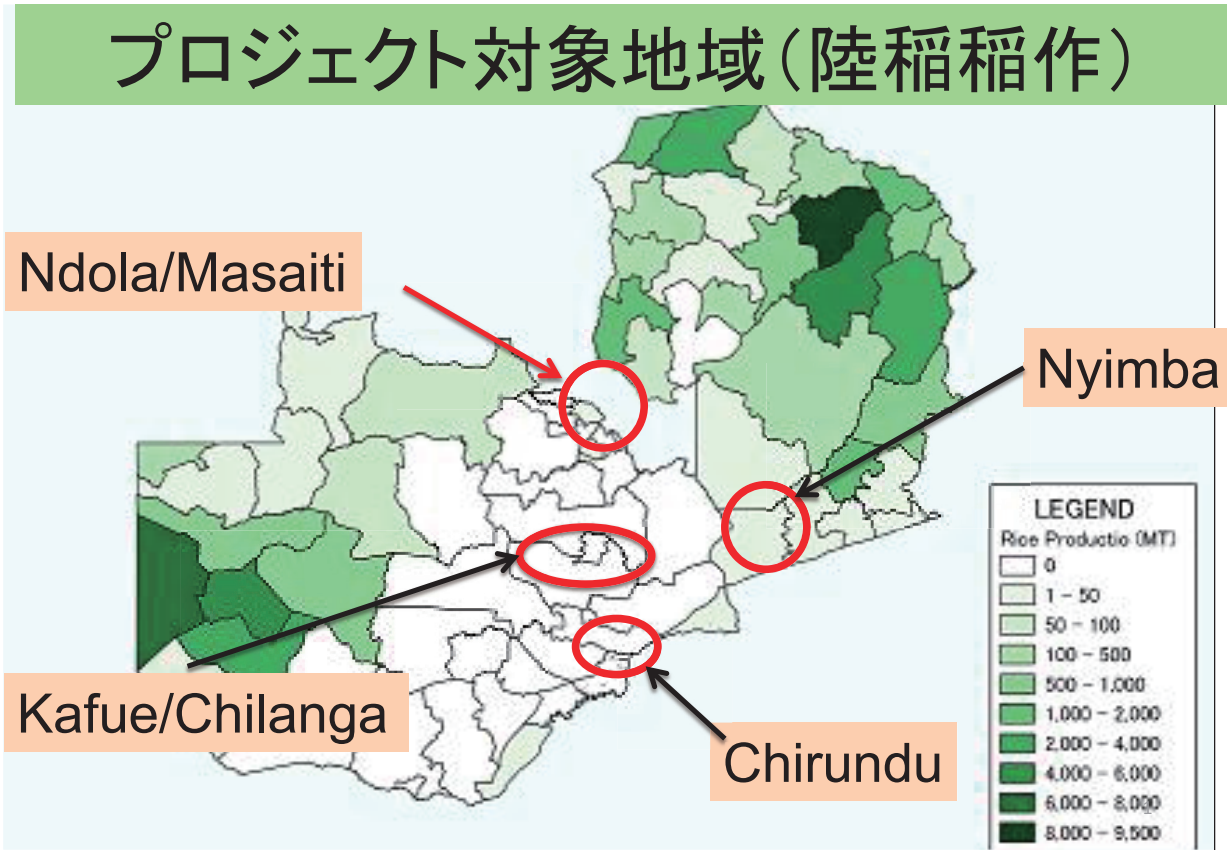
終わりに、本調査にご協力とご支援を頂いた内外の関係者に対して、心からの感謝の意を表します。

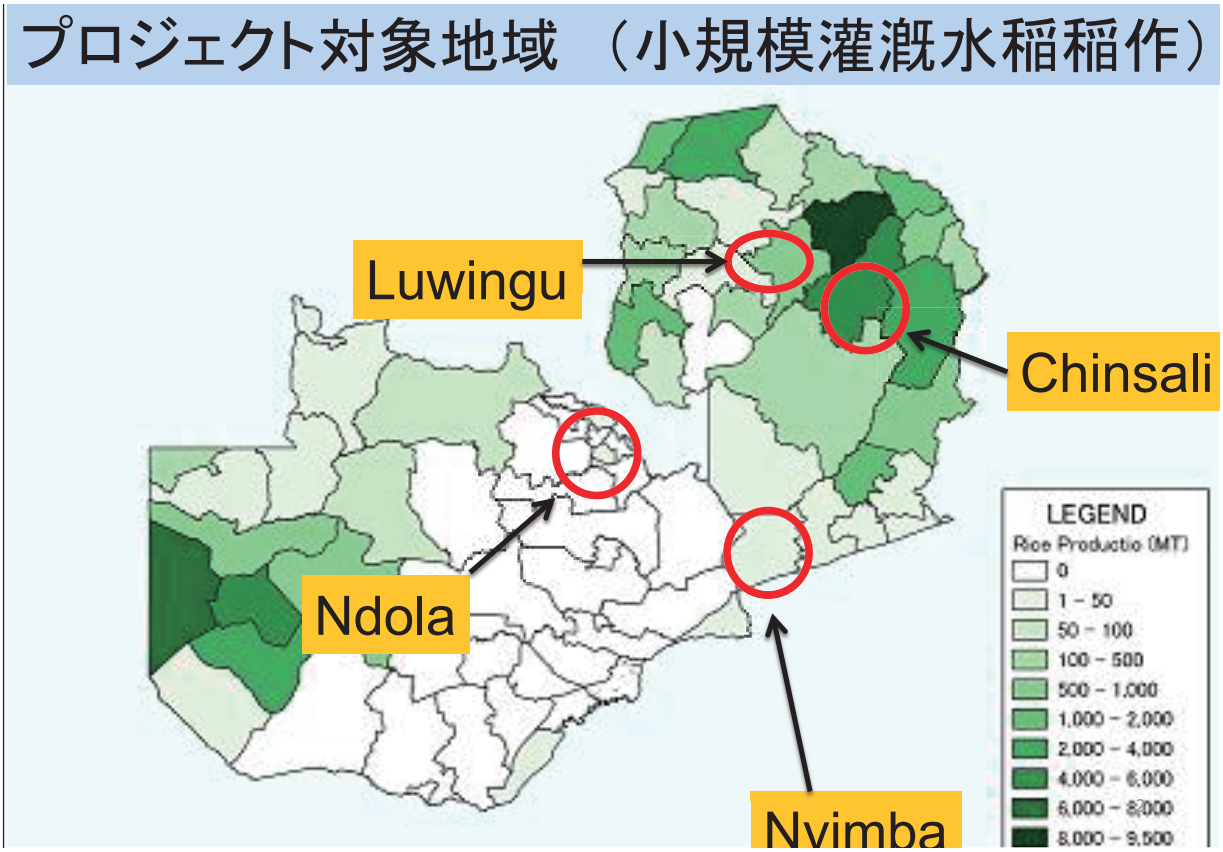
平成 26 年 7 月

独立行政法人国際協力機構
農村開発部長　北中　真人

目　　次

プロジェクト位置図


プロジェクト対象地域（陸稲稲作）
Ndola/Masaiti
Nyimba
Kafue/Chilanga
Chirundu
LEGEND
Rice Productio (MT)
0
1 - 50
50 - 100
100 - 500
500 - 1,000
1,000 - 2,000
2,000 - 4,000
4,000 - 6,000
6,000 - 8,000
8,000 - 9,500


プロジェクト対象地域　（小規模灌漑水稲稲作）
Luwingu
Chinsali
Ndola
Nyimba
LEGEND
Rice Productio (MT)
0
1 - 50
50 - 100
100 - 500
500 - 1,000
1,000 - 2,000
2,000 - 4,000
4,000 - 6,000
6,000 - 8,000
8,000 - 9,500

略　語　表

略　語	正式名称	日本語
COMACO	Community Markets for Conservation	自然保護のためのコミュニティマーケット
DOA	Department of Agriculture	農業局
FISP	Farmers Inputs Support Program	農業投入財支援プログラム
FoDiS	Food Crop Diversification Support Project for Enhancement of Food Security	食糧安全保障向上のための食用作物多様化支援プロジェクト
FoDiS-R	Food Crop Diversification Support Project Focusing on Rice Production	コメを中心とした作物多様化推進プロジェクト
GRZ	Government of the Republic of Zambia	ザンビア政府
JCC	Joint Coordination 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/M	Minutes of Meetings	協議議事録
MAL	Ministry of Agriculture and Livestock	農業畜産省
NAP	National Agricultural Policy	国家農業政策
NERICA	New Rice for Africa	ネリカ米
NGO	Non-Governmental Organization	非政府組織
NRDS	National Rice Development Strategy	国家コメ開発戦略
OVI	Objectively Verifiable Indicators	指標
PDM	Project Design Matrix	プロジェクト・デザイン・マトリックス
PO	Plan of Operations	活動計画
SCCI	Seed Control and Certification Institute	種子検査・登録所
ZARI	Zambia Agriculture Research Institute	ザンビア農業研究所
ZMW	Zambian Kwacha	ザンビアの通貨単位（クワチャ）

評価調査結果要約表

１．案件の概要		
国名：ザンビア共和国		案件名：コメを中心とした作物多様化推進プロジェクト
分野：農業農村開発		援助形態：技術協力プロジェクト
所轄部署：農村開発部　乾燥畑作地帯第一課		協力金額（評価時点）：約 2 億 1,000 万円
協力期間	2012 年 6 月～ 2015 年 6 月（3 年間）	先方関係機関：農業畜産省（MAL）
		日本側協力機関：農林水産省
		他の関連協力：「食糧安全保障向上のための食用作物多様化支援プロジェクト」（2006 ～ 2011 年）

１－１　協力の背景と概要

ザンビア共和国（以下、「ザンビア」と記す）では、農産物生産が GDP の約 12%を、農業就業者は総労働人口の約 7 割と大きなシェアを占め、国民の大半が生計を農業生産に依存していることから、農業が重要な経済活動となっている。当国農業セクターの特徴は、少数の商業農場と、絶対多数を占める伝統的な小規模農家が併存する二重構造にある。大半の小規模農家は灌漑施設へのアクセスがなく、天水による作物栽培に依存しているため、干ばつ・洪水など気象変動の影響を受けやすく、定期的に起こる食糧不足に直面してきた。今後も世帯レベル、国家レベルでの食糧安全保障の確保が、ザンビアの農業をめぐる最重要課題の 1 つとして認識されている。

一方で農業政策の影響もあって、メイズに極端に偏った生産構造となっているが、現在主に生産されているメイズは乾燥に弱く、特に干ばつの起こりやすい地域での栽培には必ずしも適していない。また、メイズが不作となると、国全体が容易に食糧不足に陥る状況にある。

以上にかんがみ、国家農業政策（National Agricultural Policy：NAP 2004-2015）では、①食用作物多様化を推進すること、及び②食糧安全保障の改善を図ることを掲げている。2011 年 10 月の大統領選スピーチでは小規模農家の作物多様化の必要性がうたわれている。

このような事情を背景に、JICA は 2006 年から 2011 年にわたって「食糧安全保障向上のための食用作物多様化支援プロジェクト（Food Crop Diversification Support Project for Enhancement of Food Security：FoDiS）」を実施し、メイズに代わる作物として根菜類を中心とした作物の植付材の生産・配布及び農民への研修実施に関する支援を行った。当該取り組みにおいては、一定程度の成果が確認されているが、効果発現のためには更なる省庁間の連携の強化が必要とされている。

さらに、ザンビア国内には、ローカル品種の主要生産地とともにネリカ米（New Rice Africa：NERICA）を含むコメ生産のポテンシャルを有する未利用地が残されており、メイズ市場の飽和傾向や都市部での食生活の悪化に伴い、小規模農家のコメ生産への関心は、年々高まっている。一方で、小規模農家の生産技術は依然として低く、優良種子へのアクセス、害虫・病害対策、適切な栽培技術の確立・普及も大きく立ち遅れている。

そこで、コメを中心とした食用作物多様化の研究及び、確実に小規模農民によって栽培される普及ルートの確立が急務となっている。そのため、JICA は 2012 年 6 月から 3 年間の予定で、「コメを中心とした作物多様化推進プロジェクト（Food Crop Diversification Support Focusing on Rice Production：FoDiS-R）」（以下、本プロジェクト）を実施している。

１－２　協力内容

（1）上位目標

対象地域における栽培作物の多様化が促進され、対象地域での食糧安全保障が改善される。

（2）プロジェクト目標

コメを中心とした作物多様化推進のための研究・普及体制が改善される。

（3）成果

1. ザンビア農業研究所（Zambia Agriculture Research Institute：ZARI）におけるイネ栽培技術の試験・研究実施能力が強化される。
2. 対象地域において、研究成果と提言（コメ栽培技術に関して）が、対象地域における普及サービスで有効に活用される。
3. 対象地域において、研究成果と提言（他対象作物の種苗増殖技術に関して）が、対象地域における普及サービスで有効に活用される。
4. 研究と普及、他関係ドナーとの連携関係が改善される。

（4）投入（評価時点）

1）日本側

専門家派遣：長期 3 名、短期 1 名（2 回）
研修員受入れ（本邦及びウガンダ）：7 名
供与機材：約 1,400 万円
ローカルコスト負担：約 2,000 万円

2）相手国側

カウンターパート（C/P）配置：延べ 9 名
土地・施設提供：
ZARI マウントマクル試験場及びミサンフ試験場内のプロジェクト執務室、付帯資機材及び水道・電気設備、マウントマクル試験場内の稲作試験圃場用地の提供

２．調査団の概要

調査者	担当分野	氏　名	所　属
	日本側		
	総括	天目石　慎二郎	JICA 農村開発部　乾燥畑作地帯第一課　課長
	稲作	貴島　祐治	北海道大学　植物育種学研究室　教授
	協力企画	藤田　暁子	JICA 農村開発部　乾燥畑作地帯第一課
	評価分析	板垣　啓子	株式会社　国際開発アソシエイツ
	ザンビア側		
	総括	Ms. Helen Kasalu	Chief Agricultural Research Officer,-Farming Systems and Social Science Division, Zambia Agriculture Research Institute（ZARI）

	団員	Mr. Phillip Siamuyoba	Chief Vegetables and Floriculture Officer, Department of Agriculture (DOA), MAL
調査期間	2014 年 2 月 16 日～ 2014 年 3 月 7 日		評価種類：中間レビュー調査

3. 評価結果の概要

3－1　成果・目標の達成度

(1) 成果 1

本成果についてはほぼ達成のめどがたっている。マウントマクル、ミサンフ、モングの試験場に、コメの試験研究に必要な各種試験研究機材が供与され、マウントマクルに稲作試験圃場が設置された。2013 年にはコメ研究者会議が 3 回開催され、コメ研究に係る情報共有・意見交換が行われたほか、2013/14 年度の研究計画が策定された。現在、5 件の研究テーマに係る試験研究が実施中である。

(2) 成果 2

本成果については高い達成見込みがある。これまでに、稲作技術に関する指導者研修（TOT）が 7 回実施され、83 名の普及員と 38 名の先進農家がこれらの研修を受講した。彼らによる現地研修が各地でこれまでに合計 32 回開催され、927 名の農民が稲作技術の研修を受講した。プロジェクトでは、ダンボにおける陸稲栽培技術に関するリーフレットを作成しており、プロジェクトによる研修のみならず、政府の農業投入材支援プログラム（Farmers Inputs Support Program：FISP）の一環としてネリカ種子を配布している ZAMSEED 社にもデータを提供し、種子を購入する農民への技術普及を図っている。

(3) 成果 3

本成果の達成には高い期待がもてる。先行協力である FoDis のフォローアップとして、マウントマクルで生産された植付材の配布に係る支援が行われている。また、普及員、先進農家 15 名に対するキャッサバ栽培技術研修が IITA（国際熱帯農学研究所）との協力によりこれまでに 2 回実施されたほか、対象地域での現地研修も 4 回開催され、84 名の農家がこれら研修に参加した。

(4) 成果 4

本成果についても高い達成見込みが得られている。ミサンフ及びマウントマクル試験場での活動と並行して、現地研修実施サイトにおける現場実証が行われており、地区担当普及員との連携が図られている。また、各地で活動する他ドナーの事業や NGO との連携の可能性も模索されており、現在、東部州で活動する NGO との具体的な活動連携の準備が進められている。

(5) プロジェクト目標達成の見込み

これまでに 7 名の研究者に対し稲研究に関する海外研修機会が提供されたほか、83 名の普及員が稲作技術研修を受講しており、コメ研究・普及に係る人材育成が図られつつある。現地実証圃場における単位収量は陸稲で平均約 2.3t/ha、水稲では平均約 3.8t/ha に達している。稲作技術に関する TOT 及び現地研修の実施を通じ、研修の内容及び方法が確立しつつあり、今後の研修活動を通じて、更に精査される見込みである。これらのことから、プロジェクト活動の成果はコメ研究・普及体制の改善につながることが期待され、プロジェクト目

標達成の見込みは高いと判断される。

３－２　評価結果の要約

（1）妥当性：高い

ザンビアの国家開発政策・農業開発戦略の方向性、並びに日本の協力政策における重点分野に大幅な変更はなく、本プロジェクトはそれらの政策に合致している。コメはプロジェクト対象地域の大半においてはいまだ新規作物であるが、現地実証活動に参加した普及関係者、農民の間では、メイズを補完する作物としてのコメの比較優位が高く評価されており、対象地域及び農民のニーズにも合致していることが確認された。

（2）有効性：高い

本プロジェクトの活動は順調に進捗しており、成果についても達成が見込まれることから、プロジェクト目標達成の可能性は高いと思われる。現地活動における他機関との連携のみならず、現在農業畜産省（Ministry of Agriculture and Livestock：MAL）が主導している国家コメ開発戦略（National Rice Development Strategy：NRDS）レビューに対するプロジェクト情報の共有によって、将来的な連携強化が図られることも期待できる。

（3）効率性：高い

本プロジェクトの運営において、日本・ザンビア国側双方のこれまでの投入、活動はおおむね適切であり、プロジェクト活動は効率的に実施されている。また、JOCV や Peace Cops（米国平和部隊）等との現地活動における協力により、プロジェクト成果のより広範な普及が進められていることは、本プロジェクトの効率的な実施に対する貢献要因となっている。

（4）インパクト：高い（正のインパクト）

コメ研究支援についてはいまだ緒についたばかりの段階であり、現地実証活動もいまだ限られた地域での実施にとどまっていることから、現時点で上位目標の達成に関する見込みを判断することは困難であるが、特に現場実証サイトでは、普及関係者及び農民からコメ生産に関する強い関心と意欲が示されており、プロジェクト実施による正の効果が発現する可能性が示唆された。なお、本調査において、負の効果、影響は特定されなかった。

（5）持続性：やや低い

食用作物多様化を推進する現在の政策の継続可能性は高く、現在見直しが行われている NRDS にも、プロジェクトが実証を行っているダンボでの陸稲生産、小規模灌漑による水稲生産が盛り込まれていることから、政策・制度的な持続性は確保される見込みである。また、プロジェクトの活動は実施機関の所掌範囲に合致しており、組織的な持続性についても担保されている一方、実施機関の人的・資金的制約が指摘されており財政面での持続性の確保には課題がある。また、コメ研究についてはいまだ計画段階であり、実施機関の技術面での持続性については、研究成果に基づいて今後検討されることになる。一方、プロジェクト参加農民からは、稲作技術に関する高い関心が寄せられており、今後、地域状況に応じた稲作技術が開発・導入されれば、技術面での高い持続性が期待できる。

３－３　効果発現に貢献した要因

（1）　計画内容に関すること：該当なし

（2）実施プロセスに関すること：

2013 年の 10 月以降実施されている現行 NRDS の見直しにおいて、プロジェクトの活動と結果が共有され、プロジェクトが推進している稲作技術についても関係者の理解が得られつつある。また、会合機会を通じて、コメ関連の他の事業についての情報が得られ、連携強化にもつながっている。NRDS 改訂作業との連携は、政策見直しへのプロジェクト成果への反映という意味でもプロジェクトの有効性に対する貢献要因になり得ると考えられる。

３－４　問題点及び問題を惹起した要因

（1）計画内容に関すること：該当なし

（2）実施プロセスに関すること：該当なし

３－５　結論

調査の結果、プロジェクトの活動が特段の遅延・障害なく実施され、期待された成果がほぼ達成されつつあることを確認し、協力期間内に本プロジェクトの目標は成功裏に達成される見込みは高いと結論する。

３－６　提言

（1）PDM の改訂

MAL 職員を対象としたワークショップで、本プロジェクトが残り期間に実施すべきこと、及び本プロジェクト終了後の稲作振興に必要なプロセスを整理し、その結果を本レビューの結果とともに PDM に反映させることを提言した。

（2）今後の研究人材の充実について

1）稲研究への従事について

本プロジェクトの稲研究に関する活動は、マウントマクル、ミサンフ及びモングに配置されている研究者を中心に構成されている“Rice Team”と日本人専門家により実施されている。ザンビア側は協力開始後新たに 2 名の若手研究者を採用しミサンフ試験場に配置するなど、研究実施体制強化に向けた前向きな姿勢が認められる。他方、多くの研究者は稲研究専属ではなく、他分野の研究と兼任の状況にとどまっている。

今後の稲研究の一層の推進に向けて研究実施体制の強化が求められることから、ザンビア側は他分野との兼任については稲専属とするなど、稲研究により時間を割けるよう業務環境を改善することが求められる。

2）稲研究に係る能力強化の必要性

ザンビアでは近年コメの需要が増加傾向にあり稲作に係る非常に大きなポテンシャルを有することから稲研究に対する重要性が高まっているが、同分野の研究は本プロジェクトを通じて本格化したところであり、まだ緒に就いた段階にある。多くの研究者は稲に関する知識・経験自体が十分でないことから、プロジェクトで実施中の Researchers’ Meeting

の参加に加え当該分野の技術研修やワークショップへの出席などを通じて継続的に稲に関する能力向上を図っていくことが求められる。

また、ザンビア側は引き続き稲研究に従事する研究者数の増員の可能性を探るとともに、将来の稲研究人材配置計画の作成を含めて、段階的に研究人材の体制強化を図っていくことが求められる。

(3) プロジェクト関係者間のコミュニケーションの強化

1) プロジェクト関係者間での定期会合の開催

現状ではプロジェクト関係者による定期会合が開催されていないなど、十分なコミュニケーションがとられているとはいい難い。他方、プロジェクトの拠点がマウントマクル（ルサカ）、ミサンフ（北部州）に分かれており両試験場の関係者が定期的に一堂に会するのは現実的でないことから、マウントマクル、ミサンフのそれぞれの試験場内において現在の活動の進捗状況、成果、今後の活動計画及び課題などにつき議論する定期会合を開催するなどコミュニケーションの強化を図る必要がある。また、両試験場の間では相互に議事録の作成、メールでの発信など双方の状況につき共有することが求められる。

2) Researchers' Meeting の推進

現在プロジェクトでは年 3 回の頻度で Researchers' Meeting を開催し、稲作に関する各研究の進捗状況や成果などにつき共有されている。同 Meeting は研究者の能力向上に大きく役立っていることから、今後も引き続き定期的に開催することが望まれる。同 Meeting は現在は開催経費を日本側負担で実施しているが、継続的な取り組みの重要性にかんがみ今後は開催経費の負担を含めてザンビア側が主体的に実施していくことが望まれる。

(4) プロジェクト活動予算の充実

現状ではザンビア側の予算上の制約により、プロジェクト活動経費の大部分を日本側の経費負担で実施している。研究者のなかからは、ザンビア側の予算不足により車両や日当・宿泊代について十分対応されず、フィールドでの研究活動に支障をきたしているとの声も上がっている。ザンビア側には、今後プロジェクト活動の実施に必要となる予算、特に研究にかかる予算の十分な確保が求められる。

第１章　中間レビュー調査の概要

１－１　調査の背景

ザンビア共和国（以下、「ザンビア」と記す）では、農産物生産が GDP の約 12％を、農業就業者は総労働人口の約 7 割と大きなシェアを占め、国民の大半が生計を農業生産に依存していることから、農業が重要な経済活動となっている。当国農業セクターの特徴は、少数の商業農場と、絶対多数を占める伝統的な小規模農家が併存する二重構造にある。大半の小規模農家は灌漑施設へのアクセスがなく、天水による作物栽培に依存しているため、干ばつ・洪水など気候変動の影響を受けやすく、定期的に起こる食糧不足に直面してきた。今後も世帯レベル、国家レベルでの食糧安全保障の確保が、ザンビアの農業をめぐる最重要課題の 1 つとして認識されている。

一方で農業政策の影響もあって、メイズに極端に偏った生産構造となっているが、現在主に生産されているメイズは乾燥に弱く、特に干ばつの起こりやすい地域での栽培には必ずしも適していない。また、メイズが不作となると、国全体が容易に食糧不足に陥る状況にある。

以上にかんがみ、国家農業政策（National Agriculture Policy：NAP 2004-2015）では、①食用作物多様化を推進すること、及び②食糧安全保障の改善を図ることを掲げている。2011 年 10 月の大統領選スピーチでは小規模農家の作物多様化の必要性がうたわれている。

このような事情を背景に、JICA は 2006 年から 2011 年にわたって「食糧安全保障向上のための食用作物多様化支援プロジェクト（Food Crop Diversification Support Project for Enhancement of Food Security：FoDiS）」を実施し、メイズに代わる作物として根菜類を中心とした作物の植付材の生産・配布及び農民への研修実施に関する支援を行った。当該取り組みにおいては、一定程度の成果が確認されているが、効果発現のためには更なる省庁間の連携の強化が必要とされている。

さらに、ザンビア国内には、ローカル品種の水稲の主要生産地とともにネリカ米（New Rice Africa：NERICA）を含む陸稲生産のポテンシャルを有する未利用地が残されており、メイズ市場の飽和傾向や都市部での食生活の多様化に伴い、小規模農家のコメ生産への関心は、年々高まっている。一方で、小規模農家の生産技術は依然として低く、優良種子へのアクセス、害虫・病害対策、適切な栽培技術の確立・普及も大きく立ち遅れている。そこで、コメを中心とした食用作物多様化の研究及び、確実に小規模農民によって栽培される普及ルートの確立が急務となっている。

このような背景の下、JICA は 2012 年 6 月から 2015 年 6 月まで、技術協力プロジェクト「コメを中心とした作物多様化推進プロジェクト（Food Crop Diversification Support Project Focusing on Rice Production：FoDiS-R）」（以下、「本プロジェクト」）を実施している。

１－２　調査の目的

今回の中間レビュー調査では、研究と普及をそれぞれ担当するザンビア農業研究所（Zambia Agriculture Research Institute：ZARI）/ 農業局（Department of Agriculture：DOA）と JICA が合同で、本プロジェクトの目標や成果の達成状況を検証し、評価を行う。また、評価結果に基づき、プロジェクト後半の活動計画を検討し、改善策の提言や教訓の抽出を取りまとめる。

具体的な調査内容は、以下のとおり。

(1) これまでの実績の確認（活動、投入）、実施プロセスの検証

(2) プロジェクト目標と成果の達成状況、貢献・阻害要因の分析

(3) 上記 (1)、(2) を踏まえ、評価 5 項目の観点からの総合的な評価
(4) 今後の国家コメ開発戦略（National Rice Development Strategy：NRDS）推進にあたっての必要な措置の確認と本プロジェクトにおける効果発現のための改善策の検討・提言
(5) 類似プロジェクトのための教訓抽出
(6) 上記 (3)～(5) を合同評価報告書に取りまとめ、合意する。

１－３　調査団の構成

(1) 日本側調査団

担当分野	氏　名	所　属
総括	天目石　慎二郎	JICA 農村開発部　乾燥畑作地帯第一課　課長
稲作	貴島　祐治	北海道大学　植物育種学研究室　教授
協力企画	藤田　暁子	JICA 農村開発部　乾燥畑作地帯第一課　主任調査役
評価分析	板垣　啓子	株式会社国際開発アソシエイツ　国際開発コンサルタント

(2) ザンビア側調査団

Title	Name	Position
Leader	Ms. Helen KASALU	Chief Agricultural Research Officer,-Farming Systems and Social Science Division, Zambia Agriculture Research Institute（ZARI）
Evaluation	Mr. Phillip SIAMUYOBA	Chief Vegetables and Floriculture Officer, Department of Agriculture（DOA）, MAL

(3) 調査日程

現地調査は 2014 年 2 月 16 日から 3 月 7 日までの期間で実施された。
調査の概要は、以下のとおりである。

		ザンビア側調査団		日本側調査団		
		Ms. Kasalu (ZARI)	Mr. Siamuyoba (DOA)	板垣	天目石 藤田	貴島
16-Feb	Sun			Arrive at Zambia		
17-Feb	Mon	Kick off meeting with Joint Evaluation Team (Chilanga)		Courtesy call to JICA Office Kick off meeting with Joint Evaluation Team, Experts and C/Ps (Chilanga) Meeting with Experts (Dr Nozaka)		
18-Feb	Tue			Meeting with Experts about PDM (Chilanga)		
19-Feb	Wed	Kabwe → Lusaka		Meeting with development Partners (FAO, COMACO, Peace corps)		

20-Feb	Thu	Lusaka → Nyimba Meeting with DACO, CEO, Farmers etc.				
21-Feb	Fri	Meeting with CEO& Farmers Nyimba → Lusaka				
22-Feb	Sat	Lusaka → Kabwe		documentation		
23-Feb	Sun			documentation	Arrive at Zambia	
24-Feb	Mon	Kabwe → Lusaka		Courtesy call to JICA Office		
			Meeting with IITA			
		Lusaka → Kabwe		Meeting with ACF		Arrive at Zambia
25-Feb	Tue	Kabwe → Kasama		Courtesy call to Director of Agriculture (Mr. Lungu) Meeting with Dr. Nozaka and Mr. Ito Courtecy call and Meeting with ZARI (Incl. Courtesy call to Director)		
26-Feb	Wed			Lusaka → Kasama		
		Meeting at Misamfu				
27-Feb	Thu	Site survey (Luwingu)				
28-Feb	Fri	Site survey (Flood Plane) Kasama → Mpika			T-COBSI Kasama → Mpika	Site survey (Flood Plane) Kasama → Mpika
1-Mar	Sat	Mpica → Lsaka				
2-Mar	Sun			Internal Meeting / documentation		
3-Mar	Mon		Workshop for NRDS Review (concept note)			
4-Mar	Tue		Workshop for NRDS Review			
						Departure from Zambia
5-Mar	Wed	Kabwe → Lusaka	Documentation			
6-Mar	Thu	Meeting with Evaluation team Prepare for JCC (Evaluation report)				
				Report to EOJ		
7-Mar	Fri	Joint Coordinating Committee				
		Lusaka → Kabwe		Meeting with PS of MAL Report to JICA office Departure from Zambia		

（4）ザンビアでの現地調査

1） 今回調査に必要な指標の設定案についてザンビア側と協議を行う。

2） 評価グリッドに基づき、プロジェクト関係者に対するヒアリング、サイト視察を行い、プロジェクト実績・活動プロセス等に関する情報・データの収集・整理を行う。

3） 上記 1）で収集したデータを分析し、プロジェクト実績の貢献・阻害要因を抽出する。

4） 事前調査及び上記（1）～（3）で得られた結果を総合的に判断し、評価 5 項目の観点から評価を行い、提言とともに合同評価レポート（案）に取りまとめる。

5） 上記 4）のレポート（案）は日本・ザンビア側双方合同評価委員で合意した後、ザンビア側関係者への説明を行い、その結果をミニッツにより合意・署名する。

6） 調査結果に基づき NRDS ワークショップに参加し、各種提言を行う。

（5）調査項目

本調査では、以下の評価 5 項目の観点から評価調査を実施する。

1） 妥当性（relevance）

プロジェクト目標や上位目標がザンビアの開発政策、わが国の援助方針、受益者のニーズに合致しているかどうかを判断する。

2） 有効性（effectiveness）

成果及びプロジェクト目標の現時点での達成状況､プロジェクト終了時での達成見込み、及び成果の達成がプロジェクト目標の達成に貢献しているかを判断する。

3） 効率性（efficiency）

投入の時期、質、量等により、成果にどう影響を与えたか、投入は成果の達成のために貢献しているか、投入に不足はなかったか、または無駄な投入はなかったかを判断する。

4） インパクト（impact）

プロジェクト実施によりもたらされる、より長期的、間接的効果や波及効果をみるものであり、プロジェクト計画時に予期された、あるいは予期されなかったプラスまたはマイナスの波及効果を評価する。なお、上位目標は計画立案時に「意図した」「プラスの」インパクトである。

5） 持続性（sustainability）

制度的側面、財政的側面、及び技術的側面から、協力終了後も相手国側によりプロジェクトの成果が継続して維持・発展する見込みがあるかどうかを判断する。

第２章 プロジェクトの概要

２－１　概要

（1）プロジェクト成果

①稲作の基礎研究に係わる能力開発

②コメと対象作物の研修・普及活動の支援

③同協力活動を通じた研究と普及の連携の強化

（2）プロジェクト目標

コメを中心とした作物多様化推進のための研究・普及体制が改善される。

（3）上位目標

ザンビアの食糧安全保障の強化及び小規模農家の収入が向上する。

２－２　協力期間

2012 年 6 月～ 2015 年 6 月（3 年間）

２－３　実施機関

農業畜産省（Ministry of Agriculture and Livestock：MAL）農業研究所（ZARI）

２－４　プロジェクトサイト

（1）稲作支援にかかわる活動

北部州・西部州・ムチンガ州、東部州、ルサカ州、コッパーベルト州（東部州、ルサカ州、コッパーベルト州については、2013 年 11 月 JCC にて追加）

（2）FoDiS プロジェクトのフォローアップ活動

東部州・ルサカ州（南部州・西部州は 2013 年 11 月 JCC にて削除）

（FoDiS での成果定着のための普及体制確立を行う。）

第３章　プロジェクトの実績

３－１　投入実績

３－１－１　日本側投入

以下に、日本側の投入として、専門家派遣、本邦研修、機材供与、現地業務費支出、建物・施設等の実績について記述する。

(1) 専門家派遣

表３－１に示すとおり、本プロジェクトには、「チーフアドバイザー / 稲作適用化」「業務調整 / 組織間連携強化」「北部稲作」分野の長期専門家 3 名が派遣中であり、またこれまでに「社会調査」分野で短期専門家が派遣されている。

表３－１　専門家派遣実績

種別	専門分野	派遣期間
長期	チーフアドバイザー / 稲作適用化	2012.6.20 ～
	業務調整 / 組織間連携強化	2012.7.19 ～
	北部稲作	2013.5.26 ～
短期	社会調査	2013.3.1 ～ 2013.3.23
		2013.8.10 ～ 2013.9.14

出所：プロジェクト作成資料

(2) 機材供与

活動の実施に必要な農業機械、車両、試験研究用資機材、事務機器等が要請され、これまでに総額約 1,400 万円相当の機材が供与されている。供与された機材の詳細は英文報告書 ANNEX4 に示すとおりである。

(3) カウンターパート（C/P）の本邦研修

これまでに、6 名の C/P がウガンダ、1 名が本邦での研修に参加した。C/P の本邦及び第三国研修の詳細については英文報告書 ANNEX5 を参照。

(4) 現地業務費支出

これまでに総額 100 万ザンビア・クワチャ（ZMW）（約 2,000 万円[1]）のローカルコスト負担が行われた。各年度の支出実績は、表３－２のとおりである。

[1] 1.0ZMW ＝約 20 円で換算。

表３－２　現地業務費支出内訳

（ZMW）

年度（注 1）	2012	2013（注 2）	合計
金額	405,573	594,769	1,000,342

（注 1）日本の会計年度による。　（注 2）2014 年 1 月末までの実績額。
出所：プロジェクト作成資料

３－１－２　ザンビア側投入

以下に、ザンビア側の投入として、人員配置、土地・施設の提供等の実績について記述する。

（1）C/P の配置

実施機関である ZARI より延べ 9 名の C/P が配置され、日本人専門家とともに、プロジェクト活動の運営にあたっている。これら C/P の一覧は英文報告書 ANNEX6 に示すとおりである。

（2）土地、施設等の提供

ザンビア側より、ZARI のマウントマクル試験場、ミサンフ試験場双方に専門家執務室が設置され、これら執務室の付帯資機材及び電気・水道が提供されているほか、マウントマクル試験場内の約 3,700m^2 の圃場が稲作試験圃場設置のために提供された。

３－２　成果達成状況

本プロジェクトの枠組みにおいては、コメを中心とした食用作物多様化のための研究・普及体制の改善を目標として 4 つの成果が設定されている。協力期間前半のプロジェクト活動は、PDM 及び PO に沿って特段の遅滞や問題なく進捗しており、これらの成果の達成には高い見込みがあると判断される。本レビュー調査時点までの成果の達成状況は、以下のとおりである。

成果 1：ZARI におけるイネ栽培技術の試験・研究実施能力が強化される。
指標：1-1　3 つの試験場で研究に必要な施設・機材が整備される。 1-2　コメ研究者会議が年 2 回開催される。 1-3　1 つ以上のコメ研究計画が策定され、実施される。

プロジェクトでは、ハンドトラクター、精米機、脱穀機などの農機を含め、コメ関連の試験研究実施に必要な資機材を調達し、マウントマクル、ミサンフ、モングの試験場に供与した。これら機材供与のほか、マウントマクル試験場内の圃場に稲作試験のための水田圃場が設置された。2013 年にはコメ研究者会議が 3 回開催され、コメ研究に係る情報共有・意見交換が行われたほか、2013/14 年度の研究計画が策定されている。本コメ研修者会議はいままでのところプロジェクトによるアドホックな会合と位置づけられているが、将来的には ZARI の定期会合として内部化されていくことが望ましい。コメ研究については、コメ研究者会議でも検討が行われ、2013/14 年度の計画として、ミサンフ試験場において、5 件の研究テーマ（寒冷気候による生育への影響、ダンボにおける湛水（たんすい）・非湛水圃場での稲生産、ローカル品種比較、ザンビアにおける改良品種、趣旨生産技術）にかかる試験研究が実施中である。

表３－３　コメ研究者会議開催実績

	開催日程	参加者数	内　容
1	2013 年 5 月 9 日	13	過去 2 年間の稲研究のレビュー
2	2013 年 8 月 16 日	15	1）世界銀行支援による南部アフリカ農業生産性強化プログラム（APPSA）に関する情報共有 2）プロジェクトにおけるコメ研究の方向性と戦略に係る議論
3	2013 年 9 月 6 日	15	2013/14 年度のコメ研究計画の発表・議論

出所：プロジェクト作成資料

成果 2：対象地域において、研究成果と提言（コメ栽培技術に関して）が、対象地域における普及サービスで有効に活用される。
指標：2-1　100 名以上の普及員及び 50 名以上の農家が対象作物に関する技術研修を受講する。 2-2　1,000 名以上の農家が対象作物に関する研修を受講する。 2-3　普及に必要な普及教材が使用可能となる。

これまでに、稲作技術に関する指導者研修（TOT）が 7 回実施され、83 名の普及員と 38 名の先進農家がこれらの研修を受講した。彼らによる現地研修が各地でこれまでに合計 32 回開催され、927 名の農民が稲作技術の研修を受講した。これらの研修の実績は表３－４に示すとおりであり、更なる詳細については英文報告書 ANNEX7 を参照されたい。プロジェクトでは、TOT を受講した先進農家の圃場を中心に 19 カ所の現地実証サイトを設置し、稲作技術の適用可能性を検証しつつ、周辺農民への展示を行っている。なお、本成果の指標 2-1 及び 2-2 については、本調査時点までにほぼ達成されていることから、プロジェクト終了までに達成すべき指標を新たに設定する必要があると判断され、PDM 改訂に関する議論において、成果と指標の修正が検討された（PDM 修正案については英文報告書 ANNEX9 に示すとおりである）。

表３－４　稲作技術研修実績

研修種別	実施回数	参加者数				
		普及員	先進農家	その他	一般農家	合計
TOT	7	83	38	9		130
現地研修	32				927	927
Total	39	83	38	9	927	1,057

出所：プロジェクト作成資料

プロジェクトでは、ダンボにおける陸稲栽培技術に関するリーフレット〔Upland（Dambo）Rice Cultivation Guide 第 1 版〕を作成しており、プロジェクトによる研修のみならず、政府の農業投入材支援プログラム（Farmers Input Support Program：FISP）の一環としてネリカ種子を配布している Zamseed 社にもデータを提供し、種子を購入する農民への技術普及を図っている。

成果 3：対象地域において、研究成果と提言（他対象作物の種苗増殖技術に関して）が、対象地域における普及サービスで有効に活用される。
指標：3-1　15 名以上の普及員が対象作物に関する技術研修を受講する。 3-2　100 名以上の農家が対象作物に関する研修を受講する。

先行協力である「食糧安全保障向上のための食用作物多様化支援プロジェクト（FoDiS）」のフォローアップとして、プロジェクトではマウントマクル試験場で生産された植付材の配布に係る支援を継続的に行ってきた。また、普及員・先進農家 15 名を対象として、キャッサバ栽培技術に関する集団研修が IITA（国際熱帯農学研究所）との協力によりこれまでに 2 回実施されたほか、豆及びキャッサバ栽培技術に関する現地研修も 4 回開催され、84 名の農家がこれら研修に参加した。これら研修の実績を表３－５に示す。

表３－５ コメ以外の食用作物に関する研修実績

研修種別	実施回数	参加者数			
		普及員	先進農家	一般農家	合計
集団研修	2	6	9		15
現地研修	4			84	84
合計	6	6	9	84	99

出所：プロジェクト作成資料

なお、本成果の指標についても、本調査時点までに高い達成度が確認されたことから、プロジェクト終了までに達成すべき指標を新たに設定する必要があると判断され、PDM 改訂に関する議論において、成果と指標の修正が検討された（PDM 修正案については英文報告書 ANNEX9 に示すとおりである）。

成果 4：研究と普及、他関係ドナーとの連携関係が改善される。
指標：4-1　研究者、普及員及びドナー間の連携が強化される。

上述のとおり、プロジェクトでは、ミサンフ及びマウントマクル試験場での試験研究活動と並行して、現地研修実施サイトにおける稲作技術の現地実証を行っており、これらの活動においては当該地区担当普及員との連携が図られてきた。また、プロジェクト開始当初より、稲作振興に関連した他ドナーや NGO の事業に関する情報収集を行ってきており、連携の可能性が模索されている。現在、東部州で活動する NGO、自然保護のためのコミュニティマーケット（Community Markets for Conservation：COMACO）との活動連携の準備が進められており、今後、プロジェクトが稲作技術を提供し、COMACO が普及指導、精米施設及びマーケティング支援を行うという形での協力が具体化する予定である。プロジェクトでは今後もこのような連携の可能性を発掘し、活動に組み込んでいくことを検討している。

なお、本成果達成度の検討において、指標が不適切である点が指摘され、PDM の改訂に際しては、本成果指標についても見直すことが提案された（PDM 修正案については英文報告書

ANNEX9 を参照)。

３－３　プロジェクト目標達成の予測

プロジェクト目標：コメを中心とした作物多様化推進のための研究・普及体制が改善される。
指標：1. 10 名以上の研究者及び普及員が研修を受ける。 2. 農家レベルで 2.5t/ha 以上のコメ生産が達成される。 3. コメの普及研修パッケージが 1 つ以上作成される。

プロジェクトではこれまでに 7 名の研究者に対し稲研究に関する海外研修機会を提供したほか、前述のとおり、83 名の普及員が稲作技術研修を受講しており、コメ研究・普及に係る人材育成に貢献してきた。

これまでのところ、農家レベルでのコメの収量は把握されていないが、2012/13 年にデータが得られた 9 カ所の現地実証圃場の収量は表３－６に示すとおりであり、陸稲で平均約 2.3t/ha、水稲では平均約 3.8t/ha に達している。現地実証圃場はプロジェクトの管理下に置かれており、一般農家の収量より高い収量が得られていると考えられるが、少なくともこれらの結果からは、本指標の達成に一定の期待がもてると判断された。

表３－６　現地実証圃場における収量

県	普及地区	村	稲の種類	収量（t/ha）
Nyimba	Chikonta	Nyamandu	陸稲	3.8
	Mombe	Lavison		1.5
Kafue	Lukolongo	Lisiko		3.2
	Chikupi	Chikupi		0.3 (注 1)
Chirundu	Lusitu Bridge	Lusitu		2.5
陸稲平均収量				2.26
Chinsali	Chinsali Central	Seed farm	水稲	4.5 (注 2)
	Chibesa	Luvuwa		3.0 (注 2)
Luwingu	Luwingu Main	Museya		4.5 (注 2)
Nyimba	Mombe	Lavison		3.1
水稲平均収量				3.78

（注 1）水不足による生育不良が発生。　　（注 2）推定値。
出所：プロジェクト作成資料

なお、稲作技術に関する TOT 及び現地研修の実施を通じ、研修の内容及び方法が確立しつつある。2013/14 年の研修計画策定に際しては 2012/13 年の研修内容に関する見直しに基づく修正がなされており、今後の研修活動を通じて、更に精査される見込みである。

以上のとおり、現在の指標は本調査時点でほぼ達成される見込みであるが、調査団内では、例えば農家レベルの実際の収量がプロジェクト目標であるコメ研究・普及の体制改善を測る指標と

して適切であるかという点が議論となり、プロジェクト終了時の目標達成に関して、新たな指標を設定することが提案された（英文報告書 ANNEX9 に示す PDM 修正案を参照のこと）。

３－４　実施プロセスにおける特記事項

３－４－１　意思決定のメカニズム

日本、ザンビア側関係者により構成される合同調整員会（JCC）は、プロジェクトの意思決定機関であり、これまでに 2 回の会合が開催されている。これら JCC 会合においては、活動進捗及び成果達成状況と次期活動計画内容の確認・承認、また、PDM の指標決定等が行われてきた。今般調査期間中に第 3 回 JCC が開催され、プロジェクトの進捗と中間レビュー調査結果及びそれに基づく提言が報告され、承認を得た。

なお、当初計画では、組織間連携を促進し、プロジェクト活動の詳細モニタリングを行って技術的助言を行うための技術委員会（TC）が四半期ごとに開催されることとなっていたが、JCC との構成員の重複及び、特に組織の管理職位にあるメンバーのスケジュールの問題等から開催が困難であるとして、第 2 回 JCC において同 TC の機能を JCC が担うことが決定された。日常的なプロジェクト運営に関しては、農業畜産省（MAL）のプロジェクト・マネジャーと日本人専門家チームが定期的に連絡をとりあって業務上の意思決定を行っている。

３－４－２　プロジェクト関係者間の連絡調整

日本人専門家と C/P がマウントマクルとミサンフに分散して配置されているという本プロジェクトの状況において、定例会合を開催することは難しく、プロジェクトチームとしての定例会合はこれまで実施されていない。プロジェクト運営及び活動に関する情報共有や議論・検討の機会は、不定期かつ一部のプロジェクト関係者間の会合機会に限られており、プロジェクト全体の枠組みや活動に関して、一部の C/P の理解不足が指摘された。

本プロジェクトの活動はそれぞれが独立して実施されることとなっているため、これまでの活動において特に問題を生じることはなかったが、円滑なプロジェクト運営のためには、関係者間の連絡調整、情報共有が重要であり、プロジェクトチームとしての情報共有を強化することが、協力期間後半の課題であると思われる。

第4章　評価5項目によるレビュー結果

４－１　レビュー結果

４－１－１　妥当性

以下の理由から、本プロジェクトの妥当性は高いと評価される。

(1) ザンビア政府の政策・制度等との整合性

プロジェクト開始以降、第6次国家開発計画（SNDP：2011-2015）などの上位の開発計画や国家農業政策（NAP：2004-2015）などセクター開発計画に大幅な変更はなく、持続的で成長力のある農業セクターの確立は、世帯及び国家レベルでの食糧安全保障の確保と収入向上に向けた重要な方向性として依然重視されている。さらに、稲作生産の倍増という目標を掲げる国家コメ開発戦略（NRDS 2011-2015）についても現在見直しが行われており、本プロジェクトが試行しているダンボでの陸稲生産や小規模灌漑による水稲生産の推進が改訂NRDS（2014-2018）に反映されていることから、本プロジェクトの方向性はザンビア政府の政策と合致していることが確認された。

(2) 日本の開発援助政策との整合性

2012年4月に策定されたわが国の対ザンビア共和国国別援助方針[2]において、産業の活性化は援助重点3分野の1つに挙げられており、農業については食用作物の多様化や灌漑開発に向けた技術協力の重要性がうたわれている。事業展開計画上も、本プロジェクトは、現地適応技術の普及による作物多様化の推進と灌漑面積の拡大によって安定的な生産量と生産性の向上を図ることで小規模農家の市場参加を促進することを目的とする「農業生産の安定化と生産性向上プログラム」に貢献するものと位置づけられている。さらに、わが国政府はアフリカにおける稲作の生産性向上に向け、継続的に「アフリカ稲作振興のための共同体（CARD)」の枠組みを支援する立場をとっている。これらの点にかんがみ、本プロジェクトとわが国の援助政策の整合性は確保されている。

(3) 対象地域・受益者ニーズとの合致

本プロジェクトの対象地域の大半において、コメはいまだ新しい作物であり、地域農民や普及員の稲作技術に関する知識・経験は限られたものであった。しかしながら、今般調査のインタビューでも、農民がコメ生産のメリットを感じており、継続的に稲作を続けていく意欲を示していることが確認された。同様に、普及員や県農業調整官のレベルでも、食用作物の多様化を推進するうえでのコメの重要性が認識されており、プロジェクトからの継続的な技術支援に対する高い期待が表明された。以上のことから、本プロジェクトの内容は、対象地域・受益者ニーズに対する適切な対応であると考えられる。

４－１－２　有効性

以下の点から、本プロジェクトの実施には高い有効性が期待できる。

[2] 英文報告書においては本援助方針策定時期が“December 2012”と誤記されているが、正しくは“April 2012”である。

(1) プロジェクト目標達成の見込み

前章に既述のとおり、本プロジェクトの活動は順調に進捗しており、成果についても達成が見込まれている。試験研究能力向上については、現在ミサンフ試験場を中心にいくつかのテーマでコメ研究が実施されており、ダンボでの陸稲生産、小規模灌漑による水稲生産の実証も各地で実施されている。コメ以外の食用作物生産技術に関する先行案件のフォローアップ、他の事業との連携促進も行われており、プロジェクト期間後半の活動を通じて、これらが更に制度化されることが期待され、プロジェクト目標達成の見込みは高いと考えられる。

(2) 協力目標達成への成果の貢献度

本プロジェクトの目標は、各成果に対応した 4 つの手段により達成されることとなっている。成果 1 は試験研究能力の向上、成果 2 は稲作技術、成果 3 はその他の食用作物生産技術の普及であり、それらを促進するための組織間連携の強化が成果 4 として位置づけられている。成果からプロジェクト目標に至る論理性は確保されており、これら 4 つの成果の達成は等しくプロジェクト目標達成に貢献することが見込まれる。しかしながら、成果 2 に係るプロジェクトの実際の活動においては、試験研究とは別個に各地で稲作技術の現地実証が行われており、研究の結果として確立した技術を普及するレベルには至っていない。よって、PDM の修正に際しては、成果 2 とその達成のための活動について、プロジェクトの実態に即して見直しを行うことが適当であると判断された。

(3) プロジェクトの有効性に対する貢献要因

2013 年の 10 月以降、MAL は現行の NRDS の見直しに向けた作業に着手しており、コメセクターに関係する組織・機関の代表者等による議論が継続的に行われてきている。このフォーラムにおいて、プロジェクトの活動と結果が共有されており、プロジェクトが発掘している稲作推進の可能性についても関係者の理解が得られつつある。また、これらの会合機会を通じて、コメ関連の他の事業についての情報が得られ、連携強化にもつながっている。政策見直しへのプロジェクト成果への反映という意味でも、同フォーラムとの連携はプロジェクトの有効性に対する貢献要因になり得ると考えられる。

(4) プロジェクトの有効性に対する阻害要因

今般調査において、特段の阻害要因は報告・特定されなかった。

(5) 外部条件の変化による影響

上述のとおり、NRDS 見直しに関連した MAL 関係者協議を通じ、試験研究・普及関係者間の連携・情報共有が進んでいる。FISP 等、コメ生産増加に資する政府の他のプログラムも実施されており、他ドナー支援によるコメ関連事業も計画中である。C/P の頻繁な異動はなく、おおむね継続的なプロジェクトへの関与が得られている。よって、これまでのところ、外部条件の変化による特筆すべき問題は発生していない。 ただし、外部条件

に関する議論のなかで、ザンビア政府予算に関連した事項については、一般的な問題であり、本プロジェクトの外部条件として特定することには疑問があるとして、PDM 修正に際して見直すことが提案された（PDM 修正案については英文報告書 ANNEX9 を参照）。

４－１－３　効率性

本プロジェクトの運営において、日本・ザンビア国側双方の投入、活動に過不足はなく、期待された成果の発現に貢献していると思われ、本プロジェクトの効率性は高いと判断された。

(1) 日本側投入

これまでに派遣された日本人専門家はおのおのの専門分野に関する指導的な役割を果たしている。供与された機材に関しては、量・質・供与時期ともに適切であり、良好な状態で管理され、試験研究、現地実証等のプロジェクト活動と運営管理業務において有効に活用されている。C/P の研修についても、内容が適切なものであり、プロジェクト活動のみならずおのおのの将来的な業務遂行に際しても有益であると評価されている。

(2) ザンビア側投入

本プロジェクトには、実施機関である ZARI から活動に必要な分野の C/P が配置されており、各地での現地実証においても担当地区普及員との連携・協力が進められている。また、実施機関からの施設等の提供は効率的なプロジェクト活動の実施につながっている。

(3) 他の稲作支援プログラム等との連携

本プロジェクトにおいては、関係機関との連携強化が成果の 1 つに掲げられており、プロジェクトでは他組織の事業との連携に係る努力を意識的に行ってきた。その結果として、前述のとおり、現地実証や稲作技術の普及に関する COMACO との具体的な協力が計画されている。また、稲作技術に関する現地研修の際、青年海外協力隊（JOCV）や米国平和部隊（Peace Cops）のボランティアの参加を募り、その後、各人の任地において農民への指導が行われている。これらの連携・協力を通じてプロジェクト成果のより広範な普及が進められていることは、本プロジェクトの効率的な実施に貢献していると考えられる。

４－１－４　インパクト

本レビュー調査時点では、プロジェクト実施によるポジティブな効果が発現する高い可能性が示唆され、ネガティブな効果、影響は特定されなかった。

(1) 上位目標達成に向けたインパクト

本プロジェクトの上位目標は対象地域における食糧不足の改善であるが、今般調査時点では本目標に関する判断根拠を得ることはできなかった。対象地域の大半において、コメ生産が導入されたのはごく最近であり、プロジェクトが実施している現地実証サイト周辺においても生産はいまだ非常に小規模である。今後、生産規模の拡大と、それに伴う生産量の増加は期待されるものの、今後の活動が対象地域の食糧自給全体にどのような影響をもたらし得るか、把握できる段階にはない。

なお、今般調査において、上位目標設定の論理的整合性を見直す必要が議論された。プロジェクト目標はコメを中心とした食用作物多様化のための試験研究・普及体制の改善であり、体制改善によってもたらされる直接的な効果はまず実際の生産増加であり、食糧自給状況の改善は生産増の結果として達成されるものである。したがって、上位目標については後述のとおり、PDM の改定に際し、見直しを行うことが提案された（英文報告書 ANNEX9 に示す PDM 修正案を参照）。

(2) 協力実施によるポジティブ・インパクト

対象地域の大半において、コメは新しい作物であるが、普及関係者及び農民からはコメ生産に関する強い関心と意欲が示されている。インタビューにおいても、農民がコメ栽培、特に陸稲栽培には困難を感じておらず、他の作物がよく育たない低地でもむしろよく生産できること、売値が他の作物より高いこと、収穫物が長期保存でき、販売できなくても自家消費できることなど、コメの比較優位を認識していることが確認された。これまでのところ、栽培面積も少なく、小規模な生産にとどまっているが、今後彼らによるコメ生産が継続・展開され、経験蓄積がなされれば、食糧安全保障、農業収入の双方の面で、プロジェクト実施によるポジティブな効果が発現する可能性が示唆された。

(3) 協力実施によるネガティブ・インパクト

今般のレビュー調査時点で、特段のネガティブ・インパクトは報告・確認されなかった[3]。

４－１－５　持続性

以下のとおり、本プロジェクトの持続性については一定程度の見込みがあると思われるが、若干の点については課題が残されている。

(1) 政策及び制度的持続性の見込み

現在のザンビア政府の政策において、農業セクター開発、特に小規模農民の強化の重要性は強く認識されており、食用作物多様化のための取り組みについても継続される可能性が高い。現在見直しが行われ、今後 2018 年まで実施される予定である改訂 NRDS においても、更なるコメ生産強化が目標として掲げられていることから、政策面での持続性は確保される見込みである。一方、実施機関のレベルでは、コメ生産支援のための試験研究・普及を今後一層強化していくために、例えばコメ研究者会議を制度化するなど、内部的な調整を行っていくことが必要であると思われる。

(2) 組織及び財政面での持続性の見込み

プロジェクトの活動は実施機関の所掌範囲に合致しており、既存の組織機構に則って実

[3] ただし、JOCV による水稲栽培技術指導が行われた対象地域外の村において、水をめぐる問題の発生が報告されている。上流に養魚池のある地域で水稲生産を始めた農家が、養魚池のための取水が増加したことにより生産できなくなり、上下流の農民間に争いが起こった。この事例は、今後特に小規模灌漑による水稲生産を導入する地域の選定に関する留意事項として重要であり、コミュニティ内での事前調整等の配慮が必要であることを示唆している。

施されていることから、少なくとも今後数年の間にそれらが大幅に変更される可能性は低いと考えられる。一方、実施機関の人的・資金的制約が指摘されており財政面での持続性の確保には課題がある。過去の政策・農業開発プログラムにおいてコメは重視されてきておらず、今後、コメ生産強化に係る試験研究・普及活動に対する資源の確保に向け、コメセクター関係者の一層の努力が求められる。

(3) 技術面での持続性の見込み

現在計画されているコメ研究は今作期以降に実施される予定であり、今般調査時点で、技術面での持続性の見込みを判定することは困難である。一方で、プロジェクト活動に参加した農民からは、稲作技術に関する高い関心が寄せられており、今後、地域状況に応じた稲作技術が開発・導入されれば、農家レベルでの技術面の持続性には一定の見込みがあると考えられる。ただし、実際の技術受容度については、導入される稲作技術により差が生じることが予想される。これまでの活動においても、陸稲については比較的容易に受容されるのに対し、水稲、特に小規模灌漑による栽培に関しては個別農家に受容されにくいという傾向が指摘されている。技術面での持続性を確保するためにも、今後、農家レベルでの技術適用についてのデータを収集し、継続的に検討していくことが肝要である。

４－２　結論

調査団は、これまでのプロジェクト活動が当初計画に沿って遅延・障害なく実施され、期待された成果の達成に向けて着実に進捗してきたことを確認した。したがって、本調査によって提起された課題への対応と今後の継続的な努力により、協力期間内にプロジェクト目標が成功裏に達成される可能性は高いと結論する。

第５章　提言

５－１　提言

５－１－１　PDM の改定

本レビュー結果・及びザンビア稲作振興にかかわる MAL 職員を集めてワークショップを開催し、本プロジェクトの残り期間及び本プロジェクト終了後の稲作振興に必要なプロセスを整理した結果、本プロジェクトの残り期間にプロジェクトが実施すべき内容を整理し、PDM に反映させることを提言した。

５－１－２　今後の研究人材の充実について

(1) 稲研究への従事について

本プロジェクトの稲研究に関する活動は、マウントマクル、ミサンフ及びモングに配置されている研究者を中心に構成されている“Rice Team”と日本人専門家により実施されている。ザンビア側は協力開始後新たに 2 名の若手研究者を採用しミサンフ試験場に配置するなど、研究実施体制強化に向けた前向きな姿勢が認められる。他方、多くの研究者は稲研究専属ではなく、他分野の研究と兼任の状況にとどまっている。

今後の稲研究の一層の推進に向けて研究実施体制の強化が求められることから、ザンビア側は他分野との兼任については稲専属とするなど、稲研究により時間を割けるよう業務環境を改善することが求められる。

(2) 稲研究に係る能力強化の必要性

ザンビアでは近年コメの需要が増加傾向にあり稲作に係る非常に大きなポテンシャルを有することから稲研究に対する重要性が高まっているが、同分野の研究は本プロジェクトを通じて本格化したところであり、まだ緒に就いた段階にある。多くの研究者は稲に関する知識・経験自体が十分でないことから、プロジェクトで実施中の Researchers’ Meeting の参加に加え当該分野の技術研修やワークショップへの出席などを通じて継続的に稲に関する能力向上を図っていくことが求められる。

また、ザンビア側は引き続き稲研究に従事する研究者数の増員の可能性を探るとともに、将来の稲研究人材配置計画の作成を含めて、段階的に研究人材の体制強化を図っていくことが求められる。

５－１－３　プロジェクト関係者間のコミュニケーションの強化

(1) プロジェクト関係者間での定期会合の開催

現状ではプロジェクト関係者による定期会合が開催されていないなど、十分なコミュニケーションがとられているとはいい難い。他方、プロジェクトの拠点がマウントマクル（ルサカ）、ミサンフ（北部州）に分かれており両試験場の関係者が定期的に一堂に会するのは現実的でないことから、マウントマクル、ミサンフのそれぞれの試験場内において現在の活動の進捗状況、成果、今後の活動計画及び課題などにつき議論する定期会合を開催するなどコミュニケーションの強化を図る必要がある。また、両試験場の間では相互に議事録の作成、メールでの発信など双方の状況につき共有することが求められる。

（2）Researchers’ Meeting の推進

現在プロジェクトでは年 3 回の頻度で Researchers’ Meeting を開催し、稲作に関する各研究の進捗状況や成果などにつき共有されている。同 Meeting は研究者の能力向上に大きく役立っていることから、今後も引き続き定期的に開催することが望まれる。同 Meeting は現在は開催経費を日本側負担で実施しているが、継続的な取り組みの重要性にかんがみ今後は開催経費の負担を含めてザンビア側が主体的に実施していくことが望まれる。

５－１－４　プロジェクト活動予算の充実

現状ではザンビア側の予算上の制約により、プロジェクト活動経費の大部分を日本側の経費負担で実施している。研究者のなかからは、ザンビア側の予算不足により車両や日当・宿泊代について十分対応されず、フィールドでの研究活動に支障をきたしているとの声も上がっている。ザンビア側には、今後プロジェクト活動の実施に必要となる予算、特に研究に係る予算の十分な確保が求められる。

５－２　団長所感

５－２－１　稲研究に係る人材育成（北大による支援）

ザンビアの稲研究分野は、数が少ないだけでなくもともと稲を専門としない人材が稲研究に従事するなど質・量ともに極めて貧弱であり、人員体制の強化が必要な状況にある。質に関しては、今後さまざまな機会をとらえて各研究者が稲研究に関する広範な知識・経験を積む必要があるが、その一環として来年度は北海道大学の協力により若手研究者 1 名の本邦研修を実施する方向性を確認した。また、研究者として十分な専門能力を獲得するため、本邦研修終了後上記研究者を北大修士課程へ受け入れる可能性につき検討していくこととなった（スキームにつき ABE イニシアティブの活用を含めて今後検討）。

量（研究者の数）については、ザンビア側はこれまで 2 名の若手研究者を追加配置するなど前向きな姿勢が認められるものの絶対数が不足していることから、更なる配置が望まれる旨を MAL 次官及び ZARI 所長に申し入れを行った。先方からは稲研究体制の充実に向け ZARI で新規スタッフの採用手続き中であり 2014 年中に追加配置予定との回答を得たことから、今後の動向に注視していく必要がある。

ザンビアの稲研究は緒に就いたところであることから、人員体制の強化も本プロジェクト中のみならずその後も継続的に取り組んでいくことが求められる。

５－２－２　ザンビアにおける国家コメ開発戦略（NRDS）の推進

本レビューの際ザンビア稲作関係者（MAL、ZARI、ザンビア稲作連盟）及び日本人専門家出席の下で NRDS ワークショップ（W/S）が開催された。同 W/S 開催は NRDS 策定（2011 年）後目立った進展がないことを受け、JICA 専門家（野坂農業アドバイザー）がザンビア側に対して相当な働きかけを行って実現した経緯がある。当日はザンビア側機関（Agricultural Consultative Forum）が進行役を務めるなどザンビア側が主体的に開催した点は評価できる。他方、個々のザンビア側参加者の主体性は十分とはいえず体制の弱さが明白となった。議論自体は専門的見地から網羅的かつバランスのとれた議論がされたとはいい難いものの、日本側コンサルタント団員が Co-facilitator となり NRDS の優先事項ごとに作成された既存の Concept Note

の改定案がまとまった。今後は関係者間で W/S 結果の最終化を行ったうえで、1 カ月後をめどに Stakeholders W/S（ドナー、地方組織を含む）を開催する計画である。

NRDS の推進はいかに Stakeholders の意向を集約し、理解を得、具体的な事業につなげていくかが鍵となる。Stakeholders W/S の開催だけにとどまることなく、幅広い関係者に対してさまざまな形でアプローチしていくことが求められるが、現行のザンビア側の NRDS 推進体制には不安が残る。仮にザンビア側の動きが低調な場合には、先方の主体性を維持しつつも日本側による支援の可能性を検討する必要がある。

５－２－３　今後の JICA の協力について

ザンビアはコメ生産量が年間 5 万 t にすぎないものの農業環境面から非常に大きな稲作ポテンシャルを有している。現在 JICA は本プロジェクトを通じて稲研究を中心に NRDS の推進に向けた協力を展開している。今後の協力については NRDS に関する検討状況を注視する必要があるものの、コメの国内消費量の伸長、稲作に係る大きなポテンシャルに加えて、ザンビア側が食用作物多様化（メイズ偏重）の観点からも、本フェーズ終了後も引き続き稲作分野で協力を展開していくことが適当である。

ザンビアの場合、稲作対象地は①氾濫原、②畑地（丘地）、③ダンボ、④小規模灌漑の 4 つであるが、それぞれ稲作のアプローチが異なる。JICA の協力ですべてをカバーするのは困難であることから、将来新たな協力を実施する場合には分野、地域、日本がもつ技術的優位性など具体的な情報を基に十分検討したうえで協力範囲を絞り込む必要がある。

なお、次期フェーズの検討に際しては現フェーズの成果の活用が重要となる。今後現フェーズでは引き続き成果の発現及び取りまとめに取り組むとともに、上記成果を踏まえた十分な検討後ザンビア側との協議を経て次期フェーズの協力枠組みを定めることとする。

付　属　資　料

１．協議議事録（M/M）及び合同評価レポート〔PDM Ver.3（案）含む〕

２．NRDS ワークショップ開催結果

MINUTES OF MEETING
ON
THE MID-TERM REVIEW
ON
THE PROJECT
FOR
FOOD CROP DIVERSIFICATION SUPPORT PROJECT FOCUSING ON RICE PRODUCTION
(FoDiS-R)

Japan International Cooperation Agency (hereinafter referred to as "JICA") and Government of Zambia (hereinafter referred to as "GRZ") jointly organized the Mid-Term Review Mission from 16th February 2014 to 8th March 2014 for the purpose of reviewing the progress of the Technical Cooperation for the Project for Food Crop Diversification Support Project Focusing on Rice Production (hereinafter referred to as "the Project").

After the intensive study and analysis of the activities and achievement of the Project, the Mission prepared the Joint Mid-Term Review Report (hereinafter referred to as "the Report") and presented it at the JCC held in Lusaka on 7th March 2014.

Through the workshop and series of discussion, major issues of the Project were stated in the Report, and as a result, three sides have reached a mutual understanding regarding the matters referred to the documents attached hereto.

Lusaka, 7th March 2014

Ms. Emma Malawo
Director
Policy and Planing Department
Ministry of Agriculture and Livestock
The Republic of Zambia

Mr. Shinjiro AMAMEISHI
Director
Arid and Semi-Arid Farming Area Division 1
Rural Development Department
Japan International Cooperation Agency
(JICA)

ATTACHMENT

Main points of a series of discussions during the review are as follows.

1. Approval of the Joint Mid-term Review Report
   The summary of the Joint Mid-term Review Report, which is attached as Annex 1, was presented at the JCC in Lusaka on 7th March 2014. It was agreed to take necessary actions for each recommendation.

2. Revision of the Project Design Matrix (PDM)
   The revision of PDM is proposed by the Mission. Through intensive discussions, both sides agreed on the revision of PDM (PDM Ver. 3) as attached Annex 9 of the Report.

Annex1: Joint Mid-Term Review Report

JOINT MID-TERM REVIEW REPORT

FOR

THE FOOD CROP DIVERSIFICATION SUPPORT PROJECT FOCUSING ON RICE PRODUCTION (FoDiS-R)

IN

THE REPUBLIC OF ZAMBIA

7th March, 2014
Joint Mid-term Review Mission

For Zambian Review Team

Ms. Helen KASALU
Chief Agricultural Research Officer
Farming Systems and Social Sciences Division
Zambia Agriculture Research Institute (ZARI)

For Japanese Review Team

Mr. Shinjiro AMAMEISHI
Director
Arid and Semi-Arid Farming Area Division 1
Rural Development Department
Japan International Cooperation Agency (JICA)

Abbreviations

COMACO	Community Markets for Conservation
DOA	Department of Agriculture
FISP	Famers Inputs Support Program
FoDiS	Food Crop Diversification Support Project for Enhancement of Food Security
FoDiS-R	Food Crop Diversification Support Project Focusing on Rice Production
GRZ	Government of the Republic of Zambia
JCC	Joint Coordination Committee
JICA	Japan International Cooperation Agency
M/M	Minutes of Meetings
MAL	Ministry of Agriculture and Livestock
NAP	National Agricultural Policy
NERICA	New Rice for Africa
NGO	Non-Governmental Organization
NRDS	National Rice Development Strategy
OVI	Objectively Verifiable Indicators
PDM	Project Design Matrix
PO	Plan of Operations
SCCI	Seed Control and Certification Institute
ZARI	Zambia Agriculture Research Institute
ZMW	Zambian Kwacha

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Chapter 1: Outline of the Mid-term Review

1-1 Background

Food Shortage in Zambia is the result of high dependency on rain-fed cultivation and drought entails food crisis. This is particularly serious among small scale farmers where the prevalence of the maize monoculture, at the expense of other equally important food crops, exacerbates the impact on food shortages in the county.

To overcome this situation, the Government of the Republic of Zambia (GRZ), as evidenced by various policy documents, has been encouraging crop diversification. Mono-cropping of maize has been a great concern and there is need to establish the most appropriate cropping patterns for the target crops in a holistic manner for sustainable production of staple food crops, including rice. Through the support of FoDiS (Food Crop Diversification Support Project for Enhancement of Food Security) which had been supported by Japan International Cooperation Agency (JICA) since 2006 for five years, the production of traditional staple food crops such as cassava and sorghum has been expanding in recent years in the target areas.

Meanwhile, the interest of small scale farmers in rice production has been increasing year by year. In line with that GRZ through Ministry of Agriculture and Livestock (MAL) initiated the formulation of a National Rice Development Strategy (hereinafter referred to as "NRDS"). However, rice production technology of small scale farmers is not well developed, and services (such as supply of good seeds, control of pest and disease, and development of appropriate farming methods) have largely lagged behind.

It is in view of the foregoing that technical cooperation "Food Crop Diversification Support Project Focusing on Rice Production (FoDiS-R, hereinafter referred to as "the Project")" was requested by GRZ to promote food diversification with particular attention to rice in order to improve their food security situation.

1-2 Objectives of the Mid-term Review

The mid-term review (hereinafter referred to as "the Review") was conducted by the joint monitoring team consisting of Japanese and Zambian reviewers.

The objectives of the Review are;

(1) To examine the achievements (activities and inputs) so far and verify the implementation process;
(2) To assess the extent of achievement of the Project's purpose and outputs;
(3) To analyze factors that either positively or negatively affected the Project's implementation;
(4) To conduct the 5 evaluation criteria of relevance, efficiency, effectiveness, impact and sustainability;
(5) To make recommendations for improvement towards an impact;
(6) To extract lessons learned for the similar projects;
(7) To prepare and agree on a joint review report on the results of (3) to (6) above; and
(8) To hold a workshop for steady implementation of the NRDS

1-3 Member of the Review Team

The Review was conducted by the teams composed by the following members:

(1) Zambian Side

Title	Name / Position
Leader	Ms. Helen KASALU Chief Agricultural Research Officer,-Farming Systems and Social Science Division, Zambia Agriculture Research Institute (ZARI)
Evaluation	Mr. Phillip SIAMUYOBA Chief Vegetables and Floriculture Officer, Department of Agriculture (DOA), MAL

(2) Japanese Side

Title	Name / Position
Leader	Mr. Shinjiro AMAMEISHI Director, Arid and Semi-Arid Farming Area Division 1, Rural Development Dept., JICA
Rice Cultivation	Dr. Yuji KISHIMA Professor, Hokkaido University
Planning of Cooperation	Ms. Akiko FUJITA Deputy Director, Arid and Semi-Arid Farming Area Division 1, Rural Development Dept., JICA
Evaluation Analysis	Ms. Keiko ITAGAKI Social Development Specialist, International Development Associates Ltd.

1-4 Schedule of the Review

Duration of the Review is from 16th February 2014 to 8th March 2014. The schedule of the Review is attached as Annex 1.

1-5 Methodology of the Review

(1) To collect data and information on "National Agricultural Policy (NAP 2004-2015)", NRDS, and other related policy in Zambia.
(2) To collect data and information on the current status of on-going activities through interviews and field survey.
(3) To discuss with relevant institutions on the basic design of the Project including Project Design Matrix (PDM) and Plan of Operations (PO).
(4) Based on the analysis of the Project performance and implementation process above, the Project was analyzed and evaluated in terms of the five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability, the definition of which are given in the following Table 1-1 below).
(5) Compile the result of the Review and officially agree on the Minutes of the Meetings (M/M).

Table 1-1 Definition of the five evaluation criteria

Relevance	Relevance is reviewed and justified by the project purpose and the overall goal in connection with the needs of the beneficiaries, policies of the GRZ and appropriateness of strategy or measures.
Effectiveness	Effectiveness is assessed by evaluating the effect to which the Project has achieved and contributed to the beneficiaries.
Efficiency	Efficiency is analyzed focusing on the relationship between the output and input/activities in terms of timing, quality and quantity.
Impact	Impact is identified and/or forecasted by referring to direct and indirect, positive and negative impacts caused by the Project.
Sustainability	Sustainability is assessed in political/institutional, organizational, financial and technical aspects by examining the extent to which the achievement of the Project will be sustained and/or expanded after the Project is completed.

Chapter 2: Outline of the Project

The PDM version 2 dated on November 2013 represents the outline of the Project as follows. (For more details, refer to the Annex 2).

2-1 Project Period

Three (3) years from June 2012 to June 2015 (The Record of Discussions was signed on 14 March 2012).

2-2 Counterpart Organizations

Implementing Agency:
Zambia Agriculture Research Institute(ZARI) of MAL
Co-implementing Agencies:
Department of Agriculture (DOA) and Seed Control and Certification Institute (SCCI) of MAL.

2-3 Target Areas

Rice activities: Northern, Muchinga, Western, Eastern, Lusaka and Copperbelt Provinces
FoDiS follow-up activities: Eastern and Lusaka Provinces

2-4 Beneficiaries

Small-Scale Farmers in the Target Areas

2-5 Project Summary

(1) Overall Goal
Level of food insecurity in the target areas of Zambia is reduced through promotion of crop diversification.

(2) Project Purpose
Research and extension systems for promotion of food crop diversification are improved, focusing on rice production.

(3) Outputs

Output 1: Research implementation capacity of ZARI for rice cultivation techniques is strengthened.

Output 2: Research results and recommendations (in regard to rice cultivation techniques) are effectively utilized in extension services in the target areas.

Output 3: Research results and recommendations (in regard to target propagation techniques of other target crops) are effectively utilized in extension services in the target areas.

Output 4: Linkages among research, extension and other donors are improved.

Chapter 3: Achievements and Implementation Processes

The performance of the Project including inputs and outputs as well as the implementation processes were reviewed to assess the degree of achievements, the results of which are described in the following:

3-1 Inputs

The Team has confirmed that the Project has availed the following inputs along with the plan stated in the PDM and the PO, attached as Annex 3.

(1) Japanese side

1) Dispatch of experts to Zambia

A total of four (4) experts in the following fields of expertise have so far been dispatched to the Project. The details of the Japanese experts are as shown in the following Table 3-1.

Table 3-1: List of Japanese Experts

Sl.	Name	Field of Expertise	Period of Assignment
1	Mr. Yukinori Ito	Chief Advisor/Rice adaptation	20 June 2012 – To date
2	Mr. Tokutaro Iino	Project Coordinator/ Inter-organization relationship	19 July 2012 – To date
3	Dr. Masahiro Kasuya	Rice cultivation	26 May 2013 – To date
4	Prof. Yoko Kijima	Social survey	1 March 2013 - 23 March 2013
			10 August 2013 - 14 September 2013

Source: Documents prepared by the Project for the period up to the end of January 2014.

2) Provision of machineries and equipment

Machineries and equipment of a total value equivalent to 14 million Japanese Yen have so far been provided for the Project activities. The details of the machineries and equipment are shown in Annex 4.

3) Training of counterpart personnel in Japan and the third countries

So far, six (6) counterpart personnel were dispatched to Uganda and one (1) to Japan for training on the subjects relevant to rice research and development, such as "Rice Research Methodology" and "Development of Core Agricultural Researchers for Rice Promotion in Sub-Saharan Africa" and so forth. The details of the counterpart personnel attended these training are found in Annex 5.

4) Bearing of local costs

A total amount of 2,000,684 Zambian Kwacha (ZMW) has been provided to supplement a portion of operational expenses for the Project activities by the end of January 2014, as indicated in the following Table 3-2.

Table 3-2: Local Expenses borne by the Japanese Side (ZMW)

FY (*1)	2012	2013 (*2)	Total
Local Expenses	405,573	594,769	1,000,342

(*1) Figures are based on the Japanese Fiscal Year (April – March).
(*2) Figures are based on the accounts settled by the end of January 2014.
Source: Documents prepared by the Project

(2) Zambian side

1) Appointment of counterpart personnel

A cumulative total of nine (9) counterpart personnel were assigned to the Project from ZARI, the details of whom are shown in the Annex 6.

2) Provision of facilities and operational costs

The necessary office spaces with office equipment, water and electricity have been

provided for the Project Office at Mt. Makulu as well as in Misamfu research station. A total of 3,700 sq m. of land has also been provided at Mt. Makulu research station for setting up of the experimental plots on rice cultivation.

3-2 Achievements of the Outputs

The Project has been implemented as per the plan stipulated in the PDM and PO with slight modifications, which are considered appropriate. It was confirmed that the Project has so far implemented its activities without notable delays and could manage to cope with any unprecedented difficulties encountered in the process. It is thus generally assumed that the Project would achieve its expected outputs by the end of the cooperation period. The Team examined the degree of achievement of the outputs so far as follows:

Output 1: Research implementation capacity of ZARI for rice cultivation techniques is strengthened
Indicators: 1-1 Research facilities are rehabilitated and equipment installed at 3 research stations. 1-2 Researchers' meeting on rice is conducted 2 times per year. 1-3 At least 1 research plan on rice is formulated and implemented.

Activities and Achievements:

The Project has procured various machineries and equipment to conduct research activities on rice, including farm machineries such as hand tractor, rice milling machines, huskers and winnowers to be used for on-station experiments. Machineries and equipment for the rice research were distributed to three research stations, i.e. Mt. Makulu, Misamfu and Mongu. Beside the provision of the equipments, the Project has also established the experimental plots to conduct on-station experiments on rice cultivation techniques at Mt. Makulu, where varietal trials are being conducted, while the SCCI also conducts the experiments for rice seed registration.

The Project has so far organized the rice researchers' meeting three (3) times, where the various issues related to rice research and development were discussed, as summarized in the Table 3-3 below. The Team noted, however, that these meetings were organized by the initiatives of the Project as ad hoc events, which, in the long term perspectives, should be integrated as a part of the regular activities of ZARI in the future.

Table 3-3: Rice researchers' meeting so far held by the Project

Sl.	Date	No. of participants	Topics / issues discussed
1	May 9, 2013	13	Review of the rice research in last 2 years.
2	August 16, 2013	15	1) Information sharing on the World Bank's Agricultural Productivity Program for Southern Africa (APPSA) 2) Discussion on the basic direction and strategy for rice research under the Project
3	September 6, 2013	15	Presentation and discussion on the rice research plans for 2013/14.

Source: Documents prepared by the Project

Through the researchers' meetings above, there are five research plans to be implemented at Misamfu research station for 2013/14, that cover various topics, namely, research on occurrence of cool weather damage and evasion, development from flooded to non-flooded paddy field rice cultivation system in *dambo*, local varietal trial, access to improved rice varieties, and seed multiplication. It is anticipated that these researches would properly be conducted and bring the results and useful insights for the further promotion of rice production.

Output 2: Research results and recommendations (in regard to rice cultivation techniques) are effectively utilized in extension services in target areas.
Indicators: 2-1 More than 100 extension officers and 50 lead farmers have the technical trainings on target crops. 2-2 More than 1000 local farmers receive the trainings on target crops. 2-3 Extension materials made available to extension service.

Activities and Achievements:

The Project conducted the training of trainers (TOT) at ZARI for 7 times so far targeting the extension officers and lead farmers selected from the communities. Those who attended the TOT then played vital role in the conduct of field training at the community levels to disseminate the rice cultivation techniques to the farmers in the respective communities. The Project has so far set up 19 field trial sites on rice cultivation, where the field training were organized for 32 times to disseminate and demonstrate rice cultivation techniques to farmers in the vicinity of the field test sites. The Table 3-4 below summarizes the record of these training activities, further details of which are given in Annex 7. The Project has almost achieved the target figures of the indicators 2-1 and 2-2 by the time of the Review; hence a new set of indicators may be necessary for the purpose of measurement of the degree of achievement by the end of the Project. Accordingly, the Team examined more suitable indicators for the Output 2 as presented in the proposed revision of the PDM attached as Annex 9.

Table 3-4: Record of training on rice cultivation techniques conducted by the Project

Type of training	No. of training sessions	No. of participants				
		Extension officers	Lead farmers	Others	Local Farmers	Total
TOT	7	83	38	9		130
Field training	32				927	927
Total	39	83	38	9	927	1,057

Source: Document prepared by the Project

As for the extension materials on rice cultivation techniques, the Project has prepared a leaflet entitled as "Upland (Dambo) Rice Cultivation Guide (first edition)" dated in September 2013, which has been distributed through field training. The Project has also distributed its digital data to relevant stakeholders such as Zamseed so that the leaflet can be distributed to the recipients of the subsidized seed under Farmers Inputs Support Program (FISP).

Output 3: Research results and recommendations (in regard to target propagation techniques of other target crops) are effectively utilized in extension services in target areas.
Indicators: 3-1 More than 15 extension officers have the technical trainings on target crops. 3-2 More than 100 local farmers receive the trainings on target crops.

Activities and Achievements:

The Project has continued to support the activities to promote the food crop diversification that were initiated in the foregoing JICA project, i.e. FoDiS (2006 – 2011), by providing planting materials propagated at Mt. Makulu research station to the lead farmers in the target areas. Also, group training for extension officers and farmers on production of cassava has been conducted since 2012 in collaboration with IITA as shown in the following Table 3-5. The Project has technically supported the IITA training and jointly provided planting materials to the participants. Furthermore, the Project has conducted field training for farmers on cultivation of beans and cassava, as shown in the Table 3-5 below.

Table 3-5: Details of the training on the target crops other than rice

Type of training	No. of training sessions	No. of participants			
		Extension officers	Lead farmers	Local Farmers	Total
Group training	2	6	9		15
Field training	4			84	84
Total	6	6	9	84	99

Source: Document prepared by the Project

As the target figures of the indicators are almost achieved by the time of the Review, it came to the discussion, again, among the members of the Team that a new set of indicators may be necessary for the purpose of measurement of the degree of achievement by the end of the Project. Accordingly, the Team examined the possible revisions of the indicators for the Output 3, which are presented in the proposed revision of the PDM attached as Annex 9.

Output 4: Linkages among research, extension and other donors are improved.
Indicator: 4-1 Increase coordination among researchers, extension and donors

Activities and Achievements:

Aside from the on-station rice related research activities, which are mainly implemented at Mt. Makulu and Misamfu research stations, the Project has conducted field tests in the farmers' plots in various sites, where the extension officers in the respective areas have always been involved. Also, since the very beginning of the Project implementation, efforts have been made to gather and exchange information on rice-related interventions by other stakeholders, i.e. other government programs, donor projects and those of Non-Governmental Organizations (NGOs). Through these efforts, it is generally observed that the linkages are being improved. The Project is planning to collaborate further with some relevant stakeholders in terms of the field activities, for example, the Project was about to sign the agreement with an NGO, Community Markets for Conservation (COMACO), at the time of the Review so that the rice cultivation techniques tried by the Project would be shared to the COMACO, while COMACO would provide the beneficiary farmers of the Project the access to COMACO's extension services, milling facilities and marketing supports. It is thus generally anticipated that the Project would further strengthen the linkages and explore more scopes for future collaboration by the end of the cooperation period.

It should be noted, however, that the current indicator for this Output 4 is not appropriate to measure the degree of achievement, thus the Team recommends modifications of the indicator, which are elaborated in the proposed revision of the PDM attached as Annex 9.

3-3 Prospects to Achieve the Project Purpose

Project Purpose: Research and extension systems for promotion of food crop diversification are improved, focusing on rice production.
Indicators: 1. 10 or more researchers and extension officers have the training. 2. Yield of the rice become more than 2.5t/ha at farmers field. 3. At least 1 training package for extension on rice is formulated.

So far, seven (7) researchers have attended the training overseas on rice research. Also, as discussed in the previous section, 83 extension officers participated in the TOT on rice cultivation techniques.

As for the yield performances, data were obtained from nine (9) field test plots for the cropping season in 2012/13, but not from the farmers' fields. Although the yield performances in these field trial sites may be better than those of the farmers in the respective areas as close supervision is provided by the Project, the yields generally indicate positive prospects, as shown in the following Table 3-6. (The details of field tests are given in the Annex 8.)

Table 3-6: Yield performances at the field trial sites

District	Camp	Village	Type of rice	Yield (t/ha)
Nyimba	Chikonta	Nyamandu	Upland	3.8
	Mombe	Lavison		1.5
Kafue	Lukolongo	Lisiko		3.2
	Chikupi	Chikupi		0.3 (*1)
Chirundu	Lusitu Bridge	Lusitu		2.5
Upland Average				2.26
Chinsali	Chinsali Central	Seed farm	Lowland	4.5 (*e)
	Chibesa	Luvuwa		3.0 (*e)
Luwingu	Luwingu Main	Museya		4.5 (*e)
Nyimba	Mombe	Lavison		3.1
Lowland Average				3.78

Note *1: There was serious problem of water shortage in this site
Note *e: These yield are the estimated figures.
Source: Document prepared by the Project

Along with the field test activities, the Project has also conducted training for the farmers. The program and contents of these field training has become fairly uniform after progressive modifications were made in the cropping season 2013/14 based on the findings and feedback derived from the training conducted in 2012/13. The technical contents of the training have generally been identified, which would further be scrutinized through the training activities to be conducted in coming cropping seasons.

Although the target figures of the current indicators on the Project purpose have almost been achieved, there were discussions among the Team members on possible modifications, since the current indicators may not properly represent the Project purpose: for example, the yield performance is not the measurement of the system improvement. Thus the Team recommends a revised set of indicators to measure the degree of achievement of the Project purpose to be used in the terminal evaluation as indicated in the proposed revision of the PDM attached as Annex 9.

3-4 Implementation Processes of the Project

(1) Decision making mechanism

The Joint Coordinating Committee (JCC), which is the decision-making authority of the Project, has so far been held twice to review the progress of the Project activities, to endorse the plans for the upcoming period, and to make decisions on the issues related to the Project implementation, including the revision of PDM. Another JCC meeting is scheduled to be held at the time of the Review. It was originally planned to form Technical Committee (TC), meetings of which is supposed to be held quarterly to facilitate inter-organizational coordination as well as to monitor the detailed activities and to provide technical advice. In the course of the Project implementation, however, due to the overlapping of the membership with those of the JCC as well as the busy schedule of key members who are in managerial positions in their respective institutions, it was decided that the expected functions of the TC would be borne by the JCC. As to the issues related to day-to-day operations, the Project manager has close and regular contacts with Japanese experts to make necessary decisions.

(2) Coordination and communication among the Project personnel

As the Project personnel are stationed in scattered locations, i.e. Project offices at Mt. Makulu and Misamfu research stations, the Project has not organized regular meeting among all of the project personnel. Sharing of information and discussions on the relevant issues are limited to the occasional meetings, which somewhat affected the understanding of the framework of the Project as a whole among some of the counterpart personnel. Although there has not been any tangible obstacle in the implementation of the Project activities as each activity component are to be carried out separately, it is still necessary for the Project personnel to strengthen the communication and cautiously try to share information relevant to the activities of the Project among the entire team so as to ensure the smooth implementation of activities to be undertaken in the later half of the cooperation period.

Chapter 4: Technical situation and issues

Based on the reports in the meeting at Misamfu research station in Kasama and field inspections, following minute was described.

(1) Environmental Circumstances of Rice Cultivation in Zambia

There are several possible locations for rice cultivation in Zambia, i.e., irrigated field, dambo and flooded plain. Among those locations, dambo is expected as a potential rice field to be exploited on behalf of small farm holders. The possible fields available for rice cultivation in Zambia are mostly acidic and poor nutrient soil conditions. However, rice is relatively tolerant of acidic soil, and organic fertilizer may improve the poor nutrient conditions. Sandy soil that are difficult to retain water is rather serious problem for rice cultivation.

(2) Rice Varieties in Zambia

Only 17 varieties of rice have been registered for cultivation in Zambia, so far. Even a small number of the rice varieties, the researchers have not characterized these in details such as morphological traits, agricultural traits, ecotypes, and so on. In some cases, farmers' rice seeds are not derived from a pure line, but several mixtures of rice lines or naturally crossed lines (genetic mixture) are contained in the cultivated rice populations. The farmers may not recognize a catastrophic consequence led by seed contamination, which causes consistent low yield, unstable state of cultivation condition and inferior quality.

(3) Case of NERICA 4 Cultivation

With some rice fields in Northern Province, a rice variety, New Rice for Africa (NERICA) 4, was tested in terms of geographical locations, sowing periods and positions in terrace. In these tests, overall results summarized as follows 1) NERICA 4 had very late heading (flowering) relative to the expected date when the sowing was conducted before rain season (from August to October), 2) NERICA 4 was vulnerable to cool temperatures at approximately 20°C as averaged weather in Northern Province, resulted in severe sterility, 3) plants in upper terrace, which was likely to be dried, indicated particularly weak growth, 4) disease (Bacterial Panicle Blight) and insect damage (bug) might be a cause of sterile seeds. These results suggest that the suitability and possibility of off season cropping of NERICA 4 should further be studies, and that cool and drought tolerances should be taken into account as essential traits for the varieties introduced in this region.

Chapter 5: Results of the Review based on the Five Criteria

Through the Review, the relevance, effectiveness, efficiency, impact and sustainability of the Project are assessed, the major findings of which are described below.

5-1 Relevance

The relevance of the Project is evaluated as high based on the following confirmations:

(1) Relevance to the development policies and sector programs of GRZ

During the course of implementation of the Project so far, there has not been any notable change either in the national development plans at higher levels such as Sixth National Development Plan (SNDP: 2011-2015), or in the sector development policy such as NAP. Development of a sustainable and viable agricultural sector still remains as one of the major thrusts to ensure food security and income generation both at household and national levels. Also the NRDS (2011-2015) aims to enhance the rice production in the country, with seemingly ambitious targets to double the rice production, and in the current review of the NRDS, upland rice production in *dambo* and paddy production with small scale irrigation, the potential of which the Project has been exploring, are being incorporated as additional target of the new NRDS initiatives covering the period from 2014-2018. From these viewpoints, the Project is considered to be very much consistent with the policy directions of the GRZ.

(2) Consistency with the ODA policies of Government of Japan

In the Country Assistance Policy for the Republic of Zambia of the Japanese government formulated in December 2012, vitalization of productive sectors is regarded as one of the three priority areas, and as to the agriculture sector, it clearly stipulates that Japan will provide technical assistance for expanding the area of irrigation and diversifying food crops. Accordingly, the current Rolling Plan puts its emphasis on promotion of food crop diversification with the Program on "Stabilising the Production and Improving the Productivity in Agricultural Sector", of which the Project is recognized as one of the centerpieces. From these viewpoints, it is assessed that the relevance of the Project to the Japanese aid policies is secured.

(3) Relevance to the needs of target beneficiaries

Rice is a rather new crop in most of the target areas of the Project, and both farmers and extension officers did not have much experiences or knowledge on rice cultivation techniques prior to the intervension of the Project. Nonetheless, it was found out during the interviews that the farmers have shown interests in rice production. The interviewed farmers unanimously shared with the Team that they have been benefited from introduction of rice production, and that they are eager to continue. Similarly, the extension officers and District Agricultural Coordinators in target areas regard rice as a vital alternative in their efforts to promote food crop diversification and requested the Project to provide further supports. It is therefore understood that the contents and focus of the Project have adequately addressed the needs of the target areas and the beneficiary farmers.

5-2 Effectiveness

The effectiveness of the Project is considered as high based on the following analysis:

(1) Prospects to achieve the Project Purpose

The Project Purpose is to improve research and extension systems for promotion of food crop diversification focusing on rice production. As for the research, various research activities are being conducted mainly at Misamfu research station, while some varietal trials are implemented at Mt. Makulu as well. The Project also tries out upland rice cultivation in *dambo* and paddy production under irrigated conditions in various test sites in the target areas, while providing training for extension officers and farmers to promote rice production as one of the vital alternatives to be emphasized in the efforts to diversify the food crops. Continuous

supports have also been provided to sustain the propagation and distribution of planting materials of the other crops. Efforts have been made to identify the scope of collaborations with other stakeholders to promote food crop diversification, some of which are materialized in the implementation of Project activities. Therefore, the prospect of achieving the Project purpose seems to be high.

(2) Contribution of outputs to the achievement of the Project Purpose

The Project purpose is to be achieved through four means corresponding with the outputs; firstly the research capacities on rice is to be enhanced, i.e. output 1; while the basic rice cultivation techniques are tried out and disseminated to the farmers in the target areas, i.e. output 2; at the same time, the continuous support to extension service is provided on the crops other than rice as the follow-up of the foregoing FoDiS project , i.e. output 3; and lastly, the linkages with other stakeholders who promote food crop diversification should be strengthened as output 4. The logical sequence between these outputs and Project purpose is appropriate, and as the steady progress has been made to achieve these outputs as confirmed in the previous section, the Team assumes that these outputs would adequately contribute to the achievement of the Project purpose. During the discussion, however, the Team found that the activities being implemented to achieve the output 2 are not really the extension per se but are rather the outreach activities, which are primarily to explore the potentials for future promotion of rice production. Therefore, the Team considered that the description of the output 2 and activities for it in the PDM should be rephrased so as to clearly reflect the actual activities being carried out by the Project.

(3) Analysis of factors

1) Promoting factors

Since October 2013, MAL has initiated a review of the current NRDS, and extensive discussions have been held in the forum of relevant stakeholders and key players in the rice sector in Zambia. The Project shared its activities and findings with the forum, which could contribute to promote the understanding on the potential scope of promotion of rice production that the Project is exploring. The Project could also obtain various information on the on-going or pipeline plans and programs on development of rice sector from the forum. This linkage with the policy review forum seems to have contributed to the effectiveness of the Project.

2) Hampering factors

There has not so far been any hampering factor that affected the Project implementation reported by the time of the Review.

(4) Important assumptions

As there has been a coordination mechanism established among the MAL officers in relation to the review of the NRDS mentioned above, better linkages are observed among the relevant officers in research and extension. Some of the on-going programs such as FISP are targeting to increase rice production are duly implemented, while other programs are to be implemented with donor assistances. There has not been frequent turnover of the counterpart personnel thus their continuous involvement was generally secured. The Team understood that there has not been any notable influence caused by the change of the important assumptions. While examining the influences of other important assumptions, however, the Team found that some aspects related to budget allocation and fund disbursement modalities were more of the general issue, rather than to be considered as the important assumption for this particular Project, thus proposed modifications in this regard. (Details are given in Annex 9.)

5-3 Efficiency

The efficiency of the Project is assessed as high based on the results of the examination on the following aspects:

(1) Inputs from Japanese side

The Japanese experts have properly played their expected roles in the course of the

implementation of the Project activities. The machineries and equipment required for the Project activities and technical transfer have duly been provided as per original plans, which are fully utilized in research, field tests, training, regular monitoring and managerial activities of the Project. All of them are properly kept in good conditions. As for the training in Japan and the third countries, the counterpart personnel who participated generally assess that the subjects of these training were adequate and appreciate that their learning from the training has been helpful not only for the activities of the Project but also for their future activities to support promotion of rice production.

(2) Inputs from the Zambian side

The counterpart personnel were duly assigned from ZARI, who have actively participated in the Project activities. The provision of the office spaces with basic equipment and facilities for the Project at Mt Makulu as well as at Misamfu research station have contributed to the smooth implementation of the Project activities.

(3) Collaboration with other intervention for the field activities

As strengthening of linkages with other stakeholders is set as one of the outputs, the Project has made efforts to collaborate with various stakeholders and programs, particularly in terms of field tests and dissemination of rice cultivation techniques at the field level, such as the collaboration with COMACO, as described in the previous section. The Project also trained Peace Corps volunteers and Japan Overseas Cooperation Volunteers (JOCV) members who, then, teach the rice cultivation techniques to the farmers in their respective areas of jurisdiction, which contributed to enable wider dissemination of techniques hence to create greater impacts. These collaborations are considered to have contributed to the efficiency of the Project especially at the field level.

5-4 Impacts

The impacts of the Project are generally considered to be positive as described in the following:

(1) Prospect of attaining the overall goal

Prospects of achieving the overall goal, i.e. the reduction of food insufficiency in the target areas through promotion of crop diversification, could not yet be assessed at the time of the Review. Rice production has just been introduced in the target areas, and scale of production is still limited in and around the field test sites, although further expansion of rice cultivation and thus the increase of production are anticipated in the future. As there has not yet been any basis to assess the overall impact of introduction of rice on the food security in the target areas.

In the discussion, some logical gaps between the Project purpose and the overall goal have been noted: Improvement of research and extension system, i.e. the Project Purpose, would not directly affect the reduction of food insufficiencies. Given that the overall goal is to be attained within a few years after the completion of the Project, the improved system would lead to the actual increase of production at first as direct attribute, which would further contribute in the later stage to the food security in the target areas. Therefore, the Team recognizes the necessity to reconsider the level of the overall goal and to propose its modification in the PDM, as indicated in the Annex 9.

(2) Positive impacts

It has been reported in the interviews with the farmers that, although rice is a new crop for them, they have shown interest in rice production. The interviewed farmers shared with the Team that they have not faced difficulties in growing rice, especially in upland. They are aware of the comparative advantages of rice over the other crops, such that rice can be grown in the plots in lower elevation where other crops cannot be grown well, that selling price of the rice is higher than those of other crops, and that they can store the harvests for longer period and can consume the produce by themselves even if there may not be marketing channel. Although they have just started rice production in smaller areas, more impacts could be expected on food security and on farm income with accumulated experiences over the passage of time.

(3) Negative impacts[1]

There has not been any negative impact of the Project reported or observed at the time of the Review.

5-5 Sustainability

The sustainability of the Project is assessed as lower moderate at the time of the Review, as some of the aspects are found to be fairly sustainable while there are other aspects that need continuous monitoring and further reinforcement as described in the following:

(1) Policy and institutional sustainability

In the current government policies, development of agricultural sector, especially among the smallholder farmers, is emphasized on, and food crop diversification is regarded as one of the priorities. Out of the current review of NRDS, a revised NRDS for the upcoming period from 2014 to 2018 would be formulated, which aims at further enhancement of rice production. It is thus generally assumed that these policy supports would continuously be secured for the coming years. It may be necessary for the implementing agency to institutionalize certain internal arrangements such as rice researchers' meeting to further promote understanding and implementation of research and extension on rice production.

(2) Organizational and financial sustainability

The activities of the Project have been carried out in line with the existing organizational structures of the implementing agencies within the scopes of their mandates, which would very much likely be continued for the rest of and after the cooperation period. As to the financial aspects, it should not be denied that the operational funds allocated for the agricultural research and extension activities have still been limited. As rice has not been given much emphasis in the agricultural policies and programs in the past, it is deemed to be essential for the relevant stakeholders in the rice sector to accelerate their efforts so as to avail necessary fund for research and extension on rice promotion to ensure the financial sustainability in the future.

(3) Technical sustainability

Since the research plans are to be implemented in coming season, it is still too early to assess the technical sustainability of the implementing agency at the time of the Review. On the other hand, despite the fact that rice is a new crop in most of the target areas, it was found that there are favorable responses and fair interest in rice cultivation techniques among the farmers participated in the training conducted by the Project. It is generally assessed that the technical sustainability is high among the farmers, although the degrees of acceptance vary among the different rice cultivation technologies: farmers tend to adopt the cultivation technique of upland rice more easily than those of lowland paddy, which should yet be confirmed with concrete data for further discussion on the technical sustainability in the later course of Project implementation.

5-6 Conclusion

The Team has confirmed that the Project has so far been implemented in line with the plan that were originally agreed upon, and assessed that the Project would likely achieve the expected outputs by the end of the Project. Thus the Team concluded that there is high prospect of achievement of the Project purpose within the cooperation period, given the Project should continue its efforts during the remaining period and properly address the issues and concerns identified through the Review.

[1] Although it was not the case in the Project's sites, the Team learned that there was a case of dispute over the water distribution where the JOCV members disseminated irrigated paddy cultivation techniques; the paddy cultivation in the downstream was disturbed when amount of water taken for the fishponds in the upstream increased. Such issue may be considered as a potentially hampering factor to be taken into account, and the lessons should be drawn that it is essential to conduct preparatory discussions in the communities where the potential sites for irrigated paddy production are to be identified in the course of Project activities for the remaining period.

Chapter 6: Recommendations

The Team proposes the following recommendations for better implementation of the Project activities.

6-1 Revision of the PDM

In the process of the Review, some questions were raised and discussion was held in terms of the overall goal level, the descriptions of outputs, some of the objectively verifiable indicators (OVI) and activities stipulated in the current version of the PDM. It was noted that some modifications would be necessary to clarify the actual focus of the Project as well as to streamline the logical sequences in the framework of the Project. Accordingly, it is recommended for the Project to further discuss and properly revise the PDM. Major points for the proposed revision are; 1) setting of the overall goal level, 2) clarification of the output 2 as well as activities to achieve the same, and 3) re-examination of some of the OVI ant their target figures. The proposed revision of PDM and the explanations on the major points are attached as Annex 9 and Annex 10, respectively.

6-2 Strengthening of rice research activities

(1) Improvement of work environment for rice research

At present rice research activities are promoted by the rice team, which is composed of researchers in Mt. Makulu, Misamfu and Mongu, and the Japanese experts. Taking into account the importance of human resources on rice research, Zambian side attached two research staff to Misamfu research station. However most of the researchers of rice team are still engaged in their original research work with priority as well as the rice research activities. It is recommended that work environment be improved to enable them to spend more time for rice research activities.

(2) Enhancement of rice research capacity

Recently rice research becomes more important because of the growing domestic consumption and vast potential of rice production. It is recommended that capacities of each researcher should further be enhanced by providing them with the various opportunities such as technical trainings, workshops, researchers' meetings organized by the Project, etc. Since enhancement of research capacity is a long process, it is hoped that Zambian side explores the possibility on further staff allocation to three research stations and makes a future staff allocation plan.

6-3 Strengthening of communication among the Project personnel

(1) Organizing regular meetings

The Project has so far not organized regular meetings among the Project personnel due to the physical distance between Mt. Makulu and Misamfu research stations. It is recommended that the meeting among the Project personnel should regularly be held at each station, and then that the records of these meetings are to be shared between stations so as to improve the sharing of the information on the plans, progresses and outcomes of the Project activities.

Also, it is necessary for the Project to take part in the ZARI's annual planning meetings held at the station levels so that the activities of the Project can also be integrated in the activity plans of the respective stations and that the Project activities are well known to the relevant divisions and units within the entire research management structures.

(2) Continuously organizing the researchers' meetings to strengthen the interactions and sharing amongst rice researchers

The Project organized researchers' meetings three times for the year 2013 in order to present the progress and outcomes of each research activity with the participation of rice team members, which are at present organized with administrative and financial support from the Project. Such occasions would contribute to strengthen the interaction and sharing amongst the rice researchers and to enhance the research capacity as an institution. It is recommended

that such meetings be continuously organized on regular basis under the ownership of the Zambian side in the future.

6-4 Alignment of the Project activities with the other programs of GRZ

It was pointed out during the discussion that the most of the Project costs has so far been borne by the Japanese side. The budgetary limitation of the Zambian side might cause negative impact not only for the smooth implementation of the Project activities but also for future sustainability. As the programs funded by the donor agencies, such as APPSA, are in operation, the Project should thoroughly consult with relevant personnel of implementing agencies to ensure the close alignment of activities with the other existing programs of GRZ, so as to secure the financial and other resources.

6-5 Strengthening of the monitoring activities by the extension officers

Along with the field tests on the rice cultivation techniques, the Project has provided field training to a fairly large number of farmers. It is thus essential to monitor the performances at the field tests as well as the farmers practices to grasp the potential impacts. Although the Project has worked in close collaboration with the extension officers in the target areas, monitoring had not effectively been conducted by the extension officers, due to various difficulties including the chronicle fund shortage. It is thus recommended to the implementing agencies to extend enabling supports to the extension officers so that they can take part in the monitoring of the field activities, while continuous efforts should also be made by the Project to foster their understanding on rice production and to mobilize their involvement in the Project activities.

6-6 Technical Recommendations

In order to promote and improve rice cultivation system, major tasks to be achieved within the term of the Project are considered as below.

(1) NERICA 4 is the popular variety in many African countries, although survey and confirmation must be done for suitability in several conditions to be cultivated in Zambia.

(2) It is necessary to define particular characteristics of the rice to adapt for cultivation and production in Zambian conditions. The survey should be focused on the traits to overcome the constraining environmental conditions in Zambia, such as cool, drought, disease and flowering earliness.

(3) Degrees of genetic purity of the rice varieties should be checked in terms of major morphological characteristics and agronomical traits.

(4) A program should embark on fostering of rice research specialists.

ANNEX 1: Schedule for Mid-Term Review for FoDiS-R 2014

			Zambian Review Team		Japanese Review Team		
			Ms Kasalu (ZARI)	Mr Siamuyoba (DOA)	Consultant (Ms. Itagaki)	Mr Amameishi / Ms Fujita	Prof. Kishima
	16-Feb	Sun			Arrive at Zambia		
	17-Feb	Mon	Kick off meeting with Joint Evaluation Team (Chilanga)		Courtesy call to JICA Office Kick off meeting with Joint Evaluation Team, Experts and C/Ps (Chilanga) Meeting with Experts (Dr Nozaka)		
	18-Feb	Tue			Meeting with Experts about PDM (Chilanga)		
	19-Feb	Wed	Kabwe→Lusaka		Meeting with development Partners (FAO, COMACO, Peace corps)		
	20-Feb	Thu	Lusaka→ Nyimba Meeting with DACO, CEO, Farmers etc.				
	21-Feb	Fri	Meeting with CEO& Farmers Nyimba→ Lusaka				
	22-Feb	Sat	Lusaka→Kabwe		documentation		
1	23-Feb	Sun			documentation	Arrive at Zambia	
2	24-Feb	Mon	Kabwe→Lusaka		Courtesy call to JICA Office		
					Meeting with IITA		
			Lusaka→Kabwe		Meeting with ACF		Arrive at Zambia
3	25-Feb	Tue	Kabwe→ Kasama		Courtesy call to Director of Agriculture (Mr. Lungu) Meeting with Dr Nozaka and Mr Ito Courtecy call and Meeting with ZARI (Incl Courtesy call to Director)		
4	26-Feb	Wed			Lusaka→ Kasama		
			Meeting at Misamfu				
5	27-Feb	Thu	Site survey (Luwingu)				
6	28-Feb	Fri	Site survey (Flood Plane) Kasama→ Mpika			T-COBSI Kasama→ Mpika	Site survey (Flood Plane)
7	1-Mar	Sat	Mpica→ Lsaka				
8	2-Mar	Sun			Internal Meeting / documentation		
9	3-Mar	Mon			Workshop for NRDS Review (concept note)		
10	4-Mar	Tue			Workshop for NRDS Review		Departure from
11	5-Mar	Wed	Kabwe→Lusaka		Documentation		
12	6-Mar	Thu	Meeting with Evaluation team Prepare for JCC (Evaluation report)				
					Report to EOJ		
13	7-Mar	Fri	Joint Coordinating Committee				
			Lusaka→Kabwe		Meeting with PS of MAL Report to JICA office Departure from Zambia		

Final

ANNEX 2: Project Design Matrix (PDM)

Version 2 (Nov.2013)

Project Title:	Food Crop Diversification Support Project Focusing on Rice Production (FoDiS-R)		
Implementing Agency	ZARI of MAL	**Co-implementing Agency**	DOA and SCCI of MAL
Target Areas	Rice activities: Northern, Muchinga, Western, Eastern, Lusaka and Copperbelt Provinces FoDiS follow-up activities: Eastern and Lusaka Provinces		
Target Group	Small-Scale Farmers in Target Area		
Project Period	2012 to 2015 (3years)		

Summary		Indicators	Means of Verification	Important Assumptions
Overall Goal	Level of food insecurity in the target areas of Zambia is reduced through promotion of crop diversification.	More than 30% of small-scale farmers in target area have improved access to food.	* Census Reports * Household Living Condition Monitoring Survey * Sampling survey of Small-Scale Farmers	Policies in regard to food security are effectively implemented in Zambian.
Project Purpose	Research and extension systems for promotion of food crop diversification are improved, focusing on rice production.	1) 10 or more researchers and extension officers have the training. 2) Yield of the rice become more than 2.5t/ha at farmers field. 3) At least 1 training package for extension on rice is formulated.	* Project Reports * ZARI Annual Reports * Paper and/or Reports from ZARI Researchers * Sample survey of Small-Scale Farmers at Targeted Areas	* Serious droughts and/or floods affecting agricultural production do not occur in the target areas * Serious pest and/or diseases on major food crops do not occur or are effectively controlled. * Interests of GRZ and Cooperating Partners to promote crop diversification are maintained in Zambia.
Outputs	1. Research implementation capacity of ZARI for rice cultivation techniques is strengthened.	1) Research facilities are rehabilitated and equipment installed at 3 Research Stations. 2) Researcher meeting on rice is conducted 2times per year. 3) At least 1 research plan on rice is formulated and implemented	* Project Reports * ZARI Annual Report * Paper and/or Report from ZARI Researchers	* MAL officers are willing to improve the linkages between research and extension services. * Policies to increase rice production will be effectively implemented.

Summary		Indicators	Means of Verification	Important Assumptions
	2. Research results and recommendations (in regard to rice cultivation techniques) are effectively utilized in extension services in target areas.	1) More than 100 extension officers and 50 lead farmers have the technical trainings on target crops. 2) More than 1000 local farmers receive the trainings on target crops. 3) Extension materials made available to extension service.	* Project Reports * ZARI Annual Report * Paper and/or Report from ZARI Researchers * Extension materials	
	3. Research results and recommendations (in regard to target propagation techniques of other target crops) are effectively utilized in extension services in target areas.	1) More than 15 extension officers have the technical trainings on target crops. 2) More than 100 local farmers receive the trainings on target crops.	* Project Reports * ZARI Annual Report * Paper and/or Report from ZARI Researchers * Extension materials	
	4. Linkages among research, extension and other donors are improved.	1) Increase coordination among researchers, extension and donors.	* Minutes of Meetings	

Summary		Inputs	Important Assumptions
Activities	**For Output 1:** 1-1. Synthesize the existing information regarding rice cultivation in Zambia. 1-2. Conduct a study on the production, marketing and consumption of different rice varieties. 1-3. Carry out rehabilitation of existing facilities and installation of equipment required for research on rice at Misamfu, Mongu and Mt.Makulu research stations. 1-4. Conduct research to identify and recommend rice varieties and cultivation techniques suited for different production areas 1-5. Rice seeds for research (including NERICA and/or local varieties on the process of purification) are produce and preserved at respective research stations 1-6. Identify training needs and conduct the training for rice researchers.	**Japanese side:** 1) Long Term Experts (Chief Advisor/Rice research/Extension, Coordinator/Training, Rice Research) 2) Short Term Expert: Post-harvest technology, Gender, etc. and when needs arise 3) Third Country Experts 4) C/P Training overseas (Japan and Third Country) 5) Equipment (for Research)	**From Activities to Outputs:** * Frequent turnover or resignation of Counterpart officers assigned to the Project does not occur very frequently. * GRZ increases allocation of budget to agricultural research and extension services. * Disbursing modalities of GRZ budget is improved.

	For Output 2: 2-1. Demonstrate rice cultivation techniques by establishing on-farm demonstrations at community levels. 2-2. Conduct trainings on improved rice cultivation techniques for district, extension officers and lead farmers. 2-3. Compile training materials for extension. **For Output 3 :** 3-1. Conduct adoption study of crops supported by FoDiS. 3-2. Provide technical support for implementation of extension activities. **For Output 4 :** 4-1. Share the activity plans and achievements of the Project periodically at the HQ level. 4-2. Share the activity plans and achievements of the Project at field levels in target areas among ZARI researchers, provincial/district officers in charge of extension, and other stakeholders. 4-3. Collaborate with other cooperating partners (CP) promoting value chain and/or market development especially of rice sub-sector.	**Zambian side:** 1) Management team: Project Director (Director of PPD) Project Manager (Director of ZARI) Project Coordinator (Deputy Director of ZARI) Members of Steering Committee (representatives of ZARI, DoA, SCCI, PPD) 2) Assignment of Counterpart officers Researchers in charge of Farming System, Agronomy, Plant Protection, Rice (ZARI Mount Makulu/Misamfu/ Mongu Stations) Senior staff in charge of extension (DoA) 3) Building, office spaces and necessary facilities for the Project activities 4) Local cost (Operational cost for the Project implementation)	**Pre-conditions:** * The functions of ZARI are not changed through re-organization. * C/P officers of FoDiS project are re-assigned as C/P to the Project. * Farmers' interests in non-maize crops (particularly rice) continuously increase in Zambia.

ANNEX 3: Plan of Operations (PO)

	Activities	2012		2013				2014				2015	
		7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6
Output 1: Research implementation capacity of ZARI for rice cultivation techniques is strengthened.													
1-1	Synthesize the existing information regarding rice cultivation in Zambia.												
1-2	Conduct a study on the production, marketing and consumption of different rice varieties.												
1-3	Carry out rehabilitation of existing facilities and installation of equipment required for research on rice at Misamfu, Mongu and Mt.Makulu research stations.												
1-4	Conduct research to identify and recommend rice varieties and cultivation techniques suited for different production areas												
1-5	Rice seeds for research (including NERICA and/or local varieties on the process of purification) are produce and preserved at respective research stations												
1-6	Identify training needs and conduct the training for rice researchers.												
Output 2: Research results and recommendations (in regard to rice cultivation techniques) are effectively utilized in extension services in target areas.													
2-1	Demonstrate rice cultivation techniques by establishing on-farm demonstrations at community levels.												
2-2	Conduct trainings on improved rice cultivation techniques for district, extension officers and lead farmers.												
2-3	Compile training materials for extension.												
Output 3: Research results and recommendations (in regard to target propagation techniques of other target crops) are effectively utilized in extension services in target areas.													
3-1	Conduct adoption study of crops supported by FoDiS.												
3-2	Provide technical support for implementation of extension activities.												
Output 4: Linkages among research, extension and other donors are improved.													
4-1	Share the activity plans and achievements of the Project periodically at the HQ level.												
4-2	Share the activity plans and achievements of the Project at field levels in target areas among ZARI researchers, provincial/district officers in charge of extension, and other stakeholders.												
4-3	Collaborate with other cooperating partners (CP) promoting value chain and/or market development especially of rice sub-sector.												

ANNEX 4: List of Machineries and Equipment

Sl.	Date	Item	Product No.	Manufacturer	Price	Installation Place	Procurement Place	Frequency of utilization(*1)	Current Condition
1	2013/3/14	Husking Machine	NPS250EATM	Satake	¥504,000	Mt. Makulu	JAPAN	C	Good
2	2013/3/14	Milling machine	CBS300AS	Satake	¥103,950	Mt. Makulu	JAPAN	C	Good
3	2013/3/14	Voltage trans	SU2500	Swallow	¥84,000	Mt. Makulu	JAPAN	C	Good
4	2013/3/14	Electric scale	TXB2201L	Shimazu	¥73,500	Misamfu	JAPAN	A	Good
5	2013/3/14	Electric scale	TXB2201L	Shimazu	¥73,500	Mongu	JAPAN	A	Good
6	2013/3/14	Electric scale	TXB2201L	Shimazu	¥73,500	Mt. Makulu	JAPAN	A	Good
7	2013/3/14	Electric scale	TXB2201L	Shimazu	¥73,500	Mt. Makulu	JAPAN	C	Good
8	2012/11/29	Moisture tester	Riceter J6-2	Ket	¥42,500	Mt. Makulu	JAPAN	C	Good
9	2012/11/29	Moisture tester	Riceter J6-2	Ket	¥42,500	Mt. Makulu	JAPAN	C	Good
10	2012/11/29	Moisture tester	Riceter J6-2	Ket	¥42,500	Mt. Makulu	JAPAN	C	Good
11	2012/11/29	Moisture tester	Riceter J6-2	Ket	¥42,500	Mongu	JAPAN	C	Good
12	2012/11/29	Moisture tester	Riceter J6-2	Ket	¥42,500	Misamfu	JAPAN	C	Good
13	2012/11/29	Rice Husker(5P)	TR-130	Ket	¥25,500	Mt. Makulu etc.	JAPAN	C	Good
14	2012/11/29	Pedal thresher	FT-371	Hokuetsu	¥40,400	Mt. Makulu	JAPAN	C	Good
15	2012/11/29	Pedal thresher	FT-371	Hokuetsu	¥40,400	Mongu	JAPAN	C	Good
16	2012/11/29	Hand winnower	HD-1	Hokuetsu	¥40,500	Mt. Makulu	JAPAN	C	Good
17	2012/11/29	Hand winnower	HD-1	Hokuetsu	¥40,500	Mongu	JAPAN	C	Good
18	2012/11/29	Paddy boots(80P)	M/L/LL/LLL	Marukatsu	¥113,600	Mt. Makulu	JAPAN	A	Good
19	2012/11/29	Bird Net(15P)	18m*18m	Daio	¥31,800	Mt. Makulu	JAPAN	A	Good
20	2012/11/29	Weeder(60P)	Moon/Triangle	Ide	¥112,800	Mt. Makulu	JAPAN	A	Good
21	2012/8/9	Laptop computer	Vostro 1540	Dell	¥35,530	Mt. Makulu	Computer Express	A	Good
22	2012/10/15	Laptop computer	Vostro 1540	Dell	¥35,530	Mt. Makulu	Computer Express	A	Good

23	2012/12/3	Video camera	XA10	Canon	¥310,710	Mt. Makulu	Office machine services	C	Good
24	2012/10/15	Water/Trash Pump	WT30XK	Honda	¥155,040	Mt. Makulu	Handyman`s	A	Good
25	2013/2/26	Rice milling machine	SB30		¥270,955	Mt. Makulu	CAMCO	C	Good
26	2013/2/26	Hand Tractor	KDT910L		¥179,226	Mt. Makulu	CAMCO	C	Good
27	2013/3/20	Color Printer	551DN	HP	¥77,735	Mt. Makulu	Computer planet	A	Good
28	2013/1/18	Vehicle (ALT3071)	Pajero	Mitsubishi	¥5,638,968	Mt. Makulu	Southern Cross	A	Good
29	2013/6/13	Vehicle (ALL1943)	KB300 D/CAB	ISUZU	¥3,566,561	Mt. Makulu	Action Auto	A	Good
30	2013/7/10	Laptop computer	laptop 650	HP	¥59,788	Mt. Makulu	Computer planet	A	Good
31	2013/7/10	Laptop computer	laptop 650	HP	¥59,788	Mt. Makulu	Computer planet	C	Good
32	2013/7/10	Laptop computer	laptop 650	HP	¥59,788	Misamfu	Computer planet	A	Good
33	2013/7/10	Laptop computer	laptop 650	HP	¥59,788	Misamfu	Computer planet	A	Good
34	2013/5/29	Photo Copy		Sharp	¥97,156	Misamfu	Computer planet	A	Good
35	2013/7/22	Mechanical scale	300kg	AQ300k	¥65,025	Mt. Makulu	Zambia Scale	C	Good
36	2013/7/19	Milling machine	SB-10		¥228,021	Mt. Makulu	CAMCO	C	Good
37	2013/12/23	incubator	ICI-200	As one	¥170,000	Misamfu	JAPAN	B	Good
38	2013/12/23	Voltage trans	AVR-1000E	Swallow	¥47,250	Misamfu	JAPAN	B	Good
39	2013/12/23	Electric scale	SP402FJP	O-house	¥41,800	Misamfu	JAPAN	A	Good
40	2013/12/23	Electric scale	SP402FJP	O-house	¥41,800	Misamfu	JAPAN	A	Good
41	2013/12/23	Water temperature data logger (5p)	TR-52S	T&D	¥89,000	Misamfu	JAPAN	C	Good
42	2013/12/23	Moisture meter(2P)	DM-18	Takemura	¥63,000	Misamfu	JAPAN	C	Good
TOTAL					¥12,996,410				

Note (*1): Classification of the frequency of utilization
A: used frequently (almost daily) B: used well (1-3 times per week) C: used in specific season(s) only
D: not so much used (3-11 times per year) (needs reasons) E: not used by specific reason (needs reasons)

ANNEX 5: List of the Counterpart Personnel Participated in Training in Japan and the Third Country

Name	Period of Participation	Field / Name of the Training Course	Content	Implementing Institution	Position at that time of training	Current Position
Sonwell MUNGALU	2013/4/15-2013/4/26	Rice research methodology	Rice researcher training	PRiDe Uganda	SARO	SARO
Chrisantus MUTALE	2013/4/15-2013/4/26	Rice research methodology	Rice researcher training	PRiDe Uganda	ARO	SARO
Ireen NGULUBE	2013/4/29-2013/8/30	Fresh Researcher	Season long rice farming training for agronomists	PRiDe Uganda	Technical assistant	Technical assistant
Mulube MWIINGA	2013/4/29-2013/8/30	Fresh Researcher	Season long rice farming training for agronomists	PRiDe Uganda	ARO	ARO
Chrisantus MUTALE	2013/7/2-2013/8/3	Development of Core Agricultural Researchers for Rice Promotion in Sub-Saharan Africa	Agriculture policy and public administration.	JICA Chubu (JAPAN)	ARO	ARO
Mathias NDHLOVU	2013/7/22-2013/7/29	Extension worker	Field observation and Rice cultivation technic	PRiDe Uganda	SARO	SARO
Juliet MAATA	2013/7/22-2013/7/29	Extension worker	Field observation and Rice cultivation technic	PRiDe Uganda	SARO	SARO

ANNEX 6: List of Counterpart Personnel

Sl.	Name	Institution	Title	Field of Specialization	Assigned Period	Remarks: Involvement in the Project
1	Mathias NDHLOVU	ZARI	Senior Research Officer	Economist	22/6/2012 -	Full time
2	Brian CHISANGA	ZARI	Agriculture Research Officer	Economist	22/6/2012 – 30/6/2013	Full time
3	Ireen NGULUBE	ZARI	Technical assistant	Nutritionist	1/2/2013 -	Full time
4	Mukanga MWESHI	ZARI	Chief Agriculture Research Officer	Entomology/ Breeder	1/2/2013 –	Part time
5	Chitambi MUSIKA	ZARI	Principle Agriculture Research Officer	Agronomist	22/6/2012 –	Part time
6	Sonwell MUNGALU	ZARI	Senior Agricultural Research Officer	Agronomist	22/6/2012 –	Part time
7	Sombo CHINYAMA	ZARI	Agriculture Research Officer	Agronomist	2/10/2013 -	Part time
8	Mulube MWIINGA	ZARI	Agriculture Research officer	Agronomist	2/10/2013 -	Part time
9	Chrisantus MUTALE	ZARI	Senior Agriculture Research Officer	Agronomist	22/6/2012 –	Part time

ANNEX 7: Details of the training activities on Rice Cultivation

1. Group Training (TOT)

FY		Title	Contents	Venue	Target District	Training Period	BEO, CEO	Lead Farmers	Others	Total
2012	1	Basic Skill of Rice Cultivation	Lecture and Practice of Upland, Lowland Rice Cultivation	ZARI (Misamfu)	Kasama, Chinsali, Luwingu	Sep. 25 - 26, 2012	5	5	1	11
	2	Basic Skill of Rice Cultivation	Lecture and Practice of Upland Rice Cultivation	ZARI (Mt.Makulu)	Kafue	Nov. 13, 2012	4	3	3	10
	3	Basic Skill of Rice Cultivation	Lecture and Practice of Upland, Lowland Rice Cultivation	ZARI (Mt.Makulu)	Nyimba, Chirundu	Nov. 15-16, 2012	6	5	0	11
2013	4	Basic Skill of Rice Cultivation	Lecture and Practice of Upland, Lowland Rice Cultivation	ZARI (Mt.Makulu)	Ndola, Chinsali, Luwingu, Kalulushi	Oct. 22-23, 2013	8	7	4	19
	5	Basic Skill of Rice Cultivation	Lecture and Practice of Upland, Lowland Rice Cultivation	ZARI (Mt.Makulu)	Lusaka Province	Oct. 28, 2013	40		1	41
	6	Basic Skill of Rice Cultivation	Lecture and Practice of Upland, Lowland Rice Cultivation	ZARI (Mt.Makulu)	Nyimba	Nov. 1, 2013	9	8		17
	7	Basic Skill of Rice Cultivation	Lecture and Practice of Upland, Lowland Rice Cultivation	ZARI (Mt.Makulu)	Masaiti	Nov. 18, 2013	11	10		21
		Total					83	38	9	130

2. Field Training

Sl	District	Camp		Village	Year	Month	Day	Contents	No. of Farmers
1	Chinsali	Chinsali central	1	Seed farm	2012	11	19	Field Making, Leveling, Nursery Bed Making, Sowing (Lowland)	16
					2013	5	15	Harvesting (Lowland)	27
		Chibesa	2	Luvuwa	2012	11	20	Field Making, Leveling, Nursery Bed Making, Sowing (Lowland)	8
2	Luwingu	Mufili	3	Chikobora	2012	11	21	Sowing (Lowland)	14
		Luwingu Main	4	Lima	2012	11	21	Nursery Bed Making (Lowland)	3
			5	Museya	2013	5	16	Harvesting (Lowland)	24
3	Nyimba	Chikonta	6-1	Nyamandu	2012	12	6	Field Preparation, Sowing (Upland)	64
					2013	1	16	Field Making, Leveling, Nursery Bed Making, Sowing (Lowland)	43
					2013	4	11	Harvesting (Upland)	44
			6-2	Nyamandu	2013	12	4	Field Preparation, Sowing (Upland)	156
		Mombe	7-1	Lavison	2012	12	7	Field Preparation, Sowing (Upland)	31
					2013	4	11	Harvesting (Upland)	13
			7-2	Lavison	2013	12	3	Field Preparation, Sowing (Upland)	20
		Hofmere	8	Sichibende	2013	12	3	Field Preparation, Sowing (Upland)	67
		Luwezi	9	Chinkala	2013	12	4	Field Preparation, Sowing (Upland)	47
4	Kafue	Lukolongo	10-1	Lisiko	2012	12	10	Field Preparation, Sowing (Upland)	20
					2013	4	11	Harvesting (Upland)	14
			10-2	Lisiko	2013	11	26	Field Preparation, Sowing (Upland)	31
		Kasaka	11	Nutrition	2012	12	14	Field Preparation, Sowing (Upland)	12
		Chikupi	12	Chikupi	2013	1	6	Field Preparation, Sowing (Upland)	19
					2013	4	10	Harvesting (Upland)	12
			13	Chyanyanya	2013	11	26	Field Preparation, Sowing (Upland)	35
5	Chilanga	Mwembeshi	14	Mbaluwa	2013	12	10	Field Preparation, Sowing (Upland)	60
6	Chirundu	Chirundu	15	Kapurulira	2012	11	28	Field Making, Leveling, Nursery Bed Making, Sowing (Upland & Lowland)	11
		Lusitu bridge	16	Lusitu	2012	11	29	Field Making, Leveling, Nursery Bed Making, Sowing (Upland & Lowland)	31
					2013	3	20	Harvesting (Upland)	18
7	Ndola	Misundu	14	Chipulukusu	2013	11	28	Field Preparation, Sowing (Upland) Field Preparation, Sowing (Lowland)	26
					2013	12	19	Transplanting (Lowland)	7
		Madando	15	Kafubu	2013	11	28	Field Preparation, Sowing (Upland) Field Preparation, Sowing (Lowland)	7
					2013	12	19	Transplanting (Lowland)	7
8	Masaiti	Masaiti	16	Tebulu	2013	11	29	Field Preparation, Sowing (Upland)	21
		Chiwala South	17	Kamipunda	2013	11	29	Field Preparation, Sowing (Upland)	19
				Total					927

ANNEX 8: Details of the Field Tests

Upland Rice (Main Site)

Year	No	District	Camp	Village	Plot Size (m^2)	No of participant	Yield (t/ha)	Remarks
2012/13	1	Nyimba	Chikonta	Nyamandu	200	64	3.8	The rice of demo plot was eaten by cow. Project got the data of yield from another farmer's plot participated the training
			Mombe	Lavison	80	31	1.5	Poor management of the field
	2	Kafue	Lukolongo	Lisiko	800	20	3.2	Because of short of rain in Kafue, the rice of demo plot was not grow. Project got the data of yield from another farmer's plot participated the
			Kasaka	Nutrition	100	12	-	Short of rain
			Chikupi	Chikupi	400	19	0.3	Short of rain
	3	Chirundu	Chirundu	Kapurulira	400	11	-	Farmer did not irrigate to the field
			Lusitu bridge	Lusitu	400	31	2.5	
2013/14	4	Nyimba	Chikonta	Nyamandu	200	156		
			Mombe	Lavison	-	20		
			Hofmere	Sichibende	200	67		
			Luwezi	Chinkala	200	47		
	5	Kafue	Lukolongo	Lisiko	200	31		
			Chikupi	Chanyanya	400	35		
	6	Chiranga	Mwenbeshi	Mbaluwa	400	11		
	7	Ndola	Misundu	Chipulikusu	150	26		
			Madando	Kafubu	100	7		
	8	Masaiti	Masaiti	Tebulu	400	21		
			Chiwala South	Kamipunda	200	19		
Sub Total (2012/13)						188		
Sub Total (2013/14)						440		
Total						628		

Upland Rice (Sub Site)

Year	No	District	Camp	Village	Amount of Seed distributed to Camp (kg)	No.of participant	Yield (t/ha)	Remarks
2013/14	1	Nyimba	Central 2	Mulira	100	96		
			Chipembe	Alidoni	100	100		
			Ndake	Chinkoko	100	83		
				Kashoni				
			Visimumba	?	100	100		Under monitoring
	2	Masaiti	Chiwala North	Songolo	100	5		
			Mutaba North	Lubemba	100	11		
			Mutaba South	Bwingi	100	28		
				Chakupa		13		
			Nyenyeshi	-	100	0		
			Mushili	Makamba	50	123		
			Fifungo	Mulomwe	50	20		
				Yande		25		
			Matete	Kaindi	50	31		
			Mishikishi West	Mutububi	50	28		
				Kasuka		30		
				Kasoti		20		
				Tondo		25		
Total						738		

Lowland Rice (Main Site)

Year	No.	District	Camp	Village	Plot Size (m^2)	No of participant	Yield (t/ha)	Remarks
2012/13	1	Chinsali	Chinsali central	Seed farm	120	16	4.5	Variety : Supa
			Chibesa	Luvuwa	90	8	3.0	Variety : Supa
	2	Luwingu	Mufili	Chikobora	400	14	0.5	Variety : Supa
			Luwingu Main	Lima	200	3	2.5	Variety : Supa
				Museya	250	24	4.5	Variety : Supa
	3	Nyimba	Chikonta	Nyamandu	50	43	-	Variety : NERICA 4 Late transplanting
			Mombe	Lavison	100	31	-	Variety : NERICA 4 Late transplanting
	4	Chirundu	Chirundu	Kapurulira	150	11	-	Variety : NERICA 4 Water pump did not work
			Lusitu bridge	Lusitu	100	31	-	Variety : NERICA 4 Lead Farmer did not transplant.
2013/14	5	Ndola	Misundu	Chipulikusu	100	26		Variety : Supa
			Madando	Kafubu	100	7		Variety : Supa
Total						214		

ANNEX 9: Proposed Revision of Project Design Matrix (PDM)

Ver. 3 (6 February 2014)

Project Title:	Food Crop Diversification Support Project Focusing on Rice Production (FoDiS-R)		
Implementing Agency	ZARI of MAL	**Co-implementing Agency**	DOA and SCCI of MAL
Target Areas	Rice activities: Northern, Muchinga, Western, Eastern, Lusaka and Copperbelt Provinces FoDiS follow-up activities: Eastern and Lusaka Provinces		
Target Group	Small-Scale Farmers in the Target Areas		
Project Period	June 2012 to June 2015 (3years)		

Summary		Indicators	Means of Verification	Important Assumptions
Overall Goal	Diversified food crop production, especially rice production, is enhanced in the target areas.	1) The number of rice growing farmers is increased by 20% in the target areas by 2018, compared to the number in 2012.(*Note 1) 2) Average yield of rice in the target areas exceeds 2.0t/ha by 2018.	* Data of MAL * Data and reports of Districts * Sample survey	Policies in regard to food security are effectively implemented in Zambian.
Project Purpose	Research and extension systems for promotion of food crop diversification are improved, focusing on rice production.	1) At least 5 researches on rice are implemented. 2) The report on the identified potentials of rice production is shared to the research and other relevant institutions. 3) Extension materials on rice cultivation are made available for extension services.	* Project Reports * ZARI Annual Reports * Paper and/or Reports from ZARI Researchers * Extension materials	* Serious droughts and/or floods affecting agricultural production do not occur in the target areas. * Serious pests and/or diseases on major food crops do not occur or are effectively controlled. * Interests of GRZ and Cooperating Partners to promote rice production are maintained in Zambia.
Outputs	1. Research implementation capacity of ZARI for rice cultivation techniques is strengthened.	1-1 Research facilities are rehabilitated and equipment installed at 3 Research Stations. 1-2 Researcher meetings on rice are conducted at least 2 times per year 1-3 10 or more researchers are trained on researches related to rice production.	* Project Reports * ZARI Annual Report * Records of training attended by the researchers	* MAL officers are willing to improve the linkages between research and extension services. * Policies to increase rice production are effectively implemented.

Summary		Indicators	Means of Verification	Important Assumptions
	2. Potentials for future promotion of research and extension on rice production in target areas are identified.	2-1 More than 20 field tests on upland rice cultivation techniques are conducted. 2-2 Yields of 2.0 ton/ha or more are obtained at 50 % of the field test sites on upland rice cultivation techniques. 2-3 More than 10 field tests on lowland paddy cultivation techniques are conducted. 2-4 Yields of 3.0 ton/ha or more are obtained at 50% of the field test sites on lowland paddy cultivation techniques.	* Project Reports * ZARI Annual Report * Records of activities at the field test sites	
	3. Research and extension services on other target food crops are continuously enhanced.	3-1 More than 200 local farmers receive the trainings on target crops. 3-2 More than 50% of the trained farmers apply the learned techniques in the production of target crops	* Project Reports * ZARI Annual Report * Results of the adoption survey	
	4. Potential linkages are identified and strengthened among research, extension and other stakeholders to further promote food crop diversification, especially rice production.	4-1 Rice development potentials identified by the Project are incorporated in the revised NRDS. 4-2 A matrix of relevant plans and programs to promote rice production is compiled 4-3 Meetings among the relevant stakeholders at working level to share experiences and achievements of the Project are held at least twice a year.	* NRDS documents * Program matrix	

Summary		Inputs	Important Assumptions
Activities	<u>For Output 1:</u> 1-1. Synthesize the existing information regarding rice cultivation in Zambia. 1-2. Conduct a study on the production, marketing and consumption of rice. 1-3. Carry out rehabilitation of existing facilities and installation of equipment required for research on rice at Misamfu, Mongu and Mt.Makulu research stations. 1-4. Conduct research to identify and recommend rice varieties and cultivation techniques suited for different production areas	<u>Japanese side:</u> 1) Long Term Experts (Chief Advisor/Rice research/Extension, Coordinator/Training, Rice Research) 2) Short Term Expert: Post-harvest technology, Gender, etc. and when needs arise	<u>From Activities to Outputs</u>: * Turnover or resignation of Counterpart officers assigned to the Project does not occur very frequently. * Allocation of budget to agricultural research and extension services are secured.

	1-5 Rice seeds for research (including NERICA and/or local varieties on the process of purification) are produce and preserved at respective research stations 1-6. Identify training needs and conduct the training for rice researchers. **For Output 2:** 2-1. Verify rice cultivation techniques by conducting field tests at community levels. 2-2. Disseminate the processes and the results of the field tests to the farmers to obtain their feedback. 2-3. Identify potentially effective rice cultivation techniques that would achieve higher yield performances. 2-4. Gather the information on climatic conditions and water sources in the target areas to identify potential areas for the verified rice cultivation techniques. 2-5. Compile a report on the potentials of rice cultivation. **For Output 3 :** 3-1. Provide technical support for implementation of extension activities. 3-2 Conduct adoption survey **For Output 4 :** 4-1. Share the activity plans and achievements of the Project among ZARI researchers, provincial/district officers in charge of extension, and other stakeholders. 4-2. Collaborate with other cooperating partners (CP) promoting value chain and/or market development especially of rice sub-sector.	3) Third Country Experts 4) C/P Training overseas (Japan and Third Country) 5) Equipment (for Research) **Zambian side:** 1) Management team: Project Director (Director of PPD) Project Manager (Director of ZARI) Project Coordinator (Deputy Director of ZARI) Members of Steering Committee (representatives of ZARI, DoA, SCCI, PPD) 2) Assignment of Counterpart officers Researchers in charge of Farming System, Agronomy, Plant Protection, Rice (ZARI Mount Makulu/Misamfu/ Mongu Stations) Senior staff in charge of extension (DoA) 3) Building, office spaces and necessary facilities for the Project activities 4) Local cost (Operational cost for the Project implementation)	**Pre-conditions:** * The mandates and functions of ZARI are not changed through re-organization. * Farmers' interests in non-maize crops (particularly rice) continuously increase in the target areas

*Note 1: The figure may further be revised in case if the target is already met at the time of terminal evaluation.

Annex 10: Major Points of the Proposed Revision of the PDM

Part of the PDM	Description in the Current Version of PDM	Proposed Revision	Explanation
Overall Goal	Level of food insecurity in the target areas of Zambia is reduced through promotion of crop diversification	Diversified food crop production, especially rice production, is enhanced in the target areas.	As the Project purpose is the improvement of research and extension system, the direct effects should be increased production. The reduction of the food insecurity is to be achieved after the production is increased
OVI for the Overall Goal	More than 30% of small-scale farmers in target area have improved access to food	1) The number of rice growing farmers is increased by 20% in the target areas by 2018. compared to the number in 2012. 2) Average yield of rice in the target areas exceeds 2.0t/ha by 2018.	1) Based on the number of farmers participated in the training at field test sites and assumed adoption so far, it is roughly calculated that 20% of increase may be expected. 2) The actual achievements at field tests so far on upland rice and irrigated paddy are 2.3 t/ha and 3.8 t/ha, respectively. As the actual dissemination after the completion of Project may largely be on upland rice cultivation, without close supervision, thus the target is set at a bit lower level of 2.0 t/ha.
Important Assumptions from the Project Purpose to Overall Goal	1. Serious droughts and/or floods affecting agricultural production do not occur in the target areas 2 Serious pests and/or diseases on major food crops do not occur or are effectively controlled. 3 Interests of GRZ and Cooperating Partners to promote crop diversification are maintained in Zambia.	*1 No change* *2. No change* 3. Interests of GRZ and Cooperating Partners to promote rice production are maintained in Zambia.	It should be clarified that the focus of the Project is put on rice production. Although the assistance of other cooperating partners may help promotion of rice production, their interest may not be an important assumption that affects the achievement of the overall goal.
OVI for the Project Purpose	1) 10 or more researchers and extension officers have the training. 2) Yield of the rice become more than 2.5t/ha at farmers field 3) At least 1 training package for extension on rice is formulated.	1) At least 5 research plans on rice are formulated and implemented. 2) The report on the identified potentials of rice production is shared to the research and other relevant institutions. 3) Extension materials on rice cultivation are made available for extension services	1) The current indicator 1 should be concentrated on researchers training which should be the indicator for the output 1 Systematic development of research capacity should be measured on the actual conduct of research. 2) As activities for the output 2 is considered to be the outreach activity to explore the potential, not really as the extension in general sense, the indicator should be set on the identification of the potentials 3) The Project may not formulate concrete technical training package on rice production, as what the Project is implemented are still the field tests. The indicator on the extension should thus be limited to the concrete deliverables but not the training package.
OVI for Output 1	1-1 Research facilities are rehabilitated and equipment installed at 3 Research Stations. 1-2 Researcher meeting on rice is conducted 2times per year 1-3 At least 1 research plan on rice is formulated and implemented	1-1 (No Change) 1-2 (No Change) 1-3 10 or more researchers are trained on researches related to rice production	1-3 Implementation of research plan is considered to be the result of capacity building, thus the training on rice research may be a more direct indicator

Output 2	Research results and recommendations (in regard to rice cultivation techniques) are effectively utilized in extension services in target areas.	Potentials for future promotion of research and extension on rice production in target areas are identified	As what the Project is tried out in the field is not the extension of the results of the research, but the field tests to explore the potentials of rice cultivation in different ecologies, which should clearly be indicated.
OVI for Output 2	2-1 More than 100 extension officers and 50 lead farmers have the technical trainings on target crops 2-2 More than 1000 local farmers receive the trainings on target crops 2-3 Extension materials made available to extension service.	2-1 More than 20 field tests on upland rice cultivation techniques are conducted. 2-2 Yields of 2.0 ton/ha or more are obtained at 50 % of the field test sites on upland rice cultivation techniques. 2-3 More than 10 field tests on lowland paddy cultivation techniques are conducted. 2-4 Yields of 3.0 ton/ha or more are obtained at 50% of the field test sites on lowland paddy cultivation techniques.	As the activities for output 2 are the field tests to explore the potentials, the number of test sites and their yield performances should be the indicator for this output. Target figures are set at the assumingly achievable level, based on the achievement so far
Output 3	Research results and recommendations (in regard to target propagation techniques of other target crops) are effectively utilized in extension services in target areas.	Research and extension services on other target food crops are continuously enhanced.	As the propagation mechanism established under FoDiS are no longer functional, the Project is to continue support the research and extension, not specifically focused on propagation techniques
OVI for Output 3	3-1 More than 15 extension officers have the technical trainings on target crops 3-2 More than 100 local farmers receive the trainings on target crops	3-1 More than 200 local farmers receive the trainings on target crops 3-2 More than 50 % of the trained farmers apply the learned techniques in the production of target crops	3-1 The output 3 is the follow-up of the FoDis, thus training of extension officers may no longer the indicator, but the dissemination to the farmers should be taken into account. As the target figure has almost been achieved by the time of Review, the target should be increased. 3-2 It is also necessary to grasp the degree of adoption among the farmers as indicator for this output.
Output 4	Linkages among research, extension and other donors are improved	Potential linkages are identified and strengthened among research, extension and other stakeholders to further promote food crop diversification, especially rice production.	Linkage should not be limited to the donors. Also, the objective of the linkage should be clarified
OVI for Output 4	Increase coordination among researchers, extension and donors	4-1 Rice development potentials identified by the Project are incorporated in the revised NRDS. 4-2 A matrix of relevant plans and programs to promote rice production is compiled 4-3 Meetings among the relevant stakeholders at working level to share experiences and achievements of the Project are held at least twice a year.	As the current indicator is just the statement of desirable condition, some tangible indicators are set which exemplify the increased coordination.

Important Assumptions from Activities to Output	1 Frequent turnover or resignation of Counterpart officers assigned to the Project does not occur very frequently. 2 GRZ increases allocation of budget to agricultural research and extension services. 3 Disbursing modalities of GRZ budget is improved	1. Turnover or resignation of Counterpart officers assigned to the Project does not occur very frequently. 2 Allocation of budget to agricultural research and extension services are secured	1. Grammatical collection. 2 As important assumption, secured budget may be enough, rather than the increase. 3 Improvement of budget disbursement modalities is rather a general issue, not specifically to be considered as important assumption for this particular Project.
Activity 1-2	Conduct a study on the production, marketing and consumption of different rice varieties	Conduct a study on the production, marketing and consumption of rice	As it is not quite possible to obtain data on production, marketing and consumption which are disaggregated by varieties, the study should be the one to cover the general trend of rice production, marketing and consumption.
Activities 2	2-1 Demonstrate rice cultivation techniques by establishing on-farm demonstrations at community levels. 2-2 Conduct trainings on improved rice cultivation techniques for district, extension officers and lead farmers. 2-3. Compile training materials for extension	2-1 Verify rice cultivation techniques by conducting field tests at community levels 2-2 Disseminate the processes and the results of the field tests to the famers to obtain their feedback. 2-3 Identify potentially effective rice cultivation techniques that would achieve higher yield performances 2-4Gather the information on climatic conditions and water sources in the target areas to identify potential areas for the verified rice cultivation techniques. 2-5 Compile a report on the potentials of rice cultivation.	In the current PDM, the output 2 is described as if the research results are disseminated through extension activities, but the field activities in the actual context of the Project are the field tests to explore the potentials of rice production. Therefore, the activities should also be streamlined to make the objective of this output, i.e. the identification of the potentials, can clearly be indicated.
Activities 3	3-1 Conduct adoption study of crops supported by FoDiS 3-2. Provide technical support for implementation of extension activities.	3-1 Provide technical support for implementation of extension activities. 3-2. Conduct adoption survey	As the system of extension under FoDiS had become malfunctioning, it was not possible to conduct adoption study. Instead, the Project would conduct adoption study by the end of the Project to grasp the degree and impacts of the activities.
Pre-conditions	1 The functions of ZARI are not changed through re-organization. 2. C/P officers of FoDiS project are re-assigned as C/P to the Project. 3 Farmers' interests in non-maize crops (particularly rice) continuously increase in Zambia	1. The mandates and functions of ZARI are not changed through re-organization. 2 Farmers in the target areas are interested in non-maize crops, including rice.	The original pre-condition 3 meant the actual adoption by the farmers, i.e. to be realized as the results of the Project activities. It should thus be replaced with the attitudes and willingness, as one of the pre-conditions for the Project implementation.

2.NRDS ワークショップ開催結果
NRDS コンセプトノート改訂ワークショップ開催実施報告書

１．開催日時： 2014 年 3 月 3 日（月）14:00～16:30、3 月 4 日（火）9:00～16:00

２．開催場所： Courtyard Hotel, Lusaka

３．背景・経緯

ザンビアにおける農業セクターの特徴は、少数の商業農場と、絶対多数を占める伝統的な小規模農家が併存する二重構造にある。大半の小規模農家は灌漑施設へのアクセスがなく、天水による作物栽培に依存しているため、干ばつ・洪水など気象変動の影響を受けやすく、定期的に起こる食糧不足に直面してきた。今後も世帯レベル、国家レベルでの食糧安全保障の確保が、ザンビア国農業をめぐる最重要課題の 1 つとして認識されている。同国の食用作物生産は、過去の農業政策により、メイズに極端に偏った構造となっているが、国家農業政策（NAP2004-2015）においては、①食用作物多様化を推進すること、及び②食糧安全保障の改善を図ることが目標に掲げられている。

ザンビアにおける現在のコメ生産量は年間5万ｔにすぎないが、国内には在来稲品種の主要生産地のみならず、ネリカ米を含むコメ生産のポテンシャルを有する未利用地が存在しており、メイズ市場の飽和傾向や都市部での食生活の変化に伴い、小規模農家のコメ生産への関心が高まっている。これらの背景から、ザンビア政府はコメ振興をめざし 2011 年に国家コメ開発戦略（National Rice Development Strategy: NRDS 2011-2015）を策定、5 年間でコメ生産を倍増させるという野心的な目標を掲げた。しかしながら、同戦略策定以降、その具体化に向けた作業は停滞しており、事業実施に結びついていない。この点にかんがみ、2013 年 10 月 15 日に、CARD（アフリカ稲作振興のための共同体）事務局専門家の出席を得て、NRDS レビュー会合が開催された。農業畜産省（MAL）、ザンビア農業研究所（ZARI）関係者を中心に約 20 名の出席者が参加し、①ザンビアにおけるコメセクター概観、②FoDiS-R の進捗、③NRDS 実施状況と問題点等が協議された。同会合の結論として、①2014 年 3 月までをめどに NRDS を改定すること、②そのために小委員会（タスクフォース）を設置して勉強会や現場視察等を実施し、NRDS 及びコンセプトノートの改訂作業を進めることが合意された。

今後のザンビアの稲作振興のためには、NRDS に基づいて具体的な成果につながる活動を明確化し、計画・実施していく必要がある。そのため、現在 JICA は NRDS の推進に向けた協力を展開しており、今般の FoDiS-R の中間レビューにおいても、NRDS の見直し作業結果を確認し、新たな NRDS の方向性を反映してコンセプトノートを改定することが、プロジェクトの後半の活動、更には将来的な支援の方向性を検討するうえでも重要であるとの認識の下、本ワークショップが実施されることとなった。

４．NRDS 改訂との関連（事前作業とのすり合わせ）

これまでの NRDS 改訂作業において、NRDS の主要コンポーネントとして以下の 8 領域が特定されており今回のワークショップでは、これに沿って優先事項の特定と、コンセプトノートへの反映作業を行うこととした。

（1）改良品種及び種子システムへのアクセス改善 （Improving accessibility of improved varieties and seed systems）
（2）農家レベルでの生産投入材のインプット（Farmers Input）
（3）灌漑開発（Irrigation Development）
（4）農業機械化（Agricultural Mechanization）
（5）収穫後処理（Post-Harvest）
（6）研究（Research）
（7）技術普及（Technology Dissemination）
（8）農業融資へのアクセス（Access to credit/ agricultural finance）

また、コンセプトノート改訂に先立って、NRDS 改訂に係るこれまでの経緯と議論を踏まえ、ザンビアのコメセクターにおけるギャップ分析結果が表 1 のとおり発表され、サブセクターごとに優先すべき課題領域が示された。なお、同分析で示されている課題領域は、上述の NRDS 主要コンポーネントと必ずしも一致していないが、種子と研究は NRDS のコンポーネント(1)、品質向上と市場アクセスは(5)に含まれるものという理解のうえでその後の作業を進めた。

表1:ギャップ分析結果

サブセクター/課題領域	政策・制度	物理的基盤・インフラ	人的資源・能力	物的供与・支援	知識・情報
種子	対応が不十分	対応が不十分	対応が不十分	優先	優先
投入材(肥料)	対応が不十分	需要はあるが対応されていない(ギャップ)	需要はあるが対応されていない(ギャップ)	一定程度対応されている	対応が不十分
灌漑・水管理	対応が不十分	優先	優先	需要はあるが対応されていない(ギャップ)	対応が不十分
技術普及	需要はあるが対応されていない(ギャップ)	対応が不十分	優先	需要はあるが対応されていない(ギャップ)	需要はあるが対応されていない(ギャップ)
機械化	需要はあるが対応されていない(ギャップ)	需要はあるが対応されていない(ギャップ)	需要はあるが対応されていない(ギャップ)	需要はあるが対応されていない(ギャップ)	需要はあるが対応されていない(ギャップ)
品質向上	対応が不十分	対応が不十分	対応が不十分	優先	優先
市場アクセス	対応が不十分	対応が不十分	優先	需要はあるが対応されていない(ギャップ)	需要はあるが対応されていない(ギャップ)
金融アクセス	対応が不十分	需要はあるが対応されていない(ギャップ)	対応が不十分	対応が不十分	需要はあるが対応されていない(ギャップ)
総合的な政策取り組み	需要はあるが対応されていない(ギャップ)	需要はあるが対応されていない(ギャップ)	需要はあるが対応されていない(ギャップ)	需要はあるが対応されていない(ギャップ)	需要はあるが対応されていない(ギャップ)

出所:ワークショップにおける DOA 職員発表資料による。

これらの NRDS 主要コンポーネント及び課題領域と、現行のコンセプトノートとの対比を表 2 に示す。(ただし、課題領域に示されている「総合的な政策取り組み」については、横断的な課題領域であるため、下表には含めていない。) ギャップ分析において優先事項とされている課題領域をほぼ網羅する形で現行のコンセプトノートが作成されていることが確認できたが、コンセプトノートのテーマが品質向上と市場アクセス改善に集中していることには留意が必要である。なお、一部のコンセプトノートについては、表題と内容に乖離があるため、内容の修正と合わせて再度確認、整理する必要が指摘された。

表2:NRDS コンポーネント、課題領域及びコンセプトノート対応表

NRDS コンポーネント	課題領域	優先課題	関連コンセプトノート
(1)改良品種及び種子システムへのアクセス改善	種子	物的供与 知識・情報	CN3 既存混在品種の純化、改良品種の開発と増殖 CN4 種子品質管理システムの分権化による種子増殖・配布の改善
(2)農家レベルでの生産投入材のインプット	投入材(肥料)		

(3)灌漑開発	灌漑・水管理	インフラ 人的資源・能力	CN9 稲作促進のための灌漑インフラ開発
(4)農業機械化	機械化		
(5)収穫後処理	品質向上 市場アクセス	物的供与 知識・情報 人的資源・能力	CN1 稲作地帯における市場アクセスの改善 CN2 コメ貯蔵庫買付システムを通じたコメサブセクターと市場の統合 CN5 国内産米の競争力強化に向けたコメの品質基準開発 CN6 国内産米の品質向上 CN8 ザンビアコメ連盟(ZRF)を通じたコメバリューチェーンの連携強化
(6)研究			(CN3)
(7)技術普及	技術普及	人的資源・能力	CN7 コメ生産増加に向けた普及サービス強化
(8)農業融資へのアクセス	金融アクセス		

5. ワークショップ結果

ワークショップにおいては、上述の整理を踏まえ、各コンセプトノートの内容につき検討し、必要な修正を加える作業が中心となった。合意された主要な改訂点は、表 3 に示すとおりである。ただし、いくつかのコンセプトノートについては、当該課題に対する事業責任を担う組織・部局の関係者がワークショップに出席していなかったため、後日確認・再修正を行うことが合意された。また、責任をもつ担当部局が特定されていないコンセプトノートもあるため、次回会合で確認・決定することとなった。

表3:コンセプトノートの主要な改訂点

コンセプトノート	主たる改訂点	担当組織・部局
CN1 稲作地帯における市場アクセスの改善	特に変更点なし。	?
CN2 貯蔵庫買付システムを通じたコメサブセクターと市場の統合	農業マーケティング関連の法令に関する確認。責任機関への確認が必要なため、後日再検討。	Dep. Agribusiness & Marketing
CN3 既存混在品種の純化、改良品種の開発と増殖	研究機関の能力向上を追加し、また品種のみならず適切な栽培管理技術も開発することを追加。	ZARI
CN4 種子品質管理システムの分権化による種子増殖・配布の改善	SCCI の分権化ではなく、官民連携の強化により目標を達成することに整理。表題も変更。	SCCI
CN5 国内産米の競争力強化に向けたコメの品質基準開発	ザンビア基準局(ZABS)の体制について確認が必要。ZABS 関係者への確認後、再検討。	ZABS
CN6 国内産米の品質向上	特に変更点なし。	?
CN7 コメ生産増加に向けた普及サービス強化	普及活動の流れを確認・整理。	DOA (Advisory Services)
CN8 ザンビアコメ連盟(ZRF)を通じたバリューチェーンの連携強化	バリューチェーンに限定せず、活動内容が ZRF の組織強化である点を明確化。表題も変更。	ZRF
CN9 稲作促進のための灌漑インフラ開発	具体的地名・スキーム名の限定を解除。表題も変更。	DOA (TSB)

6. 今後の作業

本ワークショップの最後に、今後必要な作業及び予定について、以下のとおり合意された。

(1)各コンセプトノートについて、内容に関連する事業の実施責任をもつ機関の関係者を担当として特定する。

(2)担当者ベースで、記載事項(目標、活動、成果)を再度検討して最終化を図る。その際、資金源の欄にドナー名は記載せず、ザンビア側の責任機関を明記する。

(3)全コンセプトノートを最終編集し、表現の平仄を一致させ、統一の様式に整理する。

(4)最終版の確認後、4 月上旬をめどにドナー、地方組織を含む関係者を広く招いたワークショップを開催し、これらコンセプトノートを発表する。

なお、コンセプトノート発表後には、個別のテーマないし活動に関心をもつドナーとの個別協議により具体的な支援案件の検討が進められることが期待される。

7. 今後の作業における留意事項

(1)コンセプトノートの位置づけに関する関係者の理解

NRDS コンセプトノートは本来、ザンビア政府として、どのような優先課題に対し、どのような活動を行っていくことが必要であるかを示すものである。しかしながら、これまでの作業において、ドナーのプロジェクト計画にあわせてコンセプトノートを書き換える、あるいは対象地域や規模を限定するといった改定が行われてきたことが議論のプロセスで明らかになった。現状では、これら事業実施のための資金をドナーに依存しなければならず、ドナーの意向とのすり合わせは必要であるが、コンセプトノート自体は、あくまで「必要な活動」を網羅的に示すものであり、各ドナーがその中から支援コンポーネントを選ぶことができるような形で整理しておくことが極めて重要である。

(2)コンセプトノートのテーマの優先順位づけ

今般ワークショップにおいては、現行の 9 つのコンセプトノートについて検討・修正が加えられたが、本来、この 9 項目が本当に 2018 年までの NRDS 計画期間における優先課題であるのかという議論が事前になされるべきであったと思われる(例えば、CN5 はコメの輸出促進を意図する内容であり、現状の生産体制からみて時期尚早と思われる面もある)。今後、ドナーを含む関係者への広範な周知がなされていくプロセスにおいて、緊急性の高い重要な事業のみが支援対象となっていくことは必然であるが、本コンセプトノートがいずれ評価の対象になるのであれば、計画未実施という事態を避けるためにも、計画時点で、9 つのコンセプトノートの中に優先度をつけておくことが望ましいのではないかと思われる。

(3)専門性と実施責任をもつ組織・部局の関係者によるコンセプトノートの最終化

これまでの議論は、主として本ワークショップに出席した NRDS レビュー・タスクフォースによって担われてきた。しかし、さまざまな専門性を有するタスクフォースは、NRDS 全体の方向性、優先分野の特定のためには十分に機能してきたと思われるが、個別のコンセプトノートの策定には専門的な知識に基づく具体的な議論が必要であり、今後の作業については当該分野の事業実施責任を有する組織・部局の関係者が主体性をもってかかわることが不可欠である。

8. 添付資料: コンセプトノート改訂版

List of the Participants

NRDS Task Force

Mr. Alick Daka, Director, Crop Division, DOA, MAL
Mr. Philip Siamuyoba, Chief Vegetable and Flora Agriculture, DOA, MAL
Mr. Morton Mwanza, PVFO, MAL
Mr. Moses Mwale, Director, ZARI
Mr. Godffrey Mwila, Chief Agricultural Research Officer, ZARI
Mr. Mathias Ndhlovu, Agricultural Research Officer, ZARI
Ms. Elly S.Mwale, Zambia Rice Forum (ZRF)
Dr. Jiro Nozaka, Advisor to MAL, JICA
Mr. Yukinori Ito, Chief Advisor, FoDiS-R, JICA
Mr. Tokutaro Iino, Project Coordinator, FoDiS-R, JICA

Facilitator

Mr. Masiye Nawiko, Programme Officer, Agriculture Consultative Forum (ACF)

FoDis-R Mid-term Review Team (Observers)

Mr. Shinjiro Amameishi (Director, Arid and Semi-Arid Farming Area Division 1, Rural Development Dept., JICA)
Dr. Yuji Kishima (Professor, Hokkaido University)
Ms. Akiko Fujita (Deputy Director, Arid and Semi-Arid Farming Area Division 1, Rural Development Dept., JICA)
Ms.Keiko Itagaki (Social Development Specialist, International Development Associates Ltd.)

Report of the Workshop on the Revision of NRDS Concept Notes

1. Date & Time of the workshop： March 3, 2014 14：00～16：30 and March 4, 2014 09：00～16：00

2. Venue： Courtyard Hotel, Lusaka

3. Background an Objective of the Workshop

Food Shortage in Zambia is the result of high dependency on rain-fed cultivation and drought entails food crisis. This is particularly serious among small scale farmers where the prevalence of the maize monoculture, at the expense of other equally important food crops, exacerbates the impact on food shortages in the county. To overcome this situation, the Government of Zambia (GRZ), as evidenced by various policy documents, has been encouraging crop diversification. Mono-cropping of maize has been a great concern and there is need to establish the most appropriate cropping patterns for the target crops in a holistic manner for sustainable production of staple food crops, including rice.

Although current rice production in Zambia is about 50,000 metric tons, i.e. still nominal, there are large potentials for rice production, not limited to the flood plains where majority of local rice are being produced. With the already saturated maize market and gradual changes of food habit in the urban areas, domestic demand of rice is drastically increasing, leading to the increase of the interests of small scale farmers in rice production. Hence GRZ has formulated the National Rice Development Strategy: NRDS 2011-2015in 2011, aiming to enhance the rice production in the country, with seemingly ambitious targets to double the rice production. The progress of NRDS, however, was not outstanding, and the necessity of accelerate the implementation was reportedly pointed out. The NRDS Review Meeting was held on October 15, 2013, organized by NRDS Task Force, Ministry of Agriculture and Livestock (MAL) with financial support from FoDiS-R (Food Crop Diversification support Project Focusing on Rice), a technical cooperation project of JICA. About 20 participants mainly from MAL including ZARI (Zambia Agriculture Research Institute) were present where 1) Overall Status of Rice sub-sector in Zambia, 2) Review of NRDS, 3) Activities of FoDiS-R and 4) Way forward were discussed. Way forward to implement NRDS, especially on how to strengthen the function of NRDS Task Force, were not fully discussed, however, the meeting overall expressed consensus on: 1) update NRDS by March 2014, 2) form small committee (smaller than NRDS Task Force) and 3) organize a series of small workshop to review overall strategy on rice sub sector as well as update NRDS concept notes.

In view of further promotion of rice production in Zambia, it is deemed essential to clarify, plan and implement the realistic measures to bring concrete and tangible outputs based on the NRDS. To confirm the process of the NRDS review and to revise the concept notes in accordance with the new NRDS strategies are considered to be an important step to examine the directions not only of FoDiS-R in the latter half of its cooperation period, but also of future assistance of JICA in the rice sector in Zambia. This workshop to review and modify the NRDS concept notes was thus to be organized with the financial and advisory supports by JICA, and under the facilitation of Agriculture Consultative Forum (ACF).

4. Basic Directions of NRDS Review:

Through various discussions so far held among the members of the NRDS Task Force, the following eight (8) issues have been identified and confirmed as the main components of NRDS, along with which the priorities are to be examined and the existing concept notes are to be revised.

(1) Improving accessibility of improved varieties and seed systems

(2) Farmers Input

(3) Irrigation Development

(4) Agricultural Mechanization

(5) Post-Harvest

(6) Research

(7) Technology dissemination

(8) Access to credit/ agricultural finance

In the workshop, there was also a presentation on the gap analysis of rice sector in Zambia, as shown in the Table 1 below, which has been developed through the discussion on the NRDS review. There are eight (8) issues over 5 sub-sectors that are considered as the priorities. Although these sub-sectors are not exactly consistent with the NRDS components above, general resemblance is observed.

Table 1: Gap Analysis of Rice Sector in Zambia

Sub-sector/ issues	Policy / institutional	Infrastructure	Human resources / capacity	Provision / support	Information / knowledge
Seed	Insufficient	Insufficient	Insufficient	Priority	Priority
Fertilizer	Insufficient	Demand not addressed (Gap)	Demand not addressed (Gap)	Sufficient	Insufficient
Irrigation and water management	Insufficient	Priority	Priority	Demand not addressed (Gap)	Insufficient
On-farm technology dissemination	Demand not addressed (Gap)	Insufficient	Priority	Demand not addressed (Gap)	Demand not addressed (Gap)
Mechanization	Demand not addressed (Gap)	Demand not addressed (Gap)	Demand not addressed (Gap)	Demand not addressed (Gap)	Demand not addressed (Gap)
Quality improvement	Insufficient	Insufficient	Insufficient	Priority	Priority
Access to market	Insufficient	Insufficient	Priority	Demand not addressed (Gap)	Demand not addressed (Gap)
Access to credit	Insufficient	Demand not addressed (Gap))	Insufficient	Insufficient	Demand not addressed (Gap)
Overall policy tools	Demand not addressed (Gap)	Demand not addressed (Gap)	Demand not addressed (Gap)	Demand not addressed (Gap)	Demand not addressed (Gap)

Source: Presentation by DOA officer

To start the discussion, the co-relationship among the NRDS components, priority issues in the sub-sectors and the existing concept notes were classified as shown in the Table 2 below. (As the sub-sector "overall policy tools" is considered to be a cross-cutting aspect, it is not included in the table.) I was confirmed that the current concept notes were formulated to address the priority issues identified in the gap analysis. It should also be noted, however, that the five (5) out of nine (9) concept notes are related to the post-harvest and marketing. It was also pointed out at this stage that some of the concept notes are with titles that are not accurately reflecting the contents, which should be re-examined in the modification exercises.

Table 2: Relationship among NRDS components, priority issues in the sub-sectors and concept notes

NRDS components	Sub-sector	Priority issues	Current concept notes
(1) Improving accessibility of improved varieties and seed systems	Seed	Provision / support Information / knowledge	CN3 Purification of existing rice admixtures, development and multiplication of improved rice varieties CN4 Improved seed multiplication and distribution practices through decentralization of quality control system
(2) Farmers Input	Fertilizer		
(3) Irrigation Development	Irrigation and water management	Infrastructure Human resources / capacity	CN9 Development of irrigation infrastructure for increased rice production
(4) Agricultural Mechanization	Mechanization		
(5) Post-Harvest	Quality improvement Access to market	Provision / support Information / knowledge Human resources / capacity	CN1 Improved market access in rice producing areas CN2 Market integration of rice subsector through rice warehouse receipt system CN5 Development of rice standards for improved marketability and competitiveness for locally produced rice CN6 Enhancing quality of locally produced rice CN8 Horizontal and vertical integration of stakeholders through ZRF along the rice value chain
(6) Research			(CN3)
(7) Technology dissemination	On-farm technology dissemination	Human resources / capacity	CN7 Enhancing extension services for increased rice production
(8) Access to credit/ agricultural finance	Access to credit		

5. Result of the workshop

During the workshop, the participants jointly reviewed each concept note and necessary modifications were proposed. Major points modified in each concept note were summarized in the Table 3 below. Some of the concept notes, however, could not fully be revised as some controversies were not clarified, due to the absence of representative of relevant agencies. Clarifications would be made after the workshop, with which the final revisions would be made. It was

also noted that it is necessary to identify and designate agencies and/or institutions that shall be responsible for each concept note. It was agreed that the designation of responsible entities would be discussed and decided at the next Task Force meeting to be held.

Table 3: Major points of modification

Current concept notes	Major points modified	Responsible agency(ies)
CN1 Improved market access in rice producing areas	n.a.	?
CN2 Market integration of rice subsector through rice warehouse receipt system	Confirmation on Agricultural Market act and Bill is needed. After confirmation, modifications may be made.	Dep. Agribusiness & Marketing
CN3 Purification of existing rice admixtures, development and multiplication of improved rice varieties	Enhancement of research capacity is included as a part of the activities. In addition to the varieties, the development of agronomic practices is added in objectives and activities.	ZARI
CN4 Improved seed multiplication and distribution practices through decentralization of quality control system	The objective should be achieved not through the decentralization of SCCI structure, but through the strengthening of public-private partnership. The modification should also be reflected in the title of the concept note.	SCCI
CN5 Development of rice standards for improved marketability and competitiveness for locally produced rice	Confirmation on the setup and structures of ZABS is needed. After confirmation, modifications may be made.	ZABS
CN6 Enhancing quality of locally produced rice	n.a.	?
CN7 Enhancing extension services for increased rice production	The flow of extension activities is streamlined.	DOA (Advisory Services)
CN8 Horizontal and vertical integration of stakeholders through ZRF along the rice value chain	Activities are clarified to focus on organizational strengthening of ZRF, not directly related to the value chain. The modification should also be reflected in the title of the concept note.	ZRF
CN9 Development of irrigation infrastructure for increased rice production	Specific names of schemes and places are deleted. The modification should also be reflected in the title of the concept note.	DOA (TSB)

6. Actions to be taken after the workshop

At the end of the workshop, the following activities to be carried out from now on and their schedule were agreed upon.

(1) The technically and administratively responsible agency for each concept note shall be identified and designated who will be in charge of finalization of concept note.

(2) Each of the designated responsible agencies shall finalize the respective concept notes through re-examination of the objectives, activities and outputs. No donors should be referred at this stage as suggested fund source but the name of particular agencies or institutions of GRZ should be mentioned as the one responsible.

(3) All concept notes will be collected and uniformly edited (the descriptions should be consistent and expressions should also be edited in similar manners).

(4) The final versions of concept notes should be prepared by the end of March 2014. A stakeholders' workshop shall be organized in early April 2014 by inviting donors and other cooperating partners, government officers at the local levels, representatives of local government and other relevant stakeholders, where the final concept notes will be presented for their knowledge and interests.

It is generally expected that, after the stakeholders workshop, individual consultations would be held between the agencies responsible for particular concept note and the donors/cooperating partners who may be interested in the specific theme of the concept notes.

7. Recommendation for the way forward

(1) Understanding on the concept notes

The NRDS concept notes are to consolidate the concrete and necessary actions that GRZ needs to take to improve the conditions in the relevant sub-sectors. However, some revisions had so far been made to modify the contents so as to closely focus on the donors' interests, rather than to indicate all activities needed. In the current financial conditions, GRZ may have to rely on the supports from donor agencies to realize these concept notes, but the concept notes are not the project proposal for particular donors, and are to be formulated in such a manner as a comprehensive action list from which the donors can select the issues of their concerns.

(2) Further prioritization of the themes of the concept notes

During the workshop, all of the existing nine (9) concept notes were revised, without re-examining whether these nine issues are priorities for the planned period of NRDS, i.e. up to 2018. For example, the Concept Note #5 intends to promote the export of locally produced rice, which may be a bit too early to be discussed, based on the assessment of current level of production. In the later stage, the urgently needed and important themes would selectively be supported through practical discussion with donors and other stakeholders. It may thus be necessary for the Task Force to put further prioritization among these nine (9) concept notes so as to avoid the confusion in the evaluation of these plans.

(3) Finalization of the concept notes by relevant agencies / institutions with technical expertise and designated mandates to deal with the theme of the concept notes

Discussion on the revision of the concept notes has so far been jointly held among the members of the NRDS Review Task Force. The Task Force could function well to examine the general policy directions of the revised NRDS as well as to identify priorities and strategies. However, the finalization of concept notes requires highly technical discussions, which shall be availed from the specific agencies / institutions specialized in the relevant fields of the concept notes. It is thus strongly requested to the Task Force to nominate and work in close collaboration with the agencies that are equipped with appropriate expertise.

8. Annexes:

a. Revised concept notes

b. List of the participants

CN-1

2. Title (Full name)	**Enhancing Market Access in Rice Producing Areas in Zambia**	
3. Project	Rice Zones IIa and IIb	
4. Type of	**1 3 4 5**	
	1. Grant, 2. Loan, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector	
5. Field of	**3 5 6**	
	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing	
6. Fund sources	GRZ, IFAD, FAO, FINIDA	
7. Budget	1.622 million US Dollars	
8. Duration of the project	5 Years	
9. Goal and	Goal:	Increase farmers incomes through improved market access
	Obj.:	To facilitate rice trading by strengthening the linkages among market players in the rice value chain*(indicator: increase sales volume and number of market agreements)*
		To enhance access to market information such as quantity, quality, timing and pricing
10. Target beneficiaries	Direc	Small Holder Farmers
	Sec.:	Extension Officers, Millers, Traders, Input suppliers, transporters and other service providers.
11. Project component (activities)	1	Identify the players in the rice value chain and the roles they play.
	2	Mobilize small holder farmers, millers, traders, input suppliers, transporters and other service providers into organized groups
	3	Formation/formalizing of smallholder farmer associations *(indicator: 20 associations are strengthened)*
	4	Train mobilized groups in good governance, financial management, conflict resolution, negotiation, business management and entrepreneurship.
	5	Package and disseminate market information including quantity, quality, demand and supply, prices and crop forecasts
	6	Conduct exchange visits and study tours
12. Expected results (outputs)	1	Organized and capacitated farmer associations, millers, traders and other service providers in input and output trading.
	2	Improved capacity of extension officers to facilitate the access of small holder farmers to input and out put markets
	3	Established rice marketing information system

CN-2

2. Title (Full name)	Market Integration of Rice Subsector through Rice Warehouse Receipt System	
3. Project Location	Priority Rice Zone I, II, III, IV	
4. Type of project	1 3 4 5 1. Grant, 2. Loan, 3. Technical Coop./Assistance, 4. National budget, 5.	
5. Field of support	1 5 8 1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing 6. Post-harvest, 7. Irrigation, 8. Credit, 9. Seed, 10. Other (specify below)	
6. Fund sources (Suggested)	GRZ, SIDA, EU, USAID,	
7. Budget	1.622Million US Dollas	
8. Duration of the project	3 Years	
9. Goal and	Goal:	Increase farmers incomes through improved market access
	Obj.:	1. To establish a functional WRS that enhances rice producers' market access 2. To establish institution framework that operationalizes WRS 3. To Establish a multi-stakeholder forum of government, Financial institutions, farmer organisations, Zambia Rice Federation, Food Reserve Agency, traders, millers and NGO to develop appropriate policy tools to operationalize WRS 4. To advocate and lobby for the enactment ofAgricultural Marketing Actto provide a legal framework for rice marketing 5. To create an enabling environment that fosters establishment of edequate and appropriate warehouse in rice production areas through public-private sector partnership 6. Facilitate farmers having access to finance through WRS for atleast 20,000 farmers 7. To build capacity among actors for management of WRS and create awareness among stakeholders
10. Target beneficiaries	Direct: Sec.:	Small scale Farmers Warehouse Managers; Extension Officers, Millers, Traders, Input suppliers
11. Project component (activities)	1 2 3 4 5 6 7	Establishment of institutional framework for WRS: Establishment WRS Multi-stakeholder forum for developing a regulartory Evidence Based lobby and advocacy on Enactment ofAgricultural Market Bill Creating awareness on WRS among stakeholders Capacity building for warehouse Receipt System Actors
12. Expected results (outputs)	1 2 3 4 5	Capacity for storage and marketing of locally produced rice increased Atleast 20, 000 accessing finance using warehouse receipts system Functioning of WRS for Rice Improved skills on WRS management

CN-3

2. Title (Full name)	**Purification of Existing Rice Admixtures, Development of Improved Rice Varieties and Management Practices**	
3. Project Location	All Zones	
4. Type of project	**1** **3** **4** **5**	
	1. Grant, 2. Loan, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector	
5. Field of support	2 3 9	
	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing	
6. Fund sources (Suggested)	AfDB, JICA, AGRA, GRZ (matching grant/counterpart-funding), Private sector	
7. Budget	837,190 USD (1,037,190)	
8. Duration of the project	5 years	
9. Goal and objectives	Goal:	Increased production of locally produced rice through the use of improved high yielding and marketable rice varieties.
	Obj.:	To increase adoption of pure and improved rice varieties by rice growers. To develop the improved agornomic management practices
10. Target beneficiaries	Direct: Sec.:	Rice growers, Millers, Consumers, Traders
11. Project component (activities)	1 2 3 4 5 6 7 8 9 10 11	Recruit and train human resource (breeders and technicians) Provision and/or rehabilitation of research facilities Collection of local germplasm of existing cultivars (admixtures) and germplasm from other Participatory identification of the characteristics and isolation of the individual lines that Characterization of the local rice collections which are in the National Plant Genetic Produce basic- and foundation seeds of the purified lines and the developed cultivars Participatory selection and introduction of the improved rice varieties Create improved varieties with biotic and abiotic stress tolerant (i.e. high yielding, Acid/Aluminum tolerant, submergence tolerant, photo insensitive and of high organoleptic Nucleus seed of purified and new varieties maintained through maintenance breeding. Conducting field days and demonstration plots Generation and adaptation of appropriate agronomic management practices.
12. Expected results (outputs)	1 2 3	Purification of existing rice cultivars (admixtures) Development of improved high yielding varieties of rice that are tolerant to Aluminuim toxicity, photo insensitive, of high organoleptic qualities and disease resistant.. Upgrading of germplasm and breeding laboratories

CN-4

2. Title (Full name)	**Improved Seed Multiplication and Distribution Practices throughenhanced public and private partnership**	
3. Project	Rice Zone IIa and IIb	
4. Type of	**1** **3**	
	1. Grant, 2. Loan, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector	
5. Field of	**2** **3** **9** 7	
	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing 6. Post-harvest, 7. Irrigation, 8. Credit, 9. Seed, 10. Other (specify below)	
6. Fund sources	JICA, AfDB,AGRA,GRZ, Finland, EU, SIDA	
7. Budget	USD 1Million	
8. Duration of the	3 years	
9. Goal and objectives	Goal:	Increased rice production and productivity through improved acccess of certified seed at community level
	Obj.:	To improve the availability of supply and timely access of farmers to high quality seeds *(indicator: about 500MT of certified rice seed produced)*
10. Target beneficiaries	Direc	Rice farmers and seed growers
	Sec.:	Entrepreneurs, Ministy of Agriculture and Livestock (SCCI, DoA FISP, ZRF)
11. Project component (activities)	1	Identification of farmer clusters (cooperatives and associations) and their
	2	Train farmer clusters in seed multiplication *(indicator: at least 200 rice seed growers trained)*
	3	Train and licence seed inspectors *(indicator: at least 30 seed inspectors trained @ 2 per district)*
	4	Identify and engage private seed producers (entrepreneurs, commercial farmers , agro-dealers and companies) through ZRF
	5	Multiplication of Foundation Seeds
	6	Promoting multiplication and distribution of Certified Seeds through agro-dealers and other private entities
12. Expected results (outputs)	1	Establishment and rehabilitation of seed laboraties in Northern, Western and
	2	Strengthening the capacity of seed growers and seed inspectors on seed production and certification, respectively.
	3	Establishment of two storage sheds

CN-5

2. Title (Full name)	Development of rice standards for improved marketability and competitiveness of locally produced rice(TO BE FURTHER	
3. Project	RZ I, II, III, and IV	
4. Type of project	**1** **3** **4** **5**	
	1. Grant, 2. Loan, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector	
5. Field of support	1 2 3 5 6	
	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing	
6. Fund sources (Suggested)	UNIDO, GRZ, Private Sector	
7. Budget	1.21million USD	
8. Duration of the project	3years	
9. Goal and	Goal:	To increase profitability of rice growers and improve rice
	Obj.:	1. To conduct research and develop national rice standards 2. To create awareness national rice standards 3. To implement decentralization of Zambia Bureau of Standards services through a licensing schem
10. Target beneficiaries	Direc	All Actors in the value chain
	Sec.:	Consumers
11. Project component (activities)	1	Establish rice standards based on research on existing rice stanadards in the target international markets (COMESA, SADC, East African Community, EU etc)
	2	Sensitization: Conduct meetings, workshops, seminars and rice fairs for rice stakeholders in the rice value chain
	3	Capacity Building: Train rice producers, processors and traders in quality assurance and compliance with national and international rice
	4	The levels of ZABS decentralisation should go up to(provincial?) camp level to ensure efficiency in compliance
	5	Regular monitoring and evaluation of the whole value chain to ensure compliance to the standards
	6	Identify agents to be licensed to offer ZABS services at a regional
	7	Design and develop training programs and manuals for training ZABS agents assuring rice quality based on standards developed
12. Expected results (outputs)	1	National rice standards developed and implemented
	2	Decentralised ZABS-Agents quality assurance system developed and implemented
	3	Stakeholder awareness on national and international rice standards created

CN-6

2. Title (Full	**Enhancing the Quality of Locally Produced Rice in Zambia**	
3. Project	RZ I, II, III and IV	
4. Type of project	**1** **3** **4** **5**	
	1. Grant, 2. Loan, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector	
5. Field of support	3 4 5 6	
	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing	
6. Fund sources (Suggested)	Finland, IFAD, UNIDO, USAID, World Bank, EU, FAO, GRZ, ILO-UN	
7. Budget	3 million USD	
8. Duration of the project	3 Years	
9. Goal and objectives	Goal:	To increase profitability of rice growers and improve rice marketability
	Obj.:	To reduce post harvest losses and enhance the quality of locally produced rice
10. Target beneficiaries	Direc Sec.:	Actors in the rice value chain (specify; input suppliers to retailers) Service providers
11. Project component (activities)	1	Awareness creation on quality management of rice through meetings, serminars and workshops
	2	Identification of training needs
	3	Development and production of training materials
	4	Training of trainers (public- and private service providers) in the rice production and post harvest handling
	5	Training of the actors in the rice value chain in participatory monitoring and evaluation
	6	Provision of postharvest equipment (e.g. threshers, moisture meters, dryers, etc)
12. Expected results (outputs/? outcomes)	1	Increased access to modern postharvest facilities through the provision of village scale drying and milling centers.
	2	Enhanced capability of farmers and extension workers on post production technologies.

CN-7:

2. Title (Full name)	**Enhancing Extensions Services for increased Rice Production**	
3. Project Location	Rice Zone-II	
4. Type of project	1 4 5 3	
	1. Grant, 2. Loan, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector	
5. Field of support	3	
	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing 6. Post-harvest, 7. Irrigation, 8. Credit, 9. Seed, 10. Other (specify below)	
6. Fund sources (Suggested)	AGRA, World Fish Center, Finland Government, Private Sector, CIDA, SIDA USAID	
7. Budget	2.15 million USD	
8. Duration of the project	3 years	
9. Goal and	Goal:	To double rice production and increase household income for farmers by 2016
	Obj.:	1. To increase awareness on technologies of cultivation, crop management, post harvest handling and processing of rice 2. To improve the efficiency of farmer-to-farmer dissemination of improved technologies in high rice production areas 3. To engage public- and private service providers in promoting new technologies and developing and fine-tuning adapted technologies through feed-back cycles. 4. To build capacity of extension staff and lead farmers in rice production. 5. To establish rice farmer field schools for increased knowledge & skills in rice production.
10. Target beneficiaries	Direc Sec.:	Millers, Input suppliers, traders, extension service staff, private sector
11. Project component (activities)	1	Establishment of rice Farmer Field Schools / Study Circles
	2	To conduct On-farm Demonstrations and Field Days
	3	Promotion of Farmer-to-Farmer technology dissemination (specify)
	4	Provision of appropriate technologies for rice production (specify)
	5	To prepare and disseminate training material (Rice production)
	6	Provision of Transport to extension workers and lead farmers
	7	To hold Public /Private sector Meetings
	8	Training of extenstion workers, lead farmers and rice growers
12. Expected results (outputs)	1	Sustainable rice production practices adopted by rice growers
	2	Appropriate technologies available and being used by farmers .
	3	Increased knowledgeable, skills and effective extension services in rice production

CN-8

2. Title (Full name)	Operationalisation of the Zambia Rice Federation (ZRF)	
3. Project	ZRF IN ALL Zones	
4. Type of	1 3 4 5	
	1. Grant, 2. Loan, 3. Technical Coop./Assistance, 4. National budget, 5. Private sector	
5. Field of	10	
	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing 6. Post-harvest, 7. Irrigation, 8. Credit, 9. Seed, 10. Other (specify below)	
6. Fund sources	GRZ, USAID, MasterCard Foundation, Finland Government, SIDA, IFAD (SAPP/S3P), FAO	
7. Budget	2,534,941 USD	
8. Duration of the project	3 years	
9. Goal and objectives	Goal:	To increase rice production and productivity through a well coordinated and effective rice sector
	obj.	1.To operationalise the ZRF structures at district, province and national levels. 2. To improve coordination, linkages, information flow and management for increased efficiency and competitiveness in the subsector. 3. To increase the market share of Zambian produced rice through enhanced promotional activities . 4. To advocate for a predictable and pro-business trade policy environment that could provide incentives for small holder farmers and private sector investment in the rice sub-sector.
10. Target beneficiaries	Direct:	Rice Growers, Zambia Rice Federation
	Sec.:	Rice consumers, Farm input suppliers, traders, millers and service providers
11. Project component (activities)	1 To establish the ZRF structres at District, Province and National level. 2 To organise the district, province and national forums once a year. 3. To participate in trade fairs, trade missions, exhibitions and exchange visists for 4. To set up an information sharing unit 5. To sensitize farmers on new technologies of rice production . 6. To lobby, advocate and participate in policy issues related to rice sector; regulations affecting the sub-sector, sub-sector competitiveness, trade policies, market access programs, environmental policies, food safety, agricultural budget allocations towards rice development	
12. Expected results (outputs)	ZRF structures established and operational. Regular forums are conducted Farmers sesitized on new technologies Participation in agriculture and international shows information sharing enhanced ZRF presentation on National committees involveds in promotion of rice sector	

CN-9

2. Title (Full name)	**Development and rehabilitation of Irrigation Infrastructures in the areas with potentials for Increased Rice Production of Zambia**	
3. Project Location	Rice Zones I, IIa and IIb	
4. Type of	**1** **2** **3** **4** **5**	
	1. Grant, 2. Loan, 3. Technical Coop./Assistance, 4. National budget, 5. Private	
5. Field of	3 4 5 7	
	1. Policy, 2. R & D, 3. Extension & Training, 4. Production, 5. Marketing	
6. Fund sources (Suggested)	AfDB, WB, JICA, Finland Government, GRZ, Private companies	
7. Budget	32.5 million USD (57.7 million)	
8. Duration of the	5 years	
9. Goal and objectives	Goal:	Increased rice productivity through use of appropriate and sustainable irrigation systems
	Obj.:	Expansion of area under irrigated lowland and upland rice cultivation and increase in cropping intensity through effective water management.
10. Target beneficiarie	Direct:	Rice growers (Seed growers, small and medium scale rice farmers)
	Sec.:	Traders, millers, consumers
11. Project component (activities)	1	Assess the condition of existing irrigation facilities
	2	Rehabilitate, cleaning and clearing of existing irrigation facilitie
	3	Conduct the pre feasibility and feasibility studies for new irrigation
	4	Construct irrigation schemes in selected sites in the provinces with high potential for increase rice production
	5	To provide knowledge and skills, and strengthen capacity of rice growers to efficiently operate/manage smallholder irrigation schemes on a sustainable commercial basi
	6	To strengthen the capacity of rice growers to engage the private sector through the use of partnership agreements between the rice growing communities and the private sector.
	1	The existing irrigation schemes (such as Sefula, Siatwinda and Maheba)
	2	The new irrigation schemes are established in areas with high potential for increased rice production, such as in Muchinga (Chinsali), Northwestern (Zambezi) and Western (Kaoma) and so forth.
	3	All of the new and rehabilitated irrigation schemes governing committees trained in the management of their schemes in a commercial
	4	Private-partnership agreements for these irrigation schemes signed and implemented


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