PROJECT INFORMATION DOCUMENT / INTEGRATED SAFEGUARDS DATA SHEET (PID/ISDS)

CONCEPT STAGE

.

Report No.:PIDISDSC15482

Date Prepared/Updated: 26-Oct-2015

I. BASIC INFORMATION

A. Basic Project Data

Country:	Madagascar	**Project ID:**	P154698/P157909
		Parent Project ID *(if any)*:	
Project Name:	Sustainable Agriculture Landscape Project (P154698)		
Region	AFRICA		
Estimated Appraisal Date:	01-Dec-2015	**Estimated Board Date:**	24-Mar-2016
Practice Area (Lead):	Agriculture	**Lending Instrument:**	Investment Project Financing
Sector(s):	Irrigation and drainage (30%), Forestry (30%), Flood protection (10%), Crops (30%)		
Theme(s):	Rural services and infrastructure (40%), Water resource management (30%), Other environment and natural resources management (30%)		
Borrower(s)	Ministry of Agriculture		
Implementing Agency	PN-BVPI		

Financing (in USD Million)

Financing Source	**Amount**
BORROWER/RECIPIENT	0.00
International Development Association (IDA)	50.00
Global Environment Facility	13.69
Total Project Cost	63.69

Environmental Category	B-Partial Assessment
Concept Review Decision	
Is this a Repeater project?	Yes
Is this a Transferred project? (Will not be disclosed)	
Other Decision (as needed)	

B. Introduction and Context

Country Context

Madagascar is endowed with many assets: a great potential for agriculture, mineral resources, abundant labor, and unparalleled biodiversity. Between 1995 and 2011, Madagascar's natural capital, including forests, agricultural land, fisheries and minerals, accounted for about one-quarter to one-third of its total wealth[1].

[1] Discounted present value of future consumption, measured in 2010 constant dollars.

With adequate management of natural resources, complemented by investments in physical and human capital and effective governance, it would be a prosperous country.

Almost the entirety of the country's natural wealth is found in rural and naturally intact landscapes. Agricultural land (cropland) accounts for 40 percent of natural capital, followed by forest products (timber and non-timber), protected areas (32 percent), and pasture land (26 percent). Energy and minerals, still in exploration phase, account for 2 percent of total wealth. The number is bound to increase as new reserves are discovered and data availability improves. These figures however underestimate the total contribution of biodiversity to wealth as they do not take into account the values of the country's biodiversity in its contribution in advancing scientific research[2].

The country's fantastic income potential is however being severely eroded, together with productivity in the rural space where the majority of the population lives. Madagascar's total wealth has been declining over time, and natural capital more sharply. Madagascar had US$7,955 in per capita wealth in 1995, but by 2011 the value had dropped to US$7,176 (a 10 percent decline in real terms). The drop in the real value of natural capital has been even more important: 26 percent, from US$2,796 per capita in 1995 to US$2,078 in 2011. This drop has been associated by and large with a drop in cropland (minus 33 percent), pasture land (minus 31 percent) and non-timber forest value (minus 42 percent). While the drop in natural capital values has been halted and reversed during the period 2003-2010, the trend reversed again more recently.

Madagascar is one of the poorest countries in the world with 91.2 percent of its population living with less than $2 PPP per day[3]. This predominantly rural poverty (close to 80 percent of the poor live in rural areas) has been further exacerbated by five years of crisis. Moreover, Madagascar is one of eight countries in the world (for which data are available) that have lower per capita income in 2010 than in 1960, and food insecurity (defined as a lack of availability and economic access to nutritious food sufficient for a healthy and active life), now touches approximately 20 percent of the population. 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, and greater proportions of people lack access to clean water and improved sanitation services.

In 2014 Madagascar emerged from a five-year long political and economic crisis, caused in part by the mismanagement of rural lands. During the political crisis the public sector was starved of resources due to economic stagnation and suspension of external aid. Yet, the government managed to keep the macroeconomic situation stable. This stability came at a heavy cost; public investments collapsed, as did social spending. Progress in poverty reduction has been minimal or inexistent. The percent of the population living with less than $1.25 a day went from 80.7 percent in 2005 to 79.1 percent in 2010, to 78.2 percent in 2012. Since the establishment of a democratically elected government in early 2014 the country has failed to regain sustained economic growth. Occurrence of a new crisis in the coming years cannot be excluded as the government continues to face high tensions with opposition political parties and the Parliament.

Weak institutions limit the path to sustained development. The administration operates and takes decisions based on a very weak or absent knowledge base. Moreover, it features weak technical capacity in agencies and ministerial departments at both national and local levels. The link between the central government and local administrations is tenuous and often relies on political ties. Opportunities for institutional strengthening are limited owing to the country's regional isolation, inadequate availability of modern technical skills and poor quality of academia. The development partners play an inadequate role as Madagascar continues to be one of the countries characterized by lowest Official Development Assistance in the world.

Sectoral and Institutional Context

[2] Ninety-eight percent of Madagascar's land mammals, 92% of its reptiles, 68% of its plants and 41% of its breeding bird species exist nowhere else on earth according to *Atlas of Population and the Environment*. American Association for the Advancement of Science/University of California Press (2001). Madagascar is also one of a dozen countries in which 70% of the world's species is found (Global Environment Outlook 3, 2003).

[3] World Bank, 2015. Madagascar Sistematic Country Diagnostic. World Bank: Washington DC.

A - Environment and natural resources management

Forests cover approximately 9.2 million hectares of the island of Madagascar, representing approximately 15.8 percent of the national territory. The system of protected areas of Madagascar (Système des Aires Protégées de Madagascar, SAPM) covers nearly two-thirds of the total forest area. It hosts one of the most important biodiversity hotspots worldwide.

Although deforestation rates on the national scale decreased between 1990 and 20104, more recent calculations are illustrative of increasing rates of deforestation, likely related to the break-down of law and order in the wake of the political crisis: for the Eastern Humid Forest ecoregion, deforestation increased from 22,771 ha/year (0.50 percent between 2005 and 2010) to 41,899 ha/year (0.94 percent between 2010 and 2013).

The rapidly vanishing forest cover is contributing to a stagnant and declining agricultural productivity due mainly to soil degradation via soil erosion by water5; and the negative impact of erosion on agriculture is exacerbated by soil fertility loss6. Moreover, climate projections tend to predict increased erosivity strength of the rain7.

The World Bank and a large number of development partners, have worked together since 1990 in support of Madagascar's National Environmental Action Plan (NEAP)[8]. Several important milestones9 were achieved during that timeframe, including: (i) the creation of key institutions (MNP, ONE, ANAE, etc.); (ii) the establishment of Community based NRM legal framework; and (iii) the setting up of innovative financing (FAPBM).

In spite of these achievements, the Environment Program has allowed to learn important lessons that need to be taken into account moving forward: (i) a shift towards a more integrated approach of conservation and development partnership is necessary; (ii) Governance constraints force us to think in a new way to engage with Government at national level and at local level, placing environmental issues more squarely at the center of the Government agenda; (iii) Community participation in natural resources management has been underutilized. Where it has happened, it did not produce the results expected; (iv) there is a largely unexploited potential for generating carbon credits from avoided deforestation and from degraded forests restoration. Madagascar is a pilot country of the Forest Carbon Partnership Facility (FCPF) and since May 2015 Madagascar has been working on its REDD+ Readiness process and has recently submitted a proposal (Emission Reduction Program Idea Note, ER-PIN) to an ambitious carbon finance scheme supported by the Carbon Fund, a multi-donor facility aiming at large scale purchases of carbon credits from REDD+ schemes that is part of the FCPF process.

An important recent development is that the ER-PIN has been accepted in the Carbon Fund pipeline and design of the Program Document will be done around the concept of integrating forest management into the broader objective of rural development. It will put the accent on the connections between agricultural intensification, optimization in the use of water resources and conservation of soils and forests in key watersheds.

[4] Nation-wide deforestation decreased from 0.83% between 1990 and 2000 to 0.53% between 2000 and 2005 and 0.40% between 2005 and 2010.
[5] The central plateau of Madagascar has very fragile soils, also due to the fact that the island is relatively young in geological terms. Surely however, the natural causes are exacerbated by an intense and often inappropriate human activity, aimed at expanding and improving the pasture for the livestock, to produce charcoal from woodcuts, and to generate income through timber trade, reportedly sometimes illegally.
[6] Due to lack of resources for purchasing the fertilizers, scarce availability of manure and poor agronomic techniques are at the roots of this condition.
[7] Projections lead to think that an increase in drought spells will be possible in the next decades. Also, while the overall amount of annual rainfall seems stable, the frequency and intensity of the showers are increasing.
[8] Details of the NEAP are in Annex 5
[9] Details of the achievements in Annex 6

B - Agriculture and rural development

Agriculture 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, 201510). The vast majority of the Malagasy population lives in households whose income is highly dependent on agriculture, and the agricultural sector contributes to about one-third of gross domestic product (GDP). For 81 percent of all households (89 percent in rural areas), agriculture is either a principal or secondary economic activity. Most of these households engage in subsistence farming, which is characterized by extremely low levels of productivity. Productivity is low for a wide range of reasons, including limited uptake of improved technology, such as high-yielding seed, fertilizer, and agricultural machinery; insecure land tenure under traditional tenure arrangements; poor access to credit (only 3 percent of farmers use formal credit); inadequate storage facilities; lack of appropriate institutions to ensure sustainability, and deficient transport infrastructure.

In spite of the above agriculture holds a great potential for Madagascar's development. First, agriculture can become a major driver of growth and poverty reduction. With policy reforms, institutional changes, and stepped-up levels of investment, including on watershed and water resources management, it is not unrealistic to expect that agricultural GDP could increase at 6 percent per year over the longer term. Because so many households in Madagascar make their living from agriculture, sustained agricultural growth of this order of magnitude would create employment for millions of rural households, meaning that the fruits of growth would be widely shared. Second, agriculture, mainly rice production, can provide the basis for improved food security, both at the national level as well as at the household level. The most concrete way to improve food security is likely to be through reducing the yield gap (field level yields as a percentage of maximum attainable yield under experimental conditions). A comparison of the results on experimental research stations in Madagascar with other countries that have achieved higher average yields indicates that the yield gap in Madagascar is much wider than elsewhere. A yield gap of 25 percent is reported by FOFIFA (the National Agricultural Research Institute), with results under experimental conditions exceeding 8 ton/ha whereas the average yield countrywide is 2.6 ton/ha. Third, agriculture could become a major source of export earnings. Compared to most other countries, Madagascar is richly endowed with underutilized land and labor resources. Opportunities exist both in the high-value commodities targeted at niche markets (e.g., fruits and vegetables, vanilla, spices, essential oils), but also in low-value bulk commodities that could be produced on an extensive scale (e.g., rice, maize, wheat, oilseeds, biofuels feedstock).

As for the outcomes of past interventions, the Bank-funded Madagascar Irrigation and Watershed Management Project (known in French as BVPI) demonstrated that watersheds impact on irrigation schemes (and vice-versa) in many different ways. One of the most visible ways is the impact of environmentally unsustainable practices on the slopes of the watershed, the development of lavakas and the subsequent loss of productive land downstream due to sedimentation. Another example is the fact that upstream water abstractions for and releases from irrigation have an impact on water quantity and quality further downstream in the watershed. The project also demonstrated the validity of the integrated watershed approach and beneficiaries' interest for that approach. It successfully tested a series of tools like Watershed Management Plans, Watershed Development Plans, Scheme Developments, etc. However, project results suggest that erosion control/soil conservation interventions on uplands should be allocated greater resources in order to be implemented at scale to demonstrate their impact on the downstream areas. In particular, erosion control/soil conservation measures (lavaka stabilization, afforestation, improved pasture management, etc.) should be carried out in a much more systematic and larger scale way, with the full involvement of the other administrations concerned (Ministry of Environment, Ministry of Water, Ministry of Livestock, etc.), and ensuring sustainability through formal maintenance and exploitation arrangements with local populations.

C- Water resources

Madagascar has more than approximately 3000 km of rivers over 256 river basins. Lakes occupy a total area of about 2000 km2 which equals about 0.3% of the territory. Average annual rainfall is 1500 mm on the national territory but the distribution is uneven and some areas of the island do suffer from lack of rain. Rainfall

in Madagascar actually varies from that of tropical rain forest to near desert conditions. The West is hot and the dry season is very long, up to nine months in the far south-west. Rainfall can be less than 400 mm/year. The East Coast is warm and humid with rainfall that can exceed 3000 mm/year and with almost no dry season. The renewable water resources are estimated at 337 km³/year, which is almost 15 times the total water required for the development of the irrigation potential, yet water scarcity across all water-using sectors is widespread. The legal frameworks governing Malagasy freshwater are: (i) the Convention of Ramsar since 1998, urging the Government to promote a rational use of wetlands within its territory; and (ii) the Water Code established in 1999 which aims to guarantee accessibility to water especially for disadvantaged strata. Lack of bulk water infrastructure is the major constraint in Madagascar concerning access to water. Less than 3 percent of the water used for irrigation is stored in dams and artificial lakes according to the FAO official estimate. In recent years, new dams have been built, but storage is still lagging far behind the agricultural irrigation needs. Much of the existing irrigation infrastructure is obsolete and canals are full of sediment. Climate change and the numerous droughts only exacerbate the situation.

D- Land tenure

The land certification system in Madagascar is based on a decentralized and cost-effective land management system that was launched 10 years ago and that has significantly improved land management services for rural communities. Despite the political crisis, a third of Malagasy Communes were equipped with land offices that are authorized and equipped to issue land certificates, which are documents with the same legal value as the traditional land title. By decentralizing land management, the procedure to obtain a written proof of ownership costs 30 times less and is 12 times faster than achieving the same under the former land titling system. To date, 500 municipalities have issued some 120,000 land certificates in the last years in a country where only 500,000 land titles were issued during a century of land administration. Despite this progress, the outcomes of the first land reform phase are still far from the initial objectives of the 2005 Land Policy Letter, which aimed to achieve nationwide land rights registration in a country of approximately 10 million parcels.

The Madagascar Agriculture Rural Growth and Land Management Project (P151469) will support the existing institutions in charge of the land management, i.e. the local land offices and regional land administration services and will develop capacity to facilitate inclusive agribusiness investment. These efforts will also support the implementation of the landscape project. It will also provide support at the central level to the management of the national land administration system and to the Land Reform Coordination Unit.

D - Moving towards a landscape approach

The balance between natural resources and livelihoods is extremely fragile. Local, often isolated, rural populations depend upon the country's natural resources to ensure basic livelihood. Generally, the further away from urban centers, the more precarious living conditions are. Livelihoods heavily depend on subsistence agriculture, fragile pasture lands, timber and fuel wood, small scale fisheries, each rarely in connection to markets and often in direct or indirect relationship with forests and other natural resources. Population growth has increased demand for agricultural land both for subsistence production and for cash crops and has consequently increased the pressure on forests. Poor soil management in areas outside of forests reinforces expansive land clearing and incursions into forest areas where the soil is more fertile.

National demand for agricultural land is on a collision course with environmental protection goals. Moreover, poverty reduction does not stand to win from this. The sector approaches adopted so far, of which the Environment Program and the BVPI are notable examples, have taught that project risks and keys to success are found outside the boundaries of the sectors. Deforestation has to be dealt with by giving sustained development opportunities to local communities, and agricultural productivity relies on effective watershed planning and water resources management. Yet these problems have not been dealt with in an integrated way.

[10] World Bank, 2015. Madagascar Systemic Country Diagnostic. World Bank: Washington DC.

The vision for the future of watershed management is to strengthen the links between agriculture and environment, both on the Malagasy and the Bank sides. Specifically, the proposed project wishes to address the increasing soil erosion problems causing siltation (sand deposit) of rice fields by tackling degradation in the upper watershed or even the entire river basin, not only in the immediate watershed through efforts in integrated landscape management (ILM). The proposal would therefore be to contemplate the full scale of the agriculture-environment and development-conservation nexus, and designing corresponding solutions across the landscape.

Relationship to CAS/CPS/CPF

The Systematic Country Diagnostic (SCD), approved by the Board of Executive Directors in September 2015, will inform a new Country Partnership Framework (CPF)11. From the SCD, it is clear that rural growth, agriculture sector development and the management of natural capital are crucial to remove constraints to reduce extreme poverty and promote inclusive growth. The proposed project will stand for a logical follow-up to the BVPI and the Environment Program (EP).

The SCD argues for the development of a landscape approach to project finance and carbon finance. Involving communities in conservation will often require boosting agricultural productivity. Agricultural intensification will in turn require healthy watersheds and forests. Developing actions that are spatially integrated will mean a bigger solutions space and the possibility to exploit synergies across sectors. In addition, being a pioneer on forest carbon, and having being accepted to prepare an Emissions Reduction Program Document to the Carbon Fund of the Forest Carbon Partnership Facility (FCPF), Madagascar could potentially become a leader in addressing deforestation, reduce forest degradation, increase agricultural productivity and the use of biomass energy in an integrated approach that enhances food security, increases the resilience of local communities and environments to climate change and raises new finance for conservation. The proposed project would promote agricultural productivity and natural resources conservation by connecting the two through information, knowledge sharing, and institutions.

The proposed Project has been conceived in a close coordination with other development partners active in the targeted sectors, some of whom may have an interest in parallel or co-financing. The European Union (EU), the Japanese International Cooperation Agency (JICA), the German International Cooperation (GIZ), the United States Cooperation (USAID), the International Fund for Agricultural Development (IFAD), the French Development Agency (AFD)

C. Proposed Development Objective(s)

Development Objective(s)

The proposed objective of the project is to improve agricultural productivity and management of associated natural resources in selected landscapes, and to set up a landscape approach to promote sustainable agriculture nationwide in Madagascar.

Key Results

PDO level:

i. (CORE) Agricultural yield (tons/ha)
ii. (CORE) Area restored or re/afforested (ha)
iii. (CORE) Direct project beneficiaries (number), of which female (percentage)
iv. Number of Watershed Management Plans designed, consulted and approved.

Intermediate level (tentative):

i. Setting up a nationwide landscape approach to sustainable agriculture
    1. (CORE) Operational water user associations created and/or strengthened (number)
    2. (CORE) Target population with use or ownership rights recorded as a result of the project (#)

[11] An Interim Strategy Note (ISN), which followed the unconstitutional change in Government in 2009 and the application of OP/BP 7.30, has been supporting a cautious, strategic and selective approach to new operations in Madagascar to mitigate the heavy impact of the crisis on the most vulnerable populations.

3. (CORE) Land area where sustainable land management practices have been adopted as a result of the project (ha)
4. (CORE) Land area brought under a catchment system as a result of the project (ha)
5. (CORE) Reforms in forest policy, legislation or other regulations supported (Yes/No)
6. (CORE) Government institutions provided with capacity building support to improve management of forest resources (#)

ii. Agriculture (indicators and targets apply to selected landscape)

7. (CORE) Technologies demonstrated in the project areas (number)
8. (CORE) Clients who have adopted an improved agricultural technology promoted by the project (number)

iii. Irrigation (indicators and targets apply to selected landscape)

9. Area provided with irrigation and drainage services (ha)
10. Water users provided with new/improved irrigation and drainage services (number)

iv. Watersheds (indicators and targets apply to selected landscape)

11. (CORE) Forest area brought under management plans (ha)
12. (CORE) People in targeted forest and adjacent communities with increased monetary or non-monetary benefits from forests (#)
13. (CORE) People employed in production and processing of forest products (#)
14. (CORE) Forest users trained (#)
15. Carbon credits from avoided deforestation (# teq CO2)

D. Concept Description

The project comprises two technical components covering major strategic orientations: (i) Setting up a nationwide landscape approach to sustainable agriculture; (ii) On the ground landscape interventions. The third component includes project management and a zero budget line that provides finance contingent on an emergency triggered by an extreme event:

Component 1: Setting up a nationwide landscape approach to sustainable agriculture (US$ 10 million)

The project will support government efforts to adopt a landscape approach for the promotion of sustainable agriculture nationwide. A number of key elements of a landscape approach will be developed such as the capacity to generate information to understand the linkages between different elements of the landscape. The project will also support institutions that make use of information and plans in the performance of their tasks. The project will also support a national level program for sustainable agriculture under a landscape approach, including policy reform and formulation, coordination with key line ministries and other strategies and programs. The Project will finance the following three sub-components:

Component 1.1 Information and planning: The sub-component will contribute to improving the knowledge base, monitoring systems and analytical tools to modernize planning and stakeholder engagement. Key activities are proposed to include: (i) Knowledge Base (e.g., mapping/remote sensing/GIS, data rescue to computerize paper records, surveys – e.g., groundwater/ land use change, documentation); (ii) Monitoring Systems (ground-based and use of earth observation data products); (iii) Analytical Tools (modeling tools, Decision Support Systems); (iv) Knowledge Products and Services for Stakeholder Engagement (Atlases, Annual Resource Monitoring Reports, other publications, portals, Apps); and (v) Program Framework facilitation (Landscape Development Plan, basin/watershed plans, investment preparation studies – including surveys, designs, technical/ economic/ environmental/ social/ institutional/ financial assessments and stakeholder consultation; accessing finance – including climate finance; investor forums). The key outcomes of this component is the formulation of Landscape Development Plans which will serve as a basis for selection of investments within the selected specific landscapes.

Component 1.2 Institutional Capacity: This component seeks also to improve the policy and institutional framework and capacities in the country to manage the evolving risks and to take effective advantage of opportunities in modernizing agriculture and landscape-scale natural resources management. The key target

institutions include Government Agencies (National, State, Region, Commune), Community Institutions (e.g., WUAs, Kolo Harena, forest associations), Research Institutions/Academia, and the general public. Key focus activities include: (i) Institutional Infrastructure: Modernization of institutional infrastructure and equipment (modern IT-enabled collaboration-enhancing infrastructure, connectivity, university analytical centers, farmer field schools, etc.); (ii) Capacity Building Activities: Improving outreach and extension services (community radio stations, TV programs to enable experience sharing and innovation, mobile extension services, extension information packaging and access, web portals, mobile Apps), manuals/ harmonized codes of practice, enforcement capacity, resource monitoring/State of the Landscape reports, knowledge exchange & forums, Innovation fund/ competitive grants/research, micro-finance/revolving funds, partnerships with academia/internships, innovative private-public partnerships, strengthening producers associations, community groups, water users associations; and (iii) Policy Strengthening Activities: Riparian zoning, tenure security/land titling, certification (e.g., National Organic Certification process), green labelling/branding, resilience (hydromet advice/early warning, construction codes), public-private partnerships, performance-based incentive systems (e.g. FDL).

Component 1.3 Strengthening of policy framework: The promotion of sustainable agriculture through a landscape approach will require that land use and land use planning are anchored on a robust policy framework. Key areas for policy formulation and reform include (i) the strengthening of land tenure system; (ii) the development of the National Sustainable Development Plan and National Policy for Sustainable Development; (iii) strengthening the suite of laws and regulations around Community-based natural resources management; among others. At the same time, the project will support the operationalization of the relevant Sustainable Development Goals. The government is now setting up a timeline for including the goals into its key strategic documents and plans.

Component 2: Landscape Development (US$ 50 million)
On the basis of the Landscape Development Plan proposed in Component 1, this component seeks to facilitate and finance preparation, implementation, monitoring, and scaling-up of on-the-ground investments to improve agricultural performance and effective natural resources management in a landscape context. The Project will support two sub-components:

Component 2.1. Agriculture and Irrigation Development
The objective of this component is to lay the foundations (i) for improved market access and sustainable intensification and diversification of irrigated and rainfed rice production systems in the watersheds targeted by the Project; and (ii) for improved management, maintenance, and sustainability of irrigation services provision in selected small- to large-scale irrigation schemes through targeted rehabilitation of irrigation infrastructure. This component involves the project area as a whole irrigated scheme and upland areas. It is part of a coherent framework which is "Landscape Development Plan" proposed in Component 1. The Project will finance the following two sub sub-components:
Component 2.1.1 Intensification, Diversification and Commercial Agriculture (US$ 10 million) to improve access to markets and supports the development of commercial agriculture value chains, through innovative technologies for sustainable production, storage and processing, and a stronger enabling environment at the site level. The project is funding services, work, equipment, training and operational costs. Activities can be adjusted to specific needs of each site, and include (a) the support to the development of dynamic market-driven supply chains, particularly by *creating and strengthening links between producers and markets*; (b) dissemination of technologies for sustainable agricultural intensification and diversification in lowlands and uplands, including support and advisory services for the implementation of agro-ecological and agroforestry techniques in the upper parts of the watersheds. The funding will contribute in assuring that intensification and diversification of agricultural production is based on agro-ecological principles. To this end, high quality technical assistance is provided. GEF support will be adjusted to specific environmental conditions of the four project zones. Capacity strengthening of farmers and technicians in agro ecological techniques and principles is receiving priority, as well as the testing and adaptation of techniques in farmers' fields.

Component 2.1.2 Water Resources Management and Irrigation Development (US$ 20 million) to improve water resources management as whole and management, maintenance and sustainability of irrigation services provision in the selected landscape sites. This component will support extension of agriculture development through: (i) recalibration, reshaping and compacting principal canals and intakes supplying irrigated areas; (ii)

rehabilitation and development of irrigation schemes; (iii) works to install or improve main pumping stations; and (iv) capacity building of water user associations and farmers to ensure that water resources are managed properly and the systems are well operated and maintained.
Under the overall Landscape Development Plan proposed in Component 1, it is envisaged that a Scheme Development Plan (SDP), annual Performance Contracts (PC) negotiated between (F) WUAs, the Communes and Regions, and the Direction Régionale de Développement Agricole (DRDA) will also be supported under this component. The technical design studies, civil works and construction supervision will be financed. Investments will be determined in a competitive way such that the better performing sites (in terms of O&M cost recovery) will be prioritized for investment. The sub-component will also promote water-conserving irrigation technologies.

Component 2.2: Watershed Development (US$ 20 million)
The objective of the component is to finance those aspects of the landscape plan that aim at (i) optimally use land in watersheds immediately surrounding irrigation perimeters in the targeted landscapes; (ii) manage resources and space in upper watersheds. The Project will finance the following sub sub-components:
Component 2.2.1 Closer Watersheds immediately surrounding irrigation perimeters, the sub- component would contribute to: (i) protect watersheds by reducing erosion and sedimentation through soil restoration works and techniques; (ii) increase the productivity and sustainability of agricultural production based on Agro-Silvo-Pastoral systems including agroforestry, livestock & grazing management; collection, propagation, and integration of native species; (iii) develop sustainable household energy sources such as through ethanol value chain and sustainable charcoal; and (iv) strengthen the management of natural resources to improve the environment and living conditions.
Component 2.2.2 Upper Watersheds in addition to the applicable activities highlighted above, this sub-component will support: (i) the management of relevant protected areas; (ii) the conservation of non-protected forests through the promotion of sustainable forest management practices and the development of timber value chains which could include precious woods in suitable locations (accompanied by the development of traceability mechanisms); (iii) eco-tourism activities through public-private partnerships. This work will be supported through the development of a national REDD+ strategy and through the carbon finance opportunities that a REDD+ system will allow. Notably, some of the pre-selected landscapes are already in the accounting area of the proposed ER-PIN submitted by Madagascar to the Carbon Fund of the FCPF.

Component 3: Project Coordination and Management, and Contingency Fund (US$ 3.69 million)
The objective of this component is to manage and use resources in accordance with the Project's objectives and procedures and to evaluate its results, and to establish a zero budget emergency contingency fund. It will support two sub-components.

Component 3.1 Project Coordination and Management A Project Implementation Unit with strong records in implementing World Bank projects will be established with the following technical implementation capacities: (i) mapping and GIS; (ii) public sector performance; (iii) agricultural intensification and infrastructure; (iv) environmental management; (v) decentralization and community development. Possible linkages with the PIU that will implement the Agriculture Rural Growth and Land Management Project (P151469) and the PN-BVPI that has implemented several Agricultural Bank-funded projects are also to be explored. The project will require an innovative and multi-disciplinary implementation approach, guided by a multi-ministry oversight committee. Project oversight would be led by the Ministry of Agriculture and the Ministry of Environment, Ecology, Sea and Forests, also involving the Ministries of Water and Interior and Decentralization.

Component 3.2 Emergency Contingency Fund Zero Budget This sub- component establishes a disaster recovery contingency fund that could be triggered in the event of a natural disaster through formal declaration of a national or regional state of emergency, or upon 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 this sub-component 3.2 to facilitate rapid financing of a positive list of goods and services related to Components 1 and 2. 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).

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GEF Incremental reasoning and the Aichi targets

The incremental GEF support that will generate environmental benefits by promoting the uptake of sustainable land use management and biodiversity conservation practices by agro-pastoral communities in order to reduce land degradation and support sustainable development in key watersheds. The proposed project will build upon results and lessons of previous engagements to link community driven initiatives with the need for safeguarding biodiversity, enhancement of carbon stocks in forest and non-forest lands and other ecosystem services at appropriate scales, through both investments and technical assistance. The project will also contribute to build enabling environment for the country's readiness to implement REDD+.

The proposed project aligns with the GEF-6 focal area objectives[12], including: i) for **biodiversity:** Obj BD1; Obj BD2, which relates to targets 5,6,7,8,9,10 of the Aichi targets; Obj BD3, relating to targets 1,2,3,4 of the Aichi targets; Obj BD4 that relates to targets 17,18,19,20 of the Aichi targets. ii) **For land degradation**, it aligns with Obj LD1 that relates to targets 7&8 of the Aichi targets; Obj LD2 and Obj LD3, relating to targets 14 and 15 of the Aichi targets. iii) **For climate change**, the project aligns with Obj CC3 relating to target 15 of the Aichi targets; and finally, iv) **for sustainable forest management**, it aligns with Obj SFM1, Obj SFM2, Obj SFM3, Obj SFM4 related to target 7, 14, 15, 17,18,19,20 of the Aichi targets[13].

II. SAFEGUARDS

A. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

Four project sites have been preselected with very different agro ecological environments, farming systems and social structure/ institutions. The targeted sites include:

i. In the Eastern coastal zone agro-ecoregion: (a) Andapa landscape in SAVA region; (b) Iazafo landscape in Analanjirofo region; and (c) Masoala landscape in Analanjirofo region.

ii. In the North-Western low altitude plains agro-ecoregion: Marovoay landscape in Boeny region;

Potential sites have been identified by a joint agriculture/environment government's team based on a number of criteria for site selection. Some of these criteria include:

ii. Likelihood of demonstrable results (e.g. existence of earlier investments; accessibility);

i. Strength of spatial linkages across landscape (e.g. conservation (high ecological value), high agriculture potential and irrigation potential);

ii. Innovation and learning potential (e.g. new technologies/approaches that show promise for paradigm shifts and scaling-up);

iii. Preparation readiness (e.g. political commitment; information availability; enabling policy adequacy (e.g. fiscal/legal); institutional capacity; investment preparation status).

B. Borrowers Institutional Capacity for Safeguard Policies

Borrower has a strong and proved experience and expertise to implement World Bank funded operations. Experience gained under the previous and recent agriculture operations such as BVPI (Bassin Versants et Perimetres Irrigues), third environmental project as well as many others sectoral operations in Madagascar have given the country in general, key line ministries in particular a fairly good commend on how to adequately deal with safeguards risks and implement mitigation measures. This project will build upon previous experience to ensure adequate handling of safeguards issues throughout the project life cycle.

C. Environmental and Social Safeguards Specialists on the Team

12 The GEF 6 focal area objectives are available at: https://www.thegef.org/gef/sites/thegef.org/files/webpage_attached/GEF6_programming_directions_final_0.pdf
13 The Aichi biodiversity targets are available at https://www.cbd.int/sp/targets/

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D. POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The project proposed activities in the component 2 may lead to some social and environmental impacts. Most adverse environment impacts are expected to be limited and temporary, which can be mitigated through implementation of Environmental Management Plan. Since the exact locations of these infrastructure investments and activities cannot be determined prior to project appraisal, the Borrower will prepare an Environmental and Social Management Framework (ESMF) that includes an Environmental and Social Management Plan (ESMP). The ESMF report will be publicly disclosed both in – country and at the World Bank Infoshop prior to project appraisal. It is anticipated that there will be limited impacts on the surrounding environment, or communities. An Environment and Social Management Framework (ESMF) has been prepared as specific sites and alignment will not be known prior to appraisal. Guidance on managing environment and social concerns including avoidance, mitigation and monitoring of concerns will be included in the ESMF.
Natural Habitats OP/BP 4.04	TBD	The ESMF report will determine whether natural habitats are likely to be affected by the proposed project. The instruments to mitigate any potential impact are described under the Environmental and Social Management Framework. The ESMF will indicate the extent to which natural habitat might be affected by the physical investments and thus will provide appropriate guidance for sub-project implementation. The ESMF will be publicly disclosed both in- country and at the World Bank InfoShop prior to appraisal.
Forests OP/BP 4.36	Yes	The project could finance a reforestation under watershed management and others project activities could triggered this policy. The ESMF report will determine whether forests are likely to be affected by the proposed project. The ESMF will indicate the extent to which forests might be affected by the infrastructure investments and thus will provide appropriate guidance for sub-project implementation. ESMF will be publicly disclosed both in- country and at the World Bank InfoShop prior to appraisal.

Pest Management OP 4.09	Yes	Intensification, diversification and commercial agriculture which conduct to improving agricultural performance may lead to the extensive use of pesticides to boost agriculture productivity. To ensure safe pest management, the project will prepare a Pest Management Plan for Sub-project, building on recent experience. The PMP will be a standalone report.
Physical Cultural Resources OP/BP 4.11	TBD	Given the physical feature of expected project areas and nature of the proposed physical work, the possibility of finding evidence of physical cultural resources during physical work is very low. The project would not involve significant physical work, excavations and demolitions. However, the ESMF will include a procedure for dealing with cases of chance finds.
Indigenous Peoples OP/BP 4.10	No	No indigenous people lands and properties is these project areas.
Involuntary Resettlement OP/BP 4.12	Yes	No physical displacement of people is expected under this project. However, the proposed project activities in components 3 may lead to the acquisition of land, loss of assets and/or means of livelihood. Since the exact locations of these infrastructure investments cannot be determined at this stage, the Borrower will prepare a Resettlement Policy Framework (RPF). The RPF report will be publicly disclosed both in–country and at the World Bank Infoshop prior to project appraisal. Where and when warranted, Full resettlement Action Plans (FRAPs) or Abbreviated Resettlement Action Plans (ARAPs) will be prepared, reviewed, cleared and disclosed.
Safety of Dams OP/BP 4.37	Yes	While the project will not finance the construction of large dams, the policy on Safety of Dams is triggered as (i) the project might build smaller check dams and (ii) irrigation schemes that are identified for rehabilitation rely on existing dams. It could be identified irrigation infrastructures which need rehabilitation downstream of existing large dam or reservoirs. Dam safety issues will be considered before final selection of these subprojects to project financing.
Projects on International Waterways OP/BP 7.50	No	Madagascar is an Island. The policy on Projects on International Waterways is not triggered given location and potential impact of the Project.
Projects in Disputed Areas OP/BP 7.60	No	There are no disputed areas associated with the Project.

E. SAFEGUARD PREPARATION PLAN

1. **Tentative target date for preparing the Appraisal Stage ISDS:**

   Prior appraisal stage

2. **Time frame for launching and completing the safeguard-related studies that may be needed. The specific**

studies and their timing should be specified in the Appraisal-stage ISDS.

The specific studies and their timing should be specified in the PAD-stage ISDS. ESMF - IPMP - Generic Dam Safety analysis with the Small Dams Security Manual - Resettlement Policy Framework Before Appraisal.

III. Contact point

World Bank

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V. Approval

Task Team Leader(s):	Name:Ziva Razafintsalama,Giovanni Ruta	
Approved By:		
Safeguards Advisor:	Name:	Date:
Practice Manager:	Name:	Date:
Country Director:	Name:	Date:

[1] Reminder: The Bank's Disclosure Policy requires that safeguard-related documents be disclosed before appraisal (i) at the InfoShop and (ii) in country, at publicly accessible locations and in a form and language that are accessible to potentially affected persons.