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Report No: PAD1370

INTERNATIONAL DEVELOPMENT ASSOCIATION

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED CREDIT

IN THE AMOUNT OF SDR 38.30 MILLION
(US$53 MILLION EQUIVALENT)

TO THE

REPUBLIC OF MADAGASCAR
FOR AN

AGRICULTURE RURAL GROWTH AND LAND MANAGEMENT PROJECT

MARCH 1, 2016

Agriculture Global Practice
Country Department for Madagascar, Mauritius and Mozambique
Africa

CURRENCY EQUIVALENTS

(Exchange Rate Effective December 31, 2015)

Currency Unit	=	Malagasy Ariary (MGA)
MGA 3,170.9	=	US$1
1 US$	=	SDR 0.72164130

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ADB	African Development Bank
AFD	Agence Française de Développement
AIAs	Agriculture Investment Areas
BoA	Bank of Africa
BP	Bank Procedures
CAADP	Comprehensive Africa Agriculture Development Program
CBA	Cost-benefit Analysis
CCRF	Land Reform Coordination Unit
CEFFEL	Centre d'Expérimentation et de Formation des Fruits et Légumes
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement
CNM	Commission Nationale des Marchés
CTHA	Centre Technique Horticole in Antananarivo
CTHT	Centre Technique Horticole de Tamatave
CRS	Comité Régional de Suivi
CSA	Climate Smart Agriculture
CSA	Centres de Services Agricoles
CSO	Civil Society Organization
DA	Designated Account
DAOMAR	Direction d'Appui à l'Organisation du Monde Agricole et Rural
DGSF	Direction Générale des Services Fonciers
DRDA	Direction Régionale du Développement de l'Agriculture
DRTP	Direction Régionale des Travaux Publics
EA	Environmental Assessment
EDBM	Economic Development Board of Madagascar
EFA	Economic and financial analysis
EOIs	Expressions of Interest
ERR	Economic Rate of Return
ESSA	Ecole Supérieure des Sciences Agronomiques
ESIA	Environment and Social Impact Assessment
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESMV	École des Sciences et de Médecine Vétérinaire
ESW	Economic Sector Work

EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FEA	Financial and economic analysis
FIs	Financing Institutions
FID	Fonds d'Intervention pour le Développement
FIFATA	Fampivoarana ny Tantsaha (Association for Progressive Farmers)
FIFAMANOR	Centre de développement rural et de recherches appliquées
FMA	Financial Management Assessment
FM	Financial Management
FOFIFA - DRZV	Centre National de Recherche Appliquée au Développement Rural/ Département de Recherches Zootechniques et Vétérinaires
FRDA	Fonds Régional de Développement Agricole
FORMAPROD	Programme de Formation Professionnelle et d'amélioration de la Productivité Agricole/Training and Agricultural Productivity Improvement Programme
FY	Fiscal Year
GAC	Governance and Anti-Corruption
GCV	Greniers Communs Villageois
GDP	Gross Domestic Product
GHG	Green House Gases
GIZ	German Organisation for International Cooperation
GoM	Government of Madagascar
GP	Global Practice
GRS	Grievance Redress Service
HILF	High Intensity Labor Force
IAS	International Accounting Standards
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
IDA	International Development Association
IEG	Independent Evaluation Group
IFAD	International Fund for Agricultural Development
IFC	International Finance Corporation
IFMIS	Integrated Financial Management Information System
IFR	Interim Unaudited Financial Report
INDC	Intended Nationally Determined Contributions
IPF	Investment Project Financing
IP	Implementing Partners
IPR	Intellectual Property Right
IPSATA	Institut Professionnel Supérieur en Agronomie de Tombontsoa Antsirabe
IRR	Internal Rate of Return
ISA	International Standards on Auditing
ISP	Implementation support plan
IT	Information Technology
JICA	Japan International Cooperation Agency
LPAEP	Lettre de Politique Sectorielle Agriculture, Elevage et Pêche
LULUCF	Land-Use, Land-Use Change and Forestry
M&E	Monitoring and Evaluation
MEPATE	Ministry of Presidential Projects, Land Use Planning and Equipment
MFIs	Microfinance Institutions

MoA	Ministry of Agriculture
MoU	Memorandum of Understanding
MSME	Micro Small and Medium Enterprises
MTR	Mid-term Review
NAMA	National Appropriate Mitigation Actions
NCB	National Competitive Bidding
NDP	National Development Plan
NGO	Non-governmental Organization
NLTA	Non-lending Technical Assistance
NPV	Net Present Value
OP	Operational Policy
PAD	Project Appraisal Document
PADAP	Projet d'Agriculture Durable par une Approche Paysage/Sustainable Agriculture Landscape Project
PASEF	Projet d'Appui aux Services Financier/Financial Services Project
PCGF	Partial Credit Guarantee Fund
PFI	Participating Financial Institution
PFM	Public Finance Management
PFS	Project Financial Statements
PDO	Project Development Objective
PIC	Projet de Pôles Intégrés de Croissance/Integrated Growth Poles Project
PIU	Project implementation Unit
PIM	Project Implementation Manual
PIP	Project Implementation Plan
PLOF	Plan Local d'Occupation Fonciere
PMP	Pest Management Plan
PNIAEP	National Investment Plan for Agriculture, Livestock and Fisheries
PPA	Project Preparation Advance
PPCG	Partial Portfolio Credit Guarantee
PPMP	Pest and Pesticide Management Plan
PPP	Public-Private Partnership
PRAI	Principles for Responsible Agriculture Investment
P-RAMS	Procurement Risk Assessment Management System
PRMP	Personne Responsable des Marchés Publics
PSAEP	Programme Sectoriel Agriculture Elevage Pêche
PSC	Project Steering Committee
QCBS	Quality and Cost-based Selection
R&D	Research and Development
RAP	Resettlement Action Plan
REDD	Reducing Emissions from Deforestation and Forest Degradation
RFPs	Requests for Proposals
RPF	Resettlement Policy Framework
SACs	Schémas d'Aménagement Communaux
SDR	Special Drawing Right
SER	Shadow Exchange Rate
SIF	Solidarité des Intervenants sur le Foncier
SIL	Specific Investment Loan
SOE	Statement of Expenditure

SME	Small-Medium Enterprise
SNFAR	Stratégie Nationale de Formation Agricole et Rurale
SRI	System of Rice Intensification
SSA	Sub-Saharan Africa
TA	Technical Assistance
T&C	Trade and Competitiveness
ToR	Terms of Reference
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
US$	United States Dollar
WRS	Warehouse Receipts Systems

Regional Vice President:	Makhtar Diop
Country Director:	Mark Lundell
Senior Global Practice Director:	Juergen Voegele
Practice Managers:	Dina Umali-Deininger
	Jorge Munoz
Task Team Leaders:	Jan Joost Nijhoff
	Andre Teyssier

MADAGASCAR

Agriculture Rural Growth and Land Management Project

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PAD DATA SHEET

Madagascar

Madagascar Agriculture Rural Growth and Land Management Project (P151469)

PROJECT APPRAISAL DOCUMENT

AFRICA

Report No.: PAD1370

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Basic Information		
Project ID P151469	EA Category B - Partial Assessment	Team Leader(s) Jan Joost Nijhoff, Andre Teyssier
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [ ]	
Project Implementation Start Date 22-Mar-2016	Project Implementation End Date 30-Jun-2021	
Expected Effectiveness Date 30-Jun-2016	Expected Closing Date 30-Jun-2021	
Joint IFC No		

Practice Manager/Manager	Senior Global Practice Director	Country Director	Regional Vice President
Dina Umali-Deininger	Juergen Voegele	Mark R. Lundell	Makhtar Diop

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Recipient: Government of Madagascar

Responsible Agency: MINISTERE DE L'AGRICULTURE

Contact:	Lydia Nicole RASOLOFOARIFARA	Title:	Directeur de l'Appui Agricole et Rural
Telephone No.:	261340565320	Email:	rlydian@yahoo.fr

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Project Financing Data(in US$ Million)										
[ ] Loan	[ ] IDA Grant	[ ] Guarantee								
[X] Credit	[ ] Grant	[ ] Other								
Total Project Cost:	53.27	Total Bank Financing:	53.00							
Financing Gap:	0.00									

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Financing Source	Amount
BORROWER/RECIPIENT	0.27
International Development Association (IDA)	53.00
Total	53.27

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Expected Disbursements (in US$ Million)

Fiscal Year	2017	2018	2019	2020	2021					
Annual	11.25	14.20	17.30	6.00	4.25					
Cumulative	11.25	25.45	42.75	48.75	53.00					

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Institutional Data
Practice Area (Lead)
Agriculture
Contributing Practice Areas
Climate Change, Finance & Markets, Gender, Trade & Competitiveness
Cross Cutting Topics
[X] Climate Change
[ ] Fragile, Conflict & Violence
[X] Gender
[X] Jobs
[X] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Agriculture, fishing, and forestry	General agriculture, fishing and forestry sector	70	30	
Industry and trade	Agro-industry, marketing, and trade	30	16	15
Total		100		

☐ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

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Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Rural development	Rural services and infrastructure	40
Environment and natural resources management	Land administration and management	30
Rural development	Rural policies and institutions	30
Total		100

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Proposed Development Objective(s)

The proposed development objective is "to improve rural land tenure security and access to markets of targeted farming households in selected agricultural value chains in the Project Areas, and to provide immediate and effective response to an Eligible Crisis or Emergency".

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Components

Component Name	**Cost (US$ Millions)**
Component 1. Agribusiness Value Chain Development	18.49
Component 2. Support to Land Policy and Land Rights Registration	13.40
Component 3. Support to Marketing Infrastructure Development and Maintenance	15.07
Component 4. Project Management and Coordination	6.04
Component 5. Contingency Emergency Response	0.00

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Systematic Operations Risk- Rating Tool (SORT)	
Risk Category	**Rating**
1. Political and Governance	Substantial
2. Macroeconomic	Moderate
3. Sector Strategies and Policies	High
4. Technical Design of Project or Program	Substantial
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Substantial
9. Other	
OVERALL	Substantial

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Compliance	
Policy	
Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]
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Does the project require any waivers of Bank policies?	Yes [ ] No [X]
Have these been approved by Bank management?	Yes [ ] No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ] No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X] No [ ]

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Safeguard Policies Triggered by the Project	**Yes**	**No**
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04		**X**
Forests OP/BP 4.36	**X**	
Pest Management OP 4.09	**X**	
Physical Cultural Resources OP/BP 4.11	**X**	
Indigenous Peoples OP/BP 4.10		**X**
Involuntary Resettlement OP/BP 4.12	**X**	
Safety of Dams OP/BP 4.37		**X**
Projects on International Waterways OP/BP 7.50		**X**

Projects in Disputed Areas OP/BP 7.60		**X**

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Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
Annual Work Plan and Budget for the first year of Project implementation		No later than one (1) month after the Effectiveness Date.	

Description of Covenant

The Recipient shall furnish to the Association the annual work plan and budget for the Project for the first year of Project implementation, and the evidence which may be required for the implementation of the activities included in the draft annual work plan and budget for such period which shall be furnished no later than one (1) month after the Project Effectiveness Date.

Name	**Recurrent**	**Due Date**	**Frequency**
Procurement Complaint Handling Mechanism		No later than three (3) months after the Project Effectiveness Date.	

Description of Covenant

The Recipient shall have established a procurement complaint handling mechanism acceptable to the Association no later than three (3) months after the Project Effectiveness Date.

Name	**Recurrent**	**Due Date**	**Frequency**
Regional Implementation Units (RIUs)		No later than three months after the Project Effectiveness Date.	

Description of Covenant

The Recipient shall establish and maintain two Regional Implementation Units (RIUs) within the PIU, located in Antsirabe and Toamasina, with mandate, composition and resources acceptable to the Association, no later than three months after the Project Effectiveness Date.

Name	Recurrent	Due Date	Frequency
External Audit		No later than six (6) months after the Project Effectiveness Date.	

Description of Covenant

The Recipient shall recruit an external auditor for the Project no later than six (6) months after the Project Effectiveness Date.

Name	Recurrent	Due Date	Frequency
National Land Program		No later than three (3) months after the Project Effectiveness Date.	

Description of Covenant

The Recipient shall have adopted in a manner satisfactory to the Association, the National Land Program no later than three (3) months after the Project Effectiveness Date.

Name	Recurrent	Due Date	Frequency
PPCG Fund Pre-closing Review		No later than six (6) months before the Closing Date.	

Description of Covenant

No later than six (6) months before the Closing Date, the Recipient shall, in conjunction with the Association and the Fund Manager, conduct a pre-closing review of the Project, covering the progress achieved in the performance of the PPCG Fund and the Fund Manager.

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Conditions

Source Of Fund	Name	Type
IDA	Project Operational Manual	Effectiveness

Description of Condition

The Recipient has adopted the Project Operational Manual for the Project in form and substance acceptable to the Association.

Source Of Fund	Name	Type
IDA	Adoption of an Institutional Decree, and establishment of a Project Steering Committee and Project Implementation Unit	Effectiveness

Description of Condition

The Recipient has adopted the Institutional Decree for the Project, in form and substance acceptable to the Association, and established the Steering Committee, and the PIU with mandates, compositions, staff and resources satisfactory to the Association as further set out in Section I.A of Schedule 2 to the Financing Agreement.

Source Of Fund	Name	Type
IDA	Withdrawal of Proceeds of Project Financing	Disbursement

Description of Condition

No withdrawals shall be made under Category (2)(a) unless: (i) the PPCG Operational Manual has been updated in form and substance satisfactory to the Association to take into account the issuance of PPCGs to Eligible Agribusiness Firms (the "Updated PPCG Operational Manual"); (ii) an agreement in form and substance satisfactory to the Association has been signed between the PIU, AGEPASEF and the Fund Manager setting forth the respective management, supervision and financing responsibilities with respect to PPCGs issued to Eligible Agribusiness Firms under Part 1.3 of the Project (the "Coordination Agreement"); (iii) an agreement in form and substance satisfactory to the Association has been signed between the Recipient and the Fund Manager providing for the transfer of funds contributed under Part 1.3(i) of the Project to the PPCG Fund and the management of such funds by the PPCG Manager (the Transfer Agreement"); or

under Category (2)(b) unless (A) the funds allocated to Category (2)(a) have been disbursed in full; (B) a PPCG Agreement in form and substance satisfactory to the Association has been signed between PPCG Fund (represented by the Fund Manager) and the Participating Financial Institutions in the form set forth in Section I.G of Schedule 2 of the Financing Agreement (the " PPCG Agreement", and collectively with the Transfer Agreement, the Updated PPCG Operational Manual and the Coordination Agreement, the "Updated PPCG Documents"); and (C) the Recipient shall have provided evidence (including the list of credits entered into on the basis of the PPCG), in form and substance satisfactory to the Association, that said funds have been allocated to the provision of one or more PPCGs of the risk of a Participating Financial Institution on eligible credits (in Ariary) which represent 60% of the total amount (in Ariary) that can be supported by the existing capital (in Ariary); or

under Category (2)(c) unless (A) the funds allocated to Categories (2)(a) and (2)(b) have been disbursed in full; and (B) the Recipient has provided evidence (including the list of credits entered into on the basis of the PPCG), in form and substance satisfactory to the Association, that said funds have been allocated to the provision of one or more PPCGs of the risk of a Participating Financial Institution on eligible credits (in Ariary) which represent 60% of the total amount (in Ariary) that can be supported by the existing capital built up with the disbursement under Category (2)(b) and 2(c) (in Ariary).

Source Of Fund	Name	Type
IDA	Withdrawal of Proceeds of Project Financing	Disbursement

Description of Condition

No withdrawals shall be made under Category three (3) unless an Eligible Crisis or Emergency has occurred, a request has been made to respond to the Crisis or Emergency, and the Association has accepted and agreed with such request, as set out in Schedule Two, Section IV (B) of the Financing Agreement.

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Jan Joost Nijhoff	Team Leader (ADM Responsible)	Sr. Agriculture Economist		GFA07
Andre Teyssier	Team Leader	Sr. Land Administration Specialist		GSULN
Lova Niaina Ravaoarimino	Procurement Specialist (ADM Responsible)	Sr. Procurement Specialist		GGO07
Enagnon Ernest Eric Adda	Financial Management Specialist	Sr. Financial Management Specialist		GGO19
Aissatou Diallo	Finance Officer (ADM Responsible)	Sr. Finance Officer		WFALA
Anders Jensen	Team Member	Sr. Monitoring & Evaluation Specialist		GENDR
Andry Herizaka Rakotoarisoa	Team Member	Consultant		GTIDR
Bodomalala Sehenoarisoa Rabarijohn	Team Member	Team Assistant		AFMMG
Christine Heumesser	Team Member	Economist		GFA13
Coralie Gevers	Team Member	Country Manager		AFMMG
Demba Balde	Safeguards Specialist	Sr. Social Development Specialist		GSU01
Eneida Herrera Fernandes	Team Member	Sr. Private Sector Development Specialist		GTC13

Irene Bomani	Team Member	Operations Analyst		GFA07
Lalaina Randrianarison	Team Member	Consultant		GFADR
Maya Abi Karam	Team Member	Sr. Counsel		LEGAM
Nathalie S. Munzberg	Counsel	Sr. Counsel		LEGEN
Noroarisoa Rabefaniraka	Team Member	Sr. Transport Spec.		GTI01
Paul-Jean Feno	Safeguards Specialist	Sr. Environmental Specialist		GEN07
Pauline Ravalisoamampianina	Team Member	Program Assistant		AFMMG
Rondromalala Raharimahefa	Team Member	Executive Assistant		AFMMG
Tugba Gurcanlar	Team Member	Trade Specialist		GTC13
Wim Douw	Team Member			IFC
Ziva Razafintsalama	Team Member	Sr. Agricultural Spec.		GFA07

Extended Team

Name	Title	Office Phone	Location
Alain Onibon	Investment Officer	233021675000	Accra
Carl Erik Schou Larsen			
Lisa Hubert	Investment Officer		Rome

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Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Madagascar		➢ Highlands (Antananarivo, Antsirabe); ➢ East Coast (Toamasina to East Fenerive); and ➢ Fort Dauphin.	✓		

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Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required ? Consulting services to be determined

I. STRATEGIC CONTEXT

A. Country Context

1. **Madagascar is one of the poorest countries in the world.** Extreme poverty[1] has increased from 77.5 percent in 2001 to 78.2 percent of the population in 2012. Over the same timeframe, absolute poverty (US$2 per capita per day) rose from an estimated 88.9 in 2001 to 91.20 percent of the population in 2012 (World Bank, 2015). Poverty is significantly higher in rural areas where close to 80 percent of Madagascar's population lives. Development indicators for rural areas lag behind those for urban areas: incomes are lower, infant mortality rates are higher, life expectancy is shorter, illiteracy is more widespread, malnutrition is more prevalent[2], and greater proportions of people lack access to clean water and improved sanitation services. Extreme poverty incidence is higher among female-headed households, which constitutes about a fifth of all households.[3]

2. **Madagascar is emerging from a five year long political and economic crisis, caused in part by the mismanagement of rural lands.** Madagascar returned to constitutional order when a duly-elected government took office in 2014. The crisis had devastating effects on the economy, poverty and social outcomes. Despite continued tensions between the executive and legislative branches, some progress has been made: a new National Development Plan (NDP) (2015-2019) and its implementation strategy were developed; macroeconomic stability has been maintained and the Ministry of Finance has launched reforms of its public finances, starting with the customs and tax administrations; efforts were made to reorient public expenditure towards social spending and public investments in the last two State budgets adopted by the Parliament (supplemental budget for 2014 and the budget law 2015); and the constitutionally-mandated local elections were held peacefully in July 2015. While some reforms are starting to show some initial results, they have yet to be implemented fully. The speed of the turnaround is perhaps to be expected, as the last crisis was particularly long and traumatic, even for a country prone to political instability.

3. **Madagascar's investment climate remains unfavorable.** As measured by *The World Bank Doing Business Indicators,* it currently ranks 164 out of 189 countries. In the agribusiness sector, private sector participation is constrained by insufficient investments in agricultural technology availability and adoption, human capacity development, regulatory enforcement, and industry-specific conduct and governance issues. Addressing these constraints in key sub-sectors, or value chains, would make an important contribution to the overall improvement of the investment climate in the agriculture sector.

4. **With increased unpredictability and severity, floods and droughts frequently disrupt agricultural production and livelihoods in Madagascar.** A priority recognized by most stakeholders in the sector is to enhance resilience to the effects of climate change

[1] Extreme poverty is defined as per capita consumption under US$1.25 per day. Absolute poverty is defined as per capita consumption under US$2 per day.
[2] 76 percent of the population receive less than 2133 kcal/day (Source: INSTAT, ENSOMD 2012)
[3] Source: World Bank 2014, Face of poverty in Madagascar Poverty, Gender and Inequality Assessment

that will increasingly introduce volatility in weather patterns resulting in variable rainfall, floods, and droughts. Promotion of climate-smart agriculture should form an integral part of agriculture development as it allows for the adoption of practices and adaptation of technology for specific commodities and agro-ecological zones. Emphasis should be on promoting climate-smart agricultural management practices which are gender-responsive and improve labor-efficiency.[4]

5. **Malnutrition rates are high in Madagascar.** Only a minority of farmers produce fruits and vegetables and many lack cash to diversify their diet. On a national scale 53 percent of rural households consume limited or insufficient nutritious foods to maintain an active and healthy life. About a quarter of the population is undernourished (up from about 20 percent in the 1990s), implying that their food intake regularly provides less than their dietary energy requirements. Almost half of children under five suffer from stunted growth, representing 1.6 million children who never reach their full physical and mental potential. Households that are food insecure typically have less access to land, leading to production levels 2.5 times lower than households which are considered food secure; also low farm productivity has been identified as a leading cause of poverty and food insecurity in Madagascar.[5] There is a need to support nutrition education to increase knowledge and incentives to translate gains in agricultural production and income into nutrition improvements, and to improve households' access to a diverse diet through supporting diversification of on-farm production.

B. Sectoral and Institutional Context

Sectoral Context

6. **Agriculture[6] involves directly or indirectly 80 percent of the population, provides the bulk of the diet in rural and urban areas, and employs the largest share of the labor force.** Agriculture has also been the sector least affected by temporary political shocks and has become the main source of labor income (World Bank, 2014). The agriculture sector was the main driver in employment growth during the 2000s, contributing more than 85 percent of employment growth. At the same time, productivity in the sector is structurally low.[7] Labor market outcomes suggest that women's earnings are not as high as those of men when controlling for various other factors.[8] Compared to the national average, female-headed households cultivate on average smaller plots.[9] As a

[4] Labor-saving technologies and practices, defined as "tools and equipment which reduce drudgery and/or improve efficiency of performing various farming or household activities,"4 play several important roles. They reduce the burden on women through potential time and labor savings, provide men and women farmers with a wider range of choices to make in their productive and reproductive spheres, and directly and indirectly enhance household climate resilience.

[5] WFP and UNICEF (2011): Comprehensive Food and Nutrition Security and Vulnerability Analysis.

[6] "agriculture" refers to agriculture and livestock.

[7] World Bank (2014): Face of Poverty in Madagascar. Poverty, Gender and Inequality Assessment. Report No. 78131-MG

[8] Source: World Bank 2014, Face of poverty in Madagascar Poverty, Gender and Inequality Assessment

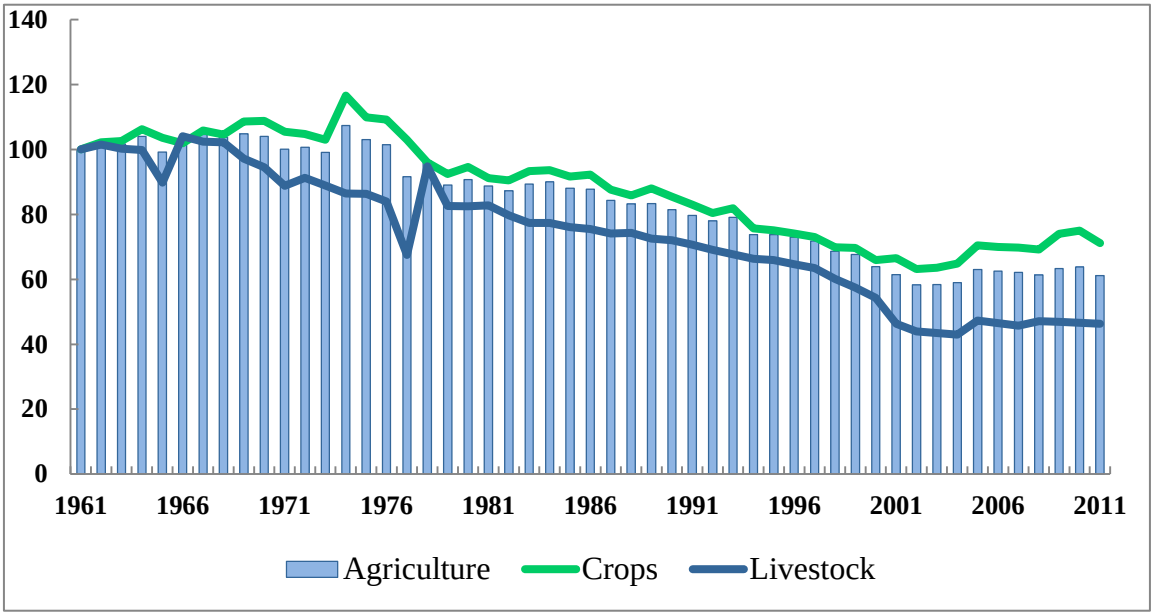
[9] 84 percent of female-headed households are small-scale farmers, whereas 70 percent of male-headed households are found in this category.

consequence, female-headed households' average agricultural revenue is about 43 percent less than male-headed households and incidents of poverty are higher there.[10]

7. **Since 1960, value added per capita in agriculture has fallen by an average of 1 percent per year, with poor performance recorded in both the crops and livestock sub-sectors** (Figure 1). Food production gains have not kept pace with population growth, resulting in rising food imports and declining levels of national food self-sufficiency. Because the agricultural sector has grown so slowly, it has put a limit on labor requirements and has not been able to absorb many of the 450,000 urban and rural young adults who enter the work force every year, swelling the ranks of the jobless and increasing pressure on government to create attractive employment opportunities.

8. **The existence of a wide variety of agribusiness value chains offers an opportunity for accelerated rural growth that can be supported as part of the Bank's post-crisis turnaround strategy for Madagascar.** The development of the agriculture sector is a priority – it has the potential to lift a large portion of the rural population out of poverty. Strengthening agriculture has always been at the heart of the policies for rural development, but the investment budget of the Malagasy State is severely limited. Public investment should be combined with private investment to deliver long-lasting results on growth and poverty reduction. The project's PDO and approach are in line with the Government's vision for Madagascar's agriculture sector, which is to provide food and nutrition security at household and national levels, adequate incomes for rural households, and non-farm employment opportunities through value addition.

Figure 1: Trends in per capita value of production in agriculture, 1961-2011 (index, 1961 = 100)



Source: FAOSTAT 2015

[10] This varies by region, while in Atsimo Andrefana and Analamanga only 55 percent of households pursued agricultural activity, in Itasy it is 96.5 percent. Enquête Périodique Auprès Des Ménages, 2010. http://www.gripweb.org/gripweb/sites/default/files/databases_info_systems/Madagascar%20EPM%202010.pdf

9. **With coordinated improvements in technology, productivity, infrastructure and land management, the farming sector has the potential to better serve domestic as well as export markets with a diversified commodity range, and can be more competitive and resilient to internal and external economic shocks.** Value chains with growth potential that involve smallholder producers include spices and essential oils for export markets (cloves, vanilla, pepper, other spices), fruits and vegetables for export markets (lychee, green beans, asparagus), staple crops for the local market (rice, potato, onion), ingredients for animal feed (maize, soya), and livestock (dairy, beef, poultry). The main constraints that prevent these value chains from further developing include: lack of skills and knowledge among agricultural producers, outdated production technology (old varieties, ageing tree stock, and poor husbandry practices), inadequate assembly and marketing capacity among producers and market intermediaries, processing technology limitations, severe rural infrastructure deficiencies, and inadequate public services such as extension, quality assurance, and food safety. Opportunities for private investment in these value chains exist, but their feasibility requires complementary public investments. Such public investment needs are value chain and area specific, and require careful identification and targeting in an integrated and spatially coordinated way. If well targeted, public investment and value chain development would result in increased farm and non-farm employment and improve overall sustainability.

10. **The development of the agriculture sector, including large and market-based small scale agriculture, is limited by the actual availability of arable land combined with an inadequate land rights management system.** Data suggest that large tracts of arable land would be available (between 70% and 90% of total arable land, depending on the information source) but the reality on the ground suggests stiff competition for access to land rather than its abundance. Moreover, poor land governance and the failure of the traditional land titling system causes widespread tenure insecurity that is not conducive to sustainable agricultural practices or to agricultural investments. In recent years, large scale land acquisition attempts, including the Daewoo case that was one of the triggers of the political crisis in 2009, have raised strong objections. Successive governments then had to manage and balance a policy of simultaneously attracting investors while reassuring public opinion that private investment will generate growth and jobs while at the same time protecting the rights and interests of the rural population.

11. **In Madagascar, women represent 53 percent of the agricultural population and are responsible for producing 80 percent of food crops and are in charge of nearly 90 percent of agricultural processing activities.** While women play an important role in ensuring food security, they are often poorly represented in critical decision making domains such as farmers' organizations.[11] Within the household there is a gendered division of tasks. For instance, men may work with cattle and soil preparation or take responsibility of staple crops such as rice and physically demanding crops such as cassava, while women take care of weeding, transplanting and vegetable gardens and

[11] IFAD (2014): Rural Women's Leadership Programme. Madagascar, Nepal, the Philippines and Senegal. Good practices and lessons learned (2010-2013). http://www.ifad.org/gender/pub/leadership_programme.pdf.

household tasks.[12] Also in the cloves value chain women play a large role in picking and separating the cloves, while the distilling process is typically done by men. A recent study of contract farmers supplying Lecofruit shows that 96 percent of contracted households are male-headed, which corresponds with international evidence that women have less access to contract farming than men. Thus, while women play a role in the implementation of the contract, the income is handled by the men in the household.[13] There is increasing evidence that more equal gender relations and equality of assets ownership in the household/community can lead to better development outcomes.[14] Female-headed households are less likely to own the land they cultivate and more likely to rent it and typically cultivate smaller areas than male headed households.[15] Project activities would thus respond to opportunities to identifying and addressing women's priorities and concerns, improving their land tenure status and access to markets.

12. **Despite substantial support to Government from key donors in Madagascar, especially in the aftermath of the 2001 crisis up to 2009, the country's overall road network is in poor condition.** The rural road network is dense (more than two-thirds of the total network) and poorly maintained. Financial resources are scarce, and donor support has been mainly oriented to the National Roads network and institutional strengthening at the central level. The outcome of the support to rural roads was limited as it was geared towards all the provinces, resulting in uncoordinated action in geographically scattered areas. The Project will address this key weakness by focusing on three specific geographical areas.

Institutional Context

13. **The Project has been designed to support the Government of Madagascar in the implementation of its new national and sector development strategies**, particularly the NDP and the Agricultural Sector Policy and Program, i.e. Lettre de Politique Sectorielle Agriculture, Elevage et Pêche (LPAEP) 2015 and Programme Sectoriel Agriculture Elevage Pêche (PSAEP) 2016-2020) which have been developed within the framework of the Comprehensive Africa Agriculture Development Program (CAADP) process.

14. **In the NDP 2015-2019, agriculture and fisheries were identified as engines of growth in the infrastructure, tourism and mining sectors.** The Project would particularly contribute to the third priority of the NDP which is "inclusive growth and territorial development" based on the following programs: development of promising value chains by promoting intensive and export-oriented agriculture; structuring of value

[12] Widman, M (2015): Essays on Resource Policy, Gender and Land Rights. Doctoral Thesis. Swedish University of Agricultural Sciences; International Land Coalition (2010): Promoting women's access to and control over land in the central highlands of Madagascar. Research Report.

[13] World Bank/UNCTAD, 2014. The Practice of Responsible Investment Principles in Large-Scale Agricultural Investments: Implications for Corporate Performance and Impact on Local Communities, p.28. https://www.responsibleagroinvestment.org/node/805; Smalley, S., 2013. Plantations, Contract Farming and Commercial Farming Areas in Africa: A comparative review, April,,p.53, tp://www.future-agri-cultures.org/component/docman/doc_download/1710-plantations-contract-farming-and-commercial-farming-areas-in-africa-a-comparative-review; GIZ (2013): Producteurs sous contrat avec Lecofruit : étude socio-économique et analyse de leur perception du contrat. Rapport de synthèse.

[14] (Quisumbing et al. 1995; Katz 1994; Hoddinott and Haddad 1994; DeWalt 1993; Helen Keller International 1993; Kennedy and Cogill 1987); (Hallman 2003; Thomas 1994; Garcia 1991; Guyer 1980) in Herthfokrd et al.

[15] WFP and UNICEF (2011): Comprehensive Food and Nutrition Security and Vulnerability Analysis.

chains; improvement of land tenure security; private sector development, promotion of Public-Private Partnerships (PPP) schemes; improvement of the legal, regulatory and taxation framework; and access to finance.

15. **The LPAEP lays out a 2025 vision for "a country which is relying on a competitive, sustainable and inclusive agricultural sector where both small-scale farms and modern processing units are key actors for food security and key export markets".** The targets to reduce poverty by half and achieve an annual growth rate of 6 percent in the agriculture sector would be achieved by promoting a rational and sustainable use of natural resources, stimulating investment in rural infrastructure, strengthening food security and improving nutrition, improving access to services and to markets, and improving economic governance. It highlights the close relationship between rural development and land reform and considers the private sector as key for increasing productivity, facilitating modernization of production, and improving market access. It confirms the need to support the land reform process and aims to create new areas for agricultural investment to support expansion and mitigate the fragmentation of family farms. The Project is in line with the Policy's vision and approach, and the proposed activities are in coherence with the guidelines of the new National Land Program.

16. **The above described policy environment calls for an integrated approach to developing the links between agriculture, agri-business development, infrastructure improvement and land tenure security.** A market driven value chain approach will require the development of strong public private partnerships and strategic investments in public infrastructure including roads and services that would facilitate and encourage private investment. An integrated approach also requires support to coordination among public institutions to enhance policy making and service delivery, and among private sector groups to enhance intra-value chain governance and efficiency.

C. Higher Level Objectives to which the Project Contributes

17. **The Project will contribute to the World Bank's twin goals of reducing poverty and boosting shared prosperity through improvement of the performance of agricultural value chains in an inclusive and sustainable manner, and through improved local land tenure systems.** It will foster the contribution of the agribusiness sector to the economy in terms of value addition, employment creation and the balance of payments through import substitution and higher export revenues. Climate smart agriculture and nutrition are embedded in a number of project activities, with a clear gender focus. The Project is also in line with the pillars of the National Investment Plan for Agriculture, Livestock and Fisheries (PNIAEP) elaborated within the framework of CAADP. The project objective and approach are also aligned with the Systematic Country Diagnostic conducted during the first half of 2015 and with the directions given by the Country Partnership Framework.

18. **The Project represents a World Bank Group collaboration.** The Project is expected to provide parallel support (technical assistance, food safety monitoring, matching grants for technology adoption, etc.) to small producers in the fruit and livestock value chains that may benefit from two International Finance Corporation (IFC)

agriculture investments that are currently under preparation. Support will focus on achieving smallholder inclusiveness, providing strategic public investments that would enable rural households to access the market opportunities provided by the private investments. In addition, the Project involves a number of Global Practices (GPs), covering agriculture, land administration, transport/rural roads, finance, trade and competitiveness and will work closely with the ongoing Pôles Intégrés de Croissance/Integrated Growth Poles Project (PIC) for Madagascar whose agribusiness component is highly complementary (agribusiness activities under the Second Integrated Growth Poles Project (PIC2) are concentrated in the North-West and the South West). The Project will also work in close collaboration with the Madagascar Sustainable Agriculture Landscape Project/Projet d'Agriculture Durable par une Approche Paysage (PADAP) under preparation. The PADAP project will address watershed management issues and will therefore implement field activities on reforestation and land security. Both projects do not overlap with the exception of one targeted area (Iazafo Plain, Analanjirofo Region). The PADAP project will benefit from the technical assistance in land policy supported by the Project at the central level and the two projects will mutually benefit from their experiences on tree replacement activities on the East Coast.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

19. The Project Development Objective (PDO) is: *"to improve rural land tenure security and access to markets of targeted farming households in selected agricultural value chains in the Project Areas, and to provide immediate and effective response to an Eligible Crisis or Emergency."*

B. Project Beneficiaries

20. The number of direct project beneficiaries is estimated at 228,000 farming households with improved access to land tenure services, and/or training services and/or marketing opportunities in the target areas, and is based on estimated land certification capacity in the project areas combined with estimated numbers of households that will participate in selected value chains in the project areas. The project's indirect beneficiaries include: (i) the formal agribusinesses and their upstream and downstream networks of Micro Small and Medium Enterprises (MSME) and entrepreneurs through access to competitive agricultural products, skilled human resources, investment opportunities and land rights; (ii) urban population through job creation in agribusinesses and access to affordable food products; and (iii) the government and decentralized institutions with incremental tax revenues, import substitution, export revenues and social peace / conflict prevention.

C. PDO Level Results Indicators

21. The achievement of the PDO will be measured through PDO-level results indicators that are measurable and realistic in terms of what the Project can reasonably achieve and be held accountable for. These indicators are:

- Direct project beneficiaries, of which female (*core indicator);*
- Targeted farmers with perception of improved access to markets (disaggregated by value chain), of which female;
- Volume of local agricultural products sourced from the targeted areas by agribusiness companies in selected value chain (disaggregated by value chain);
- Targeted farmers with improved perception of land tenure rights being recognized by a public authority (disaggregated by sex) (*civic engagement indicator*, *gender indicator*); and
- Land parcels with use or ownership rights recorded as a result of the Project (disaggregated by sex) (*core sector indicator – land administration and management*).

22. Intermediate indicators are presented in the Results Framework (Annex 1). In parallel, an analysis will be conducted to monitor the performance of the value chains in terms of productivity, competitiveness and employment dynamics as well as the perception of ease of doing business in collaboration with PIC2.

III. PROJECT DESCRIPTION

A. Project Components

23. **The proposed project's design recognizes the fact that agriculture development and land tenure security are inextricably linked.** Unless land rights and land ownership are confirmed, farmers are unlikely to make long term investments in the land that they use[16]. The commercialization process within the smallholder agriculture sector will only happen once small scale farmers have incentives to invest in their land, the soil, their crops, and their water management and irrigation infrastructure. The development of agribusiness with smallholder engagement will be hindered if key constraints, such as lack of knowledge, skills, deficient infrastructure, and finance are not addressed. Hence, the Project combines value chain development, land reform, and infrastructure maintenance and rehabilitation into an integrated approach where project interventions within value chains are demand-driven and constitute public investments that are complementary to, and would leverage additional, private investment.

24. **Following the recent political stabilization, agribusiness investors have expressed an interest in negotiating land acquisitions.** To avoid a repeat of previous

[16] Deininger, K. 2003. Land Policies for Growth and Poverty Reduction. A World Bank Policy Research Report. Oxford and New York: World Bank and Oxford University Press.
Deininger K, Feder G, 2009. Land Registration, Governance, and Development: Evidence and Implications for Policy. The World Bank Research Observer, vol. 24, no. 2 (August 2009).
Sacks, Boudreaux, 2009. Land Tenure Security and Agricultural Productivity. Mercatus Center, George Mason University.

poorly managed land acquisition attempts, formalizing women and men's land rights among rural communities will enable them to preserve their assets and negotiate possible transactions with private investors. An improved availability of written land documentation and an appropriate agribusiness investment framework will reduce the risk of land allocation at the expense of rural communities. The current government has decided to put on hold the allocation of most of the state properties and has yet to develop an appropriate mechanism for guiding investors and facilitating a process of engagement with rural communities and individuals who hold land rights. This is to be achieved by the new Land Development Program that will provide a framework for the implementation of updated guidelines.

25. **As a basis for the project's activities and selection of geographical areas, a value chain orientation would be applied with a geographical focus around key agribusiness hubs, and their respective existing and potential rural supply catchment areas.** Based on recent extensive consultations with the private sector, using criteria such as the sustainability and competitiveness of value chains, connectivity, smallholder inclusion potential, and poverty reduction and food security potential, a number of agribusiness hubs have been identified, which display a high concentration of firms within a certain locality, covering a wide range of value chains. The project geographical coverage will focus on the following important agribusiness hubs and priority commodities: (a) in the Highlands: Antananarivo (poultry, maize and soya for feed production, rice seed) and Antsirabe (dairy, potato, onion, maize and soya for feed production) whose supply catchment area includes the Analamanga, Itasy and Vakinankaratra regions; and (b) on the East Coast: a corridor from Toamasina to East Fenerive (cloves, vanilla, other spices, lychee) which covers the Atsinanana and Analanjirofo regions. In addition, in partnership with IFC and PIC2, the Project will support meat export value chains around Fort Dauphin whose supply catchment area covers the Anosy and Androy regions. These supply catchment areas are not defined by administrative boundaries, therefore neighboring sites to the project intervention areas may in some cases also be considered. Other agribusiness hubs with rural catchment areas exist and may be assessed during the course of the project. A map of Madagascar and indicative project areas is attached in Annex 8.

26. **All three project components are ready for implementation.** With support from a Project Preparation Advance, the PIU has been established at the Ministry of Agriculture and has started preparing for the commencement of project activities. Moreover, even though the final design will be based on value chain consultations, a number of activities have been identified for the selected value chains and are based on industry requirements identified thus far. The Project and its activities have buy-in from lead private sector firms in most of the value chains as well as key public and private support institutions.[17] An estimated 72 communal land offices have land certification

[17] Companies that were consulted during project preparation and showed an explicit interest in participating in project activities include: Sopral, Sigma, Scrimad (spices and lychee processors and exporters); Socota, Star Breweries, MADCO, SMTP (pulses, food and feed grain processors); Lecofruit, Bionexx (horticulture and Artemisia exporters); Socolait and SMTP (diary and red meat processors). In addition, existing industry associations and informal groupings that include some of the above firms expressed a strong interest in project activities related to value chain coordination, policy dialogue, and other enabling environment related support (notably the clove and lychee industry associations, and an agribusinesses group that engages in frequent policy dialogue with the government, led by Star Breweries, Socota, and Lecofruit).

requests on file that, with basic logistical support, can be finalized and issued in the short term. In addition, a number of capable and experienced service providers have been identified that are likely to respond to competitive calls for proposals (for most demand-driven value chain activities) and competitive tenders (for land and infrastructure related activities). The ongoing PIC2 and the Madagascar Financial Services Project/ Projet d'Appui au Services Financier (PASEF) projects will enable rapid implementation of activities related to the meat value chains (beef and goat), investment promotion, and finance.

27. **Many of the project activities have been designed to offer specific opportunities for women, measured by four sex-disaggregated PDO level results indicators.** Investments in value chain development that will specifically benefit women include the identification of production, processing and marketing constraints, and subsequent capacity building and new technology roll-out. This includes complementary interventions that promote climate smart agriculture practices and improvements in household-level nutrition that will be aimed at women. Investments in land rights registration will include a specific effort to ensure that land certificates have the ability to recognize joint male-female and female-only ownership.

28. **The Project has three key components:** (1) Agribusiness Value Chain Development; (2) Support to Land Policy and Land Rights Registration; and (3) Support to Marketing Infrastructure Development and Maintenance. The Project includes two additional components: (4) Project Coordination and Management; and (5) Contingency Emergency Response.

Component 1 - Agribusiness Value Chain Development (US$18.49m[18])

29. Activities under this component aim to address the constraints that currently prevent value chains from further developing and expanding. This includes the need to: (i) strengthen value chain policy and governance, coordinate and facilitate knowledge flow, and enhance the linkages between players; (ii) strengthen technical capacity and skills to produce improved quality and increased quantity of selected commodities, and to aggregate production; (iii) provide quality assurance services such as veterinary services, standards, certification and traceability mechanisms; and (iv) strengthen financial services. Support would be aimed at farmers, traders/collectors, processors, exporters and other value chain actors. The Project will primarily use technical assistance (TA) to support individual activities using a demand-driven approach.

30. The component consists of three main sub-components: (i) improving the enabling environment; (ii) knowledge and technology transfer; and (iii) enhancing access to agriculture finance, as detailed below. It is consistent with the National Strategy for Agricultural and Rural Training 2012 (SNFAR 2012) which supports the agricultural modernization process through supply and demand for training.

Sub-component 1.1: Improving the enabling environment (US$4.52m)

31. The sub-component's direct results include enhanced capabilities of private value chain participants and relevant government institutions to improve value chain

[18] The component costs include price contingencies of 6 percent as well as recurrent costs of US$ 0.796 million. Sub-component costs indicated below exclude recurrent component costs.

governance and efficiency, contributing to improved competitiveness and continued private investment and value chain expansion, leading to enhanced market access among producers. Operational modalities are based on the identification of demand-driven activities, involving calls for proposals with clear selection criteria (such as economic relevance, financial sustainability, smallholder inclusivity, gender considerations, environmental sustainability). Activities will be funded by the project, implemented by experienced service providers (specific to project area and groups of value chains, and that are already active and have the capacity and interest in participating), and will require contributions from value chain participants.

(i) **Value chain organization, coordination and planning.** The Project will provide technical assistance and activity-based funding to value chain stakeholders, starting with the establishment of new, or strengthening existing, vertically integrated value chain associations.[19] Value chain organizations include farmers, collectors, processors, and exporters/traders. Activities for funding will include:

a. Facilitating value chain organization by convening multi-stakeholder dialogue groups with the objective of identifying key constraints and solution areas. Training will be provided to enhance technical and organizational capacity of value chain organization members that will improve dialogue and coordination of value chain functions among stakeholders (especially required among farmer organizations and small-scale collectors/intermediaries within value chain with many players and where quality and food safety are important, e.g. clove oil, milk, beef);

b. Conducting policy analysis on key issues (related to trade policy, competition policy, regulatory framework, or other relevant policy priorities), and engagement in policy dialogue with Government;

c. Technical assistance for the preparation of proposals based on the priorities identified. Priorities are expected to include: systems to enhance intra-value chain quality control and food safety (such as disease surveys, traceability systems); technical training among producers and other value chain actors; the identification of new varieties/breeds and processing technology and subsequent roll-out; and maintenance programs of feeder roads.

(ii) **Value chain governance mechanisms and regulatory enforcement.** Based on the needs identified by value chain stakeholders, assistance will be provided to implement stakeholder-led governance mechanisms and regulatory service provision.

a. Technical assistance will be provided for the implementation of mechanisms for enforcement of quality standards, including food safety (traceability, animal disease surveys), laboratory capacity (including for veterinary purposes), and certification services (including animal husbandry and veterinary). To strengthen regulatory enforcement capacity, public-private arrangements will be developed.

[19] The associations' mandates and organizational set-up for mobilizing internal sector resources and progressively achieving financing autonomy will be clearly described in the Project Implementation Manual (PIM).

b. Where needed, existing legislation, regulations and enforcement practices in support of sound governance and competitive practices within value chains will be reviewed and improved. Depending on the area of legislation and the commodity in question, this may involve the Economic Development Board of Madagascar (EDBM), the Ministry of Agriculture, the Ministry in charge of Livestock, the Ministry in charge of Decentralization, and the Ministry in charge of Trade.

Sub-component 1.2 – Knowledge and technology transfer (US$7.87m)

32. The sub-component's direct results include enhanced knowledge and availability of improved technologies to increase production, and enhance productivity, quality, and profitability among private value chain participants, thus contributing to improved competitiveness and value chain expansion, leading to enhanced market access among producers. Operational modalities are based on the identification of demand-driven activities, involving calls for proposals with clear selection criteria (such as economic relevance, financial sustainability, smallholder inclusivity, environmental sustainability, and gender considerations). Activities will be funded by the project, implemented by experienced service providers, and will require contributions from value chain participants.

(i) **Demand led capacity development through training**. A diversified pool of public, private and non-governmental organization (NGO) training providers will be used to enhance value chain performance among value chain actors, promoting the use of appropriate advanced technologies throughout the value chains, addressing environmental and natural resources concerns and constraints, and promoting sound management practices including climate-smart agriculture technology[20], all of which aim to increase productivity and resilience and provide mitigation co-benefits. Training curricula will be designed to address a wide range of aspects including sustainability, financial management, climate adaptation, nutrition, and social and gender implications. A prominent feature of this sub-component is the design and delivery of training by Public-Private Partnerships (PPPs), involving farmers, agribusiness companies, and training institutions. Capacity building needs and activities would be identified under sub-component 1.1 by value chain actors themselves. In designing and conducting the training, challenges and priorities expressed by women farmers will be taken into account. This may include involving women farmers in climate-smart trials and demonstrations, and the development of training curricula. Similarly, where relevant, training activities will aim to provide the youth with livelihood options and skills that would enable them to respond to employment opportunities along the value chain.

[20] Climate-smart agriculture (CSA) aims to achieve climate change adaptation, mitigation and food security, increasing crop productivity and resilience. The adoption of climate-smart agriculture practices, such as conservation agriculture, no tillage systems, crop diversification and intercropping, improved water management, crop residue mulching, improved seeds, agroforestry can support them to increase and sustain crop productivity for their commercial production as well as subsistence production and produce environmental benefits such as increasing soil moisture and reducing land degradation. Local studies have shown positive impacts of CSA practices: within 4-5 years, degraded soils can be restored by climate-smart agriculture practice such as conservation agriculture, agroforestry, afforestation; adoption of conservation agriculture over a 5 year rotation can lead to a 66 percent increase of crop yields per year for rice and maize.

(ii) **Enhancing access to improved technologies.** The Project will facilitate the uptake of productivity and efficiency enhancing technologies, some of which will bring significant environmental benefits. The main delivery mechanism is technical assistance, in some cases with community led implementation, and may include cost sharing. Technology priorities will be identified under sub-component 1.1 by value chain actors. Technologies to be rolled-out in various value chains would include replanting old tree stock (cloves, lychee), post-harvest technology to farmer groups and collectors; support to improvement of alembics (clove oil distillation units) to enhance distillation efficiency and reduce firewood consumption; delivery of artificial insemination and natural breed services, introduction of fodder seed and feed concentrate; enhancement of milk collection centers' technical capacity to enforce industry quality requirements; support the development of contract farming schemes for the animal feed industry. In most cases training will be an integral part of technology development and roll-out.

Sub-component 1.3 – Enhancing access to agriculture finance (US$5.30m)

33. The sub-component's direct results include enhanced availability of value chain financing at the firm level, contributing to improved financial market liquidity among producers, traders, and processors in key value chains and value chain expansion, leading to improved market access. To operationalize this sub-component, the Project will provide grant funding to an existing and proven partial portfolio credit guarantee fund.

34. The Project will enhance access to value chain financing eligible producers, traders, processors, agribusiness small-medium enterprises (SMEs) and larger agribusiness firms to invest in new ventures and expand existing operations through a partial credit guarantee fund (PCGF), channeled through commercial banks and micro-finance institutions (MFIs) and combined with TA.

(i) **Partial Credit Guarantee Fund for agribusiness:** The fund will initially be administered through the ongoing PASEF project, which is currently implementing a broader Partial Portfolio Credit Guarantee (PPCG) scheme, managed by a local fund manager, SOLIDIS. PASEF will exclusively direct the Project's PPCG fund to eligible producers, traders, processors, agribusiness SMEs and larger agribusiness firms through a dedicated loan guarantee window in the targeted locations to help achieve the scale effects intended by this operation. The agribusiness window would eventually be managed by SOLIDIS and thus be embedded in an existing institution with good prospects for sustainability. The objective of the PPCG is to facilitate access to credit by small and larger agribusiness enterprises. Currently, five financial institutions are participating and it is expected that this will increase to ten in 2016. At present, 4 million US$ in capital can support a volume of loans of 16 million US$ entered in the guarantee. A similar loan volume can be expected with the Project's contribution to the PPCG Fund of US$4.5 million, which will be disbursed in three tranches based on performance.

(ii) **Technical assistance (TA) program:** The Project will support complementary capacity building among participating financial institutions (PFIs) and within

SOLIDIS. Within the PFIs, the TA will help with the assessment of credits, the development of products tailored to the needs of the sector, and marketing.

Component 2 - Support to Land Policy and Land Rights Registration (US$13.40m[21])

35. Uncertain land rights is one of the major constraints to the development of agricultural investments. From an investor's perspective, access to agricultural land involves risks that may compromise their projects as there is no adequate mechanism to guide investments in the field. From a smallholder's perspective, agreements with investors are desirable as long as their land rights are formally recognized, not called into question, and the agreements bring benefits. Smallholders also consider land security as an incentive for investing in their own land, for example in the form of irrigation infrastructure and tree crops. The development and commercialization of the smallholder agriculture sector and facilitation of responsible agricultural investment requires better institutional capacity for land management and land use planning at the central, regional and local levels. The component, through two sub-components, will support the current land policy reform process to promote a land management system conducive to inclusive agricultural investment by: (i) strengthening capacities of existing institutions in charge of land management, i.e. local land offices, national land administration system and the Land Reform Coordination Unit; and (ii) supporting field activities to roll out smallholder farmers' land rights registration and facilitating access to land for investors in a responsible and socially inclusive manner.

36. The gender disparity is evident with women having less access to formalized land rights than men. Both men and women have equal rights to land and natural resources but land is typically titled in the name of the male head of household and if women inherit land, they typically access land rights via a male relative. The project will pay attention to support for registration of land rights for women.

Sub-component 2.1: Support to the land policy reform process (US$3.40m)

37. The sub-component's direct results include enhanced land registration capacity at central and communal levels, new land legislation, contributing to transparency and socially inclusive land use, all of which are designed to accommodate the Principles for Responsible Agriculture Investment (PRAI), leading to improved land tenure security. Operational modalities include legal technical assistance and training by a small number of service providers, and will involve close coordination with PIC2 and IFC/Trade and Competitiveness (T&C) Advisory. The sub-component will be implemented at the central and regional levels (in the project areas).

(i) **At the central level**, the Project will: (a) strengthen the Ministry of Presidential Projects, Land Use Planning and Equipment (MEPATE's) capacity for planning and implementation of the new National Land Program[22]; (b) review of land legal texts, in particular the laws and regulations for existing Agriculture Investment Zones (ZIAs);

[21] The component costs include price contingencies of 6 percent as well as recurrent costs of US$ 0.645 million. Sub-component costs indicated below exclude recurrent component costs.

[22] Specifically, MEPATE's Direction Générale des Services Fonciers (DGSF) and the Land Reform Coordination Unit (CCRF).

(c) technical assistance to EDBM (which falls under the Presidency) to establish an agriculture investment framework that follows the PRAI guidelines (as part of investment promotion support provided to EDBM by PIC2 and IFC/T&C Advisory - the Project's contribution would focus on the linkages between EDBM and the national and local authorities dealing with land allocation and land rights.)[23]; (d) facilitate Civil Society Organizations' (CSOs) participation in the land sector to monitor land related project activities.

(ii) **At the regional level (in project areas)**, the sub-component will: (i) assist the regional authorities to promote socially inclusive land transactions involving State land, as part of the new agriculture investment framework supported at the central level (see above), that provide confidence to investors and ensure economic benefits for rural communities; and (ii) provide training to local land sector stakeholders on land policy reforms, and on the implementation of the land certification process.

Sub-component 2.2: Land rights registration and land administration (US$9.34m)

38. The sub-component's direct results include land use plans and land administration systems operationalized, with land certificates issued to farmers in the Project areas, contributing to transparency and socially inclusive land use, leading to improved land tenure security. Operational modalities include technical assistance and activity management by service providers. The sub-component will be implemented at the local commune level in project areas.

(i) **At the local commune level** this sub-component will implement the Government's land policy reform in project areas, facilitating low cost land rights registration in a timely manner, in compliance with the legal framework on decentralized land management. This would entail the following:

a. ***Updating land archives and consolidation of "local land occupancy status maps" (PLOFs).*** Technical support will be provided to regional Land Administration services to complete the PLOFs at the local level and make them more reliable. This activity will produce early results as it will help most of the Communes speed up the issuance of thousands of land certificates that were pending due to a lack of capacity and resources caused by municipal budgets cuts during the political crisis.

b. ***Issuing Land Certificates by Communal Land Offices*** – Communal Land Offices included in the project areas have been neglected since the start of the political crisis in 2009 and need urgent support to recover their capacities to recommence the land rights registration process and build a sustainable base for regular land titling activities in the future. The Project will: (i) expand the local land titling process through field operations by private service providers that combine systematic land census and land rights certification (piloted

[23] The Project will contribute to investment promotion TA provided to EDMB by IFC/T&C Advisory, focusing on the design and implementation of a responsible agriculture investment framework. The four phases of this framework are 1) investment climate; 2) investment promotion; 3) investment entry; and 4) investment operation. Currently, no agribusiness framework exists, which has resulted in controversial land allocation commitments. The new framework would guide the authorities, investors, and communities and avoid such problems.

through previous World Bank analytical work[24] and implemented on a larger scale by previous projects including projects financed by the World Bank[25], specifically supporting women and female-headed households); and (ii) support municipalities to improve the capacities of their Municipal Land Offices.

c. ***Design and implementation of local land use schemes.*** The Project will provide TA to communal land use planning (SACs – *Schémas d'Aménagement Communaux*) based on a method recommended by the MEPATE. SAC is a vision of the Commune on the development of its territory. It will be critical to include Agriculture[26] Investment Zones (ZIAs) and public lands in the SAC as well as various infrastructure, in particular rural roads to be taken into account for maintenance programs.

Component 3: Support to Marketing Infrastructure Development and Maintenance (US$15.07m[27])

39. The component's direct results include improved physical linkages between production catchment areas and markets, contributing to increased production and marketing, lower transaction costs, leading to enhanced market access among producers and value chain expansion. Operational modalities will involve the identification of priority infrastructure needs, partly derived from value chain coordination and needs assessments supported under component 1, and implemented through a combination of technical assistance and contracted civil works.

40. The current poor condition of rural roads is mainly due to: (a) natural and geographic constraints[28]; (b) a weak institutional framework (from the central Government to local authorities) with limited definition and enforcement of rules (especially for rain barriers and truck weight limit); and (c) severe lack of maintenance. As the central and local Governments lack capacity and financing to manage the sector by constructing and maintaining the road network, the maintenance of some isolated portions of roads has been undertaken by non-governmental entities, including the private sector. The current deterioration of feeder roads has resulted in substantial inefficiencies in agricultural value-chains, reducing efficiency, increasing costs, and negatively affecting competitiveness of agricultural products.

41. The lack of infrastructure and equipment for post-harvest handling and marketing is a major constraint for most of the identified value-chains. At the farmer level, a lack of storage capacity prevents them from maximizing their profit margins by forcing them to sell their production after harvest when prices are low. For downstream chain actors, the limited access to storage infrastructure increases operating costs and impacts the quality

[24] Support to Land Administration and Management Reform Technical Assistance and Madagascar Land Policy Reform: Perspectives and Prospects Economic Sector Work (ESW)

[25] Programme de Gouvernance et de Développement Institutionnel 2 (PGDI2), Programme Environnemental, Phase 3 (PEIII).

[26] Reference to agriculture includes livestock

[27] The component costs include price contingencies of 6 percent as well as recurrent costs of US$ 0.796 million. Sub-component costs indicated below exclude recurrent component costs.

[28] Heavy rains especially in the Atsinanana and Analanjirofo regions; cyclones; complex topography for roads, with succession of hills with steep slopes in the highlands; obsolete roads dimensioning; inexistent or disabled drainage structures, etc.

of the final product. Investments in storage infrastructure are usually financed by the private sector, although warehousing services that serve producers, traders and Financing Institutions (FIs) could be financed through a PPP model. The sub-component has the following sub-components:

Sub-component 3.1: Rehabilitation of commercial feeder roads (US$11.19m)

42. The sub-component will finance rehabilitation of critical spots on economically strategic feeder roads. The criteria for road selection are related to their potential economic return (production potential of catchment area, number of producers, real market linkages). Based on these criteria, key infrastructure bottlenecks (critical spots and collapsing bridges) have been pre-identified on commercially strategic feeder roads based on discussions with local economic players including agribusiness companies procuring substantial volumes for processing and/or export.

Sub-component 3.2: Maintenance of feeder roads (US$1.27m)

43. The sub-component will finance: (i) TA for clarification of the legal framework for feeder road rehabilitation and maintenance; (ii) the establishment of maintenance financing schemes; (iii) tailored pilots for local feeder road maintenance programs in targeted areas, including the identification of stakeholders' responsibilities and mechanisms for local financing, governance, and accountability; and (iv) provision of training and equipment for the *maîtres d'ouvrages.*

Sub-component 3.3: Storage infrastructure development (US$2.42m)

44. This sub-component will support further development, professionalization and expansion of rural storage (community and/or commercial and private facilities) and collateral based finance.

(i) **Support to the village grain stores (GCVs) inventory credit system**: Greniers Communs Villageois, GCVs, a communal village level storage system linked to micro credit institutions, provide farmers with inventory-based financing for working capital, mainly based on storage of paddy rice. The Project will support the development, professionalization and expansion of the GCVs through four main interventions: (a) a review of warehouses recently built by similar initiatives (financed by the International Fund for Agricultural Development (IFAD) and other donors) and linked credit systems; (b) TA to address coordination failures and information asymmetries among industry actors; (c) legal technical assistance to develop the legal framework, strengthening the legal foundation for collateral-based financial instruments; (d) building in-house capacity of MFIs to improve warehouse services and commodity handling practices, including critical functions such as grading and standardization, commingling of commodities, and oversight of stocks to minimize losses.

(ii) **Construction of new GCV storage facilities:** To expand rice marketing and GCV-linked credit availability, and based on the outcomes of the above mentioned review work and TA, the Project will introduce the system in three locations within project areas on a pilot basis for possible further expansion. Based on calls for joint proposals by producers/communities, MFIs, and possibly traders, the Project will finance the

construction of warehouse facilities. Complementary TA will be provided to identify suitable governance arrangements for warehouse ownership and management.

Component 4: Project Management and Coordination (US$6.04m)

45. The aim of this component is to ensure effective project management and coordination. The component will support all aspects of project management, including fiduciary management, M&E, knowledge generation and management, communication, and monitoring mitigation measures related to safeguards.

Component 5: Contingency Emergency Response (US$0m)

46. This component establishes a disaster response contingency funding mechanism that could be triggered in the event of an eligible crisis or emergency, such as a natural disaster involving a formal declaration of a national or regional state of emergency, or a formal request from the Government of Madagascar in the wake of a disaster. In that case, funds from other project components could be reallocated to Component 5 to facilitate rapid financing of a positive list of goods and services related to Components 1, 2, 3 and 4, and that would still be relevant to the achievement of the PDO. Eligible activities would include clearing and rehabilitating road and irrigation infrastructure, purchasing construction materials, agricultural inputs, or contribute to pest/plague control (e.g. locust control).

B. Project Financing

47. The Project is designed as an investment project financing (IPF) operation to be implemented over five years starting in 2016. The total base project cost is US$49.8 million. The total project cost including contingencies of US$3.2 million is US$53.0 million. The Government of Madagascar will also contribute approximately US$270,000 to cover compensation costs for resettlement (land acquisition costs; compensation on crops, trees, shelter, habitat, structures, etc.) that may occur as a result of implementation of the Project. The Project is also expected to leverage private financing from the agribusinesses involved in agricultural value-chains that will be channeled towards capacity-building, production expansion and rural infrastructure maintenance. Table 1 below summarizes the indicative costs by component.

Table 1: Total Project Costs and Financing

Project Components	Project Cost (US$ million)	% IDA Financing
1. Agribusiness value chain development	18.49	100%
2. Land policy and local land rights registration	13.40	100%
3. Marketing infrastructure development	15.07	100%
4. Project management, coordination and M&E	6.04	100%
5. Contingency emergency response	0	
Total Project Costs	53.00	100%

C. Lessons Learned and Reflected in the Project Design

48. The project design has benefited from best practices and lessons learned from similar interventions in the region, summarized below.

49. For some commodities, contract farming can be an appropriate model to better connect farmers to markets and to lift many of them out of poverty. According to ongoing analytical work conducted by the World Bank (Madagascar Agriculture and Rural Development, non-lending technical assistance (NLTA)), Madagascar has seen a number of success stories in contract farming. However, in some cases the number of producers involved were too few to have a significant impact on poverty reduction. The study suggests that, in order to improve contract farming impacts on poverty, semi-industrial agribusinesses with their own plantations can be promoted, acting as nucleus enterprises that can provide services to smaller producers.

50. While contract-based farming between established traders/operators/processing companies and small holders has the potential to develop local value chains, other value chains in which tens of thousands of smallholder farmers participate, and that do not lend themselves to contract farming or outgrower models, include spices and fruits for export markets. In these value chains, different models of intra-value chain coordination can provide incentives to producers to enhance volume and quality of production. Industry led mechanisms for intra-value chain coordination (or *interprofession*) are particularly well known in West Africa and will be applied in the Project.

51. Public investments should be flexible and respond to private sector demand and private sector-led investments. As concluded by the World Bank Independent Evaluation Group (IEG), interventions implemented by the private sector report a high level of positive outcomes. Evaluations show that "the role of private sector entities as primary or sole implementers was important in input technology projects and output promotion projects. One could expect private firms to have an incentive to invest when positive impacts can be assured, which, in turn, result in profits." One of the examples quoted is the promotion of export rice in Madagascar, where farmers were given high-value crops to plant and were trained to comply with specific export requirements.[29] Investments by the Project are directly linked to demonstrated private sector interests (e.g. new private investments in the red meat value chain in Fort Dauphin, expansion of existing outgrower schemes in dairy, feed grains, horticulture, involving tens of thousands of producers, and improvements in spices and fruits value chains).

52. Concentrating investments in well-defined supply catchment areas around agribusiness hubs ensures a spatial concentration of investments so as to capture synergies and increase impacts, much like a growth poles approach where public and private investment complement one another. While an integrated approach may appear complex, its geographic focus reduces the risk of excessive complexity, and avoids limited resources being spread too thinly.

53. PPPs can leverage modest public resources to improve services and achieve larger impact. Leveraging private capital and expertise can be a bridge to not only infrastructure

[29] Impact Evaluations in Agriculture, an Assessment of the Evidence. World Bank Independent Evaluation Group, 2011

funding gaps but also to smallholders financing as well as managerial and governance deficits. In addition, the private sector can help maintain public assets.

54. Access to land is known to be one of the key constraints that limits investment in agriculture. Managers of agribusiness companies based in Madagascar confirmed that their activities have been limited by extreme difficulties in finding a piece of land. Years of experience and presence on the ground are insufficient to acquire land, and this is even more complicated for incoming investors who are unfamiliar with the country and without professional networks. It is likely that the demand for land will increase as the political situation improves and leads more national and international companies to consider agriculture investment projects in Madagascar. However the area of available land for new agribusiness investments remains unknown. Available data so far are rough estimates stating that 90 percent of arable land is not cultivated Food and Agriculture Organization of the United Nations (FAO) and the concept of arable land needs to be clarified. Attractive land for investments, i.e. land that is fertile, irrigable and close to all weather roads is likely to be in short supply. The Land Observatory confirms that investors are competing to acquire such land.

55. As a result, investment in agriculture remains a sensitive and complex topic. Many in Madagascar remember the disastrous consequences of botched land deals negotiated on excessively large areas in 2008 (Daewoo, Varun). It demonstrated the need for appropriate strategies to be developed to attract investment in the agricultural sector while avoiding land dispossession that could cause social unrest. No resettlement of population will be considered by the Project as a basic principle so as to avoid any claims and reputational risk. Based on previous experience, the purpose of the Project is to assist in formalizing existing land rights to facilitate transparent and inclusive transactions current between landholders and potential investors.

56. A decentralized land management system as the one promoted by the Madagascar land policy reform helps mitigate land grabbing. Most cases of land grabs are related to land allocations without consultation at local level, mostly carried out by central services that did not take into account existing land rights or land occupancies. The challenge is to strengthen the capacity of municipal land offices in two ways: (i) provide smallholders with written proof of their rights in a quick and low cost way to provide incentives for investment on their own land, protect smallholders' access to land and avoid forced evictions; and (ii) facilitate land transactions records. Communal land offices will establish the basis for an informed and transparent land market and facilitate connections between landholders who lack capital and investors looking for land.

57. The design should be inclusive and anchored in the existing local performing public and private institutional arrangements. Extensive local consultations with public and private value chain players and the integration of the partnership with them into project design are essential to build ownership and avoid duplicative efforts. Beneficiaries should be invested in the success of the Project.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

58. Three principles underlie the selection of the project's institutional and implementation arrangements: (i) implementation arrangements are based on strengthening the existing capacity within the Ministry of Agriculture (MoA), to avoid the creation of *ad hoc* arrangements that could dissolve after Project closure; (ii) implementation arrangements will make use of existing structures that can meet the requirements of the World Bank to avoid unnecessary additional administrative burden; and (iii) implementation arrangements were chosen to ensure maximum ownership and involvement by stakeholders in project implementation.

59. Overall responsibility for project implementation will lie with the Ministry of Agriculture. Given the Project's multi-sectoral scope and nature, various other ministries, government agencies at the local, national and regional levels, the private sector, CSOs and farmer organizations will also be involved in implementation.[30] This will require the strong coordination of activities and consultations among all the implementers at various levels and will be the responsibility of Ministry of Agriculture as the lead ministry.

Overall Coordination and Project Management

60. The project's coordination and management structure will be based on three main bodies: the Project Steering Committee (PSC) (*Comité de Pilotage*), the Project Implementation Unit at the central level (*Agence d'exécution*), and two Regional Implementing Units (*Cellules Régionales d'Exécution*).

61. The **Project Steering Committee** will provide strategic oversight of the project. The Committee will be chaired by the Secretary General of Agriculture or his representative, and include representatives of the Ministries of Finance; Presidential Projects, Land Use Planning and Equipment; Industry and Development of the Private Sector; Livestock; Trade; EDBM; Civil Society representatives; farmers' organizations; private sector platforms and one representative of the Regions of each project intervention area[31]. The PSC will meet at least twice a year and will be responsible for approving the annual work plans and related budgets, Project progress reports and providing policy direction. The Steering Committee may participate in annual field visits as needed. The PIU will act as the Secretariat of the Project Steering Committee and will be responsible for preparing the meetings, preparing the documents for the meeting, and recording the minutes of the meeting.

[30] The main ministries that will be part of the project include:
- the Ministry of Presidential Projects, specifically the Direction Générale des Services Fonciers, the Land Reform Coordination Unit and the Land Observatory
- Economic Development Board of Madagascar (EDBM)
- Ministry of Industry and Private Sector Development
- Ministry of Livestock
- Ministry of Finance

[31] The terms for the appointment of the regional representatives will be detailed in the institutional decree for the establishment of the Steering Committee.

62. The **Project Implementation Unit (PIU)** based within the Ministry of Agriculture will manage the Project's day-to-day activities, project Monitoring and Evaluation (M&E), and policy dialogue on improved policies for commercial agriculture. The PIU staff will be responsible for all procurement, disbursement, accounting, financial and technical reporting, monitoring and evaluation of the project, including the environmental and social safeguards aspects, policy dialogue on commercial agriculture, and ensuring the auditing of the Project accounts. At the central level the PIU will be composed of the following staff nominated by the Ministry of Agriculture: (i) a national coordinator; (ii) a procurement specialist; (iii) a financial management specialist; (iv) an accountant; (v) a monitoring and evaluation specialist; (vi) six technical experts (agribusiness, land, public policies and governance, rural roads, and two livestock specialists); (vii) one environmental and social safeguards specialist; (viii) an internal auditor; and (ix) three assistants. Technical experts of the central PIU will also supervise field activities in the part of the Highlands located around Antananarivo, and the market supply basin around Fort Dauphin. Additional staff with specific expertise may also be recruited as and when needed. The PIU will prepare bi-annual reports recording Project progress and participate in bi-annual joint support missions with the World Bank. It will provide the MoA with analytical skills and prospective evaluation capacities, conduct analytical work on the agricultural sector, land tenure security, agricultural responsible investment and management of rural infrastructures, and on this basis arrange national debates on agricultural and land policies aiming at decisions to improve the institutional environment for commercial agriculture.

63. **Two Regional Implementation Units (RIUs)** located in the Highlands (Antsirabe) and in the East Coast (Toamasina) will be in charge of project implementation at the regional level. They will be responsible for supervising project activities in the targeted areas and facilitation of ongoing dialogue with regional authorities. Each of these Units will include: (i) a Regional Coordinator; (ii) a procurement specialist; (iii) an accountant; (iv) three technical experts (agribusiness, land and rural roads), and (v) related assistants. A regional presence will be established in Fort Dauphin to coordinate project activities related to the meat value chains in collaboration with PIC2 and IFC. The RIUs will be accountable to the central PIU and to a ***Comité Régional de Suivi (Regional Monitoring Committee)***. The Regional Committee will meet twice a year to ensure consistency of project activities with regional development policies, and monitor project progress. The Regional Committee will be chaired by the Head of Region or his representative, and will include representatives of sectoral technical services (Agriculture, MEPATE; Industry and Private Sector Development, Livestock; Trade), CSO representatives, farmers' organizations and private sectors platforms. The Project will provide resources to CSOs and farmers' organizations to follow and assess progress made by various project activities. Annex 2 provides further details and an illustration of the institutional project implementation arrangements.

64. A Project Implementation Manual (PIM) including a Project Implementation Plan (PIP) will be prepared by the PIU and finalized by project effectiveness. The PIP will include project coordination, management, implementation, monitoring and evaluation, all periodic reporting arrangements and procedures for the establishment and management of the grant system.

B. Results Monitoring and Evaluation

65. The Project M&E system will be embedded in the MoA's existing M&E structure. All implementing entities will participate in data collection and reporting. The PIU will be in charge of the monitoring of project outputs, including data consolidation, quality control, analysis and reporting through its technical experts and the M&E officer. The PIU monitoring system will ensure that the Project is on track and will be used as the basis to improve the efficiency, targeting and impact of the Project when needed. To that end, M&E reports will be used when preparing the annual work plans and budgets.

66. The PIU will also be in charge of feeding the M&E needs of the MoA and the national system which will be set-up to monitor the CAADP process. If needed, capacity-building at the MOA will be provided through the Project for very specific aspects and sectors, using a hands-on approach to ensure long-term results. Capacity-building would target a few young professionals from the Ministry in charge of M&E, who would be involved on a continuous basis on the Project M&E system.

67. The implementing partners (IPs) will undertake most of the data collection with triangulation by the PIU or other external partners and the beneficiaries as part of the citizen's engagement agenda. The results-based contracts and Memorandum of Understanding (MoUs) with the IPs will include clear M&E requirements and reporting formats, which will be prepared and shared by the M&E officer of the PIU to ensure comprehensive reporting by all partners.

68. Output-level M&E indicators will be closely reviewed by the PSC and by the World Bank implementation support teams to ensure that the required targets are achieved. If planned results are not reached, the implementation support teams will need to closely analyze the reasons and develop a strategy to review the approach to the component or sub-component.

69. For evaluation of the outcome level indicators, a baseline and final surveys will be conducted by a single consulting firm. The methodology will be a qualitative survey conducted on a representative sample of households from the project target population and a control group. The sample should be large enough to account for potential attrition effect. The main indicators to be covered in the survey are:

- PDO indicator 2: Targeted farmers with perception of improved access to markets (disaggregated by value chain), of which female;
- PDO indicator 4: Targeted farmers with improved perception of land tenure rights being recognized by a public authority (disaggregated by sex) (civic engagement indicator, gender indicator);
- Intermediate indicator 1.1: Targeted farming households reporting larger volumes of agricultural products sold; and
- Intermediate indicator 1.3: Targeted farming households reporting hiring additional paid non-family labour

70. Other indicators related to livelihoods could be included in the survey. For the PDO indicators 2 and 4, a perception index will be developed in collaboration with national institutions to ensure the relevance of the index and potential adoption of the methodology after the project: (i) for land tenure: the *Observatoire du Foncier* and the *Cellule de la Réforme Foncière*; and (ii) for market access: the EDBM, the Ministry of Agriculture and PIC2.

71. In parallel, a value-chain analysis will be conducted (baseline and final evaluation). This will be undertaken by an experienced consulting firm or individual consultant in partnership with the industry associations. They will focus on: (i) performance in terms of competitiveness, productivity and value addition[32] for the overall value chains and by chain actors; (ii) equity and inclusiveness dimensions of each value-chain in terms of the number of people involved, job creation dynamics and distribution of value-addition and margins across the chain actors; (iii) their fiscal impact and taxation dynamics, both official and informal; and (iv) consumer satisfaction both on domestic and international markets.

72. The Project will identify and address issues specific to men, women and youth during implementation. A gender analysis of the identified commodity value chains will be conducted to better understand the critical gender gaps and identify how best to address them. Based on the findings of the analysis, the Project will establish a baseline on which realistic targets will be based.

73. The Project may also promote a market information tool experimented by the PIC2 project for several agricultural value-chains based on the results of the pilot. The process would be led by the industry associations to ensure the relevance and sustainability of the system.

C. Sustainability

74. **Institutional sustainability** of the Project would be ensured through: (i) the alignment of the project development approach with the national policies, strategies and the on-going CAADP process; and (ii) the implementation arrangements fostering the capacity building of public institutions and the ownership of the Government.

75. The value chains have partly been selected based on criterion that will guarantee the **financial and economic sustainability**, such as market potential, price-competitiveness on domestic and international markets, additional profits for the upstream, midstream and downstream actors of the value chains, job creation potential, etc. Implementation mechanisms have also been identified based on the post-project financial sustainability of commercial actors and the cost-efficiency of non-commercial actors (local land administration offices, training facilities, road maintenance schemes). Enabling environment interventions for private sector investment will also foster long-term economic development.

[32] The service provider would capitalize on existing methodology for the monitoring and evaluation of value chain performance (United States Agency for International Development (USAID), FAO/AGS tool kits, etc.)

76. **Social sustainability** will be built through: (i) consultations with all the actors of the identified value-chains during implementation; (ii) CSO participation during the implementation of specific interventions (policy dialogue forums, sector platforms, etc.); (iii) citizen third party monitoring for some of the project interventions; (iv) capacity building to enable professional and constructive civil society engagement on issues related to private investment; (iv) implementation of specific interventions aimed at improving stakeholder participation in policy reform dialogue, sector roundtables and participative monitoring tools; and (iv) grievance redress mechanisms. The land tenure interventions would also contribute to conflict prevention.

77. The technical options identified at the upstream and midstream segment of the selected value chains will ensure the **environmental sustainability** of the Project. Activities such as replanting of perennial crops, agro-forestry production models or improvement of primary processing will generate substantial environmental benefits. It is also expected that a share of the production for the export markets will be organic certified.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

78. The overall implementation risk is *substantial*. While Madagascar has returned to democracy, the political situation remains fragile and governance remains weak. Resulting from this, sector strategies and policies may be subject to unexpected interventions, e.g. land policy and agriculture market interventions that could have an adverse impact on project activities. These risks are mitigated by project support to policy analysis, dialogue and regulatory capacity.

79. The focus is on risks to development results associated with the project, mainly failure to achieve the intended results, and the risks that the project might cause unintended (possibly negative) results. Table 2 summarizes and rates the major risks associated with the proposed project. Political and governance risk is rated "*Substantial*", due to the unstable political situation and the potential negative impact of poor governance on private investments in agriculture. Risks rated "High" and "Substantial" and mitigation measures are as follows. Risk associated with Sector strategies and policies is rated "*High*", mostly reflecting the risks of reversal of the land policy and the land reform agenda currently pursued. This will be mitigated by the implementation of the new National Land Program. Technical design of the Project and institutional capacity for its implementation are both rated "*Substantial*" as a result of the multi-sector nature of the Project that involves various Government ministries, agencies and regional authorities for implementation. These risks are mitigated by multi-sector implementation and coordination arrangements and the use of service providers. Fiduciary risk is rated "*Substantial"* reflecting areas of significant weaknesses in financial management and procurement. This risk will be mitigated by the recruitment of qualified fiduciary staff[33] in the PIU and RIUs and adoption of an implementation manual to provide detailed

[33] Financial management and procurement specialists and accountants.

guidance for effective fiduciary oversight. Agribusiness investment may result in disputes, posing a *"Substantial"* stakeholder risk. This is mitigated by project support to the implementation of the principles for responsible agriculture investments, which are designed to protect the interests of local communities and create "win-win" agreements.

Table 2: Summary ratings of major risks

Risk category	Rating
1. Political and governance	Substantial
2. Macroeconomic	Moderate
3. Sector strategies and policies	High
4. Technical design of project	Substantial
5. Institutional capacity for implementation and sustainability	Substantial
6. Fiduciary	Substantial
7. Environment and social	Moderate
8. Stakeholders	Substantial
Overall	Substantial

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

80. **Development impact.** The PDO is *to improve rural land tenure security and access to markets of targeted farming households in selected agricultural value chains in the Project Areas, and to provide immediate and effective response to an Eligible Crisis or Emergency* through three main technical components focusing on support to agribusiness development; land tenure security and to commercial infrastructure development and maintenance. The current EFA demonstrates that: (i) the incremental benefits expected in the "with project" (WP) situation compared to the "without project" (WOP) situation justify the project costs although not all incremental benefits can be expressed in monetary terms; and (ii) the proposed investments are financially sustainable for the target population and their commercial units. Due to the lack of reliable data, the fiscal impact of the project could not be assessed but is expected to be substantial especially due to the incremental tax base for local and export taxes and duties.

81. **Public rationale.** There is a strong rationale for public sector financing including the correction of market failures as well as positive environmental spillovers and incorporation of externalities. The selected agricultural value-chains suffered from critical market failures mainly due to economic governance issues and an obsolete legal framework leading to low and even decreasing private sector investments. Private investors are facing a business environment characterized by uncertainty and high risks at all levels of the value-chains, from farmers to exporters. The current situation is deteriorating fast especially for exported commodities whose price and quality competitiveness is dramatically affected by these market failures. Exports of high value commodities such as vanilla and clove essential oil could drop by 20% annually in the coming years according to experts (*Centre Technique Horticole de Tamatave*, CTHT, and industry associations). The lack of public infrastructure such as roads, limited access to financing for private investments and a poor enabling environment around land tenure also result in a large untapped potential in the targeted areas. Some areas are known to

have been highly productive areas in the past but are no longer under production mainly because of limited physical access. There is thus a strong rationale for the World Bank to invest in the selected agricultural value-chains with a focus on value-chain governance, land tenure security and commercial infrastructure using in most cases, a public-private sector partnership approach. Another rationale for public sector provision is the mitigation of negative environmental externalities. Improved equipment for clove oil distillation has been piloted and supported for initial scaling-up. This would generate substantial benefits in terms of fire wood reduction. Support to replanting of firewood as well as old tree stock for lychee and clove would trigger both economic benefits and large scale environmental benefits (CO2 sequestration, mitigation of soil erosion, mitigation of cyclone related damages, etc.).

82. **World Bank value added.** The World Bank has brought an integrated approach to the project design process, drawing from various disciplines that, together, will support a holistic development of smallholder agriculture and agribusiness. Global expertise from within the World Bank has been mobilized from a range of sectors (agriculture, land administration, transport/rural roads, finance, trade and competitiveness) and collaborations with other development partners have been identified to ensure an integrated project approach. In addition, other World Bank activities and financing mechanisms are leveraged, such as the PCGF to facilitate access to credit for small farmers and larger agribusinesses. Extensive consultations were held with the Government of Madagascar (GoM) and private value chain players to build a strong partnership and ownership of the Project, while facilitating a process of coordination with other development partners, and both World Bank and externally funded agriculture programs in Madagascar. The Project will complement interventions by other World Bank projects, in particular the PIC2 and PASEF projects, as well as from other donors, especially IFAD and the European Union (EU). PIC2 is currently implementing activities in other geographic regions but the budget dedicated to the agricultural sector is limited. In addition to the PIC2 project investments and expertise, the Project will capitalize on IFC's investments in private agribusiness companies, which will be a major pulling factor. The project approach which will be largely based on industry associations' needs, public-private partnerships and collaboration with the banking sector, will avoid any crowding-out of private financing.

83. The Project will also complement interventions in the land tenure sector from other World Bank projects involved in other areas (Projet d'Urgence pour la Sécurité Alimentaire et la Protection Sociale (PURSAPS[34]), PIC2) and from the French Development Agency, the European Union, the Swiss Cooperation and the German Organisation for International Cooperation (GIZ). Thanks to strong coordination among donors in the land sector, the Project will provide similar technical and institutional support to that provided by other donors to State land administration services and Municipal Land Offices. All activities will be aligned with the National Land Tenure Program currently under preparation. The Project will implement on a larger scale, an updated approach for improved land rights registration activities that were piloted with technical assistance sponsored by the World Bank. This new approach is based on more systematic and faster procedures that allow for a significant cost reduction from US$15 to

[34] Madagascar Emergency Food Security and Social Protection Project

US$2 per certificate. This significant cost reduction makes the certificate affordable to the poorest landowners.

84. **Financial analysis.** A financial analysis was conducted for several crop/farm models to ensure they are financially profitable for the farmers. The models include pepper, vanilla, cloves, dairy, rice seed, green bean, onion, potato and maize for animal feeding. The assumptions for "the without and with project" situations were drawn from experiences of other projects, the private sector and research studies. All models have a positive net present value (NPV) and the return on family labor is significantly higher than the average rural wage, and above the poverty line of US$2 per day. A model was also developed for a distillation unit producing clove essential oil and generates positive results in terms of incremental net margin and return on family labor.

85. **Economic analysis.** The economic analysis of the Project was conducted using a cost-benefit analysis (CBA) over a 20-year period. The analysis includes the following economic benefits related to: (i) incremental crop and dairy production; (ii) distillation improvement; (iii) road rehabilitation; and (iv) CO2 emission reduction. These were estimated based on Ex-Act-based Greenhouse Gas (GHG) accounting which provided an average CO2 emission balance per hectare and per year for the proposed interventions. Conversion factors, shadow rural wage and shadow exchange rates were used to estimate the incremental economic benefits. The estimated NPV of the Project is US$25.7 million and US$62.1 million at a discount rate of 10% and 5% respectively, which makes the Project profitable. The internal rate of return (IRR) is estimated at 18%. A sensitivity analysis taking into account the main risks identified in the previous section and the assumptions of the Project's results-chain was carried out. A sensitivity analysis was also conducted to test various scenarios through proxy variables such as prices of high value commodities, input prices, crop yields, project costs, project outreach, etc. The results remain robust in all scenarios – positive NPV and Economic Rate of Return (ERR) ranging from 10% to 24%.

B. Greenhouse Gas Emissions Analysis

86. An analysis of the project's net carbon balance was conducted in accordance with the World Bank's corporate mandate on conducting GHG emissions accounting for investment lending. The Project is a net carbon sink. The emission reduction and carbon sequestration potential over a period of 20 years ranges from 366,295 total carbon equivalent (tCO_2-equ) if all proposed activities are fully adopted, to 231,795 tCO_2-equ if 60 percent of target area is reached, to 113,976 tCO_2-equ if the activities are adopted on 30 percent of the target area (see annex 7 for further details).

87. The Project is demand-driven. While several potentially relevant value chains and potential activities in the target area have been identified, which constitute the basis for the calculation of the mitigation potential, there remains uncertainty as to which ones will be implemented. Therefore, a conservative focus on a low adoption scenario leading to an overall balance of 113,976 tCO_2-equ is recommended. The analysis indicates that to increase the overall mitigation potential, focus should be on activities that decrease deforestation as well as encourage afforestation and agroforestry activities. As the Project is demand-driven, regular assessments to monitor the projects mitigation achievements should be conducted.

C. Technical

88. The project approach and design are technically sound and sustainable. The proposed project supports several categories of key activities: (i) investments in support of agribusiness value chain development and or strengthening, with particular focus on improving the enabling environment, and capacity building of value chain actors through knowledge and technology transfer; (ii) support for implementation of the Government's land policy reform, facilitation of land rights registration and management, training and improving capacities of land sector stakeholders in land management and land use planning; and (iii) investments to improve physical linkages between production catchment areas and markets to increase agricultural volumes produced and marketed; link producers to additional production catchment areas and market opportunities; lower transaction and transportation costs of local products; and limit post-harvest losses.

D. Financial Management

89. The proposed financial management and disbursements arrangements comply with the Financial Management Manual for World Bank-financed Investment Operations dated March 1, 2010.

90. The project's coordination and management structure will be based on three main bodies: the Project Steering Committee (*Comité de Pilotage*), the Project Implementation Unit at the central level (*Agence d'exécu*tion), and two Regional Implementation Units (*Cellules Régionales d'Exécution*). The project coordination, management, implementation, monitoring and evaluation procedures will be detailed in a Project Implementation Manual (PIM) to be prepared by the PIU by project effectiveness.

91. The MoA and PIU's financial management system have been assessed to determine whether: (i) the financial management arrangements are adequate to ensure that the project funds will be used for the intended purposes in an efficient and economical way; (ii) the financial reports will be prepared timely with accuracy and reliability; and (iii) the Project's assets will be safeguarded. The assessment concludes that the MoA and PIU's financial management system is adequate and complies with the Bank's minimum requirements under OP/BP10.00, subject to the effective implementation of the mitigation measures described in the paragraph below.

92. The overall fiduciary risk for the Project has been assessed as *substantial* and the proposed mitigation measures are: (i) the PIU will recruit one qualified accountant and

one Financial management specialist according to the ToRs to be agreed on with the World Bank; (ii) one qualified accountant will be recruited at each Regional Implementing Unit (RIU) level; (iii) an operational manual will be prepared to detail the roles and responsibilities of each implementing entity and the applicable fiduciary procedures; (iv) the multi-site Integrated Financial Management System (IFMIS), with the ability to consolidate implementing entities' financial data will be set up at the PIU and the RIUs; (v) recruit a reputable auditing firm according to ToRs agreed upon with the World Bank to conduct the audit of the project annual financial statement; (vi) ensure the involvement of the internal audit department of MoA in project activities per World Bank requirements.

93. More details on financial management and disbursement arrangements are provided in Annex 4.

E. Procurement

94. The procurement capacity assessment of the PIU, under the Direction d'Appui à l'Organisation du Monde Agricole et Rural (DAOMAR) Department, was conducted at the MoA level and focused specifically on the Public Procurement Management Unit (Unité de Gestion de Passation des Marchés Publics) of the entire Ministry. The Head of Public Procurement (Personne Responsable des Marchés Publics, PRMP) and the team within the ministry are technically proficient and are involved in procurement activities of several projects financed by different donors (IFAD, ADB, WB, and Government). The PIU is staffed with a procurement officer, a technically proficient civil servant. Before project effectiveness, two new highly qualified procurement officers will be recruited for the two Regional Implementation units (RIU) based respectively in Antsirabe and in Toamasina. All procurement officers will operate under the overall guidance and control of the PRMP of the MoA.

95. The PIU will carry-out all procurement activities under the project. The PIU will sign MOUs with other sectoral ministries (such as MEPATE) to define activities, responsibilities, accountabilities, budget for technical support that these latter would provide to the project.

96. Risks/issues identified during the assessment include: (a) delays in procurement processes, (b) technical aspects of procurement (development of TORs and technical specifications) not properly handled by the implementing agency due to weak coordination with sectorial ministries. The following mitigation measures are proposed: (i) Carry-out procurement processes for the first year during Project Preparation Advance (PPA); (ii) A project operational manual to be prepared shall include inter alia a detailed description of the overall procurement arrangements and responsibility of each entity; (iii) Basic procurement training to be provided to all staff involved in the project before project effectiveness; and (iv) Continuous procurement hands-on support to the Recipient's staff.

97. A fiduciary risk assessment review conducted in April 2015 identified procurement weaknesses. However, the review concluded that the Commission Nationale des Marchés (CNM) can be used to carry-out prior and post procurement reviews on Bank financed project activities. The use of National documents for National

Competitive Bidding (NCB) presents a moderate risk unless the Recipient inserts additional provisions\exceptions (approved by Legal Operations or LEGOP) which are outlined in Annex 4 of the PAD. Finally, the review highly recommends the use of the SIGMP to increase transparency during procurement processes.

98. Procurement for the Project will be carried out in accordance with the World Bank's "Guidelines: Procurement of Goods, Works, and Non-Consulting Services[35] under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011, revised in July 2014, and "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" dated January 2011, revised in July 2014, and the provisions stipulated in the Financing Agreements. The "Guidelines on Preventing and Combating Fraud and Corruption in projects Financed by IBRD Loans and IDA Credits and Grants", dated October 15th, 2006 and updated January 2011, will also apply to the Project.

99. With regard to procurement readiness, procurement processes for the first year of implementation such as calls for expressions of interest (EOIs), the evaluation of EOIs, and the drafting of bidding documents and requests for proposals (RFPs) shall be carried out during the implementation of activities executed under the PPA. Therefore, the Project will have its procurement documentation fully prepared, approved by the World Bank, and activities launched prior to effectiveness.

100. The Project procurement plan for the first 18 months has been prepared by the Recipient and approved by the World Bank. The procurement plan is a living document and will be updated at least annually, or as required, to reflect actual project implementation needs over the course of implementation. The Procurement Plan will be published at the national level and on the World Bank's website as stated by the guidelines. More details on procurement arrangements are outlined in Annex 4.

101. Although the procurement system within the implementing agency is adequate, the overall procurement risk rating for activities to be financed under the proposed project is *substantial*, given that external factors could undermine the implementation of procurement activities (see Annex 4, Table 4.1).

F. Social (including Safeguards)

Social safeguards.

102. The Project is not anticipated to induce the physical displacement of people. It will not support any activities that could lead to the physical displacement of rural households from public or private land, even in cases where rural families do not have written proof of their land rights. However, the Project supports a range of sub-components, some of which may require land acquisition which could potentially lead to economic displacement and involuntary resettlement as a result of restricted access to productive natural resources, and/ or loss of incomes and livelihoods. The World Bank's

[35] Non-consulting services are defined as "...services in which the physical aspects of the activity dominate, such as drilling, mapping, and similar operations, and which are bid and contracted on the basis of performance of a measurable physical output".

Policy on Involuntary Resettlement (OP/BP 4.12) is triggered and a Resettlement Policy Framework (RPF) has been prepared, validated, and disclosed in accordance with World Bank Safeguards Policy OPBP 4.12. The RPF provides guidance for dealing with any negative social impacts associated with land acquisition, involuntary resettlement, loss of access to resources, and other matters arising from the implementation of project activities. Given a potential risk of misinterpretation related to the land activities, the RPF will also apply to people displaced from the titling of state land. In addition, in the event of private disputes as a result of land titling of private land, a social assessment will be conducted to identify risks that may arise, and mitigation measures will be established when needed. The RPF provides clear principles and detailed guidance on minimizing land acquisition and subsequent physical or economic displacement; compensating project-affected persons; rehabilitating livelihoods; addressing grievances; and implementing the RPF through the preparation of Resettlement Action Plans (RAPs) as needed, which fully detail the operational process of enacting resettlement. The Project will include training in Safeguards Policies. The PIU will appoint a Safeguards Focal Point to oversee the development of the safeguards documents and ensure compliance with the project's environmental and social safeguards instruments during implementation.

103. The project's activities are expected to provide positive social benefits to 228,000 beneficiaries whose livelihoods rely on the identified value chains. The Malagasy Government has agreed to contribute the cost of resettlement (land acquisition costs; compensation on crops, trees, shelter, habitat, structures, etc.) of approximately US$ 270,000 for around 501 ha and 505 households or about 2575 persons.

104. Monitoring of the social development outcomes is a key Project element and will be assessed during implementation support missions.

G. Environment (including Safeguards)

105. **Category.** The environmental and social impacts of the project activities are expected to be moderate, site-specific, and manageable to an acceptable level, and the proposed project requires no exceptions to the Bank's policies on environmental and social safeguards. The Project is classified as **Environmental Category B** due to the low size and site specific nature of its foreseen social and environmental risks and impacts. The Project triggers the following Environmental and Social Safeguards Policies: OP/BP 4.01 (Environmental Assessment), OP 4.09 (Pest Management), OP 4.36 (Forests); OP 4.11 (Physical Cultural Resources) and OP/BP 4.12 (Involuntary Resettlement).

106. **Environmental and Social Safeguards Instruments**: Several safeguards instruments and the associated due diligence products have been prepared, which are consistent with the overall approach to environmental and social issues in the Project. The approach was designed to assess and address the induced impacts, as well as to identify and mitigate impacts of specific investments. The instruments outlined in the following paragraphs provide the framework for environmental management and are detailed further in Annex 4.

107. **Environmental and Social Management Framework (ESMF):** As the precise locations and potential impacts of future subprojects have not yet been identified, the ESMF provides the basis for the environmental and social safeguards preparation needed for the subproject investments. The Project has prepared an Environmental and Social Management Framework (ESMF) that includes an Environmental and Social Management Plan (ESMP). The ESMF/ESMP outlines an environmental and social screening process for future sub-projects to ensure that they are environmentally and socially sound, sustainably implementable, and in line with the GoM and World Bank policies and guidelines on environmental and social impact management. In addition, mitigation measures to avoid any environmental pressures to the Zahamena Natural Park in the event of the extension of agriculture zones by the smallholders (all activities which could affect natural habitats are ineligible for project financing) have been identified. In compliance with OP 4.36 on Forests, the ESMF also includes measures to avoid and reduce impacts on critical forests, ensure project activities are not conducted in critical forest zones and the adoption of reforestation.

108. **Pest and Pesticide Management Plan (PPMP):** Although project funds will not be used to purchase and distribute agrochemicals, agribusinesses may encourage farmer groups to use more inorganic fertilizers and pesticides. To ensure safe pest management, the Project has prepared an Integrated Pest and Pesticide Management Plan which includes: (i) a survey on the local bio pesticides and agronomic technical practices to reduce the impacts of pests on the agriculture value chains in the project areas; (ii) appropriate actions to reduce the exposure of farmer groups to pesticides used in agricultural production systems; (iii) guidelines to be adopted on the possibility of agrochemical application and disposal; (iv) training sessions to strengthen the capacity of different actors (farmers, local vendors, regional agricultural agents, etc.) on the use, storage and disposal of agrochemical products; and (v) a coherent budget available in the project financing.

109. **Resettlement Policy Framework (RPF):** Because some project activities may lead to the acquisition of land, loss of assets and/or means of livelihood that could result in the involuntary resettlement of people, the Recipient has prepared a RPF that sets forth the basic principles and procedures that both the Recipient and the World Bank must follow to mitigate any potential adverse social impacts.

110. **Screening process.** Prior to its commencement, as soon as the implementation sites are identified, each subproject/activity will be screened per established environmental and social screening procedures detailed in the ESMF. The screening and classification of eligible sub-projects will be carried out by the PIU's Safeguards focal point. The results of the screening will be processed according to the national regulations and Bank requirements. The ESMF and the RPF include institutional arrangements outlining the roles and responsibilities for the various stakeholder groups involved, for screening, review and approval of activities, as well as implementation and monitoring of their mitigation measures. The environmental and social mitigation measures summarized in the ESMF, as well as the specific mitigation measures approved for the subprojects, will be implemented, monitored and reported in the Environmental and Social Safeguards section of the overall project periodic report.

111. **Disclosure of safeguard documents.** The PIU will initiate public consultations as early as possible and provide, in a timely manner prior to consultation, all the relevant materials in the form and language(s) needed to be understandable and accessible to the groups being consulted. The ESMF includes a public consultation approach and comprehensive and clear grievance mechanism to be adopted during project implementation. All the Recipient's safeguards instruments (ESMF, PPMP & RPF) have been approved by the World Bank and were disclosed in-country on January 13, 2016 and on January 14, 2016 at the Infoshop in compliance with the World Bank safeguards and national policies and Disclosure Policy.

H. Other Safeguards Policies Triggered

112. No other safeguards policies are triggered.

I. World Bank Grievance Redress

113. Communities and individuals who believe that they are adversely affected by a World Bank–supported project may submit complaints to existing project-level grievance redress mechanisms or the World Bank's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project-affected communities and individuals may submit their complaints to the World Bank's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of World Bank non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service, please visit www.worldbank.org/grs. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

MADAGASCAR: Agriculture Rural Growth and Land Management Project

Project Development Objective (PDO): "improve rural land tenure security and access to markets of targeted farming households in selected agricultural value chains in the Project Areas and to provide immediate and effective response to an Eligible Crisis or Emergency."

PDO Level Results Indicators*	Core	Unit of Measure	Baseline	Target Values**					Frequency	Data Source/ Methodology	Responsibility for Data Collection	Description (indicator definition etc.)
				YR 1	YR 2	YR3	YR 4	YR5				
Indicator 1: Direct project beneficiaries	☒	Number	0	11,449	57,244	125,937	194,630	228,976	Yearly	Calculation of number of individuals receiving project inputs.	PIU	Individuals directly benefitting from project activities / inputs (land certification has the larger outreach so taken for total beneficiaries). Cumulative targets.
Of which female	☒	%	0	40%	40%	40%	40%	40%				
Indicator 2: Targeted farmers with perception of improved access to markets (disaggregated by value chain)	☐	%	0	0	-	30	-	60	Baseline, mid-term and final	Perception index to be developed by a consulting firm or consultant. Applied to a household panel.	Consulting firm / consultant*	Perception index including triggers related to pre-identified market access barriers (ex: time from closer marketing point, number of taxes paid, etc.). Annual targets.
Of which female	☐	%	0	0	-	20	-	40				
Indicator 3: Volume of local agricultural products sourced from the targeted areas by agribusiness companies in selected value chain (disaggregated by value chain)	☐									Volumes reported in the companies' balance sheets.	Implementing partners, private companies. PIU for consolidation	Agribusiness companies include exporters. When a new value-chain is integrated in the project, baseline has to be established. Cumulative targets.
Dairy value chain (milk)	☐	Liters			1140	3990	4560	4560	Yearly			
Horticulture value chains (green beans, onions, potatoes)	☐	Tons			1622	3446	4770.3	5337.1	Yearly			
Cereals for food and animal feed	☐	Tons			957.6	1995	2793	2793	Yearly			
Spices (cloves, vanilla, pepper)	☐	Tons			432	1209.6	2052	3269.3	Yearly			

Project Development Objective (PDO): **"**improve rural land tenure security and access to markets of targeted farming households in selected agricultural value chains in the Project Areas and to provide immediate and effective response to an Eligible Crisis or Emergency."

PDO Level Results Indicators*	Core	Unit of Measure	Baseline	Target Values**					Frequency	Data Source/ Methodology	Responsibility for Data	Description (indicator definition etc.)
Indicator 4: Targeted farmers with improved perception of land tenure rights being recognized by a public authority (civic engagement indicator, gender indicator) (disaggregated by sex)	☐	%	0	0	-	40	-	80	Baseline, mid-term and final	Perception index to be developed in collaboration with the Land Observatory and the CC-RF. Applied to a household panel.	Consulting firm / consultant*	Perception index where farmers would give rankings on indicators such as fear of his/her land getting stolen, risk of conflict within the family, trust of rental agreement, etc. Annual targets.
Indicator 5: Land parcels with use or ownership rights recorded as a result of the project (disaggregated by sex)	☒	Number	0	35,000	130,000	240,000	375,000	500,000	Yearly	Monitoring visits to communal land offices every year.	Observatoire du Foncier, PIU	Same methodology as for the PURSAPS project. Annual targets.
Intermediate Result (Component 1)												
1.1: Targeted farming households reporting larger volumes of agricultural products brought by buyers	☐	%	0	-	-	25	-	50	Baseline and final	Qualitative survey conducted with a household panel.	Consulting firm / consultant*	
1.2: Client days of training provided (disaggregated by gender, actor and type of training)	☒	Number	0	-	-	25,000	-	50,000	Mid-term and final	Calculation of number of individuals receiving training	Implementing partners, PIU	Training provided as a direct project output.
1.3: Targeted farming households reporting hiring additional paid non-family labor	☐	%	0	-	-	30	-	60	Mid-term and final	Qualitative survey conducted with a household panel.	Consulting firm / consultant*	
Intermediate Result (Component 2)												
2.1: Communal land offices that have land certification capacity operational	☐	Number	72	-	-	96	-	191	Yearly	Monitoring visits every 6 months.	Coordination de la Réforme Foncière, PIU	Communal land offices that have the capacity to deliver at least 10 land certificates per month. Cumulative targets.
2.2: Land tenure deals with the private sector following the principles for responsible agriculture investments	☐	Number	0	-	-	5	-	10	Yearly	Interviews with key informants and main stakeholders.	Observatoire du Foncier, PIU	Methodology and criteria available in the Responsible Agriculture Investments guidelines. Cumulative targets.
Intermediate Result (Component 3)												

Project Development Objective (PDO): **"**improve rural land tenure security and access to markets of targeted farming households in selected agricultural value chains in the Project Areas and to provide immediate and effective response to an Eligible Crisis or Emergency."

PDO Level Results Indicators*	Core	Unit of Measure	Baseline	Target Values**					Frequency	Data Source/ Methodology	Responsibility for Data	Description (indicator definition etc.)
3.1: Road constructed or rehabilitated	☒	km	0	0	50	75	75	75	Yearly	Review of technical inspection report 3 months after completion.	PIU	

** Perception index will be developed in partnership with the mentioned partners (especially for land). Surveys will be conducted on a representative household sample with a control group. The same sample will be surveyed at baseline and at the end of the project. The sample should be large enough to account for possible attrition.*

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Annex 2: Detailed Project Description

MADAGASCAR: Agriculture Rural Growth and Land Management Project

1. The Project Development Objective is: *"to improve rural land tenure security and access to markets of targeted farming households in selected agricultural value chains in the Project Areas, and to provide immediate and effective response to an Eligible Crisis or Emergency".*

2. The Project will contribute to poverty reduction and economic recovery through improvement of the performance of agricultural value chains in an inclusive and sustainable manner, and through improved local land tenure systems. It will increase the contribution of the agribusiness sector to the economy in terms of value addition, employment creation and the balance of payments through import substitution and higher export revenues. The Project is also in line with the pillars of the PNIAEP elaborated within the framework of CAADP. The project objective and approach are also aligned with the Systematic Country Diagnostic conducted during the first half of 2015 and with the directions given by the Country Partnership Framework. Climate smart agriculture and nutrition are embedded in a number of project activities with a clear gender and youth focus.

3. Integrated approach: The project design recognizes the fact that agriculture development and land tenure security are inextricably linked. Unless land rights and land ownership are confirmed, farmers will not make long term investments in the land that they use. Likewise, the commercialization process within the smallholder agriculture sector will only happen once small scale farmers have incentives to invest in their land, the soil, their crops, and their water management and irrigation infrastructure. The development of agribusiness with smallholder engagement will be hindered if key constraints, such as lack of knowledge, skills, and deficient infrastructure, are not addressed. Hence, the Project combines value chain development, land reform, and infrastructure maintenance and rehabilitation into an integrated approach where project interventions within value chains are demand driven and constitute public investments that are complementary to, and would leverage additional, private investment.

4. Within World Bank Group linkages: The Project is expected to provide parallel support to small producers in the fruit and livestock value chains that may benefit from two IFC agriculture investments that are currently under preparation, respectively on the East Coast and near Fort Dauphin in the South. Support will focus on achieving smallholder inclusiveness, providing strategic public investments that would enable rural households to access the market opportunities provided by the private investments. In addition, the Project involves a number of GPs, covering agriculture, land administration, transport/rural roads, finance and markets, and trade and competitiveness.

5. The Project will work closely with the ongoing PIC2 whose agribusiness component is highly complementary (PIC2 agribusiness activities are concentrated in the North-West and the South West). The Project will contribute to investment promotion support to EDBM provided by PIC2, supported by TA by IFC/T&C Advisory that aims to design and implement a responsible agriculture investment framework. In addition, the Project will work with T&C in using the Warehouse Receipts Systems (WRS) Toolkit (developed by the World Bank) which has a successful track record in Sub-Saharan Africa (SSA), on the set of activities identified in sub-component 3.3. Another area of collaboration with IFC/T&C Advisory is on livestock reform

that has been developed in collaboration with the Agriculture GP and that is currently implemented under two IFC advisory projects in East Africa.

6. The project will also work in close collaboration with the Madagascar PADAP project under preparation. The PADAP project will address watershed management issues and will therefore implement field activities on reforestation and land security. The two projects do not overlap with the exception of one targeted area (Iazafy Plain, Analanjirofo Region). The PADAP project will benefit from the technical assistance in land policy supported by the proposed Project at the central level and the two projects will mutually benefit from their experiences on tree replacement activities on the East Coast.

7. Value chains and geographical coverage: As a basis for the project's activities and selection of geographical areas, a value chain orientation would be applied with a geographical focus around key agribusiness hubs, and their respective existing and potential rural supply catchment areas. Based on recent extensive consultations with the private sector, using criteria such as the sustainability and competitiveness of value chains, scalability and smallholder inclusion potential, and poverty reduction and food security potential, a number of agribusiness hubs have been identified, which display a high concentration of firms within a certain locality, covering a range of value chains. Companies that were consulted during project preparation and showed an explicit interest in participating in project activities include: Sopral, Sigma, Scrimad (spices and lychee processors and exporters); Socota, Star Breweries, MADCO, SMTP (pulses, food and feed grain processors); Lecofruit, Bionexx (horticulture and Artemisia exporters); Socolait and SMTP (diary) In addition, existing industry associations and informal groupings that include some of the above firms expressed a strong interest in project activities related to value chain coordination, policy dialogue, other enabling environment related support (notably the clove and lychee industry associations, and an agribusinesses group that engages in frequent policy dialogue with the government).

8. The project's geographical coverage will focus on the following important agribusiness hubs and priority commodities: (a) Antananarivo (poultry, maize and soya for feed production, rice seed); (b) Antsirabe (dairy, potato, onion, barley, maize and soya for feed production); and Toamasina (clove, vanilla, other spices, lychee). In addition, the Project will support meat export value chains (beef and goat) around Fort Dauphin, in partnership with IFC and PIC2. Other agribusiness hubs with rural catchment areas exist and may be assessed during the course of the project. A map of Madagascar and indicative project areas is attached in Annex 8.

9. The Project has three key components: (1) Agribusiness value chain development; (2) Support to Land Policy and Land Rights Registration; and (3) Support to Marketing Infrastructure Development and Maintenance. The Project includes two additional components: (4) Project Coordination and Management and (5) Contingency Emergency Fund.

Component 1 - Agribusiness Value Chain Development (US$18.49m)

10. Activities under this component aim to address the constraints that currently prevent value chains from further developing and expanding. These include the need to: (i) strengthen value chain policy and governance, coordinate and facilitate knowledge flow, and enhance the linkages between players; (ii) strengthen technical capacity and skills to produce improved quality and increased quantity of selected commodities, and to aggregate production; (iii) provide quality assurance services such as veterinary services, standards, certification and traceability mechanisms; and (iv) strengthen financial services. Support would be aimed at

farmers, traders/collectors, processors, exporters and other value chain actors. The Project will primarily use TA and activity-based funding. Sub-components 1.1 and 1.2 will be implemented by experienced service providers in the project areas.

11. The component consists of three main sub-components: (i) Improving the enabling environment; and (ii) Knowledge and technology transfer; and (iii) Enhancing access to agriculture finance, as detailed below. It is consistent with the SNFAR 2012 which supports the agricultural modernization process through demand driven training.

Sub-component 1.1: Improving the enabling environment (US$4.52m)

12. The sub-component's direct results include enhanced capabilities of private value chain participants and relevant government institutions to improve value chain governance and efficiency, contributing to improved competitiveness and continued private investment and value chain expansion, leading to enhanced market access among producers. Operational modalities are based on the identification of demand-driven activities, involving calls for proposals with clear selection criteria (such as economic relevance, financial sustainability, smallholder inclusivity, gender considerations, environmental sustainability).

13. Activities will be funded by the project, implemented by experienced service providers, and will require contributions from value chain participants.

(i) **Value chain organization, coordination and planning.** The Project will provide technical assistance and activity-based funding to value chain stakeholders in establishing new (or strengthening existing) vertically integrated value chain associations[36] (including farmers, collectors, processors, exporters), and preparing proposals for financing under the Project. Activities for funding will include:

a. Facilitating value chain organization by convening multi-stakeholder dialogue groups with the objective of identifying key constraints and solution areas. Training will be provided to enhance technical and organizational capacity of value chain organization members that will improve dialogue and coordination of value chain functions among stakeholders (especially required among farmer organizations and small-scale collectors/ intermediaries within value chain with many players and where quality and food safety are important, e.g. clove oil, milk, beef);

b. Conducting policy analysis on key issues (related to trade policy, competition policy, regulatory framework, or other relevant policy priorities), and engagement in policy dialogue with Government; and

c. Technical assistance for the preparation of proposals based on the priorities identified. Priorities are expected to include: systems to enhance intra-value chain quality control and food safety (such as disease surveys, traceability systems); technical training among producers and other value chain actors; the identification of new varieties/breeds and processing technology and subsequent roll-out; and maintenance programs of feeder roads.

[36] The associations' mandates and organizational set-up for mobilizing internal sector resources and progressively achieving financing autonomy will be clearly described in the Project Implementation Manual (PIM).

(ii) **Value chain governance mechanisms and regulatory enforcement.** Based on the needs identified by value chain stakeholders, assistance will be provided to implement stakeholder-led governance mechanisms and regulatory service provision.

a. Technical assistance will be provided for the implementation of mechanisms for enforcement of quality standards, including food safety (traceability, animal disease surveys), laboratory capacity and certification services. To strengthen regulatory enforcement capacity, public-private arrangements will be developed.

b. Where needed, existing legislation, regulations and enforcement practices in support of sound governance and competitive practices within value chains will be reviewed and improved. Depending on the area of legislation and the commodity in question, this may involve EDBM, the Ministry of Agriculture, the Ministry of Animal Production and Animal Protection, the Ministry of Interior and Decentralization, and the Ministry of Trade.

Sub-component 1.2 – Knowledge and technology transfer (US$7.87m)

14. The sub-component's direct results include enhanced knowledge and availability of improved technologies to increase production, and enhance productivity, quality, and profitability among private value chain participants, thus contributing to improved competitiveness and value chain expansion, leading to enhanced market access among producers. Operational modalities are based on the identification of demand-driven activities, involving calls for proposals with clear selection criteria (such as economic relevance, financial sustainability, smallholder inclusivity, environmental sustainability, and gender considerations).

15. Activities will be funded by the Project, managed by two experienced service providers (one service contract in each project area, possibly combined with sub-component 1.1, depending on available service delivery capacity), and will require contributions from value chain participants.

16. One of the key constraints to productive participation in the value chains and access to markets identified by actors from various commodity chains is a low level of know-how and technological capacity within the agricultural sector at large, but especially prevalent at producer level. Malagasy farmers at the producer level struggle with low productivity, caused by a lack of access and awareness to improved technologies, severe land degradation, which is affecting 50 percent of agricultural land, and the impacts of climate change. Project support will be channeled through two main avenues: (a) formal and informal training at farm and post farm levels; and (b) technology improvement at farm and firm levels as described below.

(i) **Demand led capacity development through training**. The main objective of the training support is to achieve behavioral changes which would enhance value chain performance and stimulate significant impact on the ground. A diversified pool of public, private and NGO training providers will be used to enhance value chain performance among public and private value chain actors, promote the use of appropriate advanced technologies throughout the value chains, address environmental and natural resources constraints and promote sound management practices including climate-smart agriculture practices[37], which aim to increase

[37] Climate-smart agriculture (CSA) aims to achieve climate change adaptation, mitigation and food security, increasing crop productivity and resilience. The adoption of climate-smart agriculture practices, such as conservation agriculture, no tillage systems, crop diversification and intercropping, improved water management, crop residue mulching, improved seeds,

productivity and resilience and provide mitigation co-benefits, and reforestation activities. Training curricula will be designed to address a wide range of aspects including sustainability, climate smart elements, nutrition, financial, social and gender implications, creation of producer organizations, and understanding and management of contractual obligations and rights (especially relevant in contract farming). A prominent uniqueness of this sub-component is the design and development of robust systems for aligning training demand and supply through the use of financially viable PPPs. Under this sub-component, the Project will collaborate closely with the Programme de Formation Professionnelle et d'amélioration de la Productivité Agricole (FORMAPROD), a youth training project funded by IFAD, relevant private sector players, producer organizations and training providers. Where relevant, the Project will assess the feasibility of supporting expansion of the training capacity to accommodate growing demand within project targeted agribusiness hubs. Where financially viable, PPP arrangements will be encouraged and supported to design and implement the curricula. Particular focus will be on facilitating access to the training for women and youth farmers. In designing and conducting the training, challenges and priorities experienced by women farmers will be addressed. This may include involving women farmers in climate-smart trials and demonstrations and development of training curriculum. Similarly the training will aim to provide youth with livelihood options and skills that enable them to take advantages of employment opportunities along the value chain.

Farm and Post farm level training. The former will aim to increase farmers' livelihood and revenue streams by improving farmers' market linkages and introducing climate-smart production techniques that can increase on-farm productivity and household resilience to climate-induced risks. Training will focus predominantly on small-holder farmers' capacity to: (i) improve market linkages and supply high quality agricultural products produced in an ethical and sustainable manner, and satisfactory for commercial use in domestic and export markets. It will include among others: (i) entrepreneurship and business training; (ii) on-farm production techniques for commercial and subsistence production through climate-smart agricultural practices; and (iii) nutrition education to increase farmers' understanding of translating gains in production and income into nutrition improvements. In regards to the latter, the private sector is looking for assistance in developing tailor-made training that meets their needs for staff learning. The public institutions are looking for training funds and relevant training providers. The Project will address both these spectrums through targeted and corresponding support for the different parties. Specific focus will be on the needs of women farmers and youth, and facilitation of their access to the training.

Introducing climate-smart agriculture practices. Malagasy smallholder farmers face numerous risks to their agricultural production including extreme or erratic weather events, pests and disease outbreaks or market shocks. Farmers have limited resources and capacity to cope with shocks and reductions in production or productivity significantly aggravate food, nutrition and income insecurity. Climate change is expected to aggravate this situation,

agroforestry can support them to increase and sustain crop productivity for their commercial production as well as subsistence production and produce environmental benefits such as increasing soil moisture and reducing land degradation. Local studies have shown positive impacts of CSA practices: within 4-5 years, degraded soils can be restored by climate-smart agriculture practice such as conservation agriculture, agroforestry, afforestation; adoption of conservation agriculture over a 5 year rotation can lead to a 66 percent increase of crop yields per year for rice and maize.

disproportionately affecting smallholder farmers.[38] Climate-smart agriculture practices on experimental plots show sizable benefits in terms of increased productivity, improved soil fertility, control of the weed *Striga Asiatica*, and improved net incomes in the medium to long term. Local training institutions have introduced climate-smart practices on their demonstrations plots.[39] While the practices show good results, they have not yet been broadly disseminated and adopted among the farmer community. The training will focus on adoption of locally suitable climate-smart agriculture practices that have the potential to support farmers in their commercial and subsistence production[40]. The Project will support peer learning approaches (see annex 2 for more details), where trained lead farmers supported in adopting the practices on their plots, reach out to their communities. The lead farmers will be supported by technical advisors who are either affiliated to local, existing training institutes or employed by private sector companies who work with the farmers. The design and implementation of the training and the promotion of practices will take into account the needs of women and youth farmers.

Promoting nutrition education. To support the diversification towards more nutritious diets among the Project beneficiaries, nutrition education will provide knowledge incentives to help translate production and income gains into nutrition improvements. The curricula will be designed to support the increased consumption of nutrient-dense food throughout the year through specific training on: the nutritional value of specific foods and role of animal sources and protein; and their value to health and nutrition; diversification of food production towards more nutritionally diverse crops; cooking demonstrations and preparation classes for new recipes with special focus on pregnant/lactating women and children, to maintain high nutritional content; home-based food processing and preservation practices such as solar drying to retain nutritional value to decrease seasonality of food insecurity; storage, shelf-life, and food safety to avoid build-up of toxins and post-harvest losses. Overall the training will target women farmers and vulnerable groups.

(ii) **Enhancing access to improved technologies.** The Project will facilitate the uptake of productivity and efficiency enhancing technologies, some of which will bring significant environmental benefits. Technology priorities will be identified under sub-component 1.1 by value chain actors. Delivery mechanisms, cost sharing and performance based subsidy arrangements to support the development and roll out of technologies will be established based on the specific needs of/for farmers, collectors and agri-businesses identified in approved proposals for funding under sub-component 1.1. In most cases training and capacity building will be an integral part of technology development and roll-out. Project funds will support the implementation of the proposed delivery mechanisms.

[38] Under medium and high climate change impact scenario crop yields for irrigated rice, sugarcane and maize are projected to decrease, due to projected decreases in irrigation water availability. (Industrial Economic, Incorporated (2012): Adaptation to future climate risk in Madagascar Reports).

[39] In the Vakinankaratra CEFFEL introduced climate-smart agriculture practices including: Intercropping, terracing, no tillage, the use of bio-pesticides which are based on e.g. Absinth, "lutte biologique" – planting pest-deterring crops together with vegetable crops, and organic composting, on their demonstration plots.

[40] This could include conservation farming, sustainable rice intensification systems, adopting improved seeds, crop diversification, composting, agro-forestry, mulching or no tillage practices.

A tentative list of technologies to be rolled-out in various value chains include:

(i) cloves, vanilla, other spices, and lychee – delivery of planting material (including wood fuel seedlings for clove) to farmers, harvest and post-harvest techniques to farmers, farmer cooperatives and collectors;

(ii) clove distillation – technical support for the improvement of alembics to enhance distillation efficiency and reduce firewood consumption;

(iii) dairy and meat – the delivery of improved semen (artificial insemination and natural breed services), inputs (fodder seeds, feed – concentrate) to farmers, through the promotion of a network of local enterprises; the enhancement of milk collection centers' capacity to improve quality (equipment, knowledge); and

(iv) maize and soya beans - the development of contract farming schemes that ensure farmers' access to improved seeds and fertilizer, and extension services through sustainable industry driven delivery arrangements that continue after the end of project funding.

Sub-component 1.3 – Enhancing access to agriculture finance (US$5.30m)

17. The sub-component's direct results include enhanced availability of value chain financing at the farm level, contributing to improved financial market liquidity among buyers in key value chains and value chain expansion, leading to improved market access.

18. The Madagascar PASEF project is a US$15 million operation that aims at increasing access to financial services for MSMEs and households in Madagascar. It includes a partial portfolio credit guarantee for MSMEs, launched in July 2014 that over the past FY has been showing impressive results. The objective of the PCGF is to facilitate access to credit by MSMEs. Guarantee schemes did not have a successful track record in Madagascar and initially only one financial institution (Bank of Africa-BOA) accepted to participate. As of December 4, 2015, four more institutions (including a micro finance institution) had signed a convention to participate in the PCGF. There were 314 credits outstanding on the guarantee for an amount of 19.3 billion AR (US$4.5 million) while the cumulative amount of credit registered is 27 billion AR (US$8.2 million) with 497 credits to MSMEs. There is a growing interest in the PCGF within the financial community. Currently, five financial institutions are participating and it is expected that this will increase to ten in 2016. Banks and micro finance institutions will be able to join the PCGF at their convenience.

19. By funding an agribusiness guarantee window within the existing PPCG Fund, the Project will enhance access to financing among eligible producers, traders, processors, agribusiness SMEs and larger agribusiness firms to invest in new ventures and expand existing operations. Agreements between the Project, the PASEF PIU and fund manager SOLIDIS will be prepared to operationalize this sub-component.

(i) **Partial Credit Guarantee Fund for agribusiness SMEs:** The fund will initially be administered through the ongoing World Bank funded PASEF operation, which is currently implementing a broader Partial Portfolio Credit Guarantee (PPCG) scheme, managed by a

local fund manager, SOLIDIS. PASEF will exclusively direct the Project's PPCG fund to eligible agribusiness entrepreneurs, SMEs and larger agribusiness firms through a dedicated loan guarantee window in the targeted locations to help achieve the scale effects intended by this operation. The agribusiness window would eventually be managed by SOLIDIS and thus be embedded in an existing institution with good prospects for sustainability. The objective of the PPCG is to facilitate access to credit by agribusiness enterprises. At present, US$4 million in capital can support a volume of loans of US$16 million entered in the guarantee. Based on this experience, a similar loan volume can be expected to be supported by the new agribusiness PPCG.

(ii) **Technical assistance (TA) program:** The Project will support complementary capacity building among PFIs and within SOLIDIS. Within the PFIs, the TA will help with the assessment of credits, the development of products tailored to the needs of the sector, and marketing.

Component 2 - Support to Land Policy and Land Rights Registration (US$13.40m)

20. Madagascar agriculture needs investment but the current context is not conducive to family farms investments nor agribusiness investments. Uncertain land rights are one of the major constraints to the development of agricultural investments. Poorly managed large scale land acquisition has recently led to serious conflicts that were an aggravating factor for the 2009 political crisis. Most investments requiring land allocation are currently imposed in a top-down manner, usually at the expense of both occupants and investors. From an investor's perspective, access to agricultural land involves risks that may compromise the Project as there is no relevant mechanism to guide investments in the field. From a smallholder's perspective, agreements with investors are desirable as long as their land rights are formally recognized and not called into question. They also consider land security as a key incentive for investing themselves in their own land. The development and commercialization of the smallholder agriculture sector and facilitation of responsible agricultural investment requires better institutional capacity for land management and land use planning at the central, regional and local levels. The component through two sub-components will support the current land policy reform so as to promote a land management system conducive to inclusive agricultural investment: (i) by strengthening capacities of existing institutions in charge of land management, i.e. local land offices, national land administration system and the Land Reform Coordination Unit; and (ii) by supporting field activities to speed up family farms land rights registration and to facilitate access to land for investors.

21. The gender disparity is evident with women having less access to formalized land rights than men. Both men and women have equal rights to land and natural resources but land is typically titled in the name of the male head of household and if women inherit land, they typically access land rights via a male relative. The Project will pay attention to support for registration of land rights for women.

Sub-component 2.1: Support to the land policy reform process (US$3.40m)

22. The sub-component's direct results include enhanced land registration capacity at central and communal levels, new land legislation, contributing to transparency and socially inclusive land use, all of which are designed to accommodate the Principles for Responsible Agriculture

Investment (PRAI), leading to improved land tenure security. Operational modalities include legal technical assistance and training by a small number of service providers, and will involve close coordination with PIC2 and IFC/T&C Advisory. The sub-component will be implemented at the central and regional levels (in the project areas).

(i) **At the central level**, support will be provided to the Ministry of Presidential Projects (currently the MEPATE in charge of Land Affairs) and its *Direction Générale des Services Fonciers* (DGSF) and the Land Reform Coordination Unit (CCRF), and EDBM to coordinate land activities and contribute to the implementation of the updated National Land Program and its guidelines for responsible agricultural investment (piloting innovative operations, updating land legal framework, policy dialogue with other public ministries that may interfere with land activities (Environment, Mining). The proposed activities include:

a) Strengthening capacity for planning and implementation of the new National Land Program – CCRF and MEPATE's regional land administration capacities will be strengthened with additional equipment and human resources so as to better coordinate project land activities in accordance with the new National Land Program and its guidelines for responsible agricultural investment, and training capacities in the land sector. Support activities will be jointly implemented by the PIU and MEPATE who will be responsible for the supervision and quality control of field activities implemented with project resources by qualified service providers or by land administration services. A mechanism for information technology (IT) maintenance will be designed. The PIU will identify staff and equipment needs, prepare the related ToRs and provide immediate support to the development and implementation of the National Land Program. The activities will be carried out by civil servants and consultants working for the CCRF. An agreement for implementation of the activities will be signed between the PIU and CCRF / DGSF. The support will focus on equipment and functioning cost. CCRF consultant costs will be covered by the Project.

b) Review of land legal texts – The Project will support the Committee in charge of the revision of land texts to elaborate new bills in compliance with the Letter of Land Policy and land-related international guidelines (UN Voluntary Guidelines & Principles for Responsible Agriculture Investment). Two new laws are expected: a bill on the Titled Private Property, and a bill on Lands with Specific Status which will provide a legal basis for land dedicated to private investment. The Project will support the EDBM and the Ministry of Agriculture in the revision of associated regulations under the new land policy, in particular the creation of a comprehensive package of laws and regulations for agribusiness investment zones (zone creation, administration, investor allocation and monitoring) in compliance with the Principles for Responsible Agricultural Investment. The Project will cover field missions to assess the impact of previous and new legal provisions, additional legal expertise and logistical support to workshops for text design and regional / national debates. The Project will also facilitate the attendance of lawyers selected by the private sector organizations and by CSOs.

c) TA to contribute to an agriculture investment framework – As part of investment promotion support provided to EDBM by PIC2 and IFC/T&C Advisory, the Project will contribute to the establishment of linkages between EDBM and the national and local authorities dealing with land allocation and land rights. The Project will contribute to investment promotion TA provided to EDMB by IFC/T&C Advisory, focusing on the

design and implementation of a responsible agriculture investment framework. The four phases of this framework are: 1) investment climate; 2) investment promotion; 3) investment entry; and 4) investment operation. Currently, no such agribusiness framework exists, a situation that may contribute to possible controversial land allocation commitments. A new agribusiness investment framework would guide the authorities, investors, and communities and avoid such problems. The Project will strengthen EDBM, the Ministry of Agriculture and the MEPATE by: (i) providing guidance materials and capacity to support a responsible approach to the identification and upstream assessment of land for investment; (ii) contributing to the development of standards and guidelines for agribusiness concession contracts and monitoring systems; (iii) supporting involved public bodies (Regions, Ministry of Agriculture and the MEPATE) to generate an offer of potential agribusiness investment zones in compliance with the Principles for Responsible Agriculture Investment. The Project will provide TA to EDBM to enhance its administrative procedures for establishing agribusiness projects (long term land leases, environmental permits) in close collaboration with the involved ministries. The Project may also review a forthcoming proposal for a parastatal agency in charge of public estate management with a view to promote agriculture investment. The Project will focus on facilitating the involvement of CSOs such as the Solidarité des Intervenants sur le Foncier (SIF) in any investment promotion institution. Activities will be carried out either by consultants working for the EDBM, in which case the PIU would sign an agreement with EDBM.

d) ***Support to Civil Society Organizations involved in the land sector*** – the Project will support CSOs through an agreement with the SIF platform to provide the needed means for monitoring the land activities. This activity includes field trips to project areas where responsible agriculture investments will be promoted. This is expected to help CSOs participate in the Project Steering Committee in a more active way.

(ii) **At the regional level (in project areas),** the sub-component will: (i) assist the regional authorities to promote socially inclusive land transactions, following the agriculture investment framework that will be developed at the central level (see *(i) c)* above) involving State land that reassure investors and ensure economic benefits for rural communities, and (ii) provide capacity building among local land sector stakeholders on land policy reforms, and on the implementation of the land certification process.

a) ***Piloting socially inclusive land transactions between rural communities and investors.*** This activity will be developed in two phases. The first will be to assess the ongoing implementation of Agricultural Investment Zones led by the Vakinankaratra Region and to provide technical support to the planning process of actual land transactions in order to draw lessons. Based on lessons learned, the Project will develop an approach and will provide recommendations at the central and regional levels to EDBM for promoting socially inclusive land transactions through an agriculture/agribusiness investment protocol that reflects the Principles for Responsible Agriculture Investments and other land related international agreements and best practice. A key criteria would be the potential for contract farming or other business relationships between investors and rural communities. The sub-component will support an inventory of existing ZIAs and will study and draw lessons from the first ZIA implemented in the Vakinankaratra Region,

jointly with the Land Observatory, the regional land administration services, the Region and a qualified service provider such as the NGO Matoy.

Based on an initial pilot, the Project will support public land inventories in the targeted areas and their reclassification in order to identify State lands available for agricultural investment. The inventory will exclusively target the "*Domaine Privé de l'Etat*" (see Annex 3). State land inventories will focus on: (i) the identification of current occupants even if the State considers them as squatters from a strictly legal point of view; (ii) soil quality and water availability; (iii) physical access to land parcels and potential public infrastructures rehabilitation. The Project will hire qualified service providers to carry out the inventories in the field, to conduct consultations with any occupants and to facilitate discussions with investors. DGSF and the State land surveyors will be in charge of the quality control. The support would cover equipment and operating costs but no salaries. This activity is to be combined with the completion of the PLOFs and will involve Regional land administration services and Communal land offices. Expected deliverables are comprehensive public land inventories and a "rural land catalog" which will present a database of land selected for its potential for investment and will be posted on the websites of Regions, EDBM and of the ministries of Agriculture and MEPATE.

b) Training and improving capacities of land sector stakeholders. The sub-component will provide training for Communal land officers and land administration civil servants including "*Bureaux Spécialisés*", regional staff of Ministries involved in the land sector (Justice, Interior and Decentralization, Agriculture, Environment), to ensure better understanding of the land policy reform, and private service providers to improve their capacities to deliver. This training is to be awarded by the Project or by the Direction de l'Appui à la Gestion Foncière Décentralisée (DAGFD)/MEPATE. While hiring private consulting firms the Project will give advantage to companies presenting staff who attended this training. Training activities will also focus on gender issues so as to provide clear information about the legal provision that allow to issue land certificates on behalf of both the husband and his spouse. The Project will pay special attention to the training on land issues so as to increase the number of certificates issued in the name of a woman and thus aiming to improve the women's land rights recognition.

23. Activities under sub-component 2.1 will be carried out through agreements with public bodies or service contracts with qualified consulting firms. Procurement will be the responsibility of the PIU. DGSF and CCRF will be involved in the firm selection procedure. The following critical institutional linkages have been identified and will be formalized into agreements:

24. Agreement with CCRF / DGSF – "Strengthening National Land Program supervision capacities". The Project will support DGSF and CCRF to facilitate their supervision capacities within the Project areas and any policy activities (updating land legal framework through a support to the Committee in charge of the revision of land texts, policy dialogue with other public ministries that have an interest in land activities). The activity will be carry out by civil servants and consultants working for the CCRF. The support will focus on equipment and functioning cost. Salaries for CCRF consultants will be paid by the Project.

25. Agreement with EDBM – "Institutional framework conducive to inclusive agricultural investments". The Project will support EDBM to strengthen its capacities in order to deliver

better guidance to private investors, in particular for any land negotiations. The activity will be carry out by consultants working for the EDBM. The support will focus on equipment and operational costs. Salaries for EDBM consultants will be paid by the Project.

26. Agreement with SIF 'Solidarité des Intervenants sur le Foncier" – Support to Civil Society Organizations involved in the land sector. The Project will support CSOs through an agreement with the SIF platform so as to provide the needed means for monitoring any project activities on land.

27. Service contract and control quality by the State land administration – "State land inventory in targeted areas". Service will be provided by a consulting firm selected and hired by the PIU. ToRs will be prepared by the DGSF / CCRF / PIU technical staff in charge of land activities. Procurement will be the responsibility of the PIU. DGSF and CCRF will be involved in the firm selection procedure. DGSF and the State land surveyors will be in charge of the quality control. An agreement will be signed by the PIU and DGSF for the control quality service. The support will focus on equipment and functioning cost. No salaries will be paid by the Project.

28. Agreement with CCRF / Land Observatory – "Piloting inclusive land transactions". Service will be provided by CCRF and/or the Land Observatory with the support of local NGOs / CSOs. An agreement will be signed by the PIU and CCRF. ToRs will be prepared by the PIU technical staff in charge of land activities. The PIU will be in charge of the supervision task.

Sub-component 2.2: Land rights registration and land administration (US$9.34m)

(i) **At the local commune level:** This sub-component will implement the Government's land policy reform in project areas, facilitating low cost land rights registration in a timely manner, in compliance with the legal framework on decentralized land management. This would entail the following:

a) Updating land archives and consolidation of "local land occupancy status maps" (PLOFs) – The Project will update land archives within the project areas (following the model developed in Ambatondrazaka by BV Alaotra Lake project). Technical support will be provided to regional Land Administration services to complete the PLOFs at the local level and make them more reliable. This activity will produce early results as it will help most of the Communes to speed up the issuance of thousands of land certificates that were pending due to a lack of capacity and resources caused by municipal budgets cuts during the political crisis.

b) Issuing Land Certificates by Communal Land Offices – Communal Land Offices included in the project areas have been neglected since the start of the political crisis in 2009 and need urgent support to recover their capacities to recommence the land rights registration process and build a sustainable base for regular land titling activities in the future. This Project will: (i) expand the local land titling process through field operations by private service providers that combine systematic land census and land rights certification (piloted through previous World Bank analytical work[41] and implemented on a larger scale by previous projects including projects financed by the World Bank[42],

[41] Support to Land Administration and Management Reform Technical Assistance and Madagascar Land Policy Reform: Perspectives and Prospects Economic Sector Work
[42] PGDI2, PEIII.

specifically supporting women and female-headed households); and (ii) support municipalities to improve the capacities of their Municipal Land Offices.

c) ***Design and implementation of local land use schemes***. The Project will support implementation of communal land use schemes (SACs – *Schémas d'Aménagement Communaux*) based on a method recommended by the MEPATE. SAC is a vision of the Commune on the development of its territory. It will be critical to include ZIAs and public land in the SAC as well as various infrastructures, in particular rural roads to be taken into account for any maintenance program. Planned activities include support for State land inventories and their reclassification to identify land for agricultural investment.

Sub-component 2.2 will be carried out through two service contracts and two agreements:

29. Agreement with DGSF – Updating of land archives and consolidation of Local land occupancy use mapping (PLOFs). The Project will support the "Service Topographique" (Public Land Surveyors) for PLOFs (Local land occupancy status maps) improvement and completion. The activity will be carried out by civil servants and State land surveyors. An agreement will be signed by the PIU and DGSF. The support will focus on equipment and operating costs. No salary will be paid by the project.

30. Service contract – "Field operations for land census and low-cost land certification + support to Communal land offices". Service will be provided by a consulting firm selected and hired by the PIU. ToRs will be prepared by the DGSF / CCRF / PIU technical staff in charge of land activities. Procurement will be the responsibility of the PIU. DGSF and CCRF will be involved in the firm selection procedure.

31. Agreement with DGSF – "Quality control of field operations for land certification". DGSF and its service in charge of Communal Land Offices supervision will be in charge of the quality control. An agreement will be signed by the PIU and DGSF for the control quality service. No salaries will be paid by the Project.

32. Service contract – "Support to Communes' planning schemes". Service will be provided by a consulting firm selected and hired by the PIU. ToRs will be prepared by the DGAT / CCRF / PIU technical staff in charge of land activities. Procurement will be the responsibility of the PIU. DGAT and CCRF will be involved in the firm selection procedure.

Component 3: Support to Marketing Infrastructure Development and Maintenance (US$15.07m)

33. The country's overall road network is in poor condition: out of a total network of about 31,000km, about 85% is unpaved, of which more than 80% is in bad condition, including roads in the Project's targeted areas in the Vakinankaratra region (dairy, fruits and vegetables) and the Analanjirofo-Atsinanana region (export-oriented agricultural products such as litchis, cloves, coffee, vanilla). This is mainly due to: (a) natural and geographic constraints[43]; (b) a weak institutional framework (at central and local levels) with limited definition and enforcement of

[43] heavy rains especially in the Atsinanana and Analanjirofo regions; cyclones; complex topography for roads, with succession of hills with steep slopes in the highlands; obsolete roads dimensioning; inexistent or disabled drainage structures, etc.;

rules, (especially for rain barriers and truck weight limit); and (c) severe lack of maintenance. This results in large areas with substantial production potential being disconnected from markets with high transportation costs and few buyers. This has resulted in the creation of substantial inefficiencies in the agricultural value-chains from farm production to final domestic market and export, diminishing profit margins at all levels, and hindering the competitiveness of local agricultural products.

34. The component's direct results include improved physical linkages between production catchment areas and markets, contributing to increased production and marketing, lower transaction costs, leading to enhanced market access among producers and value chain expansion. Operational modalities will involve the identification of priority infrastructure needs, partly derived from value chain coordination and needs assessments supported under component 1, and implemented through a combination of technical assistance and contracted civil works.

35. The component will address key infrastructure bottlenecks in a cost-efficient and sustainable manner in order to: (i) link current and additional producers from current and additional production catchment areas to market opportunities; (ii) reduce transportation costs of local products; and (iii) limit post-harvest losses and offer opportunities for collateral based financing. Based on the priorities indicated by value chain actors, including local communities and agribusiness firms, the following three sub-components have been identified:

Sub-component 3.1: Rehabilitation of commercial feeder roads (US$11.19m)

36. The sub-component will finance rehabilitation of critical spots on economically strategic feeder roads. The criteria for road selection are related to their potential economic return (production potential of catchment area, number of producers, real market linkages). Based on these criteria, key infrastructure bottlenecks (critical spots and collapsing bridges) have been pre-identified on commercially strategic feeder roads based on discussions with local economic players including agribusiness companies procuring substantial volumes for processing and/or export. The process is also representative of regions and communes' priorities to ensure alignment with them and development plans in coordination with the Heads of decentralized offices of the Ministry of Agriculture, *Direction Régionale De l'Agriculture* (DRDA) and the Ministry of Public Works, *Direction Régionale des Travaux Publics* (DRTP). Out of 36 corridors (totaling 637 km in the three regions) pre-identified based on the agribusiness development potential, the Project will finance: (i) first, the rehabilitation of 6 corridors totaling 50 km which are heavily damaged (US$5 million), the construction of one bridge of 170 m in Analanjirofo, the construction of one bridge of 100 m and the reinforcement of six metallic bridges for a total length of 90 m in the Atsinanana region (US$5 million); and (ii) second, the rehabilitation of 4 corridors totaling 25 km of roads in medium-state deterioration (US$2 million). The pre-selection will be fine-tuned during the preparation phase with all the stakeholders to ensure quick implementation of the rehabilitation works.

37. For sustainability purposes and in order to minimize the maintenance works, the most suited technical option would be cobblestoned roads. They have the following advantages: (i) the stones are locally available in the three regions (cost reduction); (ii) the option involves the use of the High Intensity Labor Force (HILF) approach (employment for local communities); (iii) a 15-year lifespan exceeding the lifespan of bituminous works (which are more expensive) ; (iv) lower maintenance costs and possibility to use the HILF approach; and (v) materials are more resilient to heavy rains and more appropriate to rainy regions such as Analanjirofo and

Atsinanana. Another alternative would be graveled roads which are between 10 to 20% cheaper than cobblestoned, roads but which are also less sustainable: they can be advised in the highlands but less in rainy regions like Analanjirofo and Atsinanana.

38. The local authorities will be considered as the *maître d'ouvrage.* The PIU will however be in charge of coordinating the road rehabilitation activities including: (i) the fine-tuning of the selection with key stakeholders through the PIU rural engineers at central and regional levels; (ii) the procurement process for the recruitment of private contractors in charge of the rehabilitation; and (iii) the procurement process for the independent control and monitoring which will be undertaken by a selected contractors in coordination with a committee including representatives of all stakeholders especially the *maître d'ouvrage* (commune or region), the private sector (users), the communities (users), the DRDA and the DRTP.

Sub-component 3.2: Maintenance of feeder roads (US$1.27m)

39. According to the law, local authorities (Provinces, Regions, and Communes) are in charge of the rehabilitation and maintenance of roads except national roads according to their function of "*maître d'ouvrage"*. To that end they are allowed to collect taxes[44] through collection systems (including taxes on agricultural products to be exported and/or sold on the local markets, called "*Ristournes*") which are often not very effective and thus generate few resources. Some communes have established additional tax collection mechanisms through tolls to cope with scare resources which are sometimes supported by NGOs and donors. The legal and regulatory framework of such schemes will have to be clarified at the beginning of the project. In the absence of resources at local level to ensure the maintenance of the feeder roads and clear legal framework, alternative solutions have been experienced in Madagascar. They include among others: (i) a private sector system: basic routine maintenance is organized and financed by private companies for which specific road networks are vital to allow them to access their raw material or to evacuate their final product (ex: Lecofruit exporting locally produced horticultural products and HOLCIM a cement factory). These systems are not easily replicable because they rely on fully vertically integrated models; (ii) a multi-stakeholder system: organized by donors and NGOs with a focus on inter-communal structures where communes sharing the road networks are in charge of tax collection and road maintenance through their road menders (*cantonniers*) and HILF schemes (ex: MATOY, CFHIMO). This system strongly focuses on local governance to ensure effectiveness, accountability and transparency of both the tax collection and tax use (citizen's engagement, participative definition of tax levels, etc.). In parallel the communes are strengthened technically (training of road menders, equipment) while the DRTPs are involved in the control and monitoring. The main issues with this model are the actual enforcement of the system after the Project and the lack of clarity around the legal framework on local taxation; and (iii) the establishment of regional funds for road maintenance fed by the *ristournes.* However this system has not been fully piloted so far (attempted in the Eastern region just before the 2009 crisis). The Project will support two main activities focused on institutional and social engineering around feeder road maintenance: (i) clarification of the legal framework on the roles and responsibilities of regions and communes for feeder road rehabilitation, maintenance and the related taxation system; (ii) tailored pilots for feeder road maintenance in the targeted areas, including activities focusing on local governance and accountability around tax collection and tax use for all stakeholders, especially the private sector

[44] Law No.2014-020 related to Decentralized Local Authorities, their election procedures, organization, operation and organizational assignment, dated August 20, 2014.

and users of the roads, the communes and the regions; and (iii) technical strengthening of the *maîtres d'ouvrage* (training and equipment of regional and communal road menders).

Sub-component 3.3: Storage infrastructure development (US$1.60m)

40. The lack of infrastructure and equipment for post-harvest handling and marketing is a major constraint for most of the selected value chains. A lack of storage prevents farmers to maximize margins: produce is sold immediately following the harvest when prices are low. For the downstream chain actors, limited access to tailored storage facilities increases operating costs and hampers the quality of the final product. Since marketing and storage infrastructure is considered a private good, several dimensions need to be taken into account prior to any investments to ensure effectiveness and sustainability: (i) the profitability of the investment based on a sound business plan including an amortization plan[45]; (ii) locality of the infrastructure taking into account access to energy and the physical accessibility (proximity with road, space for trucks, etc.); (iii) the technical dimension of the investment through the prism of cost-efficiency, sustainability, ease of maintenance and adaptability to specific commodities; (iv) the ownership of the infrastructure and the land; and (v) the management modalities of the facility.

41. Greniers Communs Villageois (GCVs), or village grain stores, were originally promoted as the main product of a microfinance network, but such has been its success that a range of other mutual and non-mutual networks have taken it up. Currently MFI professionals estimate that there are up to five major MFI competitors in this product space and the competition across their offerings have increased over time. The original intent was to store GCV-linked paddy rice in communal warehouses, however with the large uptake of the product and shortages in infrastructure, today close to 70 percent of GCV stocks are stored in home storages, holding 1-4 depositors' produce (which can be up to 8 tons), with the remaining 30 percent stored in community managed warehouses. There is an increasing interest in building additional warehouses to support GCVs as the current practices appear to fall short of addressing the seeming demand from the producers, and due to concerns over poor management and theft in home storages.

42. Despite its strong uptake, GCVs still only reach just 2 percent of rice producers. Moreover, there is potential for GCVs to support the development of a feed value chain by becoming a forcing device for better marketing practices with crops such as maize and soya bean.

43. The assessments to date suggest an established potential to scale up and professionalize GCVs to improve farmers' access to these products, improve their management by MFI professionals, and help them become a basis for a national, professional Warehouse Receipt System that reaches more farmers and involves more crops.

(i) **Support to the village grain stores (GCVs) inventory credit system**.

Against this backdrop, the Project will support the development, professionalization and expansion of the GCVs through four main interventions:

[45] Storage facilities are a financial asset and as such should be included in a solid business plan showing the profitability of the operation. Aspects such as peak and off-peak periods should be carefully analyzed. This will also determine the type and size of the investment required.

a. ***Review of GCV experiences:*** The Project, in partnership with other donors which have been active in this area (such as IFAD, Agence Française de Développement (AFD), and United Nations Development Program (UNDP) will carry out a technical assessment of the overall demand and shortages for storage facilities and the prospects for additional infrastructure to unlock a more professional WRS industry in the country. It will also conduct an assessment of recent IFAD investments in village level warehouses (35 warehouses have been built in the last 7 years by an IFAD project and they have been operational for 3-5 years).

b. ***Addressing coordination failures and information asymmetries across industry actors***: The Project will provide TA to support the development of a national dialogue/policy and strategy, by improving coordination mechanisms, building awareness and capacity among the financial sector participants, as well as public authorities, for industry development. This TA program will also help the MFIs and other financial institutions involved in GCV financing to further develop their operational and risk management systems and pricing for GCVs and develop a strategy for centralized, third party warehousing, and other inventory financing mechanisms.

c. ***Developing the legal framework***. The Project will provide legal technical assistance to develop a national regulatory framework to: (a) regulate and upgrade GCVs into tradable warehouse receipts; (b) increase financial institutions' ability to assess and manage risks associated with GCVs, as well as warehouse receipt financing; and (c) develop a national regulatory system to license, inspect and supervise third party warehousing to ensure good practice and minimize the risks involved (notably physical losses and quality deterioration, fraud and speculative price risks). This TA will aim to promote sustainability by modeling options that leverage levies on licensed warehouse systems, and internalize the cost of all due diligence and risk assessment, so as not to depend on Government budgetary allocations.

d. ***Capacity building support to Microfinance Institutions*** (***MFIs) to improve warehouse services and commodity handling practices:*** The Project will provide training to industry participants on best practices in warehouse services, and develop commodity specific expertise across a range of priority crops, such as rice and maize, to help better carry out critical functions such as grading and standardization, commingling of commodities, and oversight of stocks to minimize losses. Professionalization and expansion of GCVs, both in terms of increasing volumes and farmers served by GCV loans, and the number of crops financed under this scheme will require increased industry capacity in warehouse services and commodity handling practices.

(ii) **Construction of new GCV storage facilities:** To expand rice marketing and GCV-linked credit availability, and based on the outcomes of the above mentioned review work and TA, the Project will introduce the system in three locations within project areas on a pilot basis for possible further expansion. Based on calls for joint proposals by producer organizations/communities, MFIs, and possibly traders, the Project will finance the construction of warehouse facilities. These will likely be village-based warehouses (as those found in Malawi within the auspices of the Agricultural Commodity Exchange) owned and operated by farmers associations, village cooperatives or organizations, small-scale traders,

or other rural bodies (e.g. MFIs). They will be small-scale facilities with third party storage provided to farmers as an economic service by various operators. They will be licensed, inspected and supervised in line with the national regulatory framework developed in the first phase of the Project. Complementary TA will be provided to identify suitable governance arrangements for warehouse ownership and management.

Component 4: Project Management Coordination and M&E (US$6.04m)

44. The aim of this component is to ensure effective project management and coordination. The component will support all aspects of project management, including fiduciary management, monitoring and evaluation (M&E), knowledge generation and management, communication, and monitoring mitigation measures related to safeguards.

Component 5: Contingency Emergency Response (US$0m)

45. This component establishes a disaster response contingency funding mechanism that could be triggered in the event of an eligible crisis or emergency, such as a natural disaster involving a formal declaration of a national or regional state of emergency, or a formal request from the Government of Madagascar in the wake of a disaster. In that case, funds from other project components could be reallocated to component 5 to facilitate rapid financing of a positive list of goods and services related to components 1, 2, 3 and 4, and that would still be relevant to the achievement of the PDO. Eligible activities would include clearing and rehabilitating road and irrigation infrastructure, purchasing construction materials, agricultural inputs, or contributing to pest/plague control (e.g. locust control).

Annex 3: Madagascar Land Policy Reform

MADAGASCAR: Agriculture Rural Growth and Land Management Project

1. This annex is to detail the land sector institutional and legal context in which the Project will be implemented. It includes: (i) a background on the 2005 land policy reform and on the prospects opened up by the new local land management system for facilitating agricultural investment by smallholders and investors; (ii) a presentation of the various ways for acquiring land for agricultural investment; (iii) a section about the development rationale, the expected outcomes and beneficiaries; and (iv) a presentation of the latest developments in land policy and the potential policy reversal risk that could affect the Project, and the possible way to mitigate it.

Land sector background

2. The Madagascar land policy reform began in 2005 with the Government's adoption of a Letter of Land Policy elaborated following a consultation process launched in November 2004 and which was presented by the Prime Minister to a large audience on February 8, 2005. The letter announced the broad lines of a new land policy and a strong commitment to facilitate the recognition of land ownership on a large scale, through an innovative decentralized land management system.

3. The 2005 reform heralded significant changes in land administration in Madagascar. The new law mandated that untitled land could no longer be presumed to belong to the Malagasy State. It provided for the establishment of new land offices in the communes (*guichets fonciers communaux),* where local authorities were empowered to formalize rights to previously untitled land through land certificated (*Certificat Foncier*) issued in a transparent, local procedure that considers opposing claims. Land certificates have virtually the same legal value as land titles; any legally permissible transaction involving a land title can be done with a certificate, including sale, lease, subdivision, and inheritance. The certificates differ from traditional land titles in being reversible, in delimiting holdings based on neighbors' consensus, and in that they are ratified by community representatives. The new laws have essentially given Madagascar two simultaneous land management systems: the public land administration, which manages State property and titled private property, and the communal land administration, which manages untitled private property.

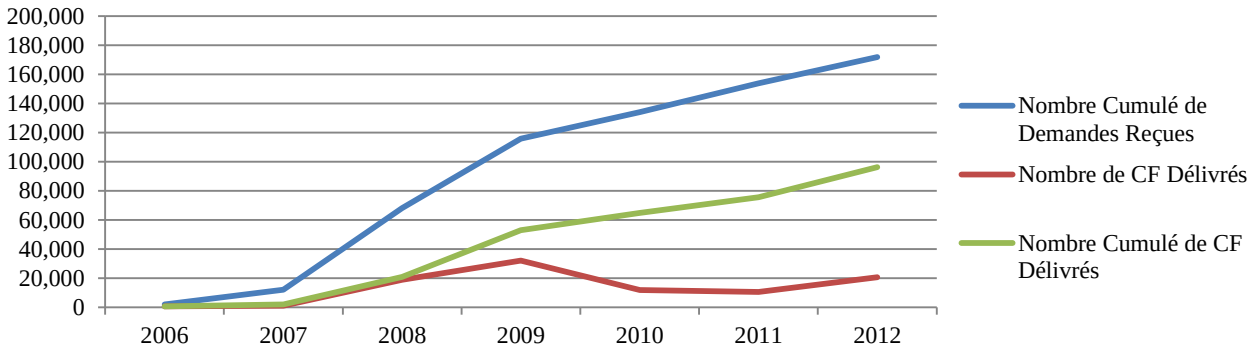
4. The decentralization of land management was undeniable progress. By increasing the speed and reducing the cost of receiving a formal acknowledgment of land rights, decentralized land management clearly represents a significant improvement over the former land titling system (Table 3). Locally, land administration procedures are simpler and services are more easily available, without any subsidy from the central government and wide backing (but limited financial support in recent years) from the international community. In one-third of Malagasy communes, anyone owning untitled land can obtain an official document—a land certificate—that guarantees his or her rights through a process that is 12 times shorter and costs 30 times less than the process of acquiring a traditional land title. Nationally, this improvement in land management services has increased the visibility of the commune land offices and the land certificates they issue.

Table 1: Obtaining a land title and land certificate: Average cost and time

	Average cost	Average time
Land title	US$507–600	6–10 years
Land certificate	US$9–14	6–18 months

Source: ECR 2006; Observatoire du Foncier.

Figure 2: Changes in numbers of applications and land certificates (CF) issued, 2006–12 [46] [47]



Source: Land Observatory 2012

5. The issuance of nearly 120,000 certificates in 9 years in just part of Madagascar should be viewed in the context of the 578,000 land titles established throughout the country during the 115-year existence of the land administration. This comparison alone shows the scale of the progress achieved, although progress still falls far short of the objectives of a massive and nationwide land rights registration operation as set out in the 2005 Land Policy Letter.

To what extend does a decentralized land management system facilitate agriculture investment and agriculture project implementation?

6. Decentralization of land management is an important asset for the execution of the Project and for facilitating fair and inclusive agricultural investments in that municipalities have clear knowledge of land rights and on possible land availability. This includes:

- Communes equipped with Communal Land Offices have tools (Local Land Tenure Status Mapping (PLOF)), staff (Communal land officer) and a legal framework to process land rights registration at local level.
- Communal land offices help farmers to get legal protection of their land rights. Communal land offices have their own mapping tools (PLOF – Local land occupancy status maps representing the land legal status of the land on the whole Communal territory), competent staff and legal procedures for registering existing land rights. Farmers can easily access information related to any agribusiness projects that seek land within the territory of their Commune. Land certification procedures legally involve all the farmers with land rights in an area identified by an agribusiness company.

[46] Translation of legend: Nombre Cumulé de Demandes Reçues = Total number of applications received; Nombre de CF Délivrés = Number of land certificates issued; Nombre Cumulé de CF Délivrés = Total number of land certificates issued.
[47] Due to the international funding suspension the Land Observatory was no longer able to collect data in the field since 2012.

- Communal land offices may be a reliable entry point for any investor looking for land. Investors may consult PLOFs to identify the possible occupant(s) of a track of land of interest to them.
- Communal land offices may facilitate agreements and land leases between farmers and private firms.

7. A decentralized land management system helps mitigate land grabbing. Most cases of land grabs are related to land allocations without consultation at local level, mostly carried out by central services that did not take into account existing land rights or land occupancies. The challenge is to strengthen the capacity of municipal land offices in two ways:

(i) provide smallholders with written proof of their rights in a quick and low cost way, aiming at providing incentives for investment on their own land, protecting smallholders' access to land and avoiding forced evictions; and

(ii) facilitate land transactions records. Communal land offices will establish the basis for an informed and transparent land market and facilitate connections between landholders without capital and investors looking for land.

Agriculture Land & Investment

8. Contract farming is considered as a way to better connect farmers to markets and to get them out of poverty. According to recent analytical work conducted by a World Bank team (Madagascar Agriculture and Rural Development Economic Sector Work), Madagascar has many success stories in contract farming but the quantity of production and the number of involved producers are too small to have a significant impact on poverty reduction. To improve contract farming impact on poverty it is recommended among other things, to promote semi-industrial agribusinesses with their own plantations that can be mechanized and can provide services to small producers. Access to land then becomes a key issue to be addressed.

9. Access to land is known to be one of the key constraints that limits investment in agriculture. Some managers of agriculture companies based in Madagascar for several years confirmed that their activities are often limited by difficulties in finding land. Years of experience are not always sufficient to identify the land on which to invest and this is even more complicated for incoming investors unfamiliar with the country and without professional networks. It is likely that the demand for land will increase as the relative improvement in the political situation has led more national and international companies to consider agriculture investment projects in Madagascar. However the area of available land for new agribusiness investments remains unknown. Available data so far are rough estimates stating that 90% of arable land is not cultivated and the concept of arable land needs to be clarified. Attractive land for investments, that is to say fertile, irrigated and close to viable roads is probably uncommon. The Madagascar Land Observatory notes that investors are even competing to acquire the same pieces of land.

10. Investment in agriculture remains highly sensitive. Many in Madagascar still remember the disastrous consequences of botched land deals negotiated on too large areas in 2008 (Daewoo, Varun). The Project will help the Government to develop appropriate strategies to attract investment in the agricultural sector while avoiding land dispossession which could cause

social unrest. No resettlement of population will be considered by the Project as a basic principle so as to avoid any claims and reputational risk. The purpose of the Project is to help formalize existing land rights to facilitate transparent and inclusive transactions current between the State, landholders and potential investors.

11. In Madagascar, there are two ways to allocate land for investors, either by decision of the State or through land market mechanisms between individuals:

- ***1) Land allocation by decision of the State***

The State may decide to allocate land to private investors or young farmers only on land deemed to belong the State, namely State land. The concept of State land is sometimes ambiguous because it covers different legal terms. The Project support will be adjusted to the State Land various legal land status. The below table clarifies the various legal definitions of State Land and proposes guidelines for actions planned in each State Land statute.

State Land statute	Legal framework	Proposed actions by the project
Domaine Public Public Land Estate	Law No 2008-013 of July 3rd, 2008 on the "*Domaine public*". "*Domaine Public*" includes the "Natural Domaine Public" (shores, rivers, lakes) and the "Artificial Domaine Public" (ports, railways, channels, roads, and other key infrastructures).	The use of land included in the "*Domaine Public*" can be transferred to a legal person for free (by arrêté of the Minister in charge of land Affairs) or for a fee (by decree of the Council of Ministers). The *Domaine Public* is mostly transferred for investments related to the tourism or industry sectors. The Project will not support any land transfer from the public domain.
Domaine Privé – Registered land	Public land registered in the name of the State, under the "*Domaine Privé de l'Etat, des Collectivités Décentralisées et des personnes morales de Droit public*" ruled by the Law No 2008-014 of July 23rd, 2008	The Project will support: (i) private or public surveyors' teams to identify land titled on behalf of the State and refresh the plot delineation in the field as needed; (ii) identification of possible occupants; and (iii) conduct initial negotiations with populations eventually settled on the land. These negotiations will be conducted in compliance with the World Bank safeguards. They will conclude an official recognition of occupancies, and / or involvement of the occupants in the activities of the agribusiness company. The State Land inventories will also provide data about soils quality, access to water and to permanent roads. Expected deliverables are a characterization of lands and a site assessment including an updated mapping of the public land and of potential occupancies, prior to any agreement and/or transaction between the State, the private company and rural communities.

		The Project will limit its activities to this type of State land as long as the expected Law on Lands with Specific Status is not enacted.
Domaine privé – Unoccupied and unregistered land	Unoccupied and unregistered land raises questions since the concept of non-occupation remains unclear. Unused and unclaimed land is legally included into the "*Domaine Privé*". The rule that applies is the titling on behalf of the State prior to any transaction. The legal status of grazing land or occasionally cultivated land remains unclear. Yet this land that may be of interest for investors. This category of land is currently being discussed and it is a subject for controversial discussion.	The so-called "unoccupied and ownerless" land must be registered before any lease[48] or sale, and transactions are to be conducted following specifications determining the land development. The Project will support at the central level, the preparation of updated legal provision for a clarification of this matter. An expected deliverable is new text on Land with Specific Status that will clearly defined land reserves for environmental or investment purposes. The Project will not support any land transaction on this type of State land as long as the new Law on Land with Specific Status is not enacted.

12. A large amount of State land is actually occupied, sometimes for generations. Moreover, the notion of "unoccupied and ownerless" land is difficult to see from the ground, in particular when it comes to pastures or untouched land for soil regeneration purposes. The distinction between untitled "*Domaine Privé*" and untitled private property remains unclear. The boundaries of State land are poorly identified and mostly unknown by the occupants, in particular when State land is so large that it may cover several Communes and when it remains unused by public authorities.

13. Thus, land allocation from the "*Domaine Privé*" to a private company involves a high level of risk of local claims from rural households living on this land and whose claims are relayed at national and international level. Even the allocation of titled land of the "*Domaine Privé*" may cause protest when this land is occupied by rural families for generations or by influential people. Many disputes involving agribusinesses have occurred in recent years (Daewoo, Varun in Sofia, Bionexx in Itasy, Tozzi Green in Ihorombe).

14. To mitigate the risks, the Project will develop a two-fold strategy:

i. The Project will implement activities for facilitating agricultural investment only in one specific category of State land, namely the registered *Domaine Privé* which includes titled land on the behalf of the State. The targeted parcels include land previously allocated to various public bodies that no longer use them i.e. former State ranches now abandoned, plots assigned to the MoA for research activities that are no longer implemented, or Army-owned land without activity for decades. This is the land that may

[48] Regular leases are less than 18 years. Long leases ("baux emphytéotiques") are from 19 to 99 years long.

be primarily offered to meet the demand for agricultural investments while minimizing the risk of social claims.

ii. As this land may also be occasionally occupied, the Project will provide adequate resources for carrying out an inventory of registered State land in order to know the precise legal status of the land and its current occupancies before launching any negotiation and land transaction. The Project will provide the needed resources to help the Government achieve these inventories and offer investors land whose rights will be clarified before any transaction.

15. The Project will avoid being associated with any resettlement issues. If any transfer of a parcel located in the registered *Domaine Privé* is needed the Project will then trigger the OP 4.12 on Involuntary Resettlement in close compliance with the World Bank safeguards rules.

- ***2) Land allocation through market mechanisms***

16. Land purchase, lease or rental between individuals supposes three prerequisites: (i) a clearly delineated plot; (ii) a clearly identified owner; and (iii) clear and reliable documentation to inform the transaction and a place for archiving the transaction records.

17. These prerequisites are often missing. In Madagascar, where only one parcel out of fifteen is registered, there is a potential risk of a land transaction that is not conducted with the right land holders. The risks of questioning transactions are high when land rights are not registered and not informed.

18. Market mechanisms are a viable solution once local land rights are registered. The easiest and cheapest solution is to: (i) assist land certification using local procedures under the responsibility of municipalities and fokontany[49]; and (ii) promote voluntary land transactions between landholders and investors, preferably in the form of leases. The Project will provide technical assistance for the design and monitoring of these leases. Region and Communes will be strengthened for monitoring the leases in a longer term.

Rationale & objectives

19. The Malagasy land sector is characterized by weak land governance due to an inefficient land registration system, poor management of public land, a poorly documented and non-transparent land market and controversial land policy directions. Under such a context, constraints for commercial agriculture development are significant because of the risk of land grabbing for family farms and the risk of unreliable transactions for investors. This has resulted in limited investment for the whole private sector (including small producers) and the risk of rising land disputes that can degenerate into social unrest.

20. The Madagascar land policy reform is based on a low cost and fast track land rights registration system that may address the above constraints in the Project areas and within the Project timeline. In that view, the Project will assist the Government to improve the rural land management system in order to facilitate rural households and agribusiness firms' investments. It

[49] In compliance with the Law No 2006-31 and its implementation decree.

is about: (i) reactivating the decentralized land management system so as to secure small holders land rights and to encourage investments on their own plots; (ii) improving public land management capacity so as to help the Government to have better knowledge on potential land it may lease to private investors; (iii) developing transparent and fair land allocation mechanisms which take into account existing land rights and provide potential benefits to local people.

21. To avoid disputes and facilitate investment, two prerequisites for access to land of interest for agriculture investment are essential: clarification of existing land rights and an appropriate negotiation process. Negotiations should be based on: (i) prior identification of all rights-holders; (ii) comprehensive consultation with all landholders; (iii) possible farmers' involvement in the agro-industrial project and clarification of expected benefits and mutual duties; and (iv) written formalization of agreements, including validation by an administrative authority. The challenge is to go beyond fair compensation and to make the investment project also a project for developing rural communities. Negotiations should be carried out by an organization able to monitor on a longer term, the implementation of the agreements between investors and rural communities, and to provide technical and legal assistance to rural communities and private companies.

Principles for Responsible Investment in Agriculture and Food Systems

22. The Principles for Responsible Investment in Agriculture and Food Systems were approved by the 41st Session of Committee on Food Security on 15 October 2014. The Principles address all types of investment in agriculture and food systems - public, private, large, small - and in the production and processing spheres. They provide a framework that all stakeholders can use when developing national policies, programs, regulatory frameworks, corporate social responsibility programs, individual agreements and contracts. They are voluntary and non-binding, but represent the first time that governments, the private sector, civil society organizations, UN agencies, development banks, foundations, research institutions and academia have agreed on what constitutes responsible investment in agriculture and food systems that contribute to food security and nutrition. The 10 principles are as follows:

1. Contribute to food security and nutrition.
2. Contribute to sustainable and inclusive economic development and the eradication of poverty.
3. Foster gender equality and woman's empowerment.
4. Engage and Empower Youth.
5. Respect tenure of land fisheries, forests and access to water.
6. Conserve and sustainably manage natural resources, increase resilience, and reduce disaster risks.
7. Respect cultural heritage and traditional knowledge, and support diversity and innovation.
8. Promote safe and healthy agriculture and food systems.
9. Incorporate inclusive and transparent governance structures, processes, and grievance mechanisms.

10. Assess and address impacts and promote accountability.

Beneficiaries and expected outcomes

23. Beneficiaries include rural communities in targeted regions, districts and 180 municipalities equipped with an operating Communal Land Office. Municipalities' capacities will be strengthened so as to allow them to fully implement their skills in land management and to have reliable information about land legal status throughout the municipal territory.

24. A total of 228,000 smallholders whose land rights are presently undocumented will receive land certificates. The issuance of half a million land certificates is expected by the end of the Project. These smallholders cultivate less than 0.8 hectare and remain at risk of losing their property as long as their rights are not officially recognized, especially in a context of weakened governance.

25. Rural communities as well as agribusiness companies will benefit from a clear and transparent process that will facilitate access to land guaranteed by the State. Benefits for the Government include: (i) a significant contribution to the implementation of the Government's development goals including the Letter of Land Policy and the National Land Program; (ii) a better reputation for attracting investment in the agricultural sector; and (iii) a calmer social climate in rural areas and a reduction in land disputes tried by civil courts.

Latest developments on land policy – implications for the project

26. After a promising start during the first four years of implementation, the pace of reform has slowed since 2009, when political instability broke out, causing donors to suspend funding for the reform program. Ten years later and after a five year political crisis that stopped the implementation of land activities in the field, the Government of Madagascar was keen to restart the land policy reform process and to draw updated policy guidelines based on new developments and lessons learned during the past decade.

27. In 2015 the Government of Madagascar prepared an updated Land Policy Letter following comprehensive consultations with CSOs and donors. It was enacted on May 26, 2015 and it confirmed a clear commitment for municipal competencies in land management and for strengthening the decentralized management system over the next 15 years.

28. Land administration civil servants unions however questioned the new land policy letter and asked to review it. Following a two-month strike, a second version of the Land Policy Letter was submitted on August 5, 2015 to the Council of Ministers without any prior consultation. This new version was prepared by the land administration civil servants unions who feared that a decentralized land management system might dismantle their monopoly over the land management system and related rents. It includes substantial changes that may pave the way to a policy reversal and risk of a gradual return to the previous centralized land management system.

29. The proposed changes are the: (i) mandatory transformation of the land certificate into a land title before any transaction, which induces the progressive end of the Municipal competencies in land management; (ii) elimination of the guidelines included in the May version for the termination of the uncompleted colonial land survey operations by the Municipal Land Offices and (iii) transfer of the management of local development areas under the responsibility of the State Land Services. These proposals are part of a vision that is the opposite of the Government line in favor of decentralization. If this land policy option is retained, Malagasy municipalities would lose the land management competencies obtained 10 years ago while State land services would be overwhelmed by a substantial increase in their activities. That version caused an outcry through civil society organizations, including the SIF[50] platform. Referring to the Voluntary Guidelines on Responsible Governance of Tenure of Land they circulated a statement asking the international community not to support a land policy decided without their prior consent.

30. Donors have also expressed their concern as several projects under preparation are aligned with the May 2015 version. These projects may not be consistent with the August version. Following various meetings and mail exchanges with the Government, a national land policy workshop was held in Antananarivo on November 10, 2015 to clarify the Government's view and enable CSOs to express their demands. Unfortunately no clarification came out of the workshop. A consensus now is sought through which a 5-year National Land Program will provide clear guidelines and an institutional framework conducive to an efficient decentralized land management system.

31. Though the Project land component is aligned with the legal framework currently in force and based on a decentralized land management system there is risk of a policy reversal. The key risk is that the new land certificates issued at the municipal level will be considered a temporary proof of land rights property. During preparation of the PAD, the Minister in charge of Land Affairs made an oral statement confirming the Government will not change the law on land certificates and that certificates will still be a permanent document. Written confirmation from the Ministry was obtained in January 2016. In addition, a draft National Land Tenure Program with clear principles to ensure continuity of the land reform has been prepared and will be finalized and adopted no later than three months after Project Effectiveness.

32. Three principles inspired by the Voluntary Guidelines on Governance of Tenure are included in the draft National Land Tenure Program: (i) *principle of continuity*: keeping land certificates as permanent proof of property rights; (ii) *principle of representativeness*: opening formal or informal bodies in charge of design, monitoring or supervision of the land reform policy to any stakeholders involved in the land sector (CSOs, private sector, elected people, external expertise as needed); and (iii) *principle of progressiveness*: maintaining capacity for innovation aiming at incremental updates of the legal and institutional framework based on pilot operations and evaluation. The inclusion of these principles ensures proper alignment of the Project with the GoM's land policy guidelines. It also guarantees that the existing policy framework that supports decentralized commune-level land registration for rural households will remain in place.

[50] Solidarité des Intervenants sur le Foncier

33. The Government and the Land Reform Coordination Unit will prepare a roadmap to inform stakeholders about the planned approach and key milestones for presentation of the National Land Program. The PIU and its land specialist are an integral part of the Technical Committee in charge of preparation of the National Land Program and are mandated to discuss with and clarify the program and its principles to stakeholders.

34. Should there be any ambiguity in the final National Land Tenure Program, the World Bank will then assess the risk of discrepancy between the Government land policy and the planned project activities, and initiate a dialogue with the Government and the MEPATE prior to its adoption.

Annex 4: Implementation Arrangements

MADAGASCAR: Agriculture Rural Growth and Land Management Project

1. Three principles underlie the selection of the project's institutional and implementation arrangements: (i) implementation arrangements are based on strengthening the existing capacity within the Ministry of Agriculture (MoA), to avoid the creation of *ad hoc* arrangements that could dissolve after Project closure; (ii) implementation arrangements will make use of existing structures that can meet the requirements of the World Bank to avoid unnecessary additional administrative burden; and (iii) implementation arrangements were chosen to ensure maximum ownership and involvement by stakeholders in project implementation.

2. The Ministry of Agriculture will take the lead for project implementation. Given the Project's multi-sectoral scope and nature, various ministries, government agencies at the local, national and regional levels, the PASEF project and fund manager SOLIDIS, the private sector, CSOs and farmer organizations will also be involved in project implementation. These include Presidential Projects, Land Use Planning and Equipment; Industry and Development of the Private Sector; Livestock; and Trade. Important government agencies include the Economic Development Board of Madagascar (EDBM) for investment promotion and the Fonds d'Intervention pour le Développement (FID), possibly for community-based feeder road maintenance programs). A number of service providers are active in Madagascar, delivering technical training and extension services (for example: CTHT in Tamatave, CTHA, CEFFEL/FIFATA[51], TOMBONTSOA[52] and IPSATA[53], and FIFAMANOR[54] in Antsirabe, ESMV[55] FOFIFA/DZRV[56] , ESSA[57] and CIRAD[58]). The number of active implementers at various levels will require the strong coordination of activities and consultations among all the implementers at various levels. This will be the responsibility of the Ministry of Agriculture as the lead ministry.

Overall Coordination and Project Management

3. The project's coordination and management structure will be based on three main bodies: the Project Steering Committee (*Comité de Pilotage*), the Project Implementation Unit at the central level (*Agence d'exécu*tion), and two Regional Implementing Units (*Cellules Régionales d'Exécution*). The Project coordination, management, implementation, monitoring and evaluation procedures will be detailed in a Project Implementation Manual (PIM) to be prepared by the PIU by project effectiveness.

4. The **Project Steering Committee** will provide strategic oversight of the project. The Committee will be chaired by the Secretary General of Agriculture or his representative, and include representatives of the Ministries of Finance; Presidential Projects, Land Use Planning

[51] FIFATA: Fampivoarana ny Tantsaha (Association for Progressive Farmer) is an apex framer based organization.
[52] TOMBOTSOA: Ferme Ecole Paysanne
[53] IPSATA: Institut Professionnel Supérieur en Agronomie de Tombontsoa Antsirabe) Option : Agriculture, Elevage, Environnement
[54] FIFAMANOR: Centre de Développement Rural et de Recherches Appliquées
[55] ESMV: École des Sciences et de Médecine Vétérinaire
[56] FOFIFA - DRZV: Centre National de Recherche Appliquée au Développement Rural/ Département de Recherches Zootechniques et Vétérinaires
[57] ESSA: Ecole Supérieure des Sciences Agronomiques
[58] CIRAD: Centre de Coopération Internationale en Recherche Agronomique pour le Développement

and Equipment; Industry and Development of the Private Sector; Livestock; Trade; EDBM; and Civil Society representatives; farmers' organizations; private sector platforms and one representative of the Regions of each project intervention area[59]. The PSC will meet at least twice a year and will be responsible for approving the annual work plans and related budgets, progress reports and providing policy direction. The PSC may participate in field trips as needed. The PIU will act as the Secretariat of the Project Steering Committee and will be responsible for preparing the meetings, elaborating the documents for the meeting, and recording the minutes of the meeting.

5. The **Project Implementation Unit (PIU)** based within the MoA will manage the Project's day-to-day activities, project M&E, and policy dialogue on improved policies for commercial agriculture. The PIU staff will be responsible for all procurement, disbursement, accounting, financial and technical reporting, monitoring and evaluation of the project, policy dialogue on commercial agriculture, and ensuring the auditing of the project accounts. The PIU will be composed of the following staff nominated by the Ministry of Agriculture: (i) a national coordinator; (ii) a procurement specialist; (iii) a financial management specialist; (iv) an accountant; (v) a monitoring and evaluation specialist; (vi) six technical experts (agribusiness, land, public policies and governance, rural roads, and two livestock specialists); (vii) environmental and social safeguards specialist); (viii) internal auditor; and (ix) three assistants. Technical experts of the central PIU will also supervise field activities in the part of the Highlands located around Antananarivo, and in the market supply basins around Fort Dauphin. The PIU will have a formal collaboration agreement with the PASEF PIU for the management of Component 1.3. Additional staff with specific expertise may also be recruited as and when needed. The PIU will prepare bi-annual reports recording Project progress, including environmental and social safeguards aspects, and participate in bi-annual joint support missions with the World Bank. It will also provide the MoA with analytical skills and prospective evaluation capacities, conduct analytical work on the agricultural sector, land tenure security, agricultural responsible investment and management of rural infrastructures, and on this basis arrange national debates on agricultural and land policies aiming at decisions to improve the institutional environment for commercial agriculture.

6. **Two Regional Implementation Units** located in the Highlands (Antsirabe) and in the East Coast (Toamasina) will be in charge of project implementation at the regional level. They will be responsible for supervising project activities in the targeted areas and facilitation of ongoing dialogue with regional authorities. Each of these Units will include: (i) one Regional Coordinator, (ii) one procurement specialist; (iii) one accountant; (iv) three technical experts (agribusiness, land and rural roads), and (v) related assistants. A regional presence will be established in Fort Dauphin to coordinate project activities related to the meat value chains in collaboration with PIC2 and IFC. The Regional Implementation Units will be accountable to the central PIU and to a ***Comité Régional de Suivi/Regional Monitoring Committee***. The Regional Committee will meet at least twice a year to ensure consistency of project activities with regional development policies, and monitor project progress. The Regional Committee will be chaired by the Head of Region or his representative, and will include representatives of sectoral technical services (Agriculture, Land; Industry and Development of the Private Sector, Livestock; Trade), Civil Society Organizations (CSO) representatives, farmers' organizations and private sector

[59] Appointment terms for the regional representatives will be detailed in the decree for creation of the SC

platforms. The Project will provide resources to the CSOs and farmers' organizations to facilitate their review of progress made by the project activities.

7. A Project Implementation Manual (PIM) including a Project Implementation Plan (PIP) will be finalized by project effectiveness. The PIP will include all periodic reporting, M&E arrangements for the life of the project and procedures for the grant selection. The manual will develop the "matching grants procedures".

Figure 3: Summary of Institutional Implementation Arrangements

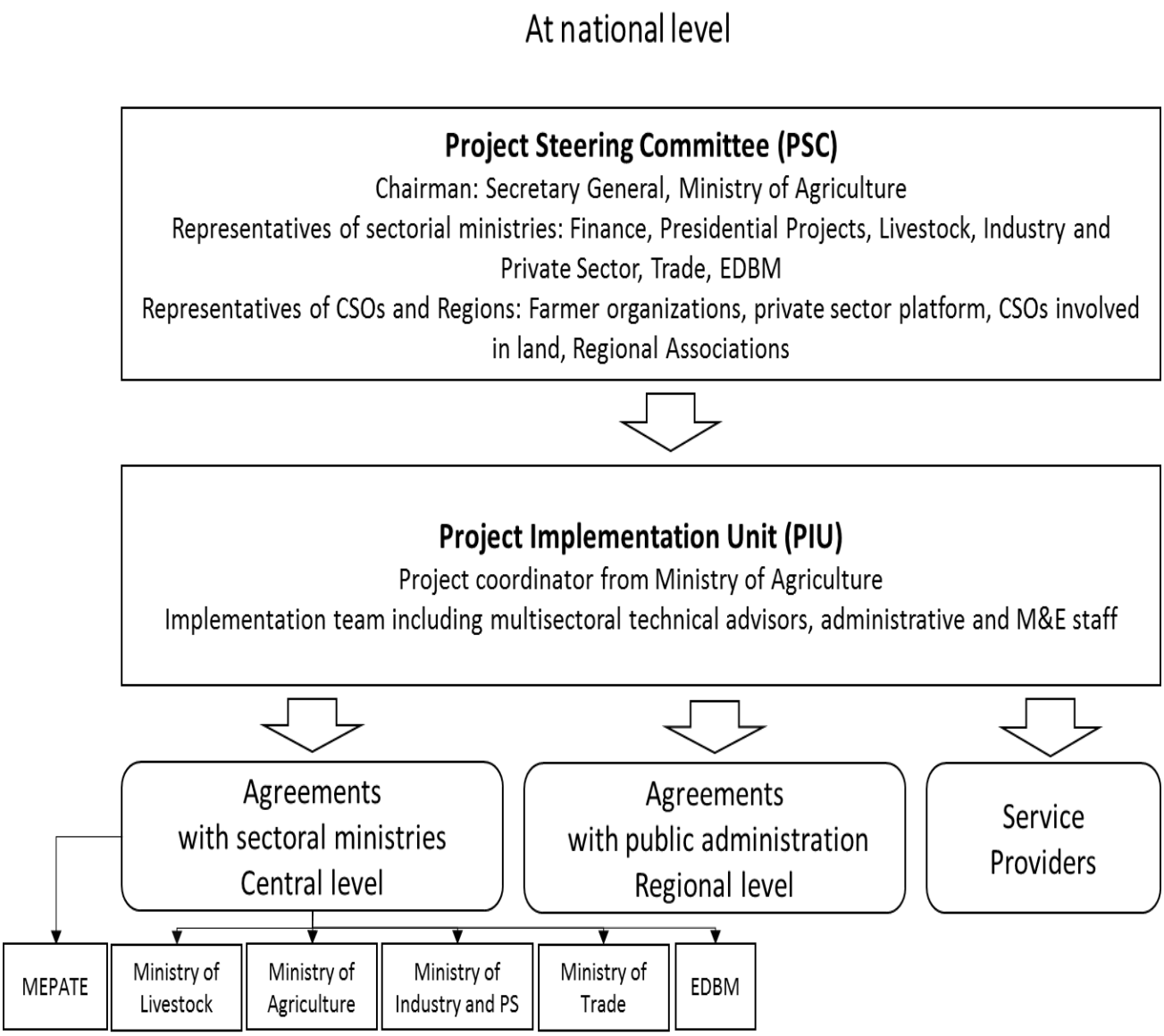
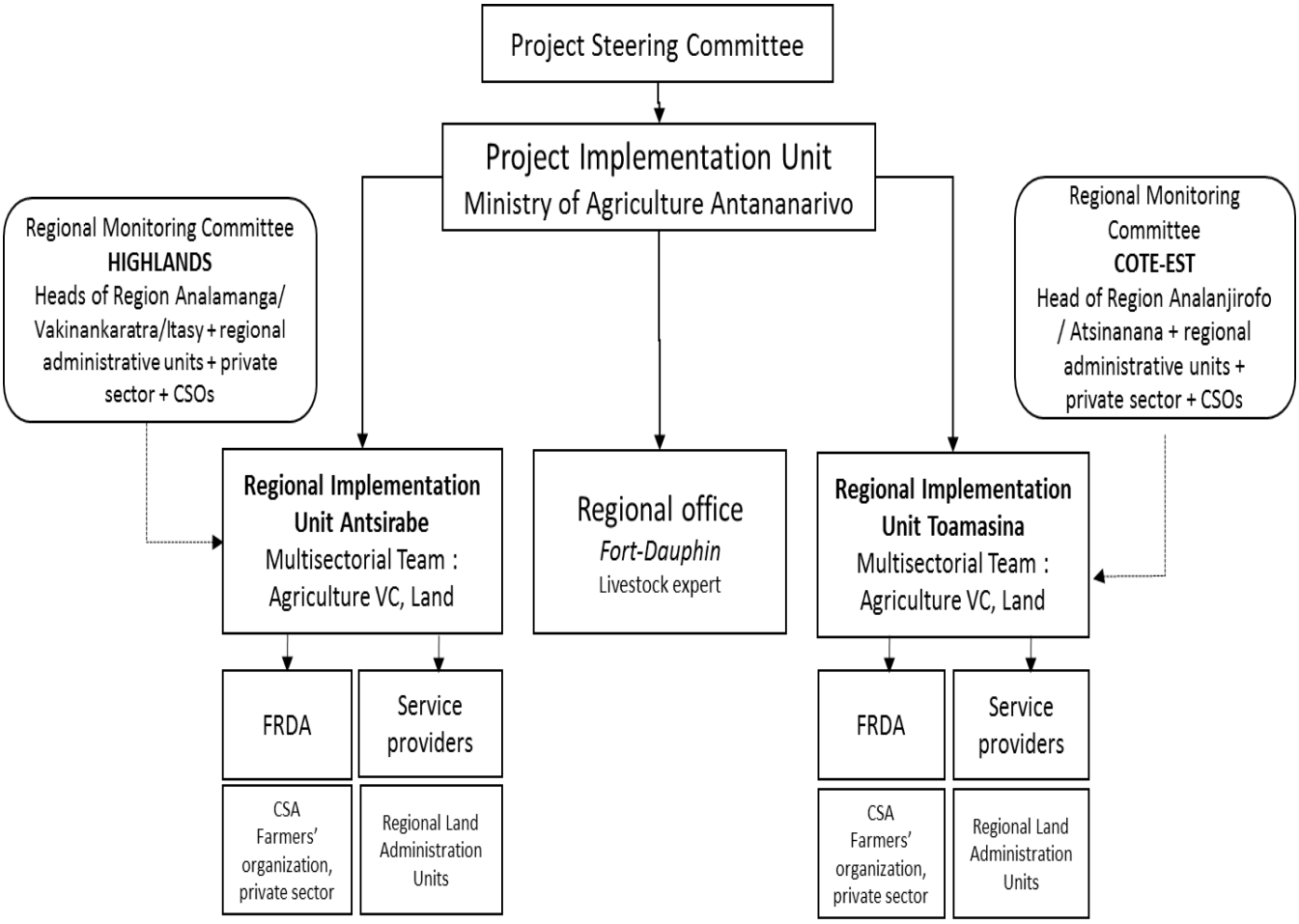


Figure 4: Institutional Implementation Arrangements



Component Implementation Modalities

8. **Component 1: Agribusiness Value Chain Development (US$18.49m).** This component will be managed by a small number of service providers that will implement activities involving a number of private and public stakeholders. The regional agriculture development funds (FRDAs) in the project areas have been identified as potential partners and beneficiaries in value chain activities as follows: 1) To gain experience in demand-driven value chain development, FRDAs may be involved in beneficiary identification and selection, and activity supervision services; 2) FRDAs may receive capacity building support in fund and project management. The capacity of FRDAs to manage funds could be assessed during the mid-term review of the Project by the GoM and the Bank. The *Centre de Services Agricoles* (CSA) have also been identified as key institutions in assisting producers preparing their demand and linking value chain actors to service providers. CTHT has been identified as a potential service provider for sub-components 1.1 and 1.2 for activities in the East coast project area. FIFAMANOR has been identified as a key specialist technology provider for livestock activities in sub-components 1.1 and 1.2 in the Highlands and in Fort Dauphin. To enable farmer mobilization, FRDAs, MATOY (an NGO), and FIFATA (Madagascar's umbrella farmer association), have been identified as key players and potential service providers, particularly for value chain activities in the Highlands. Through the PASEF project, SOLIDIS has been identified as the delivery mechanism for the loan guarantee activity under sub-component 1.3. There will be a collaboration agreement between the PIU and the PASEF PIU, as well as legal arrangements between the PIU and SOLIDIS to operationalize component 1.3 and the phased disbursement of the grant funds. Further details are provided in paragraph 23 of this annex.

9. **Component 2: Support to Land Policy and Land Rights Registration (US$13.40m).** The PIU will be in charge of the recruitment of national or international consultants for the activities related to the land related institutional and legal framework in coordination with the public institutions involved at the decentralized and central levels. The activities related to the establishment of pilots including institutional and social engineering, stakeholder coordination and monitoring as well as technical strengthening of *maîtres d'ouvrage* will be implemented by a service provider recruited through the project procurement modalities.

10. **Component 3: Support to Marketing Infrastructure Development and Maintenance (US$15.07m).** The local authorities will be considered as the *maître d'ouvrage.* The PIU will however be in charge of coordinating the road rehabilitation activities including: (i) the fine-tuning of the selection with key stakeholders through the PIU rural engineers at central and regional levels; (ii) the procurement process for the recruitment of private contractors in charge of the rehabilitation; and (iii) the procurement process for the independent control and monitoring which will be undertaken by a selected contractors in coordination with a committee including representatives of all stakeholders especially the *maître d'ouvrage* (commune or region), the private sector (users), the communities (users), the *Direction Régionale du Développement de l'Agriculture* (DRDA) and the *Direction Régionale des Travaux Publics* (DRTP). For the GCV, the PIU will work closely with the financial institutions active in the targeted project area to identify needs and opportunities in terms of scaling-up and conduct the procurement process of the private contractors through the PIU rural engineers. For the other marketing infrastructure, proposals would be selected (based on the above criteria) and channeled through the industry organizations (*interprofession*) to the PIU which would manage the procurement process in close collaboration with the client.

11. **Component 4: Project Management Coordination and M&E (US$6.04m).** This component will be coordinated by the PIU which will work closely with the various government private sector, and farmer partners to ensure smooth management of all the Project activities.

12. **Component 5: Contingency Emergency Response (US$0m).** This component establishes a disaster response contingency funding mechanism that could be triggered in the event of an eligible crisis or emergency. An Immediate Response Mechanism Operations Manual will need to be adopted by the Government before a crisis occurs and funds from other project components are reallocated to Component 5 to facilitate rapid financing of a positive list of goods and services.

Financial Management, Disbursements and Procurement

Country Public Finance Management (PFM) situation and Use of Country System

13. The Project will be implemented in an environment where the overall country fiduciary risks including fraud and corruption risks are *substantial*. The Government intends to mainstream the Project into existing government structures and use the country Public Finance Management (PFM) systems to reduce the multiplicity of processes, procedures and information systems which increase workloads and undermine the strengthening of country systems. A recent country PFM review identified some weaknesses that could negatively affect the smooth implementation of the Project in case the country PFM system is fully used. Other risks include the number of implementing agencies. A number of these risks are directly addressed as part of the design of the project. The Project will opt for the gradual use of the country PFM systems using a risk-based approach. Additional mitigation measures include: (i) the development of a project manual which will provide clarity of roles and responsibilities, as well as the process to implement and report on project activities; (ii) the strengthening of the control environment, and monitoring and evaluation systems; and (iii) the frequency of the Bank implementation support.

Financial Management

14. The proposed financial management and disbursements arrangements complies with the Financial Management Manual for World Bank-financed Investment Operations dated March 1, 2010.

15. The MoA will assume ultimate responsibility for project coordination and implementation of the project.

16. The MoA and PIU financial management system have been assessed to determine whether: (i) the financial management arrangements are adequate to ensure that the project funds will be used for the intended purposes in an efficient and economical way; (ii) the financial reports will be prepared timely, with accuracy and reliability; and (iii) the project's assets will be safeguarded. The assessment concludes that the MoA and PIU's financial management system is adequate and complies with the Bank's minimum requirements under OP/BP10.00, subject to the effective implementation of the mitigation measures described in the paragraph below.

17. The overall fiduciary risk for the Project has been assessed as *substantial* and the proposed mitigation measures are: (i) the PIU will recruit one qualified accountant and one Financial management specialist per ToRs to be agreed on with the World Bank; (ii) one qualified accountant will be recruited at each Regional Implementing Units (RIU) level; (iii) an operational manual will be prepared to describe the role and responsibility of each implementing entity and the applicable fiduciary procedures; (iv) multi-site IFMIS with the ability to

consolidate implementing entities financial data will be set up at the PIU and the RIUs; (iv) the annual audit of the project financial statement will be carried out by a reputable auditing firm per ToRs agreed upon with the World Bank; and (v) the internal audit department of the MoA will be involved in the project activities per the World Bank requirements.

FM Conditions and FM covenants

a) The adoption of the operational manual (condition of effectiveness);
b) The recruitment of an external auditor for project financial statement (no later than 6 months after Project effectiveness);
c) The involvement of Internal audit department of MoA on the project activities;
d) The recruitment of one Financial Management Specialist and one accountant at the PIU level (condition of effectiveness);
e) The recruitment of one accountant at each Regional unit (no later than three months after Project effectiveness); and
f) Set up an accounting information system (no later than three months after Project effectiveness).

Risk	Risk Mitigating Measures Incorporated into Project Design	Residual Risk/ (Risk) rating	Implementation
Inherent risk		**High**	
Country level PFM reform is experiencing implementation delays and weaknesses identified by the PEFA 2014 in PFM cycle generate the risk of lack of transparency and accountability in the use of public funds.	Implement PFM reform agenda with the support of the World Bank and others donors (AFDB and EU).	High	Implementation
Entity level The MoA is not experienced in the management of Donor funded project.	Rely on the external qualified staff recruited to ensure the fiduciary responsibility of the ME.	Moderate	Implementation

Project level Lack of coordination between the MoA, PIU and RIUs.	Describe the role and responsibility of each implementing entity in the operational manual and ensure its implementation during supervision.	Substantial	Implementation
Control Risk		**Moderate**	
Budgeting Delay in preparing yearly budget and inappropriate monitoring of budget execution resulting in delay in achieving project's objectives.	Follow strictly budget procedures and timeline as per administrative and financial manual of procedures. Ensure that the annual work program is in line with the procurement plan to prevent any delays due to the procurement process (mainly for the rehabilitation component). Track budget variances and take proactive decisions	Moderate	Implementation Implementation Implementation
Accounting Lack of capacity in the financial management of World Bank financed project which will result in delay and inaccuracies in recording financial transactions.	Provide training to the projects fiduciary Staff	Substantial	Implementation
Internal Controls and Internal audit Ineffective audit function	Provide support to the MoA's internal audit unit to strengthen its capacity and ability to perform the risk based approach audit. Recruit a qualified internal auditor for the PIU and RIUs.	Moderate	Implementation

Funds Flow Risk of delay in the disbursement of the funds due to the location of the designated account at the Central Bank.	Open a Designated Account at the Central Bank. Provide support to the government to identify and mitigate the risk of the transfer of the funds to the Central Bank (dedicated unit for donors funded projects at the Central Bank)	Substantial	Implementation Implementation
Financial Reporting and Monitoring Unreliable IFRs and delay in submitting the IFRs	Set up a multisite information system to produce the IFRs according to the format agreed with the World Bank.	Substantial	Implementation
External Auditing Inadequate audit opinion	Recruit qualified and independent external auditors under TORs satisfactory to the Bank. The audit will be performed according to internationally recognized standards, the scope and the objectives of the audit tailored to the particularity of the project.	Moderate	Implementation
Fraud & Corruption Risk of fraud & corruption in the contracts management	Ensure that the grievance redress mechanism is part of the project.	Moderate	Implementation
Overall Risk		**Substantial**	

18. The overall residual risk rating is **Substantial**.

Key weaknesses and Action Plan to reinforce the control environment

Significant Weaknesses or risks	Actions	Responsible	Completion
Lack of the project implementation manual	Adopt the project implementation manual	MoA and PIU	Effectiveness condition
Absence of qualified financial staff	Recruit qualified FM staff at PIU and Regional Implementation Unit	MoA	

19. **Staffing**. The PIU, one financial management specialist and one accountant will be recruited. For each regional implementation unit, one accountant will be recruited. At the project launch, the World Bank financial management specialist will provide training to the project's fiduciary staff on the World Bank financed project financial procedures.

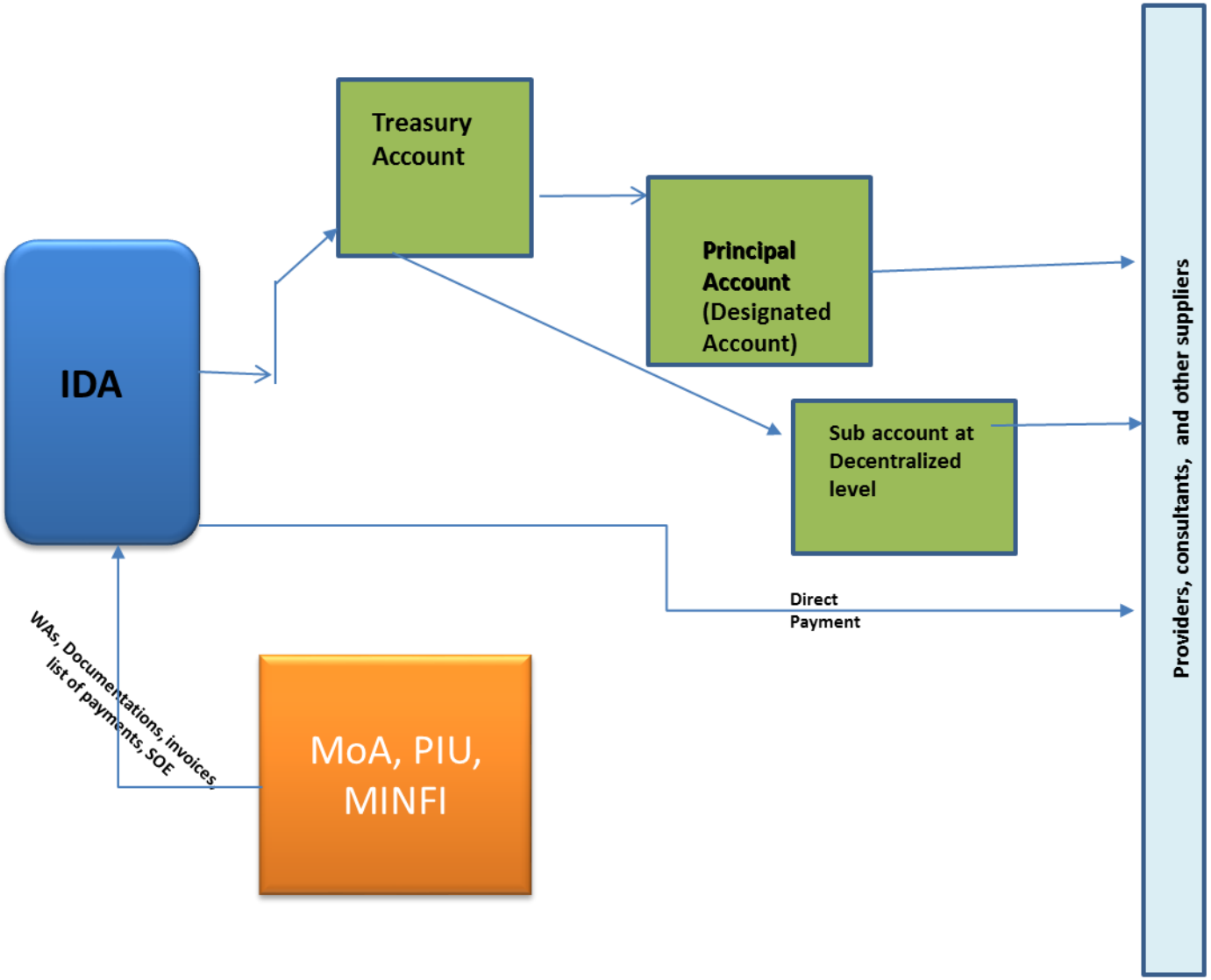
20. **Budgeting**. The MoA implementing entity and PIU will prepare the annual budget of the project. The budget information will be prepared in line with the regular Government annual budget preparation cycle. The annual budget will be sent to the Ministry of Finance and Budget for consolidation into the national budget. Each regional unit will contribute to the annual budget which will be consolidated by the PIU. The budget planning and implementation procedures will be further detailed in the Project's operational manual.

21. **Accounting**. The project accounting records will be maintained on a modified accruals cash basis with disclosure of commitments and in accordance with the National Accounting Standards. All information on the budget execution will be entered ex post in the Government GFP. To that end, the MoA will send the budget execution report to the Ministry of Finance and budget. An accounting system will be acquired and tailored to manage the project's accounts and reporting.

22. **Disbursemen**t. Disbursements will be made in accordance with the *World Bank Disbursement Guidelines for Projects,* dated May 1, 2006. The financing proceeds will be disbursed using one or more of the four disbursement methods available to the Project – reimbursement, advance, direct payment and special commitment. As per the decree on external debt management signed on October 27, 2015, one designated account (DA) denominated in US$ will be opened at the Central Bank. A sub-account denominated in Ariary will also be opened at the Central Bank. Both accounts will be managed by the PIU Project team (coordinator jointly with the FMS). In line with decree no. 2015-1457, the funds will flow from the World Bank to the Treasury account and then transferred to the Designated Account (or "principal account"). The sub-account will also be replenished by transfers from the DA. Another sub account may be opened at the regional level and operated by the regional Project team (Regional coordinator and account). The latter will report the use of funds to the PIU before replenishment according to procedures to be described in the Project Operational Manual. The DA will receive an initial advance of up to the ceiling amount of US$3.1 million, equivalent to four month of forecasted expenditures and will be replenished regularly through monthly Withdrawal Applications supported with Statements of Expenditures (SOEs). Direct payments may be made to service providers at the request of the Recipient. The funds flow diagram is below. The Recipient may also request reimbursements for pre-financed expenditures or payments pursuant to special commitments entered into by the Recipient. For activities under the Contingent

Emergency Response component (CERC) (Component 5), disbursements will be subject to the conditions precedent to accessing the CERC funds, namely that the Recipient has provided, and the Bank has accepted, evidence of the occurrence of an eligible crisis or emergency and the Recipient has prepared and adopted/adhered to the IRM Operations Manual. Disbursements under this component will follow procedures described in the IRM Manual, including supporting documentation.

23. Disbursements under the PPCG Fund – Disbursements under Component 1.3 will be made in three tranches. The first tranche totaling US$1.5m equivalent will be disbursed upon completion of the following: (i) the PPCG Operational Manual has been updated to take into account the issuance of PPCGs to Eligible Agribusiness Firms (the "Updated PPCG Operational Manual"); (ii) an agreement has been signed between the PIU, AGEPASEF and the Fund Manager setting forth the respective management, supervision and financing responsibilities with respect to PPCGs issued to Eligible Agribusiness Firms under Part 1.3 of the Project (the "Coordination Agreement"); (iii) an agreement has been signed between the Recipient and the Fund Manager providing for the transfer of funds contributed under Part 1.3(i) of the Project to the PPCG Fund and the management of such funds by the PPCG Manager (the Transfer Agreement"). The second tranche in the amount of US$1.5m equivalent will be disbursed: (i) once the funds allocated under the first tranche have been disbursed in full; (ii) a PPCG Agreement satisfactory to the Association has been signed between the PPCG Fund (represented by the Fund Manager) and the Participating Financial Institutions; and (iii) upon acceptance of evidence (including the list of credits entered into on the basis of the PPCG) that funds have been allocated to the provision of one or more PPCGs of the risk of a Participating Financial Institution on eligible credits (in Ariary) which represent 60% of the total amount (in Ariary) that can be supported by the existing capital (in Ariary). The third and final tranche also totaling US$1.5m equivalent will be disbursed under the same conditions as the second tranche. Funds will be disbursed from the DA to the PPCG Fund. Disbursements will be supported with SOEs.


Treasury Account
Principal Account (Designated Account)
IDA
Sub account at Decentralized level
Direct Payment
Providers, consultants, and other suppliers
WAs, Documentations, invoices, list of payments, SOE
MoA, PIU, MINFI

24. **Internal controls and Internal audit**. Internal controls will comprise, but not be limited to the following: division of responsibilities between the implementing entities, segregation of duties, and periodic reconciliation of accounting and reporting data. The details on internal controls will be provided in the Project operational manual. Regarding the Internal audit, the *Département de l'Audit Interne* within the MoA will be responsible for the internal audit of the project's activities. The Internal audit unit of the PIU will be also strengthened to carry out a risk based audit covering project activities.

25. **Reporting**. The Project will report to the Bank on a quarterly basis in the form of the Interim Unaudited Financial Reports (IFRs) whose format has been agreed on by the World Bank. The IFRs will be submitted to the World Bank within 45 days after the end of each reporting period and will comprise: (i) the statement of resources and use of funds; (ii) the statement of use of funds per component or activity; (iii) the designated account reconciliation statement; and (iv) the budget execution report.

26. **External financial Audit**. The external audit of the project financial statements will be carried out by contracted auditors based on the audit ToRs agreed with the World Bank. The Court of Accounts may be involved for information and capacity building purposes.

27. **Financial Management Conditions and Covenants**. Financial covenants are summarized as follows:

Action	**Responsible**	**Timeline**
Recruit the accountants and the FMS.	MoA	Condition of Effectiveness
Develop the Project Operational Manual (POM), including roles and responsibilities of the key players, and the overall Project fiduciary arrangements.	MoA and PIU	Condition of Effectiveness
Set up an accounting information system.	PIU	No later than 3 months after effectiveness
Recruit an external auditor to audit the project financial statement per ToRs acceptable to the Bank.	MoA	No later than 6 months after effectiveness

28. **Conclusions of the FM Assessment:** The overall residual FM risk is considered **Substantial**. The proposed financial management arrangements for this project are considered adequate subject to the implementation of the mitigation measures, and meet the Bank's minimum fiduciary requirements under OP/BP10.00.

29. **Implementation Support and Supervision Plan.** Financial management implementation support intensity and frequency will be in line with risk-based approach, and will involve a collaborative approach with the entire Task Team. The first implementation support mission will be performed two months after project effectiveness. Afterwards, the missions will be scheduled by using the risk based approach model and will include the following diligences: (i) monitoring of the financial management arrangements during the supervision process at intervals determined by the risk rating assigned to the overall FM Assessment at entry and subsequently during implementation; (ii) integrated fiduciary review on key contracts; (iii)

review of the IFRs; (iv) review of the audit reports and management letters from the external auditors and follow-up on material accountability issues by engaging with the task team leader, Client, and/or Auditors; the quality of the audit (internal and external) is to be monitored closely to ensure that it covers all relevant aspects and provide enough confidence on the appropriate use of funds by recipients; and, (v) other assistance to build or maintain appropriate financial management capacity and efficient internal control system.

30. **Procurement Arrangements**. Madagascar is in the process of making major procurement reforms. The Senate and Parliament passed a new Procurement Code that became effective in July 2004. The main pillars of the code are transparency, efficiency and economy, accountability, equal opportunity for all bidders, prevention of fraud and corruption, and promotion of local capacity. The Procurement Code was complemented by new regulations and procedure manuals as well as standard bidding and other procurement documents. The Procurement Code defines methods of procurement and review procedures. In 2006, in accordance with the code**,** the government created the Public Procurement Oversight Authority (*Autorité de Régulation des Marchés Publics*), which oversees the National Tender Board (*Commission Nationale des Marchés*) for procurement reviews and the Regulatory and Appeals Committee (*Commission de Régulation et de Recours*) for handling norms and complaints. Finally, the code also provided for the creation of Public Procurement Management Units (*Unités de Gestion des Marchés Publics*) under the leadership of a Head of Public Procurement (*Personne Responsable des Marchés Publics* or PRMP), as well as a Tender Commission (*Commission d'Appel d'Offres*) in each ministry and in the decentralized departments of national public institutions.

31. The Procurement Code is largely consistent with good public and international practices and includes provisions for: (i) far-reaching and effective advertising of upcoming procurement opportunities (issuance of general procurement notices for each procuring entity and their inclusion on the Public Procurement Oversight Authority website); (ii) open public bidding; (iii) pre-disclosure of all relevant information, including clear and transparent bid evaluation and contract award procedures; (iv) clear accountabilities for decision making; and (v) an enforceable right to review for bidders when public entities breach the rules.

32. The fiduciary risk assessment review conducted in April 2015 identified procurement weaknesses. However, the review concluded that fundamentally nothing stands in the way of utilizing the CNM (Commission Nationale des Marchés) to carry-out prior reviews and post procurement reviews on Bank financed project's activities. The review highly recommends the use of the SIGMP to increase transparency during procurement processes.

33. An assessment of Madagascar's procurement system using the Methodology for assessment of national procurement (MAPS) tool developed by OECD will be carried-out in 2016. The assessment will provide a set of strategic axes for new policy implementation, capacity development strategy for public procurement in Madagascar.

Guidelines

34. **General observations**. In general, Madagascar's Procurement Code and regulations do not conflict with IDA guidelines. Procurement for the proposed project will be carried out in accordance with: (i) the World Bank's Guidelines: Procurement under IBRD Loans and IDA Credits, dated January 2011 and revised in July 2014; (ii) Guidelines: Selection and Employment of Consultants by World Bank Borrowers, dated January 2011 and revised in July 2014; and (iii) the provisions of the Financial Agreement.

35. **Anti-corruption guidelines**. The Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants, dated October 15, 2006 and revised in January 2011, will apply to this project.

36. **Procurement documents**. Procurement transactions will be carried out using the Bank's standard bidding documents for all International Competitive Bidding (ICB) and standard RFPs for selecting consultants using the Quality and Cost based Selection (QCBS) method. For National Competitive Bidding (NCB), the use of National documents for NCB presents a moderate risk unless the Recipient inserts additional provisions\exceptions (approved by Legal Operations or LEGOP) which are provided at the end of this section. The Recipient may submit a sample form of bidding documents to the Bank for prior review, which will then be used for the duration of the Project if it is approved. The Bank's sample form of evaluation reports will also be used.

Advertising Procedures

37. General procurement notices, specific procurement notices, requests for EOI, invitations to bid, results of the evaluation, and awards of contracts should be published in accordance with the advertising provisions in the Guidelines: Procurement under IBRD Loans and IDA Grants, dated January 2011 and revised in July 2014, and Guidelines: Selection and Employment of Consultants by World Bank Borrowers, dated January 2011 and revised in July 2014.

38. For ICB and RFPs that involve international consultants, the contract awards will be published in the UN Development Business online within two weeks of receiving IDA's "no objection" to the contract award recommendation.

Procurement Methods

39. **Procurement of works**. Works to be financed by IDA will include rehabilitation, maintenance of strategic feeder roads, bridges; construction /rehabilitation of storage facilities, and irrigation infrastructure. Works estimated at or above US$5,000,000 per contract will be procured using ICB. Contracts estimated at less than US$5,000,000 may be procured using NCB. Contracts estimated at less than US$500,000 may be procured using prudent shopping procedures. The Recipient should solicit at least three price quotations to formulate a cost comparison report. Direct contracting may be used to extend an existing contract or to award new contracts in response to disasters. For such contracting to be justified, the World Bank should be satisfied that the price is reasonable and that no advantage would have been obtained by further competition. The direct contracting may be from contractors or NGOs that are already mobilized and working in the affected area.

40. **Procurement of goods**. Goods to be financed by IDA will include agricultural equipment, construction equipment, vehicles, and IT equipment. Goods that can be provided by a single vendor will be grouped in bid packages estimated to cost at least US$500,000 per contract and will be procured using ICB. Contracts estimated at less than US$500,000 may be procured using NCB. Readily available off-the-shelf goods with a value of less than US$200,000 per contract may be procured using shopping procedures. For shopping, contracts will be awarded following an evaluation of bids received in writing following a written solicitation issued to several qualified suppliers (at least three) who have a physical shop carrying the goods concerned. The award will be made to the supplier with the lowest price but only after comparing a minimum of three quotations at the same time and determining that the supplier has the experience and resources to execute the contract successfully. For shopping, the project procurement officer will keep a register of suppliers to be updated at least every six months.

Goods may also be procured through United Nations agencies. A framework agreement acceptable by the World Bank may be used for procurement of goods.

41. **Selection of consultants**. The Project will finance consultant services such as technical and financial audits, technical assistance, program impact evaluations, engineering, designs, and supervision of works, and capacity-building activities. Consultant firms will be selected using the following methods: (i) Quality and Cost-based Selection (QCBS); (ii) Quality-based Selection (QBS); (iii) Consultant's Qualifications Selection (CQS) for specialized assignment contracts to cost less than US$200,000; (iv) Least Cost Selection (LCS) for standard tasks such as financial and technical audits; (v) Fixed Budget Selection (FBS); and (vi) Single Source Selection with prior approval of the Bank for services in accordance with paragraphs 3.8–3.11 of the Consultant Guidelines. Individual consultants will be hired in accordance with paragraphs 5.1–5.6 of the World Bank Guidelines.

42. Lists of shortlisted consultants for services estimated at less than US$200,000 per contract may be composed entirely of national consultants in accordance with paragraph 2.7 of the Consultant Guidelines as long as a sufficient number of qualified individuals or firms are available. However, if foreign firms express an interest, they will not be excluded from consideration.

43. **Operational costs**. Operating costs financed by the Project are reasonable incremental operating expenses, based on Annual Work Programs and Budgets approved by IDA, incurred by the PIU or its regional offices for project implementation, management and monitoring. This includes operations and maintenance costs of the office, vehicles and office equipment; water and electricity utilities, telephone, office supplies, bank charges, public awareness-related media expenditures, travel and supervision costs, per diem, additional staff costs, but excluding the salaries of officials and public servants of the Recipient's civil service. These will be procured using the procurement procedures specified in the Bank-approved procedures manual of each agency.

Procurement Capacity and Risk Assessment of Implementing Agencies

44. The procurement capacity assessment for the PIU, under the DAOMAR Department, was conducted at the MoA level and focused specifically on the Public Procurement Management Unit (Unité de Gestion de Passation des Marchés Publics) of the entire Ministry. The Head of Public Procurement (Personne Responsable des Marchés Publics, PRMP) and the team within the ministry are technically proficient and are involved in procurement activities of several projects financed by different donors (IFAD, ADB, WB, and Government). The PIU is staffed with a procurement officer, a technically proficient civil servant. The capacity assessment of this assigned procurement officer revealed that she is technically proficient and has experience in public procurement using the National Public Procurement Code (Code des Marchés Publics). She has theoretical knowledge of the Bank's procedures but lacks practice and experience, but with continuous support from the Bank local procurement specialist, she will be able to apply the Bank's procedures and guidelines with confidence. She will be located at the Central Unit to cover Analamanga and Itasy Regions and will ensure overall coordination of all procurement officers across the regions. Before project effectiveness, two new, highly qualified procurement officers will be recruited for the two Regional Implementation units (RIU) based respectively in Antsirabe and in Toamasina. All procurement officers will operate under the overall guidance and control of the PRMP of the Ministry of Agriculture.

45. The PIU will carry-out all procurement activities under the project. The PIU will sign MOUs with other sectoral ministries (list of other ministries such as MEPATE) to define

activities, responsibilities, accountabilities, budget for technical support that these latter would provide to the project.

46. The fiduciary risk assessment review conducted in April 2015 concluded that fundamentally nothing stands in the way of utilizing the CNM (Commission Nationale des Marchés) to carry-out prior and post procurement reviews of Bank financed project's activities. The review highly recommends the use of the SIGMP to increase transparency during procurement processes.

47. The overall procurement risk assessment rating is "*Substantial*". Annex Table 4a summarizes the risk assessment and corresponding mitigation measures incorporated into the project's design.

Annex Table 4a: Procurement Risk Assessment and Risk Mitigation Measures

Designation	Concerns	Risk Mitigation	Due Date
Capacity of the procurement officer of CASEF at Central and regional Units	Appointed procurement officer has strong experience in Malagasy public procurement code but lacks experience of and practice in Bank procedures and guidelines. Two (2) new procurement officers for regional offices still to be recruited. Risk of delays in procurement processes and thus of untimely disbursement.	- Hands-on support to be provided by the Bank local procurement specialist; - Recruit regional procurement officer as early as possible; - The procurement officers will attend procurement training provided by the country office procurement specialist (by effectiveness); and Prepare procurement documents and processes during PPA.	Continuous Prior to effectiveness Training before effectiveness Prior to effectiveness
Fraud and corruption	Increase of suspended/debarred medium-sized firms in Madagascar lately due to forged documents.	- There will be rigorous due diligence by Bank staff and continuous client sensitization and information on debarred firms. - Systematic authentication of bid security to issuing bank and/or of any doubtful official documents.	Constantly
Market-specific risk	Project covers several regions: lack of bidders' participation; lack of competition.	Advertisements about the bidding process will be widely disseminated. The client will be given some flexibility in terms of the qualifications criteria for bidders but ensure close supervision by technical staff/experts with deep knowledge of the market.	As needed

48. **Other mitigation measures**. No additional mitigation measures can be identified at this point. The Bank's Procurement Specialist is based in Madagascar, and therefore close supervision and hands-on support will be provided.

Frequency of Procurement Reviews and Supervision

49. The Bank's prior and post reviews will be carried out in accordance with the thresholds described in Annex Table 4.b and as displayed in the approved procurement plan. The Bank will conduct frequent supervision missions and annual Post Procurement Reviews of 20 percent of the contracts. The Bank may also conduct an Independent Procurement Review at any time up to two years after the closing date of the project.

Annex Table 4.b: Procurement and Selection Review Thresholds

Expenditure Category	Contract Value (Threshold) (US$)	Procurement Method	Contract Subject to Prior Review
1. Works	≥5,000,000	ICB	All
	<5,000,000	NCB	
	<500,000	Shopping	
	No threshold	Direct Contracting	All
2. Goods	≥500,000	ICB	All
	<500,000	NCB	
	<200,000	Shopping	
	No threshold	Direct Contracting	All
3. Consulting firms	≥200,000	QCBS, QBS, LCS, FBS, CQS, SSS	All contracts
	<200,000	QCBS, QBS, LCS, FBS, CQS, SSS	
Individuals	≥100,000	Comparison of 3 CVs	All contracts
	<100,000	Comparison of 3 CVs	
Firms and individuals	No threshold	Single Source	All
Note: All terms of reference regardless of contract value are subject to prior review.			

50. All contract amendments that raise the initial contract value by more than 15 percent of the original amount or above the prior review thresholds will be subject to IDA's prior review. All contracts not submitted for prior review will be submitted to IDA for post review in accordance with Annex 1, paragraph 5, of the Bank's Consultant Selection Guidelines and the Bank's Procurement Guidelines.

Procurement Plan

51. All procurement activities will be carried out in accordance with the original or updated approved Procurement Plans. The Procurement Plans will be updated at least every 18 months or as necessary to reflect actual implementation needs and capacity improvements. All Procurement Plans should be published at the national level and on the Bank website as stated by the guidelines. The Procurement Plan shall set forth those contracts which shall be subject to the Association's Prior Review. All other contracts shall be subject to Post Review by the Association.

52. This preliminary Procurement Plan (Table 4.c) lists only activities requiring prior review by IDA for the first 18 months of the Project. The Project has developed and submitted the

Procurement Plan for the respective components which have been reviewed and approved by the Bank.

Procurement Filing

53. Procurement documents must be maintained in the project files and archived in a safe place until at least two years after the closing date of the project. Procurement staff within each implementing agency will be responsible for properly filing procurement documentation.

Annex Table 4.c: Simplified Procurement Plan (With Methods and Time Schedule)

a) Works

1	2	3	4	5	6	7	8	9	10
Ref. No.	**Contract (Description**	**Estim. Amount (US$)**	**Proc. Method**	**Pre-qualific. (yes/no)**	**Dom. Pref. (yes/no)**	**Prior Rev. (yes/no)**	**Expected Bid-Opening Date**	**Start Date**	**Comments**

b) Goods

1	2	3	4	5	6	7	8	9	10
Ref. No.	**Contract (Description**	**Estim. Amount (US$)**	**Proc. Method**	**Pre-qualific. (yes/no)**	**Dom. Pref. (yes/no)**	**Prior Rev. (yes/no)**	**Expected Bid-Opening Date**	**Start Date**	**Comments**

c) Consultancy Assignments

1	2	3	4	5	6	7
Ref. No.	**Description of Assignment**	**Estimated Cost (US$)**	**Selection Method**	**Prior Review (yes/no)**	**Expected Proposals Submission Date**	**Comments**

Madagascar NCB Exceptions (Based on the Procurement Guidelines as revised January 2011)

General

54. The procedures to be followed for National Competitive Bidding (NCB) shall be those set forth in "Law no. 2004-009 of July 2004 portant Code des Marchés Publics"—the Public Procurement Law (PPL)—with the modifications described in the following paragraphs.

Eligibility

55. The eligibility of bidders shall be as defined under Section I of the Procurement Guidelines; accordingly, no bidder or potential bidder shall be declared ineligible for contracts financed by the Association for reasons other than those provided in Section I of the

Procurement Guidelines. The requirement of producing a registration number (*Numéro d'Immatriculation*) for any bidder to participate in the bidding process, shall not be interpreted as a prior requirement to any sort of local registration, license, or authorization.

56. Government-owned enterprises or institutions of the Republic of Madagascar shall be eligible to participate in the bidding process, only if they can establish that they are legally and financially autonomous, operate under commercial law, and are not dependent agencies of the Recipient or sub-recipient.

Bidding Documents

57. Standard bidding documents acceptable to the Association shall be used so as to ensure economy, efficiency, transparency, and consistency with the provisions of Section I of the Procurement Guidelines.

Participation by Joint Ventures

58. Participation shall be allowed from joint ventures on condition that such joint venture partners will be jointly and severally liable for their obligations under the Contract. Therefore, the "*Groupement Conjoint*," as set forth in the PPL, shall not be allowed under NCB.

Preferences

59. No domestic/regional preference, or any other kind of preferential treatment, shall be given for domestic/regional bidders, and/or for domestically/regionally manufactured goods, and/or for domestically/regionally originated related services.

Applicable Procurement Method

60. Subject to these provisions, procurement shall be carried out in accordance with the "Open Competitive Bidding" method (Appel d'offres ouvert) set forth in the PPL.

Qualification

61. Qualification criteria shall entirely concern the bidder's capability and resources to perform the contract, taking into account objective and measurable factors. The qualification criteria shall be clearly specified in the bidding documents, and all criteria so specified, and only such criteria so specified shall be used to determine whether a bidder is qualified. Qualification criteria shall be assessed on a "pass or fail" basis, and merit points shall not be used. Bidders' qualifications shall be assessed by post-qualification.

Fees for Bidding Documents

62. If a fee is charged for the bidding documents, it shall be reasonable and reflect only the cost of their typing, printing or publishing, and delivery to prospective bidders, and it shall not be so high as to discourage bidders' participation in the bidding process. Bids may be submitted by electronic means only provided that the Association is satisfied with the adequacy of the system, including, inter alia, that the system is secure, maintains the integrity, confidentiality, and authenticity of the bids submitted, and uses an electronic signature system or equivalent to keep bidders bound to their bids.

Bid Validity and Extension of Bid Validity

63. The bid validity period required by the bidding documents shall be sufficient to complete the evaluation of bids and obtain any approval that may be required. If justified by exceptional circumstances, an extension of the bid validity may be requested in writing from all bidders before the original bid validity expiration date, and it shall cover only the minimum period required to complete the evaluation and award of the contract. The extension of the bid validity requires the Association's no objection for those contracts subject to prior review, if it is longer than four (4) weeks, and for all subsequent requests for extension, irrespective of the period.

Bid Evaluation

64. (a) Evaluation of bids shall be made in strict adherence to the evaluation criteria declared in the bidding documents. Evaluation criteria other than price shall be quantified in monetary terms, and the manner in which they will be applied for the purpose of determining the lowest evaluated bid shall be established in the bidding documents. A weighting/scoring system shall not be used. (b) A contract shall be awarded to the qualified bidder offering the lowest-evaluated and substantially responsive bid. No negotiations shall be permitted. (c) Bidders shall not be eliminated on the basis of minor, non-substantial deviations. (d) In case of requests for clarifications, bidders shall not be asked or permitted to alter or complete their bids.

Rejection of All Bids and Re-bidding

65. All bids shall not be rejected, the procurement process shall not be cancelled, and new bids shall not be solicited without the Association's prior concurrence.

Securities

66. Securities shall be in the format included in the bidding documents. No advance payment shall be made without a suitable advance payment security.

Publication of Contract Award

67. Information on contract award shall be published at least in a national newspaper of wide circulation within two (2) weeks of receiving the Association's no objection to the award recommendation for contracts subject to prior review, and within two (2) weeks from the award decision for contracts subject to post review. Publication shall include the following information: (a) the name of each bidder which submitted a bid; (b) bid prices as read out at bid opening; (c) evaluated prices of each bid that was evaluated; (d) the names of bidders whose bids were rejected and the reasons for their rejection; and (e) the name of the winning bidder, the final total contract price, and the duration and summary scope of the contract.

Contract Modifications

68. In the case of contracts subject to prior review, the Association's no objection shall be obtained before agreeing to: (a) a material extension of the stipulated time for performance of a contract; (b) any substantial modification of the scope of services or other significant changes to

the terms and conditions of the contract; (c) any variation order or amendment (except in cases of extreme urgency) which, singly or combined with all variation orders or amendments previously issued, increases the original contract amount by more than 15 percent; or (d) the proposed termination of the contract. A copy of all contract amendments shall be furnished to the Association for its records.

Right to Inspect/Audit

69. In accordance with the Procurement Guidelines, each bidding document and contract financed from the proceeds of the Financing shall provide that bidders, suppliers, and contractors, and their subcontractors, agents, personnel, consultants, service providers or suppliers, shall permit the Association, at its request, to inspect their accounts, records and other documents relating to the submission of bids and contract performance, and to have them audited by auditors appointed by the Association. Acts intended to materially impede the exercise of the Association's inspection and audit rights constitute an obstructive practice as defined in the Procurement Guidelines.

Fraud and Corruption

70. Each bidding document and contract financed from the proceeds of the Financing, and as deemed acceptable by the Association, shall include provisions stating the Bank's policy to sanction firms or individuals found to have engaged in fraud and corruption as defined in the Procurement Guidelines.

Debarment under National System

71. The Association may recognize, if requested by the Recipient, exclusion from participation as a result of debarment under the national system, provided that the debarment is for offenses involving fraud, corruption, or similar misconduct, and further provided that the Association confirms that the particular debarment process afforded due process and the debarment decision is final.

Establishment of a Procurement Complaint Handling Mechanism

72. The Recipient shall establish a procurement complaint handling mechanism acceptable to the Association no later than three (3) months after the Project Effectiveness Date.

Environmental and Social (including safeguards)

73. The Project is classified as category B in the World Bank's Environmental Assessment classification. The following table indicates the safeguard policies, which are triggered and the justifications:

Safeguard Policies	Triggered	Explanation (Optional)
Environmental Assessment OP/BP 4.01	**Yes**	The proposed project activities in components 1, 2, and 3 could potentially lead to some social and environmental impacts that would require the establishment of appropriate mitigation measures. The Recipient has prepared an Environmental and Social Management Framework (ESMF) that includes an Environmental and Social Management Plan (ESMP). The ESMF/ESMP outlines an environmental and social screening process for future sub-projects to ensure that they are environmentally and socially sound and sustainably implementable.
Natural Habitats OP/BP 4.04	**No**	Sub-projects that could affect the conservation of critical natural habitats will not be eligible for project financing.
Forests OP/BP 4.36	**Yes**	There are numerous forests and forest areas in the project area. Project-related activities have the potential to affect the health and quality of these forests, and the rights and welfare of local residents dependent on forest resources. The Project could propose reforestation activities. The screening form and E&S guidelines developed as part of the ESMF seek to avoid impacts to critical forest areas and provide mitigation measures to identify and offset impacts to other non-critical forest areas.
Pest Management OP 4.09	**Yes**	Extension of agribusiness services may lead to the extensive use of pesticides to boost agriculture productivity. To ensure safe pest and pesticide management, the Project has prepared an Integrated Pest Management Plan which includes: (i) a survey on the local bio pesticides and agronomic technical practices to reduce the impacts of pests on the agriculture value chains in the project zones; (ii) actions to reduce the exposure of farmer groups to pesticides used in agricultural production systems; and (iii) guidelines to be adopted on the possibility of agrochemical application and disposal; and (iv) training sessions to strengthen capacity of different actors (farmers, local vendors, regional agricultural agents, etc.) on the use, storage and disposal of

		agrochemical products with a coherent budget available in the project financing.
Physical Cultural Resources OP/BP 4.11	**Yes**	Components 1, 2, and 3 may lead to the discovery of new physical cultural resources that would require adequate mitigation measures. Given the physical features of the expected project areas and nature of the proposed physical construction activities in the project areas, the possibility of finding evidence of physical cultural resources during construction is very low. In addition, the Project would not involve significant physical work, excavations and demolitions. However, the ESMF includes procedures for dealing with cases of chance finds.
Indigenous Peoples OP/BP 4.10	**No**	There are no Indigenous Peoples in the project area.
Involuntary Resettlement OP/BP 4.12	**Yes**	Project activities in components 2 and 3 may lead to the acquisition of land, loss of assets and/or means of livelihood that could result in the involuntary resettlement of people. The Recipient has prepared a Resettlement Policy Framework (RPF) that sets forth the basic principles and procedures that both the Recipient and the World Bank must follow to mitigate any potential adverse social impacts once the physical locations of the proposed activities are known.
Safety of Dams OP/BP 4.37	**No**	The Project will not finance any constructions of new dams or activities downstream of large dams or reservoirs.
Projects on International Waterways OP/BP 7.50	**No**	The Project does not involve international waterways.
Projects in Disputed Areas OP/BP 7.60	**No**	N/A

74. An Environmental and Social Management Framework (ESMF), a Resettlement Policy Framework (RPF) and a Pest and Pesticide Management Plan (PPMP) have been prepared in compliance with the requirements of the World Bank Safeguard Policies and were publicly disclosed in-country and at the World Bank on January 13 and January 14, 2016 respectively.

75. There are no potential large scale, significant and/or irreversible impacts expected to arise from this project. The ESMF indicates, the proposed Project could potentially induce adverse environmental and social impacts, including the risk of disruption of agricultural parcels, accident risks, land acquisition and involuntary resettlement; health and safety risks; use of potentially harmful pesticides and other biocide products; harm to potential chance finds of physical cultural resources; and the extension of agriculture parcels into the forests areas of Zahamena Natural Park. These impacts are, however, expected to be site specific with no large scale impacts. Potential investments that might induce the above adverse impacts

include: rehabilitation/construction/maintenance of feeder roads and storage infrastructures, and promotion of agribusinesses. However, the environmental and social impacts of anticipated activities are expected to be moderate, site-specific, and manageable to an acceptable level, and the proposed project requires no exceptions to the World Bank's policies on environmental and social safeguards.

76. Selection criteria for investors including the above mentioned issues will be established. These planning activities will need to take into account the environmental, social, and gender aspects and mitigate health and safety impacts. Part of the project capacity building efforts will focus on environmental, social, health and safety management capacity building, including gender aspects. All of these activities will have low local environmental and social impacts in areas which are easy to mitigate and should be conducted outside of sensitive natural habitats or forest areas.

77. The client has been actively responsive in addressing safeguards issues. At the national level, Madagascar has a legislative and regulatory framework which is conducive to good environmental management. In addition, Madagascar has signed a number of international treaties and conventions to ensure sound environmental management. In the agriculture sector, implementation of ongoing World Bank financed projects, e.g. PURSAPS has laid a sound institutional foundation for preparing, managing and monitoring potential adverse environmental and social impacts of Bank funded projects. The Ministry of Agriculture has the ultimate responsibility for the project's compliance with World Bank safeguards guidelines. This sector has long standing experience in implementing Bank funded investments. The Malagasy Environmental law states that environmental assessments for both private and public development are regulated under Decree N°2004-167. This is fairly effective but institutional capacity needs to be developed to ensure more widespread application and improved monitoring. The national environmental law will be reinforced by the World Bank safeguards policies for this proposed project. The required safeguards instruments have been prepared by the client.

78. The ESMF/ESMP outlines an environmental and social screening process for future sub-projects to ensure that they are environmentally and socially sound, and sustainably implementable, in line with GoM and World Bank policies and guidelines on environmental and social impact management. The screening outcomes will determine if sub-projects will need to prepare an Environmental and Social Impact Assessment (ESIA), a freestanding Environmental and Social Management Plan (ESMP), a Resettlement Action Plan (RAP), implement a Pest and Pesticide Management Plan (PPMP), or if no action will be needed. The screening of the sub-projects will be done by the safeguards specialist, who will be part of the Project Implementation Unit. In case safeguards instruments need to be prepared, the PIU's safeguards specialist will prepare the Terms of Reference for these safeguard instruments, be responsible for the procurement of consultants to prepare them, supervise the consultants and, also be responsible for the monitoring of the implementation of the ESMPs, PMPs and RAPs in the project areas. The ESMF contains sample TORs for Environmental and Social Impacts Assessments (ESIA) that may be needed for Project-supported activities, as well as screening guidelines to be used to implement Project-supported works (e.g., rehabilitation/construction of feeder roads, infrastructure storages). The safeguards specialist also will ensure that all contractor contracts include environmental and social clauses, which are attached as an annex to the ESMF, in order to ensure adequate environmental and social management practices during construction and operation. Mitigation measures to avoid any environmental pressures to the Zahamena Natural Park in the event of the extension of agriculture zones by the smallholders are also included. All activities which could affect natural habitats will be ineligible for project financing. In

compliance with OP 4.36 on Forests, the ESMF also includes measures to avoid and reduce impacts on critical forests, ensure project activities are not conducted in critical forest zones and the adoption of reforestation. Based on the outcomes of the screening process, ESIAs will be carried out as necessary and ESMPs will be prepared as needed. To date, no project activity triggers this policy. Concerning infrastructure subprojects (mainly feeder roads), no archaeological vestiges will be impacted because the Project will work under the existing right-of-ways. For more assurance, the ESMF has made provisions for cultural resources management in the event the Physical Cultural Resources OP 4.11 is triggered during the implementation phase and includes "chance finds" procedures for inclusion in the contractors' contract. Funds to prepare and implement these potential ESIAs, ESMPs, PMPs and RAPs have been included in the project costs (US$1,000,000).

79. The project funds will not be used to purchase and distribute agrochemicals, however agribusinesses may encourage farmer groups to use more inorganic fertilizers and pesticides. To ensure safe pest management, the Project has prepared an Integrated Pest and Pesticide Management Plan which includes: (i) a survey on the local bio pesticides and agronomic technical practice to reduce the impacts of pests on the some agriculture value chains in project zones: (ii) actions to reduce the exposure of farmer groups to pesticides used in agricultural production systems; (iii) guidelines to be adopted on the possibility of agrochemical application and disposal; training sessions to strengthen capacity of different actors (farmers, local vendors, regional agricultural agents, etc.) on the use, storage and disposal of agrochemical products with a coherent budget available in the Project financing. Finally, it recommends the application of an integrated pest management approach coupled with the promotion of agro-ecological practices by farmer groups.

80. Since the physical locations of the proposed activities are unknown at this stage and the Project activities in components 2 and 3 may lead to the acquisition of land, loss of assets and/or means of livelihood that could result in the involuntary resettlement of people, the Recipient has prepared a detailed Resettlement Policy Framework (RPF) that sets forth the basic principles and procedures that both the Recipient and the World Bank must follow to mitigate any potential adverse social impacts. The RPF includes detailed information on the legal and institutional framework, eligibility criteria, assets evaluating methods, implementation arrangements, grievances redress mechanism, resettlement budget totally covered by the Government, and monitoring and evaluation. The RPF contains the basic principles and procedures/directives to be followed by the Recipient for the preparation of the Resettlement Action Plan (RAP) once the physical locations of the proposed activities are known. The results of socio-economic studies have characterized different forms of compensation. The Malagasy government agreed to finance the costs of resettlement (land acquisition costs; compensation on crops, trees, shelter, habitat, structures, etc.) for around 501 ha and 505 households or about 2575 persons with a provision of approximately US$270,000 on the potential RAPs.

Monitoring & Evaluation

81. The detailed Results Framework is provided in Annex 1. The PIU will be in charge of the monitoring of project outputs, including data consolidation, quality control, analysis and reporting through its technical experts and the M&E officer. The monitoring system of the PIU will ensure that the Project is on track and will be used as the basis to improve the efficiency, targeting and impact of the Project when needed. To that end, M&E reports will be used when preparing the annual work plans and budgets.

82. The PIU will also be in charge of feeding the M&E needs of the Ministry of Agriculture and the national system which will be set-up to monitor the CAADP process. Capacity-building at the level of the Ministry of Agriculture could be provided through the Project for very specific aspects and sectors, and using a hands-on approach to ensure long-term results. Capacity-building should focus on a couple of young professionals from the Ministry in charge of M&E aspects who would be involved on a continuous basis on the project M&E system.

83. The implementation partners will undertake most of the data collection with triangulation by the PIU or other external partners and the beneficiaries as part of the citizen's engagement agenda. The results-based contracts and MoUs with the IPs will include clear M&E requirements and reporting formats, which will be prepared and shared by the M&E officer of the PIU to ensure comprehensive reporting by all partners.

84. Output-level M&E indicators will be closely reviewed by the Project Steering Committee and by the World Bank supervision teams to ensure that the required targets are achieved. If planned results are not reached, the supervision team will need to closely analyze the reasons and develop a strategy to review the approach to the component or sub-component.

85. For the evaluation of the outcome level indicators, a baseline and final surveys will be conducted by a single consulting firm. The methodology will be a qualitative survey conducted on a representative sample of households from the project target population and a control group. The sample should be large enough to account for potential attrition effect. The main indicators to be covered in the survey are:

- ✓ PDO indicator 2: Targeted farmers with perception of improved access to markets (disaggregated by sex and value chain)
- ✓ PDO indicator 4: Targeted farmers with improved perception of land tenure rights being recognized by a public authority (disaggregated by sex) (civic engagement indicator, gender indicator)
- ✓ Intermediate indicator 1.1: Targeted farming households reporting larger volumes of agricultural products brought by buyers (disaggregated by gender)
- ✓ Intermediate indicator 1.3: Targeted farming households reporting hiring additional paid non-family labour (disaggregated by gender).

86. Other indicators related to livelihoods could be included in the survey. For the PDO indicators 2 and 4 a perception index will be developed in collaboration with national institutions to ensure the relevance of the index and potential adoption of the methodology after the project: (i) for land tenure: the *Observatoire du Foncier* and the *Cellule de la Réforme Foncière*; and (ii) for market access: the EDBM, the Ministry of Agriculture and the PIC2.

87. In parallel, a rigorous value-chain analysis will be conducted (baseline and final evaluation). This will be undertaken by an experienced consulting firm or individual consultant in partnerships with the industry associations. They will focus on: (i) the performance in terms of competitiveness, productivity and value addition[60] for the overall value chains and by chain actor; (ii) the equity and inclusiveness dimension of each value-chain in terms of the number of people involved, job creation dynamics and distribution of value-addition and margins across the chain actors; (iii) their fiscal impact and taxation dynamics both official and informal; and (iv) consumer satisfaction both on domestic and international markets.

[60] The service provider would capitalize on existing methodology for the monitoring and evaluation of value chain performance (USAID, FAO/AGS tool kits, etc.)

88. The Project will also promote a market information tool experimented by the PIC2 for several agricultural value-chains based on the results of the pilot. The process will be led by the industry associations to ensure the relevance and sustainability of the system.

Detailed M&E arrangements for each indicator

Indicator	Methodology	Arrangements
PDO-level indicators		
1. Direct project beneficiaries **(disaggregated by sex and by type of activities)**	✓ Calculation of number of individuals receiving project inputs (training, seedlings, land title, etc.) ✓ First by type of activities then aggregation for overall project after verification of potential double counting. If doubt, take the activity with the largest number of beneficiaries.	**Implementing partners** > data collection, reporting to PIU **PIU** (all experts + M&E officer) > quality control, aggregation, reporting
2. Targeted farmers' with perception of improved access to markets **(disaggregated by value chain and by sex)**	✓ Perception index to be developed based on triggers related to pre-identified market access barriers / constraints (ex: time from closest marketing point, number of taxes paid, etc.). ✓ Two samples of farming households: (i) treatment groups (project beneficiaries); (ii) control group. Large enough to account for potential attrition at the end of the project (same households surveyed). ✓ Baseline and final surveys.	**PIU** > recruitment of consulting firm, quality control, contribution to analysis and related recommendations, dissemination of results **Consulting firm** > development of perception index with local partners, test of questionnaire, sample design, data collection, data treatment, data analysis, capacity building of local partners if needed. **CONTRACT 1** **Local partners** = Universities > participation in the design of the methodology, questionnaire, sample and analysis **Partnership with PIC2**
3. Volume of local agricultural products sourced from the targeted areas by agribusiness companies in selected value chain **(disaggregated by value chain)**	✓ Volumes reported in the companies' balance sheets.	**Implementing partners** > data collection, reporting to PIU **Industry associations** > data collection, reporting to IPs or PIU **PIU** (agribusiness experts at central and regional level + M&E officer) > quality control, aggregation, reporting
4. Targeted farmers' with improved perception of land tenure rights being recognised (disaggregated by sex) **(civic engagement indicator, gender indicator)**	✓ Perception index to be developed based on indicators such as fear of his/her land getting stolen, risk of conflict within the family, trust of rental agreement, etc. ✓ Two samples of farming households: (i) treatment groups (project beneficiaries); (ii) control group. Large enough to account for potential attrition at the end of the project (same households surveyed). ✓ Baseline and final surveys.	**PIU** > recruitment of consulting firm, quality control, contribution to analysis and related recommendations, dissemination of results **Consulting firm** > development of perception index with local partners, test of questionnaire, sample design, data collection, data treatment, data analysis, capacity building of local partners if needed. **CONTRACT 1** **Local partners** = *Observatoire du Foncier* and *Cellule de Coordination de la Réforme Foncière* > participation in the design of the methodology, questionnaire, sample and analysis **Partnership with PIC2**

5. Land parcels with use or ownership rights recorded as a result of the project (disaggregated by sex)	✓ Monitoring phone calls once per month and monitoring visits to communal land offices every year. ✓ Methodology already implemented by the PURSAPS	**Implementing partners =** *Observatoire du Foncier* > data collection, reporting to PIU **PIU** (land tenure experts at central and regional level + M&E officer) > quality control, aggregation, reporting
Intermediate indicators		
1.1 Targeted farming households reporting larger volumes of agricultural products brought by buyers		
1.2 Client days of training provided to value chain actors **(disaggregated by sex)**	✓ Calculation of number of individuals receiving training ✓ Disaggregation by type of training, type of trainer and type of trainee	**Implementing partners** > data collection, reporting to PIU **PIU** (all experts + M&E officer) > quality control, aggregation, reporting
1.3 Targeted farming households reporting hiring additional paid non-family labour	✓ Two samples of farming households: (i) treatment groups (project beneficiaries); (ii) control group. Large enough to account for potential attrition at the end of the project (same households surveyed). ✓ Baseline and final surveys.	**PIU** > recruitment of consulting firm, quality control, contribution to analysis and related recommendations, dissemination of results **Consulting firm** > within **CONTRACT 1**
2.1 Communal land offices that have land certification capacity operational	✓ Monitoring visits to communal land offices (pluri-annual)	**Implementing partners =** *Cellule de Coordination de la Réforme Foncière* > data collection, reporting to PIU **PIU** (land tenure experts at central and regional level + M&E officer) > quality control, aggregation, reporting
2.2 Land tenure deals with the private sector following the principles for responsible agriculture investments	✓ Interviews with key informants and main stakeholders.	**Implementing partners =** *Observatoire du Foncier* > data collection, reporting to PIU **PIU** (land tenure experts at central and regional level + M&E officer) > quality control, aggregation, reporting **Local partner** = civil society organization > participation to surveys
3.1 Road constructed or rehabilitated	✓ Review of technical inspection report 3 months after completion. ✓ Survey of key informants of communes, regions and agribusinesses for triangulation	**Contractors** > reporting to PIU **PIU** (rural engineers at central and regional level + M&E officer) > quality control, aggregation, reporting

Annex 5: Implementation Support Plan

MADAGASCAR: Agriculture Rural Growth and Land Management Project

Strategy and approach for implementation support

1. A detailed implementation support plan (ISP) has been prepared to ensure timely and effective project implementation. The goal is to ensure that implementation support activities provide effective mitigating measures against the Project's key risks and increase the likelihood of achieving the expected results.

2. The ISP focuses on the key implementation risks identified in the risk assessment and describes actions to mitigate them. The ISP also includes a detailed schedule summarizing the planned implementation support missions, collaboration with other partners including development partners (DPs), and the required human and financial resource commitment by the World Bank needed to ensure effective and successful implementation of the Project.

Implementation Support Plan

3. The ISP approach entails close monitoring of the Project's technical design and implementation aspects, governance, fiduciary, and safeguards issues. Given the overall design and scope of the project, a multi-disciplinary team comprised of technical specialists, along with fiduciary, environmental and social, and operations specialists will be needed to support the Government of Madagascar in implementing the Project. A number of technical specialists are based in the region, sub-region, and country office. This will facilitate overall implementation and timely communication with the client and the various stakeholders involved in implementation and allow for timely follow-up on specific issues and/or areas of concern when needed.

4. One challenge will be to coordinate the actions agreed in the ISP with operational activities on the ground, ensuring that information flows effectively and on a timely basis between all the project implementing entities. Critical to the Bank's effective implementation support will be its coordination and timing, aligned with key stakeholders\points in the planning and implementation of project activities.

5. **Implementation:** To ensure that project resources are being used effectively in pursuit of achievement of the PDO, the World Bank will undertake biannual implementation support missions. In addition, a mid-term review (MTR) of the Project is envisaged. The first implementation support mission will take place as soon as possible after effectiveness to provide direct and timely feedback on the quality of implementation plans and their likely soundness and acceptability. The first mission is therefore expected to include all team members (i.e., technical, environmental, social, fiduciary and operational specialists). Subsequent implementation support will focus on verification/M&E skills and technical implementation expertise, per the actual needs as specified in the ISP.

6. **Technical:** A number of potential risks have been identified in the design of the Project among them, unforeseen delays and challenges associated with implementation of the CB grants

scheme under component 1 and possible challenges under the land management component of the Project. Rigorous technical vetting of the submitted proposals, establishment of clear guidelines and criteria for the selection of proposals and implementation of the grants will help increase the success of the grants scheme. The Bank team will ensure the availability of the appropriate technical skills mix and experience to support and guide project implementation.

7. **Governance:** Governance aspects of the Project will be monitored during the biannual implementation support missions.

8. **M&E:** The World Bank will complement the Project's M&E activities by carrying out biannual implementation support missions during which performance indicators will be closely monitored. Field visits will be undertaken to verify data in M&E reports and to ensure that the M&E system is generating a complete and accurate picture of project performance.

9. **Environmental and social safeguards:** Potential risks may include negative impacts on the environment and/or human populations living in the Project target areas as a result of the potential increased use of fertilizers, herbicides and pesticides in some of the project activities and land related activities. An ESMF, PPMP and RPF for the Project have been developed and disclosed. Implementation of these safeguards instruments will require rigorous screening of the project target areas and close follow up on the related implementation issues. The Bank's safeguards team will consist of the Environmental and Social Safeguards specialists who will be core members of the bi-annual support missions. They will guide the project team and client in applying the agreed on safeguards instruments and ensure compliance.

10. **Fiduciary:** Financial management risk has been assessed as "*substantial*". Procurement capacity risk has also been assessed as "*substantial*". Proposed mitigation measures for both FM and procurement are detailed in annex 4. As part of its bi-annual implementation support missions, the World Bank's FM and Procurement Specialists will conduct reviews to ensure the adequacy of systems and capacity over the course of project implementation, provide advice and guidance on related issues, and recommend\arrange for training and capacity strengthening when needed.

Table 2: Summary of project implementation support

Time	***Focus***	***Skills Needed***	***Resource Estimate Per Year***	***Partner Role***
0-12 months	❖ Project effectiveness & implementation start-up ❖ Finalization of PIM ❖ Implementation support ❖ Review of progress made in year 1	❖ Agriculture Specialist ❖ Land Specialist ❖ Private Sector/Agri-business Specialist ❖ Food and Export Crop Value Chains Specialist ❖ Gender and Youth Specialist ❖ Rural Infrastructure Specialist ❖ Financial Management	US$150,000	FAO/CP

		Specialist ❖ Procurement Specialist ❖ Environmental and Social Safeguards Specialists ❖ Finance/Disbursement ❖ Operations ❖ Project Administrative Support		
12-48 months	❖ Implementation of planned activities/review of annual work plans & budgets, & cross-checking linkages between planning, budgeting, and results ❖ Conducting of ISM missions ❖ Monitoring, evaluation of ongoing activities ❖ Assessment of implementation of safeguards instruments ❖ MTR conducted in year three	Same as above	US$150,000	
49-60 months	❖ Implementation of planned activities/review of annual work plans & budgets ❖ Conducting of ISM missions ❖ Monitoring, evaluation of ongoing activities ❖ Assessment of implementation of safeguards instruments ❖ Project completion and ICR preparation	Same as above	US$150,000	

Table 3: Required skills mix for implementation support

Skills Needed	*Number of Staff Weeks*	*Number of Trips Per year*	*Comments*
Lead/Senior Agriculture Specialist (TTL)	20	3	Mozambique-based
Land Specialist (co-TTL)	20	3	France-Based
Private Sector/Agri-business Specialist	4	2	Washington-Based
Food and Export Crop Value Chains Specialist	4	2	Washington-Based
Livestock Specialist	4	2	Washington-Based
Gender and Youth Specialist	4	2	Washington-Based
Rural Infrastructure Specialist	4	2	Washington-Based
Financial Management Specialist	6	2	Country Office-based
Procurement Specialist	6	2	Country Office-based
Environmental Specialist	4	2	Country Office-based
Social Safeguards Specialists	4	2	Country Office-based
Disbursement Officer	4		Washington-Based
Legal	2		Washington-Based
Operations	10	2	Washington-Based
Project Administrative Support	8	2	Country Office-based

Annex 6: Financial and Economic Analysis

MADAGASCAR: Agriculture Rural Growth and Land Management Project

I. Introduction

1. An economic and financial analysis (EFA) was conducted for the Project based on available data and assumptions in terms of expected benefits and project coverage. The EFA has various objectives corresponding to different levels of analysis. It includes the analysis of : (i) the financial profitability of business or economic units at micro level through indicators such as net revenues or profits (household, farm, small and medium enterprises, microfinance institutions, etc.); (ii) the financial sustainability of public services through indicators such as operational self-sufficiency or the ratio between financial resources and operating costs – often linked with the fiscal analysis; (iii) the economic benefits of specific investments with individual economic models (road, irrigation or tree crop plantation, etc.); (iv) the results of the Project at macro level for instance on the competitiveness of the value-chains or the efficiency of the land market; (v) the fiscal impact of the Project for the country; and (vi) the economic return on investment of the Project (NPV and IRR).

2. The present EFA aims at answering the following three questions: (i) what is the project's development impact?; (ii) is public sector provision or financing the appropriate vehicle?; and (iii) what is the World Bank's value added?

3. **Development impact.** The PDO is *to improve rural land tenure security and access to markets of targeted farming households in selected agricultural value chains in Project Areas, and to provide immediate and effective response to an Eligible Crisis or Emergency*, through three technical components including support to agribusiness development, to land tenure access and to commercial infrastructure development and maintenance. The current EFA demonstrates that: (i) the incremental benefits expected in the "with project" situation compared to the "without project" situation justify the project costs although not all incremental benefits can be expressed in monetary terms; and (ii) the proposed investments are financially sustainable for the target population and their commercial units. Due to the lack of reliable data, the fiscal impact of the Project could not be assessed but is expected to be substantial, especially due to the incremental tax base for local and export taxes, and duties.

4. **Public rationale.** There is a strong rationale for public sector financing including the correction of market failures as well as positive environmental spill overs and incorporation of externalities. The selected agricultural value-chains suffered from critical market failures mainly due to economic governance issues, infrastructure bottlenecks and an obsolete legal framework leading to low and even decreasing private sector investments. Private investors are facing a business environment characterized by uncertainty and high risks at all levels of the value-chains, from farmers to exporters. The current situation is deteriorating fast especially for exported commodities whose price and quality competitiveness is dramatically affected by these market failures. Exports of high value commodities such as vanilla and clove essential oil could drop by 20% annually in the coming years according to experts (*Centre Technique Horticole de Tamatave* CTHT, industry associations). The lack of public infrastructure such as roads, limited access to financing for private investments and the poor enabling environment around land tenure also result in a large untapped potential in the targeted areas. Some areas are known to have been highly productive areas in the past but no longer are mainly because of physical

access. There is thus a strong rationale for the World Bank to invest in the selected agricultural value-chains with a focus on value-chain governance, land tenure security and commercial infrastructure using in most cases a public-private sector partnership approach. Another rationale for public sector provision is the mitigation of negative environmental externalities. The distillation process of cloves to obtain essential oils is currently being carried out using equipment with a poor energy-efficiency ratio, which mainly translates into the consumption of large volumes of firewood and subsequent rapid deforestation. Improved distillation equipment has been piloted and support for initial scaling-up would generate substantial benefits in terms of firewood reduction in partnership with the private sector already active in firewood replanting. There are also few incentives for farmers and other chain actors to invest in perennial crop replanting due to the above mentioned market failures. Support to tree crop replanting would thus trigger both economic benefits and large scale environmental benefits (CO2 sequestration, mitigation of soil erosion, mitigation of cyclone related damages, etc.).

5. **Bank value added.** The World Bank has brought an integrated approach to the project design process, drawing from various disciplines that, together, will support a holistic development of smallholder agriculture and agribusiness. Global expertise from within the World Bank has been mobilized from a range of sectors (agriculture, land administration, transport/rural roads, finance, trade and competitiveness) and collaborations with other development partners have been identified to ensure an integrated project approach. In addition, other World Bank activities and financing mechanisms are leveraged, such as the PCGF to facilitate access to credit for small farmers and larger agribusinesses. Extensive consultations were held with the Government of Madagascar (GoM) and private value chain players to build a strong partnership and ownership of the Project, while facilitating a process of coordination with other development partners, and both World Bank and externally funded agriculture programs in Madagascar.

6. The Project will complement interventions by other World Bank projects, in particular the PIC2 as well as from other donors, especially IFAD and the EU. The PIC2 is currently implementing activities in other geographic regions and the budget dedicated to the agricultural sector is limited. Besides the PIC2 investments and expertise, the Project will capitalize on IFC's investments in private agribusiness companies which will be a major pulling factor in some of the targeted areas. The approach of the Project which will be largely based on demand from industry associations, public-private partnerships and collaboration with the financing sector will avoid any crowding-out effect of private financing.

II. Project benefits and development impact

1. Expected project benefits

7. Currently Madagascar has proven comparative advantages for several value-chains in terms of both domestic and international markets. Because the Project is based on a market-led approach, most of the benefits at farm levels are a combined result of: (i) new downstream market opportunities for the farmers; and (ii) improved capacity of the farmers to answer to these new marketing opportunities. Such opportunities would be the result of improvements in the downstream stages of the agricultural value chains which are hampered by inefficiencies. Most of these inefficiencies are linked to institutional issues rather than technical constraints, road and energy infrastructure set aside. Institutional issues include the regulatory framework and more often its enforcement especially with regards to quality standards, access to land and taxation.

The Project will support investments to overcome technical constraints (road rehabilitation, training, technology improvement, etc.) and governance and business environment related constraints (value-chain coordination, enforcement of quality control, policy dialogue, etc.).

8. The **direct tangible benefits** expected through the Project include: production intensification (higher labour and land productivity) through improved access to extension and training services, technologies, land tenure security and access to finance; production expansion due to improved access to market opportunities, land and financing; lower risk exposure for farmers engaged in contract farming; lower transaction costs to access formal land title; increased value per output unit due to improved quality at harvest and post-harvest stages and enforcement of quality standards; lower production costs at specific stages of the value chains resulting into lower cost per final output unit (lower production, transportation and bad governance related costs, etc.); etc. Most of those benefits would translate into tangible benefits at individual level and/or at value-chain level:

- ⇨ **Value-chain level**: improved technical and operational efficiency usually captured through higher overall productivity (net output value / net total input value) and profitability (net profit margin, return on asset, return on investment at value chain level), larger production volumes per season or cycle, and/or higher global value addition (gross output value of 1 unit of production sold to the consumer / raw material value).
- ⇨ **Individual level**: higher margin per unit and/or larger production volumes/turnover resulting in higher net profit, combined with a higher predictability and stability of income for the farming households involved in contract farming schemes.

Table 4: Expected tangible benefits of the Project at farm and value-chain level

Tangible benefits – FARM LEVEL	
Income increase	⇨ From higher farm productivity due to improved production technologies and techniques (land and labour productivity) ⇨ From production expansion to answer new marketing opportunities ⇨ From improved access to marketing opportunities in terms of volumes and/or prices
Income predictability and stability	⇨ From contract farming arrangements
Food security improvement	⇨ From larger production volumes (self-consumption) and income ⇨ From access to credit to finance winter production during the lean season
Tangible benefits – VALUE CHAIN LEVEL	
Improved technical and operational efficiency ⇨ Lower production cost and/or higher quality of final product	⇨ Lower production costs at farm level due to the higher productivity from improved techniques and technologies, higher investments ⇨ Lower transportation costs after farm gate due to road rehabilitation ⇨ Decrease in losses due to the lack of marketing and storing infrastructure ⇨ Enforcement of quality standards and norms along the value chain
Higher private investments	⇨ Improvement of the enabling environment and overall value-chain climate including clear legal frameworks and effective enforcement

9. There are two key elements to consider when looking at the **allocation of the incremental benefits**: (i) the balance between individual short term gains and longer term gains at country level linked with the competitiveness of the value chains on domestic and international markets; and (ii) the distribution of the gains between the value chain actors depending on the power relations (bargaining power), inclusiveness and governance issues in each of the value chains. Ideally the Project should foster the competitiveness in price and/or quality of the agricultural value chains while ensuring tangible and sustainable incremental benefits for the farmers and the other value chain players. To that end the interventions should focus on higher margin per output units through lower production costs (and higher output price for markets where quality is the key element and for which there is a premium) and larger volumes or turnover depending of the value chains. For some value chains it is necessary to produce larger volumes at a lower price, for others the need lies in improved quality for similar volumes and output prices, etc.

10. The **fiscal impact** of the Project is uncertain since there is limited data available. The tax base is likely to increase due to higher economic activities and increased exports but three aspects must be carefully considered: (i) the governance aspects related to taxation (low official tax collection and high "parallel taxation"); (ii) the effect of taxation on the competitiveness of local commodities on both international and national markets; and (iii) more recently the use of established businesses to collect taxes from farmers which could hamper their formal contractual arrangements. An analysis of the fiscal impact of potential losses of market shares for major exported commodities will be conducted through the Project.

11. The **direct intangible benefits** of the Project are: greater feeling of security at household level due to land tenure security and contract farming; higher human capital at country level through better training facilities and curriculum; environmental benefits in the clove essential oil value-chain through improved processing units with higher energy efficiency; improved investments from agribusinesses and investors through improved access to business and investment services including land access; better land resource allocation through a more dynamic land market; strengthened institutional capacities at decentralized level particularly regarding local taxation and road maintenance; water savings through the use of drip irrigation; etc. Some of these intangible benefits can be quantified and integrated in the economic analysis of the project.

2. Literature and empirical research: benefits from contract farming and land tenure security

12. **Contract farming**. At household level, most of the research has focused on increased incomes or related indicators such as increased net profits at farm level based on the assumption that contract farming would relax some of the obstacles or market failures constraining productivity (access to inputs, marketing channels, predictability, training, access to credit, etc.). Most of the research has concluded that contract farming does generate additional revenues to the farmers through higher land and labour productivity as well as higher prices to a lower extent. The report *Contract Farming in Madagascar: Constraints and Opportunities* (WB/FAO, 2015) highlights the results found in Madagascar, in particular a study that demonstrated an income increase as high as 60% for the green bean producers working with Lecofruit (GIZ, 2014). Contract farming also has benefits in terms of an increase in the stability and predictability of incomes for farmers which is often mentioned as the main positive outcome in

the surveys conducted (Minten *et al.*, 2006). Empirical research has also found positive outcomes in terms of improved food security for the households involved in a contract farming scheme. A recent study conducted in Madagascar showed a reduction of the household's hungry season by ten days on average and a 20 percent higher chance to have no more hungry season at any point in time (Bellemare and Novak, 2015). Other benefits linked to welfare and livelihoods at household level (improved nutrition, higher education, asset accumulation, etc.) and at macro level in terms of development and industrial organization are mentioned in the literature but no empirical research has been conducted (Bellemare, 2015). Intangible benefits are mentioned as a result of an improved perception of security such as the self-reported happiness of smallholders (Dedehouanou *et al.*, 2013). Since contract farming will represent only a minor share of the targeted beneficiaries, no specific analysis of the economic benefits linked to contract farming have been conducted but two crop models were established based on Lecofruit's model.

13. **Land tenure**. At *household level*, a greater security in land tenancy would lead to higher land and labor productivity and livelihood improvement (housing improvements, etc.) through three mechanisms: (i) increased investments in land (irrigation, permanent crops, etc.); (ii) increased access to credit with the possibility to use land as collateral; and (iii) a more efficient land market which results in a better allocation of the land resources. At *institutional level*, the main expected impacts are a reduction in time and costs related to land transaction as well as increased access to reliable information about land availability and transactions. At the *macroeconomic level*, improving land tenure security and access to land in general can foster more dynamic land market and attract investors, resulting in a better allocation of land resources nationwide as well as additional revenues for the governments (Belli and Anderson, 2013) Intangible social and environmental benefits are also emphasised in the literature on land tenure. They include better conservation of protected areas (biodiversity, sustainable natural resource management and tourism) and the reduction of boundary conflicts in protected areas and indigenous territories. The recent political crisis in Madagascar has also allowed lessons to be drawn from the impact of a weak land governance and the potential risk of a return to a crisis situation when rural lands are sold to foreign investors regardless of existing rights. The aim of the Project is to avoid the return of such social conflicts and their disastrous economic consequences. In the EFA, the economic benefits stemming from increased land secure security were not analysed separately but were indirectly integrated in the models (effects of greater feeling of land tenure security and investments in long term productive capital including permanent crops).

III. Financial analysis

1. Crop and livestock production

14. **Methodology.** The financial analysis builds on the methodology developed by Gittinger (1982)[61], Belli et al. (2001)[62] to estimate the financial profitability and sustainability of increased production of selected crops from the perspective of the project beneficiaries, e.g. the farming households. A cost-benefit analysis was conducted using "WOP" and "WP" scenarios to estimate the incremental financial benefits at farm level for several crop and livestock production models. The following models were analyzed as they represent the most substantial part of the

[61] Gittinger, P., 1982, Economic analysis of agricultural projects

[62] Belli, P., J.R. Anderson, H.N. Barnum, J.A. Dixon, and J-P. Tan (2001), Economic Analysis of Investment Operations: Analytical Tools and Practical Applications. WBI Development Studies, World Bank Institute, World Bank, Washington, D.C.

investment of component 1: clove, pepper and vanilla for the Toamasina hub; rice seed and maize for animal feed in the Antananarivo hub; and potato, onion, green beans, maize for feed production and dairy for the Antsirabé hub. For chicken fattening and soybean not enough data were available in order to be able to establish crop models but they could be developed during the evaluation mission. For beef production for export no models were developed due to the uncertainty of the project investments in this value chain and limited information.

15. **Data and assumptions.** The financial analysis used data collected during the technical preparation missions (2015) and from empirical and technical studies and working papers conducted on several value-chains in Madagascar. They include studies from CIRAD and from or in collaboration with the CTHT. For rice seed production, the synthetic data provided by JICA on production costs and incomes have been used. For commodity prices conservative average values have been used based on the past price trends, e.g. removing the years with dramatic price increase and/or using the lowest prices during the year (after harvest).

16. **"WOP" and "WP" scenarios.** The Project will finance proposals which include activities aiming at improving productivity at farm level. Several farm models have been analyzed to assess if the "WP" situation brings incremental benefits compared to the "WOP" situation when looking at profitability at household level (net profit / revenue) and their contribution to the overall value chain efficiency improvement (cost of production per output, output volume per productivity factor, etc.). The Project is likely to support both the expansion of the production area and intensify the areas already under production through a sustainable intensification approach (new technologies for a same crop, renewal of productive capital – replanting –, introduction of additional crops in the farming system through agroecology). The assumptions of the "WP" and "WOP" situations have been built on empirical experiences from other donors, private actors, training and research institutions (CEFFEL, CTHT, IFAD, Lecofruit, Socolait, FIFAMANOR, etc.). Benefits in the "WP" scenario are summarized in table 5 below.

Table 5: Benefits in farm models under the "WP" scenario

	WOP situation	WP situation
Green beans - expansion	Low productivity due to poor soil fertility management, use of local seeds. Low share of production marketed due to bad roads.	Shift in production patterns and higher productivity through access to contract farming opportunities including production package and technical assistance (Lecofruit's experience)
Green beans - intensification	Productivity not at its full capacity due to limited use of drip irrigation and technical capacities	Improved productivity due to improved techniques and drip irrigation (Lecofruit's experience)
Pepper	Multi-crop extensive family farming	Introduction of pepper in association with current crops leading to net incremental incomes (CTHT and IFAD's experience)
Clove	Trees destroyed during the last cyclones	Replanting of trees in location protected from cyclones leading to net incremental income (CTHT and CIRAD's experience)
Dairy production - expansion	Low productivity due to poor husbandry practices and low incomes due to limited market opportunities (local cheese)	Improved productivity and market opportunities due to improved feeding practices and road connexion
Dairy production - semi-intensification	Low productivity due to poor husbandry practices	Improved productivity dur to better husbandry techniques (FIFAMANOR, SOCOLAIT's experience)
Maize for feed production	Low productivity, high post-harvest losses and low quality (humidity content) due to poor soil fertility management and use of local seeds	Improved productivity and lower post-harvest losses due to improved seeds, better production and post-harvest management techniques
Onion	Low productivity due to poor soil fertility management and use of local seeds	Higher productivity due to improved seeds and soil fertility management (FERT, CEFFEL, IFAD's experience)
Rice seeds	Low productivity due to seed quality, water and fertlity management	Improved techniques leading to improved yields and lower losses (JICA's experience)
Potato	Low yields and high post-harvest losses due to poor soil fertility management and use of local seeds	Higher productivity due to improved seeds, soil fertility management (FERT, CEFFEL, IFAD's experience)
Vanilla	Low yields and low quality due to the quality of planting material and production techniques	Improved techniques and replanting leading to increase in yields and quality (CTHT's experience)

17. **Financial results.** All models are financially profitable with a positive net present value and return on family labor higher than the average rural wage of MGA 2,800. In most cases production costs are higher in the "WP" scenario but the increase in yields results in a higher margin per unit. In the case of dairy, horticulture and rice seeds, the margin per unit is lower due to the use of more inputs required for intensification but total volumes are substantially larger leading to higher revenues for the farmer. Not surprisingly, the high value commodities – pepper and vanilla – generate the highest net margin and return on family labor. The results for cloves highlight the limited production costs once the trees start to produce (limited to labor).

Table 6: Summary of financial crop/farm budgets

	Margin* (M MGA/ha)			**Unit margin*** (MGA/kg)			**Return on family labour** (MGA/pers-j)			**NPV**
	WOP	WP	*Increm.*	WOP	WP	*Increm.*	WOP	WP	*Increm.*	(M MGA)
Green beans - expansion	0.5	4.2	672%	92	383	318%	6,106	29,445	382%	20
Green beans - intensification	6.1	7.6	25%	563	561	0%	42,176	70,112	66%	5
Pepper	-	17	na	-	745	na	-	111,253	na	60
Clove	-	0.7	na	-	3,200	na	na	na	na	2
Dairy production - expansion	0.15	0.6	284%	150	360	140%	na	na	na	2
Dairy production - semi-intensification	0.6	0.8	38%	478	360	-25%	na	na	na	0.6
Maize	0.2	0.5	110%	179	153	-15%	1,615	3,089	91%	2
Onion	1.1	1.9	70%	276	188	-32%	2,453	4,009	63%	8
Potatoes	1.0	1.8	69%	163	130	-20%	4,671	6,328	35%	5
Rice seed	1.5	2.0	29%	537	404	-25%	na	na	na	2
Vanilla	6	11	97%	8,353	9,101	9%	63,006	132,855	111%	21

18. The dramatic margin increase for the expansion of green bean production can be explained by the low value on local markets of crops previously produced. For the expansion of dairy production the reason is the low margin for local cheese production and the low volumes being produced compared to the daily sale of fresh milk to collection points.

2. Clove distillation

19. The Project will support the roll-out of improved distillation combined with firewood replanting. The main incremental benefits are related to: (i) improved processing efficiency per distillation with higher extraction rate; (ii) lower quantities of firewood per distillation resulting in less person-days for firewood collection; and (iii) reduction in time per distillation with additional labour savings. Additional benefits are expected in terms of environment externalities but are only included in the economic analysis.

20. **Modelling hypothesis**. A model was established to estimate the incremental economic benefits of the intervention. The "WOP" scenario is characterised by traditional distillation and a depletion of firewood resources resulting in a gradual increase of the time needed to collect the firewood required for the distillation process over 20 years. In the "WP" scenario the distillation efficiency in terms of extraction rate, extraction duration and energy efficiency is higher due to the improvement of the still as experienced by the CTHT. The improved distillation is a fairly simple technology and does not require specific skills to handle. In parallel, replanting of firewood and a sustainable management of wood resources enable a reduction of the time spent to collect firewood. Conservative assumptions have been used.

Table 7: "WOP" and "WP" parameters and hypothesis for the distillation model

WOP situation	WP situation
2.25 m3 of firewood / distillation	1.85 m3 of firewood / distillation
2.4% of extraction rate / distillation	3.1% of extraction rate / distillation
24 hours / distillation	13.5 hours / distillation
Increase in time for firewood collection (depletion)	Lower increase in time firewood (replanting)

21. **Results.** The NPV of the financial model of improved distillation equipment is positive (MGA 18 million) and the return on family labor increases by 188% compared to the previous situation.

IV. Economic analysis

22. The economic analysis includes the benefits from: (i) incremental crop and livestock production; (ii) improved distillation equipment; (iii) road rehabilitation; and (iv) environmental externalities.

1. Economic benefits of distillation improvement

23. **Incremental benefits**. The economic benefits of the improvement of distillation units for clove essential oil production were calculated by converting the financial benefits into economic prices and by integrating the environmental benefits linked to reduced firewood consumption and related CO2 emissions. Additional benefits are expected from the productive use of the dried leaves remaining after the extraction process – either as a source of energy with further reduction in CO2 emission due to a substitution effect with firewood or as compost for crop production – but research is still on-going so they are not included in the analysis. The environmental benefits are calculated separately based on the reduction of firewood volumes and an average CO2 equivalent content provided by Ex-Act and a research project conducted by the CTHT (2011).[63] The social price of carbon of US$30 per ton was used to monetize the benefits of CO2 reduction as per the World Bank Guidance Note on the Social Value of Carbon (2014). The results of the distillation model and the environmental benefits have been aggregated based on the number of improved distillation units supported by the Project. A conservative phasing was applied to the expected benefits with full development in year 5. The project costs are integrated to estimate the incremental cash-flow. The net present value and the internal rate of return are estimated at US$1.2 million and 69% respectively at a discount rate of 10%.

2. Economic benefits of road rehabilitation

24. **Incremental benefits.** The Project will finance the rehabilitation of key points on feeder roads which are currently constraining the marketing opportunities of farmers among others. Road rehabilitation will be implemented based on existing marketing opportunities provided by private companies procuring raw products in catchment areas which will be "re-connected". The main expected incremental benefits are: (i) an increase in the share of production marketed due to new marketing opportunities as well as improved access of vehicles (light trucks, pick-ups, motorcycles) from/to the farm gate and from/to markets[64]; and (ii) reduced post-harvest losses

[63] Mémoire "*Empreinte carbone de différents types d'exploitations agricoles à base de systèmes agroforestiers dans le district de Fenerive Est*", Joyce Razakaratrimo, 2011 - ESA, IRD, CTHT

[64] Ranging between 5 and 40 percent based on the experience of similar projects such as IFAD projects

due to the improved road network quality and a faster access to warehouses and sale points. Other benefits are expected but are not considered in the model in order not to overestimate the results: lower travel time, improved access to services for rural communities (credit, health, education, agricultural inputs, etc.) which can result in higher agricultural productivity, expansion of area under production, reduction of market distortions, etc.

25. **Modelling methodology**. As these feeder roads have a relatively low level of traffic (between 50 and 500 vehicles per day) and that no detailed data are available, the vehicle operating costs and travel time costs approaches are not relevant to conduct the economic analysis. Besides, the road rehabilitation component is embedded in the project approach of linking catchment areas with marketing opportunities, in particular agribusiness companies. The selection of the roads to be rehabilitated was done in partnership with the private sector such as Socolait or Lecofruit to enlarge their catchment area for the procurement of fresh milk and green beans respectively. The methodology used is thus based on an increase in local crop production due to improved access to both inputs and an increase in the marketed volumes due to improved access to markets. Other benefits could occur but are not considered in the EFA in order not to overestimate benefits: reduction in transportation costs, reduced post-harvest losses due to improved road network quality and a quicker access to markets, increased trade along the road and increase in cultivated areas near the road.

26. **"WOP" and "WP" assumptions**. The "WOP" scenario is characterised by farm systems mainly based on staple crops which are largely self-consumed or marketed locally due to the constraints to transport products from farm gate to market. Post-harvest losses during transportation are also high due to poor road conditions. In the "WP" situation the rehabilitation of the roads allows Lecofruit to reach additional farmers through their contract farming schemes with the following results: (i) a shift in cropping models to respond to marketing opportunities (introduction of green beans); (ii) an increase in yields due to better access to inputs (combined with higher production costs); (iii) a larger share of the production being marketed; and (iv) higher prices due to access to marketing opportunities and lower transportation costs.

Table 8: WOP and WP parameters and hypothesis for the road model

WOP situation	WP situation
	Introduction of green beans (contract farming)
Traditional food crops (cassava and maize)	Yield increase due to access to inputs and markets (+15% - LECOFRUIT experience)
Low share of production marketed	Increase in production costs due to input use
Llimited access to inputs and technical services > low yields	Increase in the share of food crop production marketed (+10%)
	Increase in price for food crop (+20% for maize only)

27. The model is based on the rehabilitation of 110 km of feeder roads serving around 7,100 farming households that could be linked with Lecofruit at full development. The volumes of crop produced and the average costs of production have been estimated previously in crop models and an average cropping pattern for winter crops have been established based on a study conducted among Lecofruit's producers (GIZ, 2013). Rice production was not included as most of the rice is self-consumed and in order to avoid the overestimation of benefits. Based on the above assumptions, the net benefit per kilometre is estimated to be US$9,258.

28. **Results**. The economic benefits are aggregated based on a progressive phasing reflecting the number of farmers gradually entering in Lecofruit's scheme. Full development is expected in year 3. The economic costs include: (i) the rehabilitation costs; (ii) annual routine maintenance costs; and (iii) periodic maintenance costs in the event of cyclones. In the base case scenario of a rehabilitation cost of US$40,000 per kilometre, the NPV is estimated to be US$0.9 million at a discount rate of 10% and an IRR of 14%.

3. Environmental benefits

29. The net CO2 emission balance of the Project was estimated using the Ex-Act tool developed by FAO. The economic analysis took into account the average net CO2 emission balance per year and per hectare for the scenario using a 60% adoption rate (-14 tons of CO2 equivalent). The average balance was applied to the phasing of the area under production expected based on the proposed interventions and related budget. As explained above, the social price of carbon of US$30 is used to estimate the economic value of the CO2 emission balance. At full development the Project is expected to generate US$1.7 million of equivalent economic benefits.

4. Economic analysis of the Project

30. **Data and prices.** Economic prices have been calculated using standard conversion factors for exported agricultural commodities and imported inputs in order to correct distortions due to taxation, public subsidies and other market imperfections[65]. An economic cost of labour was used using a shadow rate wage factor previously established for labour hired on farms (Barrett *et al.*, 2011).[66] The incremental benefits calculated in local currency were converted into US$ using a shadow exchange rate (SER) to take into account the opportunity cost of foreign exchange. The SER was estimated using the methodology proposed by Belli and Anderson.[67]

31. **Economic benefits**. The analysis is conducted over a period of 20 years. The economic benefits including in the project economic analysis are: (i) economic benefits related to incremental crop and dairy production; (ii) economic benefits from still improvement; (iii) economic benefits from road rehabilitation; and (iv) economic benefits related to the CO2 emission balance of the project.

32. The incremental benefits from crop and livestock production were converted into economic prices and aggregated based on the number and phasing of farmers or hectares for which investments have been proposed (direct beneficiaries). The aggregation takes into account the production patterns of each model (number of years before full development). In order to avoid double-counting, green beans production was not included as it was used to estimate the benefits of the road rehabilitation model. Rice seed production was not included due to the uncertainty of its inclusion among the targeted value chains. The incremental economic benefits related to road construction and distillation improvements were included based on the total

[65] For agricultural outputs, economic prices have been used only for the value chains where there are a lot of distortions (vanilla, clove, pepper), not for green beans or locally traded products for which the market prices reflect the opportunity cost of these goods.

[66] Barrett, C., Stifel, D. and J.C. Randrianarisoa. *The Demand for Hired Labor in Rural Madagascar*.

[67] $SER = OER \cdot \frac{[(M + Tm) + (X - Tx)]}{(M + X)}$ where SER denotes the shadow exchange rate, OER the official exchange rate (or market exchange rate if the value of foreign exchange is not set by the authorities), M the volume of imports, X the volume of exports, Tm import duties and Tx export taxes.

quantities included in the budget. Benefits from land tenure security are assumed to be included in the model through the channel of private investment.

33. **Economic costs**. The economic costs of the project were obtained using the COSTAB software and by removing taxes and duties. All costs were inputted in US$ in COSTAB. Project investment costs were removed from the economic benefits included in the analysis to avoid double-counting of costs.

34. **Discount rate**. A discount rate of 10% was used for the analysis in line with the commercial deposit interest rates of the last 5 years in Madagascar ranging between 10.5 and 10.8% (World Bank database). However, as recommended by the World Bank[68] an analysis using a 5% discount rate was also carried out.

35. **Time period**. The economic analysis was conducted over a 20-year period reflecting the full lifetime of most of the costs and benefits. Only the benefits stemming from clove production could occur over a longer period of time since clove trees can remain productive up to 50 and 100 years.

Table 9: Economic analysis of the Project (economic prices, US$m)

	PY1	PY2	PY3	PY4	PY5	PY6	PY7	PY8	PY9	PY10	PY11-20
Incremental economic benefits											
Benefits from crop production	-	-0.9	-0.1	0.8	2.0	3.0	3.3	3.5	3.6	3.6	3.6
Benefits from dairy production	-	-0.0	-0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Benefits from road rehabilitation	0.3	0.7	1.1	2.1	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Benefits from still improvement	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Benefits from reduced CO2 emissions	0.0	0.7	1.2	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Total incremental benefits	0	-1	2	6	9	11	12	12	12	12	12
Project economic costs											
Investment costs	13	12	8	5	4	-	-	-	-	-	-
Recurrent costs	1	1	1	1	1	1	1	1	1	1	1
Total costs	15	13	9	6	5	1	1	1	1	1	1
Incremental cash-flows	**-14**	**-13**	**-6**	**-1**	**4**	**10**	**11**	**11**	**11**	**11**	**11**
NPV @10% (in M US$)	25.7										
NPV @5% (in M US$)	62.1										
IRR @10%	18%										

36. **Results.** The estimated NPV of the Project is US$25.7 million and US$62.1 million at a discount rate of 10% and 5% respectively, which makes the Project profitable. The internal rate of return is estimated to be 18%.

37. **Sensitivity analysis.** A sensitivity analysis was conducted to test various scenarios using the following proxy variables: (i) high value crop prices; (ii) crop yields; (iii) input prices; (iv) actual outreach of farming households for the road; (v) total incremental project benefits; and (v) project costs. The NPV of the Project remains positive in all the scenarios.

38. Madagascar is very exposed to cyclones and other weather-related events with dramatic short term consequences on agricultural production and long term impact on the productive capital for permanent crops. The Project includes climate-smart investments mainly through agroecology but they will not impact cyclone occurrence and are unlikely to mitigate their incidence due to the size of such events. The economic costs would thus be the same in the "WOP" and "WP" scenarios. The cost-benefits analysis is based on net incremental benefits

[68] Technical Note on Discounting Costs and Benefits in Economic Analysis of World Bank Projects (World Bank, 2015)

hence the effects of cyclones are not included in the model. Similarly, price shocks are not included in the base case analysis but are taken into account in the sensitivity analysis.

Table 10: Results of the sensitivity analysis (in US$m)

	NPV	IRR		NPV	IRR
High value crop prices			**Input prices**		
-5% in prices	21.2	17%	-5% in prices	25.9	18%
-10% in prices	16.7	15%	-10% in prices	26.2	18%
-20% in prices	7.6	12%	10% in prices	25.2	18%
10% in prices	34.7	21%	20% in prices	24.7	18%
20% in prices	43.7	24%	30% in prices	24.3	18%
Agricultural productivity			**Project outreach (roads)**		
-10% in yields	11.8	14%	-10% in outreach	21.7	17%
-20% in yields	0.7	10%	10% in outreach	29.7	19%
Total project costs			**Total project incremental benefits**		
10%	21.4	16%	-10%	20	17%
20%	17.1	15%	-20%	14.4	15%
30%	12.9	13%	-30%	8.7	13%
-10%	30	20%	10%	31.3	20%
-20%	34.2	23%	20%	37	21%

Annex 7: Analysis of the Project's Net Carbon Balance with EX-ACT

MADAGASCAR: Agriculture Rural Growth and Land Management Project

1. The following analysis assesses the Project's net carbon balance, which project activities have the largest potential to reduce emissions and sequester carbon, and provides an understanding of the Project's contribution to the country's mitigation goals.

National climate change adaptation and mitigation policy context

2. **Madagascar's adaptation and mitigation strategy.** In 2010 and 2013, Madagascar adopted the National Climate Change Policy and the National Strategy to Face Climate Change in Agriculture-Livestock-Fishery for 2012-2015, respectively. Both strategies promote adaptation strategies as well as the need for climate change mitigation. In 2010, Madagascar submitted its National Appropriate Mitigation Actions (NAMA) to the United Nations Framework Convention on Climate Change (UNFCCC), covering the energy, forestry, energy/waste, agriculture and transport sectors. The Second National Communication to the UNFCCC reported the key sources of GHG emission for the baseline year 2000. Agriculture and energy were the main emitting sectors.[69] The Third National Communication of Madagascar is currently under preparation. [70]

3. **Madagascar's proposed mitigation goals until 2030.** In September 2015, Madagascar's Intended Nationally Determined Contributions (INDC) were published, presenting proposed climate actions under the new international climate agreement. By 2030, Madagascar aims to reduce 30 $MtCO_2$ of its greenhouse gas emission, representing 14 percent of national emissions, and aims for a GHG absorption of 61 $MtCO_2$ in 2030, which represents 32 percent compared to the business as usual scenario which is based on an inventory from 2000 to 2010. The cost of mitigation is estimated at about US$6 billion for Madagascar and the international community is encouraged to support these objectives through the UNFCCC or other financial mechanisms.

4. **Adaptation strategies with mitigation potential.** Adaptation measures in agriculture and measures to improve ecosystem resilience towards climate change have a significant potential to contribute to the mitigation goals. Specific mitigation measures in agriculture until 2030 are: (i) large scale dissemination of intensive/improved rice farming techniques (System of Rice Intensification (SRI); (ii) large scale implementation of conservation agriculture and climate-smart agriculture; and (iii) dissemination of arboriculture. In the Land-Use, Land-Use Change and Forestry (LULUCF) sector the envisioned mitigation actions are large scale reforestation for sustainable timber production and conservation, reduction of deforestation,

[69] In particular due to following activities: Agricultural soils emitting N_2O, and accounting for 58 percent of Madagascar's total CO_2-equivalent emissions; livestocks' enteric fermentation emitting mainly CH_4 constituting 17 percent of total CO2-equivalent emissions; manure management emitting N_2O, 12 percent of total CO_2-equ emission; combustion of transport and other activities accounted for 5 percent of CO2-equ emission; and rice farming for 1.7 percent.[69] Madagascar has lost ca. 40 percent of its forest cover in the last 50 years. Controlled fires in agriculture and conversion of forest and grasslands accounted for ca 30 percent of the CO emission.

[70] Nachmany M et al. (2015): Climate Change Legislation in Madagascar. An Excerpt From The 2015 Global Climate Legislation Study A Review of Climate Change Legislation in 99 Countries. http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2015/05/MADAGASCAR.pdf

adoption of agroforestry, and promotion of Reducing Emissions from Deforestation and Forest Degradation (REDD-plus) and improved forest monitoring.

World Bank mandate and accounting methodology

5. In its 2012 Environment Strategy, the World Bank adopted a corporate mandate to conduct GHG emissions accounting for investment lending. The quantification of GHG emissions is an important step in managing and ultimately reducing emissions, and is becoming common practice for many international financial institutions.

6. The World Bank has adopted the Ex-Ante Carbon-balance Tool (EX-ACT) developed by FAO in 2010[71] to assess a project's net carbon-balance. This is the net balance of tons of CO_2 equivalent (tCO_2-eq) GHGs that were emitted or carbon sequestered as a result of project implementation compared to a "without project" scenario and compared to the initial scenario. EX-ACT categorizes activities in five modules: (i) land use change; (ii) crop production; (iii) livestock and grassland; (iv) land degradation; and (v) inputs and investment. EX-ACT thus estimates the carbon stock changes as well as GHG emissions per unit of land, expressed in tCO_2-eq per hectare and year.

Project activities relevant for the analysis.

7. **Target area and beneficiaries.** Component 1 offers demand led support to strengthen value chains in the project target areas. While stakeholders from a range of value chains can submit proposals for funding, several potential value chains were identified: (i) in Antananarivo (Region Itasy and Analamanga) poultry, maize and soya for feed production, and the rice seed value chain; (ii) Antsirabe (Region Vakinankaratra), the dairy, potato, onion, barley, maize and soya for feed production; and (iii) Toamasina (Region Atsinanana and Analanjirofo) the clove, vanilla, other spices, and lychee value chain. Before proposals are approved for funding, they have to fulfill certain requirements, amongst others to introduce and provide training on CSA practices, such as no tillage, agroforestry, improved nutrient management, improved breeding and feeding practices and improved pasture management or afforestation activities. However, as the proposals are demand-driven, it cannot be identified ex-ante which activities and value chains will be targeted and or the exact number of beneficiaries that will implement climate-smart agriculture practices. In addition, uncertainty prevails whether all producers who participate in the CSA training, will change their farming behavior accordingly.

8. **Adoption scenarios.** The GHG analysis will focus on several of the identified value chains and rely on expert estimates as to how many beneficiaries and hectare area fall under CSA practices. Due to the demand-driven nature of the project, these estimates are subject to uncertainty such that the analysis is conducted for three adoption scenarios: (i) 100 percent adoption; (ii) high adoption scenario with 60 percent adoption rate and improved distillation technology 2 (see below); and (iii) low adoption scenario with 30 percent adoption rate and moderately improved distillation technology 1 (see below). All values are indicated in Table 1.

[71] http://www.fao.org/tc/exact/ex-act-home/en/

Data inputs to EX-ACT by activity

9. **Climate and soil regimes.** Madagascar has four major agro-ecological zones and diverse climate and moisture regimes, including tropical wet, tropical moist and tropical dry climate regimes. The project areas Vakinankaratra and Analamanga are in Tropical Dry and Atsinanana and Analanjirofo in Tropical Moist climate and moisture regime. The soil type in all regions is High Activity Clay Soil. The project duration is 5 years; the capitalization period is assumed to be 15 years to allow changes in soil carbon to materialize. Dynamics of evolution are assumed to be linear. Default "Tier 1" coefficients are used.

10. **Improvements in crop management practice.** Improvement in management practices in the following value chains is expected as a result of the project. The values for the 60 percent and 30 percent adoption scenario are presented in Table 1 below:

- *Horticulture value chain:* In Vakinankaratra, agribusiness companies such as Lecofruit or Socota, offer contract farming arrangements to local producers. The companies' technical advisors work closely with the farmers to ensure correct application of production inputs and sustainable management practices, and product quality. The improved training opportunities and the introduction of rural roads by the Project may allow additional 12,500 farmers to enter the horticulture value chain, producing green beans, onion, potatoes or pepper and benefiting from the technical advisory service of private sector extension agents. In addition the private sector companies may encourage the introduction of drip irrigation systems for some crops. It is assumed that the farmers cultivate on average 0.1ha under horticulture cultivation, thus 1,250 ha. It is assumed that they apply improved agronomic practices, improved water management and improved nutrient management which are accounted for in EX-ACT.

- *Maize and soya feed value chain:* To support the poultry value chain, 3,500 producers in the region Analamanga could enter the maize and soya production. The producers typically don't have access to inputs, improved technologies and training. Training on climate-smart agriculture, could encourage producers to adopt improved agronomic practices that support them in increasing productivity and crop residues.

11. **Input use**. Contract farmers typically receive an input-kit from the company, which includes seeds, chemicals and fertilizers needed for production. Without the project, we assume that farmers use no or very small amounts of fertilizer for subsistence production. For the "WP" scenario, we assume that the recommended amount of fertilizer for green beans production during the planting stage is applied. This is ca 1,000kg/ha (2:3:4) (27) which results in ca. 75 tons of N and 113 tons of P for 1,250 ha land.[72] In addition drip irrigation systems horticulture production is considered.

12. **Improved livestock and pasture management.** The dairy value chain in the central highlands may be targeted by the project. In Vakinankaratra dairy farmers are serviced by the research institute FIFAMANOR, which may plan to expand production under the Project.

[72] Fertilizer recommendation for green beans: http://www.arc.agric.za/Pages/Home.aspx, November 2015

- *Dairy value chain.* Component 1 may reach up to 3,000 dairy producers in Vakinankaratra, with on average 2 cows and 0.5 ha pastureland. With the project, FIFAMANOR, may provide services such as improved breeding, feeding concentrate, and insemination support, depending on the adoption scenario 100 percent, 60 percent or 30 percent of cattle. While improving feeding practices through using more concentrates commonly increases CH4 emission on an animal basis, it also increases productivity and thus emissions intensity so that the end result is an overall reduction of CH4 emissions per unit of product.[73]

- *Improved pasture management.* FIFAMANOR plans to provide improved quality forage seeds which allow higher planting density. Due to the input use, the pastureland can be improved from moderately degraded to non-degraded, while it would otherwise remain moderately degraded.

13. **Land use change – increasing area under trees and tree crops.** In the Atsinanana and Analanjirofo region, the Project will have an impact on land use change, as crop trees/perennials such as cloves, litchi trees and vanilla jatropha may be planted on grassland, set aside for other land. In addition, the Project promotes replanting of forests to compensate deforestation for wood fuels:

- *Cloves value chain*. About 8,000 farmers in the cloves value chain could be targeted. Expert estimates suggest that farmers own on average 70 trees and can double the number of trees over the project period, resulting in 560,000 trees planted loosely on their farming area. In terms of land area under perennials, this is equivalent to 504 ha.[74] Without the project, they may plant 10 additional trees as they have fewer incentives for production, which is equivalent to 72 ha land under clove trees.

- *Cloves value chain – reforestation.* For grant proposals along the cloves value chain to be approved, reforestation is required. It is assumed that 8,000 clove farmers will replant 200,000 trees with the Project, resulting in 180 ha reforested land which was previously degraded land. The "WOP" scenario, replanting would take place as well, but at a more moderate level. With the Project farmers are expected to plant on average additional 5 trees a year, while without the project they are expected to continue to replant ca. 1 trees/year.

- *Vanilla value chain.* It is assumed that 5,000 vanilla producers are reached and are supported to plant 40 jatropha plants per farmer during the project period, resulting in a coverage of 180 ha.[75] Without the project a moderate increase of 10 plants over the project period is expected, covering 45 ha.

[73] FAO EasyPol (2011): EX-ANTE: Carbon-Balance Tool. (EX-ACT). Technical Guidelines for Version 4.
[74] According to FAO and a plantation density of 3x3, 1,111 trees can be planted on one ha; thus 560,000 trees result in 504 ha. http://www.fao.org/docrep/t0122e/t0122e08.htm
[75] Assuming a plantation density of 3x3,this results in 1,111 trees per ha.http://www.fao.org/docrep/t0122e/t0122e08.htm

- *Lychee value chain.* The Project aims to reach 5,000 producers to replant 115,000 trees, which can result in 104 hectares[76] under tree crops. Without the project, it is assumed that only 5 trees per producer are planted over the project period, resulting in 22 ha.

14. **Reducing deforestation through technological improvements.**[77] Traditional distillation units are used to extract essential oils from clove leaves and stems. During the distilling process a large amount of fire wood is consumed which is the main reason for ongoing deforestation in the area. 1 alembic allows 40-50 distillations per year; one distillation yields 4-5 liters of essential oil and consumes 2m^3 of wood fuel.[78] As estimated 1,000 alembics exist in the project area, this results in ca. 40,000 distillations per year and 80,000 m^3 of wood fuel harvested per year, 400,000 m^3 for 5 years, which is equal to 160 ha of natural forest. The Project may introduce up to 400 improved alembics. Currently there are two technologies available: Technology 1 reduces the time of distillation from 24 hours to 12 hours, reducing wood fuel by 50 percent. For 400 improved alembics this results in 80,000 m^3 over 5 years and avoided deforestation on 32 ha. This has to be interpreted with caution as decreased wood fuel requirement can increase farmers' incentives to use the distillation more frequently, thus increasing or maintaining the pressure on the forests. Technology 2 represents a distillation technology under development, which allows the re-use of combustible plant material to heat the stills.[79] Thus, for 40 distillations, one still uses ca. 2.5 m^3 of wood fuel, resulting in 5,000 m^3 or 2.5 ha natural forest deforested and avoiding deforestation on 62 ha natural forest.

15. **Infrastructure development**. Based on a demand-driven approach the Project plans to finance the rehabilitation of pre-identified roads and related structures, focusing on critical spots, and ensuring the continuity of traffic between specific points of origin and destination. This may entail the rehabilitation of 216km of roads.

[77] All information presented in this paragraph is based on personal communication with experts from Centre technique de Horticole in Tamatave (CTHT) ; www.ctht.org

[78] According to White (1983), the vegetation of Africa, Madagascar can be divided into 6 floristic domains, which is characterized by specific type of vegetation. In the Eastern domain, the canopy averages 20-30 meters. A tree with a height of 20 meters and a mid-diameter of 35 cm amounts to ca. 2m^3 of wood (White, F. 1983. The Vegetation of Africa. Natural Resources Research 20. Paris: UNESCO, 356 pp; http://www.forestry.gov.uk/pdf/TimberVolumeCalculator.pdf/$FILE/TimberVolumeCalculator.pdf). For the natural forest, we assume a spacing of 2x2, resulting in 2,500 trees per ha. Thus 400,000m^3 result in 160 ha.

[79] The distillation process has following steps: For the first distillation a full load of firewood, thus 2 m^3 is used; in the second distillation 80 percent of the needed fuel can be taken from combustibles material; and only 20 percent wood fuel, thus 0.4 m^3 are needed; in the third distillation, 20 percent of the wood fuel of the 2nd distillation is needed, thus 0.08 m^3; in the 4th distillation 20% of 0,08 m^3 etc.

Table 11: Potential project activities for three adoption scenarios and implementation in EX-ACT modules.

Region	Value chain	Implementation in EX-ACT	"WOP" scenario	"WP" scenario		
				Full adoption	High adoption (60 percent)	Low adoption (30 percent)
Analamanga	Cereals	Improved agronomic practices	0	1,500 ha	900 ha	450 ha
Vakinan-karatra;	Horticulture	Improved agronomic practices Improved water management Improved nutrient management	0	1,250 ha	750 ha	375 ha
		Fertilizer inputs	0	75 ton /N 113 ton/ P	45 ton /N 68 ton /P	22.5 ton /N 34 ton /P
		Drip irrigation		1,250 ha	750 ha	375 ha
	Livestock, Dairy	Technical mitigation options: Improved breeding Improved feeding practices	0	6,000 heads	3,600 heads	1,800 heads
	Pasture management	Reducing land degradation.	0	1,500 ha	900 ha	450 ha
Atsinanana; Analanjirofo	Clove	Planting clove trees	72 ha	360 ha	216ha	108ha
		Improved distillation technology for ca. 40% of distillers in area to reduced deforestation	1,000 stills Deforested area: 160ha	Tech. 2, 400 stills: avoided deforestation: 62 ha	Tech. 2, 400 stills: avoided deforestation: 62 ha	Tech. 1, 400 stills: avoided deforestation: 32 ha
		Reforestation for firewood	36 ha	Additional 180 ha	Additional 108 ha	Additional 54 ha
	Vanilla	Planting Jatropha shrubs	45 ha	180 ha	108 ha	54 ha
	Lychee	Planting Lychee trees	22 ha	104 ha	62 ha	31 ha
All regions	Infrastructure improvement	Rehabilitation of rural roads	0	108 km	108km	108km

Results – Net Carbon Balance.

16. **Results.** Based on the above assumptions, the Project is a net carbon sink. The emissions reduction and carbon sequestration potential over a period of 20 years ranges from 366,295 tCO_2-eq if all proposed activities are fully adopted, to 231,795 tCO_2-equ if 60 percent of target area is reached, to 113,976 tCO_2-equ if the activities are adopted on 30 percent of the target area (Figure 1). Figure 1 shows that without the project, under business as usual management, an additional 258,518 tCO2-equ would be emitted over 20 years. In case of 100 percent adoption these emissions can be fully avoided and an additional carbon sink of 107,777 tCO_2-equ could be created. In contrast, in the 30 percent adoption scenario, less than half of the emissions of the business as usual scenario are avoided (creating the net carbon sink of 113,976 tCO_2-equ) such that the Project still constitutes a carbon source of 144,542 tCO_2-equ. This is mainly caused by the ongoing deforestation activities to support the distillation of cloves (cp. Table 2). This shows that improved distillation technologies (introduced in full and high adoption scenario) which rely on combustible plant material rather than natural forests are needed to have a significant impact on the net carbon balance. Figure 2 shows which project activities contribute most to the net carbon sink. Taking the full adoption scenario as example: replanting fuel wood has the largest mitigation and carbon sequestration potential of 138,455 tCO_2-equ, or 38 percent of the entire net carbon balance; followed by planting of agroforestry/perennials (cloves, lychees, vanilla) with

92,844 tCO_2-equ constituting 25 percent of the net carbon balance; avoided land degradation and improving pastures with inputs as well as avoided deforestation contribute about 15.5 percent each to the net carbon balance; followed by improved cropping practices with a mitigation potential of 32,550 tCO_2-equ. The improved breeding and feeding practices of the dairy cattle, which allow an increase in productivity and thus emissions intensity, show a small mitigation potential of less than 1 percent of the total emissions in a business as usual scenario. This small positive impact of livestock may be overestimated, as an animal reproduction rate similar as in the business as usual scenario is assumed. The improved management practices may, however, lead to a decrease in calving interval and a faster increase in herd size than without the Project, which may also lead to an increase in methane emission compared to the business as usual scenario.

17. **Caveats**. There are several aspects that need to be considered when interpreting the result: (i) This is a demand-driven project and not all of the proposed activities will be implemented. In addition, the Project is open to support a range of value chains in the project areas, not only those presented here, which can cause a shift in activities with implications on the net carbon balance; (ii) uncertainty remains regarding the adoption rate of climate-smart agriculture practices, after the farmers participated in the training such that results are overestimated; (iii) there may be a time lag in adopting the CSA practices or other innovations which cannot be adequately accounted for in the estimation software EX-ACT, overestimating the positive impact; and (iv) the assessment focuses only on the production sector but does not consider upstream activities along the value chain, such as processing or transport to market, electricity and fuel use, and could thus greatly overestimate the achieved net carbon balance.

18. **Recommendation**. Taking the caveats into account, it is recommendable to focus conservatively on the moderate adoption scenario leading to an overall balance of -231,795 tCO_2-equ tCO_2-equ. To increase the overall mitigation potential, it is recommendable to focus on activities that decrease deforestation as well as increase afforestation and agroforestry activities. As the Project is demand-driven, regular assessments to monitor the Project's mitigation achievements should be conducted.

Figure 5: "WP" and "WOP" project scenarios and net carbon balance for three adoption scenarios, in tCO2-equ

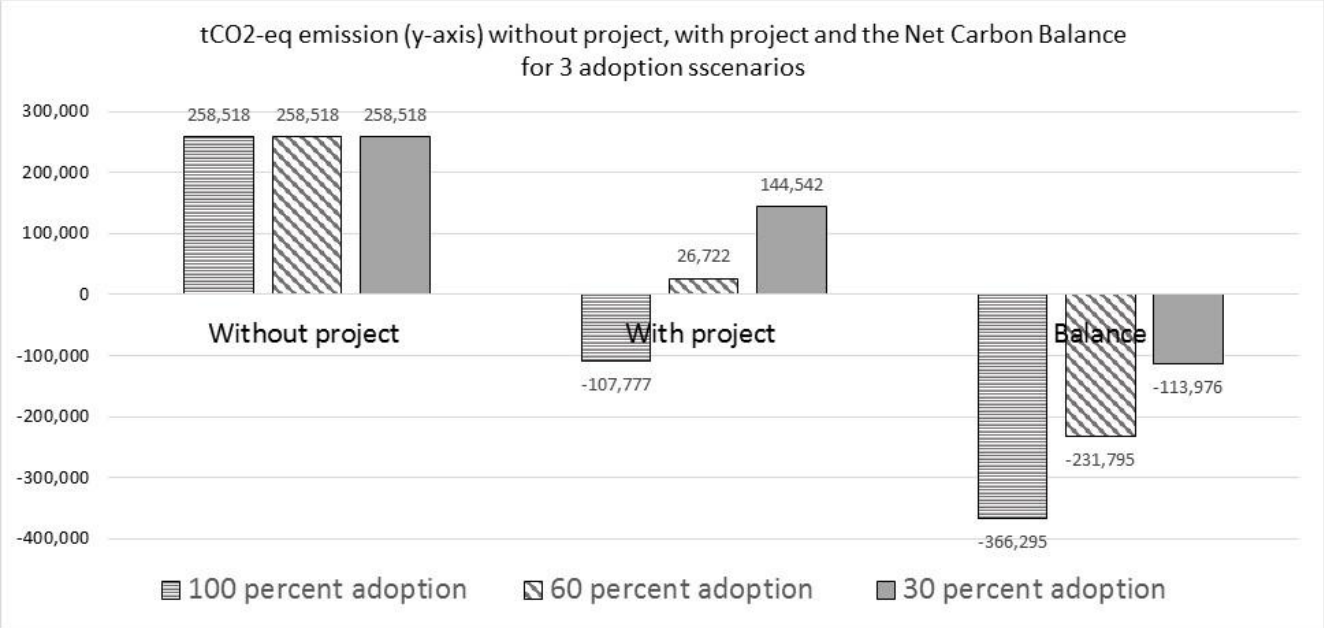


Figure 6: All GHG emission sources, by project activities in tCO2-equ

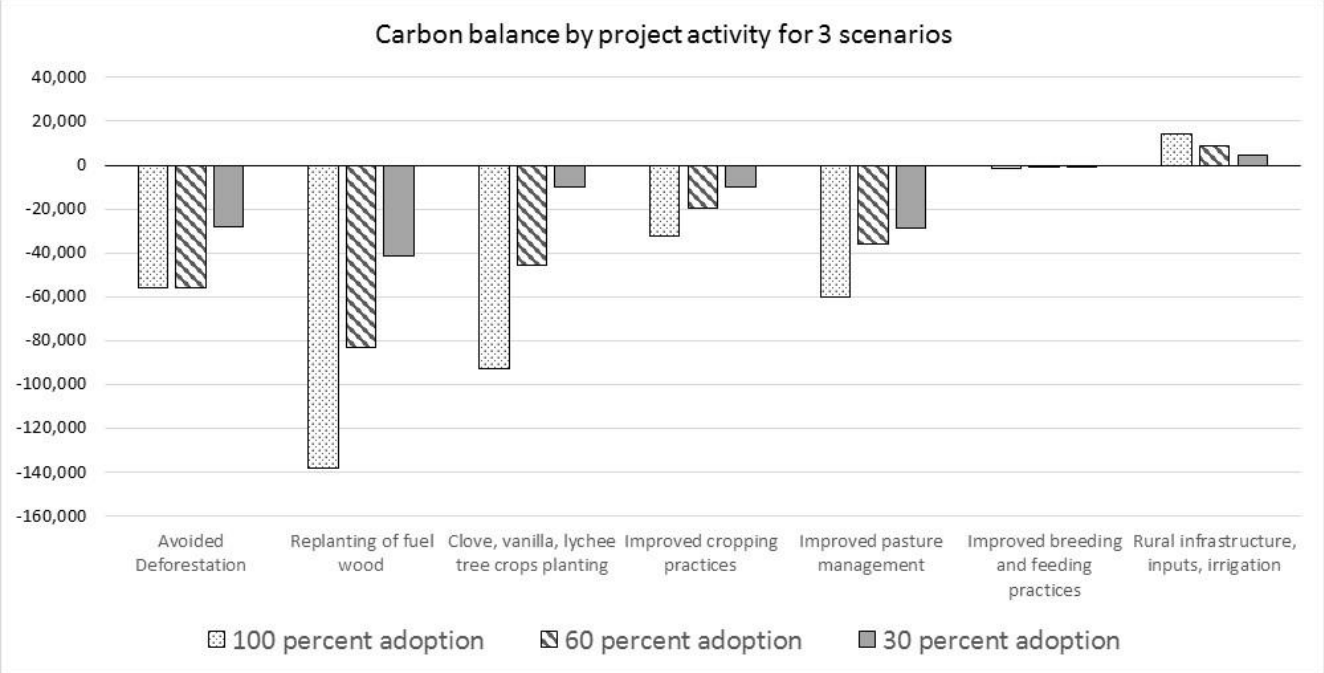


Table 12: tCO2-equ emission per activity for the without and with project scenario for 3 adoption scenarios over a period of 20 years

	100 percent adoption			60 percent adoption			30 percent adoption		
	Without	**With**	**Balance**	**Without**	**With**	**Balance**	**Without**	**With**	**Balance**
Avoided Deforestation	144,017	88,211	-55,807	144,017	88,211	-55,807	144,017	116,114	-27,903
Afforestation/Replanting of fuel wood	-27,691	-166,146	-138,455	-27,691	-110,764	-83,073	-27,691	-69,227	-41,536
Clove, vanilla, lychee tree crops planting	-25,555	-118,399	-92,844	-25,555	-70,966	-45,411	-25,555	-35,483	-9,928
Improved cropping practices	0	-32,550	-32,550	0	-19,530	-19,530	0	-9,765	-9,765
Improved pasture management	0	-59,910	-59,910	0	-35,946	-35,946	0	-28,837	-28,837
Improved breeding and feeding practices	167,747	166,512	-1,235	167,747	167,006	-741	167,747	167,376	-370
Rural infrastructure, inputs, irrigation	0	14,505	14,505	0	8,712	8,712	0	4,364	4,364
Total	258,518	-107,777	**-366,295**	258,518	26,722	**-231,795**	258,518	144,542	**-113,976**
Per hectare	128	-172	-300	164	-112	-276	237	52	-186
Per hectare per year	6	-9	-15	8	-6	-14	12	3	-9

Annex 8. Map of Madagascar with Indicative Project Areas