



# Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)

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Appraisal Stage | Date Prepared/Updated: 11-Apr-2018 | Report No: PIDISDSA24651



**BASIC INFORMATION**

**A. Basic Project Data**

Country Madagascar	Project ID P159756	Project Name Integrated Urban Development and Resilience Project for Greater Antananarivo	Parent Project ID (if any)
Region AFRICA	Estimated Appraisal Date 30-Mar-2018	Estimated Board Date 17-May-2018	Practice Area (Lead) Social, Urban, Rural and Resilience Global Practice
Financing Instrument Investment Project Financing	Borrower(s) Ministère des Finances et du Budget	Implementing Agency Ministère des Projets Présidentiels, de l'Aménagement du Territoire et de l'Équipement	

Proposed Development Objective(s)

The proposed Project Development Objective is to enhance urban living conditions and flood resilience in selected low-income neighborhoods of Greater Antananarivo; and to improve the Recipient’s capacity to respond promptly and effectively to an Eligible Crisis or Emergency.

Components

- Improving urban environment, services and resilience in targeted areas
- Strengthening institutional capacity for resilient urban governance
- Project Management, Coordination, Monitoring and Evaluation
- Contingent Emergency Response Component (CERC)
- Unallocated

**Financing (in USD Million)**

Financing Source	Amount
International Development Association (IDA)	75.00
<b>Total Project Cost</b>	<b>75.00</b>

Environmental Assessment Category

A - Full Assessment



Decision

The review did authorize the preparation to continue

## B. Introduction and Context

### Country Context

1. Madagascar is an island nation with unparalleled biodiversity and significant natural wealth, which serve as great resources for the country's economy. Agriculture, including fishing and forestry, accounts for more than 25 percent of the country's GDP, which was estimated at \$35.49 billion in 2015. The sector also employs roughly 80 percent of Madagascar's work force. Macroeconomic stability in recent years has been an asset to the country, with inflation hovering around 6-7 percent and the fiscal deficit amounting to less than 2 percent of GDP.
2. However, a clear majority of the 23 million (2015) Malagasy are extremely poor. Extreme poverty (per capita consumption under US\$1.90 2011 Purchasing Power Parity (PPP) per day) hovered around 80 percent of the population between 2001 and 2012. Over the same timeframe, absolute poverty (US\$2 PPP per capita per day) rose from an estimated 88.9 percent in 2001 to 92.7 percent of the population in 2005, and stayed above 90 percent until 2012. In terms of social indicators, the rate of enrollment in elementary school was at 69.4 percent in 2012, and immunization coverage, a proxy indicator for the overall performance of the health system, was at 60 percent in 2013. According to the 2015 Global Hunger Index (GHI), Madagascar has an "alarming" GHI score of 36.3, with stunting for under-five year old children rising to close to 50 percent. These high levels of stunting are closely linked to the extremely poor levels sanitary quality. Only 12 percent of the Malagasy had access to improved sanitation in 2015, compared to the low-income countries average of 28 percent.
3. Madagascar is slowly emerging from a protracted period of economic stagnation and political crisis triggered by strong protests and an unconstitutional change of power in February 2009. Following a lengthy mediation process, Madagascar held new presidential elections in 2013. Those elections, and the international recognition of the newly elected Government of Madagascar, brought an end to a political crisis which lasted five years and had devastating effects on the economy, poverty and social welfare.
4. The political context remains challenging and the current government continues to be "fragile" as scheduled presidential elections approach in late 2018. If successful, this will be the first time in Madagascar's history that a Presidential term starts and ends with a constitutional transfer of power through elections. Many tangible advances have been achieved since the return to constitutional order in 2014, including the elaboration of a new National Development Plan (2015-2019) released in April 2015. The country has, however, encountered difficulties in moving ahead to implement the plan. Many of the urgent reforms that are pending relate to fiscal policies, on both the revenue and expenditure fronts, both as a prerequisite for financing public investments as well as for the social expenditures necessary for fighting poverty and pursuing sustainable development. For instance, the low tax revenue, representing only 9.7 percent of GDP in 2014, which is well below the low-income countries average of 15.6 percent of GDP (2005-2012 average), does not support the public investments necessary for development nor does it



provide for the adequate provision of public services.

5. Finally, due to its location, topography and socioeconomic conditions, Madagascar is also one of the world's most exposed and vulnerable countries to climate change, with the most likely risks involving extreme weather events such as cyclones, flooding, and drought. A disaster risk modeling study completed at the end of 2016 shows that Madagascar faces Average Annual Losses (AAL) of US\$100 million for all combined hazards (cyclone, flood and earthquake) and that every year, there is a 10 percent probability that damages will exceed US\$240 million and a 5 percent probability that they will exceed US\$600 million. From 1990 to 2015, at least 65 major climate-related disasters were recorded in Madagascar, with more than 50 cyclones. Greater Antananarivo (GA) was most recently hit by catastrophic flooding in January 2015, which affected an estimated 93,000 people and displacing 40,000, and had an estimated economic impact equivalent to 1.1 percent of GDP. The country's resilience is constrained by the pre-existing vulnerability of the population and the weakness of the public infrastructure and services.

## Sectoral and Institutional Context

### a. Urban context

6. Madagascar and GA are witnessing rapid urbanization. The country today houses more than 6.9 million urbanites compared to 2.8 million in 1993. Cities account for approximately three fourths of the national GDP, with the capital contributing 50 percent of GDP (*Defi Urbain* report). The *Commune Urbaine d'Antananarivo* (CUA) has a population of about 1.8 million (2011) and is growing exponentially. UN Habitat estimates that the CUA's population is growing at a rate of 5 percent a year, driven by both population growth as well as strong rural-urban and urban-urban (secondary cities to GA) migration trends. As such, the capital city gains approximately 100,000 new inhabitants per year and has experienced a 50 percent increase of its built environment since 2003. The GA metropolitan area, encompassing the CUA and 36 other communes, hosts nearly 3 million people. The lack of employment opportunities for the growing population has led to a concentration of poverty of more than 66 percent in GA, compared to a national urban poverty rate of about 51 percent<sup>1</sup>. The average per capita household consumption after rental payments is estimated at 1,753 thousand MGA or US\$538 per year in GA.

7. The urban poor live in settlements that have fewer basic services and are residing in housing that is often temporal in nature. It is estimated that about 70 percent of the CUA's settlements are informal. Slum dwellers are often unskilled laborers with extremely low revenues whose limited economic opportunities contribute to perpetuating the degradation of their living environment. This precariousness has led to a range of additional issues, such as the growing phenomenon of crime and violence, which threaten citizens' security and increase negative social and economic externalities. Overall, informal settlements disproportionately affect the poor and undermine other poverty reduction and economic development efforts.

8. Being in the heart of the highlands of Madagascar, Antananarivo is situated on 12 laterite hills and alluvial plains drained by three rivers. The region receives an average annual rainfall of 1300mm, of which

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<sup>1</sup> World Bank, 2017. Greater Antananarivo: Urban Poverty and Resilience Study.



90 percent is concentrated in the rainy season. The growth of the city on a natural floodplain explains the great challenge of drainage in an increasingly urbanized setting, making it particularly vulnerable to urban flooding.

9. The CUA's high exposure to flooding presents a significant threat to the high concentration of people and assets in the flood plain, especially for the poor. Competition for space makes households locate in areas that are at risk of floods but close to urban labor markets. In some municipalities of GA, up to 50 percent of the built environment is directly located in flood-prone areas (20-year return flooding). A recent survey found that among GA households reporting that they are affected by floods, 30 percent are within the lowest per capita consumption quintile. Recurring flood events have significant negative impacts on capital accumulation in these lower quintiles and may contribute to lasting poverty traps<sup>2</sup>.

10. In addition to being highly exposed to flooding, CUA faces low access to safe water and sanitation. Only 16 percent of Madagascar's urban dwellers have access to improved sanitation, compared to a low-income country average of 39 percent. The average access to potable water in Madagascar's urban cities decreased from 63 percent in 2005 to 61 percent in 2012. Poor access to drinking water and sanitation facilities has had significant negative impacts on public health, education, poverty, nutrition as well as the environment. Diarrheal diseases are the second leading cause of death after malaria, and affect 51 percent of children under 5 years. The poor levels of health and sanitation gave rise to a national outbreak of the plague in 2017, that infected over 2,000 people and killed more than 200. Contrary to previous smaller outbreaks, most cases were identified in the informal settlements of CUA and the surrounding urban areas.

#### **b. Failing Infrastructure and Deficient Urban Services**

11. Rapid urbanization is increasing the already acute pressure on a limited stock of existing infrastructure and deficient local services. Challenges and shortcomings can be observed across a variety of sectors in the city.

12. **Urban Drainage and Water Management.** The rapid and largely unplanned urbanization of GA has significantly altered the natural drainage capacity of the environment. The drainage canals in their current state have a greatly reduced ability to discharge surplus water from the urban area due to their poor condition, high pollution levels, lack of regular maintenance, and highly limited capacity throughput (with sediments and solid waste completely filling the canals in certain places or constructions, such as low bridges and buildings, covering the canals and drainage infrastructure). In addition, the elevation levels of the three main rivers (Ikopa, Sisoany and Mamba) are at a higher elevation than the low-lying plain area. Current uncontrolled practice of backfilling low lying areas for speculative land development contributes to the aggravation of floodings. To protect the city from riverine flooding, dikes were built along the main rivers more than 50 years ago. These dikes were designed to provide protection against floods with return periods of 20 and 50 years. However, many dikes are in poor condition and dike breaches have occurred during nearly every recent flooding event.

13. The *Autorité pour la Protection contre les Inondations de la Plaine d'Antananarivo* (APIPA) is

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<sup>2</sup> World Bank, 2015. Shock Waves



responsible for the maintenance and operational management of both the dike system and main canals and pumps of the storm water drainage system of Greater Antananarivo. APIPA also operates and maintains a Flood Early Warning System for the metropolitan area. At the same time, the *Ministère de l'Eau, de l'Energie, et des Hydrocarbures* (MEEH) oversees service provision of water supply, sanitation, and flood management for Antananarivo.

14. Solid Waste Management. Antananarivo generates approximately 1,100 tons of solid waste per day. This rate is projected to reach 1,600 tons per day by 2020 due to population increase and changes in the mode of consumption. The waste collection rate in 2016 was approximately 75 percent but projections show that this rate could drop below 50 percent by 2020 if the means of waste collection and disposal are not improved. At the neighborhood level, pre-collection arrangements that rely on fokontany (neighborhood) organizations (RF2, for example) have been set-up and are working well in some but not all CUA neighborhoods. The variance in performance depends on the different levels of engagement between CUA-arrondissement-RF2, funding and equipment, and the presence of support organizations, among others. Finally, the current dumpsite of *Andralanitra* will reach full capacity in less than four years and an alternative long-term treatment and disposal landfill site has not yet been identified. The identification and development of a new landfill site will be a time-consuming process given the land scarcity in Greater Antananarivo that will require significant institutional coordination and investment. The SAMVA was created by the CUA as an autonomous entity to manage municipal solid waste within the CUA jurisdiction only. However, the SAMVA is critically underfunded, underequipped and unable to provide a proper service. A large portion of solid waste is thus disposed into illegal dumpsites or left in drainage channels.

15. Disaster Risk Management. The *Cellule de Prévention et Gestion des Urgences* (CPGU), a coordination unit within the Prime Minister's office, was created to provide high-level strategic advice on disaster risk management (DRM), primarily by mainstreaming disaster risk reduction into sectorial planning and programs. Its objectives are to reduce the vulnerability of the country's infrastructure and build resilience to climate hazards. The *Bureau National de Gestion des Risques et des Catastrophes* (BNGRC), under the Ministry of the Interior and Decentralization (MID), is in charge of the operational aspects involved in the management of disasters, as well as the coordination of emergency relief. Local Disaster Management Committees have also been established by municipal decree for each fokontany. However, staff turnover has been high due to ongoing changes in political landscapes.

16. Informal Settlements. The combination of rapid urbanization, high concentration of poverty, failing infrastructure, and deficient service delivery is leading to the proliferation and deterioration of informal settlements on both public and private lands, especially in unsanitary lowland areas that are highly susceptible to flooding. Today, it is estimated that about 70 percent of the CUA's settlements are informal with sub-standard housing (*Profil Urbain d'Antananarivo, UN Habitat*). So far, there have been limited government or donor efforts targeted at improving the resilience of informal settlements.

#### **d. Lack of Effective Metropolitan Governance, Municipal Finance, and Urban Land Management**

17. Several key institutions, both at central government and municipal government levels, are



designed to play a role in managing the city's growth and its metropolitan area. Strong tensions between the municipal and central governments in today's political landscape also deeply affect the sound management of the metropolitan area. The history between the opposing political parties governing the central government and the CUA translates into limited, if any, coordination between the central and local levels on issues related to metropolitan governance, shared services (flood protection, solid waste management, transport), financing, and planning.

18. The *Ministère rattaché auprès de la Présidence en charge des Projets présidentiels, de l'Aménagement du Territoire et de l'Équipement* (M2PATE) has a central role related to implementing policies connected to urban development as well as a cross-cutting function designed to coordinate the implementation of relevant urban infrastructure interventions across all departments. At the same time, the CUA retains a special status as the capital of Madagascar (Act N° 2015-011). Its powers and responsibilities mostly cover the challenges and needs related to social issues, roads, water, sanitation, hygiene, waste management, and municipal land management, amongst others. The CUA is run by an Executive Board that is led by the Mayor. The Mayor is also in charge of appointing a delegate for each of the six *arrondissements*. The *Agence d'Exécution des Travaux d'Intérêt Public et d'Aménagement* (AGETIPA) was created in 1993 to help execute infrastructure projects across a variety of departments. M2PATE handles technical oversight for both the CUA and AGETIPA. In practice, the numerous institutions and government agencies that provide services and are in charge of planning and enforcing urbanization norms have not been effectively coordinating across their areas of responsibility. Finally, as an example that institutional and governance systems have not yet caught up to the reality of the metropolitan area, the other 36 communes that are part of GA are still administratively considered as rural, even though most of them are highly urbanized. As GA continues to grow with almost half of the population living outside of the CUA, the 36 communes and their municipal governments will have an increasingly more relevant role to play in the urban growth patterns of the metropolitan area. No metropolitan-level authorities currently exist, however, to manage metro-wide issues.

19. Municipal Finance. The CUA has a voted annual budget of 35 billion Ariary (about US\$11.13 million), of which only 18 billion Ariary (about US\$5.72 million) are executed due to non-realized fiscal revenue and government transfers. Among the roughly 400,000 properties within the vicinities of the city, only 25 percent are formally registered and thus the remainder falls outside of the taxation system. Among those, only about 20 percent pay their taxes, which put severe limitations on the CUA's budget and illustrate the CUA's weak revenue generation capacity. Hence between 2007 and 2013, each year the CUA collected a mere 15 to 23 billion Ariary (about US\$4.77 to US\$7.31 million). The commune has roughly 3,500 employees, whose salaries take up to 83 percent of its executed budget and thus limit its investment capacity. Critical challenges include: (i) limited revenue streams and weak budget management leading to poor service-delivery and undermining public investment management efficiency; (ii) limited transparency and accountability of local governments dis-incentivizing citizens and private sector to pay their taxes; and (iii) political-economy constraints and institutional challenges undermining the efficiency of reforms.

20. Urban Land Management. GA suffers from a poorly functioning land market and deficient land management practices. Those range from (i) outdated and inadequate land policies; (ii) unenforced land use and zoning codes that have been formally adopted; (iii) poorly functioning and incomplete urban land registries that affects the land taxation system; (iv) a large number of undocumented land transactions and an underground land market; (v) a lack of adequate planning tools to operationalize broader planning





guidelines; (vi) weak knowledge of the existence of public assets and their best utilization; and (vii) perceived corruption and land capture by the elite and some economic parties, among others. Coupled with an absence of an inclusive housing policy, these factors have led to the massive proliferation of slums on public and private lands with their high concentrations in flood-prone areas. At the moment, three key initiatives are underway: (i) the Government is undertaking the preparation of an Urban Development National Policy; (ii) JICA is financing the updating of the *Plan d'Urbanisme Directeur* (PUDi) for GA; and (iii) the Government is seeking private financing to prepare detailed land use plans for multi-use zoning of specialized redevelopment districts in the CUA that would include strategic infrastructure.

21. World Bank Engagement in Urban Development and Water Sector in Madagascar. The World Bank has not been involved in urban development and the water sector in Madagascar for over a decade. The catastrophic flooding of January 2015 provided evidence of the consequences of dysfunctional urban systems and the inability of multiple agencies and levels of government to coordinate on strategic urban management, infrastructure maintenance, and service provision. At the request of the Government of Madagascar, the Bank engaged in some key TA<sup>3</sup> by both the SURR and Water GPs to better understand urban poverty and opportunities for more integrated urban water management of the urban water cycle in GA.

### C. Proposed Development Objective(s)

#### Development Objective(s) (From PAD)

The proposed Project Development Objective is to enhance urban living conditions and flood resilience in selected low-income neighborhoods of Greater Antananarivo; and to improve the Recipient's capacity to respond promptly and effectively to an Eligible Crisis or Emergency.

#### Key Results

22. The PDO-level indicators for the proposed project include the following:

- People provided with improved urban living conditions (number)
- People protected by restored or improved flood protection infrastructure
- Share of direct project beneficiaries that are satisfied with the project interventions (%)

23. **Intermediate results indicators** will measure more specifically (i) improved sanitation in target neighborhoods; (ii) rehabilitated canals and embankments; (iii) detailed urban plan completed in a 2-year timeframe; (iv) revenue enhancement strategy and action plan for CUA completed; (v) project complaints effectively addressed; (vi) roads constructed or rehabilitated; (vii) pedestrian paths constructed or rehabilitated; (viii) increase of properties for which owners have been identified for tax purposes; (ix) amount of sludge dredged from the C3 and safely disposed; (x) neighborhoods (*Fokontany*) which have prepared and tested a contingency plan and evacuation strategy; (xi) person-days of temporary jobs created; (xii) Increase of Water and sanitation community groups (RF2) operational within the project area; (xiii) Solid Waste Management Strategy approved.

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<sup>3</sup> Urban Poverty and Resilience Study in Antananarivo (P156547); Fostering Integrated Urban Water Management of Greater Antananarivo (P157539).





#### D. Project Description

24. A joint preliminary assessment by the World Bank and M2PATE teams has identified multiple and interconnected factors contributing to the growing challenge Antananarivo has with its exposure to urban flooding. The assessment identified several issues contributing to flood risk in Antananarivo. Out of these, five will be addressed under this project: (i) deficient city drainage system; (ii) lack of proper solid waste management (SWM); (iii) weak management of flood control assets; (iv) deficient land use planning and policies; and (v) weak urban governance at national and local levels. Given the limited project funds and weak absorptive capacity by the CUA, service delivery agencies, and the Government of Madagascar, the above issues were prioritized.

25. The proposed project aims at developing a long-term resilience framework by focusing on the critical pillars of resilience identified for Antananarivo, focusing on Drainage and Flood Risk Management, Urban Upgrading and Improving Social Resilience via improved access to basic services, and building institutions via tackling planning, governance, financial and human resources management among others. Due to its framework approach, the project will have the opportunity to benefit from enough flexibility in the project design to make changes based on learning. More specifically, this project's framework design ensures:

26. *Learning from the master planning exercises and initial project investments.* The development of the Greater Antananarivo Urban Master Plan and Integrated Sanitation Master Plan financed by JICA and AFD respectively (to be completed in 2018), together with the Detailed Urban Plan (DUP) included under this project, are configured as part of project implementation rather than project preparation. These plans provide a unique platform to engage with various levels of government and communities to shape their long-term urban development and resilience framework that address the multi-sectoral nature of resilience. Such a framework will also provide guidance to GoM and GA municipal authorities on means to phase capital investments in tandem with government efforts to increase revenues.

27. *Improved cost-effective investments in flood risk management and urban upgrading.* The adoption of a framework design approach for this project effectively sets the "rules of the game" and allows infrastructure investments and urban upgrading interventions to be selected on a dynamic basis following the adoption of the Integrated Sanitation Master Plan, the Detailed Urban Plan, and the GA Land Use Master Plan. The studies will provide much needed clarity on the future land use and urban development plans for the target area, as well as the range of structural and non-structural measures that can be implemented in a cost-effective manner. Their adoption will signal multi-stakeholder buy-in of different government bodies and communities.

28. The proposed project aims at targeting the poor and most vulnerable. To ensure that targeted interventions contribute to lessons learned in a cross-thematic manner, it was agreed to focus on a target area, prioritizing vulnerable populations, based on several criteria namely: (i) poverty concentration; (ii) urban density; (iii) highest exposure to floods; and (iv) insertion in the 2004 physical masterplan as priority intervention area. (The selected target area is defined in Annex 5). Apart from NGO interventions, this target area has never benefited from previous donor support, as it was considered too complex to intervene. Despite this complexity, the Government and the Bank have made a strategic choice to prioritize interventions in this area based on the intention of making this a transformative project that goes beyond the replication of individual urban upgrading efforts in areas not prone to flooding. The



Government recognizes the Bank's added value in bringing a multi-sector approach to address these complex development challenges. Once completed, this project has the potential of making a dramatic change in the lives of thousands of urban dwellers.

29. **Climate Change Co-Benefits.** The World Bank Climate and Disaster Risk screening tool was used to complete climate screening. As large parts of Greater Antananarivo are located in a flood plain, extreme precipitation and flooding was identified as the primary hazard that climate change poses to investments under this project. Adaptation measures incorporated into the project design include: (i) increasing the drainage and pumping capacity of the canal C3 while protecting water retention basin from future encroachments; (ii) improving emergency evacuation roads/paths and creating evacuation spaces as part of the urban upgrading sub-component; and (iii) preparing communities for emergency response. The Greater Antananarivo Integrated Urban Development and Resilience Project will contribute significantly to climate change adaptation, with climate adaptation co-benefits estimated at 80%<sup>4</sup>.

## **A. Project Components**

30. The project consists of four main components: (i) Improving urban environment, services and resilience in targeted areas; (ii) Strengthening institutional capacity for resilient urban governance; (iii) Project Management, Coordination, Monitoring and Evaluation; and (iv) Contingent Emergency Response Component.

### **Component 1 - Improving urban drainage, services and resilience in targeted areas (USD 58 million)**

31. This component, via its integrated design, aims to invest in resilience building in selected target areas of Greater Antananarivo. More specifically, this component will invest in both (i) flood and drainage risk reduction, (ii) urban upgrading and integration of vulnerable neighborhoods into the urban fabric, while ensuring (iii) effective and inclusive citizen engagement in diverse processes of design and implementation.

32. The target area where both flood protection/drainage improvements and urban upgrading interventions will be focused were selected in an inclusive manner to ensure a focus on both exposure to flood risks, that are expected to increase in intensity with climate change, and poverty. This target area, which covers parts of the first and fourth "arrondissements" of the CUA, as well as the extension to three neighboring communes (Bemasoandro, Andranonahoarta, Anosizato Andrefana), consist of the most vulnerable areas to flooding based on most recent flood modeling. Furthermore, based on diverse poverty assessments, field visits, and NGO consultations, they are considered to be the neighborhoods with the highest levels of poverty in the city. Finally, the target area includes a strong combination of high-dense areas, and fast growing urban spaces.

#### **33. Sub-component 1.1: Improvements of Canal, Drainage and Sanitation Infrastructure (USD 36.6**

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<sup>4</sup> Of the \$75 million, \$40 million will finance the rehabilitation of the storm water drainage system and flood protection infrastructure (100% adaptation co-benefits); another \$20 million will finance neighborhood upgrading interventions with a clear focus on resilience (50% adaptation co-benefits); \$5 million will finance resettlement/compensation costs (100% adaptation co-benefits); and finally, \$5 million will go to resilient urban governance (50% adaptation co-benefits).



**million).** The objective of this sub-component is to ensure flood risk mitigation through structural measures by financing public infrastructure investments for flood mitigation and drainage improvements. This component consists of no-regret priority engineering solutions identified by the Government including improvements of the C3 Canal and its associated flood retention ponds, as well as rehabilitation works on selected riverine flood protection infrastructure along the Ikopa and Sisony Rivers. As one of the three major storm water drainage canals that helps remove storm waters from the urban plains of Antananarivo, the 12-km C3 Canal is a vital part of the drainage infrastructure. It originates at Anosibe flood retention pond and traverses through a variety of urban settlement patterns (including urban agriculture land) before draining into the Mamba River by a major pumping station. Two retention ponds (Anosibe and Andavamamba) form part of this drainage system that is currently managed by APIPA. Eligible improvement works will include cleaning and dredging of the C3 Canal and retention ponds; removal of hyacinth overgrowth in the retention ponds; removal and safe disposal of accumulated solid waste; improvement of water flows and hydrological performance; improvement and construction of embankments and retention walls; construction of access ways to facilitate maintenance; improvement of inflows by tributary canals that drain into the C3; rehabilitation of the pumping station. The preliminary design estimates the costs for rehabilitating the entire Canal C3 and dikes at about \$14 million. The cost estimate for the pumping station and associated works is not yet completed and will depend on the technical design options currently being identified. Single or multiple bid packages will also be defined once the technical designs and costs are completed.

34. In addition to the works, this component will finance consulting services for the preparation of the engineering designs, bidding documents and relevant safeguards instruments, as well as works and safeguards supervision costs.

35. *Resettlement costs.* Because of the uncontrolled occupation of urban land along certain portions of the C3 Canal, involuntary resettlement will take place only in certain areas. Because of the dynamic land market, albeit informal, the bulk of the permanent resettlement is expected to be absorbed by the local rental market and little need for land acquisition should be required. However, M2PATE has identified 3 resettlement sites in Andavamamba, Soavimasoandro and Anosiala. The Resettlement Action Plan (RAP) indicates that 429 housing structures, of which 94 structures less than 5 square meters, corresponding to 583 households (since more than one household inhabits housing structures in several cases) and small businesses will be affected by this sub-component by both temporary and permanent resettlement. A socio-economic survey of an estimated 2,000 households has been conducted for a better understanding of the socio-economic characteristics of the affected areas.

36. Based on the census conducted by the Resettlement Action Plan, the total number of project affected persons (PAPs) under this sub-component will be 3,031, of which 2,111 will be affected by Canal C3 rehabilitation and will require permanent resettlement. Given prior compensation costs associated with previous projects implemented in the country, the costs for resettlement are estimated to be around \$7,350,000. This cost includes the preparation and construction of 3 resettlement sites. Because of the weak budgetary position of government and the importance of not letting resettlement costs impede the progress of this project, up to \$5.93 million of IDA resources may be used to finance compensation.

37. **Sub-component 1.2: Neighborhood upgrading (USD 20.1 million).** This subcomponent will finance key urban infrastructure in the target intervention area. Those interventions will be planned and executed in tandem with drainage investments in sub-component 1.1. While the detailed nature of investments will be identified based on an inclusive process, and on the participatory preparation of the



Detailed Urban Plan for the intervention area, they will aim at improving (i) mobility and accessibility; (ii) access to basic sanitation services; (iii) public and recreational spaces; and (iv) building resilience.

38. To ensure rapid buy-in in the target area while building innovative and more sustainable long-term solutions, this sub-component will merge two upgrading approaches that are complementary in nature:

- a. No-regret urban upgrading: this first activity aims at identifying and implementing quick-win interventions that will be the first step in improving the quality of, and access to, basic urban services.
- b. Structural urban upgrading: This activity seeks to lay the foundation for a novel and more durable modality for urban upgrading and integration, based on a comprehensive urban study covering the aspects of long-term urban integration and upgrading needs. This activity will build on and benefit from the social and community engagement during the preparation and execution of the above quick-win interventions. This activity builds on a wealth of World Bank international experience in urban upgrading.

39. Activities under this sub-component will help boost local job creation within selected neighborhoods, which will help build increased project's ownership and engagement among local communities. AGETIPA, the delegated contract manager, has extensive experience in labor intensive construction techniques. For instance, roads upgrading creates 15 times more man-day labor effort than asphalt roads. This will also ensure mobilization and engagement of local neighborhood labor, and keep maintenance costs lower, since capital-intensive equipment and inputs will not be needed. The residents and workers of the pilot areas will be consulted throughout the planning and implementing processes to ensure that the interventions serve the neighborhood's actual needs and support identified improvement opportunities. Specific attention will be devoted to the female population to ensure that their needs are fully integrated in the component's conception and implementation. These consultations will build on the outcomes of gender-sensitive consultations, which were carried out during project preparation.

40. In addition to the infrastructure and service delivery works, this sub-component will finance consultant services for the preparation of the target area's Detailed Urban Plan, all relevant engineering designs and supervision efforts, social analysis, behavioral audit, stakeholders' mapping and engagement plan and safeguards related instruments.

41. *Resettlement costs.* Further, this component will finance resettlement and compensation costs related to the impact of above-mentioned works. While the exact dimension of PAPs for this component are still unknown, resettlement might be expected if any major works are recommended, such as widening of roads, increased number of access ways to link marginalized neighborhoods with the rest of the urban fabric. The RPF has identified that approximately 660 people could be affected by the works, corresponding to resettlement costs estimated at \$762,000.

42. **Sub-component 1.3: Citizen engagement (USD 1.3 million).** The sub-component will support a system of sustainable citizen engagement to contribute both to the sustainability of infrastructure and investments in the project's pilot intervention area and to strengthen citizen participation. Activities will consist of (i) technical assistance to support the establishment of Local Coordination Structures (LCS) for promoting inclusive participation of all local stakeholders, including authorities, citizens and communities, private sector; and (ii) the development of a Stakeholder Engagement Plan (SEP) to ensure the participation and the commitment of all stakeholders of the project; (iii) the development and the



implementation of the Grievance Redress Mechanism (GRM) of the project; (iv) to conduct bi-annual beneficiaries feedback survey and public disseminations activities of the project; and (v) capacity building of local communities mainly to reinforce the communities' preparedness and ability to deal with possible natural hazards.

## **Component 2 - Strengthening institutional capacity for resilient urban governance (USD 5.4 million)**

43. In an effort to ensure the sustainability and scalability of interventions under this project, this component would seek to build the capacity of local authorities – the CUA and a selection among the other 36 communes that make up GA – to improve inter-communal governance, municipal finance, planning, and collaboration at both a municipal and metropolitan levels. The objective is to institute an integrated approach to municipal governance and urban development so as to better manage existing settlements and urban growth.

44. **Sub-component 2.1: Strengthening capacity for inclusive and resilient urban management (USD 1.5 million).** One of the main drivers to slum proliferation in Greater Antananarivo and in Madagascar in general is the deficient and outdated land and housing policies and instruments. To curb that trend, a better understanding of the reality of informal settlements will be needed, in addition to the development of novel policy instruments. This sub-component aims at:

- i. Supporting M2PATE, CUA and targeted municipalities to internalize the recommendations of the Detailed Urban Plan (prepared under Sub-component 1.2), and the GA Urban Land Use Plan prepared by JICA, via developing a monitoring and evaluation instrument for urban growth, and a training and capacity building program that includes capacity building on managing land acquisition and involuntary resettlement in urban areas.
- ii. Prepare an integrated slum upgrading strategy and affordable housing strategy for Greater Antananarivo. This strategy, to be led by M2PATE, will aim at reviewing diverse urban upgrading practices, and explore modalities to institutionalize some of them. It will be directly linked and build on the macro recommendations of the urban masterplan.

45. **Sub-component 2.2: Municipal Management (USD 2.1 million).** This sub-component would seek to begin to modernize public sector management of the CUA by supporting reforms that aim to (i) increase local revenue mobilization while promoting transparency and accountability and oversight mechanisms; and (ii) improve human resources processes and systems.

46. **Sub-component 2.3: Capacity Enhancement and sector reforms for environmental sanitation (USD 1.8 million).** The activities under this sub-component aim to (a) ensure that the assets rehabilitated under Component 1.1 (Improvements of Canal, Drainage and Sanitation Infrastructure) are properly maintained by APIPA in order to ensure their long-term sustainability and functionality; (b) improve solid waste management through the improved collection in the designated project area, behavior change campaign, and the development of a solid waste management strategy for GA including a sanitary landfill plan; and (c) provide technical assistance to the multi-stakeholder coordination of the Integrated Urban Water Management (IUWM) Platform that will play an important role in building multi-stakeholder consensus on both drainage and solid waste management reforms.



### **Component 3 - Project Management, Coordination, Monitoring and Evaluation (USD 6.5 million)**

47. This component will finance the following activities: (i) incremental operating costs (including delegated contract management costs); (ii) fiduciary activities; (iii) audit, studies and assessments required under various project components; (iv) communication; and (v) monitoring (including of safeguards processes) and evaluation.

### **Component 4 - Contingent Emergency Response Component - CERC (USD 0 million)**

48. This component will provide immediate response to an Eligible Crisis or Emergency, as needed. This would finance emergency works in the case of another disaster event by including a "zero-dollar" Contingency Emergency Response Component (CERC). This would help reduce damage to infrastructure, ensure business continuity, and enable early rehabilitation. In parallel, following an adverse event that causes a major disaster, the Government of Madagascar may request the Bank to channel resources from this component into an Immediate Response Mechanism (IRM). The IRM would enable the use of up to 5 percent of uncommitted funds from the overall IDA portfolio to respond to emergencies. This IRM has already been established for Madagascar and is now operational. Specific details around this component (including activation criteria, eligible expenditures, and specific implementation arrangements as well as required staffing for the Coordinating Authority) are defined in greater detail in the IRM Operations Manual approved in March 2017.

## **E. Implementation**

### Institutional and Implementation Arrangements

49. **Project Steering Committee.** A Project Steering Committee (PSC) was established on August 18, 2017 to provide strategic oversight of the project. The PSC is chaired by the Directeur Général of Land Use Planning and Equipment (M2PATE) and includes representatives of the Ministries of Finance and Budget, Agriculture, Interior and Decentralization, Water- Energy-Hydrocarbons, Population, Social Protection and Women; Commune Urbaine of Antananarivo, Communes of Bemasoandro, Anosizato, and Andranonahoatra; APIPA, SAMVA, BPPAR and AGETIPA. 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 Project Management Unit (PMU) will act as the Secretariat of the Project Steering Committee and will be responsible for preparing the meetings, preparing the documents for the meetings, and recording the minutes of the meetings.
50. **Project Management Unit.** The PMU will be based within the Ministry attached to the Presidency, in charge of Presidential Projects, Land Use Planning and Equipment (M2PATE) and will be responsible for the day-to-day management of the project. M2PATE would be in charge of: (i) executing the project; (ii) managing technical inputs from different line ministries (i.e. MEEH), municipalities and relevant technical agencies (especially APIPA and SAMVA); (iii) endorsing consolidated technical and financial project





reports from the implementing entity for onward transmission to the Bank; (iv) ensuring dissemination of lessons learned from the project to all participating agencies, beneficiary communities and other stakeholder institutions, as well as managing the overall project communications and citizen engagement strategy; and (v) ensuring the proper implementation of safeguards requirements.

51. **Delegated Contract Management.** M2PATE will sign a Delegated Contract Management (DCM) Agreement with the *Agence d'Exécution des Travaux d'Intérêt Public et d'Aménagement* (AGETIPA) for managing the execution of Sub-component 1.1 and 1.2 of the Project. AGETIPA is a public works contract management agency with a long experience with urban infrastructure projects. AGETIPA will be responsible for: (i) selecting and recruiting consultants in charge of technical studies, detailed design and preparation of bidding documents; (ii) supervising the quality of studies and bidding documents; (iii) managing the bidding process and awarding and contracts for consultants, works and goods; (iv) managing contracts and approving invoices; and (v) receiving works. The execution and delivery of this DCM Agreement will be an effectiveness condition of the project.
52. The project will also engage in capacity building for the CUA by working with the municipality to implement recommendations from the PEFA Action Plan. A small Project Implementation Unit will be established within CUA to support the implementation of the TA activities under Component 2 and support the involvement of CUA in overall project implementation. This PIU will not have any fiduciary role. In addition, MOUs will be signed between the PMU and other institutions (i.e. APIPA, SAMVA) which will benefit from the technical assistance component.
53. **Project Implementation Readiness.** A Project Preparation Advance (PPA) in the amount of US\$ 2 million was used to carry out project preparation activities. Feasibility studies, detailed designs and safeguards documents have been developed for the proposed priority drainage and flood protection works (estimated cost of \$14 million); corresponding bidding documents are expected to be finalized by project effectiveness. In addition, the detailed urban study will be launched by Board approval and will identify quick-wins interventions within its first six months to address basic service delivery gaps. The total estimated cost of works that can commence during the first year of project effectiveness, including safeguards measures, is \$15 - 20 million.

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

The project will intervene in Greater Antananarivo metropolitan area of the Analamaga Region (Madagascar). Works will be mainly concentrated in the 1st and 4th arrondissement of the Commune Urbaine d'Antananarivo (CUA) and three neighboring communes (Bemasoandro, Andranonahoarta, Anosizato Andrefana) – all located in urban areas.





**G. Environmental and Social Safeguards Specialists on the Team**

Paul-Jean Feno, Environmental Safeguards Specialist  
Peter F. B. A. Lafere, Social Safeguards Specialist  
Andrianjaka Rado Razafimandimby, Social Safeguards Specialist

**SAFEGUARD POLICIES THAT MIGHT APPLY**

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	<p>The policy is triggered because of proposed infrastructure investments that could cause adverse environmental and social impacts. These include proposed activities under Component 1: (i) the rehabilitation of a 12 km stretch of C3 drainage canals and retention ponds as well as rehabilitation of riverine flood protection infrastructure along segments of the Ikopa and Sisony rivers within the municipality; and (ii) urban upgrades such as the construction and rehabilitation of public sanitation infrastructures (wash house, public toilets, etc.), pedestrian streets and public roads within the neighborhoods (fokontany) in the 1st and 4th arrondissement of the Commune Urbaine d'Antananarivo (CUA) and three neighboring communes (Bemasoandro, Andranonahoarta, Anosizato Andrefana), The dredging and rehabilitation of the C3 Canal could produce nuisances such as noise, dust, vibration, and odors; erosion on quarry sites of rocks and earths used for construction; occupational health and safety issues, and negative environmental externalities from the disposal of dredged and excavated material from the canal itself.</p> <p>This project could also produce social conflict (mainly linked to land acquisition processes and resettlement), community health and safety risks such as the ncreased STD/AIDS transmission risks as a result of the important number of workers in densely populated neighborhoods during the civil works. It could also result in an increase in risks of</p>



traffic accidents in terms of the transportation of sludge to its final disposal site and ground water pollution risks by polluted sludge if the excavated materials are not correctly disposed and the disposal site is not properly designed and operated.

The activities related to infrastructure under Sub-component 1.2 that improve mobility and access ways, social services, public health and hygiene investments are expected to create environmental and social impacts that can be managed with site-specific mitigation measures. Given the large scale activities under Sub-component 1.1 generating potentially adverse, permanent social and environmental risks and impacts, the environmental and social category of the project is rated A.

To reduce these risks and adverse environmental and social consequences and meet triggered safeguard policy requirements, the Borrower has prepared : (i) an Environmental and Social Management Framework (ESMF) for the activities related to mobility and accessibility infrastructure, social services and public health and hygiene investment (Sub-component 1.2), since the specific sub-projects and locations of these infrastructure investments and activities cannot be determined prior to project appraisal; and (ii) a full Environmental and Social Impact Assessment (ESIA) with a specific ESMP for the civil works related to the rehabilitation of the C3 Canal and river segments (Sub-component 1.1). The ESMF, ESIA and ESMP have been approved by the Bank and have been disclosed publicly in-country on April 05, 2018 and on the World Bank's external website on April 06, 2018. Prior to project effectiveness, a full ESIA (and RAP if needed in the eventuality that the selected site is inhabited) will be prepared to address the sludge disposal site (including the transportation, treatment and disposal of the canal sludge). The ESIA's for the three resettlement sites identified (Andavamamba, Soavimasoandro and Anosiala) and ESIA and RAP if needed for the construction and rehabilitation of public sanitation infrastructures (wash house, public toilets, etc.), pedestrian streets



		and public roads under Sub-component 1.2 will be conducted during implementation.
Natural Habitats OP/BP 4.04	Yes	The environmental assessments conducted for the C3 Canal ESIA did not indicate any significant negative impacts to natural habitats although dredging and civil works could temporarily affect rivers downstream of the works. Dredging, in the long run, will result to environmental benefits of these polluted waterways. In addition, as the final site for the disposal of sludge from the C3 Canal has yet to be selected, potential negative impact on natural habitats cannot yet be entirely ruled out. Potential impacts will be assessed during the site-specific ESIA study for the sludge disposal site and, as needed, the ESMP for the disposal site will include mitigation measures for any impacts on natural habitats.
Forests OP/BP 4.36	No	The project will not affect any forest, forest health and forest-dependent communities within its area of influence, including the future disposal site and resettlement sites, since all of the infrastructure and associated works will be located in the urban area, specifically in the capital, Antananarivo.
Pest Management OP 4.09	No	The project will not purchase or use pesticides. Nor will it lead to increase usage of pesticides.
Physical Cultural Resources OP/BP 4.11	Yes	The ESIA identified three sites of cultural or religious significance (2 churches and one cock-fighting arena) that will be affected by the C3 works. Appropriate mitigation measures are included in the ESIA. In addition, the ESMF has included “chance find” procedures in case of chance finds during construction.
Indigenous Peoples OP/BP 4.10	No	There are no Indigenous Peoples living on or nearby the project intervention areas, nor will the project have any direct and indirect impacts on Indigenous Communities.
Involuntary Resettlement OP/BP 4.12	Yes	The policy is triggered because of the proposed infrastructure investments under the proposed Component 1. Indeed, around 3,691 PAPs corresponding to 905 households are expected to be affected by land acquisition, temporary or permanent involuntary resettlement, or loss of livelihoods (based on information from the current Resettlement Policy Framework (RPF) as well as the



Resettlement Action Plan (RAP) for sub-component 1.1). The RAP for sub-component 1.1 (Improvements of Canal, Drainage and Sanitation Infrastructure) has been prepared by the Government. Under sub-component 1.2, since the physical locations of these proposed activities are unknown at this stage and will be designed during the first year of project implementation, the Borrower has prepared a detailed RPF. The RPF sets forth the basic principles and procedures/directives to be followed by the Borrower for the preparation of a RAP for sub-component 1.2 once the physical locations of the proposed activities are known. The RAP for the sub-component 1.1 Improvements of Canal, Drainage and Sanitation Infrastructure, and the RPF of the project have been disclosed publicly in-country on April 05, 2018 and on the World Bank's external website on April 06, 2018.

Safety of Dams OP/BP 4.37	No	The project will not be financing any activities related to dams.
Projects on International Waterways OP/BP 7.50	No	This policy is not expected to be triggered by any of the project activities and Madagascar is an Island.
Projects in Disputed Areas OP/BP 7.60	No	There are no disputed areas associated with the Project.

## KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

### A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

The Project is classified as Category “A” because although the environmental and social impacts are predictable, impacts could be significant, permanent, large scale and irreversible. Four environmental and social Safeguard Policies are triggered by this operation: OP 4.01 (Environmental Assessment), OP 4.12 (Involuntary Resettlement); OP 4.11(Physical Cultural Resources); and OP 4.04 (Natural Habitats).

Sub-component 1.1, Improvements of Canal, Drainage and Sanitation Infrastructure, will include works related to the removal and disposal of an estimated 100,000 cubic meters of sludge from the C3 Canal and associated drainage and sanitation infrastructure works. The main environmental impacts associated with these works based on the ESIA are generation of noise, dusts and vibration; erosion on the quarry sites of rocks and earth, unpleasant smells, disposal of contaminated dredged and excavated materials, social conflict due mainly to land acquisition and resettlement process and health and safety issues for workers and the local population due to labor influx issues of temporary workers, during the civil works, around work sites, the traffic disturbance and accident traffic risks with the sludge transportation, and groundwater pollution risks with the contaminated sludge. The main mitigation measures to



address these risks are described in the ESIA/ESMP.

The main social impacts will be related to works undertaken under sub-component 1.1 “Improvements of Canal, Drainage and Sanitation Infrastructure” (including all activities on the C3 Canal, pumping station, sludge disposal site) and 1.2 “Neighborhood Upgrading”. These social impacts are related to land acquisition, and permanent and temporary involuntary resettlement which could affect 3,691 PAPs corresponding to 905 households. Along the C3 Canal, the number of households that will be permanently affected by the works on the existing canal’s right of way is 583 households and businesses and corresponding to 1,602 PAPs, in which 420 households and 72 businesses will have to be moved. In addition, there are a total of 509 additional PAPs with temporary losses: owners of rental structures, owners or tenants of ancillary buildings, farmers in the downstream floodplain, sediment extractors and brick makers. For sub-component 1.1 there will be a total of 2,111 PAPs. In addition, there are a number of small-scale, informal economic activities along the canal that may be affected from loss of access to the water, including laundry services, brick makers from the river’s sediment and vendors of wood and agriculture products. For sub-component 1.2 there is an estimated impact on 165 households in terms of involuntary resettlement corresponding to 660 PAPs. Options for resettlement to one of three nearby resettlement sites, assistance to find alternative housing within the neighborhoods, in-situ reconstruction of partially affected structures as well as cash compensation have been included in the RAP mitigation measures.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area: Long term impacts resulting from the project are mainly positive (i) reduction in flooding; (ii) urban upgrading and greater inclusion of vulnerable neighborhoods into the urban fabric; and (iii) effective and inclusive citizen engagement in diverse processes of design and implementation. Overall, the project will contribute to the improvement of the quality of life in the project and surrounding areas.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts. Alternatives considered to avoid or minimize adverse impacts included focusing on upgrading subprojects that outside of the targeted area (first and fourth arrondissements of the CUA and three neighboring communes), selecting alternative waterways other than the C3 Canal to rehabilitate, and focusing works only on portions of the C3 Canal that did not require any involuntary resettlement. These alternatives were not selected because they don’t maximize the intended transformational nature and objective of the project.

Regarding the Canal C3 and dikes rehabilitation works, several alternatives were identified: the design of the rehabilitation works of Canal C3 has considered several alternatives with different associated resettlement impacts. Due to the highly urbanized target area, the least impacting scenario was selected. In terms of the disposal of canal sludge, six different sludge management and disposal options have been considered, including disposal at the existing landfill, waste recovery and recycling, incineration. Due to existing landfill being near full capacity and anticipated higher costs of treatment (due to the mixing of sludge with other solid waste), this alternative was not pursued. Likewise, waste recycling and incineration options were discarded due to the composition of the sludge.

Several resettlement alternatives were considered, including sites that are located a longer distance from the project area. These alternatives were not pursued because of the importance of maintaining livability options for project affected people. Dredging technologies are still being considered and will be part of the final procurement packages of the civil works.



4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

The client has been actively responsive in addressing safeguards issues. To address the safeguard policies issues, the Borrower has prepared: (i) an Environmental and Social Management Framework (ESMF) and Resettlement Policy Frameworks (RPF) for the activities related to infrastructure that improve mobility and access ways, social services, public health and hygiene investments, since the exact locations of these infrastructure investments and activities cannot be determined prior to project appraisal; and (ii) a full Environmental and Social Impact Assessment (ESIA) with a specific ESMP and a detailed Resettlement Action Plan (RAP) for the civil works related to the rehabilitation of the C3 Canal. The ESMF, RPF, ESIA with its ESMP and RAP for the drainage and rehabilitation of C3 Canal have been cleared by the Bank and publicly disclosed in-country and on the World Bank's external website.

Environmental and Social Management Framework (ESMF): In compliance with OP 4.01 (Environmental Assessment) since the precise locations and potential impacts of future investments in infrastructure to improve mobility and accessibility, social services and public health and hygiene, cannot be identified prior to appraisal, an Environmental and Social Management Framework (ESMF) has been prepared to be used to screen sub-project proposals for environmental, social, gender, and health and safety impacts by using the Environmental and Social Screening Form (ESSF) checklist. The ESMF, which includes a generic Environmental and Social Management Plan (ESMP), has taken into account the urban environmental and social review and described the environmental and social profiles in the project target area, which covers parts of the first and fourth "arrondissements" of the CUA, as well as the extension to three neighboring communes (Bemasoandro, Andranonahoatra, Anosizato Andrefana), on the potential activities to be supported by the project. The ESMF outlines an environmental and social screening process for future infrastructure investments to improve mobility and accessibility, social services and public health and hygiene investments, to ensure that they are environmentally and socially sound as well as sustainable. This approach conforms with GoM and World Bank policies and guidelines on environmental and social impact management (see the HSE guideline). The ESMF also outlines the importance of developing an operational grievance redress mechanism which will capture and address environmental, social, governance, and other grievances and negative impacts of the project. Prior to its commencement, and as soon as the implementation sites are identified, each subproject/activity will be screened per the ESSF procedures detailed in the ESMF. The screening outcomes will determine the need to prepare an Environmental and Social Impact Assessment (ESIA), and a freestanding Environmental and Social Management Plan (ESMP); whereas the Resettlement Policy Framework (RPF) will determine the need for preparation of additional Resettlement Action Plans (RAPs).

Since the project is rated a Category A project, all specific environmental and social ToRs for identified subprojects under Sub-component 1.2 during implementation will be submitted for the Bank's approval before launching environmental and social studies. The works of these selected subprojects will be executed with the environmental and social clauses in the respective enterprise contracts and with the required Contractor Environmental and Social Management Plans (CESMP) included after the specific ESIA's are approved by the Bank. The screening of the sub-projects will be done by the two safeguard environmental and social focal points (one environmental specialist and one social development specialist), who will be part of the Project Management Unit. The environmental and social safeguard specialists will be responsible for the procurement of consultants to prepare the safeguards instruments, supervision of the consultants and monitoring of the implementation of the ESMPs, and RAPs in the project areas. The safeguard specialists also will ensure that all contractor contracts include environmental and social clauses (including a worker code of conduct, specific grievance redress mechanism, specific measure regarding gender-based violence) , which are attached as an annex to the ESMF and will also be developed in the specific ESIA for the selected subproject



sites during implementation in order to ensure adequate environmental and social management practices during construction and operation.

For OP 4.11 Physical Cultural Resources: The ESIA identified three sites of cultural or religious significance (2 churches and one cock-fighting arena) that will be affected by the C3 works. Appropriate mitigation measures are included in the ESIA. In addition, the ESMF has included “chance find” procedures in case of chance finds during construction.

For OP 4.04, the project aims, as one of its main objectives, to preserve natural habitat and reduce risks and impacts to preserve the natural site in the project zones. OP 4.04 has been triggered due to the potential encroachment on natural habitats by the location of the sludge disposal site which has yet to be determined (as of April 2018) but also due to potential impacts from dredging and river works on rivers during construction and the long term positive impacts of dredging in improving the water quality of the rivers.

Environmental and Social Impact Assessment (ESIA): A stand-alone Environmental and Social Impact Assessment (ESIA) has been prepared for the civil works for the drainage and rehabilitation of the C3 Canal, and address, among others, the construction stage impacts mainly related to noise, vibration, erosion on the quarry sites of rocks and earths, dust, unpleasant smells, increased STD/AIDS transmission risks with the influx of temporary workers and safety issues with the important number of workers required during the civil works; health and safety issues for workers, the traffic disturbance and accident risks with the sludge transportation, groundwater pollution risks with the polluted sludge. The canal sludge lab results have noted the presence of heavy metals. In addition, the current solid waste landfill of Andralanitra will reach full capacity in less than four years and an alternative long term treatment and disposal landfill site has not yet been identified. Therefore, the project should identify a specific disposal site for the disposal of dredged and excavated material estimated to reach a volume of 100,000 m<sup>3</sup>. A site-specific, full stand-alone ESIA for the sludge disposal site is required. This site-specific ESIA will include the appropriate sludge treatment technology adopted to reduce the contamination of groundwater and the impact on the environment and human contamination risks. The current ESIA has proposed coherent criteria to select the final sludge disposal site and provides overall recommendations on the Sludge Management Plan. A strong and coherent ToR for the ESIA and RAP covering the transportation, treatment and management of the final disposal site of sludge are available at this appraisal stage. The related ESIA with its ESMPs will be submitted to Bank’s approval. The disposal site is required to be operational before the start of sludge removal works on the C3 Canal can commence under Sub-component 1.1.

A cumulative impact assessment was conducted on both canal rehabilitation projects financed under IDA (C3 Canal) and AFD (Andriantany Canal) funds. The analysis of the cumulative effects of the project with the other selected projects has concluded that there is an absence of significant negative cumulative effects during the civil works. A summary of the cumulative impact is included in the ESIA. In addition, the completion of the two projects will bring positive cumulative effects for the entire urbanized floodplain of Antananarivo: improvement of the evacuation of water from the urbanized districts within the plain, suppression of unhealthy zones, etc.

The Environmental and Social Management Plan (ESMP) summarizes all the environmental mitigation and monitoring measures, administrative procedures, as well as the institutional responsibilities that are required during both construction and operational phases in order to eliminate, mitigate, compensate or offset negative environmental and social impacts. The Contractor will be required to prepare a Contractor Environmental and Social Management Plan (CESMP) based on this ESIA/ESMP and taking into account all plans required in the ESMP: Stakeholder Engagement Plan, Hygiene Health and Security Plan, Local Labor Recruitment Plan, Traffic Management Plan, Post-construction Site Rehabilitation Plan, Plan for Management of Cultural Sites, Management Plan for Extraction of Building Materials, Solid and Liquid Waste generated by works Management Plan, Grievance Redress Mechanism, and Sludge Treatment





Management Plan. The ESIA provides detail on each of these plans required CESMP and these specifications will be included in the bidding documents once the final procurement package is finalized. The ESMP includes a clear and coherent implementation plan with a total budget of around USD 200,000 financed by the Project.

A Resettlement Policy Framework (RPF): In compliance with OP 4.12 (Involuntary Resettlement), since the precise locations and potential impacts of future subprojects, mainly the subcomponent 1.2 of the project, in terms of infrastructure investments to improve mobility and accessibility, social services and public health and hygiene, investments cannot be identified prior to appraisal, an RPF has been developed that takes into account the urban and socio-economic context of the resettlement. Indeed under Component 1.2, interventions related to the rehabilitation and development of precarious and vulnerable areas (urban upgrading), will affect various elements of the urban environment and are likely to generate land acquisitions that would result in loss of land, property, assets and/or socio-economic activities among the affected communities, including their possible involuntary resettlement. Therefore the RPF has identified a global number of affected households and PAPs for all the project, (i) described the way for the development of potential RAP to be developed after identification of specific activities of the project, (ii) outlined eligibility criteria for PAPs, (iii) defined specific compensation matrix for the project, (iv) outlined consultation process for the future PAR, (v) defined the grievance redress mechanism (GRM) which will be developed into the project and which will capture all complaints related to the project but not only those from resettlement issues, (vi) has proposed the institutional arrangement for resettlement implementation and also defines M&E approach for resettlement.

Resettlement Action Plan (RAP): In compliance with OP 4.12 (Involuntary Resettlement) a Resettlement Action Plan has been developed to address all aspect related to land acquisition temporary or permanent involuntary resettlement, or loss of livelihoods during the drainage and rehabilitation of the C3 Canal. The RAP has identified all households, enterprise, infrastructures and also PAPs directly or indirectly impacted by the project, and also outlines variable compensation and resettlement support which fits on households and PAPs categorization, and without exclusion even if some PAPs are irregular occupants. The RAP also identified three resettlement sites, located in Anosiala, Andavamamba and Soavimasandro, which are all on government land. For Andavamamba and Soavimasandro, located in humid areas in the center and on the outskirts of the city, technical studies for flood risk reduction will be included in the site development studies. Thus, installation of drainage will be required, flood protection infrastructures with landfilling areas before the installation of roads, basic urban services and construction of houses. In Anosiala, located outside the city, in addition to the overall development of the site, public facilities will be installed and renovated to accommodate resettled populations. Andavamamba site will be subject to an ESIA, while ESMP and a RAP are needed for Anosiala and Soavimasandro. All sites must be operational before start of works affecting involuntary resettlement on the C3 Canal commence under Sub-component 1.1. The RAP also defines a global grievance redress mechanism (GRM) which will capture all complaints related to the project including those from resettlement issues. The RAP includes a clear and coherent implementation plan, including an institutional arrangement with a total budget of around \$7,350,000 which will be co-financed by the government and the project. However, because of the weak budgetary position of government and the importance of not letting resettlement costs impede the progress of this project, approval of IDA resources for financing cash compensation options, up to \$5.93 million, is currently underway.

Environmental and Social Capacity Building: The capacity assessment conducted as part of the ESMF and the RPF concluded that capacities need to be strengthened at all levels. The ESMF and RPF include institutional arrangements outlining the roles and responsibilities for the various stakeholder groups involved, for screening and approval of activities, as well as implementation and monitoring of their mitigation measures and capacity building activities needed. The PRODUIR PMU will be composed by a full time of one (1) environmental specialist and one (1) social



development specialist to ensure day-to-day safeguard works and to assess project activities in compliance with the prepared safeguard documents approved by the Bank. They will be hired in compliance with the comprehensive ToR developed in the ESMF. The ESIA includes a requirement for the contractor to also include in their key personnel health and safety specialists. The Bank’s safeguards team will ensure additional capacity building support to strengthen the technical capacity on both social and environmental safeguards management. The environmental and social safeguard specialists of PRODUIR will work collaboratively with the National Office of Environment (ONE), the national authority responsible for environmental and social management and also ensure compliance with national regulation and safeguards document reviews. The ESMF has proposed thematic training sessions to main actors implicated to the PRODUIR. The safeguards training workshops will be iterative and open to other key stakeholders including beneficiary communities, private sector (consultant firms, CSOs, etc.) with the aim of reinforcing the grounding of public consultation and participation to foster more engagement, and the ownership and social accountability for the sustainability of project implemented activities. It was retained the hiring of Environmental and Social Panel at PMU to support and advise the project to implement safeguard measures and requirement following a ToR approved by the Bank.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

During the preparation of this proposed project, intensive public consultations have been held in selected project zones. The M2PATE has initiated public consultations and provided, in a timely manner prior to consultation, all the relevant materials in both French and Malagasy in order to be understandable and accessible to the groups being consulted. These consultations allowed to further communicate the project details as well as the conclusions from the ESIA, such as the mitigation measures which enhance the positive effects and attenuate the negative ones. More than 1,000 people took part in public consultations, on 11 sites. Approximately half of these people were women. The ESMF included a public consultation approach under the Stakeholder Engagement plan and comprehensive and clear grievance mechanism to be adopted during the project implementation with the Management of gender-based violence complaint which will be treated in collaboration with specialized institutions on gender-based violence (Ministry in charge of social protection, NGOs, and advocacy associations). All the Borrowers’ safeguards instruments (ESMF, RPF, ESIA, RAP) have been reviewed and approved by the Bank. They have been disclosed in-country on April 05, 2018 and in World Bank’s external website on April 06, 2018.

**B. Disclosure Requirements**

**Environmental Assessment/Audit/Management Plan/Other**

Date of receipt by the Bank	Date of submission for disclosure	For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors
19-Dec-2017	06-Mar-2018	11-Apr-2018

**"In country" Disclosure**

Madagascar  
05-Apr-2018

Comments



On Ministry website and in local newspapers

**Resettlement Action Plan/Framework/Policy Process**

Date of receipt by the Bank

20-Dec-2017

Date of submission for disclosure

06-Apr-2018

**"In country" Disclosure**

Madagascar

05-Apr-2018

Comments

On Ministry website and in local newspapers

**C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)**

**OP/BP/GP 4.01 - Environment Assessment**

Does the project require a stand-alone EA (including EMP) report?

Yes

If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?

Yes

Are the cost and the accountabilities for the EMP incorporated in the credit/loan?

Yes

**OP/BP 4.04 - Natural Habitats**

Would the project result in any significant conversion or degradation of critical natural habitats?

No

If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?

No

**OP/BP 4.11 - Physical Cultural Resources**

Does the EA include adequate measures related to cultural property?

Yes

Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?

Yes



#### **OP/BP 4.12 - Involuntary Resettlement**

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?

Yes

If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?

Yes

#### **The World Bank Policy on Disclosure of Information**

Have relevant safeguard policies documents been sent to the World Bank for disclosure?

Yes

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?

Yes

#### **All Safeguard Policies**

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?

Yes

Have costs related to safeguard policy measures been included in the project cost?

Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?

Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?

Yes

#### **CONTACT POINT**

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