

<p>カウンタートパート機関には、本プロジェクトの成果を活用・発展させていくために必要な組織体制と資金が確保されているかどうか。(組織面及び資金面)</p>	<p>プロジェクト終了後、農業畜水産省、DRDR、FOFIFA、CFAMA、CMSは、①コメ生産性向上のための「技術パッケージ」の普及し、②品種選定、種子増殖、配布体制をさらに改善・定着させることができるかどうか。(人材配置面及び資金面から)</p>	<p>本プロジェクトに参加している政府機関では、農業省(主として重点3県のDRDR)と農業省傘下にあり半独立採算制となっている重点3県のFOFIFA試験場、CFAMA、CMSである。農業省の一般的傾向としては、最近まで新規採用を止めていたため、職員数が減少しつつあった。しかし、農業省は、2010年9月と2011年5月に新規職員を採用し、若い世代の職員が、重点3県のDRDRに配属され、その一部が本プロジェクトのカウンタートパートとして加わった。このことは、農業省及び重点3県での人材の継続性確保の面から良い影響をもたらすと期待される(なお、新規採用は、高卒レベルの職員であり、まだ、大卒レベルの職員採用は行われていない)。一方、特に、FOFIFAの場合は、かなり以前から研究員の新規採用が実施されていないため、研究員数の減少と研究員の高齢化が顕著となっている。</p> <p>財政面に関して述べると、一般的に言って農業省の財政状況は好ましい状況にあるとは言えないものの、農業省は、本プロジェクトの活動に対する予算を2010年度及び2011年度に支出している。FOFIFA、CFAMA、CMSは基本的に独立採算制の機関であり、自己収入創出額が十分でないこと、業務実施上において支障を生じる。たとえば、FOFIFAの場合、政府から支給される予算は、人件費を含む運営費だけであり、研究活動に必要な予算は計上されていない。そのため、研究活動は、他の国内機関や他トナー機関との連携活動がある場合に実施される。したがって、FOFIFAの財政面での持続性は確保されているとは言えない。CFAMAについては、わが国の無償資金協力によって施設・機材が整備され、以前より多い人数の学生に対する研修が実施されていることで、自己収入が増加し、昨年度の収支がマイナスイナスからプラスに転じたとの話であった。CFAMAの収支バランスの均衡が今後も継続するかどうか、今後ともモニタリングしていく必要がある。</p>
<p>カウンタートパート機関間の連携が良好に維持されるかどうか。</p>	<p>プロジェクト終了後、農業畜水産省、DRDR、FOFIFA、CFAMA、CMSは、①コメ生産性向上のための「技術パッケージ」の普及し、②品種選定、種子増殖、配布体制をさらに改善・定着させることができるかどうか。(人材配置面及び資金面から)</p>	<p>RIMC という月例会議を開催することを通じて、また、各重点県にコーディネーターを配置したことによって、カウンタートパート機関間では、良好な連携が見られる。このRIMC会議自体は、本プロジェクト期間中は継続されるが、プロジェクト終了後に、同様の機能を果たす会合が継続するかどうか、現時点ではわからない。プロジェクト終了しても、良好な連携を維持するための方策を、残りのプロジェクト期間中に検討しておく必要があると考える。</p>
<p>移転された技術が、モデルサイト以外へ普及できる技術であるかどうか。(技術面)</p>	<p>①開発中の技術パッケージは、対象5県の自然・社会条件に適応した普及可能な技術であるかどうか。 ②対象5県のコメ生産農家に受け入れられる技術であるかどうか。</p>	<p>技術パッケージ開発における基本コンセプトは、1) 中央高地の条件に適した技術であること、2) コメ生産農家が適用しやすい技術であること、3) 収益性があること、である。したがって、技術パッケージの技術項目が普及されたところでは、継続的に適用されることが期待される。より広い地域への技術パッケージ普及に係る活動を次期作(2011/2012年作)から、プロジェクト対象の残り2県(アナラマンゴ県都イタシ県)で開始される。技術パッケージ普及を担当することになる職員に対する能力強化とコメ生産農家への技術移転を実施することを通じて、プロジェクト終了後であっても、技術パッケージの普及活動が継続することが期待される。</p> <p>なお、技術パッケージの内容のさらなる改善、コメ優良品種選定及び種子増殖のさらなる改善を継続させるためには、人材の継続性確保と関係機関の良好な財政状況を確保する必要がある。</p>
<p>供与資機材の維持管理は適切に行われているか。また、協力終了後も適切に行われる見通しはあるか。</p>	<p>機材の維持管理は良好に行われている。</p>	<p>機材の維持管理は良好に行われている。</p>

<p>持続性に影響を与える貢献・阻害要因は何か。</p>	<p>本プロジェクトで開発中の技術パッケージは、プロジェクト終了時まで一定水準のバージョンが出来上がるものと期待される。なお、このような技術パッケージの内容は、プロジェクト終了後も、さらに必要な改善や内容の追加を行っていくことが求められる。たとえば、さらなるコメの優良品種の選定や、土壌肥沃度を高める方策の検討（小規模農家で、資金面から化学肥料の利用が困難で、なおかつ牛糞堆肥等の入手が量的に十分にはできない地域など）を継続的に行っていく必要があると予想される。そのような場合、試験研究機関である FOPIFA が重要な役割を担うべきであるが、研究員数の減少、研究活動予算の不足、研究員の能力不足、研究員の高齢化など多数の課題を抱えている。そのため、その役割を十分に担うことが困難な状況にある。政府は、長年、農業分野の試験研究に対して低い優先度しか与えてこなかったとされている。このような状況が継続するならば、技術パッケージの改良・改善は、極めて困難であろうと危惧される。</p>
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2. 実施プロセスの検証

実施プロセス	評価設問		調査結果
	大項目	小項目	
実施プロセス	当初計画した成果を達成するためにどのような計画・実施体制の変更・軌道修正が行われたか。	プロジェクト実施中に把握されていた課題は何か。その課題はどのように解決されたか。	すでに記載したように、日本人長期専門家派遣については、プロジェクト開始前の計画では、長期専門家は4名の予定であったが、アロチャ・マンダラ州のモデルサイトにおける灌漑用水の不足・不安定な取水状況への対応（水利施設の簡易修復）、水利組合組織の強化などで、当初想定していた以外の活動も実施する必要があると生じているため、1名多い5名体制となっている。
	技術移転の方法に問題はなかったか。	問題がある場合、どの分野におけるどのような技術移転方法に問題があったか。どのように解決されたか。	特に問題は報告されていない。
相手国のオーナーシップ		①CP 配置の適正さ ②予算手当ては適切か 対象地域農家の本プロジェクトについての認識や参加度は高いか。	中間レビュー時点で、計73名のカウンターパートが配置されており、適正なものと思われる。2010年からマダガスカル側は、燃料費や旅費を負担している。 モデルサイトの農家は、本プロジェクトが導入を図っている技術パッケージについて、適用が容易であり、収量増加の効果もあると実感している。そのため、実証農家あるいはサテライト農家として新規に加わりたいと希望する農家が多くいることが、インタビュを通じて確認された。ただし、留意すべきことは、新規に加わりたいと希望している農家は、優良種子や肥料を無料でもらえるという点に魅力を感じていることである。プロジェクト活動の実施においては、投入物に対する農家の依存心を高めまいよう配慮していくことが必要であると感じた。


<p>プロジェクトのマネジメント体制に問題はなかったか。</p>	<p>JCCは、必要な時期に実施され、必要なテーマが話し合われていたか。</p>	<p>中間レビュー時まで、JCCが3回、ブレJCCが2回開催されている。会議のテーマと開催日は下表のとおり。</p> <table border="1" data-bbox="311 504 574 1400"> <thead> <tr> <th>種類</th> <th>目的・主な検討事項</th> <th>開催頻度</th> </tr> </thead> <tbody> <tr> <td>ブレJCC</td> <td>第1回： R/Dのレビュー、プロジェクト目標と活動の確認 第2回： 2009/10年作における各県の活動内容・成果の報告、情報共有、意見交換</td> <td>第1回：2009年1月21日 第2回：2010年6月2～3日</td> </tr> <tr> <td>JCC</td> <td>第1回： PDMの数値指標検討、活動項目修正案提案・承認、プロジェクトの課題の議論・検討。常勤CIP(プロジェクト調整員)の配置とCIP予算確保を要請。 第2回： Pre-JCCで話し合われた内容・成果の発表と予算・人材投入計画の報告。 第3回： 2010/12年作における各重点県の活動計画の承認、農業機械に関するモロゾン出張とCMSアヌシアプリに関する情報共有、意見交換。</td> <td>第1回：2009年11月5日(運営指導調査時) 第2回：2010年6月14日 第3回：2010年11月19日</td> </tr> </tbody> </table> <p>JCCは、おおむね年2回の頻度で開催されている(第1年目除く)。また、おおむね必要なテーマが話し合われていると思われる。</p>	種類	目的・主な検討事項	開催頻度	ブレJCC	第1回： R/Dのレビュー、プロジェクト目標と活動の確認 第2回： 2009/10年作における各県の活動内容・成果の報告、情報共有、意見交換	第1回：2009年1月21日 第2回：2010年6月2～3日	JCC	第1回： PDMの数値指標検討、活動項目修正案提案・承認、プロジェクトの課題の議論・検討。常勤CIP(プロジェクト調整員)の配置とCIP予算確保を要請。 第2回： Pre-JCCで話し合われた内容・成果の発表と予算・人材投入計画の報告。 第3回： 2010/12年作における各重点県の活動計画の承認、農業機械に関するモロゾン出張とCMSアヌシアプリに関する情報共有、意見交換。	第1回：2009年11月5日(運営指導調査時) 第2回：2010年6月14日 第3回：2010年11月19日			
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<p>プロジェクトのマネジメント体制に問題はなかったか。</p>	<p>その他の定例会議等を通じて、プロジェクトチーム内(専門家、関係機関関係者及びカウンタートパート)の意志決定メカニズムが十分機能しているか。</p>	<p>以下のミーティング等が実施されており、意志決定メカニズムは良好に機能していると思われる。</p> <table border="1" data-bbox="614 504 997 1400"> <thead> <tr> <th>種類</th> <th>目的・主な検討事項</th> <th>開催頻度</th> </tr> </thead> <tbody> <tr> <td>RTMC</td> <td>(詳細は、付属資料8を参照のこと) 同上</td> <td>2009年4月開始。重点3県で、ほぼ月1回の頻度で開催。 第1回：2010年4月12日 第2回：2010年7月29日 第3回：2010年11月2日 第4回：2011年3月18日</td> </tr> <tr> <td>FOFIFA 試験報告会</td> <td>(同上)</td> <td>第1回：2010年4月16日 第2回：2010年7月9日 第3回：2010年12月1日 第4回：2011年2月1日</td> </tr> <tr> <td>交換訪問</td> <td>(同上)</td> <td>第1回：2010年3月1～4日 第2回：2010年5月10～13日</td> </tr> </tbody> </table>	種類	目的・主な検討事項	開催頻度	RTMC	(詳細は、付属資料8を参照のこと) 同上	2009年4月開始。重点3県で、ほぼ月1回の頻度で開催。 第1回：2010年4月12日 第2回：2010年7月29日 第3回：2010年11月2日 第4回：2011年3月18日	FOFIFA 試験報告会	(同上)	第1回：2010年4月16日 第2回：2010年7月9日 第3回：2010年12月1日 第4回：2011年2月1日	交換訪問	(同上)	第1回：2010年3月1～4日 第2回：2010年5月10～13日
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<p>プロジェクトのマネジメント体制に問題はなかったか。</p>	<p>プロジェクトの進捗状況は、どのようにモニタリングされていたか。</p>	<p>日本人専門家からJICAに対しては、6カ月毎に進捗報告書(技術協力プロジェクト実施運営総括表)が提出されている。なお、カウンタートパート向けには、PDMやPOに示された活動項目に沿って、活動の進捗状況を整理した資料(フランス語版)を作成し、進捗状況についての情報共有をしっかりと図っていく必要があると思われる。</p>												
<p>プロジェクトのマネジメント体制に問題はなかったか。</p>	<p>専門家とカウンタートパート機関及びカウンタートパート・スタッフとのコミュニケーションは、円滑に行われているか。</p>	<p>質問票による調査結果や現地調査結果から判断して、良好なコミュニケーションが行われていると思われる。</p>												
<p>プロジェクトのマネジメント体制に問題はなかったか。</p>	<p>JICA マダガスカル事務所及びJICA 本部と、日本人専門家間の連絡・協力は、円滑に行われてきているか。</p>	<p>JICA マダガスカル事務所及びJICA 本部と、日本人専門家間の連絡・協力は、円滑に行われてきている。</p>												

MINUTES OF MEETING
BETWEEN
THE MID-TERM REVIEW TEAM
OF JAPAN INTERNATIONAL COOPERATION AGENCY
AND
THE AUTHORITIES CONCERNED
OF THE REPUBLIC OF MADAGASCAR
ON
JAPANESE TECHNICAL COOPERATION
OF
THE PROJECT FOR RICE PRODUCTIVITY IMPROVEMENT
IN CENTRAL HIGHLAND

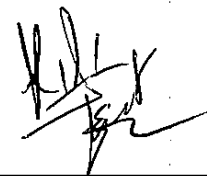
The Japanese Mid-term Review Team, organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Dr. TOKIDA Kunihiro, visited the Republic of Madagascar (hereinafter referred to as "Madagascar") from July 3 to July 23, 2011, for the purpose of conducting the Mid-term Review on the Project for Rice Productivity Improvement in Central Highland (hereinafter referred to as "the Project"). The Joint Evaluation Team (hereinafter referred to as "the Team"), which consists of four members from JICA and three members from Madagascar, was jointly organized and conducted the mid-term review. After intensive study, analysis, discussions on the activities and achievements of the Project, the Team prepared the mid-term review report (hereinafter referred to as "the Report").

The Joint Coordinating Committee for the Project (hereinafter referred to as "the Committee") was held on July 22, 2011 approved the Report, in principle, and the major points of the discussions concerning the Project are described in the document attached hereto.

Antananarivo, July 22, 2011



Dr. TOKIDA Kunihiro
Leader
The Mid-term Review Team
Japan International Cooperation Agency



Mr. RAKOTOSON Philibert
Secretary General
Ministry of Agriculture
Republic of Madagascar

ATTACHMENT

Main points of discussions based on the Report in ANNEX are as follows:

1. Progress of the Project

The project activities have been well progressing mostly as scheduled despite of the difficulties due to political and social instability in the beginning of the Project. The name of "PAPRiz" is very popular among farmers by having intensive activities in the model sites. Development of the technical packages for improving rice production is well advancing by achieving yield increase of more than 1.0 t/ha in the model sites in the three focal regions.

2. Review of the Project by the five evaluation criteria

Relevance of the Project is maintained high and effectiveness of the Project is expected to be at satisfactory level by achieving the project purpose by the end of the project period. Efficiency of the Project is also satisfactory at present, and several positive indication of impacts of the Project were observed, for example, farmer to farmer dissemination of rice cultivation techniques, production of agricultural machinery, and dissemination of quality seeds. It is expected that financial and organizational arrangement be taken to secure sustainability to a certain extent.

3. Recommendations in the Report

The Team made recommendations to the Project to take actions during the remaining project period and to Malagasy side to take actions for smooth implementation of the Project. The JCC accepted, in principle, all recommendations made by the Team, and it was mentioned that the all concerned persons need to take prompt actions.

4. Revision of the Project Design Matrix (PDM)

The Team proposed a revised version of PDM as the second version by clarifying some descriptions, combining some Outputs, modifying Objectively Verifiable Indicators with more specific numerical expressions, and adding an important assumption. The project team examines the proposed PDM and finalizes it with detailed plan of operation for approval by the JCC as soon as possible.

5. Model sites

The model site in Alaotra-Mangoro was defined as Block 4, 5, 6 and 15 of PC23 southern irrigated area due to limited water availability in the irrigation scheme. The Project supports temporary maintenance work of Sahabe river dikes to obtain minimum water required for verification of technical package in the model site. The definition of "participating farmers" in the Project Purpose is clarified as all rice farmers in the model sites.



6. Technical packages

The Project prepares optional technologies for technical packages suitable for specific locations in the model sites. The relevant information will be provided for farmers to select optional technologies. It is recommended that the appropriate small or medium agricultural mechanization and fertilizer application be considered as optional technologies.

7. Extension of technical packages

Dissemination method of technical packages is distinguished among in the model sites, outside of the model sites in the focal regions, and in the other target regions. RTMC prepares a plan for dissemination of the technical packages assuring proper use by farmers.

8. Seed production

Seed production by Seed Producer Group (GPS) is encouraged in the model sites to promote use of quality seed. In order to properly and timely conduct field inspection, the number of field inspectors is increased by training officials and Rural Development Advisor (CDR) on it.

9. Securing counterpart budget and recruitment of staff

For assuring smooth implementation and sustainability of the Project, Malagasy side continuously makes efforts to secure budget for operations and to recruit new staff of autonomous entities such as FOFIFA, SOC, CMS Sakay, and CFAMA.

ANNEX: Mid-term Review Report



THE JOINT MID-TERM REVIEW REPORT
ON THE PROJECT
FOR RICE PRODUCTIVITY IMPROVEMENT
IN CENTRAL HIGHLAND

Antananarivo, July 22, 2011



Dr. TOKIDA Kunihiro
Leader,
Japanese Mid-term Review Team,
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Mrs. RAMAHERINTSOA Claudine Armandine
Leader,
Madagascar Mid-term Review Team,
Ministry of Agriculture,
The Republic of Madagascar



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1. Introduction

1-1 Objectives of the Mid-term Review

- (1) To review the inputs to the Project, the progress and achievements of the project activities based on the Project Design Matrix (PDM) and the Plan of Operation (PO), and also to exchange opinions with the Malagasy authorities concerned through visiting the project sites,
- (2) To review the Project from the viewpoints of five evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability),
- (3) To formulate the Joint Mid-term Review Report and make necessary recommendations on the project activities in the remaining period of the Project to both Malagasy and Japanese sides, and to modify PDM and PO if necessary,
- (4) To participate in the Joint Coordinating Committee (JCC) in order to present and discuss the results of the mid-term review on the Project with the Malagasy authorities concerned and sign on the Minutes of Meeting.

1-2 Member of the Joint Review Team

1-2-1 Japanese Mid-term Review Team

No.	Field	Name	Present Occupation
1	Leader	Dr. TOKIDA Kunihiro	Senior Advisor, Japan International Cooperation Agency (JICA)
2	Rice Cultivation and Extension	Dr. ASANUMA Shuichi	Professor, International Cooperation Center for Agricultural Education, Nagoya University
3	Evaluation and Analysis	Mr. DOJUN Isao	Consultant, Chuo Kaihatsu Corporation
4	Cooperation Planning	Ms. TSUZUKU Yoshimi	Staff, Arid and Semi-Arid Farming Area Division, Field Crop Based Farming Group, Rural Development Department, JICA

1-2-2 Malagasy Mid-term Review Team

No.	Field	Name	Present Occupation
1	Leader	Mrs. RAMAHERINTSOA Claudine Armandine	Assistant for Director General of Agriculture, Ministry of Agriculture (MinAgri)
2	Agricultural Production	Mrs. RAHARISOA Georgette	Chief of Agricultural Technology Support Division, Department of Agricultural Production (DPA), MinAgri
3	Seed	Mrs. RANDRIAMILANDY Ketamalala	Chief of Division of Official Control (SOC), DPA, MinAgri

1-3 Schedule of Review

The schedule is attached as Annex 1.

1-4 Methodology of the Mid-term Review

1-4-1 Method of Review

The Project was reviewed jointly by the Malagasy and Japanese mid-term review teams (the Review Team) based on materials showing the framework of the Project such as PDM, PO and the Record of Discussion (R/D). The review activities including analysis on reports, field surveys, and interviews with staff of the Ministry of Agriculture (MinAgri), Regional Department for Rural Development (DRDR), National Center for Applied Research on Rural Development (FOFIFA), Agricultural Mechanization Training and Application Center (CFAMA), Seed Multiplication Center (CMS), JICA experts, benefitted farmers in the model sites and other concerned personnel in the Project. This mid-term review was conducted based on the following Five Evaluation Criteria.

1-4-2 Evaluation Criteria (Five Evaluation Criteria)

(1) Relevance

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

(2) Effectiveness

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

(3) Efficiency

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

(4) Impact

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

(5) Sustainability

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

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2. Outline of the Project

2-1 Background of the Project

Madagascar is a country that 18.8 million (estimated in 2008, INSTAT) people live in the land of 587 thousand km² approximately, and is the fourth largest island in the world. The staple food is rice and people consume rice about 120kg per capita annually. Rice cultivation area was 1.6 million hectares (ha) and annual rice production was around 4.9 million tonnes in 2008 (National Rice Development Strategy, Republic of Madagascar). Fluctuation of annual rice production is large due to influence of cyclones, etc., therefore, the country imports rice for about 10% of rice consumption. One of the most important reform initiatives of the Madagascar Action Plan (MAP: 2007-2012), which is the country's National Development Plan, is to double country's rice production by the year 2012 from the 3.42 million tonnes (production in 2005) through implementation of "Green Revolution". The average rice yield in Madagascar was about 2.57t/ha in 2005, and therefore there is room for improving rice yield. This five year technical cooperation project was started since January 2009 aiming to support development and extension of rice cultivation techniques which are suitable for rice cultivation systems in the Central Highland of Madagascar, and to strengthen linkage among organizations concerned with rice production.

The Project covers five regions; Alaotra-Mangoro, Bongolava, Vakinankaratra Analamanga and Itasy in central highland by targeting the first three regions as focal regions.

2-2 Summary of the Project

The framework of the project was decided in the R/D signed on December 1, 2008. PDM for the Project was modified and agreed in the first JCC on November 5, 2009. The project summary described in PDM version 1 is as follows; (For more details, see Annex 2).

(1) Overall Goal

Rice production in Central Highland is increased.

(2) Project Purpose

Productivity of rice is increased in the model sites.

(3) Outputs

- Output 1: Integrated technical packages for rice productivity improvement are developed through the Project.
- Output 2: Variety selection, seed multiplication and distribution systems are promoted under the Project.
- Output 3: Technical instruction materials are created for disseminating integrated technical packages.
- Output 4: Linkage among stakeholders in the focal regions is strengthened.
- Output 5: Technical packages are utilized by farmers in the model sites.
- Output 6: Technical packages are availed to rice farmers in the target area

3. Achievement of the Project

3-1 Inputs

3-1-1 Japanese Side

(1) Dispatch of Experts

Long-term experts were dispatched to the Project in the following fields: 1) Agricultural Development/ Chief Advisor, 2) Extension/ Coordinator, 3) Farm Management, 4) Rice Cultivation, and 5) Rice Cultivation (small scale). Short-term experts were dispatched in the following fields: 1) Farm management, 2) Agricultural Machinery, 3) Baseline Survey, 4) Nutrition Analysis (Soil), and 5) Rice Cultivation. Third country experts (4 Indonesians) were also dispatched for Agricultural Machinery. For details, see Annex 3.

(2) Training in Japan and Third Countries

By the time of the Mid-term Review, 8 counterparts were participated in the training in Japan and 4 counterparts were participated in the training in third country (Kenya). For details, see Annex 4.

(3) Provision of Equipment

Office equipment such as computers, printers, projectors, digital cameras, etc., and analytical instruments such as pH meter, moisture tester, gravimeter, electronic balance, etc., have been provided for the project activities. Cost for procurement of equipment is 37.4 million yen as of March 2011. For details, see Annex 5.

(4) Local Cost Allocated by Japanese Side

Local cost allocated by JICA for the implementation of the project activities is 828 million Ariary as of March 2011. For details, see Annex 6.

3-1-2 Malagasy Side

(1) Assignment of Malagasy Counterparts

Currently, 63 counterparts in total are assigned (7 persons of the MinAgri central level, 14 persons at DRDR Bongolava, 14 persons at DRDR Vakinankaratra, 19 persons at DRDR Alaotra-Mangoro, 1 person at DRDR Itasy, 1 persons at DRDR Analamanga, 2 persons at SOC and 5 persons at CFAMA). For details, see Annex 7.

(2) Project Operation Cost Allocated by Malagasy Side

Amount of budget allocated in 2010 and 2011 by Malagasy side is 53.95 million Ariary in total. For details, see Annex 8.

(3) Provision of Facilities

Office space at the Directorate of Rural Engineering in Antananarivo, and at the DRDR offices in three regions (Bongolava, Vakinankaratra, and Alaotra-Mangoro) have been utilized for the project activities.

3-2 Outputs

3-2-1 Output 1: Integrated technical packages for rice productivity improvement are developed through the Project.

Development of technical packages is progressing satisfactorily. Further improvement of its contents and inclusion of optional techniques are going to be realized during the remaining project period.

Indicator 1: At least one technical package is developed for each focal region.

(1) Progress of Development of the Technical packages for rice productivity improvement

Firstly, technical package for rice productivity improvement version 0 was prepared. The revision was repeated, and version 1 and version 2 of the technical package were prepared by the Project. Main contents of each version are attached as Annex 13.

Technical package version 0 was prepared before 2009/2010 rice cropping season (before starting the rice cultivation at demonstration fields in the model sites). Focused technical issues in the technical package are techniques that farmers in the model sites can easily adopt or utilize. Experimental activities in the rice fields of the participating farmers were carried out using technical package version 0.

Before 2010/2011 cropping season, the technical package version 1 for each focal region were prepared.

The technical package version 2 is under preparation through analysis and evaluation of results of rice cultivation with the model farmers for demonstration in 2010/2011 cropping season. Some contents of the technical package will be modified and new items will be added such as integrated use of paddy field (off-season cultivation) and profitability analysis.

(2) Basic idea on Development of Technical Package for Rice Productivity Improvement

The original idea or concept of technical package was to develop rice cultivation techniques appropriate for 5 regions of the Central Highland and suitable for 3 types of rice farming systems such as irrigated rice, rain-fed rice, and cool-climate highland rice.

The technical package will have 2 main components such as 1) core techniques "guideline of basic techniques on rice cultivation" and 2) optional techniques suitable for different conditions "techniques applicable for conditions of area". Contents of "guideline of basic techniques on rice cultivation" will be made based on technical package version 1 and adding items on farm management, information, and integrated use of paddy field, etc. for wider use. With regard to "techniques applicable for conditions of area", main contents will be optional techniques on variety selection, fertilization, planting density, direct seeding, green manure, improved "Dapog"¹ type nursery, cropping in off-season (beans, etc.). The basic concept on the contents of the technical package is approved at the project coordination meeting which was held on March 18, 2011.

¹ "Dapog" type nursery is constructed to raise seedlings without any soil whatsoever.



Summarized main contents of the technical package are in the following table.

Technical package	1. Guideline on basic techniques on rice cultivation	1-1 Contents of technical package version 1 1-2 Farming, information, integrated use of paddy field, etc.
	2. Techniques applicable depend on conditions of area	2-1 Variety, fertilization methods, planting density, etc. 2-2 Optional techniques: (such as efficient irrigation techniques, labor saving methods (direct seeding and others), use of green manure, intensified rice cultivation, varietal selection (for preventing rice blast), countermeasure to cool weather, improved seedling, high profitable crops in dry season (beans, etc.)

The technical package, which is under development, is for irrigated rice cultivation. In addition to this, technical package for upland rice cultivation will be produced during on the remaining cooperation period of the Project.

(3) Other Output

The following 4 kinds of manuals on agricultural machines were prepared under the Project (mainly by Indonesian experts and Malagasy counterparts of CFAMA) and utilized at the training courses for local manufacturers. Training courses for local manufacturers have been carried out 6 times with 85 participants in total. For the details of the training courses implemented, see Annex 9.

No	Title	Publication	Distribution
1	Manual book Pedal Thresher	June 2010	Local manufacturers who participated in the training courses in 3 regions (around 34 persons)
2	Manual book Power Thresher	June 2010	Local manufacturers who participated in the training courses in Alaotra-Mangoro region (around 16 persons)
3	Manual book Winnowing	June 2010	Local manufacturers who participated in the training courses in 3 regions (around 34 persons)
4	Manual book Rotary Weeder	Feb. 2011	Local manufacturers who participated in the training courses in 3 regions (around 51 persons)

It is planned to produce a seeding machine and a weeding machine for upland rice with technical manuals.

Some local producers have started to manufacture some agricultural machines or tools (weeding tools) after participating in the training courses of the Project. When locally manufactured agricultural machines are widely used by rice farmers in the target 5 regions, it is expected that efficiency of agricultural works will be improved and post-harvest loss will be reduced.

3-2-2 Output 2: Variety selection, seed multiplication and distribution systems are promoted under the Project.

Capacity enhancement of seed producers and seed inspectors are progressing and production of quality rice seeds is increasing in Bongolava and Vakinankaratra regions gradually. Rice seeds of recommended varieties are used mainly by the model farmers and satellite farmers in

the model sites.

There are on going activities rice seeds, such as variety selection for recommendation, promotion of utilization of quality seeds, preparation of manual for rice seed production and revision of catalog on rice varieties.

Indicator 2-1: More than 0 tonnes of quality rice seeds of recommended varieties are produced.

The Project is promoting seed production of varieties recommended by either DRDR or FOFIFA. For reference, seed production of major varieties in 3 regions in recent years is shown in the tables below.

(1) Alaotra-Mangoro Region (unit: tonnes) (data source: project team)

No	Variety	2008/2009 (before Project)	2009/2010	2010/2011 (as of June 22, 2011)	Remarks
1	MK34 (Makalioka)	246	170	22	Major variety in this region
2	Tsemaka	326	258	15	Major variety in this region
3	MK Malady	30	11	6	Major variety in this region
4	MR45	0	11	0	Early maturing variety
5	X265	42	154	53	Early maturing variety
	Total	645	604	97	

There are around 600 tonnes of rice seed production in Alaotra-Mangoro region. Most of these seed production is carried out by private companies. CMS reduced its production due to renting most part of land to a private company. MK34 (Makalioka) and Tsemaka varieties are dominantly produced in this region.

(2) Bongolava Region (unit: tonnes) (data source: project team)

No	Variety	2008/2009 (Before Project)	2009/2010	2010/2011	Remarks
1	X265	30	30	20	Lowland rice
2	Tsemaka	-	-	0.2	Lowland rice
3	X243	5	5	5	Lowland rice
4	2067	-	2	-	Lowland rice
5	B22	20	40	30	Upland rice
6	3737	5	10	10	Upland rice
7	NERICA 2, 4	5	6	10	Upland rice
8	FOFIFA 154, 161	5	10	10	Upland rice
	Total	70	103	85.2	

Annual rice seed production is 70 to 100 tonnes including seed production by CMS Sakay. One of the characteristics of seed production in this region is that around half of produced seed is upland rice seed. Production of rice seed for lowland is carried out by seed producer group (GPS) mostly. The training on seed production has been implemented under the Project, and it is expected to contribute to the improvement of quality and increase of quantity of seed production.

(3) Vakinankaratra Region (unit: tonnes) (data source: project team)

No	Variety	2008/2009 (Before Project)	2009/2010	2010/2011	Remarks
1	X265	Almost no production by seed producing farmers.	8.5	3.5	Lowland rice
2	FOFIFA160		0.35	0.4	Lowland rice
3	FOFIFA161		18	36	Upland rice
	Total		26.85	39.9	

Most of seed production in this region is carried out by GPS, CFAMA and FIFAMANOR (Fiompiana Fambolena Malagasy Norvezian). Training for GPS has been implemented under the Project and amount of seed production by training participants is included in this data. It is reported that there was no distribution of certified seeds before the start of the Project.

Indicator 2-2: More than 0% of farmers in model sites uses improved varieties of seeds.

(1) Achievement Related with the Indicator 2-2

The following table shows the total number of farmers in each model site, the number of rice farmers who used quality seeds, and rate of use of quality seeds.

No	Model site	Total number of rice farmers in model site	Number of rice farmers who used quality seeds	Rate of use of quality seeds (%)
1	Block 4, 5, 6, and 15 in PC23 southern irrigation area, Alaotra-Mangoro region	267 (*)	11	4.1
2	Ankompomboay irrigation area, Bongolava region	55	15	30.0
3	Andriana Sahalombo irrigation area, Vakinankaratra region	120	39	32.5

(*): Number of members of water users' associations in 2008. And it is under review.

In the cases of Bongolava and Vakinankaratra region, rate of use of quality seeds is around 30%. The use of quality seed is limited in Alaotra-Mangoro region as low as 4%, because farmers use different type of variety depending on the water availability in the model site.

(2) Performance on Quality Seeds Distribution

Collaborating with a FAO project on seeds, the Project produced and distributed 2 types of poster on promotion of use of quality seed in the whole country (1,500 copies of posters). A promotional propaganda on TV and radio as spot advertisement was also broadcasted nationwide during 2 weeks in December 2010 (2 times a day) and during whole month (more than 5 times a day) for the 3 focal regions. As a part of its result, the monthly demand for irrigated rice seed varieties at CMS Sakay in December 2010 recorded 13.1 tonnes that is 4 times higher than that of in 2009.

(3) Manual for Rice Seed Production

Development of manuals for farmers on seed production for irrigated rice and upland rice is progressing at present.

Prior to the 2010/11 cropping season, technical package version 0 for seed production was

developed by the efforts of the counterparts of DRDR Bongolava, the regional inspectors of SOC, staff of FOFIFA and CMS. Based on the results of 2010/2011 cropping season, version 1 is under preparation for next cropping season 2011/2012.

Technical package version 0 for upland rice seed production is progressing utilizing the results of demonstration activities in 2009/2010 and 2010/2011 cropping seasons at the model sites in Vakinankaratra, and also upland rice seed production experiences of CMS and CFAMA are incorporated. This technical package will be applied in next cropping season 2011/2012.

(4) Training Courses Implemented for Rice Seed Producing Farmers.

Training courses for seed producing farmers in Bongolava and Vakinankaratra regions have been carried out 6 times with 138 participants in total (several Rural Development Advisor (CDR)s and staff of CMS, etc. have been also participated in). For details, see Annex10.

3-2-3 Output 3: Technical instruction materials are created for disseminating integrated technical packages.

Several kinds of technical instruction materials and training materials for officials and farmers have been produced and published. Some materials have been used at the trainings and others have been distributed to officials and farmers.

Indicator 3-1: Technical instruction materials for trainers.

Indicator 3-2: Training materials for farmers.

The following materials related with technical package are produced under the Project.

		Title	Target person	Language	Copies	Published date	
1	a) Common	Video materials on the technical package	Farmers in target 5 regions	Malagasy and French	11,000	To be released in August 2011	
2		IRRI's rice cultivation textbook (reprinting)	Staff of DRDR, CIRDR, CDR in 3 regions, MinAgri (DRDR in the whole country) and all FOFIFA centers	Malagasy	500	Jan. 2011	
				French	200	Oct. 2010	
3			Textbook on physiology and ecology of rice (root-stem-leaf)	Participants to trainings	French	75	Oct. 2010
4			Textbook on physiology and ecology of rice (grain development)	Participants to trainings	French	75	Oct. 2010
5			Textbook on physiology and ecology of rice (morphological responses)	Participants to trainings	French	75	Oct. 2010
6		Textbook on physiology and ecology of rice (variety)	Participants to trainings	French	75	Jan. 2011	
7	b) Alaotra-Mangoro	Document on technical package for officials and farmers	Farmers	Malagasy and French	0	Nov. 2010	
8		Leaflet on technical package for farmers	Farmers	Malagasy and French	700	Dec. 2010	
9	c) Bongolava	Document on technical package for officials and	Officials and farmers	Malagasy and French	100	Sep. 2010	

		farmers				
10		Leaflet on technical package for farmers	Farmers	Malagasy	1,900	Oct. 2010
11		Poster on technical package for public office of commune	Public office of commune	Malagasy	25	Nov. 2010
12	d) Vakinankaratra	Document on technical package for officials and farmers	Officials and farmers	Malagasy	100	Sep. 2010
13		Leaflet on technical package for farmers	Farmers	Malagasy	500	Oct. 2010
14		Poster on technical package for public office of commune	Public office of commune	Malagasy	15	Nov. 2010

3-2-4 Output 4: Linkage among stakeholders in the focal regions is strengthened.

Monthly meeting has been held by the all concerned persons in each focal region. It has been promoting information sharing and discussion on technical issues related with the Project. Training of officials for capacity development is progressing.

Indicator 4-1: At least 3 regional seminars are held in each focal region.

There has not been organized any seminars in the Project since its start. However Regional Technical Management Committee (RTMC) was organized at each focal region in the framework of the Project to make effective linkage among organizations participating in the project activities and also discuss technical issues on the project activities. First RTMC was held at each focal region in April 2009. Thereafter, the RTMC have been regularly held on monthly basis for sharing progress of the project activities and technical issues of the project.

The following table shows the number of RTMC held in each region.

Focal Region	2009 (Since April)	2010	2011 (as of end of July)
Alaotra-Mangoro	8	12	6
Bongolava	7	9	5
Vakinankaratra	6	11	6

Indicator 4-2: More than 0 trainers are trained in each focal region.

Training courses for the officials (DRDR, CDR, Agricultural Service Center (CSA), CMS, and SOC) were carried out 7 times, and 185 persons in total were participated in these trainings. Subjects of trainings were baseline survey, rice cultivation techniques, seed, and agricultural machinery. For details, see Annex 11.

3-2-5 Output 5: Technical packages are utilized by farmers in the model sites.

Number of farmers who utilize techniques of the technical package is increasing in the model sites gradually and dissemination of the technical package outside of the model sites is started in the case of Bongolava region.

Indicator 5: More than 0% of farmers in the model sites used at least 0 components of technical packages.

A model site per focal region was selected. Name of model sites, number of rice farmers, number of model farmers for demonstration in 2009/2010 and 2010/2011 cropping seasons are as the following table.

	Model site	Total number of rice farmers in model site	Model farmers in 2009/2010	Model and satellite farmers in 2010/2011	Pilot farmers* for dissemination in 2010/2011
1	Block 4, 5, 6, and 15 in PC23 southern irrigation area, Alaotra-Mangoro	267	3	11	14 satellite farmers outside of block 4, 5, 6 and 15
2	Ankompomboay irrigation area, Bongolava	55	3	15	118 (outside of the model site)
3	Andriana Sahalombo irrigation area, Vakinankaratra	120	3	12	20 (within the model site)
	Total	442	9	38	152

*Pilot farmers: Farmers who have rice fields outside of the model sites and practice rice cultivation using the recommended technical package of the Project.

Nine model farmers were selected in three focal regions in 2009/2010 cropping season, and they applied all recommended techniques of the technical package version 0. For 2010/2011 cropping season, 38 model and satellite farmers were selected and they applied all recommended techniques of the technical package version 1.

In addition to 38 model and satellite farmers, 152 pilot farmers for dissemination (14 in Alaotra-Mangoro, 118 in Bongolava and 20 in Vakinankaratra) were also selected in 2010/2011 cropping season, and they applied most of the recommended techniques except for application of fertilizer.

3-2-6 Output 6: Technical packages are available to rice farmers in the target area.

Information dissemination of the technical packages has been carried out mainly in the focal regions by distributing brochures and leaflets. Information dissemination to the other two target regions of the Project and nationwide will be started from the 2011/2012 cropping season.

Indicator 6: More than 0 rice farmers receives technical materials and information.

The following technical materials and information for rice farmers were distributed to mainly farmers in the model sites in the three focal regions.

Region	Material	Language	Copies distributed	Date of publication
Alaotra-Mangoro	Brochure on technical package for extensionists and farmers	Malagasy and French	0	Nov. 2010
	Technical package leaflet for farmers	Malagasy and French	700	Dec. 2010
Bongolava	Brochure on technical package for extensionists and farmers	Malagasy and French	100	Sep. 2010
	Technical package leaflet for farmers	Malagasy	1,900	Oct. 2010
Vakinankaratra	Brochure on technical package for extensionists and farmers	Malagasy	100	Sep. 2010
	Technical package leaflet for farmers	Malagasy	500	Oct. 2010

Audio-visual teaching material on the technical package is under producing in collaboration with the advertising agency and a film company. This audio-visual material (in DVD or VCD) will be made 11,000 copies and will be distributed to not only target 5 regions but also nationwide before 2011/2012 cropping season.

As public relation activities, leaflets on the project activities, calendars, T-shirts and caps with the Project logo were made and distributed to mainly in 5 target regions. Information dissemination activities on technical package have been carried out since the off-season of 2009/2010 by participating in various events and exhibitions held in the focal region and capital city, for example, display panels on technical materials and posters, provision of leaflets, sale of quality seeds, and demonstration of agricultural machinery.

3-3 Project Purpose

Project Purpose: Productivity of rice is increased in the model sites.

As results of application of the technical packages which is under development at the rice fields of the model and satellite farmers in three model sites, average increase of yield is more than 1.0t/ha in all model sites. It can be said that improvement of rice productivity is progressing well. If most of the rice farmers in the model sites adopt the techniques of the technical packages in the coming cropping seasons in the remaining project period, it is expected that the Project purpose is achieved.

Indicator 1: Average rice yield of participating farmers in the model sites is increased more than 1t/ha.

The following table shows comparison of yield of rice of the model and satellite farmers in the model sites with the data of the baseline survey.

Region	Baseline survey (data on 2008/2009 season)		2009/2010 season, applied technical package Version 0			2010/2011 season, applied technical package Version 1		
	Yield (t/ha)	Number of surveyed farmers (household)	Yield (t/ha)	Increase* (t/ha)	Number of model farmers (household)	Yield (t/ha)	Increase (t/ha)	Number of model and satellite farmers surveyed (household)
Alaotra-Mangoro	2.7	97	4.7	2.0	3	4.5	1.8	7

Bongolava	1.7	50	3.3	1.6	3	4.2	2.5	15
Vakinan-karatra	2.5	80	6.0	3.5	3	3.6	1.1	12
Total	---	227	---	---	9	---	---	34

* Comparison with data of the baseline survey

- Model farmers: Farmers who have rice fields in the model sites and practice rice cultivation by comparing using the recommended technical package of the Project and traditional method. Seeds, fertilizer and cultivation techniques have been provided by the Project. Farm management has been carried out by farmers and the Project team.
- Satellite farmers: Farmers who have rice fields in the model sites and practice rice cultivation using the recommended technical package of the Project. Seeds, fertilizer and cultivation techniques have been provided by the Project. Farm management has been carried out mainly by farmers.

Increases of yield (average) at the model and satellite farmers in the three model sites are more than 1.0t/ha compared to the yield of the baseline survey. It indicates that increase of 1.0 t/ha in yield is possible by applying the technical package which is under development.

In addition to demonstration in the model sites, dissemination of technical package has been carried out outside of the model site in Bongolava region. Technical advice and quality seeds were provided to 118 farmers in 17 CDRs in the region in 2010/2011 cropping season (main season). Data on yield was collected from 74 farmers out of 118 farmers. The following table shows yield increase compared to previous cropping season.

	Yield of previous year 2009/2010 (without use of technical package version 1)	Yield of 2010/2011 season (with technical package version 1)	Amount of increase (t/ha)
Yield (t/ha)	3.1	4.4	1.3

In conclusion, the target level of yield increase of the Project purpose will be achieved by the end of the Project considering the above data on yield increase.

4. Results of Review

4-1 Relevance

Improvement of rice productivity and increase of rice production in the target areas and the target groups are in line with their needs and also necessary issues for the country. The target 5 regions belong to main rice production areas in Madagascar. Main project approaches are, development of rice cultivation technical package for rice varieties suitable for rice cultivation condition in the Central Highland such as irrigated rice, rain-fed rice, and highland rice (high altitude cool climate area), development of technical materials on technical package and implementation of related training courses, improvement on selection of rice seeds, seed multiplication and seed distribution system, and strengthen of linkage among organizations concerned with rice cultivation. Considering these agro-climatic aspects, it is considered that the project approach and selection of the project target area are appropriate.

This Project is well relevant to the national development plan of Madagascar.

The priority of Japan's assistance to Madagascar is given to the development of agriculture and fisheries, rural development, health, and private sector development/ promotion of investment in trade. As for development of agriculture and fisheries, and rural development, assistance for self-sufficiency of rice is an important issue within the framework of JICA's cooperation program on food production increase. This project is one of the projects within this assistance program of Japan. In addition, the Government of Japan expressed at "TICAD IV" (Tokyo International Conference on African Development IV) in May 2008 about intension to provide assistance for rice production increase in Africa next 10 years. Because Madagascar is the second largest rice producing country in Africa, the Government of Japan considers importance of assistance to Madagascar in this issue.

Japanese staple food is rice. Japan has highly experienced techniques on development of rice cultivation and rice varieties in accordance with various climate and natural conditions, and also consumer preferences. JICA has a lot of experiences in providing technical assistance related to rice cultivation techniques in Asian and African countries, and there is an advantage in Japanese experience. Therefore, it would be possible to fully utilize the technologies of Japan in Madagascar.

Overall, relevance of the Project is high.

4-2 Effectiveness

Through the project activities, development of technical packages for rice productivity improvement is progressing in the three focal regions steadily by showing favorable increase of yield. The improvement on variety selection, seed multiplication and seed distribution has



been progressing. Preparation of materials related with technical packages and capacity enhancement of officials, rice farmers are also progressing.

As mentioned in the previous chapter, it is expected that the project purpose be achieved at the time of completion of the Project. Therefore, effectiveness of the Project is to be at a satisfactory level.

4-3 Efficiency

Although there was some influence by political situation in Madagascar, especially in the early stage of the Project, progress of the project activities is in well-accordance with that as planned. The project has been producing various positive outputs. Therefore, efficiency of the Project is at a satisfactory level at this stage.

4-3-1 Inputs by Japanese Side

Japanese side has provided inputs appropriately for the project activities in general in terms of human resources (Japanese long-term and short-term experts and Indonesian experts), equipment, training in Japan and third countries, and allocation of expenses. These inputs and resources have been utilized efficiently in undertaking project activities. Although it was planned to send four long-term experts at project formulation stage, one expert was added in 2010. It was demanded for the extra activities in Alaotra-Mangoro due to suspension of Japanese grant aid for PC 23. Dispatch of a short-term expert for the baseline survey was delayed because there was political instability in Madagascar in the beginning of the Project. Progress of the project activities in the first year (2009) was also influenced to some extent.

4-3-2 Inputs by Malagasy Side

As mentioned in previous chapter (article 3-1: inputs), 63 counterparts in total are being involved in the project activities. They are officials of the MinAgri (central level), DRDR of the 3 focal regions, FOFIFA and CFAMA. Their effort in carrying out the project activities is one of the factors supported to the smooth progress of the Project activities. In addition to this, assignment of a coordinator at central level (in September 2010) and a coordinator in each focal region (April 2010) is also one of the promoting factors to the smoothly implement the project activities because many organizations are involved in the Project.

4-3-3 Project Management

There are several kinds of meeting, such as JCC, pre-JCC meeting, coordination meeting, RTMC, and meeting on the results of experiments at FOFIFA. These meetings have made good effects on participation of Malagasy counterparts, information sharing on the project activities, and decision making on the planned project activities. Especially, RTMC has been effectively held monthly basis with participants from all concerned organizations.

4-3-4 Process of Improvement of the Technical Packages with Participation of Farmers

Modification and improvement of the contents of the technical packages is progressing not only by the officials concerned with the Project and JICA experts, but also by farmers in the model sites. Farmers participated in the evaluation on the results of their rice cultivation using the technical package. This is a very appropriate way to develop adoptable techniques for farmers.

4-4 Impact

4-4-1 Prospect for Achieving the Overall Goal

Overall Goal: Rice production in Central Highland is increased.

It is prospected that the Overall Goal will be achieved by the year 2018 if the technical package of the Project is adopted by most of the farmers in the Central Highland (5 target regions of the Project), and if trend of rice production increase in recent years is continued. Several positive impacts were observed.

Indicator 1 Rice production is improved by 20% in Central Highland areas by 2018.

The following table shows rice production by region (project targeted regions)

Region	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010
Alaotra-Mangoro	435,204	446,210	461,320	470,900	567,600
Bongolava	123,999	127,720	131,440	138,010	231,150
Vakinankaratra	278,579	300,830	295,300	416,180	478,566
Analamanga	278,307	307,250	295,010	252,320	478,264
Itasy	203,975	225,250	216,210	227,020	348,000
Total	1,320,064	1,407,260	1,399,280	1,504,430	2,103,580

Source: Data from Ministry of Agriculture

Rice production in the Central Highland (5 regions) was increased from 132 thousand tonnes in 2005 to 210 thousand tonnes in 2009 (five years later). Rate of increase by 5 years is 59% and this is equivalent to 11.8% per year in average. Assuming this rice production increase rate is continued even after the completion of the Project period (in 2014), it is not difficult to achieve 20% of rice production increase from the year 2014 to the year 2018 (target year).

Rice production is increased not only by improvement of productivity (yield increase) but also increase of cultivated area. Because the aim of the Project is to increase yield, therefore, it will be appropriate to add an indicator on yield increase in addition to rice production.

4-4-2 Other Impacts

(1) Farmer to Farmer Dissemination

Several model farmers reported that model farmers explained about the technical package of the project to the neighboring farmers visited them. There are several farmers who have

adopted technique on nursery preparation of the technical package. This kind of farmer to farmer dissemination of techniques has been taken place.

(2) Manufacture of Improved Agricultural Machinery

Several local artisans, that the Review Team interviewed, have made rotary weeders and winnowers based on the knowledge acquired during the training on the agricultural machinery by the Project.

(3) Dissemination of Quality Seeds

The Review Team interviewed members of a GPS in Bongolava who participated in the training of the Project. They produced rice seeds by applying techniques learned at the training, and they sold their seeds not only to CMS Sakay but also to their neighboring farmers. This means that neighboring farmers could get quality seeds from GPS.

4-5 Sustainability

Policy sustainability will be secured. Although it might be early to prospect sustainability on organizational, financial and technical aspects of the Project, it is expected that financial and organizational arrangement be taken to a certain extent.

(1) Policy Aspect

As mentioned earlier, increase of rice production is considered important in the National Development Plan of Madagascar. Importance of rice productivity and rice production increase is expected to be continued in future from the viewpoints of stable supply in quantity and price (in term of food security) in response to population growth of the country.

(2) Organizational and Financial Aspects

Organizations involved in the Project are MinAgri (mainly DRDR in the three focal regions) and its affiliated institutions such as FOFIFA, CFAMA & CMS in the three focal regions. Decrease in number of officials is common trend in MinAgri. However, MinAgri has employed new staff in September 2010 and in May 2011. Along with it, staff in younger generation was assigned to the Project as counterpart personnel. This may bring good effects on continuity of human resources in MinAgri and DRDRs in the three focal regions. In the case of FOFIFA, employment of researchers is not taken for over a long time. Therefore, decreasing number of researchers is aggravating problems.

As of financial aspect, although financial situation of MinAgri is not favorable in general, MinAgri has allocated budget for the project activities in 2010 and 2011. Meanwhile, FOFIFA, CFAMA and CMS are institutions with self-supporting system in terms of finance basically and without sufficient self-income generation, their financial situation become critical. For example, FOFIFA receives running operation cost from the state, but budget for research activities is not available if there is no partner institution or donor agency. Therefore,

financial sustainability of FOFIFA is not well assured.

(3) Technical Aspect

Basic concepts of development of technical packages are 1) appropriate and suitable techniques in conditions of the central highland areas, 2) techniques which are easy to be adopted by rice farmers, and 3) profitable. Therefore, it is expected that techniques of the technical packages will be utilized continuously where technical packages are disseminated. Dissemination activities in wider areas is planned to start two more regions (Analamanga and Itasy) from the next cropping season (2011/2012). By assuring capacity building of staff in charge of dissemination on technical packages and by practicing technical transfer to rice farmers, it is expected that they can continue dissemination of the technical packages even after the completion of the Project.

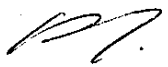
Continuity of human resources and budgetary situation of the institutions has to be secured in order to continue further improvement of the contents of technical package, rice variety selection and seed multiplication.

4-6 Conclusions

The project activities have been progressing well as scheduled despite of the difficulties due to political instability in the beginning of the Project. Development of the technical packages for rice production improvement is well advancing by achieving yield increase more than 1.0 t/ha in the model sites in three focal regions. Capacity development on staff of the institutions concerned, local manufacturers of agricultural machineries, rice seed producers, rice farmers in the model sites are progressing steadily. Development of materials related to the technical packages and seed production etc. is also progressing well.

Relevance of the Project is high and effectiveness of the Project is expected to be at a satisfactory level by achieving the Project purpose by the end of the Project period. Efficiency of the Project is also at a satisfactory level at present and several positive impacts were observed such as farmer to farmer dissemination of rice cultivation techniques, production of agricultural machineries, and dissemination of quality seeds.

However, there are some important issues in order to have better outcomes of the Project. These issues are explained as recommendations.



5. Recommendations

5-1 Recommended Actions to be taken by the Project in the Remaining Cooperation Period

5-1-1 Application of Technical Package

(1) Application of Technical Package

Technical package is composed of core technologies and optional technologies. The optional technologies are selectively used by farmers by considering farming situations including socio-economic conditions as well as rice cultivation conditions. It is necessary to provide relevant information in the technical package how to select optional technologies to avoid misuse of technical package by farmers.

(2) Clarification of the Target of the Project

The Project purpose is "Productivity of rice is increased in the model sites," and the Objectively Verifiable Indicator of the Project purpose is "Average rice yield of participating farmers in the model sites is increased more than 1t/ha." It is necessary to clarify the definition of the "participating farmers." It is possible for the Project in order to show the relevance of the use of technical package in the model sites as a whole by applying technical package to all rice farmers in the model sites. The review team proposes that the participating farmers should be defined as rice farmers who cultivate rice in the model sites in addition to model farmers, satellite farmers and trained farmers.

(3) Model Site of Alaotra-Mangoro

Alaotra-Mangoro region has located the model site in PC23 irrigation scheme. The irrigation facilities are not functional and it was supposed to have a major rehabilitation work when the Project was started, but there has been no rehabilitation. Therefore, technical package for large scale irrigation scheme can be applied in the limited area of the model sites. It is recommended that the model site in Alaotra-Mangoro is focused in the Block 4, 5, 6 and 15 of PC23 southern irrigated area where some water is available during the main cropping season without major rehabilitation work in order to verify the technical package.

(4) Fertilizer Application by Farmers

Soil fertility is one of the major common bottle necks of the model sites. During the interview of the farmers in the model sites, many farmers expressed their difficulties to apply compost, manure or chemical fertilizers. The availability of cow dung cannot be improved instantly due to reduction of cattle production. Most of small scale farmers face difficulties to purchase chemical fertilizers before cropping season. It is recommended that the Project provides optional technologies to maintain or improve soil fertility such as compost and green manure for low-input farmers.

(5) Agricultural Mechanization

It is observed that many farmers in Bongolava and Vakinankaratra region cannot afford expensive agricultural machines. It is suggested that the Project work on development of farm tools suitable for different types of farm operation for the use of small scale farmers. It is also suggested that group use of agricultural machinery be studied to promote mechanization

for small scale farmers.

Many rice farmers in Alaotra-Mangoro region have large production area, and they demand engine powered equipment for more efficient farm operations. It is suggested to develop more labor saving machines for the use by large scale farmers.

(6) Collaboration with FOFIFA for Improvement of Technical Package

FOFIFA is continuously working on technology development. It is necessary to release developed technologies for dissemination. It is recommended to further strengthen the collaborative work between DRDR and FOFIFA to promote synergy to timely provide developed technologies to farmers.

5-1-2 Extension of Technical Package

(1) Dissemination Method in the Focal Regions and the Other Target Regions

As to contribute to the overall goal, dissemination method of technical package is distinguished among in the model sites, outside of model sites in the focal regions, and in the other target regions. To attract farmers to the technical package of the Project (PAPRiz), it is worth to use mass media. However, it does not assure proper use of the technical package. It is necessary for DRDR to provide instruction to responsible persons to disseminate technical package. It is recommended to RTMC to make a plan how to disseminate it properly and quickly.

(2) Capacity Building of CDR

Proper use of technical package is vital to promote high productivity of rice. It is recommended to provide necessary hands on training on technical package for CDR in order for farmers to properly use core technologies and properly select optional technologies. CDR is closely working with farmers and it is necessary for DRDR to monitor and follow up activities of CDR.

(3) Provision of Technical Package to CSA and Commune Offices

The number of CDR is limited and they are not assigned in all communes. It is recommended to avail information on technical package through DRDR to all CSA and all commune offices in the five target regions.

5-1-3 Improvement of Seed System

(1) Seed production by GPS

Capacity enhancement of the GPS is undergoing in the Project. However, the number of GPS is limited and most GPS are located in remote places where marketing is not so easy. In order to quickly disseminate quality seed of the recommended varieties among farmers in the model sites, it is recommended to organize GPSs in the model sites, and increase number of farmers promotes seed production farmers who can provide quality seed to surrounding farmers in the model sites. It is also proposed to include techniques on maintaining the seed quality in the technical package as an alternative to promote use of quality seed.

(2) Seed Production in CMS Anosiboribory

Field inspection by SOC was not conducted in the last cropping season because CMS did not do off type roguing and did not request SOC for field inspection. It is necessary for CMS to follow regulations of SOC to meet the requirement for certification. It is pointed out that the coordination should be strengthened between CMS as the executing organization and CFAMA as the contracting organization of certified seed production.

(3) Field Inspection by SOC in DRDR

The field inspection should be done by sending two inspectors according to the regulation. However, Bongolava has only one person in SOC in the region. In order to properly conduct field inspection, it is necessary to increase the number of field inspectors. It is recommended that the SOC of national level conduct training on field inspection to CIRDR and CDR to maintain proper certification of seed produced by GPS, CMS and seed companies. It was observed that some GPS had difficulties to sell their certified seed due to delay of seed certification and it discouraged GPS to produce seed. It is also recommended that SOC DRDR and national SOC to work on the improvement of field inspection and seed certification to speed up its process to meet the demand of the seed producers as well as seed users.

5-1-4 Utilization of PO

(1) The Utilization of PO as Monitoring Tool

To build mutual understandings of the Project procedure among Japanese and Malagasy people concerned, PO should be utilized as a monitoring tool. There was no revision of the PO since the Project started but it should be revised annually and approved in JCC.

(2) More Detailed Plan for each Focal Region

In three focal region of the Project, organization, officers and people concerning the Project is differs in each region. Therefore, detailed annual plan for each focal region should be prepared by the Project to clarify schedule and person in charge for each detailed activity.

5-2 Recommended Actions to be taken by the Malagasy Side

5-2-1 Management and Coordination of the Project

(1) RTMC

After assigning regional coordinators for the Project, RTMC is functioning more smoothly than the time of advisory mission in November 2009. It is, however, necessary to provide more clear direction from the central office through the national coordinator to DRDR to coordinate all concerned organizations to catch up if there is delay of the Project implementation in the focal regions.

(2) Counterpart Budget of the Malagasy Side

The management of CFAMA is significantly improved after full utilization of improved



facilities. However, management of seed production in CMS Anosiboribory should be improved by allocating necessary budget for field labors for off type roguing. It is necessary to provide necessary budget timely although it is one of the autonomous entities. Similarly it is recommended to provide budget for fuels and allowances required to maintain mandated operations of FOFIFA and CMS.

(3) Recruitment of Staff

Continuous effort should be made by the Malagasy side to recruit new staff for FOFIFA, SOC, CMS Sakay and CFAMA for their sustainable operation. In addition, it is recommended that the MinAgri encourages the communes to hire CDR if there is not enough staff in DRDR for technology dissemination.

5-3 Recommendation on Revision of Current PDM

The Review Team conducted review on achievement of the Project based on PDM version 1. The Review Team noticed that some modification on PDM is necessary as a result of examination of current PDM (version 1) and progress of the Project activities. Proposed modification and its reasons are described in the following table. Proposed revised PDM (version 2) is attached in Annex 2.

It is expected that the Project examine this proposed PDM, by reviewing the PO for detailed Project activities in accordance with the proposed PDM, and finalize it for approval by JCC as soon as possible.

Table: Proposed modifications on the PDM

Item	Version 1	Proposed revision (Version 2)	Reason of change
Indicator for the Overall Goal	1. Rice production is improved by 20% in Central Highland areas by 2018.	1. Rice production is improved by 20% in Central Highland areas by 2018 <u>compared to rice production in 2012/2013 cropping season.</u>	Clarification of rice production year for comparison
Indicator for the Project Purpose	1. Average rice yield of participating farmers in the model sites is increased more than 1t/ha.	1. Average rice yield of <u>rice farmers (*1)</u> in the model sites is increased more than 1t/ha.	Clarification of target farmers in the model sites and also target place as model sites. All rice farmers in the model sites are target for yield increase
Indicator for the Output 1	1. At least one technical package is developed for each focal region.	At least one technical package, <u>which is adapted to location-specific conditions,</u> is developed for each focal region.	As optional technique, location-specific techniques will be added in the technical packages.
Indicators for the Output 2	2-1. More than 0 tons of quality rice seeds of recommended varieties are produced. 2-2. More than 0% of	2-1. <u>A catalogue of recommended rice varieties is produced.</u> 2-2. <u>More than 80% of farmers who participated in</u>	Considering the current project activities for improving rice seeds sector, indicators are changed and added more suitable ones.

	farmers in model sites uses improved varieties of seeds.	<u>the training on seed production produce rice seeds in accordance with the seed production manual.</u> 2-3. <u>More than 2 trained inspectors who can carry out field inspection are availed in each target region.</u>	
Indicators for the Output 3	3-1. Technical instruction materials for trainers. 3-2. Training materials for farmers.	3. <u>At least one technical instruction material for different use (for farmers, extension agents and advertisement) is produced.</u>	Former two indicators are integrated into one indicator.
Output 4	4. Linkage among stakeholders in the focal regions is strengthened.	4. Linkage among stakeholders in the <u>target 5 regions for technology dissemination</u> is strengthened.	Dissemination of technical packages is going to be carried out in target five regions. Strengthen of linkage is focused on technology dissemination.
Indicators for the Output 4	4-1. At least 3 regional seminars are held in each focal region. 4-2. More than 0 trainers are trained in each focal region.	4-1. <u>More than 80% of CDR in the focal regions has experience to disseminate techniques of the revised technical packages.</u> 4-2. <u>More than 90% of CDR in Analamanga and Itasy regions receive training on the technical packages.</u>	Different indicator on dissemination of the technical packages is set for the three focal regions and for the remaining two regions, because the planned project activities for dissemination are different in regions.
Output 5 and its indicator	5. Technical packages are utilized by farmers in the model sites.	(Deleted)	Former Output 5 and Output 6 are integrated as new Output 5 (following)
Indicators for the Output 6	6. More than 0 rice farmers receives technical materials and information.	5-1. <u>More than 80% of rice farmers in the model sites in the focal regions utilizes techniques of the technical packages.</u> 5-2. <u>More than 1,000 rice farmers outside of the model sites in the target 5 regions utilize techniques of the technical packages.</u> 5-3. <u>All commune offices and CSA offices provide farmers information on the technical packages.</u>	An indicator related to the technical packages are set for each target, such as 1) model sites, 2) target 5 regions, and 3) two regions where the Project activities are started from now on.
Basic information on the Project	Duration, implementing agencies and collaborating agencies are modified with more appropriate ones. For details, see proposed PDM (version 2).		
Important Assumptions		(Newly Added) Insufficiency of irrigation water is not occurred in the model sites.	Stable supply of irrigation water is necessary to verify technical package for irrigated rice production.
Others	Most of the means of verification are modified with more appropriate ones. For details, see proposed PDM (version 2).		

Annex 1 Schedule of the Mid-Term Review

Date			Japanese Team Member	Japanese Team Member	Malagasy Team Members	Japanese Team Member	Place to Stay
			Evaluation and Analysis	Team Leader & Cooperation Planning	Leader, Agricultural Production, and Seed	Rice Cultivation and Extension	
1	Jul/2	Sat	Leave Japan				(on board)
2	Jul/3	Sun	Arrival at Antananarivo (Tana)				Tana
3	Jul/4	Mon	10:00 Meeting JICA Office 14:00 Interview at MinAgri 15:00 Meeting with Japanese experts 16:00 Interview with a counterpart of FOFIFA Mahitsy				Tana
4	Jul/5	Tue	Move from Antananarivo (Tana) to Alaotra-Mangoro 15:00 Interview at FOFIFA CALA				Ambatondrazaka in Alaotra
5	Jul/6	Wed	9:00 Interview with farmers of the model site in Alaotra-Mangoro 14:30 Interview with DRDR in Alaotra-Mangoro				Ambatondrazaka in Alaotra
6	Jul/7	Thu	9:20 Interview to CMS Anosiboribory Move from Alaotra-Mangoro to Tana				Tana
7	Jul/8	Fri	10:00 Explanation of review method to Malagasy review team 15:00 Meeting with Japanese experts				Tana
8	Jul/9	Sat	Preparation of draft report		Leave Japan		Tana
9	Jul/10	Sun	Preparation of draft report		Arrival at Antananarivo		Tana
10	Jul/11	Mon	10:30 Meeting at JICA 14:00 Courtesy call to MinAgri and kickoff meeting				Tana
11	Jul/12	Tue	Move from Tana to Bongolava 11:00 Interview with CMS Sakay 14:30 Meeting with DRDR Bongolava				Tsiroanomandidy in Bongolava
12	Jul/13	Wed	8:30 Visit to the model site and interview with farmers				Bongolava
13	Jul/14	Thu	9:30 Interview at FOFIFA Kianjasoa 11:00 Interview with a local manufacturer (agricultural machinery) 12:00 Interview with members of seed producing group Move from Bongolava to Tana				Leave Japan Tana
14	Jul/15	Fri	Move from Tana to Antsitabe (Vakinankaratra region) 13:30 Meeting with DRDR Vakinankaratra 15:30 Interview with FOFIFA Antsirabe				Arrival at Antananarivo Antsirabe in Vakinankaratra/ Tana
15	Jul/16	Sat	8:30 Visit to the model site and interview with farmers 13:30 Interview with CFAMA				Move from Tana to Antsitabe Antsirabe in Vakinankaratra 13:30 Interview with CFAMA
16	Jul/17	Sun	Move from Antsirabe to Tana Drafting M/M	Move from Antsirabe to Alaotra-Mangoro AM: Interview with CMS/ CFAMA PM: Visit to the model site and interview with farmers			Tana / Ambatondrazaka in Alaotra
17	Jul/18	Mon	Drafting M/M	AM: Interview with DRDR PM: Interview with FOFIFA CALA			Tana / Ambatondrazaka in Alaotra
18	Jul/19	Tue	Drafting M/M	Move from Alaotra-Mangoro to Tana			Tana
19	Jul/20	Wed	9:00 Joint Evaluation meeting (preparation of mid-term review report)				Tana
20	Jul/21	Thu	9:00 Join Evaluation meeting (preparation of mid-term review report) 15:00 Report to the Embassy of Japan (only Japanese Team Members)				Tana
21	Jul/22	Fri	9:00 Joint Coordination Committee and signing of M/M 16:00 Report to JICA office (only Japanese Team Members)				Tana
22	Jul/23	Sat	Leave Antananarivo				Leave Antananarivo (on board)
23	Jul/24	Sun	Arrive Japan				Arrive Japan ---

Annex 2 Project Design Matrix (PDM)

(1) PDM Version 0

Project Title : The Project for Rice Productivity Improvement in Central Highland in Madagascar
Target Area : Five Regions in Central Highland in Madagascar (Alaotra-Mangoro, Bongolava, and Vakinankaratra as focal Regions, and Analamanga and Itasy
Target Groups: Rice farmers in the Project's target area

Implementation Agencies: DRDR in the three focal Regions, Collaborating Agencies : FOFIFA, CFAMA & CMS in the three focal Regions

Duration: 2007 to 2012 (5 years) Prepared: December 1, 2008: (R/D-M/M)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>[Overall Goal] Rice production in central highland is increased.</p>	<p>Rice production is improved by ○ % in Central highland areas by 2018.</p>	<p>Agricultural Statistical Reports & Data</p>	
<p>[Project Purpose] Productivity of rice is increased in model sites.</p>	<p>1. Average rice yield of participating farmers in model sites is increased by ○ t/ha. 2. Technical and managerial capacity of participating farmers in model sites is improved.</p>	<p>Baseline Survey Impact Survey Site Observation Project Reports & Annual Reports</p>	<p>1. Rice price does not drastically decrease. 2. Farmers can utilize necessary credit services. 3. Regions can provide budget for green revolution.</p>
<p>[Outputs] 1. Integrated technical packages for rice productivity improvement are developed through the Project. 2. Seed multiplication and distribution systems are promoted under the Project.</p>	<p>1. Types and Number of improved & newly introduced techniques are increased. 2-1. Production and distribution of quality rice seeds of recommended varieties around model sites. 2-2. Number of seed inspectors who took training 3-1. Numbers and agreement to be taken action in the stakeholder meetings 3-2. Number of meetings and participants/organization to plan and implement seminars 4. Types and Number of created technical instruction material</p>	<p>Baseline Survey Report Annual Reports Site Observation Farming Survey (Monitoring & Impact Study) Project Reports Project Activity Record & Meeting Records Training Evaluation Reports</p>	<p>1. There are no adverse weather conditions. (cyclones, drought, hale stones, etc.) 2. The price of agricultural inputs (e.g., fertilizer, pesticide) is stable for farmers.</p>
<p>3. Linkage among stakeholders in the focal Regions is strengthened. 4. Technical instruction materials are created for disseminating integrated technical packages.</p>			
<p>[Activities] 0-1. Determine model sites in each focal Region. 0-2. Identify issues and problems of targeted farmers (Conduct baseline survey). 1-1. Review existing technical information and material. 1-2. Formulate and conduct verification experiment according to regional conditions. 1-3. Conduct experiment on cultivation techniques (soil and water</p>	<p>[Inputs] <Japanese side> 1. Experts 1.1. Long-term Experts (depends on necessity) Chief Advisor/ Agricultural Development, Project Coordinator/ Dissemination, Rice Production, Farm Management (* Detail of the fields, number and terms of the experts shall be determined</p>	<p><Madagascar side> 1. Human Resources: Counterpart and Administrative personnel 2. Building, office spaces and necessary facilities</p>	<p>1. The counterparts do not frequently leave or change at the position in the attached organization. [Pre-Conditions] 1. Peace and economic stability are maintained in Madagascar.</p>

<p>management, pest and weed control, etc.)</p> <ol style="list-style-type: none"> 1-4. Conduct experiment on postharvest technology. 1-5. Develop and promote agricultural machinery. 2-1. Conduct training on seed gene management. 2-2. Conduct training on techniques of seed certification. 2-3. Provide technical guidance to seed producers (CMS and seed producing farmers). 2-4. Propose improved seed distribution systems. 3-1. Hold regular meetings among stakeholders. 3-2. Conduct necessary training of trainers (e.g. CDR). 3-3. Demonstrate technical packages in model sites. 3-4. Conduct seminar/workshop to farmers' associations. 3-5. Conduct necessary study tours/exchange visits. 4-1. Collect and review current available material. 4-2. Develop technical instruction material (brochures, posters, technical sheets, etc). 4-3. Utilize broadcast to disseminate technical information (TV/ Radio). 	<p>during the process of detail design of the Project.)</p> <ol style="list-style-type: none"> 1.2. Short-term Experts (depends on necessity) Agricultural Machinery, Farmers' Organization, Postharvest, IEC, Agricultural Economics/marketing (* Detail of the fields, number and terms of the experts shall be determined during the process of detail design of the Project.) Third Country Experts (ex. Agricultural Machinery) 2. Training Training in Japan and/or third countries 3. Equipment delivery <ul style="list-style-type: none"> • Vehicle(s), Office equipment, etc. • Other necessary Input expenses 	<p>for the Project activities</p> <ol style="list-style-type: none"> 3. Local cost (Operation cost for the Project implementation) 	<ol style="list-style-type: none"> 2. The cooperation and demarcation for the Project among MAEP and related organization (such as FOFIFA, DRDR, CMS, CFAMA) is secured. 3. The rice seed multiplication policy is not changed in Madagascar.
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(2) PDM Version 1

Title: The Project for Rice Productivity Improvement in Central Highland in Madagascar

Duration: 2009 to 2014 (5 years)

Target Area: Five Regions in Central Highland in Madagascar (Alaotra-Mangoro, Bongolava, and Vakinankaratra as focal regions, and Analamanga and Itasy)

Target Groups: Rice farmers in the model sites

Implementing Agencies: DRDR in the three focal regions

Collaborating Agencies : FOFIFA, CFAMA & CMS in the three focal regions

November 5th, 2009: Version 1 approved by JCC

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goals Rice production in Central Highland is increased.</p>	<p>1. Rice production is improved by 20% in Central Highland areas by 2018.</p>	<p>Statistical Reports & other Data, Sample Survey (ex. seed supply).</p>	
<p>Project Purpose Productivity of rice is increased in the model sites.</p>	<p>1. Average rice yield of participating farmers in the model sites is increased more than 1t/ha.</p>	<p>Baseline Survey & Impact Survey Project Reports & Annual Reports</p>	<p>1. Crop prices do not drastically change. 2. Regions provide budget for green revolution</p>
<p>Outputs 1. Integrated technical packages for rice productivity improvement are developed through the Project. 2. Variety selection, seed multiplication and distribution systems are promoted under the Project. 3. Technical instruction materials are created for disseminating integrated technical packages. 4. Linkage among stakeholders in the focal regions is strengthened.</p>	<p>1. At least one technical package is developed for each focal region. 2-1. More than 0 tons of quality rice seeds of recommended varieties are produced. 2-2. More than 0% of farmers in model sites uses improved varieties of seeds. 3-1. Technical instruction materials for trainers. 3-2. Training materials for farmers. 4-1. At least 3 regional seminars are held in each focal region. 4-2. More than 0 trainers are trained in each focal region.</p>	<p>Baseline Survey Report, Annual Reports, Site Observation, Farming survey (Monitoring & Impact Study), Project Reports, Project Activity Record & Meeting Records, Training Evaluation Reports.</p>	<p>1. There are no adverse weather conditions. (cyclones, drought, hale stones, etc.) 2. The price of agricultural inputs (e.g., fertilizer, pesticide) is stable for farmers.</p>
<p>5. Technical packages are utilized by farmers in the model sites.</p>	<p>5. More than 0% of farmers in model sites used at least 0 components of technical packages.</p>		
<p>6. Technical packages are available to rice farmers in the target area</p>	<p>6. More than 0 rice farmers receives technical materials and information.</p>		

Activities	Input	Inputs Madagascar side	1. The counterparts do not frequently leave or change at the position in the attached organization.
<p>0-1. Determine model sites in each focal region</p> <p>0-2. Identify issues and problems of targeted farmers (Conduct baseline survey)</p> <p>1-1. Formulate draft technical package and conduct experiments according to regional conditions</p> <p>1-2. Conduct experiment on cultivation techniques (selection of recommended varieties, soil and water management, pest and weed control, etc.)</p> <p>1-3. Conduct experiment on postharvest technology</p> <p>1-4. Develop and promote agricultural machinery</p> <p>2-1. Study the present situation and the problems of variety selection, seed multiplication, distribution and inspection</p> <p>2-2. Improve the variety selection system</p> <p>2-3. Provide technical guidance to seed producers (CMS, Seed producing farmers, and private sector)</p> <p>2-4. Establish the model of the seeds inspection system in the focal regions</p> <p>2-5. Propose improved seed distribution systems in the target area.</p> <p>3-1. Review existing technical information and materials</p> <p>3-2. Develop technical instruction material (brochures, posters, technical sheets, extension programs etc).</p> <p>3-3. Develop technical information for broadcasting (TV/Radio).</p> <p>4-1. Hold regular meetings among stakeholders</p> <p>4-2. Conduct necessary training of trainers (e.g. CDR).</p> <p>5-1. Demonstrate technical packages in the model sites.</p> <p>5-2. Conduct trainings for farmers in the model sites.</p> <p>6-1. Conduct seminar/workshop to farmers' associations.</p> <p>6-2. Conduct necessary study tours/exchange visits.</p> <p>6-3. Disseminate technical materials to the target area.</p> <p>6-4. Broadcast technical information to the target area.</p>	<p>Inputs Japanese side</p> <p>1. Experts</p> <p>1.1. Long-term Experts (depends on necessity)</p> <p>Chief Advisor / Agricultural Development, Project Coordinator / Dissemination, Rice Production, Farm Management</p> <p>1.2. Short-term Experts (depends on necessity)</p> <p>Agricultural Machinery, Farmers' Organization, Post-harvest, IEC, Agricultural Economics / Marketing</p> <p>1.3 Third Country Experts (ex. Agricultural Machinery)</p> <p>2. Training</p> <ul style="list-style-type: none"> • Training in Japan and/or third countries <p>3. Equipment delivery</p> <ul style="list-style-type: none"> • Vehicle(s), Office equipment, etc • Other necessary Input expenses 	<p>Inputs Madagascar side</p> <p>1. Human Resources: Counterpart and Administrative personnel</p> <p>2. Building, office spaces and necessary facilities for the Project activities</p> <p>3. Local cost (Operational cost for the Project implementation)</p>	<p>Pre-condition</p> <p>1. Peace and economic stability are maintained in Madagascar.</p> <p>2. The cooperation and demarcation for the Project among MAEP and related organization (such as FOFIFA, DRDR, CMS, CFAMA) is secured.</p> <p>3. The rice seed multiplication policy is not changed in Madagascar.</p>

(3) Version 2 (proposed version)

Title: The Project for Rice Productivity Improvement in Central Highland

Duration: From January 8, 2009 to January 7, 2014 (5 years)

Target Area: Five Regions in Central Highland in Madagascar (Alaoatra-Mangoro, Bongolava, and Vakinankaratra as focal regions, and Analamanga and Itasy)

Main Target Groups: Rice farmers in the model sites (Block 4, 5, 6 and 15 in PC23 southern irrigation area in Alaotra-Mangoro, Ankompoamboay in Bongolava, and Andriana Sahalombo in Vakinankaratra)

Implementing Agencies: MinAgri and DRDR in the three focal regions

Collaborating Agencies: DRDR in Analamanga and Itasy regions, FOFIFA, CFAMA & CMS in the three focal regions

July 22, 2011: Version 2 proposed by the Review Team

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goals Rice production in Central Highland is increased.</p> <p>Project Purpose Productivity of rice is increased in the model sites.</p>	<p>1. Rice production is improved by 20% in Central Highland areas by 2018 compared to rice production in 2012/2013 cropping season.</p> <p>1. Average rice yield of rice farmers in the model sites is increased more than 1t/ha.</p>	<p>1. Statistical reports & other data</p> <p>1. Baseline survey, impact survey, project reports, and annual reports</p>	<p>1. Crop prices do not drastically change. 2. Regions provide budget for green revolution</p>
<p>Outputs 1. Integrated technical packages for rice productivity improvement are developed through the Project. 2. Variety selection, seed multiplication and distribution systems are promoted under the Project.</p>	<p>1. At least one technical package, which is adapted to location-specific conditions, is developed for each focal region.</p> <p>2-1. A catalogue of recommended rice varieties is produced. 2-2. More than 80% of farmers who participated in the training on seed production produce rice seeds in accordance with the seed production manual. 2-3. More than 2 trained inspectors who can carry out field inspection are available in each target region.</p> <p>3. At least one technical instruction material for different use (for farmers, extension agents and advertisement) is produced.</p> <p>4-1. More than 80% of CDR in the focal regions has experience to disseminate techniques of the revised technical packages. 4-2. More than 90% of CDR in Analamanga and Itasy regions receive training on the technical packages.</p> <p>5-1. More than 80% of rice farmers in the model sites in the focal regions utilizes techniques of the technical packages. 5-2. More than 1,000 rice farmers outside of the model sites in the target 5 regions utilize techniques of the technical packages. 5-3. All commune offices and CSA offices provide farmers information on the technical packages.</p>	<p>1. Technical packages produced.</p> <p>2-1. Catalogue of recommended rice varieties 2-2. Survey to the training participants 2-3. Record on seed inspectors and their activities in five target regions.</p> <p>3. Technical instruction materials produced</p> <p>4-1. Survey to CDR in the focal regions 4-2. Record of trainings</p> <p>5-1. Survey to rice farmers 5-2. Survey to rice farmers 5-3. Survey to offices of commune and CSA</p>	<p>1. There are no adverse weather conditions (cyclones, drought, and hail stones, etc.) 2. The price of agricultural inputs (e.g., fertilizer, pesticide) is stable for farmers. 3. Insufficiency of irrigation water is not occurred in the model sites.</p>
<p>3. Technical instruction materials are created for disseminating integrated technical packages. 4. Linkage among stakeholders in the 5 target regions for technology dissemination is strengthened.</p>			
<p>5. Technical packages are available to rice farmers in the target area.</p>			

Activities	Input	Inputs Madagascar side	1. The counterparts do not frequently leave or change at the position in the attached organization.
<p>0-1. Determine model sites in each focal region</p> <p>0-2. Identify issues and problems of targeted farmers (Conduct baseline survey)</p> <p>1-1. Formulate draft technical package and conduct experiments according to regional conditions</p> <p>1-2. Conduct experiment on cultivation techniques (selection of recommended varieties, soil and water management, pest and weed control, etc.)</p> <p>1-3. Conduct experiment on postharvest technology</p> <p>1-4. Develop and promote agricultural machinery</p> <p>2-1. Study the present situation and the problems of variety selection, seed multiplication, distribution and inspection</p> <p>2-2. Improve the variety selection system</p> <p>2-3. Provide technical guidance to seed producers (CMS, Seed producing farmers, and private sector)</p> <p>2-4. Establish the model of the seeds inspection system in the focal regions</p> <p>2-5. Propose improved seed distribution systems in the target area.</p> <p>3-1. Review existing technical information and materials</p> <p>3-2. Develop technical instruction material (brochures, posters, technical sheets, extension programs etc).</p> <p>3-3. Develop technical information for broadcasting (TV/Radio).</p> <p>4-1. Hold regular meetings among stakeholders</p> <p>4-2. Conduct necessary training of trainers (e.g. CDR).</p> <p>5-1. Demonstrate technical packages in the model sites.</p> <p>5-2. Conduct trainings for farmers in the model sites.</p> <p>6-1. Conduct seminar/workshop to farmers' associations.</p> <p>6-2. Conduct necessary study tours/exchange visits.</p> <p>6-3. Disseminate technical materials to the target area.</p> <p>6-4. Broadcast technical information to the target area.</p>	<p>Inputs Japanese side</p> <p>1. Experts</p> <p>1.1. Long-term Experts (depends on necessity)</p> <p>Chief Advisor / Agricultural Development, Project Coordinator / Extension, Rice Cultivation, Farm Management, Rice Cultivation (small scale)</p> <p>1.2. Short-term Experts (depends on necessity)</p> <p>Agricultural Machinery, Farmers' Organization, Post-harvest, IEC, Agricultural Economics / Marketing</p> <p>1.3 Third Country Experts (ex. Agricultural Machinery)</p> <p>2. Training</p> <ul style="list-style-type: none"> • Training in Japan and/or third countries <p>3. Equipment delivery</p> <ul style="list-style-type: none"> • Vehicle(s), Office equipment, etc • Other necessary Input expenses 	<p>Inputs Madagascar side</p> <p>1. Human Resources: Counterpart and Administrative personnel</p> <p>2. Building, office spaces and necessary facilities for the Project activities</p> <p>3. Local cost (Operational cost for the Project implementation)</p>	<p>Pre-condition</p> <p>1. Peace and economic stability are maintained in Madagascar.</p> <p>2. The cooperation and demarcation for the Project among MAEP and related organization (such as FOFIFA, DRDR, CMS, CFAMA) is secured.</p> <p>3. The rice seed multiplication policy is not changed in Madagascar.</p>

Annex 4 Training in Japan and third countries

(1) Training in Japan

No.	Name of Training Course	Kind of training course	Location	Period	Duration (days)	Name	Position at the time of training	Present position	Remark
1	Upland Rice Variety Selection Techniques For Africa	Trainers Training Program	Tsukuba, Japan	2009/7/26 ~ 2009/11/17	104	Mme LALANEKENARISOA Nenee	Head of Service Department, CFAMA	Same	
2	Improvement of Seed Multiplication and Seed Inspection System	Country focused training	Tsukuba, Japan	2009/8/16 ~ 2009/9/19	34	Mme RAMAROKOTO Kelamalala	Head of Service, SOC	Same	
3						Mme RASOARINORONIRINA Louise	Division Head of Laboratory, SOC	Same	
4						M. RAFALIMANANA Tsiferantsoa	Head, CMS (Seed Multiplying Center) Sakay	Same	
5						M. RAVALITERA Andriamalanto	Head of Center, CMS Anosibonibory	DRDR Alaotra-Mangoro	
6						M. RAKOTONDRAHAIVO Justin Emile	SOC, DRDR Vakinankaratra	Same	
7						M. RAKOTONIAINA Gino Heritiana	Head of CIDR, DRDR Bongolava	Coordinator for PAPRIZ, DRDR Bongolava	
8	Post-harvest processing of rice (for French-Speaking Countries)	Trainers Training Program	Tsukuba, Japan	2010/8/25 ~ 2010/9/26	32	M. ZADINDRANDALANA Gildas Marie	Rural Engineering, DRDR Alaotra Mangoro	Same	

(2) Training in third countries

No.	Name of Training Course	Kind of training course	Location	Period	Duration (days)	Name	Position at the time of training	Present position	Remark
1	Training on project management		Kenya	2010/2/20 ~ 2010/2/27	7	ANDRIANTSOA Mamy	Director General of Agriculture, MINAGARI	Same	Project Manager
2						Robinson Thomas	Regional Director for Rural Development, DRDR Bongolava	Same	Co-Project Manager
3						RAKOTONDRAHAIVO Voahangy	Regional Director for Rural Development, DRDR Vakinankaratra	Same	Co-Project Manager
4						RAKOTOBE Andrianarivao Nirify	Regional Director for Rural Development, DRDR Alaotra - Mangoro	Same	Co-Project Manager

Annex 5 Equipment procured by JICA

Note: Frequency of Use (A: Every day, B: Each week/month, C: As needed, D: Never used)
Condition of Equipment (A: Good, B: Fair, C: Need of repair, D: Out of order)

Registered No.	Name of Equipment	Manufacturer	Model/ Specification	Date of donation	Quantity	Price local currency (A)	Price in Japanese Yen (yen)	Destination/ place of use	Responsible Person	Purpose of Use	Condition of Equipment	Frequency of Use	Observations	
Equipment purchased in Japanese fiscal year 2008														
20	Moisture tester	Kett Electric Laboratory	KETT Grain Moisture Tester/Riceter	Mar-09	1		45,600	DRDR Bongolava	Mr Ghno	Measure moisture of rice grain	A	C		
22	Moisture tester	Kett Electric Laboratory	KETT Grain Moisture Tester/Riceter	Mar-09	1		45,600	CFAMA	Mr David	Measure moisture of rice grain	A	A		
23	Moisture tester	Kett Electric Laboratory	KETT Grain Moisture Tester/Riceter	Mar-09	1		45,600	CMS Anosiboribory	Mr Ernie	Measure moisture of rice grain	A	C		
24	Moisture tester	Kett Electric Laboratory	KETT Grain Moisture Tester/Riceter	Mar-09	1		45,600	CMS Sakay	M. Ralfy	Measure moisture of rice grain	A	C		
25	Moisture tester	Kett Electric Laboratory	KETT Grain Moisture Tester/Riceter	Mar-09	1		45,600	DRDR Alacira-Mangoro	Mme Christina	Measure moisture of rice grain	A	C		
26	Moisture tester	Kett Electric Laboratory	KETT Grain Moisture Tester/Riceter	Mar-09	1		45,600	DRDR Vakimakarara	Mr R. Ahjara	Measure moisture of rice grain	A	C		
10	Infrared Moisture Balances	Kett Electric Laboratory	Infrared Moisture Determination Balance Kett PD-610	Mar-09	1		169,100	SOC Central	Mme Louise	Measure moisture of seed for analysis	A	C		
							442,700							
							Sub-total (Yeni)	442,700						

Registered No.	Name of Equipment	Manufacturer	Model/ Specification	Date of donation	Quantity	Price local currency (A)	Price in Japanese Yen (yen)	Destination/ place of use	Responsible Person	Purpose of Use	Condition of Equipment	Frequency of Use	Observations
Equipment purchased in Japanese fiscal year 2009													
53a	Air compressor	AVAIR	Air compressor 100L 2CV	Nov-09	1	1,368,608		CMS Sakay	M. Ralfy	Cleaning the chain packing	A	C	
53b	Spot welder	TELWIN	Spot welder for digital modular 230-230V	Nov-09	1	2,869,360		CFAMA	Mr David	Manufacture metallic agricultural equipment	A		
53c	Mower	KUBOTA	Mower	Nov-09	1	3,540,000		CMS Sakay	M. Ralfy	Rice harvest	A	C	
54	Digital heat rays anemometer	PENTAC	Digital heat rays anemometer	Nov-09	1		77,000	CFAMA	M. David	For producing Winnow	A	C	
55	Gravimeter	ANDO KEIKI	Seven small regular company of fire fighters anemometer set	Nov-09	1		14,850	CFAMA	M. David	Measure density of water	A	C	
56	Gravimeter	ANDO KEIKI	Seven small regular company of fire fighters anemometer set	Nov-09	1		14,850	DRDR Vakimakarara	Mr R. Ahjara	Measure density of water	A	C	
57	Gravimeter	ANDO KEIKI	Seven small regular company of fire fighters anemometer set	Nov-09	1		14,850	DRDR Bongolava	Mr Ghno	Measure density of water	A	D	
58	Gravimeter	ANDO KEIKI	Seven small regular company of fire fighters anemometer set	Nov-09	1		14,850	CMS Sakay	M. Ralfy	Measure density of water	A	D	
59	Gravimeter	ANDO KEIKI	Seven small regular company of fire fighters anemometer set	Nov-09	1		14,850	DRDR Alacira -Mangoro	Mme Christina	Measure density of water	A	D	
60	Portable soil pH-En meter	FUJIMASA Sentsujojo	Portable soil pH-En meter	Nov-09	1		148,200	DRDR Vakimakarara	Mr Ahjara	Analysis of soil acidity and water	A	C	
110	Incubator	AASET	Incubator 150 L	Dec-09	1	4,015,875		DRDR Vakimakarara	Mr Justin emile	Germination test	A	D	Laboratory is not yet installed.
111	Incubator	AASET	Incubator 150 L	Dec-09	1	4,015,875		DRDR Bongolava	Mme Vero	Germination test	A	D	Laboratory is not yet installed.
112	Incubator	AASET	Incubator 150 L	Dec-09	1	4,015,875		DRDR Alacira -Mangoro	Mr Jeannot	Germination test	A	D	Laboratory is not yet installed.
117	Electronic balance	YAMATO	Electronic balance	Feb-10	1		139,000	DRDR Alacira -Mangoro	Mr Jeannot	Harvest survey	A	C	
156	Desktop computer	Hewlett Packard (HP)	Desktop HP CG5003 MT	Mar-10	1	2,773,464		DRDR Alacira -Mangoro	Mme Christina	Preparation of reports	A	A	
158	Desktop computer	Hewlett Packard (HP)	Desktop HP CG5003 MT	Mar-10	1	2,773,464		DRDR Vakimakarara	M. Ahjara	Preparation of reports	A	A	
157	Desktop computer	Hewlett Packard (HP)	Desktop HP CG5003 MT	Mar-10	1	2,773,464		DRDR Bongolava	Mme Vero	Preparation of reports	A	A	
158	Desktop computer	Hewlett Packard (HP)	Desktop HP CG5003 MT	Mar-10	1	2,773,464		CMS Sakay	M. Ralfy	Preparation of reports	A	A	

Registered No.	Name of Equipment	Manufacturer	Model/ Specification	Date of donation	Quantity	Price local currency (A)	Price in Japanese Yen (yen)	Destination/ place of use	Responsible Person	Purpose of Use	Condition of Equipment	Frequency of Use	Observations
159	Desktop computer	Hewlett Packard (HP)	Desktop HP CQ600B MT	Mar-10	1	2,773,464		SOC Central	Mme Ketamalala	Preparation of reports	A	A	
160	Desktop computer	Hewlett Packard (HP)	Desktop HP CQ600B MT	Mar-10	1	2,773,464		FOFIFA CALA	M. Beropj	Preparation of reports	A	A	
162	Projector	ACER	Projector	Mar-10	1	2,246,000		DRDR Alacitra - Mangoro	Mme Christina	Meetings and training courses	A	C	
163	Projector	ACER	Projector	Mar-10	1	2,246,000		DRDR Vakinalakaitra	M. Anjara	Meetings and training courses	A	C	
164	Projector	ACER	Projector	Mar-10	1	2,246,000		DRDR Bongoleva	M. Gino	Meetings and training courses	A	C	
165	Digital camera	CANON POWERSHOT	Digital camera 12.1 Mega pixel	Mar-10	1	840,000		FOFIFA Kianjasoa	M. Pierre	Preparation of reports on experimental activities	A	C	
166	Digital camera	CANON POWERSHOT	Digital camera 12.1 Mega pixel	Mar-10	1	840,000		DRDR Bongoleva	M. Gino	Preparation of reports on demonstration activities	A	A	
167	Digital camera	CANON POWERSHOT	Digital camera 12.1 Mega pixel	Mar-10	1	840,000		DRDR Alacitra Mangoro	Mme Christina	Preparation of reports on demonstration activities	A	C	
168	Digital camera	CANON POWERSHOT	Digital camera 12.1 Mega pixel	Mar-10	1	840,000		DRDR Vakinalakaitra	M. Anjara	Preparation of reports on demonstration activities	A	C	
169	Digital camera	CANON POWERSHOT	Digital camera 12.1 Mega pixel	Mar-10	1	840,000		CMS Salyay	M. Ravaly	Preparation of reports on activities of SOC	A	C	
170	Digital camera	CANON POWERSHOT	Digital camera 12.1 Mega pixel	Mar-10	1	840,000		FOFIFA CALA	M. Beropj	Preparation of reports on experimental activities	A	C	
171	Digital camera	CANON POWERSHOT	Digital camera 12.1 Mega pixel	Mar-10	1	840,000		SOC Central	Mme Ketamalala	Preparation of reports on activities of SOC	A	C	
172	Digital camera	CANON POWERSHOT	Digital camera 12.1 Mega pixel	Mar-10	1	840,000		FOFIFA Anainabe	M. Razakia	Preparation of reports on experimental activities	A	C	
173	Digital camera	CANON POWERSHOT	Digital camera 12.1 Mega pixel	Mar-10	1	840,000		FOFIFA Mahisy	M. Xavier	Preparation of reports on experimental activities	A	C	
164a	Desktop computer (13)	Hewlett Packard (HP)	Desktop HP CQ600B MT (13)	Mar-10	13	37,022,232		CFAMA	M. David	Training courses at CFAMA	A	B	Depend on training hours
164b	Desktop computer	Fujitsu	Desktop Fujitsu Technology Solutions ESPRIMO P3620	Mar-10	1	14,678,000		CFAMA	M. David	Training courses at CFAMA	A	B	
164c	Laptop computer	Hewlett Packard (HP)	Laptop HP COMPAQ 810 (1)	Mar-10	1	2,437,800		CFAMA	M. David	Training courses at CFAMA	A	A	
164d	Office 2007 French	Microsoft	Office 2007 French (17)	Mar-10	17	9,595,160		CFAMA	M. David	For computers provided to CFAMA	A	A	
164e	AUTOCAD	Autodesk, Inc.	AUTOCAD LT 2010 French Version (5)	Mar-10	1	33,750,000		CFAMA	M. David	Training courses at CFAMA	A	B	
164f	Adobe Illustrator	Adobe Systems Incorporated	Adobe Illustrator CS4 Win FR (3)	Mar-10	3	10,680,200		CFAMA	M. David	Training courses at CFAMA	A	B	
164g	Adobe Photoshop	Adobe Systems Incorporated	Adobe Photoshop CS4 Win FR (3)	Mar-10	3	12,483,000		CFAMA	M. David	Training courses at CFAMA	A	B	
164h	Scanner	Hewlett Packard (HP)	Scanner HP SCANJET G2410(1)	Mar-10	1	235,880		CFAMA	M. David	Training courses at CFAMA	A	B	
164i	Laser printer	Hewlett Packard (HP)	HP Laserjet printer	Mar-10	1	3,275,000		CFAMA	M. David	Training courses at CFAMA	A	B	
164j	Voltage regulator 1200VA (5)	UNITEK	Voltage regulator 1200VA (5)	Mar-10	5	1,630,185		CFAMA	M. David	Training courses at CFAMA	A	B	
164k	Voltage regulator 800VA (14)	UNITEK	Voltage regulator 800VA (14)	Mar-10	14	2,318,854		CFAMA	M. David	For computers provided to CFAMA	A	B	
163	Projector	ACER	Projector	Apr-10	1	2,250,000		CFAMA	M. David	For computers provided to CFAMA	A	B	
							437,450						
							180,792,773						
							Sub-total (Yen)	9,477,089					

Registered No.	Name of Equipment	Manufacturer	Model/ Specification	Date of donation	Quantity	Price local currency (A)	Price in Japanese Yen (yen)	Destination/ place of use	Responsible Person	Purpose of Use	Condition of Equipment	Frequency of Use	Observations
208a	Greenhouses (2)	MIYATA BUSSAN	Pipe greenhouse (rect) (2)	May-10	2		1,054,120	CFAMA	M. David	Agricultural Experimentations	A	C	
208d	Weather station	ENERCO	Weather station	May-10	1		1,354,140	CFAMA	M. David	Data collection for project on site weather conditions	A	A	
208e	Weather station	ENERCO	Weather station	May-10	1		1,354,140	CMS Anelobitry/CFAMA	M. David	Data collection for project on-site weather conditions	A	A	

Registered No.	Name of Equipment	Manufacturer	Model/ Specification	Date of donation	Quantity	Price local currency (A\$)	Price in Japanese Yen (yen)	Destination/ place of use	Responsible Person	Purpose of Use	Condition of Equipment	Frequency of Use	Observations
216	Inkjet Printer	Hewlett Packard (HP)	Deskjet Printer F2410 all in one	Aug-10	1	210,000		DRDR Vakinararata	M. Anjara	Preparation of reports	A	A	
217	Inkjet Printer	Hewlett Packard (HP)	Deskjet Printer F2410 all in one	Aug-10	1	210,000		CMS Sakay	M. Rafaly	Preparation of reports	A	A	
218	Inkjet Printer	Hewlett Packard (HP)	Deskjet Printer F2410 all in one	Aug-10	1	210,000		FOFIFA Kianjasoa	M. Pierre	Preparation of reports	A	C	
219	LaserJet printer	Hewlett Packard (HP)	Laserjet printer P2055	Aug-10	1	1,535,280		DRDR Bongolava	Mme Vero	Preparation of reports	A	A	
220	LaserJet printer	Hewlett Packard (HP)	Laserjet printer P2055	Aug-10	1	1,535,280		DRDR Alaotra Mangoro	Mme Chingina	Preparation of reports	A	C	
221	LaserJet printer	Hewlett Packard (HP)	Laserjet printer P2057	Aug-10	1	1,535,280		SOC Central	Mme Katamalia	Preparation of reports	A	C	
222	LaserJet printer	Hewlett Packard (HP)	Laserjet printer P2058	Aug-10	1	1,535,280		FOFIFA CALA	M. Borojo	Preparation of reports	A	C	
242	Precision balance 0.001	KERN	Precision balance 0.001gram	Nov-10	1	1,645,200		FOFIFA Anstrabe	M. Razaka	Experimentations at FOFIFA	A	C	
243	Precision balance 0.1	KERN	Precision balance 0.1gram	Nov-10	1	339,400		FOFIFA CALA	M. Borojo	Experimentations at FOFIFA	A	C	
244	Electronic balance 15 KG	EXCELL	Electronic balance 15 KG	Nov-10	1	469,200		FOFIFA CALA	M. Borojo	Experimentations at FOFIFA	A	C	
261	Moisture tester	Kett Electric Laboratory	Moisture tester	Dec-10	1		45,600	FOFIFA CALA	M. Borojo	Measure moisture of rice grain	A	C	
262	Moisture tester	Kett Electric Laboratory	Moisture tester	Dec-10	1		45,600	FOFIFA Anstrabe	M. Razaka	Measure moisture of rice grain	A	C	
263	Moisture tester	Kett Electric Laboratory	Moisture tester	Dec-10	1		45,600	FOFIFA Kianjasoa	M. Pierre	Measure moisture of rice grain	A	C	
265	Band-saw	ML393D(360V)	Band-saw	Jan-11	1	1,960,000		CFAMA	M. David	Manufacture wooden agricultural tools	A	C	
266	Laptop computer	TOSHIBA	Portable computer TOSHIBA T 230-1320external drive	Feb-11	1	2,616,000		FOFIFA Kianjasoa	M. Pierre	Preparation of reports	A	A	
267	GPS	GARMIN	GPS eTrex Vista HCx	Feb-11	1	2,372,400		FOFIFA Anstrabe	M. Razaka	Experimentations at FOFIFA	A	C	
268	GPS	GARMIN	GPS eTrex Vista HCx	Feb-11	1	2,372,400		DRDR Alaotra - Mangoro	M. Benja	Demonstration site	A	D	
274	pH meter Eco Scan	EUTECH Instrument	Eco scan	Feb-11	1	2,899,698		FOFIFA Central Laboratories	M. Jemisa	Soil analysis	A	C	
275	Projector	MP 515	Video projector	Feb-11	1	1,404,000		FOFIFA Anstrabe	M. Razaka	Meetings and training courses	A	C	
276	pH meter	HANNA	Portable pH meter pH.0 to 14	Mar-11	1	331,680		FOFIFA Anstrabe	M. Razaka	Experimentations at FOFIFA	A	C	
278a	pH meter	HANNA	Portable pH meter pH.0 to 14	Mar-11	1	331,680		SOC Central	Mme Katamalia	Analysis of seeds	A	C	
278b	pH meter	HANNA	Portable pH meter pH.0 to 14	Mar-11	1	331,680		FOFIFA CALA	M. Borojo	Experimentations at FOFIFA	A	D	
285	Topographic survey equipment theodolite	NIKON	Electronic theodolite NIKON NE-100	Mar-11	1	14,000,000		DRDR Alaotra - Mangoro	M. Benja	Measure the rice plots	A	D	Already tested but not yet used.
Total						37,642,498	3,929,200						
Sub-total (Yen)							5,921,323						
TOTAL (Yen)							15,741,112						

(2) Equipment purchased for the project activities by JICA and these equipment will be provided to Madagascar side at the end of the project period

a) Equipment purchased mainly from Japan

Registered No.	Name of Equipment	Manufacturer	Model/ Specification	Date of purchase	Quantity	Price local currency (A\$)	Price in Japanese Yen (yen)	Destination/ place of use	Responsible Person	Purpose of Use	Condition of Equipment	Frequency of Use	Observations
	Photocopy machine	Photocopieur Multifonctions	Multifunction Copie	Mar. 2009	1	13,755,000		Project Office No37	Talekoshi				
	Desktop computer	FUJITSU SIEMENS	FUJITSU SIEMENS Espimmo P2530	Apr. 2009	1	2,529,064			Mlle Talamo				
	Desktop computer	FUJITSU SIEMENS	FUJITSU SIEMENS Espimmo P2530	Apr. 2009	1	2,529,064							
	UPS	UPS Power Tree	UPS Power Tree	Apr. 2009	1	280,000		Project Office No37	Talekoshi				
	UPS	UPS Power Tree	UPS Power Tree	Apr. 2009	1	280,000		Project Office No37	Talekoshi				
	Laser printer	HP (Hewlett-Packard)	HP CP2025DN	Apr. 2009	1	2,699,000							

Registered No.	Name of Equipment	Manufacturer	Model/ Specification	Date of donation	Quantity	Price local currency (A\$)	Price in Japanese Yen (yen)	Destination/ place of use	Responsible Person	Purpose of Use	Condition of Equipment	Frequency of Use	Observations
	Projector	TOSHIBA	TOSHIBA TDP-SP1	Apr. 2009	1	2,320,000							
	Notebook Computer	ACER	Ordinateur portable ACER ASPIRE	Apr. 2009	1	2,533,600							
	Vehicle (4WD)	TOYOTA	Land cruiser SUV Model VD250L-GNMINZ SX	Mar. 2009	1	120,500,000							
	Pick-up truck	TOYOTA	Hilux Double Cabine Model KUN 25L-FRMCHN	Mar. 2009	1	59,900,000							
	Grain Moisture Tester	Richter		Mar. 2009	1		45,600	DRDR Bongoiava	Takakoshi				
	Grain Moisture Tester	Richter		Mar. 2009	1		45,600	Project Office No37	Takakoshi				
	Grain Moisture Tester	Richter		Mar. 2009	1		45,600	CFAMA	Takakoshi				
	Grain Moisture Tester	Richter		Mar. 2009	1		45,600	CMS Anisy/bohoby	Lento				
	Grain Moisture Tester	Richter		Mar. 2009	1		45,600	CMS Sakay	Takakoshi				
	Grain Moisture Tester	Richter		Mar. 2009	1		45,600	DRDR Alotra Mangoro	Raiokobemalala				
	Grain Moisture Tester	Richter		Mar. 2009	1		45,600	DRDR Vainakaratra	Takakoshi				
	Infrared Moisture Determination Balance	Kett	FD-610	Mar. 2009	1		169,100	SNQ	Katamalahi (SOC)				
	Infrared Moisture Determination Balance	Kett	FD-610	Mar. 2009	1		169,100	Project Office No37	Takakoshi				
	Digital heat rays anemometer			Nov. 2009	1		77,000	CFAMA Anisirabe	Mr David				
	Aecometer set		Seven small regular company of fire fighters anemometer set	Nov. 2009	1		14,850	CFAMA Anisirabe	Mr David				
	Aecometer set		Seven small regular company of fire fighters anemometer set	Nov. 2009	1		14,850	DRDR Anisirabe					
	Aecometer set		Seven small regular company of fire fighters anemometer set	Nov. 2009	1		14,850	DRDR Bongoiava					
	Aecometer set		Seven small regular company of fire fighters anemometer set	Nov. 2009	1		14,850	CMS Sakay					
	Aecometer set		Seven small regular company of fire fighters anemometer set	Nov. 2009	1		14,850						
	Aecometer set		Seven small regular company of fire fighters anemometer set	Nov. 2009	1		14,850	Project Office No.35					
	Self registering thermometer			Nov. 2009	1		33,000	Bureau Nanisana					
	Self registering thermometer			Nov. 2009	1		33,000	Bureau Nanisana					
	Portable soil PHEH meter			Nov. 2009	1		148,200	DRDR Anisirabe	Mme Voahangy				
	Portable soil PHEH meter			Nov. 2009	1		148,200						
	Portable soil PHEH meter			Nov. 2009	1		148,200						
	Vehicle (4WD)	Toyota	Land cruiser Prado	Nov. 2009	1	83,500,000							
	Electronic balance			Feb. 2010	1		138,000	DRDR Alotra Mangoro	Bureau de MrYoshii				
	Chlorophyll meter			Feb. 2010	1		119,500	DRDR Alotra Mangoro	Bureau de MrYoshii				
	Notebook computer		Intel Core2 Duo	Mar. 2010	1	2,437,800		Mr Tahina					
	Pick-up truck	Toyota		Nov. 2010	1	85,200,000							
	Intercoming kits (mire and receivers)		transmitter & receiver	Dec. 2010	1		210,180	Project Office No37					
	Measuring scale			Dec. 2010	20		28,000						
	Grain counting machine		500 grams(3)	Dec. 2010	3		84,500						
	Grain grinding machine			Dec. 2010	10		56,000						
	Gravimeter			Dec. 2010	20		37,200						
	Sample crusher	KETT		Feb. 2011	1		42,000						

Registered No.	Name of Equipment	Manufacturer	Model/ Specification	Date of donation	Quantity	Price local currency (A)	Price in Japanese Yen (yen)	Destination/ place of use	Responsible Person	Purpose of Use	Condition of Equipment	Frequency of Use	Observations
	Sample crusher	KETT		Feb. 2011	1		42,000						
	Photocopy machine	Canon	IR 1024 A, Black & White Desktop	Mar. 2011	1	2,580,312		DRDR Alaotra - Mangaso					
	Photocopy machine	Canon	IR 1024 A, Black & White Desktop	Mar. 2011	1	2,580,312		DRDR Antsirabe					

2) Equipment purchased mainly in Madagascar

Registered No.	Name of Equipment	Manufacturer	Model/ Specification	Date of purchase	Quantity	Price local currency (A)	Price in Japanese Yen (yen)	Destination/ place of use	Responsible Person	Purpose of Use	Condition of Equipment	Frequency of Use	Observations
	Safetybox			Apr. 2009	1	790,000							
	Office Chairs			Sep. 2010	8	1108831,68		Project Office No. 35 & 37					
	Office Desks			Sep. 2010*	8	2558819,55		Project Office No. 35 & 37					
	Laminator machine			Nov. 2010	1	951,600		Project Office NG37					
	Magnifying glass			Nov. 2010	1	931,200		CI drdr sialotra					
	Electric Generator			Feb. 2011	1	2,015,000		PAPRIE (Centrale)					
				Total		382,180,603	2,101,480						
						TOTAL (Yeni)	21,710,510						

Grand Total	37,461,992
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Annex 6 Local Operation Cost Allocated by Japanese Side

Unit: Ariary

No.	Categories	Jan. 2009 - Mar. 2009	Apr. 2009 - Mar. 2010	Apr. 2010 - Mar. 2011	Apr. 2011 - Mar. 2012	Total
1	Personnel cost (secretary, interpreter, translator, driver, consultant, assistant for experts, etc.)	2,622,075.00	45,825,642.49	67,736,474.08		116,184,191.57
2	Operation and maintenance of vehicles (fuel, leasing, location, insurance, etc.)	11,895,984.00	57,122,970.60	99,709,838.00		168,728,792.60
3	Administration (office equipment, office maintenance (Tana office and three regions), etc.)	3,284,520.00	10,919,121.00	23,617,404.55		37,821,045.55
4	Travel expenses (experts, C/P, etc.)	2,672,000.00	26,431,000.00	58,718,579.16		87,821,579.16
5	Communication (tel (experts and coordinator), internet (Tana office and three regions), etc)	815,378.67	8,524,728.68	16,771,660.81		26,111,768.16
6	Activities (demonstration sites, soil analysis, purchase materials and data, etc.)	13,000.00	18,432,850.00	42,567,493.34		61,013,343.34
7	Activities (seeds, spot pub seed, training for SOC/GPS, etc.)	0.00	575,550.00	37,973,982.00		38,549,532.00
8	Activities (extension, training for farmers, preparation of materials on technical package, etc.)	0.00	0.00	82,695,341.00		82,695,341.00
9	Activities FOFIFA	0.00	10,455,669.00	31,697,403.12		42,153,072.12
10	Activities (agricultural machinery, training for local producers, etc.)	0.00	5,669,437.57	44,514,133.73		50,183,571.30
11	Other trainings visit to Kenya, training on rice morphology and physiology)	0.00	29,510,882.92	23,095,930.00		52,606,812.92
12	Survey (baseline survey, agricultural machinery)	0.00	5,233,260.00	19,326,750.00		24,560,010.00
13	Advertisement (brochure, calendar, FIERMADA, fair, etc)	0.00	2,230,440.00	39,095,160.00		41,325,600.00
14	Meeting (JCC, RTMC, etc)	0.00	554,400.00	13,567,040.00		14,121,440.00
15	Construction works (Sahabe intake, meteorological station)	0.00	0.00	34,238,640.00		34,238,640.00
	Total	21,302,957.67	221,485,952.26	635,325,829.79		878,114,739.72

Remark: Japanese Fiscal Year from April to March (next year)

Annex 7 Assignment of Madagascar Counterparts

No.	Organization	Name of Counterpart	Present Post	Specialty	Training in Japan or third country	Period of Assignment to the Project					Working period	
						From	To	2009	2010	2011		2012
Central Level												
1	MINAGRI	RAKOTOSON Philibert	Secretary General of MINAGRI	Agricultural Engineer		Jan. 2009	Present	█	█	█	█	Feb. 2007- at present
2	(Ministry of Agriculture)	ANDRIANTSOA Many	Director General of Agriculture	Engineer on livestock and fisheries, and master of earth science	Kenya 2010 (Project Management)	Jan. 2009	Present	█	█	█	█	Feb. 2007- at present
3		RAKOTOMAEHEFA Bruno Maunle	Director of Rural Engineering and Agricultural Mechanization	Engineer on rural facilities		Jan. 2009	Jul. 2010	█				- Jul. 2010 (changed)
4		ANDRIAMIFIDIMANANTSOA Maxime L. benard	Director of Rural Engineering and Agricultural Mechanization	Engineer on rural facilities		Jul. 2010	Present	█	█	█	█	former assistant to Director General of Agriculture, Jul. 2010 - at present
5		RANJALAHY Jocelyne	Department Head of Agricultural Mechanization	Engineer on rural facilities		May. 2010	Present	█	█	█	█	May 2001- at present
6		RALANTONARIVO RAZAFINORO Jacob	Director of Agricultural Production	Engineer on agricultural food industry		Dec. 2010	Present	█	█	█	█	2010 - at present
7		RAHARISOA Georgette	Department Head of Agricultural Technical Assistance, DPA	Agricultural Engineer		Dec. 2010	Present	█	█	█	█	Dec. 2010 - at present
8		RAZAFIMANANTSOA Voia Laiao	Assistant Director General of Agriculture and Coordination for PAPRIZ	Agro-Management Engineer		Sep. 2010	Present	█	█	█	█	Sep. 2010- at present
9		Dr RAZAFINJARA Aimé Laia	Director FOFIFA	Soil Scientist		Jan. 2009	Present	█	█	█	█	Mar. 2008 - at present
10	FOFIFA	RABENATOANDRO Yvonne	Scientific Director	Plant Pathologist		Jan. 2009	Apr. 2011	█	█	█	█	1990 - Apr. 2011 (retirement by age)
11		RABESON Raymond	Head of Rice Research Department	Soil Scientist		Jan. 2009	Present	█	█	█	█	2008 - at present
12	SOC	RAMAROKOTO Kelamalala	Head of service		Japan 2009 (Improvement of Seed Multiplication and Seed Inspection System)	Jan. 2009	Present	█	█	█	█	1988 - at present
13		RASOARINORINIRINA Louise	Division Head of Laboratory		Japan 2009 (Improvement of Seed Multiplication and Seed Inspection System)	Jan. 2009	Present	█	█	█	█	1995 - at present
Region Level (DRDR: Regional Directorate for Rural Development)												
14	DRDR Bongolava	Robinson Thomas	Regional Director for Rural Development		Kenya 2010 (Project Management)	Jan. 2009	Present	█	█	█	█	
15	DRDR Vakinankaratra	RAKOTONDRAINAIVO Voehangy	Regional Director for Rural Development		Kenya 2010 (Project Management)	Jan. 2009	Present	█	█	█	█	1986 - at present
16	DRDR Alaotra - Mangoro	RAKOTOBÉ Andrianarivao Nirfy	Regional Director for Rural Development		Kenya 2010 (Project Management)	Jan. 2009	Present	█	█	█	█	2002 - at present
17	DRDR Itasy	RAZANANDRAKOTO David Rivosoa	Regional Director for Rural Development			Jun. 2011	Present	█	█	█	█	
18	DRDR Analanangana	RAKOTO Joseph Bruno	Regional Director for Rural Development			Jun. 2011	Present	█	█	█	█	
19	DRDR Bongolava	RAKOTONIAINA Gino	Coordinator PAPRIZ	Agricultural Engineer	Japan 2009 (Improvement of Seed Multiplication and Seed Inspection System)	Jan. 2009	Present	█	█	█	█	Jul. 2006 - at present (PAPRIZ Coordinator since Apr. 2010)
20		RAHOSOFANOVA Vero	Head SRAGRI	Agricultural Engineer		Jan. 2009	Present	█	█	█	█	Sep. 2002 - at present
21		RABEHARISOA Vonjy	Head SRGRMA	Irrigation Engineer		Jan. 2009	Present	█	█	█	█	Jul. 2006 - at present
22		ANDRIANJAFINIMANANA Robson	Head SRVAOAP	Agricultural Technical Officer		Jan. 2009	Present	█	█	█	█	Sep. 2002 - at present
23		RAZAFIMBELO Jeanne Sylvia	Head SRPSE	Agricultural Engineer		Jan. 2009	Present	█	█	█	█	Sep. 2002 - at present

No.	Organization	Name of Counterpart	Present Post Post at assignment time	Specialty	Training in Japan or third country	Period of Assignment to the Project					Working period
						From	To	2008	2010	2011	
24		RASOLOMANANA Andriamiantsoa	CIRDR Fenoarivo	Agricultural Engineer		Aug. 2010	Present				Sep. 2002 - at present
25		RAKOTOARISOA Randrianaina	Person responsible on Rural Engineering	Technical Assistant Rural Facilities		Aug. 2010	Present				Sep. 2002 - at present
26		RAMANIVOSOA Dimbinando	Person responsible on Rural Engineering	Technical Assistant Rural Facilities		Oct. 2010	Present				Oct. 2010 - at present
27		RAKOTOARINJANAHARY Andriambatosoa Tsintely	Person responsible on Rural Engineering	Technical Assistant Rural Facilities		Oct. 2010	Present				Oct. 2010 - at present
28		RAFALIMANANA George Rufin	Person responsible on Agricultural Mechanization	Operator technician		Feb. 2011	Present				Feb. 2011 - at present
29		FANOMEZANTSOA Clet Eloi	CDR Fenoarivo	Agricultural Technical Officer		Aug. 2010	Present				Sep. 2002 - at present
30		ROBSON Philippe de Neri	CDR Firavahana	Person responsible on Rural Engineering		Aug. 2010	Present				Sep. 2002 - at present
31		RAZAFINDRALAMBO Richard	CDR Ambatolampy	Agricultural Technical Officer		Jan. 2009	Present				Sep. 2002 - at present
32	DRDR Vakinankaratra	RAVELOSON Ainjara	Coordinator PAPRIZ	Agricultural Engineer		Apr. 2010	Present				Apr. 2010 - at present
33		RATSIMBAZAFY Modestine	Head SRAGRI	Agricultural Engineer		Jan. 2009	Apr. 2011				- April 2011 (retirement)
34		RAZAFINDRAFARA Celestine	SOC	Technical Assistant, Agriculture		Jan. 2009	Present				1972 - at present
35		RAKOTONDRAVAIVO Justin Emile	SOC	Agricultural Engineer	Japan 2009 (Improvement of Seed Multiplication and Seed Inspection System)	Jan. 2009	Present				1985 - at present
36		RAMANAMPAMONJY Andrianasolo	Head SRPSE	Agricultural Engineer		Jan. 2009	Present				1983 - at present
37		RAYDAVISON Nivo Grazia	Head SRGRMA	Engineer for Rural Facilities		Jan. 2009	Present				1997 - at present
38		RANDRIAMANALINA Philibert	Head SRVAOOP	Programmer		Jan. 2009	Present				1977 - at present
39		RANDRIAMANAMPISOA Josvah	SRSE	Deputy Director		Jan. 2009	Present				1989 - at present
40		RABEMANANTSOA Jules	CIRDR Antsirabe I	Technical Assistant rural facilities		Jan. 2009	Present				1983 - at present
41		HERIMANAMPISOA Claudia Rosette	CIRDR Ambatolampy	Technical Assistant, Agriculture		Aug. 2010	Present				2010 - at present
42		RAKOTONARIVO Harinaina	CIRDR Mandato	Technical Assistant, Agriculture		Aug. 2010	Present				2010 - at present
43		RAKOTOARIZAFY Armand	CIRDR Antanifotsy	Technical Assistant rural facilities		Aug. 2010	Present				1974 - at present
44		ANDRIANAINA Jacob	CIRDR Antsirabe II	Technical Assistant rural facilities		Aug. 2010	Present				1982 - at present
45		RATOVONIRINA Jean Louis	CDR Antsirabe I	Technical Assistant rural facilities		Jan. 2009	Present				1982 - at present
46	DRDR Alaotra - Mangro	VOLOLONTOSOMALANDY Christina	Coordinator PAPRIZ	Agricultural Technician		Jan. 2009	Present				Nov. 2003 - at present (Coordinator since Apr. 2010)
47		RAKOTOBEMALALA	Head SRAGRI/ SOC	Agronomist		Jan. 2009	Jun. 2011				More than 40 years, retirement at 24 June 2011

No.	Organization	Name of Counterpart	Present Post Post at assignment time	Specialty	Training in Japan or third country	Period of Assignment to the Project					Working period
						From	To	2009	2010	2011	
48		RAVALITERA Andriamalanto	SRAGRI	Engineer of Agricultural Sciences	Japan 2009 (Improvement of Seed Multiplication and Seed Inspection System)	Jan. 2009	Present				Nov. 2008 - Apr. 2010, Moved to DRDR Alaotra- Mangoro, Apr. 2010 - at present
49		RAKOTOARISOA Hery Lalaina	Collaborator SRAGRI	Agronomist		Dec. 2010	Present				Dec. 2010 - at present
50		RAHELIMANANA Radodiana	Head SRPSE	Economist		Jan. 2009	Present				1990 - at present
51		RAMBELOSON Benja	Head SRGRMA	Rural Engineering		Jan. 2009	Present				1982 - 1985 (Ministry), 1995 - at present (DRDR Alaotra)
52		ZAFINDRANDALANA Gildas Marie	SRGR	Rural Engineering	Japan 2010 (Post-harvest processing of rice)	Jan. 2009	Oct. 2010				Oct. 2010 (moved to DRDR Antsinanana)
53		ANDRIAMBOLOLONAINA Patrice Joseph William	Responsible of study department for rural engineering /DRDR AL MAN	Rural Engineering		Jan. 2009	Present				1993 - at present
54		RAMAMPIANDRA Niina	Head SRCAA	Water and Forest Engineer		Jan. 2009	Present				2007 - at present
55		RASOAJAINA Tamelarisoa	Responsible for farmer's organizations (Associations)	Socio-Organization		Jan. 2009	Present				2007 - at present
56		RANDRIANARISON Tsimaroty Jeannel	SOC	Agricultural Technician		Jan. 2009	Present				2005 - at present
57		RAZAFINDRAVOAVY Andline	Counterpart	Senior Technician		Oct. 2009	Present				Oct. 2010 - at present
58		NOMENDRAINY Sova Denis	Officer SOC	Technician Agro-Sylvo-Pastoral		Feb. 2011	Present				Feb. 2011 - at present
59		RAKOTONDRAZAKA Rado Hervé	CDR C.R. Antsohijanahary	Operator Technician		Feb. 2011	Present				Feb. 2011 - at present
60		RAFARANIRINA Andriela	Officer SRAGRI	Operator Technician		Feb. 2011	Present				Feb. 2011 - at present
61		RAVOLOLONIRINA Sujette	Collaborator SRAGRI	Senior Technician		Apr. 2010	Present				Apr. 2010 - at present
62		RATEFIARIVONY Serge	Officer SRAGRI	EMO: Employed as labor		Feb. 2011	Present				Feb. 2011 - at present
63		ROBINSON Elizara	Officer SRAGRI	EMO: Employed as labor		Feb. 2011	Present				Feb. 2011 - at present
64		RAKOTOBÉ Sahondranirina Lalaina	Officer SRAGRI	EMO: Employed as labor		Feb. 2011	Present				Feb. 2011 - at present
65		RANDRIAMANAMIHANTA Rivomanjaka	Irrigation advisor PC 23 Morarano chrome (Agricultural Engineering)	Rural Engineering		Sep. 2010	Present				Sep. 2010 - at present
Centers Stations FOFIFA											
66	Mahitsy	RAKOTONJANAHARY Xavier	FOFIFA Mahitsy			Jan. 2009	Present				
67	Bongoleva	RASOLOFO Pierre	FOFIFA station Kianjasoa			Jan. 2009	Present				
68	Vakinankaratra	RAZAKAMARAMANANA	Director of FOFIFA Antsirabe			Jan. 2009	Present				
69	Alaotra - Mangoro	RABARIMANDIMBY Berjo	Director of FOFIFA -CALA	Agro-system		Jan. 2009	Present				Jul. 1985 - at present
70		RAVARISOA Richard	Technician of A.V CALA	Rice breeding		Jan. 2009	Present				Oct. 1986 - at present
71		ANDRIANANTENAINA Arsène	A.V Rice	Rice breeding		Jan. 2009	Present				Apr. 1987 - at present
Seed Multiplying Center (CMS)											
72	Sakay	RAFALIMANANA Tsiheranisoa	Head of CMS Sakay		Japan 2009 (Improvement of Seed Multiplication and Seed Inspection System)	Jan. 2009	Present				
73	Arosiboribory	RAVALITERA Andriamalanto	Head of CMS Arosiboribory		Japan 2009 (Improvement of Seed Multiplication and Seed Inspection System)	Jan. 2009	Apr. 2010				Apr. 2010, (moved to DRDR Alaotra- Mangoro)

No.	Organization	Name of Counterpart	Present Post Post at assignment time	Specialty	Training in Japan or third country	Period of Assignment to the Project					Working period	
						From	To	2009	2010	2011		2012
74		RAZAFINDRABE Emile	CMS			Jan. 2009	Present					
Agricultural Mechanization Training and Application Center (CFAMA)												
75	CFAMA	RAMIARAMANANTSOA A.	Director of CFAMA			Jan. 2009	Mar. 2010					- Mar. 2010 (moved to DGR)
76		RAKOTOSON David	Director of CFAMA	Agricultural machinery		Mar. 2010	Present					
77		RAVAOAVY Jean Charles	Agricultural Mechanization	Agricultural machinery		Jan. 2009	Present					
78		ANDRIAMANAMPISOA Nelson	Agricultural Mechanization	Agricultural machinery		Jan. 2009	Present					
79		RAVELOTSALAMA Gabriel	Agricultural Mechanization			Jan. 2009	Present					
80		LALANEKENARISOA Nénée	Head of Service Development		Japan 2009 (Upland Rice Variety Selection Techniques For Africa)	Jan. 2009	Present					

FOFIFA: National Center for Applied Research on Rural Development

SRAGRI: Service Régional de l'Agriculture: Regional Department of Agriculture

SRVAOOP: Service Régional de la Vulgarisation Agricole et de l'Appui à l'Organisation des Producteurs: Regional Department of Agricultural Extension and Support for Farmers Organization

SRPSE: Service Régional de la Planification et du Suivi-Evaluation: Regional Department of Planning, Monitoring and Evaluation

SRGRMA: Service Régional du Génie Rural et de la Mécanisation Agricole: Regional Department of Agricultural Engineering and Agricultural Mechanization

Annex 8 Project Operation Cost Allocated by Madagascar Side

Unit: Ariary

No.	Category	2009	2010	2011 (first quarter only)	2012	2013	Total
1	Fuel	0.00	47,000,000.00	0.00			47,000,000.00
2	Travel expenses	0.00	3,000,000.00	3,950,000.00			6,950,000.00
	Total	0.00	50,000,000.00	3,950,000.00			53,950,000.00

Annex 9 The training implemented for mainly local manufacturers of agricultural machinery

	Title of training	Field	Target region	Venue	Period (days)	Target of training	Number of participant			Trainer	
							Male	Female	Total		
From January 2010 to December 2010											
1	Training on manufacturing pedal threshing machine and winnower (Alaoatra-Mangoro)	Agricultural machinery	Alaoatra-Mangoro	Commune Tanambe	2010/6/21 ~ 2010/6/22	2	Local manufacture of agricultural machinery	14	0	14	Officials on CFAMA and Mr. Pattahuddin (third country expert)
2	Training on manufacturing pedal threshing machine and winnower (Bongolava)	Agricultural machinery	Bongolava	Tsiroanomandidy	2010/6/29	1	Local manufacture of agricultural machinery	9	0	9	Officials on CFAMA and Mr. Pattahuddin (third country expert)
3	Training on manufacturing pedal threshing machine and winnower (Vakinankaratra)	Agricultural machinery	Vakinankaratra	CFAMA	2010/7/2	1	Local manufacture of agricultural machinery	11	0	11	Officials on CFAMA and Mr. Pattahuddin (third country expert)
From January 2011 to December 2011											
4	Training on manufacturing rotary hand weeder (Vakinankaratra)	Agricultural machinery	Vakinankaratra	CFAMA	2011/2/14 ~ 2011/2/16	3	Local manufacture of agricultural machinery	17	0	17	Officials on CFAMA and Mr. Andri (third country expert)
5	Training on manufacturing rotary hand weeder (Bongolava)	Agricultural machinery	Bongolava	Tsiroanomandidy	2011/3/1 ~ 2011/3/3	3	Local manufacture of agricultural machinery	12	0	12	Officials on CFAMA and Mr. Andri (third country expert)
6	Training on manufacturing rotary hand weeder (Alaoatra-Mangoro)	Agricultural machinery	Alaoatra-Mangoro	Ambatondrazaka	2011/3/15 ~ 2011/3/17	3	Local manufacture of agricultural machinery Farmers	16	0	22	Officials on CFAMA and Mr. Andri (third country expert)
								85	0	85	

Annex 10 The training implemented for mainly seed production farmers

	Title of training	Field	Target region	Venue	Period (days)	Target of training	Number of participant			Trainer
							Male	Female	Total	
1	Training for group of seed producing farmers (Vakinankaratra)	seed	Vakinankaratra	Mandoto	2010/2/10	1 Seed producing farmers	10	6	16	Officials of SOC (central), officials of DRDR Vakinankaratra, officials of FOFIFA
				Miarikofeno	2010/2/11	1 Seed producing farmers	28	11	39	
				Ambatolampy	2010/2/17	1 Seed producing farmers	11	2	13	
2	Training for group of seed producing farmers (Bongolava)	seed	Bongolava	Tsiroanomandidy	2010/6/30 ~ 2010/7/2	3 Seed producing farmers	18	10	28	Officials of SOC (central), SOC in Bongolava, FOFIFA Kianjasoa, CMS Sakay, Mr. Nakamura (Long-term expert)
						CDR, CSA, CMS	8	1	9	
3	Training for group of seed producing farmers (Bongolava)	seed	Bongolava	Fenoarivobe	2010/10/13 ~ 2010/10/15	3 Seed producing farmers	9	10	19	Officials of SOC (central), SOC in Bongolava, FOFIFA Kianjasoa, CMS Sakay
						Technicians who support CDR, CMS, and GPS	9	1	10	
4	Training for group of seed producing farmers (Vakinankaratra)	seed	Vakinankaratra	Ambatolampy	2010/10/15	1 GPS Ambatolampy	4	0	4	SOC in Vakinankaratra
Total							97	41	138	

Annex 11 The training implemented for officials of authorities concerned of Madagascar

Title of training	Field	Target region	Venue	Period (days)	Target of training	Number of participant			Trainer	
						Male	Female	Total		
From January 2009 to December 2009										
1	Training on baseline survey for surveyors	Monitoring & Evaluation	Target 5 regions	Rural Engineering Directorate, MinAgri, Antananarivo	2009/7/9 ~ 2009/7/15	Officials of the division of monitoring and evaluation, DRDR Vakinankaratra	2	1		
						Officials of the division of monitoring and evaluation, DRDR Alaotra-Mangoro	3	2		
						Officials of the division of monitoring and evaluation, DRDR Bongolava	3	1	17	Mr. Kiriljima (short-term expert)
						Officials of the division of monitoring and evaluation, DRDR Analamanga	3	1		
						Officials of the division of monitoring and evaluation, DRDR Itasy	1	0		
2	Training on the results of the baseline survey	Monitoring & Evaluation	Focal 3 regions	Rural Engineering Directorate, MinAgri, Antananarivo	2009/8/27 ~ 2009/8/28	Officials of the division of monitoring and evaluation, DRDR of focal 3 regions	2	3	5	Mr. Kiriljima (short-term expert)
From January 2010 to December 2010										
3	Workshop on evaluation of prototype of pedal threshing machine and winnower	Agricultural machinery	Focal 3 regions	CFAMA	2010/3/16	Officials of DRDR of 3 regions, manufacturers of agricultural machines in Vakinankaratra, experimental farmers in Vakinankaratra	21	8	29	Mr. Joko (third country expert)
3	Training on inspection of seed farms and analysis	Seed	Focal 3 regions	FIFAMANOR, CIMS Sakay	2010/3/22 ~ 2010/4/2	Seed inspectors in 22 regions (whole regions). This training was carried out with FAO. 9 seed inspectors of 3 focal regions participated in.	25	12	37	Consultant of FAO TCP/MAG (central office)
5	Training on physiology and ecology of paddy rice	Rice cultivation technique	Focal 3 regions	CFAMA	2010/8/23 ~ 2010/8/25	Officials of DRDR Vakinankaratra, CirDR, CDR	17	7		Researcher of FOIFA, Professor of university, Mr. Nakano (long-term expert)
6	Training on technical package for extensionist in Bongolava	Rice cultivation technique	Bongolava region	Tsiroanomandidy	2010/8/24 ~ 2010/8/26	Officials of DRDR Alaotra-Mangoro, CirDR, CDR	15	10	76	
					2010/8/25 ~ 2010/8/27	Officials of DRDR Bongolava, CirDR, CDR	25	2		
					2010/10/22	All CDR in Tsiroanomandidy district	18	0	18	Officials of DRDR Bongolava
From January 2011 to December 2011										
7	Training on seed analysis	Seed	Alaotra-Mangoro region	Laboratory of SOC, Antananarivo	2011/2/14 ~ 2011/2/18	SOC in Alaotra-Mangoro region	1	2	3	Official of SOC (central office)
						Total	136	49	185	

Annex 12 The training implemented for mainly rice farmers in the model sites

Title of training	Field	Target region	Venue	Period (days)	Target of training	Number of participant			Trainer	
						Male	Female	Total		
From January 2010 to December 2010										
1	Training on technical package for farmers (Bongolava)	Bongolava	Ambatolampy	2010/10/1	1	Model farmers Satellite farmers Other farmers	3 12 3	3 12 0	33 33 3	CDR Ambatolampy, officials of DRDR Bongolava
2	Training on technical package for farmers (Vakinankaratra)	Vakinankaratra	Antsirabe	2010/10/5	1	Model farmers Satellite farmers	2 6	2 6	16	Officials of DRDR Vakinankaratra
3	Training on technical package for farmers (Vakinankaratra)	Vakinankaratra	Antsirabe	2010/10/15	1	Farmers in model sites other than experimental and satellite farmers	20	10	30	Officials of DRDR Vakinankaratra
4	Training on technical package for farmers (Alaoatra-Mangoro)	Alaoatra-Mangoro	Morarano Chrome	2010/11/16	1	Model farmers Satellite farmers Extension farmers	2 21 4	0 0 0	27	Officials of DRDR (Alaoatra-Mangoro)
5	Training on technique on rice seed selection in salt water for extensionist and farmers (Alaoatra-Mangoro)	Alaoatra-Mangoro	Morarano Chrome	2010/11/25	1	Model farmers Satellite farmers Extension farmers	2 21 4	0 0 0	27	Officials of DRDR (Alaoatra-Mangoro)
From January 2011 to December 2011										
6	Training on technical package for farmers (Alaoatra-Mangoro)	Alaoatra-Mangoro	PC23 Maille4	2011/2/22	1	Farmers Extension farmers	68 4	0 0	72	FOFIFA, officials of DRDR (Alaoatra-Mangoro)
7	Training on technical package for farmers (Alaoatra-Mangoro)	Alaoatra-Mangoro	PC23 Maille15	2011/3/17	1	Farmers Extension farmers	15 3	0 0	18	FOFIFA, officials of DRDR (Alaoatra-Mangoro)
Total							190	33	223	

Annex 13 Main contents of the technical package and main points of modification (version 0, version 1 and version 2)

Item	Techniques before the Project (according to the baseline survey)	Version 0 (2009-2010)	Version 1 (2010-2011)	Version 2 (2011-2012)
Preparation of cropping plan	—	(none)	(none)	Preparation of annual cultivation plan will be added newly.
Preparation of inputs	—	(none)	(none)	Preparation of seeds and fertilizer (purchase jointly) will be added newly.
1 Selection of variety	Vakinankaratra: <u>Botrakely</u> , Vary 3 volana, X265 Bongolava: Mavolamba, Fotsikely, Tsipa Alaoatra-Mangoro: <u>MK34</u> , Dista, Tsemaka (undefined varieties are used more than 50% of farmers) Use of previous harvest as seed (60~84%), purchase of seed (18~32%), exchange of seed (13%)	X 265 and FOFIFA 160 in Vakinankaratra region X 265 in Bongolava There is no recommended variety, but MK Malady is a promising variety in Alaoatra-Mangoro region according to the results of preliminary study.	X 265 and FOFIFA 160 in Vakinankaratra region X 265 in Bongolava Under selection for good variety for Alaoatra-Mangoro region (Makalioka, Tsemaka, MK Malady)	(under examination)
2 Preparation of nursery bed				
1) Selection of seeds	Adoption ratio by farmers Vakinankaratra: 94% (wind 72%, water 72%) Bongolava: 98% (wind 100%) Alaoatra-Mangoro 55% (wind 62%, water 38%)	Use water or salty water (specific gravity 1.13) (water was used for the demonstration fields)	For Bongolava and Vakinankaratra regions, method of use of salty water was deleted. Only use of water is described. No change for Alaoatra-Mangoro region	No change
2) Pasteurization of seeds	Adoption ratio by farmers Vakinankaratra: 1%, Bongolava: 4%, Alaoatra-Mangoro 4%	Use of disinfectant (disinfectant was not used in the demonstration fields) Soaking in water with normal temperature in 3 to 4 days. Change water every day.	Pasteurization of seeds using disinfectant is not recommended. No change	No change
3) Germination of seeds	Adoption ratio by farmers Vakinankaratra: 50%, Bongolava: 38%, Alaoatra-Mangoro 99%			
4) Quantity of seeds per unit area	Average of farmers Vakinankaratra: 64kg/ha, Bongolava: 27kg/ha, Alaoatra-Mangoro 112kg/ha	100g/m ² – 150g/m ²	25cm x 25cm : 3 Kapoaka (600g)/are 25cm x 20cm : 2 + ¼ Kapoaka (550g)/are 25cm x 10cm : 2 + ½ Kapoaka (500g)/are (Weight of dried seeds) Consider the temperature during nursing period	No change
5) Days for transplanting of seedlings	Average of farmers Vakinankaratra: 29 days (more than 30days: 66%) Bongolava: 24 days	4 leaves, seedling of 25 days	No change on "4 leaves" Seedlings of 15 to 27 days (Seedlings have 4 leaves around 15 days in Bongolava)	3 leaves in Vakinankaratra region

	Techniques before the Project (according to the baseline survey)	Version 0 (2009-2010)	Version 1 (2010-2011)	Version 2 (2011-2012)
Item	Alaoatra-Mangoro 28days (more than 30days: 57%)			
6) Preparation of nursery	Adoption ratio by farmers Vakinankaratra: lowland rice nursery 94% Bongolava: lowland rice nursery 92% Alaoatra-Mangoro: lowland rice nursery 81%	Lowland rice nursery, semi-irrigated rice nursery, upland rice nursery (semi-irrigated rice nursery was used in the demonstration fields)	Common issue: Deleted lowland rice nursery and upland rice nursery which has 1.0 to 1.2 meter width. Before set up of the nursery, a bucket of manure per m2 is applied. A grasp of urea per m2 is applied 3 days before seeding. Seeds is covered with soil after seeding and covered by rice straw. In the case of Bongolava region, drain water every 4 days.	Examine again for Alaoatra-Mangoro region in term of efficiency
3	Plowing and paddling			
1) Timing of plowing	Average of farmers Vakinankaratra: 48days Bongolava: 25 days Alaoatra-Mangoro: 109 days	Tillage is carried out a month before plowing. Minimum depth of tillage is 20 cm. Application of manure before tillage.	Tillage is carried out a month before plowing as much as possible.	No change
2) Method of plowing	(Paddling) Vakinankaratra: Cattle (64%), Bongolava: Cattle (98%), Alaoatra-Mangoro: Machine (59%) Cattle (25%) (land leveling) Angady 84~100% in 3 regions	Plowing works should be careful in order to break soils appropriately and make paddy field level well. Plowing works should be finished a day before transplanting.	No change	No change
4	Application of base manure			
	Adoption ratio by farmers Vakinankaratra: (24%), Bongolava: (6%), Alaoatra-Mangoro (19%) Average of farmers who use fertilizer Vakinankaratra: manure 2.2t/ha, guanomad 400kg/ha Bongolava: manure 3.7t/ha Alaoatra-Mangoro: manure 1.6t/ha, urea 43kg/ha	Manure application: 5 t/ha Guanomad application: 0.6 to 0.7 t/ha	Common issue: 1) Manure more than 5 ton/ha, 2) Urea (1300A/kg): 50kg/ha In the case of Bongolava and Vakinankaratra regions: DAP: 50kg/ha In the case of Alaoatra-Mangoro region: N: P205, K205 = 60:30:30 kg/ha (based on the experimental results of fertilization at FOFIFA GALA)	For Vakinankaratra region: Instead of DAP50kg/ha, change to NPK 2~3kg/a (200~300kg/ha) For Alaoatra-Mangoro region: Quantity of chemical fertilizer will be modified more appropriate one.
5	Transplanting			
1) Regular planting	Vakinankaratra: line 93% Bongolava: line 100% Alaoatra-Mangoro: line 76% Pluck seedlings	Regular planting, shallow depth planting	No change	No change
2) Uprooting of seedlings		Take seedlings without cutting roots and with soil.	In the case of Alaoatra-Mangoro region, soil of seedlings can be washed away in order	

Item	Techniques before the Project (according to the baseline survey)	Version 0 (2009-2010)	Version 1 (2010-2011)	Version 2 (2011-2012)
3) Number of seedlings per plot	Average of farmers Vakinankaratra: 3 seedlings, Bongolava: 2 seedlings, Alaotra-Mangoro: 4 seedlings	Put seedlings in water after uprooting. 2 to 3 seedlings per plot	No change	No change
4) Planting density	Vakinankaratra: 39 plots/m ² Bongolava: 29 plots/m ² (more than 50 plots: 4%) Alaotra-Mangoro: 55 plots/m ² (more than 50 plots: 47%)	25cm x 20cm, 25cm x 15cm	25cm x 20cm, 25cm x 15cm (for less fertile land and land for less quantity of fertilizer application)	For Vakinankaratra region: Change to 20x20cm
5) Planting depth	—	2 to 3 cm	No change	No change
6 Water management (irrigation and drainage)				
1) Appropriate water depth and irrigation method	—	Water depth and midseason drainage	The following items are added. For Vakinankaratra region: Keep water depth 2 - 3 cm. For Bongolava region: Higher depth of water after <u>Common issues:</u> Drainage should be done 2 weeks before harvest in order to carry out efficient harvesting works. Midseason drainage is deleted because this management is difficult.	
7 Weeding				
1) Weeding method	Vakinankaratra: 2 times by weeder and manual Bongolava: 2 times by weeder and manual Alaotra-Mangoro: first herbicide, second by weeder and manual	Use of herbicide and weeding by weeding tools and manual.	No change	
2) Timing of weeding	Vakinankaratra: (1) 26 days after transplanting, (2) 37 days after transplanting, Bongolava: (1) 24 days after transplanting, (2) 37 days after transplanting Alaotra-Mangoro: (1) 31 days after transplanting, (2) 43 days after transplanting	2 times using weeding tool and 1 time by manual	Timing of weeding are 15 days, 30 days and 45 days after transplanting. Thereafter, weeding by hand. Just after heading, take out barnyard grass.	
8 Additional fertilization				
1) Timing of additional fertilization, kinds and quantity of fertilizer	Adoption ratio by farmers Vakinankaratra: (9%), Bongolava: (2%), Alaotra-Mangoro: (33%) Vakinankaratra: 24 days after transplanting,	(none)	Urea as additional fertilization: 15 days after transplanting: 25kg/ha At boosting stage: 25kg/ha	For Vakinankaratra region: The following changes 1) 15 days after transplanting: 0.5kg/a

Item	Techniques before the Project (according to the baseline survey)	Version 0 (2009-2010)	Version 1 (2010-2011)	Version 2 (2011-2012)
9	Pest and disease control	<p>Use of pesticide Vakinankaratra: (18%), Bongolava: (5%), Alaotra-Mangoro: (79%)</p> <p>Disease prevention Vakinankaratra: chemical 67%, biological 9%, no treatment 21% Bongolava: chemical 15%, biological 26%, no treatment 51% Alaotra-Mangoro: chemical 81%, biological 5%</p>	<p>(rat poison was applied at demonstration fields)</p> <p>Kinds of insects are different by regions, therefore, take countermeasures suitable for each region. For disease prevention: Use of tolerant varieties. Rat and insects damages: Countermeasures should be done jointly.</p>	<p>(50kg/ha) 2) Boosting stage: 0.3kg/a (30kg/ha)</p>
10	Harvesting works			
	1) Timing of harvest	Harvest when 80% of ear of rice becomes yellow color.		
	2) Post-harvest	<p>Method of threshing Vakinankaratra: pounding 97% Bongolava: pounding 100% Alaotra-Mangoro: cattle 42%, power tiller and tractor 46%, powered thresher 10%</p> <p>Method of selection Natural wind 98~100% in 3 regions</p>	<p>Pedal thresher: for Bongolava and Vakinankaratra regions Powered thresher: for Alaotra-Mangoro region Winnower: for three regions.</p>	No change
	Integrated use of paddy field	(none)	(none)	Off-season crop cultivation, integrated use of paddy field (including fish culture in paddy fields) will be added.
	Calculation of income and expenditure	(none)	(none)	Method on calculation of income and expenditure will be added.

