

**Madagascar
Sahofika Hydro-Power Project**

**RESETTLEMENT ACTION PLAN
EXECUTIVE SUMMARY**



Project Background

Madagascar has one of the lowest electricity service ratios in the world, with most of the island's population using wood as a source of energy. Electricity generation is largely dependent upon fossil fuels, and the Government has therefore identified increasing hydro-electric generation as one of the country's priorities and private sector involvement as an avenue to do so without increasing the country already overwhelming debt.

The Sahofika project development was awarded to the consortium formed by companies Eiffage, Eranove, Themis and HIER, which agreed on 2 December, 2016 with the Ministry of Water, Energy and Hydrocarbons of Madagascar a Project agreement to design, finance, build, operate and maintain the Sahofika hydro-power project, further to a concession contract to be signed with the State. A Malagasy company has been established by the Consortium in this purpose, which is called *Nouvelle Energie Hydroélectrique de l'Onive* ("NEHO" or "Concessionaire").

The Project entails the physical displacement of 364 households (2,062 individuals) residing in the Project footprint, as well as the economic displacement of an additional 10 households (52 individuals). This Resettlement Action Plan (RAP) is submitted by the Concessionaire addresses these impacts in line with both Malagasy legal requirements and international standards, specifically those of the African Development Bank (AfDB) and of the International Finance Corporation (IFC). The RAP was prepared in the period July 2018 – May 2019 by Malagasy consulting firm Land Resources, supported by international resettlement consultant Frederic Giovannetti.

At this stage, this RAP addresses the dam and reservoir area in full detail (all socio-economic and asset surveys done, detailed budget available), while the linear components of the Project (road and transmission line) are addressed at a conceptual level, with surveys to be done later when the level of progress of technical design allows. It is not expected that the road and transmission line will entail any physical displacement or significant economic displacement.

Project Description and Location

The Project is located at a distance of about 100 km from Antananarivo, Madagascar capital city, and 40 km from Antsirabe. Two administrative districts (Antanifotsy and Ambatolampy districts, both in Vakinankaratra region) are affected by the dam and reservoir. The Commune of Belanitra in Antanifotsy district is the most affected by the Project as it contains the Fokontany (communities) of Antenina and Befotaka, which are both significantly affected by the reservoir, while the Commune of Tsinjoarivo contains Ankazomena and Antandrokomby Fokontany, which are marginally affected by the reservoir.

The total population of the four fokontany that are affected by the dam and reservoir is estimated around 5 760 people, 2 062 of whom will be affected by the Project.

The following two maps present the location of the Project within the region and in its more local setting. Key technical characteristics of the Project are described in the detailed RAP and ESIA reports.

Figure 1 : Regional location of the Project

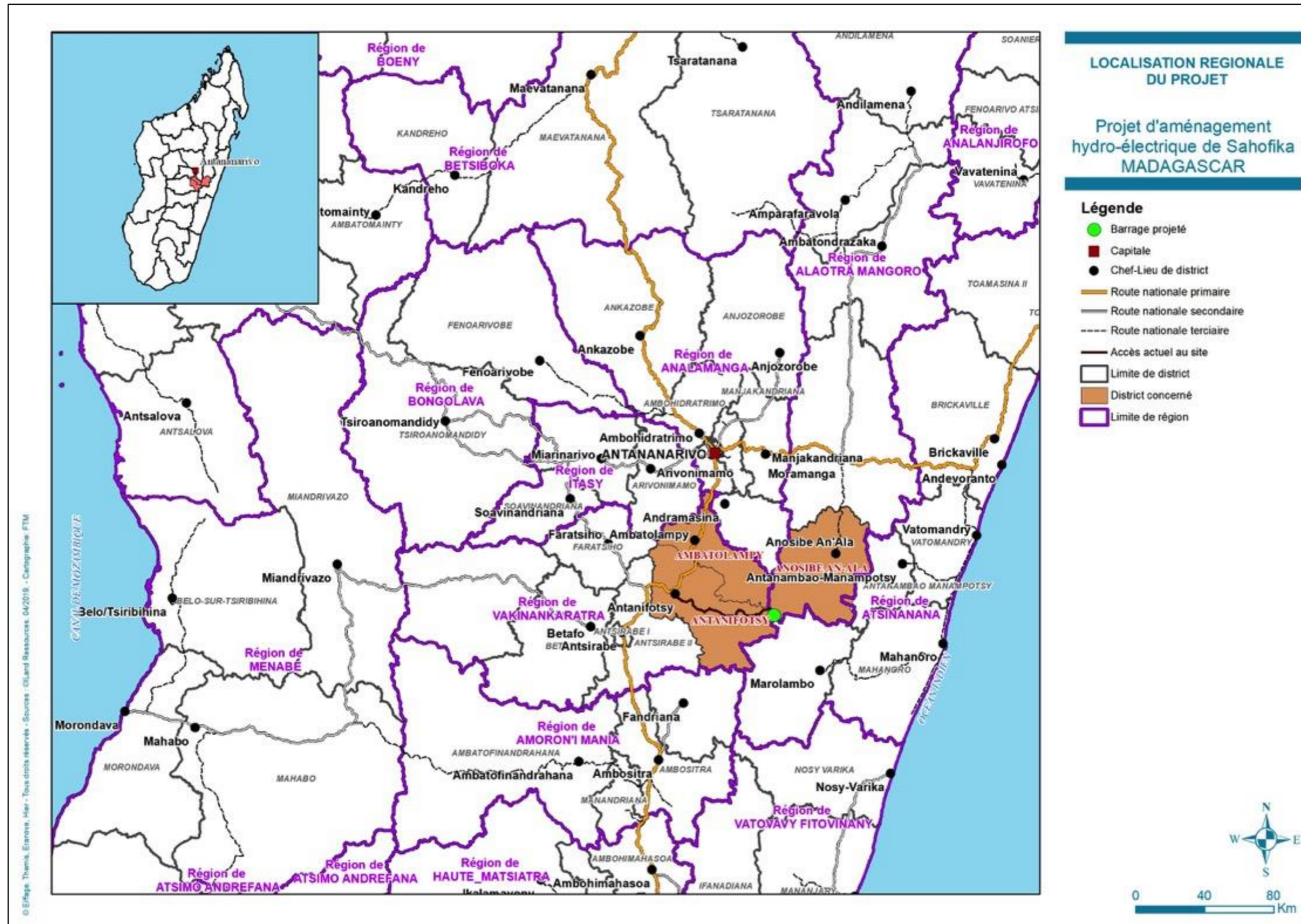
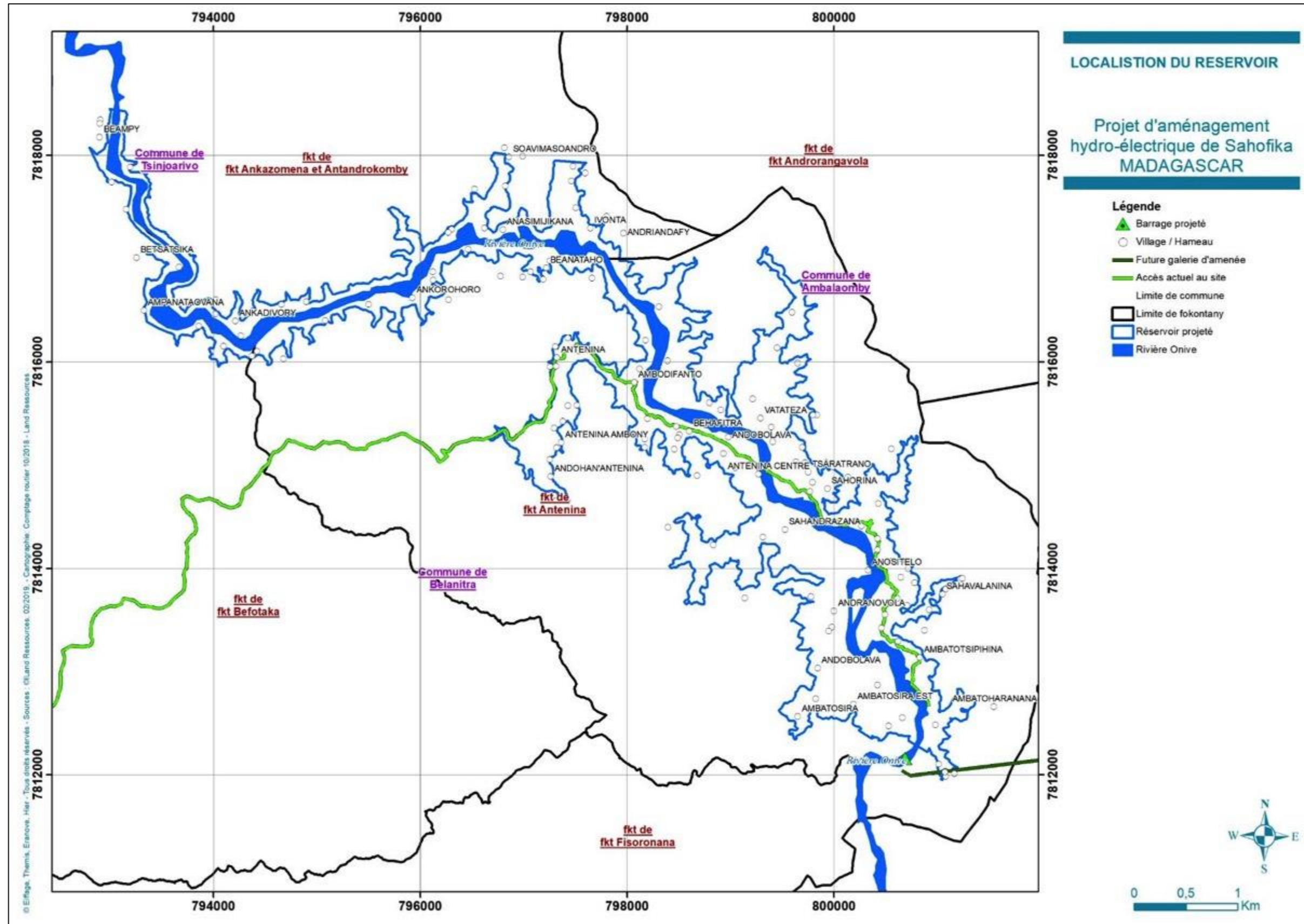


Figure 2 : Dam and reservoir



Objective of the Project

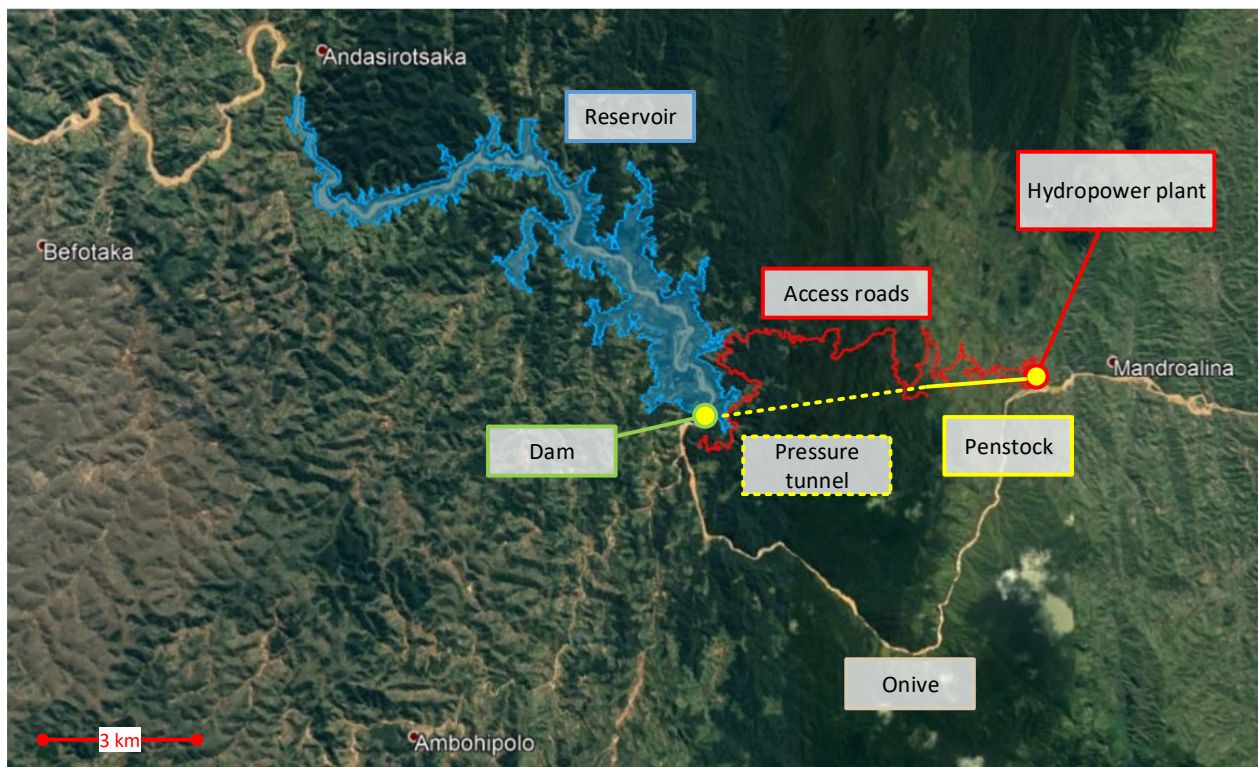
The Project is located on the Onive River and will have an installed capacity of 192 MW, of which 130 MW will be 99% guaranteed. The objective of the Project is to provide energy from an inexpensive and renewable source for the Antsirabé-Antananarivo grid. The annual average production will be 1570 GWh.

Organisation of the Project

NEHO is the developer and the concessionaire for the Project. For the detailed and construction studies for the Project, NEHO will rely on a construction company supported by an engineering consulting firm, in the form of a standard EPC (Engineering + Procurement + Construction) agreement. The operation of the project will be carried out directly by NEHO. The electrical energy produced by the plant will be transmitted to the network managed by the JIRAMA, which will ensure the distribution of the electricity.

Components of the Project

The Project comprises a principal dam on the Onive that is 60 m high and forming a reservoir of 140 hm³ (8.9km²), an underground gallery (headrace tunnel – with a length of 4.2 km) followed by a penstock (with a length of 2 km) down to the hydropower plant located 6.5 km downstream (13 km following the bed of the Onive). The dam foundation level will be at the altitude of 1328 m, whereas the hydropower plant will be at the altitude of 610 m: thus the total height of the fall will be approximately 700 m.



The Project also includes lines for the transmission of energy and all of the infrastructure necessary for its construction or its operation: access roads, service lines, temporary camps and definitive buildings, borrow areas and dredging removal areas, etc.

The energy transmission line will be a double circuit 225 kV type. It will follow as much as possible the access roads for the Project, while avoiding as much as possible the sensitive zones (inhabited zones, biodiversity interest zones, etc.). From the plant to the dam, the line will follow the access route as much as possible. From the dam to Antananarivo, the exact position of the line has not yet been defined and a corridor of 2km wide in which the transmission line will be constructed has been defined and studied for this purpose.

Method of Construction of the Project

The Project consists in general of carrying out earthworks or excavation and then installing structures made essentially of concrete (the dam, plant and gallery) or of metal (the penstock, the pylons for the line).

In the construction phase up to 1,200 persons will be employed. The personnel working to perform the Project will use the facilities provided to them nearby for each work site. Shuttles will be put in place to ensure the transportation of the personnel from the base camp to the work site. The sites will be closed and prohibited to the public. They will have a principal gate for access by heavy and light vehicles and an entryway for people on foot.

In order to construct the dam without water and protect it from floods, it is necessary to locally divert the course of the Onive by having it follow its left bank (for the construction of the right half of the dam) and then its right bank (for the construction of the left half of the dam). This will be carried out without entirely deviating the riverbed.

Project Schedule

The schedule for performance of the Project is based on the following assumptions:

- A construction period spread over 5 years, starting in 2020 and terminating upon the industrial commissioning of the structure.
- An operating period of 35 years (the duration of the concession).

Commissioning and Operation

The filling of the water reservoir will take place at the end of the construction period and will allow the correct operation of the development to be tested and verified. The Project will then be placed in production and will thus enter the operating phase.

During the operating phase, the Project will employ 25 persons.

The nominal flow of the hydropower power plant is 35 m³/s and the operating mode of the development is intended to produce the maximum energy (thus, to process 35 m³/s as often as possible) by using the water reserve of the reservoir during the dry season when the natural flow of the Onive is insufficient.

In the operating phase, the hydraulic regime of the Onive will thus be modified as follows, depending on the use of the turbines and the reservoir:

- In flooding season, once the reservoir is full: the plant will operate at its nominal capacity, and thus 35 m³/s will be diverted at all times from the reservoir to the plant.
- In the dry season, the level of the reservoir, which is full at the beginning of the season, will progressively lower in order to complement the natural flows and allow 35 m³/s to be processed.

- At the end of the dry season, with the resumption of the floods, the level of the reservoir will rise progressively until it attains the level for the normal reservoir level. Complete filling is certain for each year.

Between the dam and the plant, the flow of the Onive River will never be less than the flow planned for the development, equal to 5.7 m³/s.

The tidal range of the reservoir over the course of the year will be determined by the passage of flooding during the rainy season and the use of the water in the reservoir in order to ensure the flow during the dry season. This will be variable from one year to the next.

During a very dry year, the minimum operating level may be attained if the scheme is exploited at full capacity. For example, at the time of a ten-year dry period, the minimum operating level, located at 33 m below the normal operating level, may be attained for a period of two consecutive months.

Justification of the Project

In 2015, the government of Madagascar adopted a 2015-2030 New Energy Policy, as well as a 2015-2019 National Development Plan. By 2030, the objective is to attain a 70% level of access to electricity or another modern source of lighting, as well as an 85% mix of renewable electricity, based on 75% hydropower.

The Project is fully consistent with the objectives of the New Energy Policy. It is justified, on the one hand, by the need to improve access to electricity in order to meet the unsatisfied demand for electricity in Madagascar and, on the other hand, by the national strategy to replace electricity production capacity based on fossil fuels with a production capacity based on renewable energy.

Objectives of the RAP

This RAP is meant to demonstrate compliance of the Project with AfDB's requirements pertaining to involuntary displacement and resettlement, specifically AfDB's Operational Standard 2.

The specific objectives of this RAP are the following:

- Avoid and minimise displacement impacts to the extent technically and economically feasible;
- Describe the legal framework of Madagascar pertaining to land acquisition and analyse gaps against international standards where applicable;
- Describe and quantify economic and physical displacement impacts of the Project at household and community level;
- Describe the current socio-economic conditions in the Project area and the livelihoods of affected people;
- Describe the process having led to this RAP, particularly in terms of consultation with affected people and other stakeholders;
- Propose entitlements for each category of impact, particularly compensation for immoveable assets such as buildings and crops, compensation for disruption and transitional assistance, allowances meant for moving, as well as the proposed resettlement site and development principles thereof;
- Describe livelihood restoration measures meant to satisfy the key objective of leaving affected people as well off if not better off;
- Describe the grievance management mechanism;

- Assess the budget for implementation of all measures, and describe implementation arrangements, including the roles and responsibilities of the various parties involved at national and local levels.

Key Project Displacement Impacts

Project displacement impacts (dam and reservoir) are summarised in the table below:

1	LAND	
	Total area of affected land	1005 hectares
	Of which :	
	- Farmed land	323 hectares
	- Pasture and fallow land	305 hectares
	- Forest land	378 hectares
2	CROPS	
21	Annual crops	248 hectares
	Of which :	
	- Rice	65 hectares
	- Vegetables	60 hectares
	- Manioc	42 hectares
	- Maize	34 hectares
	- Others	47 hectares
22	Perennial crops	75 hectares
3	STRUCTURES	
31	Total number of affected residential structures	364
32	Total number of affected non-residential structures	258
4	COMMUNITY, RELIGIOUS AND RELIGIOUS ASSETS	
41	Government run primary schools	3
42	Privately run primary schools	3
43	Privately run secondary school	1
44	Sport pitches	3
45	Churches	3
46	Graves	14
47	Cultural sites	6

The Concessionaire is seeking to minimise displacement as follows:

- By locating aggregate borrowing sites inside the reservoir area, such that no additional displacement impacts are experienced as a result of construction material needs ;
- By routing the linear components of the Project such that displacement impacts are minimised;
- By handing back any land initially earmarked as potentially affected that might eventually end up being unaffected.

Legal and Institutional Framework for Resettlement

The legal and institutional framework for resettlement in Madagascar is described in details in the RAP. Key features are the following:

- Key legislation includes the Constitution, which establishes broad principles of property right protection and the possibility for the State to resort to expropriation for the public interest under certain conditions;
- Relevant Malagasy legislation is mainly contained in the expropriation law, which establishes the process and associated procedures that the State can use to acquire land in the public interest. The review of these regulations reveals a number of potential gaps against international resettlement standards, particularly in terms of compensation at replacement value, consultation, resettlement, and livelihood restoration.

The Project will bridge these gaps through specific Project measures, particularly in terms of developing a resettlement site and implementing livelihood restoration measures. A detailed table of potential gaps is presented in the full report with for every identified gap the proposed measures to bridge them.

The specific institutional framework for the Project (Public-Private Partnership) is described in the last section of this Executive Summary.

RAP Preparation Participatory Process

The RAP preparation process has entailed the following key steps and milestones:

- July 2018:
 - Consultant mobilisation;
 - Preliminary information to community and municipal authorities on project, RAP process and sponsor commitments,
 - Participatory survey of land ownership and participatory delineation of family land (without detailed inventory at this stage);
- October and November 2018:
 - Establishment of a grievance management mechanism, including a local grievance committee;
 - Establishment of a consultative mechanism, including fielding two Community Liaison Officers sourced by the Consortium from Malagasy NGO ZiNa to convey messages from the Consortium and record community feedback (still in place at the time of submitting this RAP);
 - Detailed socio-economic surveys, including participatory identification of key cultural features and focus groups on livelihoods, land tenure, compensation and resettlement preferences and priorities, gender issues, etc...;
 - Detailed asset inventories, including delineation of all residential and agricultural land plots, and measurement and description of all crops and structures;
 - Cadastral mapping of Project footprint (done by regional cadastral survey department from Ambatolampy);
- January and February 2019:
 - Investigations at proposed resettlement sites (two options considered), including water resources, agricultural potential and consultation with municipal authorities and host communities;
- May 2019:

- Finalisation of draft RAP for preliminary submission to potential lenders, including the African Development Bank and Malagasy government and consultation;
- June 2019:
 - Consultation on ESIA and RAP with stakeholders per Stakeholder Engagement Plan (submitted separately).

Current PAP Socio-economic Circumstances

Key features of the current socio-economic conditions of PAPs and their implications to the resettlement and compensation strategy are described below:

- The economy of affected households is predominantly agricultural. Losing agricultural land to the Project will entail significant economic displacement and put PAPs at risk of impoverishment should agricultural land not be replaced by similar agricultural opportunities.
- PAPs generally have a low level of education, which has two implications:
 - They will not be able to capture new economic opportunities arising from the Project unless a significant training effort is undertaken. The livelihoods of most PAPs will continue to depend on agriculture for the foreseeable future.
 - Project messages, and particularly information in regards of compensation and resettlement measures need to be adapted to that relatively low level of education. For example, written material will not be understandable by many and the Project will have to dedicate specific resources to conveying understandable messages in a culturally appropriate manner.
- PAPs are concerned about the resettlement schedule and the implications on their agricultural calendar, and in general about the period of uncertainty. This is particularly relevant to the most vulnerable PAPs, including elderly individuals and women-headed households. Specific support will have to be provided and information on the schedule of relocation will have to be conveyed consistently and transparently.
- While some households have indicated that they would prefer compensation to be delivered in cash rather than in kind, poverty and lack of education should lead to caution in this regard, as there is a significant risk of cash misuse, gender imbalance in access to cash, and ultimately impoverishment. Compensation will be proposed in-kind (full resettlement package) to all affected households, with strong safeguards to protect those willing to opt for cash.
- Cultural dimensions are critical to the success of the relocation process. This applies not only to cultural features that need to be relocated (particularly graves) but also to cultural awareness required in consultation and in preparation to the process of selecting and developing a resettlement site.

Compensation Strategy and Entitlements

Key principles of the compensation strategy are the following:

- Resettlement and compensation activities will be carried out in conformance with Malagasy law and international requirements. Where there is a discrepancy between these requirements, the most favourable to PAPs shall apply.

- Affected people will be eligible to compensation regardless of the formality of their land rights (or absence thereof). Most people in the area hold land informally but they will be eligible to compensation regardless.
- A cut-off date has been defined, broadly disclosed and posted locally. It is 20th November, 2018.
- Compensation will be offered at full replacement cost. In-kind compensation will be prioritised, particularly the provision of replacement residential or agricultural land. In general, the typical compensation package for physically displaced households will be as follows:
 - Provision of a resettlement residential land plot at the resettlement site;
 - Provision of a house meeting decent housing criteria;
 - Provision of agricultural land of similar potential as that lost in the affected area;
 - Compensation in cash for ancillary structures, trees and annual crops.
- A resettlement site will be developed to accommodate both residences and agricultural activities. The final selection of the resettlement site and its development principles, particularly in terms of community infrastructure, utilities, and amenities has been and will continue to be consulted upon with both the affected and the host communities. The site will include educational and health facilities to at least replace or improve the situation in the affected area. Drinking water, electricity and sanitation will be provided by the Project, with households further covering recurrent costs themselves.
- Affected households opting for the full resettlement package will be provided with appropriate security of tenure there.
- Grievances will be reviewed timely, fairly, free of charge, and without retaliation. Grievance management will be documented.
- Financial training will be provided to those PAPs receiving cash to minimise risks of cash misuse and associated impoverishment.

A detailed entitlement matrix has been prepared and is presented in the main report, together with all applicable compensation rates (land, structures, crops, other features).

A resettlement site has been identified at Fisoronana in Antanifotsy district, and compared to an alternative option in Soamanandrany in Ambatolampy district. It is suitable and preferable to the alternative option from the perspective of all key criteria:

- Potential presence of drinking water;
- Enough space;
- Acceptable to both affected and host communities;
- Relatively easy to access from the Project main road;
- Sufficient potential for agricultural development and irrigation (albeit subject to significant earthmoving works).

Livelihood Restoration and Enhancement

The key driver to the compensation strategy (in-kind, including replacement of agricultural land) and the selection of the resettlement site (offering good potential for agriculture) is livelihood restoration, and enhancement which has thereby been integrated into all strategic compensation options.

In addition, the Project will facilitate livelihood restoration and enhancement as follows:

- Support to the establishment of agricultural plots, particularly rice paddies, where the Project sponsor will provide earthmoving and support to the community in terms of land plot allocation;
- Support to the re-establishment of agriculture, through training, provision of inputs and tree and other seedlings and seeds;
- Financial training to avoid misuse of compensation
- Support to the re-establishment of gold digging activities within the legal framework of the Republic of Madagascar (any activity supported by the Project for re-establishment will need to be fully legally permissible).

The Project will cooperate with existing initiatives, including both governmental and non-governmental, and may enhance some of these or provide facilitation.

Assistance to Vulnerable Persons

In the context of the Project and in line with applicable standards, vulnerable groups, households and individuals are defined to include the following categories:

- Female heads of household;
- People living in poverty;
- People affected by a chronic disease, including, but not limited to those living with HIV/AIDS;
- Elderly people without family support;
- People with physical or mental handicaps without or with insufficient family support;
- Children heads of household;
- Widowed heads of household.

Potentially vulnerable PAPs have been identified during the census and socio-economic survey carried out in the third quarter of 2018. The Project sponsor will hire an NGO to carry out the following vulnerable people support activities;

- Support in the compensation negotiation and agreement process;
- Support during the construction and transition period, including assistance to moving;
- Specific support to livelihood restoration;
- Financial training to proper use of compensation and assistance to financial management (including opening and management of bank accounts) during the transition period;
- Medical care and food aid on an exceptional basis during the transition period;
- Psychosocial support before, during and after the move.

Grievance Redress Mechanism

A Project-specific grievance redress mechanism is already in place. It includes Community Liaison Officers (CLOs) based on a permanent basis in the affected communities, who gather grievances from affected people and process them on a daily basis. Grievances experienced to-date include census and inventory inaccuracies that require correction (and were corrected by inventory teams), and

broader concerns related to the Project general impacts, particularly physical displacement, impacts to agricultural land, access, and environmental impacts.

All grievances are logged by CLOs, who gather basic information (complainant identification, reason for the grievance), and investigate it in the field where warranted. CLOs then pass the grievance with a resolution proposal if possible to either the inventory team (if the grievance belongs in this category), or to NEHO management for resolution.

In case the initial resolution by NEHO is not accepted by the complainant, the grievance is escalated to the Local Resettlement Committee, which includes community and local authority representatives, whose operation is facilitated by NEHO and which can investigate the grievance in the field with the aggrieved parties, as warranted. In case the resolution proposed by that committee is again not accepted by the complainant, the grievance is escalated to the National Resettlement Committee, where it is again reviewed by members and a resolution is proposed.

Monitoring and Evaluation

Monitoring and evaluation will include a combination of internal monitoring, focussing on input, activity and output indicators, and external monitoring, focussing on outcome indicators and compliance. The RAP unit established by the Project sponsor in cooperation with the Government will gather input, activity and output indicators on a regular basis and as specified in the relevant chapter of the full RAP. These indicators will be collated in six-monthly internal monitoring reports that will be prepared by the Sponsor and potentially submitted to the lenders.

In addition, an independent consultant hired by the lenders, and whose duty of care is to the lenders, will check compliance of the RAP implementation on a six-monthly basis. Lastly, the Sponsor will organise a completion audit after livelihood restoration activities are deemed complete, i.e. potentially about three years after the completion of physical relocation.

Implementation Arrangements and Budget

The Project is a Public Private Partnership and the State and the Concessionaire will therefore cooperate in all its components, including in regards of the resettlement and compensation activities. Roles and responsibilities will be clearly allocated between both and cooperation will be organised with joint committees ensuring that adequate coordination takes place.

The Concession Agreement between the Government of Madagascar and the Concessionaire allocates the ultimate responsibility to clear land of occupation and rights to the State. The State is expected per this Agreement to make land available to the Concessionaire for the purpose of building and operating the Project. However, in practice the Concessionaire will facilitate the implementation of the RAP and will avail financial, human and material resources required for implementing the RAP within a dedicated implementation unit, while reporting on a regular basis to the Granting Authority (the State).

Two resettlement steering committees have already been put in place, one at the national level with the different central departments involved at Ministerial or Vice-Ministerial level, which will provide strategic guidance in key issues, and another one at the regional level, which will resolve day-to-day implementation issues and participate in grievance resolution. These committees will include representatives of both key State agencies involved under the chairmanship of the Ministry of Water, Energy and Hydrocarbons, and the Concessionaire.

Insofar as the Consortium will require international finance from lenders, it will take responsibility for implementation of the RAP vis-à-vis the lenders. This will particularly relate to conformance of implementation of the RAP to lenders requirements (OS2 and PS5). Conformance will be monitored by an independent Consultant hired by lenders and whose duty of care will be to the lenders.

The budget of the Sahofika HPP Project RAP is shown (in summary) in the table below:

#	Activity	Amount in MGA	Amount in USD
1	Compensation of affected household assets (land, crops, buildings)		
	Sub total	59,872,153,106	16,539,269
2	Compensation of affected community and other non-household owned assets		
	Sub-total	730,000,000	201,657
3	Resettlement site - Construction of community infrastructure		
	Sub total	1,520,400,000	420,000
4	Resettlement site - Acquisition and development		
	Sub total	18,317,200,000	5,060,000
5	Livelihood restoration		
	Sub total	2,099,600,000	580,000
6	Implementation		
	Sub total	8,307,900,000	2,295,000
	TOTAL	90 847 253 106	25 095 926
	Contingency (10 %)	9 084 725 311	2 509 593
	GRAND TOTAL	99 931 978 416	27 605 519