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SURINAME
ESSENTIAL AIR TRANSPORT SERVICE FOR REMOTE COMMUNITIES IN SURINAME
SU-L1071

ENVIRONMENTAL AND SOCIAL REVIEW SUMMARY (ESRS)
11/14/2024

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Environmental and Social Review Summary	
Operation Data	
Operation Number	SU-L1071
IDB Sector/Subsector	Transport/Rural Roads (INE/TSP)
Type of Operation & Modality	Specific Loan Operation (LON/ESP)
E&S Impact Classification (ESIC)	B
E&S Risk Rating (ESRR)	Substantial
Disaster and Climate Change Risk Classification (DCCRC)	Moderate
Borrower	Republic of Suriname
Executing Agency	Ministry of Transport, Communication and Tourism (MTCT) through the N.V. Luchthavenbeheer
IDB Loan Amount (and total Program cost)	\$25,000,000.00 (\$25,000,000.00)
Applicable ESPS's with requirements	ESPS 1; ESPS 2; ESPS 3; ESPS 4; ESPS 6; ESPS 7; ESPS 8; ESPS 9; ESPS 10
Executive Summary	
<p>In accordance with the IDB's Environmental and Social Policy Framework (ESPF), the operation is classified as Category "B" based on the environmental and social impacts that the rehabilitation works on the aerodromes may cause. These impacts will be localized, temporary, and of low magnitude. Among the impacts are gaseous emissions, particulate matter, noise and vibrations, waste generation, and disturbance to flora, fauna, and the surrounding population. None of the projects will take place within critical habitats. In Kwamalasamutu, the site is surrounded by a natural habitat, which will not be affected negatively because the intervention will be limited to the existing Right of Way (RoW) of the aerodrome and specific mitigation measures will be implemented for potential indirect impacts to flora and fauna. All the impacts will be addressed with appropriate mitigation measures and management plans. No physical or economic displacement has been identified for the projects, and no risk of involuntary resettlement has been found.</p> <p>The environmental and social risk rating is substantial due to the Executing Agency's reduced capacity for environmental and social management and lack of experience with the Bank's ESPF. The weak legal and institutional framework, including, but not limited to, environmental and social aspects, and the remote location of one of the projects also contribute to the risks, in terms of accessibility of the area for works and supervision, causing certain delays in the execution of the planned activities. A close monitoring of the accessibility conditions will be performed from the early start of the Program execution. These risks will be mitigated with the contractual requirement of establishing a new dedicated Project Execution Unit (PEU) including one Environmental Management and one Social Engagement Officer.</p> <p>An Environmental and Social Assessment (ESA) was carried out for the operation, which includes an Environmental and Social Management Plan (ESMP) and a Stakeholder Engagement Plan (SEP). Two meaningful consultations were carried out. The first one was held on October 16th, 2024, at the Suriname Aviation Training Centre (Zorg En Hoop Airport) in Paramaribo. The second one took place on October 17th, 2024, in Kwamalasamutu, with the Trio Indigenous communities, with the participation and leadership of the <i>Granman</i>. An interpreter facilitated the session, translating from the native language <i>Tareno</i> to Dutch and vice</p>	

versa. For both events, satisfactory engagement and dialogue were achieved by providing clarifications on the consultation process, the definition of roles and responsibilities of project execution, and project-specific information. Both consultations received similar concerns as related with Grievances mechanisms. In addition, at the Paramaribo consultation there was concern about who will be in charge of the monitoring of the project, as past experiences where the government was the only institution in charge of the monitoring were negative. Kwamalasamutu feedback on the project was mostly centered around decreasing the cost of the flights that is significant, as well as if there would be more flights, provided the key role these have for the communities. Other government responsibilities, such as providing fuel were brought to the attention.

Free, Prior, and Informed Consent (FPIC), in accordance with the ESPS 7, was obtained as described in detail in the SEP and the Consultation Report. The Bank disclosed the preliminary ESA/ESMP and SEP on August 14th, 2024, before the analysis mission. The updated version of the ESA/ESMP, the Consultation Report, a Socio-Cultural analysis (SCA), and an Indigenous Peoples Plan (IPP) were disclosed before distribution to the Board.

The Program includes the installation of a small solar system. Measures for the procurement of solar panels to manage the risk of forced labor are included in the ESMP.

The intervention sites are exposed to the following natural hazards: (i) hurricanes (partial affection by hurricane tales), (ii) storm surge, (iii) intense rainfall, (iv) drought, (v) sea level rise, (vi) fires, (vii) strong winds, particularly in the case of Zorg En Hoop. The criticality and vulnerability of the infrastructure interventions are moderate for all the projects. Increments in the occurrence and magnitude of extreme events are expected due to climate change. Minimal risk exacerbation may occur locally. A Disaster Risk Assessment (DRA) and a Disaster Risk Management Plan (DRMP) have been prepared: both will be updated before the bidding process, to ensure that the plans are adequate and up to date with the final engineering design specifications. Considering the small-scale improvement and rehabilitation works, the hazard levels identified, the criticality and vulnerability estimated for the infrastructure's interventions, and the low risk of exacerbation, a Moderate DCCR classification is adequate.

Operation Description

The Program's general objective is to contribute to a safe and connected air transport sector for Suriname. The specific objectives are to: (i) improve compliance with civil aviation safety and security standards; and (ii) improve the quality and resilience of the air transport sector.

After due diligence and based on the Environmental and Social Assessment, the Program has changed significantly from the one described in the iESRS annexed to the Project Profile, in the following aspects: the number of aerodromes object of interventions has been reduced from a long list, which had to undergo a prioritization screening determining the magnitude of works, to three (3) sites only, where the one in the Paramaribo (Zorg En Hoop) will receive a primary focus in terms of investment (see component description). Moreover, the portion of the funds dedicated to institutional support has seen a major increase, from US\$ 1M to US\$ 9M. In addition, the Program was restructured from multiple works to specific works.

The Program is structured in four components:

Component 1: Improvements in the institutional and legal framework (US\$5,185,000). This Component will finance the following activities:

- Restructure Suriname's civil aviation system and strengthen institutional capacity, through: (i) developing a new aviation legal framework under which the civil aviation administration will be structured, establishing clear roles and responsibilities for CASAS, CADSUR and the future accident investigation unit, including policies to improve the financial sustainability of the civil aviation system, while incorporating climate mitigation and resilience measures. Activities will include a) the

development of the new legislative framework under which the civil aviation administration will be structured; b) the development of the legal provisions for a new civil aviation structure; and c) support to MTCT during the approval of the new legislation;^[1] (ii) developing and supporting the new organizational structure, by implementing a human resource strategy to develop and restructure CASAS and CADSUR with recruitment, training, and retention policies for personnel in critical areas of activity^[2]; (iii) developing an economic strategy to support CASAS and CADSUR, including a comprehensive economic study of the current air transport system, a study of the potential growth of aviation in Suriname^[3] and a review of the financial statuses of CASAS and CADSUR; (iv) a comprehensive analysis of overflight fees and strategies to ensure appropriate reinvestment for a financially viable aviation system; (v) a digital readiness assessment outlining digital infrastructure needs and an implementation roadmap; and (vi) the hiring of a consultancy firm to assist the MTCT and pre-investment studies for rehabilitation of civil aviation infrastructure.

- Strengthening of CASAS' regulatory capacity, by: (i) developing regulatory documentation and guidance material, conducting a gap analysis of existing regulations and procedures, and developing updated frameworks for safety oversight^[4] and safety management systems; and (ii) implementing comprehensive training programs.^[5]
- Strengthening sustainability policies and decarbonization, by developing a State Action Plan for Sustainable Aviation Fuel (SAF) that encourages sustainable production, distribution, and use in accordance with best international practices.
- Communication management and stakeholder outreach: improving Suriname's aviation sector's regional integration by enhancing GOS's capacity to collaborate with stakeholders and other CARICOM member countries in matters pertaining to air navigation and aviation security.
- Gender and diversity actions: (i) Elaboration of a diagnosis, policy, and gender action plan to reduce gender gaps and encourage women's labor participation in the air transport sector;^[6] and (ii) job internships program for women and PwD in non-traditional jobs at the SMZO.

Component 2: Improvements in the air transport control and operations (US\$8,155,000). This Component will finance the following activities:

- Enhancement of air navigation capacity and efficiency, by assisting in preparing the national air navigation plan, with cost-benefit analysis and key performance indicators to address the implementation and maintenance of CNS infrastructure at optimal levels, prioritizing the national segment of the ATN (Aeronautical

[1] The policy framework will be guided by ICAO's basket of measures for climate change mitigation including emissions decline to net zero after 2050. CO₂ emissions from operations can be reduced through the optimization of air traffic management and ICAO has developed the Global Air Navigation Plan (GANP) and the Aviation System Block Upgrades (ASBU) initiatives in this regard. [ICAO Annex 16 - Environmental Protection](#) and [Greenhouse Gas Management and Mitigation at Airports](#), ICAO 2022.

[2] In particular for inspectors, meteorological personnel, ATC specialists and auxiliary services.

[3] Including an initial financial, operational and regulatory risk scenario analysis.

[4] Accident Investigation, Airworthiness, Operations, Personnel Licensing, Aerodrome and Air Navigation.

[5] One oriented for managers to equip them with skills to develop sustainable plans for Suriname's civil aviation industry and another for inspectors to equip them with the necessary skills to conduct regulatory and oversight tasks effectively.

[6] Including recruitment policies, equal wage, life-work balance gender-based violence prevention.

Telecommunication Network) and improving communication and surveillance coverage for air traffic control, as well as competency-based training methods for ATM and CNS.^[7]

- Establishment of an independent air Accident Investigation Authority (AIA), operating autonomously and complying with international standards set by the International Civil Aviation Organization (ICAO).^[8] This includes:
(i) capacity building and procedure development, with definition of procedures and protocols as well as staff training; (ii) implementation of infrastructure and resources; and (iii) acquisition of Search and Rescue (SAR) software and systems.
- Definition of a new international standard-based fee structure and collection mechanism using new digital tools that will allow to better identify, quantify, and monitor the collection of the appropriate fees, resulting mainly from air navigation services provided to airlines, and that will be efficiently used to cover operations and maintenance of all airstrips nationwide.
- Improvements in air navigation surveillance, such as (i) the development of digital flight manifests for domestic passengers and cargo to promote security and fee collection; (ii) enhancements in basic air navigation equipment in aerodromes, (iii) financing technical visits for inspections and surveillance of aerodromes; and (iv) deployment of digital technologies and equipment on key aerodromes.

Component 3: Enhancement and maintenance of Suriname's air transport infrastructure (US\$ 10,000,000).

This component will finance these activities:

- PBM international airport interventions. Activities will include:
(i) acquisition and installation of a new energy-efficient communication antenna, to improve air transport operations and overflight revenues collection; (ii) a detailed digital assessment for the Airport Management Ltd.; and (iii) training and capacity building.
- SMZO domestic hub improvements. Activities will include:
(i) rehabilitation/upgrading of existing land-side facilities considering mitigation and adaptation measures^[9] to ensure resilient, safe, and secure air transport operations; (ii) implementation of care facilities such as child-friendly bathrooms and lactation rooms; (iii) acquisition and installation of energy-efficient^[10] aeronautical equipment to ensure secure operation of the airport; and (iv) inclusion of people with disabilities and women at SMZO aerodrome through labor and internships.

^[7] Specialist assessments will be conducted to identify gaps in ATM and CNS staffing and training. Based on this assessment, a comprehensive plan will be created to address these gaps and develop a skilled workforce, through policies on staff recruitment and retainment.

^[8] Preliminary activities that are required for the establishment of the AIA, defined as conditions prior to the disbursement of the loan resources for Component 2, are already under process like the review and update of ICAO's CARS 014 regulations (Civil Aviation Regulations related to Aircraft Accident and Incident Investigation), the identification of sustainable financing and the legislative amendment required to establish this new authority. The development model for the AIA that has been recommended by a recent consultancy financed by the Bank (see [OEL#3](#)). With the support from ICAO and agreed by the MTCT is the "Integrated Model" which consists of establishing an independent investigative body that will remain at the beginning administratively attached to CASAS. This structure allows leveraging CASAS's existing infrastructure while maintaining operational independence, serving as an efficient provisional solution until the necessary legislative changes are made to establish a fully independent authority, separate from the Attorney General, with its own budget, dedicated staff, and facilities, ensuring full operational autonomy and the ability to conduct independent and thorough investigations.

^[9] In accordance with the [Technical guidance to align IDB group operations with the PA](#).

^[10] The equipment will follow energy efficiency standards and labelling ([EES&L](#)).

- Pilot for all-weather aerodrome modernization. Activities will include:
 - (i) works for the rehabilitation of Kwamalasamutu Aerodrome (SMSM) to optimize operations for safe and efficient transport services including school supplies and healthcare using climate-smart materials that are lightweight and that have proven their worth providing an all-weather surface for landing in similar contexts;^[11] (ii) acquisition and installation of energy-efficient^[12] aeronautical equipment to ensure secure operation of the aerodrome; and
 - (iii) training and capacity building, including local communities (in particular Amerindians) for disaster and resilience planning, response, and maintenance of the airstrip.

Administration and monitoring (US\$ 1,085,000). This component will finance management costs, including supervision and technical support for the Project Execution Unit (PEU), as well as audits and project evaluation.

Contingencies (US\$ 575,000). In order to provide some flexibility in the event of unforeseen costs variations that may arise during project implementation, a budget line for contingencies has been set.

The specific location of the project sites can be consulted in *Map 1* of the Annex C.

The ESA defines the extension of the Direct and Indirect Areas of Influence for the project sites. The Direct Area of Influence (DAoI) is defined as the footprint of the project, where most of the E&S impacts are expected to occur and/or be experienced most acutely, namely a radius of 100 meters around the designated project sites, including construction camps and any other additional facilities. The Indirect Area of Influence (IAoI) is the area within which indirect impacts are expected to occur, that is, those impacts that transcend the physical space of the project and its associated infrastructure. The full extents of Paramaribo City and Kwamalasamutu Village were defined as IAoI. This expanded area of influence will receive the environmental and social benefits derived from the Program's interventions.

The aerodrome of Kwamalasamutu is considered to be within a natural habitat. No critical habitats have been identified.

The aerodromes where the Program will be developed are not located within Protected Areas or Key Biodiversity Areas (KBAs). No deforestation is expected. The ESA identified impacts and risks on biodiversity in these areas. Management measures aimed at its proper management have been included, using the mitigation hierarchy and ensuring no net loss of biodiversity.

The main beneficiaries of the Program will be air transport users. Indigenous and Tribal communities, to a greater extent, may benefit from these interventions which will ensure sustainable accessibility to and from very isolated regions of the country.

The IDB conducted a survey to understand the domestic air travel market in Suriname. The survey took place at Zorg En Hoop Airport in Paramaribo in May 2024, targeting departing passengers, and involved 352 respondents. The majority were male (67%). The largest age group was 31-40 years (29.5%). In terms of ethnicity and nationality, the primary ethnic groups represented were Maroon (26.4%), Mixed (25.9%), Creole (14.2%), and Indigenous Amerindian (13.6%). Nearly 70% of the respondents were Surinamese nationals.

^[11] Designs include lightweight and easy-to-transport geosynthetic material and a reinforced top layer with the following advantages: (i) maintenance: low risk of rutting, erosion, or deformation; (ii) cost-effectiveness: stabilizes local soil material instead of transport material from elsewhere; (iii) installation: less heavy equipment than conventional asphalt pavement; and (iv) versatility: to accommodate various soil conditions and site-specific requirements.

Regarding income and employment, 49% of the respondents had paid jobs, 26% were hustling, and 12% owned businesses. The main reason for domestic air travel was work-related activities (70%).

Safety conditions for operations will see improvements, as well as times and costs for transporting people and goods. Currently, these services can be hindered by adverse natural conditions, resulting in a reduction or even cancellation of the connections, or the reliance on other less efficient means of transport. Access in the case of natural disasters will be improved thanks to the acquisition of better aeronautical equipment and the improvement of the Kwamalasamutu airstrip.

Amongst the principal civil works are rehabilitation works for the Kwamalasamutu airstrip. These will consist of minor construction, such as installing geomembranes to provide terrain stabilization and better filtration during rain. Other works will include improving existing buildings and facilities at Zorg En Hoop in Paramaribo. No new paving of the airstrips is considered. Take note that Zorg En Hoop Airport is already paved.

From a socio-environmental perspective, in the **Construction Phase**, possible activities, to be adjusted or confirmed based on the final design, include:

Work preparation: (i) Transportation, movement, and stockpiling of materials, equipment, and machinery. Labor mobilization. (ii) Worker camps installation and operation. Fencing in camps and construction fronts. (iii) Land clearing (intended as brush and stone clearing) and dismantling of facilities (where applicable). **Main work:** (iv) Rehabilitation of existing facilities (demolition, removal of damaged structures, refurbishment). (v) Installation of Aeronautical Equipment. (vi) Debris disposal, and final adjustments. **Work demobilization:** (vii) Demobilization of construction sites and workers. Removal of surplus materials.

In the **Operational Phase**, identified activities can be divided into (i) Operation of renewed and newly installed infrastructures, and (ii) Maintenance of renewed and newly installed infrastructures.

It is important to mention that there will not be construction of new aerodromes, as all the renovations and improvements will be carried out on existing ones.

The type of aircraft that the airstrips will serve on averages small planes that can only fit 5-20 passengers (mostly Cessna Grand Caravan and Cessna 172).

The Bank's experience in similar programs in Suriname has generated lessons learned that have been incorporated into the Program, such as: (i) a strong emphasis on strengthening the capacity of the Executing Agency (EA); (ii) creating dedicated execution units for program implementation; (iii) creating program steering committees where there is overlapping authority for the interventions; (iv) carefully assessing the cost and implementation time for the interventions; and (v) managing the designs to reduce the need for utility relocation and land acquisition.

Rationale for Classifications/Rating

<p><i>E&S Impact Classification</i></p>	<p>Category B Potential negative environmental and social impacts associated with the rehabilitation works of the aerodromes. These impacts are expected to be <u>localized, temporary, and of low magnitude</u>, as the works will be conducted within the Right of Way (RoW) of the existing aerodromes and no residences or activities will be affected. In Kwamalasamutu, the site is surrounded by a natural habitat: potential impacts to flora and fauna will be mitigated through the implementation of the ESMP. All impacts have been addressed with appropriate mitigation measures and management plans, with a focus on flora and wildlife. Details on said measures are available in the ESPS 6 chapter.</p>
<p><i>E&S Risk Rating</i></p>	<p>Substantial The environmental and social risk rating is substantial due to the Executing Agency's reduced capacity for environmental and social management and lack of experience with the Bank's ESPF. The weak legal and institutional framework, including, but not limited</p>

	<p>to, environmental and social aspects, and the remote location of one of the projects also contribute to the risks, in terms of accessibility of the area for works and supervision, causing potential delays in the execution of the planned activities. A close monitoring of the accessibility conditions will be performed from the early start of the Program execution. These risks will be mitigated with the contractual requirement of establishing a new dedicated Project Execution Unit (PEU) that will include one Environmental Management and one Social Engagement Officer.</p> <p>Other risks include accidental spills potentially resulting in water and soil contamination, occupational and community accident risks, occupational hazards, and service disruptions.</p>
<i>DCC Classification</i>	<p>Risk</p> <p>Moderate</p> <p>The intervention sites are exposed to the following natural hazards: (i) hurricanes (partial affection by hurricane tales), (ii) storm surge, (iii) intense rainfall, (iv) drought, (v) sea level rise, (vi) fires, (vii) strong winds, particularly in the case of Zorg En Hoop. The criticality and vulnerability of the infrastructure interventions are moderate for all the projects.</p> <p>Increments in the occurrence and magnitude of extreme events are expected due to climate change. Minimal risk exacerbation may occur locally; therefore, disaster risk must be duly and proactively managed as works will be implemented in already impacted and vulnerable areas. A Disaster Risk Assessment (DRA) and a Disaster Risk Management Plan (DRMP) have been prepared. Both will be expanded and updated once the final engineering specifications are available, before the bidding process.</p> <p>Considering the small-scale improvement and rehabilitation works, the hazard levels identified, the criticality and vulnerability estimated for the infrastructure’s interventions, and the low risk of exacerbation, a Moderate DCCR classification is adequate.</p>
Use of Borrower E&S Framework	
	No
The Program will not use the Borrower framework.	
Will a framework approach be applied?	
	No
The Program will not use a framework approach.	
Will the operation be co-financed?	
	No
The Program will not be co-financed.	
Environmental and Social Performance Standards (ESPSs) that apply to the proposed Program	
ESPS-1. Assessment and Management of E&S Risks and Impacts	
	Yes
<p>The Program will be executed by the Ministry of Transport, Communication and Tourism (MTCT) through the N.V. Luchthavenbeheer, a Parastatal organization of the MTCT whose purpose is to maintain and operate Suriname’s international airport.</p> <p>A due diligence of the MTCT and N.V. Luchthavenbeheer's Environmental and Social Management System (ESMS) has been undertaken. The agency has processes, resources, and elements through which it can manage the Program’s environmental and social impacts and risks. Nevertheless, given the identified lack of capacity, one Environmental Management and one Social Engagement Officer will have to be part of the Executing Agency to administrate E&S aspects of the Program. The table below shows the details of compliance or gaps</p>	

for each of the seven ESMS elements. Any gaps are addressed in accordance with the provisions of the Environmental and Social Action Plan (ESAP).

Element	General description
Program-specific framework	IDB ESPF and National regulations like the Nature Conservation Act (No. 26 of 1954), Environmental Framework Act (No. 97 of 2020), Hindrance Act (G.B 1930 no 64 amended by S.B.2001 no. 63), and Air Transport service regulations rules.
Identification of risks and impacts	<p>Based on this analysis, in the construction phase, the main negative impacts have been associated with the ones on biota (flora and wildlife). Other negative impacts have been associated with the following physical components: gaseous emissions and particulate matter, noise and vibrations, groundwater and surface water, soil, as well as the following socio-economic components: road network and traffic, main services, waste management, cultural heritage, and visual impact.</p> <p>Regarding noise, it must be said that the Program implementation will not significantly increase the number of flights in Zorg En Hoop (currently around 12.700 per year) and that all the planes are small propeller ones, less loud than jets. A baseline noise study was carried out in the immediacy of Zorg En Hoop, confirming that average noise levels are within adequate guidelines and below 65 Db on average for houses and businesses in the area. As for Kwamalasamutu, a rise in the number of flights will not cause significant noise increments, given that there is currently around one flight per day to this destination.</p> <p>Impacts on biota will be managed through a flora and fauna management program, to prevent, minimize, and mitigate impacts on the surrounding natural habitat of Kwamalasamutu. Deforestation in Suriname is concentrated in the northern half of the country and is directly linked to legal and illegal mining activities. No deforestation is registered in the area surrounding the Kwamalasamutu airstrip. Gold mining activities are mostly located in the eastern part of the country.</p> <p>No land acquisition or physical or economic displacement has been identified for the projects.</p> <p>An assessment of current environmental and social liabilities has been included in the final version of the ESA. The liabilities identified at the Kwamalasamutu airstrip are the possible encounter of buried waste and the state of structural deterioration of the station building. As for the Zorg En Hoop airport, the presence of fuel tanks near a residential building was registered. Proper implementation of the health and occupational plans will be crucial while the demolition of the current building in Kwamalasamutu is done. As for Zorg En Hoop, an occupational and health safety program will be implemented, making sure the tanks comply with the proper safety regulations prior to the start of the works.</p>
Management plans	<p>During the due diligence, an ESA was prepared for the projects, identifying E&S risks and impacts according to the requirements of ESPS 1 to 10.</p> <p>An ESMP, containing mitigation measures for the projects, was also developed.</p> <p>A consulting firm was hired to support MTCT in the preparation of this ESA/ESMP, which includes a Stakeholder Engagement Plan (SEP) and respective consultation processes. The fit-for-disclosure version of ESA/ESMP, including SEP, was disclosed prior to the</p>

	<p>analysis mission, and the final updated versions including the consultation report have been disclosed prior to distribution to the Board.</p> <p>An ESAP has been included in Annex A of this document and will be agreed upon with MTCT. Reference to each management plan is made under the description of the respective ESPs.</p> <p>An Indigenous Peoples Plan (IPP) has been developed based on the SCA results and disclosed prior to the distribution to the Board.</p>
Organizational capacity and competency	<p>The Program will be executed by the Ministry of Transport, Communication and Tourism (MTCT) through the N.V. Luchthavenbeheer, a parastatal organization of the MTCT whose purpose is currently to maintain and operate Suriname’s international airport. One of the main concerns related to the MTCT is its implementation capacity and the volume of tasks and activities assigned to it, as well as its ability to manage and create public awareness. The substantial increase in the volume of investment has led to the need to improve capacity.</p> <p>An assessment of the EA’s capacity to manage environmental and social risks and impacts was conducted during Program preparation as part of the preparation of the ESMS. This is the MTCT’s first operation with the Bank; as a result, it has no experience with the ESPF, which could affect its capacity to manage environmental and social risks and impacts.</p> <p>As a result of the due diligence, and in line with the results of the Institutional Capacity Analysis Platform (PACI), it is requested as a first disbursement requirement that the agency hires/designates, as appropriate, one Environmental Management and one Social Engagement Officer, in charge of the socio-environmental management of the Program. This requirement is a contractual condition.</p>
Emergency preparedness and response	<p>An Emergency Preparedness and Response Plan has been developed as part of the ESMP as derived from construction that could impact safety and security, Fire and Hazardous Material Spills, Air Traffic Control Coordination, among others. Since some of the works in Zorg En Hoop do not have final designs yet, this plan will be updated prior to the commencement of work.</p>
Stakeholder Engagement Plan (SEP)	<p>Disclosed prior to the Analysis Mission, the SEP is available as Annex 1 to the ESA/ESMP. The SEP tackles ESPs7 requirements and Free, Prior, and Informed Consent (FPIC). It presents the consultation process with all its essential elements. It introduces the Program’s Grievance Redress Mechanism (GRM), as well as the IDB’s GRM and Independent Consultation and Investigation Mechanism (MICI).</p> <p>Two meaningful consultations have been carried out in October 2024. The first one included all key stakeholders and was held in Paramaribo. The second one was done with the <i>Trio</i> Indigenous communities and took place in Kwamalasamutu.</p>
Monitoring and review	<p>The Executing Agency must submit a semi-annual progress report that will assess and provide evidence on the environmental and social performance of the Program to the Bank. The Bank will provide an environmental and social compliance report format. This process for supervision and reporting will be defined together with the Executing Agency before distribution to the Board.</p> <p>The execution scheme will see the support of one Environmental Management and one Social Engagement Officer as part of the Project Execution Unit. This specialist will</p>

	oversee the proper implementation of the ESMP and the strengthening of the environmental and social policies that the Program will support as part of Component 1.
ESGI-1.1. Number of ESMS elements completely prepared	7
ESGI-1.3. Number of Afro-descendant and/or traditional* peoples' communities within the direct and indirect area of influence of the operation <i>* Not considered under ESPS 7</i>	0
ESPS-2. Labor and Working Conditions	Yes
<p>Civil works entail processes of construction and mobilization of personnel which present risks and impacts associated with labor and working conditions. The execution of works and activities carries inherent risks, primarily of an occupational nature. These risks are attributed to the high-risk nature of various construction activities, encompassing excavations (with the potential for cave-ins and entrapment), electrical work, accidents involving heavy machinery, the potential for hearing impairment due to noise-producing equipment, welding, and hot work operations, as well as ergonomic hazards. There could also be risks associated with handling hazardous materials such as fuel, oil, and lubricants used during construction.</p> <p>Additionally, Kwamalasamutu Airstrip is situated in a region with a low population density, posing a risk of encounters with potentially hazardous wildlife. This presents a significant risk to airstrip workers due to the potential for dangerous animal interactions, which could result in serious injury or health hazards. Based on this, the ESMP includes a Flora and Fauna Management Program.</p> <p>These impacts and risks are classified as negative, of medium magnitude for main work instances and low magnitude for work preparation and demobilization activities, and of a transitory nature.</p> <p>In compliance with ESPS 2, the mitigation measures included in the ESMP, in compliance with ESPS 2, are the following:</p> <ul style="list-style-type: none"> • Occupational Health and Safety Program. • Socio-Environmental Training Program for on-site personnel, encompassing comprehensive training on personal protective equipment (PPE), work-related risks, contingency planning, safe handling of chemical substances, and related subjects. • Road Safety and Traffic Management Program, aimed at proactively preventing road accidents involving the community, personnel, and construction vehicles through measures such as safe driving practices and proper signage at work sites and detours. • Works Installation and Camp Set-up Program, ensuring the installation of fencing, access control, and appropriate signage at campsites, work areas, ditches, and other relevant locations. • Contingency Plan to ensure a swift and effective response to medical emergencies, as well as biosafety protocols that refer to human waste, medical equipment, medicines, blood, and vaccines (for both construction and operational phases). <p>The ESA analyzed labor conditions in Suriname and the EA's labor practices, including a risk analysis of child labor. The Child Labor Act in Suriname aims to protect children from exploitation, ensuring they are not engaged in hazardous work and have access to education.</p> <p>The ESMP includes required measures to address any risks identified through a series of Labor Management Procedures (LMP). The LMP prohibits child labor and provides clear conditions for the guarantee of workers' human rights and occupational health and safety. The LMP will be part of any contractor bidding documents. The requirements included in the LMP will be integrated into the Program's legal requirements, bidding</p>	

documents, and contractor and supplier contracts. In Suriname, the minimum working age is 14, lower than the 15 years set by ESPS 2. However, both Suriname’s laws and ESPS 2 agree that workers must be at least 18 years old to engage in hazardous work. This leaves some minors vulnerable to exploitation, especially in areas like agriculture, construction, and informal street vending. Nevertheless, in compliance with ESPS 2, the LMP prohibits any employment of children under the age of 15 and none under 18 for the management of hazardous materials.

Requirements for a Code of Conduct are included under the Socio-Environmental Training for Construction Personnel Program and detailed in Appendix A of Annex 2 (LMP) of the ESMP. This Code aims at addressing and preventing gender-based violence and will be prepared by the Contractor.

The Executing Agency and potential contractor’s labor practices and supply chain have been assessed through the ESA to identify potential risks and impacts following ESPS 2 requirements and national legislation.

Suriname laws have been assessed as per the requirements of ESPS 2. The Labor Management Procedures that are part of the ESA/ESMP address the gaps identified during due diligence, including mitigation measures for construction camps.

The ESMP incorporates requirements for ensuring compliance with ESPS 2 related to worker health and safety and working conditions.

For the Operational Phase, the Executing Agency will develop an Occupational Health and Safety Program, as well as a Training Program and a Contingency Plan.

The Program, in its LMP, has a Workers’ Grievance Redress Mechanism (GRM) that aims to arbitrate the means and mechanisms to facilitate the reception of concerns exclusively (queries, claims, complaints, suggestions) of workers linked to the projects, and respond to them to solve them, and to anticipate potential conflicts.

The Program includes the installation of a solar system consisting of a panel and a battery for the Kwamalasamutu airstrip, needed to power the new radio and navigation equipment. The ESMP includes measures for the procurement of solar panels to manage the risk of forced labor. These will be aligned with the document “IDB Group Measures to Address the Risk of Forced Labor in the Supply Chain of Silicon-Based Solar Modules. Revised Version” (GN-3062-1) as well as local regulations.

ESGI-2.1. Number of workers (contractors, subcontractors, freelancers and/or government entities) in the project site	N/A
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ESPS-3. Resource Efficiency and Pollution Prevention	Yes
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Risks and negative environmental and social impacts are expected primarily during the construction phase and will be those typically associated with the rehabilitation of airstrips. Impacts will be of low magnitude, punctual effects, and transitory nature: generation of gaseous emissions and particulate matter (e.g., dust, gases from heavy machinery/increased vehicular activity), noise and vibrations, waste generation (solid, liquid, and hazardous via fuels, oils, batteries, etc.), disturbance to flora and fauna, as well as potential final disposal of waste given the rural location of some of the airstrips, soil and groundwater contamination. The ESA/ESMP outlines explicit measures to mitigate these impacts. Since the civil works will be minor and only occur within the existing Right of Way of the aerodromes, and thanks to the implementation of effective measures, all residual impacts will be minimal (see Annex C for aerial maps of the aerodromes).

Among the designed measures, the ESMP presents specific management programs that the MTCT and contractors will need to implement, in compliance with ESPS 3 (take note that some relevant programs are already mentioned under ESPS 2, hence have not been repeated here):

- Monitoring and Control of Compliance with Mitigation Measures
- Construction Sites Management
- Air Quality, Noise and Vibrations Management
- (Soil) Erosion Control
- Flora and Fauna Management (for both construction and operational phases)
- Waste Management (for both construction and operational phases)
- Effluent Management
- Pest and Vector Control
- Chemical Substances Management
- Hazardous Material Management Protocol
- Tools and Machinery Maintenance Protocol

The type and source of materials and processes to be utilized for the airstrip improvement in Kwamalasamutu can be defined as climate-smart lightweight materials that have proven their worth in providing an all-weather surface for landing in similar contexts. Preliminary designs include, as the main technological material to be used in the intervention, lightweight and easy-to-transport technologies such as a Geoweb base with a reinforced top layer to improve the current conditions of runways. The Geoweb technology has been used for airstrip upgrading in similar contexts and presents the following advantages: (i) easier maintenance: low risk of rutting, erosion, or deformation; (ii) cost-effectiveness: stabilizes local soil material instead of transport material from elsewhere; (iii) installation equipment: less heavy equipment than conventional asphalt pavement; and (iv) versatility: can be customized to accommodate various soil conditions and site-specific requirements. In the ESA/ESMP, the use of different materials for construction purposes is assessed with a focus on waste management and hazardous materials, to ensure their safe and correct use and disposal.

Minor greenhouse gas emissions (GHG) are expected during construction. They will likely increase in the operational phase due to a slight increase in the number of flights, however, land and take-off emissions from aircraft are still considered minor because all the planes flying to and from Zorg En Hoop are small propeller ones. The Bank has calculated estimated gross GHG emissions for both the construction and operation phases to help determine the level of intervention. The Program is expected to produce less than 25,000 tons of equivalent CO₂ annually: 3127 tons of CO₂ for construction and 280 tons for annual operation have been estimated.

The Program does not finance the use of fertilizers or pesticides.

ESGI-3.1. Total estimated Greenhouse Gas (GHG) emissions during construction	3127
ESGI-3.2. Total estimated Greenhouse Gas (GHG) emissions during operation	280
ESPS-4. Community Health, Safety, and Security	Yes

The impacts and risks identified in the ESA on community health, safety, and security are the ones typically associated with simple rehabilitation works of aerodrome infrastructure. For the construction phase, they include nuisances due to noise, vibrations, dust, emissions, traffic, presence of heavy machinery, temporary blockage of access to residences and businesses, risk of accidents (road, community), risk of disease transmission such as waterborne and water-related diseases (Schistosomiasis, Leptospirosis, Typhoid, Cholera), contagious diseases (Hantavirus, Tuberculosis), and possible conflicts between construction personnel (possibly foreign) and the communities. Impacts will be of low magnitude, punctual effects – only affecting the Direct Area of Influence – and of a transitory nature.

The negative risks and impacts identified for the operational phase regard noise, vibration, and risks to passengers associated with small-scale aviation accidents.

A baseline noise study was carried out in the immediacy of Zorg En Hoop Airport, confirming that average noise levels are within adequate guidelines and below 65 decibels on average next to houses and businesses, which represents the threshold of significant aircraft noise exposure in residential areas as a Day-Night Average, according to FAA standards. Moreover, no houses or businesses are located within the area where the highest noise levels were registered (Coesewijnestraat). This area is allocated for emergency landings as an extension of the runway.

Nevertheless, a more in-depth noise assessment study should be completed once the works and improvements have been completed. This item has been added to the ESAP.

Zorg En Hoop airport lies in a low-density urban setting, surrounded by buildings of multiple uses, including residential. Kwamalasamutu airstrip lies in a natural environment, with houses belonging to the only small village of Kwamalasamutu located next to the airstrip and within a 1 km distance.

A mapping activity of the sensitive receptors in the Indirect Area of Influence of the project sites has led to the identification of schools, elderly residences, and sports centers in Paramaribo, within 400 meters of Zorg En Hoop Airport, and of one school in Kwamalasamutu, within 400 meters of the airstrip, as illustrated in [Map 7](#) and in [Map 8](#).

Workers are expected to be of Surinamese nationality. The estimated number of workers is expected to be within 20-25 people at its peak. These aspects will be confirmed based on the final engineering design and work chronogram.

In the case that the installation of worker camps is necessary, the ESMP already includes measures for their management, such as a Works Installation and Camp Set-up Program, ensuring the installation of fencing, access control, and appropriate signage at campsites, work areas, ditches, and other relevant locations. Besides, the Labor Management Procedures that are part of ESA/ESMP include mitigation measures for construction camps.

Requirements for a Code of Conduct are included under the Socio-Environmental Training for Construction Personnel Program and detailed in Appendix A of Annex 2 (LMP) of the ESMP. This Code aims at addressing and preventing gender-based violence and will be prepared by the Contractor.

Among the designed measures, specific management programs and guidelines will be implemented in compliance with ESPS 4. They are presented in detail in the ESMP and summarized hereafter (take note that some relevant programs are already mentioned under ESPS 2 and ESPS 3, hence have not been repeated here):

- Community Health and Safety subprogram: this plan will touch on traffic and road safety, signaling, hazardous materials, emergency preparedness and response plan, communication, and information channels.
- Disaster Management and Emergency Response (Emergency Preparedness and Response Plan).

All the above-mentioned measures are sufficient to ensure compliance with national legislation, ESPS 4, and relevant international best practice standards.

Finally, no direct impacts on ecosystem services have been identified during the due diligence.

The natural hazards present in the project sites are:

- Drought with climate change: high hazard for all three sites (see [Map 9](#))

- Water supply scarcity with climate change: moderate hazard for Zorg En Hoop and PBM airports (see [Map 16](#))
- Heatwave with climate change: high hazard for all three sites (see [Map 10](#))
- Intense rainfall and pluvial flooding, for all three sites, with a mean annual precipitation of 2.110 mm for Paramaribo and 1.897 mm for Kwamalasamutu (see [Map 11](#) and [Map 12](#))
- Riverine flooding with climate change: moderate hazard for Zorg En Hoop and PBM airports and high hazard in Kwamalasamutu (see [Maps 13](#))
- Strong winds

Additional natural hazards specific to Zorg En Hoop in Paramaribo are the following:

- Hurricanes: moderate hazard, since Suriname is located outside of the hurricane belt, but can still be affected by the tails of the hurricanes, as well as by local gales
- Storm surge: moderate hazard
- Sea level rise: moderate hazard (see [Map 14](#))
- Fires
- Tsunami hazard, shown in [Map 15](#), although absent in the Zorg En Hoop Airport area, is moderate at a closer distance from the coast, so it should not be neglected

The listed hazards could endanger passengers if not properly managed, although, with the implementation of appropriate preventive and structural measures, the system would not pose a high risk to passengers.

For more specific information, the *Physical environment baseline of the Indirect Area of Influence* and the *Hazard Exposure* chapters of the ESA can be consulted.

Following the criteria shown in the criticality chart for roadway infrastructure, used for this assessment in the absence of a specific airports chart and visible in [Figure 1](#), the criticality and vulnerability of the infrastructure component of the Zorg En Hoop Airport are: (i) physical characteristics are Low, given the type of interventions; (ii) the loss of essential services is Moderate, due to the redundancy offered by Paramaribo International Airport as well as by an additional airstrip in Paramaribo operated by a private domestic airline; and (iii) the level of interaction with the natural and anthropic environment is Moderate, given that the project has incidence on a moderate, low-density, population center and will not cause urban sprawl. Therefore, the criticality and vulnerability of this project are rated as Moderate.

Based on the same criteria, the criticality and vulnerability of the infrastructure component of the Kwamalasamutu Airstrip are the following: (i) physical characteristics are Low, given the type of interventions; (ii) the loss of essential services is Moderate; and (iii) the level of interaction with the natural and anthropic environment is Moderate, due to the slightly steep terrain of the airstrip. Therefore, the criticality and vulnerability of this project are rated as Moderate.

Minimal risk exacerbation may occur locally; therefore, disaster risk must be duly and proactively managed as some works will be implemented in already impacted and vulnerable areas.

However, it is important to note that all improvement and rehabilitation interventions will be implemented within the existing Right of Way and on existing installations and that these works will enhance the aerodromes' overall robustness, resilience, and activity time.

A more detailed Disaster and Climate Change Risk Narrative has been conducted as part of the ESA. Climate change has been considered in the identification and classification of natural hazards, as follows: Suriname is a country with high exposition and vulnerability to climate change. Extreme hydrometeorological events will likely increase in both occurrence and intensity.

Considering the small-scale improvement and rehabilitation works, the hazard levels identified, the criticality and vulnerability estimated for the infrastructure’s interventions, and the low risk of exacerbation, a **Moderate** DCCR classification is adequate.

For this Moderate risk operation, the narrative identified the need to continue to a complete qualitative risk assessment for the operation, Step 4 of the Disaster and Climate Change Risk Assessment Methodology (DCCRAM). An analysis of pluvial flooding patterns at the Kwamalasamutu airstrip will be included. This will be conducted before the bidding process.

A Disaster Risk Management Plan (DRMP) was prepared, proposing and systematizing mitigation and adaptation measures for the risks identified, intending to minimize their potential damages or impacts throughout the various Program phases. Measures are organized by the following criteria: (i) related natural hazard category; (ii) phase (design, construction, O&M); (iii) type of measure (structural/non-structural). The entity responsible for the execution of each measure is also indicated.

Measures against flooding and storm surge include the elevation of critical infrastructure and runways, the construction, inspection, and maintenance of drainage systems, the scheduling of works during the dry season, the implementation of Ground-Based Augmentation Systems for visibility, and the employment of Airport Collaborative Decision Making for communication during disruptions.

Measures for sea level rise include the necessary adjustment of construction plans as necessary, the construction or reinforcement of sea defenses, and the preservation or introduction of natural barriers.

Measures against fires include the use of fire-resistant construction materials, the establishment of safety zones, the correct management of inflammable materials and firefighting equipment, the protection of electrical components, and the application of a fire-retardant layer on fences and walls.

Measures against hurricanes and strong winds include the securing of construction materials and temporary structures and the development of comprehensive hurricane response plans with local authorities.

The only remaining uncertainties regard the engineering design specifications, which are not definitive at the current stage. These will determine the level of resistance to the aforementioned natural hazards.

The DRMP and the DRA will be updated before the bidding process, to ensure that the plans are adequate and up to date with the final engineering design specifications.

Finally, as part of the capacity-building efforts for the Executing Agency, more disaster and climate change risk training will be provided.

ESGI-4.1 Consistent narrative complying with at least step 3 of the Disaster Risk and Climate Change methodology	<p style="text-align: center;">Yes</p>
ESGI.4.3 Types of natural hazards present in the project sites <i>Types of Natural Hazards: Earthquake, Landslides, Soil Erosion, Coastal Erosion, Fluvial Erosion, Tsunami, Volcanic, Subsidence, Drought, Frost-Cold Wave, Hailstorm, Storm Surge, Fluvial Flooding, Pluvial Flooding, Tidal Wave, Extreme Winds, Hurricane-Wind, Tropical Storm, Heat Wave, Glacial Retreat, Sea Level Rise, Heavy Rains, Water Scarcity, Wildfire</i>	<p>Storm Surge, Fluvial Flooding, Pluvial Flooding, Tidal Wave, Extreme Winds, Hurricane-Wind, Tropical Storm, Heat Wave, Sea Level Rise, Heavy Rains, Water Scarcity, Wildfire, Drought</p>
ESPS-5. Land Acquisition and Involuntary Resettlement	<p style="text-align: center;">No</p>

According to the information available to date, the rehabilitation works will be on a small scale and entirely conducted within the existing RoW of the aerodromes. The operation will not involve land acquisition or any

physical or economic displacement. No individuals or activities will be adversely affected in the context of ESPS 5. This Program ensures the exclusion of all forms of displacement.	
ESGI-5.1. Number of households (families or socioeconomic units) physically displaced* <i>*Includes physically displaced households and people that are both physically and economically displaced</i>	0
ESGI-5.2. Number of people physically displaced* <i>*Includes physically displaced households and people that are both physically and economically displaced</i>	0
ESGI-5.3. Number of households (families or socioeconomic units) economically displaced.	0
ESGI-5.4. Number of economically displaced people	0
ESPS-6. Biodiversity Conservation and Sustainable Management of Living Natural Resources	Yes
<p>According to a vegetation map from 2010 from the <i>GONINI - National Land Monitoring System of Suriname</i> geoportal, the Zorg En Hoop airport is located in an urban area, while Kwamalasamutu airstrip stands on <i>bare soil</i> and is surrounded by a mix of <i>Scrub / Low savanna shrubs</i> and <i>Woodland savanna</i>, with <i>High dryland forest</i> and <i>Creek forest</i> in the outer area. (see Map 24).</p> <p>According to Map 25, the ecoregions or biomes describing the areas of Zorg En Hoop airport and Kwamalasamutu airstrip respectively, are <i>Mangroves</i> and <i>Tropical/Subtropical moist broadleaf forests</i>.</p> <p>Based on Map 26, the terrestrial ecosystems characteristics of Zorg En Hoop airport and Kwamalasamutu airstrip respectively, are <i>Tropical moist settlement on plains</i> and <i>Tropical moist forest on hills</i>.</p> <p>Paramaribo is surrounded by two terrestrial and marine Multiple Use Management Areas (MUMA's), <i>Noord Saramacca</i> and <i>Noord Commewijne/Marowijne</i>, and two Nature Reserves, <i>Wia Wia</i> and <i>Coppename Monding Nature Reserves</i>, and it is over 44 km away from the next protected areas: <i>Copi Nature Reserve</i> and <i>Boven-Coesewijne Nature Reserve</i>. The MUMAs are closest to the city, bordering its limits.</p> <p>Zorg En Hoop Airport is located 13 km from the nearest Protected Area, <i>Northern Saramacca</i>, and 14 km from <i>Noord Commewijne</i>. <i>Noord Saramacca</i> is also established as a Key Biodiversity Area and its extension differs from that of the MUMA. The airport is located 9,3 km from the KBA area.</p> <p>As for Kwamalasamutu, the closest protected area and KBA is the <i>Sipaliwini Nature Reserve</i>, located 64,3 km to the southeast.</p> <p>Consequently, no impacts are foreseen on any Protected Area or KBA, as these lay outside of the Direct and Indirect Area of Influence of the project sites. For reference, see Map 17, Map 18, and the dedicated chapter with maps in the ESA.</p> <p>Deforestation in Suriname is concentrated in the northern half of the country and is directly linked to legal and illegal mining activities. No deforestation is registered in the area surrounding the Kwamalasamutu airstrip (see Map 23). Corroborating this aspect, Map 22 shows the spatial distribution of roundwood production in the country.</p> <p>Mining activity is concentrated in the east of the country. Three areas north of Kwamalasamutu, from 60 to 80 km away, are exploited for minerals other than gold. The geospatial distribution of the mining zones is shown in Map 19, Map 20, and Map 21. A key element to highlight is that areas and airstrips serving, directly and indirectly, gold mining have been excluded during the latest selection of sites.</p> <p>The Biological Environment Baseline of the Indirect Areas of Influence of the project sites was assessed in the ESA.</p>	

Kwamalasamutu airstrip

The Kwamalasamutu airstrip is located in what can be considered a Natural Habitat.

The airstrip, consisting of a dirt track, already exists and all the works will be carried out on its Right of Way.

There is currently around one flight per day to this destination.

One of the reasons why Kwamalasamutu was chosen is its ecotourism potential and that it is not located on the east side of the country, where most of the mining activity occurs. In addition, the Bank is present in this community with programs such as the SU-L1076 and SU-G1010, as well as technical cooperations, aiming to bring sustainable development capabilities to the community, with a focus on biodiversity conservation and sustainable management of the area.

In Kwamalasamutu, the preparation of rehabilitation works may include minor land clearance, intended as the removal of brush and stones. Tree cutting is not expected and will not be needed, as confirmed by recent aerial images.

According to the E&S Impact Matrix included in the ESA, biota, i.e. flora and wildlife, can be subject to potentially punctual impacts. These have been addressed in the ESMP through a specific Flora and Fauna Management Program and will assume a low residual effect, following the implementation of the planned mitigation measures.

In compliance with ESPS 6, which requires no net loss of biodiversity values in the case of Natural Habitats, several flora management measures are envisioned, among which:

- Assess the net area of natural vegetation loss and perform a pre-clearance survey to identify species listed on the Red List of Threatened Species of IUCN once construction sites are defined to avoid the removal of those specimens.
- The Contractor must implement a revegetation scheme for zero net loss of vegetation, with clear criteria for removal only when necessary. Compensatory measures should include planting native tree species in nearby areas. A 3:1 compensation ratio for tree removal is required.
- Ensure that only native species are used in landscaping and rehabilitation efforts.

The sites where the projects will be developed are not located within protected areas or Key Biodiversity Areas (KBAs). However, Conservation International's Rapid Assessment Program (RAP) carried out a survey in 2010 in the Kwamalasamutu region to supply baseline data on biodiversity and water quality, identifying 15 species listed on the IUCN Red List of Threatened Species. These species play significant roles in the forest ecosystem as top predators and dispersers of large seeds. Additionally, some of these species are valued by the *Trio* people. Nevertheless, they are not expected to be found on the airstrip's Right of Way. Notable species include:

- White-lipped Peccary (*Tayassu pecari*): Listed as Near Threatened (NT).
- Jaguar (*Panthera onca*): Listed as Near Threatened (NT).
- Guianan Spider Monkey (*Ateles paniscus*): Listed as Vulnerable (VU).
- Giant Otter (*Pteronura brasiliensis*): Listed as Endangered (EN).

This information has been validated and updated by consulting the most recent data (2024) from the IUCN Red List of Threatened Species for the Direct and Indirect Areas of Influence, and beyond, with a buffer of 5 km from the project site. Based on this dataset, no Critically Endangered (CR) species have been identified and 1 endangered species (EN) has been found, that is the Giant otter (scientific name: *Pteronura brasiliensis*), as the field survey also revealed. Other Near Threatened (NT), Vulnerable (VU), Restricted Range (RR), and Migratory (MG) species were also identified in the area.

In the ESA, the impacts and risks identified for construction phase activities are represented by a temporary alteration of fauna's habitat within the Direct Area of Influence of the project (100 m buffer zone around the airstrip).

Specific measures will be implemented, as planned by the Flora and Fauna Management Program of the ESMP, to guarantee no net loss in fauna biodiversity. Some of these are:

- Proper training in the identification and safeguarding of native flora and fauna (with a focus on Endangered species of the IUCN Red List), as well as protocols for dealing with potentially hazardous animals.
- Establishment of procedures to deter hazardous and endangered wildlife.
- Protocols for wildlife encounters.
- Notification of attempts to exclude, deter, or remove wildlife from the airport.
- Restriction of movement of personnel and machinery to the defined work area.
- Proper delimitation of campsite and cabins.
- Specific measures for fauna's habitat restoration.
- Adoption of reduced vehicle speeds.
- Taking into account breeding seasons for the planning of activities.
- Prevention for the trafficking of IUCN red list species

Given the small area of intervention, limited to the RoW of the airstrip, and the exhaustiveness of the mitigation measures in place, no ecosystem services will be affected negatively, neither regulating ones (such as food, water, timber, plants) nor supporting ones (such as soil formation and nutrient cycling).

The definition of Critical Habitat has been excluded due to the boundedness of impacts and risks to the Direct Area of influence, corresponding to the project site's footprint, and to the fact that the Indirect Area of Influence, where impacts and risks will be from absent to minimal, only extends to the small village of Kwamalasamutu.

Finally, it can be stated that, given the nature of the works and the definition of the Areas of Direct and Indirect Influence, the Program will generate no net loss of natural habitat.

Zorg En Hoop Airport

Zorg En Hoop Airport is located in an urban environment with a low risk to biodiversity. The habitat is neither critical, nor natural, nor modified. The area surrounding the Capital city features significant mangrove cover, primarily red mangroves, with smaller areas of black mangroves. Given the small scale of the works, no significant impacts are expected at this site. An analysis of the IUCN Red List of Threatened Species was run for the Direct and Indirect Areas of Influence for this site (5-km buffer), showing the presence of zero Critically Endangered (CR) species and 2 Endangered (EN) species: *Chelonia mydas* (Green turtle) and *Hypostomus tenuis* (a catfish found in the Suriname River basin). Both species populate coastal, marine, and riverine habitats, and are not expected to be found in the airport proximities. Near Threatened (NT), Vulnerable (VU), Restricted Range (RR), and Migratory (MG) species were also identified.

For this project, the Flora and Fauna Management Program of the ESMP will be implemented rigorously to ensure that impact management will be guided by the mitigation hierarchy.

The Program, through the rehabilitation of the Zorg En Hoop Airport, aims at stabilizing and improving essential air transport services to remote communities in the country. Secondly, a focus is laid on incentivizing access to ecotourism in high biodiversity-value areas, such as Kwamalasamutu. An increase in future tourist influxes must be managed sustainably, with the utmost attention to biodiversity conservation. The Program, cooperating with other Bank programs and technical cooperations, will seek the improvement of ecotourism capabilities for local populations, with a focus on biodiversity conservation and sustainable management.

All the planned renovations and improvements will be carried out within the existing RoW of the aerodromes, and the rehabilitation works will be of small scale and impact (technical details to be confirmed based on the final engineering design).

<p>There won't be any new construction or change in land use, as the Zorg En Hoop and the Johan Adolf Pengel International airports are already paved and Kwamalasamutu airstrip is a dirt track. This is documented by recent aerial images, field visits, and current land use maps (see Map 4, Map 5, and Map 6). No deforestation is expected.</p> <p>Should the final design identify the need to clear vegetation, further assessments will be done on the classification, type, species identification, and prevalence of such vegetation. Mitigation measures will be proposed commensurate with the local regulations and the level of risk for the necessary clearance.</p> <p>In any case, according to the Flora and Fauna Management Program of the ESMP, any intervention will be designed to achieve a net zero loss of vegetation and, more broadly, biodiversity. In addition, if revegetation activities of the impacted site are required after the intervention, foreign and invasive species will be forbidden, whereas native species shall be preferred.</p> <p>Developing a State Action Plan for Sustainable Aviation Fuel (SAF) production, distribution, and use will encompass the use of sustainable biomass, as described in the Climate Change Annex. This will contribute to strengthening environmental protection policies and decarbonizing the sector.</p>	
ESGI-6.1. Area in Hectares (ha) of negatively affected natural habitats (e.g., converted or degraded)	0
ESGI-6.2. Area in Hectares (ha) of negatively affected critical habitats (e.g., converted or degraded)	0
ESPS-7. Indigenous Peoples	Yes
<p>No further impacts are expected specific to the Indigenous communities in the areas of intervention. In order to prevent temporary impacts such as occupational and community accident risks, occupational hazards, and service disruptions, an Occupational Health and Safety Program has been developed as part of the ESMS. Consistent with the temporary impact prevention measures, Labor Management Procedures (LMP), which can be found as part of the ESMP, have been established to ensure that the rights and welfare of all workers, Indigenous and Tribal communities, are protected in accordance with the ESPS 7. This ESPS 7 also considers, together with ESPS 9, that the presence of contractors in the communities during the execution of the projects can increase the risk of sexual and gender violence against women, girls, boys, LGBTQI+ people in the community, and project workers. To mitigate this risk, the ESMP includes a Gender Action Plan.</p> <p>All activities will be carried out on previously intervened land. Kwamalasamutu is located within an Indigenous territory, not formally titled, known as <i>Tarëno (Curuni/Sipaliwini)</i>. Within such territory, and in the Indirect Area of Influence of the intervention site, the <i>Trio</i> Indigenous community is present.</p> <p>In Paramaribo, and based on the ESA, there are two Indigenous Amerindian communities, the <i>Lokono</i> and the <i>Kalinya</i>. The composition of these communities is often mixed, with no clear distinction between Indigenous groups. Their geographical distribution touches both the Indirect Area of Influence (within the city limits) and the surrounding territory.</p> <p>Maroon communities, or Tribal, as the same communities often define themselves, are also present in the area, a fact supported by the identification of an Afro-descendant territory, not titled, known as <i>Santigrón</i>, about 9 km west of Zorg En Hoop Airport.</p> <p>All activities will be carried out on previously intervened lands. The <i>Trio</i> Indigenous community in Kwamalasamutu has shown interest in the airstrip's upgrade and will likely benefit from the expansion of the eco-tourism sector, finding a new source of livelihood in it. The area is known for having petroglyphs in the <i>Werephai</i> cave, which could have a high potential eco-tourism value.</p> <p>By assessing the social norms, cultural practices, power relations, and local knowledge systems, the Socio-cultural Analysis (SCA) and the Indigenous Peoples Plan (IPP) help identify opportunities for social inclusion</p>	

and equity. These analyses are essential for engaging with Indigenous Peoples and other vulnerable communities so that the Program outcomes align with their values. The Bank disclosed the SCA and the IPP before distribution to the Board.

The developed SCA informed different additional mitigation measures such as: (i) establishing an early supply and contingency transportation plan by boat for essential goods, considering that the mobility of goods, services, and people is primarily by plane, to reduce project delays and, therefore, the duration of air service disruption; (ii) establishing a Community Liaison Office within the Indigenous communities that coordinates emergency transportation needs and addresses unforeseen disruptions between the project management team and the local population.

In accordance with ESPS 7, before distribution to the Board, Free, Prior, and Informed Consent (FPIC) has been obtained for Kwamalasamutu, where the identified *Trio* communities are present within the Project Indirect Area of Influence. This is described further in the SEP and the Consultation Report, as well as under ESPS 10.

Two (2) meaningful public consultations were carried out in October 2024. The first one was a public consultation with previously mapped key stakeholders (including Indigenous and Tribal communities) in Paramaribo. Because of the absence of impacts and risks specific to Indigenous and Tribal Communities and the substantial integration of people with Indigenous or Afro-descendant origins within the city demography, a dedicated consultation was found not to be needed. The second one took place in Kwamalasamutu with the *Trio* Indigenous communities. It started with the *Granman* (the village chief) opening remarks in the native language, *Tareno*, and was translated to Dutch by a resident interpreter, Mr. Tawadi). There were approximately 40 people in attendance and equal numbers of women and men.

Culturally appropriate methods were employed to facilitate participation, ensuring that all voices were heard and respected and that the request for FPIC was clear and transparent.

Ongoing dialogue will be maintained throughout the Program lifecycle to adapt to community concerns and preferences through the Grievance Mechanism, fostering trust and collaboration. This communication channel started with the consultation invite and presentation, providing contact information for any doubts or questions about the Program.

The corresponding consultation reports were disclosed before distribution to the Board. For more details on the consultation process, see ESPS 10.

Maps reporting the geographical distribution of the mentioned Indigenous territories and communities are available in Annex C (Indigenous territories: Map 27; Tribal territories: Map 28; RAC villages: Map 29; Indigenous communities: Map 30).

ESGI-7.1. Number of Indigenous communities* that are within the direct and indirect area of influence of the operation <small>*For the purposes of ESPS 7, traditional peoples are treated as indigenous peoples, as recognized by national laws</small>	3
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ESPS-8. Cultural Heritage	Yes
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There are no tangible cultural heritage sites within the project area. Within the Indirect Area of Influence of Zorg En Hoop airport, is the Historic Inner City of Paramaribo, about 4 kilometers away (see [Map 31](#)). The nearest archaeological site to Kwamalasamutu is the *Werephai* Cave, located 12.2 kilometers northeast along the *Maripa* River, with petroglyphs dating back to 3000 B.C (see [Map 32](#)). Likewise, no intangible cultural heritage that could potentially be affected has been identified.

Potential negative impacts, of low magnitude and restricted geographical scope, have been identified in the ESA. Although of low probability, the possibility of chance findings must be addressed because of the relative proximity (12.2 kilometers as stated before) of the archaeological site to the Kwamalasamutu Airstrip. Following ESPS 8 guidelines, a Chance Find Procedure has been developed as a prevention measure to address

the correct management of historical, cultural, archaeological, and paleontological findings. It is incorporated into the ESMP.

ESGI-8.1. Area in Hectares (ha) of tangible cultural heritage negatively affected	0
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ESPS-9. Gender Equality	Yes
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Women in Suriname have higher educational attainment than men but lower labor force participation and earnings. They are underrepresented in sectors like transport and logistics, and people with disabilities face significant barriers to labor market participation, with limited regulatory support for their inclusion.

In compliance with ESPS 9, the operation considers a cross-cutting gender approach. Potential gender risks and impacts have been identified in the ESA and effective measures to avoid, prevent, or mitigate these have been included in management plans.

The presence of contractors in the communities during the execution of the projects can increase the risk of sexual and gender violence against women, girls, boys, LGTQI+ people in the community, and project workers. To mitigate this risk, the ESMP includes a Gender Action Plan that encompasses the following measures: (i) adoption by contractors of a Code of Conduct that prohibits acts of sexual harassment, sexual or gender violence, as well as establishing the corresponding measures in case of non-compliance, (ii) training for workers on respectful relations with the communities, how to avoid gender violence and the Code of Conduct of the Program, (iii) information to the communities regarding the standards of conduct for project personnel, (iv) considerations to be integrated into the Program’s Grievance Redress Mechanism, for both workers and the community, to receive, register and address claims related to sexual harassment or gender violence and (v) definition of referral protocols for victims who require it to care services of gender violence or competent authorities.

The management plans to assess gender equality issues are the following:

- Occupational and Community Health and Safety
- Socio-environmental training for construction personnel
- Community Information and Participation
- Community engagement and awareness programs
-

Besides, some of the mentioned measures are reported within the Labor Management Procedure (LMP), which can be found as an Annex to the ESMP.

Although the Surinamese government has made notable efforts to address human trafficking including adopting victim referral processes, and increasing screening during labor inspections, there are many challenges considering the complexity of this issue. A human trafficking awareness and prevention plan was included as part of the ESMP to implement measures to prevent and mitigate risks around human trafficking, such as community engagement, awareness programs, and strict labor standards.

The disclosure and undertaking of consultation events were designed with a gender perspective and carried out in a culturally appropriate manner.

ESGI-9.1. Percentage of women participating in public consultation	N/A
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ESPS-10. Stakeholder Engagement and Information Disclosure	Yes
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A stakeholder engagement and information disclosure process has been developed for the Program life cycle. In compliance with ESPS 1 and 10, a Stakeholder Engagement Plan (SEP) was developed and disclosed publicly on the Bank’s website, as Annex 1 to the ESMP, on August 14th, 2024.

The SEP includes the following elements:

- (i) Free, Prior, and Informed Consent (FPIC), obtained during the public consultations.
- (ii) Information on the meaningful and culturally appropriate consultation process: stakeholder identification and analysis, information and event disclosure considering the need for translators and using language and information that are culturally appropriate for the communities, development of the consultation process, consultation report.
- (iii) Actively encouraging the participation of diverse community members, including women, youth, elders, and other vulnerable groups, ensuring their voices are heard.
- (iv) Grievance Redress Mechanisms: GRM's guidelines, management, scope, dissemination; claims' receipt, registration, evaluation, resolution; deadlines and timelines; monitoring; IDB's GRM; IDB's Independent Consultation and Investigation Mechanism (MICI).

In addition to the abovementioned ESPS 10 Guidelines, appropriate communication channels with the communities of the village, Medical Clinics and Tourism sector (especially pertaining to *Werehpai* Cave activities) have been highlighted, considering activities that might interrupt the service of aircraft, safeguarding the minimum interruption or disturbance activities in the village such as emergency health services, supply transportation, and commercial activities. These issues are also addressed in the Community Health and Safety subprogram part of the ESMP.

A Grievance Redress Mechanism for the community is structured in Annex 1 of the ESMP and has been incorporated as part of the ESMS.

The consultation process was based on the Stakeholder Engagement Plan developed in the Program's ESMP in coordination with the MTCT. It consisted of a total of two (2) meaningful public consultations, both in-person events.

The first one was a public consultation with previously mapped key stakeholders (including Indigenous and Tribal communities) in Paramaribo, regarding the interventions on the Zorg En Hoop airport. It took place on October 16th, at 5 pm, at the Suriname Aviation Training Centre (Zorg En Hoop Airport). Out of the 22 participants, 7 were women. The engagement and results of the consultation were overall satisfactory.

In Paramaribo, because of the absence of impacts and risks specific to Indigenous and Tribal Communities and the substantial integration of people with Indigenous or Afro-descendant origins within the city demography, a dedicated consultation was not necessary.

The second one took place in Kwamalasamutu with the *Trio* Indigenous communities on October 17th, at 10 am. It started with the *Granman* (the village chief) opening remarks in the native language, *Tareno*, and was translated to Dutch by a resident interpreter, Mr. Tawadi). There were approximately 40 people in attendance and equal numbers of women and men.

Both consultations received similar concerns, often related to Grievance mechanisms. The answer provided was the confirmation of the inclusion in the PEU of two qualified and trained specialists who will oversee receiving, reporting, and resolving grievances.

In addition, at the Paramaribo consultation, there was concern about who would oversee the project monitoring, as there is a negative record of experiences where the government was the only institution in charge of monitoring.

Feedback from the *Trio* community on the project mostly inquired about a decrease in the currently high costs of flying and an increase in the number of flights, given the key role these have for the communities. Other government responsibilities, such as providing fuel, were brought to the attention. The community also shared their interest in learning additional skills and getting involved workwise in the project. Their feedback was overall very positive, as they stated that they have been waiting for this improvement on the airstrip and the small associated station building.

<p>During the consultation, Free, Prior, and Informed Consent (FPIC) was introduced as a key objective. The community expressed spontaneous support and, at the end of the event, the <i>Granman</i> declared their satisfaction with the project and expressed unanimous consent.</p> <p>Before the commencement of work, a communication campaign must be carried out in the area surrounding Zorg En Hoop Airport, divulging the final design and schedule. This further activity, which complements the information disclosure and clarifications that occurred at the public consultation, has been included in the ESAP.</p> <p>The ESMP includes guidelines for carrying out this process accordingly. Moreover, the Community Information and Participation Program of the ESMP ensures compliance with the requirements of ESPS 10.</p> <p>The updated versions of the ESA/ESMP and SEP documents, together with the consultation reports, have been disclosed on the Bank's website before distribution to the Board.</p>	
<p>ESGI-10.1. Number of socio-environmental documents disclosed by the IDB and the Borrower</p>	<p>2</p>
<p>Information Disclosure requirements (for the IDB)</p>	
<p>Disclosed documents can be found here: https://www.iadb.org/en/project/SU-L1071</p> <p>A draft ESA/ESMP was disclosed on the 14th of August 2024.</p> <p>The final ESA/ESMP, the SCA/IPP, and the Consultation Report were disclosed on the 1st of November 2024.</p>	
<p>Annexes</p>	
<p>Annex A</p>	<p>The Environmental and Social Action Plan (ESAP)</p>
<p>Annex B</p>	<p>E&S Legal Requirements</p>
<p>Annex C</p>	<p>E&S Maps</p>

Annex A. The Environmental and Social Action Plan (ESAP)

The Environmental and Social Action Plan (ESAP)	
Operation Name	Essential Air Transport Service for Remote Communities in Suriname
Operation Number	SU-L1071
ESAP Version	1
<p><i>As agreed by the Bank and the Borrower, this ESAP may be revised from time to time during Program execution to reflect adaptive management of Program changes and unforeseen circumstances or in response to the assessment of Program performance conducted under the ESAP itself. In such circumstances, the Borrower, through the Executing Agency, shall agree to the changes with the Bank and will update the ESAP to reflect such changes. Agreements on changes to the ESAP shall be documented through the exchange of letters signed between the Bank and the Borrower, through the Executing Agency. The Borrower, through the Executing Agency, shall promptly disclose the updated ESAP.</i></p>	

Topic	Action	Evidence	Milestone	Due Date	Cost (estimated)	Responsible Party
ESPS-1. Assessment and Management of E&S Risks and Impacts						
ESA/ESMP	Update ESA/ESMP based on the final design and carry out consultations	ESA/ESMP and consultation report	Before the bidding process		Administrative costs	Ministry of Transport, Communication and Tourism (MTCT) through the N.V. Luchthavenbeheer
Environmental and Social Management System	Finalize the ESMS	ESMS	Prior to eligibility		Administrative costs	Ministry of Transport, Communication and Tourism (MTCT) through the N.V. Luchthavenbeheer
ESPS-2. Labor and Working Conditions						

ESPS-3. Resource Efficiency and Pollution Prevention						
ESPS-4. Community Health, Safety, and Security						
DRMP	Update the DRMP based on the finalized engineering designs of infrastructure to be improved at the Zorg En Hoop Airport in Paramaribo and at the Kwamalasamutu airstrip.	Updated DRMP	Before the bidding process		Technical Cooperation	Ministry of Transport, Communication and Tourism (MTCT) through the N.V. Luchthavenbeheer
DRA	Update the DRA with a complete qualitative analysis based on the finalized engineering designs of infrastructure to be improved at the Zorg En Hoop Airport in Paramaribo and at the Kwamalasamutu airstrip.	Updated DRA	Before the bidding process		Technical Cooperation	Ministry of Transport, Communication and Tourism (MTCT) through the N.V. Luchthavenbeheer
Noise Management	Update the noise assessment on the ESA once the works have been completed	Update Noise Assessment on the ESA-ESMP	After construction		Administrative Costs	Ministry of Transport, Communication and Tourism (MTCT) through the N.V. Luchthavenbeheer
ESPS-5. Land Acquisition and Involuntary Resettlement						

ESPS-6. Biodiversity Conservation and Sustainable Management of Living Natural Resources						
ESPS-7. Indigenous Peoples						
Indigenous Peoples	Update the ESMP including the agreed mitigation measures resulting from the consultation process	ESMP updated	Before the bidding process		Administrative costs	Ministry of Transport, Communication and Tourism (MTCT) through the N.V. Luchthavenbeheer
ESPS-8. Cultural Heritage						
ESPS-9. Gender Equality						
ESPS-10. Stakeholder Engagement and Information Disclosure						
Information disclosure	Carry out a communication campaign in the area	Communication campaign	Prior to the commencement of work		Administrative costs	Ministry of Transport, Communication and Tourism (MTCT)

	surrounding Zorg En Hoop Airport					through the N.V. Luchthavenbeheer
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Annex B. The Environmental and Social (E&S) Legal Requirements

Special Conditions. “Article XX. Other Documents Governing Program Execution. (a) The Parties agree that the Program’s execution shall be governed by the provisions of this Contract and those established in the Operations Manual (OM), and the Environmental and Social Action Plan (ESAP). If any provision of this Contract should present any inconsistency or contradiction with the OM or ESAP, the relevant provision of this Contract shall prevail. Moreover, the Parties agree it shall be necessary to obtain the Bank’s written consent prior to making any change to the OM and ESAP.”

General Conditions

The General Conditions, specifically Article 6.03 General Provisions for Execution of the Program, Article 6.06 Environmental and Social Management, and Article 7.02 Plans and Reports provide the legal basis to ensure compliance with the Environmental and Social Performance Standards during operation execution.

“Article 6.06. Environmental and Social Management

(a) The Borrower, directly or through the Executing Agency, agrees to carry out the execution (preparation, construction, and operation) of the activities included in the Program in accordance with the Environmental and Social Policy Framework of the Bank (ESPF), its Environmental and Social Performance Standards, pursuant to the specific provisions on environmental and social considerations included in the Special Conditions.

(b) The Borrower, directly or through the Executing Agency, agrees to immediately notify the Bank of any breach of the environmental and social commitments established in the Special Conditions.

(c) The Borrower, directly or through the Executing Agency, agrees to implement a corrective action plan agreed upon with the Bank to mitigate, correct, or compensate for the adverse consequences that may occur due to failure to implement the environmental and social commitments established in the Special Conditions.

(d) The Borrower, directly or through the Executing Agency, agrees to allow the Bank, by itself or by contracting consulting services, to carry out supervision activities, including environmental and social audits of the Program, to confirm compliance with environmental and social commitments. established in the Special Conditions.”

Definitions to be included in the Loan Contract

“Environmental and Social Action Plan” or “ESAP” means the environmental and social action plan of the Program, agreed to between the parties, which sets out the necessary actions, within a specific timeframe, for the Program to comply with the Environmental and Social Performance Standards.

“Environmental and Social Performance Standards” or “ESPSs” refer to the 10 Performance Standards that are part of the Environmental and Social Policy Framework (GN-2965-23).

“Code of Conduct”: Formal declaration of principles that establish the standards of behavior for workers in relation to measures for the prevention and management of environmental, labor and social risks of the Program, including occupational health and safety risks, sexual and gender-based violence, discrimination, and abuse and sexual exploitation of children and other vulnerable people or groups, insofar as this is applicable to the works, other consulting services, consultancies, and goods.

“Associated facilities”: new or additional works and/or infrastructure, irrespective of the source of financing, essential for a Bank-financed Program to function, such as: new/additional access roads, railways, power lines, pipelines required to be built for the projects; new/additional construction camps or permanent housing for project workers; new/ additional power plants required for the projects; new/additional project effluent treatment facilities; and new/additional warehouses and marine terminals built to handle project goods.

Special Conditions

A. Clauses to be incorporated in the Special Conditions for all Category A and B

Conditions for First Disbursement

- a) *The Borrower directly or through the Executing Agency, has approved the Operating Manual and has entered into effect under the terms and conditions previously agreed with the Bank, which must include, among other elements, the environmental and social requirements and includes as Annexes the Environmental and Social Management System-ESMS, the Environmental and Social Management Plan-ESMP and the ESAP.*

Justification: *These conditions are to ensure that the environmental and social requirements of the ESMS are in line with the latest updates, are approved by the Bank, and ensure adequate capacity to manage environmental and social aspects.*

Special conditions for execution of the Program

To apply and put into practice Article 6.06 Environmental and Social Management paragraph (a) of the General Conditions, the following provisions must be included in the Special Provisions clause corresponding to Environmental and Social Management for all Category A and B operations.

Clause XX. Environmental and Social Management

2. For purposes of Articles 6.06 and 7.02 of the General Conditions, the parties agree that the Program execution shall be governed by the following provisions, which have been identified as necessary for compliance with the Environmental and Social Performance Standards:

- a) *The Borrower agrees to design, build, operate, maintain, and monitor the Program and manage the environmental, social, health, and safety (ESHS) risks of the Program's Associated Facilities, if any, directly or through the Executing Agency or through every other contractor, operator or any other person performing Program-related activities in accordance with the Environmental and Social Management System-ESMS, the Environmental and Social Management Plan-ESMP, the Disaster and Climate Change Risk Management Plan-DRMP, the Environmental and Social Action Plan-ESAP, the Indigenous Peoples Plan-IPP, and other environmental, social and occupational health and safety plans that may have already been developed and/or will be developed during execution, and the requirements included in the Corrective Action Plan.*
- b) *The Borrower, directly or through the Executing Agency, must ensure that the Program is implemented in accordance with the Environmental and Social Action Plan ("ESAP") dated November 12th, 2024, in a manner acceptable to the Bank. For this purpose, the Borrower must ensure that its costs are covered and have the personnel required for its implementation. The ESAP can be modified with the prior written consent of the Bank, as indicated therein.*
- c) *The Borrower, directly or through the Executing Agency, will: (i) implement participation processes with the affected communities and interested parties for the activities planned in the Program; (ii) disclose all environmental and/or social documentation of the Environmental and Social Management System; (iii) establish, publicize, maintain and operate an accessible, effective and efficient grievance mechanism to facilitate support or resolve concerns that may arise from the implementation of the activities of the Program, in a manner acceptable to the Bank.*
- d) *The Borrower, directly or through the Executing Agency, will ensure that all bidding documents and contracts to be financed with Loan proceeds include provisions that require applicants, bidders, proponents, contractors, consultants, representatives, staff members, subconsultants, subcontractors, and suppliers of goods and services, their representatives, and supervisory entities, among other aspects, to: (a) comply with the environmental and social instruments of the ESMS, ESAP, ESMP, IPP, and DRMP, including provisions and procedures to prevent child labor and forced labor; and (b) adopt and enforce the Program's Code of Conduct, which must be provided and properly communicated to all its workers.*

Justification: These clauses seek to ensure that the environmental and social instruments of the Program's ESA/ESMP, and particularly the ESAP, are duly considered and implemented during the various activities during execution, as required by the ESMP.

Supervision and Evaluation

1. *The Borrower, directly or through the Executing Agency, will:*

- a) *Prepare and submit, to the Bank's satisfaction, an Environmental and Social Compliance Report, in form and content agreed with the Bank on the implementation of the ESMS and compliance with the ESAP, if any, as part of the semi-annual progress report of each respective calendar period and up to two years after the last disbursement.*
- b) *Adopt all necessary measures to collect, compile, and provide the Bank with regular reports, with the frequency agreed between the Bank and the Executing Agency, or when required by the Bank, including: (i) the information on the status of implementation of the ESMS and compliance with the ESAP, if applicable; (ii) the conditions, if any, that interfere or could interfere with the implementation of the ESMS and/or compliance with the ESAP, if applicable; and (iii) the corrective and preventive measures that have been taken or that must be taken to address the conditions indicated in the previous literal (a).*
- c) *With respect to the Program, the Executing Agency will notify the Bank in writing within ten (10) days of becoming aware of any (1) material non-compliance with environmental and social requirements ; (2) incident or serious accident related to the works of the project that has resulted in fatalities or injuries with permanent disability of workers or third parties, as well as cases of sexual violence associated with a worker contracted by the Program and any other that, at the discretion of the Executing Agency, may generate a significant impact on the environment, the community or workers; (3) regulatory action of an environmental, social and/or occupational health and safety nature that initiates a disciplinary process for serious misconduct; or (4) any newly identified environmental and social risks and impacts that may affect the environmental and social aspects of the Program in each case such notification will include actions taken or proposed with respect to such events.*

Justification: The above clauses are needed to comply with the IDB's ESMP throughout the Program supervision period.

B. Clauses to be incorporated in the Special Conditions, on a case-by-case basis where justified (Category A and B)

- a) *The Borrower, either directly or through the Executing Agency, shall submit: a) the final Disaster and Climate Change Risk Assessment (DRA) and the final Disaster and Climate Change Risk Management Plan (DRMP) prior to launching the bidding process of any works;*
- b) *The Borrower directly or through the Executing Agency will hire/appoint one Environmental Management and one Social Engagement Officer in charge of the environmental and social Management of the Program six months prior to the bidding of the works.*

Justification: These conditions are to ensure that the environmental and social requirements of the ESMS are in line with the latest updates, are approved by the Bank, and ensure adequate capacity to manage environmental and social aspects. The need for the assignment of one Environmental Management and one Social Engagement Officer was identified as part of the PACI workshop in order to fully comply with the requirements of the IDB's ESPF.

C. Provision to be incorporated into the Operational Manual (all categories)

- a) *Any changes that at the Bank criteria are substantive to the ESMS, and any ESHS Plans shall be in writing and approved by the Bank in a manner consistent with the Bank's Environmental and Social Performance Standards.*

Annex C. Environmental and Social Maps

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Map 3. Watersheds of Zorg En Hoop and Kwamalasamutu

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Map 9. Drought hazard with climate change

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Map 11. Precipitation changes with climate change based on the MIROC-ESM-CHEM climate model

Map 12. Annual mean precipitation

Maps 13. Riverine flooding hazard for Zorg En Hoop, Kwamalasamutu, and PBM International Airport with and without climate change.

Map 14. Sea level rise hazard with climate change

Map 15. Tsunami hazard (RP 475 years)

Map 16. Water supply scarcity hazard with climate change

Map 17. Protected Areas

Map 18. Key Biodiversity Areas (KBA)

Map 19. Mining rights in 2020. Disputed territories are represented between blue and purple lines, as shown in Map 1.

Map 20. Mining zones in 2020

Map 21. Types of mining activity

Map 22. Roundwood production in 2017. Disputed territories are represented between blue and purple lines, as shown in Map 1.

Map 23. Total deforestation between 2000 and 2023. Disputed territories are represented between blue and purple lines, as shown in Map 1.

Map 24. Vegetation map (2010). Disputed territories are represented between blue and purple lines, as shown in Map 1.

Map 25. Ecoregions and biomes

Map 26. Terrestrial ecosystems

Map 27. Indigenous Territories

Map 28. Afro-descendant Territories

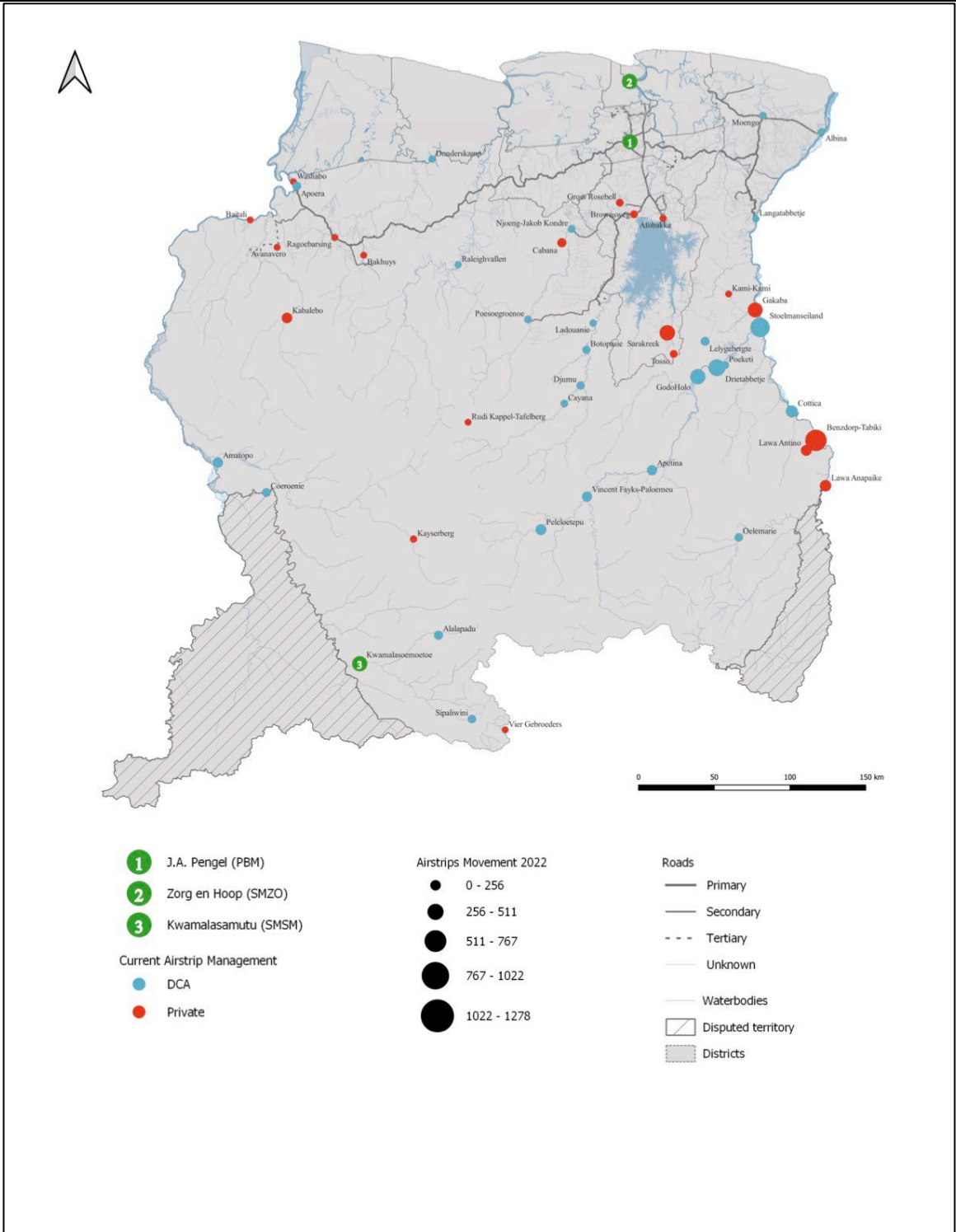
Map 29. RAC villages. Disputed territories are represented between blue and purple lines, as shown in Map 1.

Map 30. Demarcation of indigenous and maroon lands in the project areas (Heemskerk, M.)

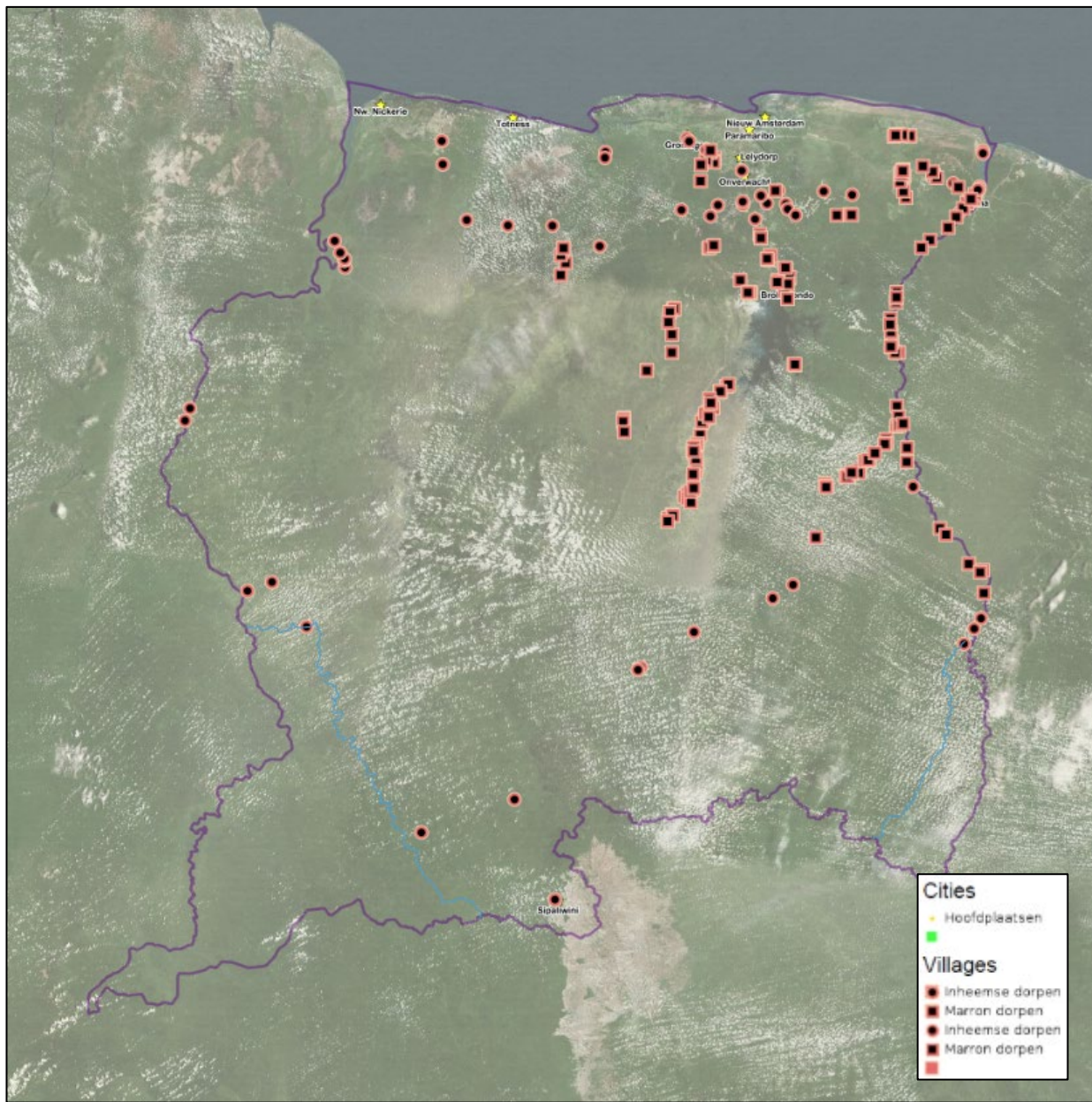
Map 31. UNESCO site in Paramaribo.

Map 32. Location of Werehpai/Iwana Samu Protected Areas and Kwamalasamutu.

Figure 1. Criticality and vulnerability cube

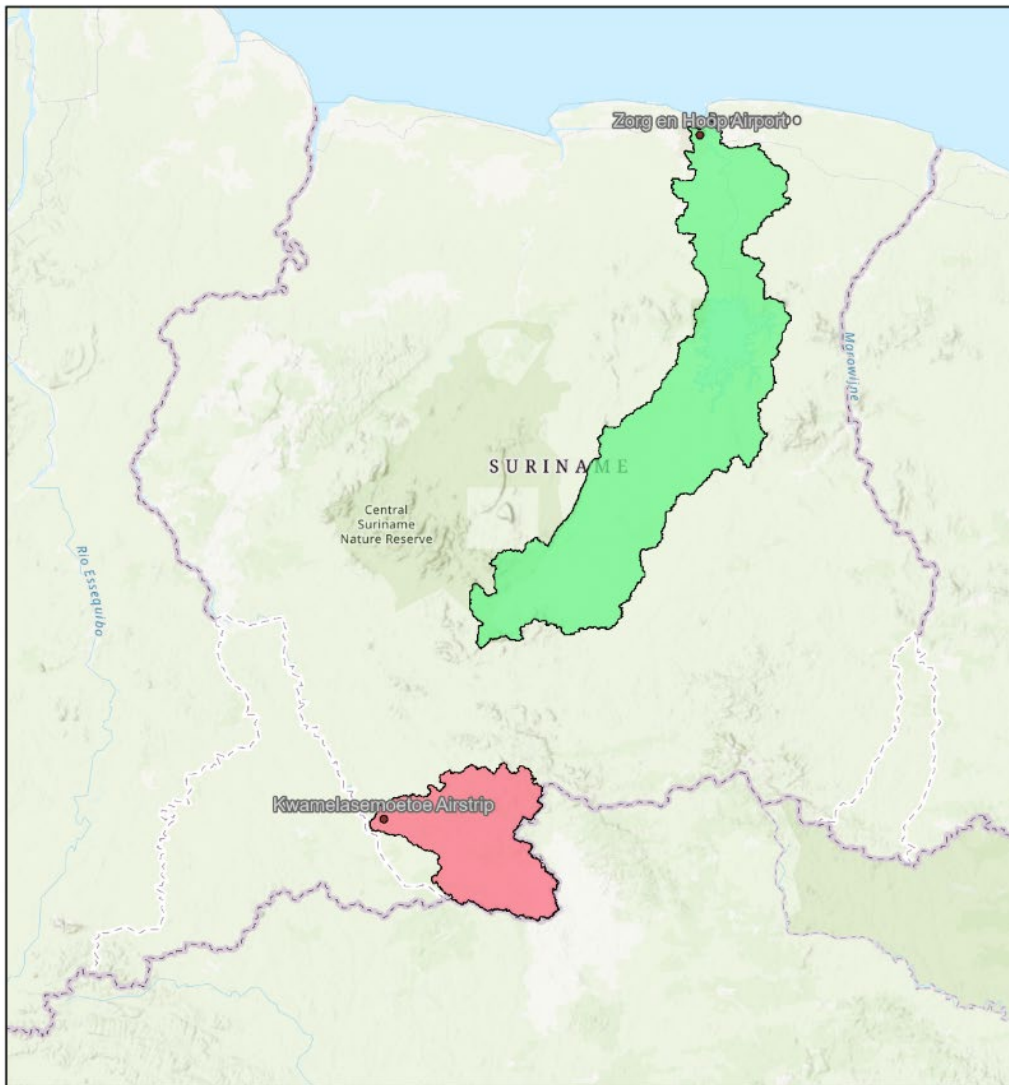


Map 1. Project sites and existing airstrips in Suriname.
 Source: Own elaboration



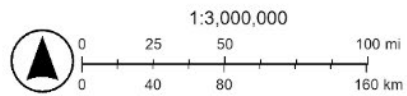
Map 2. Cities and villages. Disputed territories are represented between blue and purple lines, as shown in Map 1.
 Source: GONINI - National Land Monitoring System of Suriname (<https://gonini.org/>)

Watersheds



9/3/2024

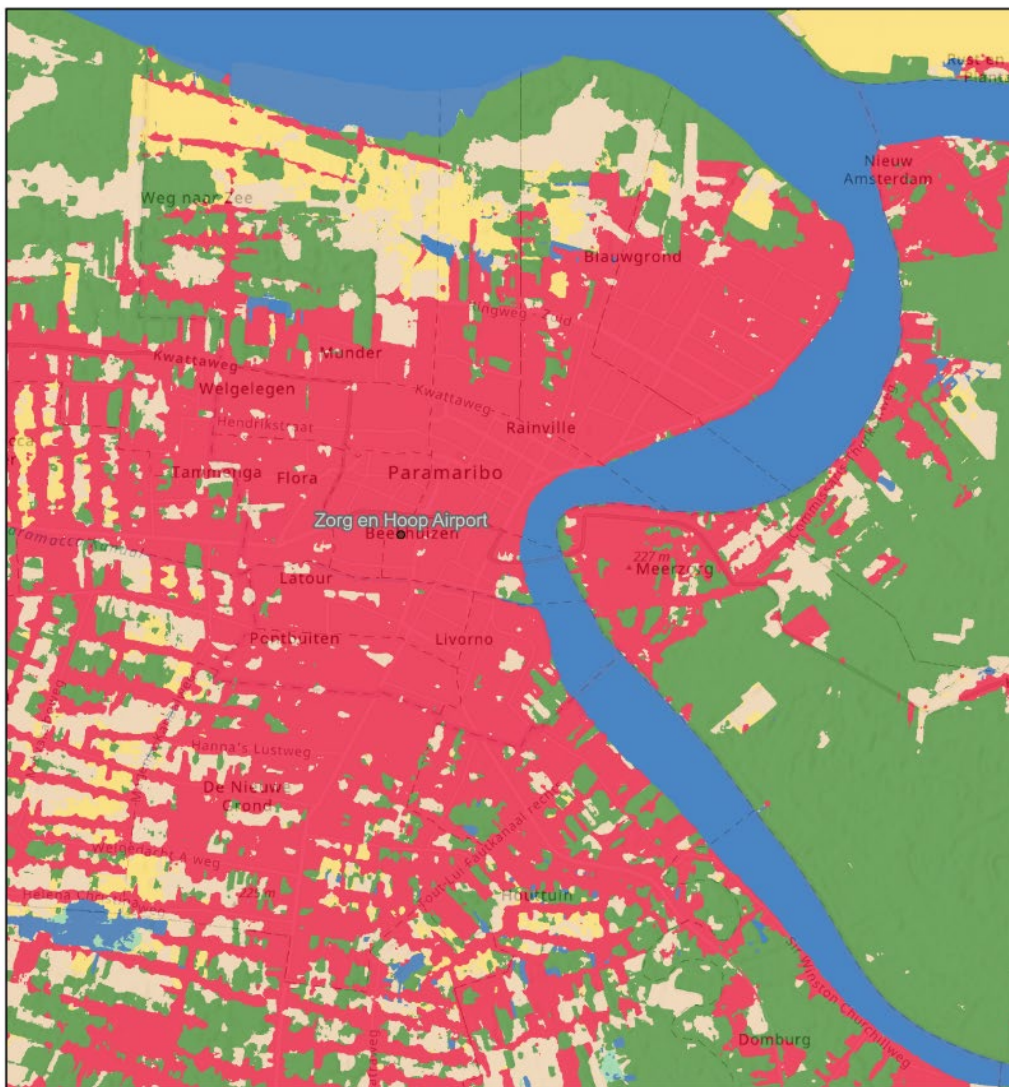
- Project sites
- Suriname River watershed
- Sipaliwini watershed
- World Hillshade



GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS

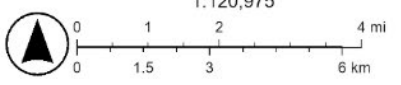
Map 3. Watersheds of Zorg En Hoop and Kwamalasamutu
Source: ArcGIS Online, Feature layer by user "rbhola"; map created with IDB ATLAS

Land cover Paramaribo



9/3/2024

- Project sites
- Sentinel-2 10m Land Use/Land Cover Time Series
- Water
- Trees
- Flooded Vegetation
- Crops
- Built Area
- Bare Ground
- Clouds
- Rangeland
- World Hillshade

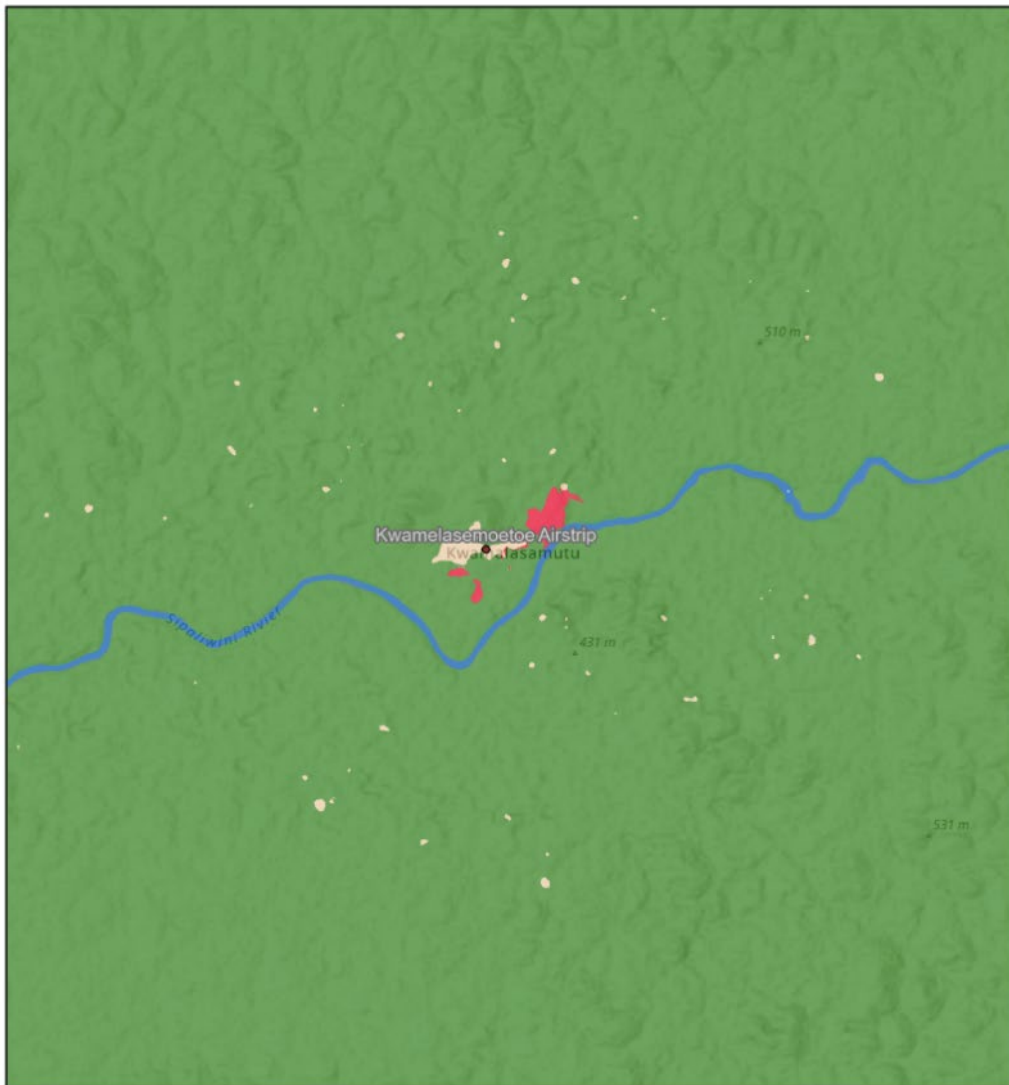


Esri, NASA, NGA, USGS, GISsat, Esri, TomTom, Garmin, Foursquare, METV, NASA, USGS, Impact Observatory, Microsoft, and Esri.

Map 4. Land cover in Paramaribo (2023)

Source: Living Atlas (Esri), Impact Observatory, and Microsoft; map created with IDB ATLAS

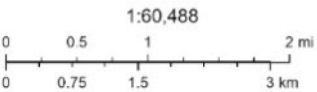
Land cover Kwamalasamutu



9/3/2024

- Project sites
- Sentinel-2 10m Land Use/Land Cover Time Series
- Water
- Trees
- Built Area

- Bare Ground
- Clouds
- Rangeland



World Hillshade Esri, NASA, NGA, USGS, GISsat, Esri, TomTom, Garmin, Foursquare, METI/ NASA, USGS, Impact Observatory, Microsoft, and Esri.

Map 5. Land cover in Kwamalasamutu (2023)

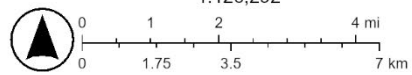
Source: Living Atlas (Esri), Impact Observatory, and Microsoft; map created with IDB ATLAS

Land cover International Airport



10/16/2024

- Project sites
- Sentinel-2 10m Land Use/Land Cover Time Series
- Water
- Trees
- Flooded Vegetation
- Crops
- Built Area
- Bare Ground
- Snow/Ice
- Clouds
- Rangeland
- World Hillshade



Esri, NASA, NGA, USGS, GISsat, Esri, TomTom, Garmin, Foursquare, METI/
NASA, USGS, Impact Observatory, Microsoft, and Esri.

Map 6. Land cover around the Johan Adolf Pengel International Airport (2023)
Source: Living Atlas (Esri), Impact Observatory, and Microsoft; map created with IDB ATLAS

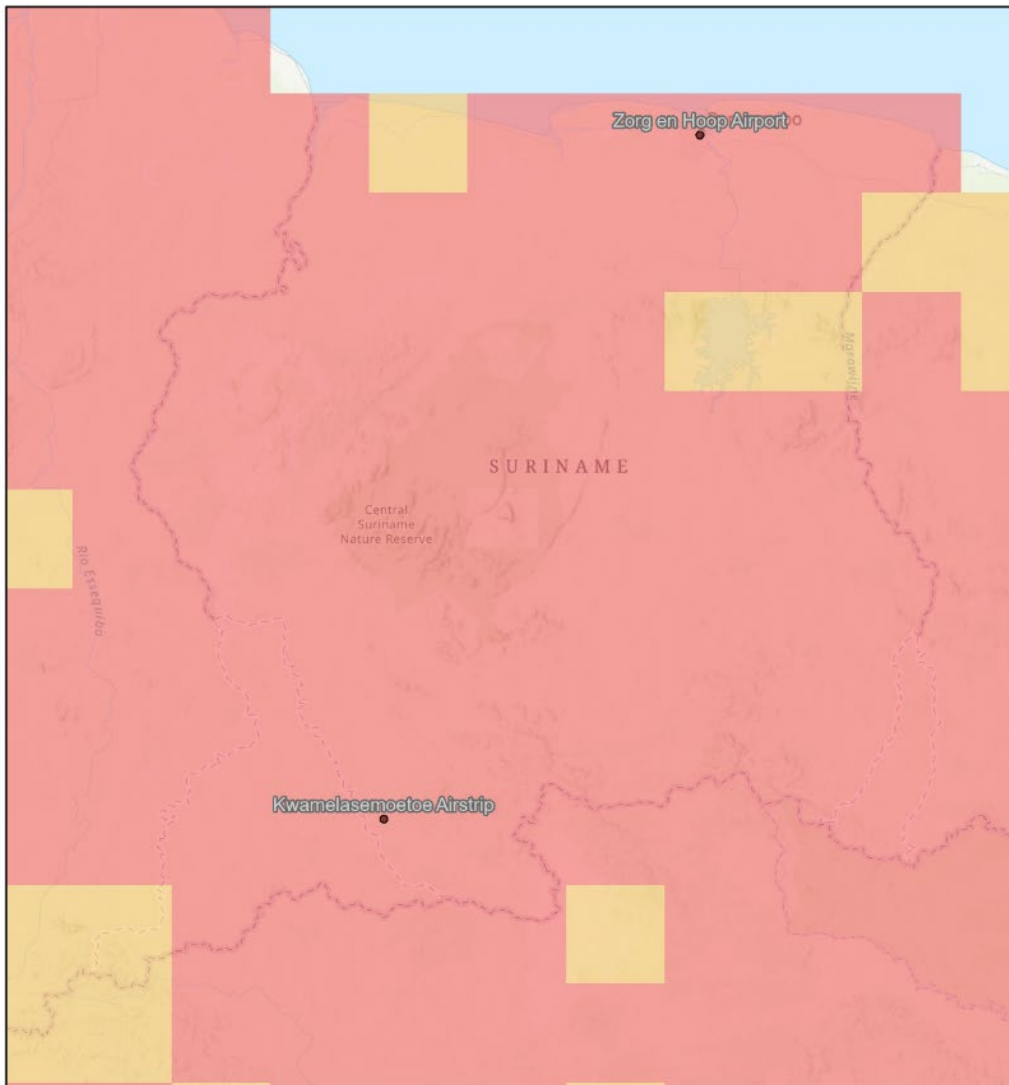


Map 7. Zorg En Hoop Airport and surrounding institutions
 Source: ESA document; map created with Google Earth



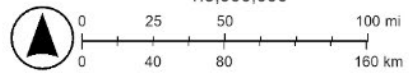
Map 8. Kwamalasamutu airstrip and surrounding area
 Source: ESA document; map created with Google Earth

Drought hazard



9/3/2024

- Project sites
- Drought Hazard with Climate Change
 - Moderate
 - High
- World Hillshade

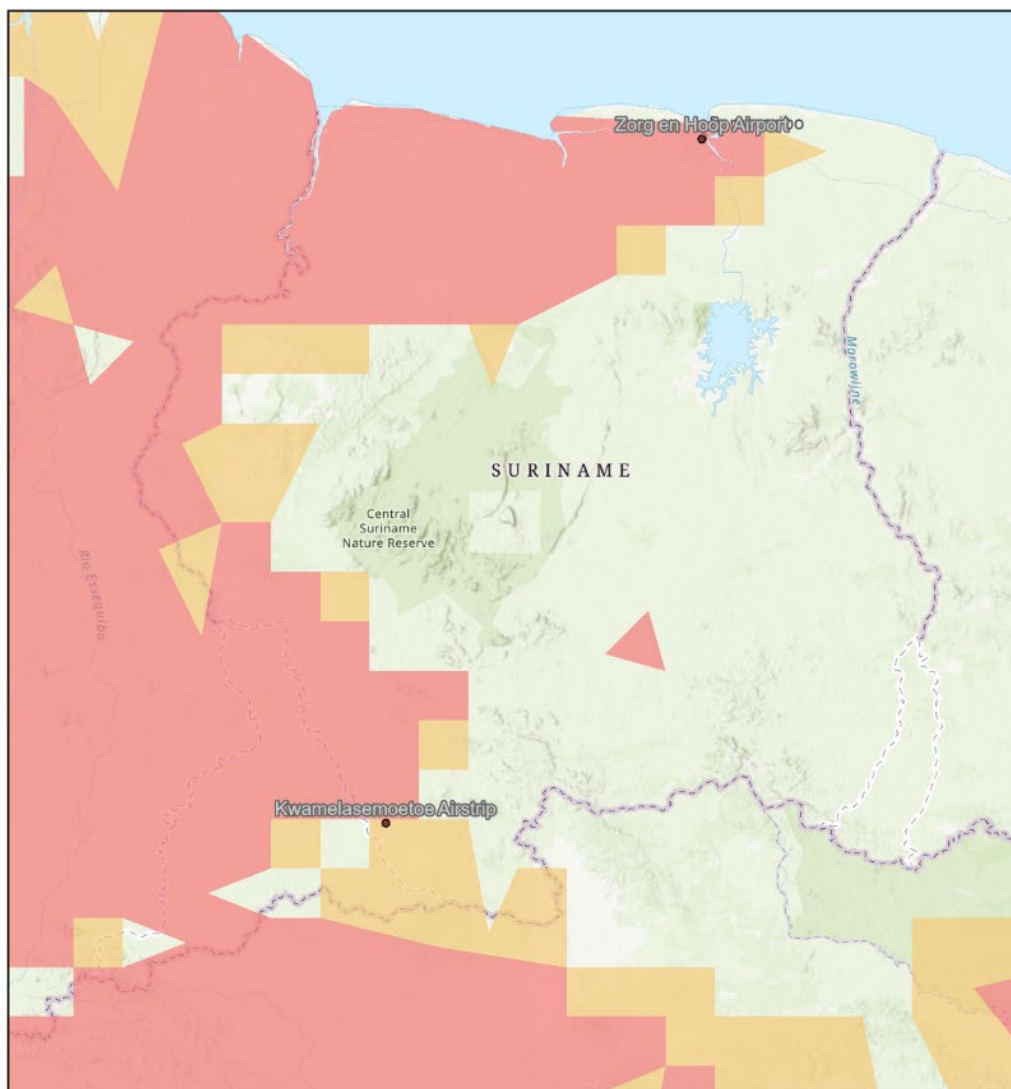


GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS

Map 9. Drought hazard with climate change

Source: ISIMIP (Inter-Sectoral Impact Model Intercomparison Project), 2017, elaborated by IDB; map created with IDB ATLAS

Heatwave hazard



9/3/2024

• Project sites
Heatwave Hazard with Climate Change_RCP4.5

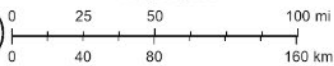
Moderate

High

World Hillshade



1:3,000,000

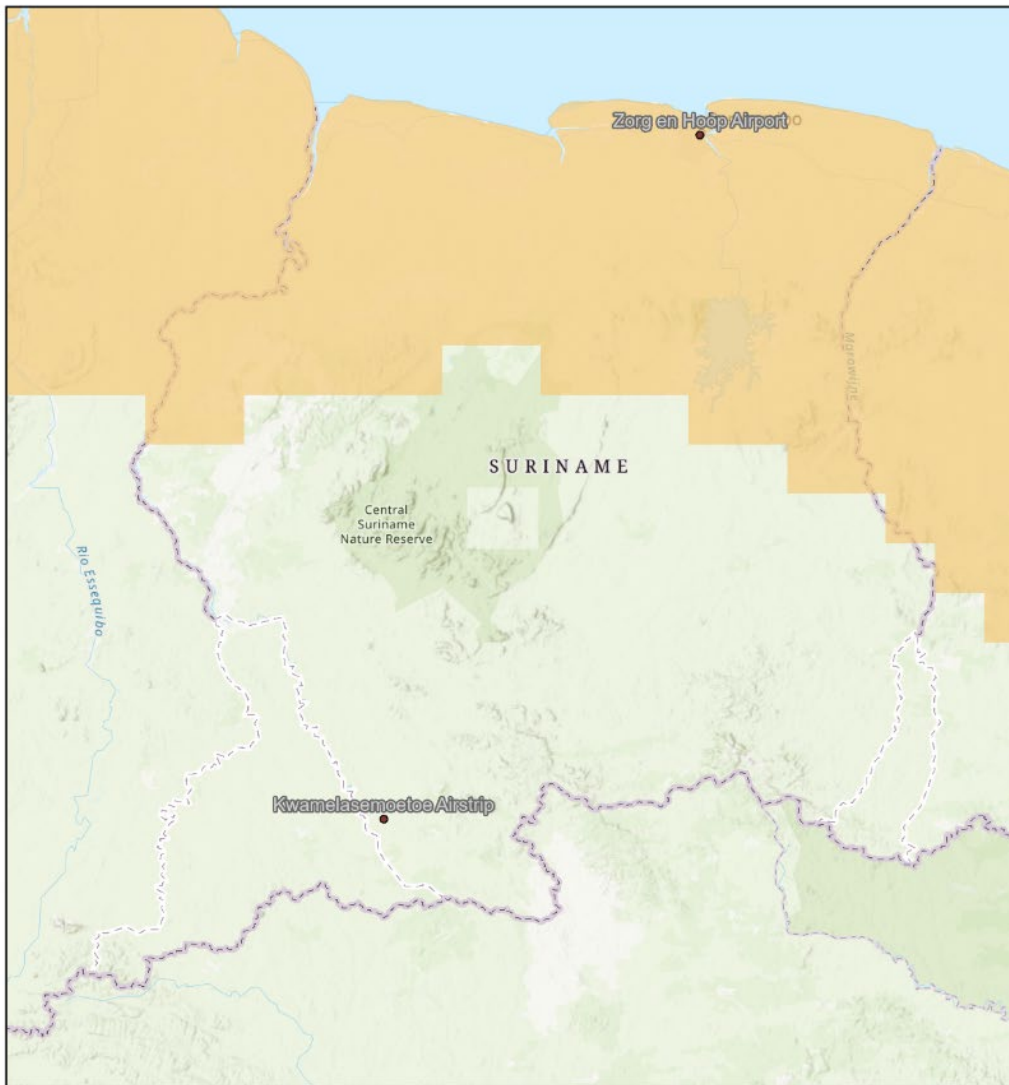


GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS

Map 10. Heatwave hazard with climate change (RCP 4.5)

Source: NEX-GDDP (NASA Earth Exchange Global Daily Downscaled Projections), 2017, elaborated by IDB; map created with IDB ATLAS

Precipitation changes

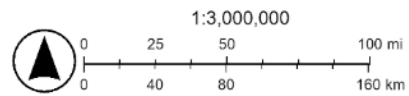


Map 11. Precipitation changes with climate change based on the MIROC-ESM-CHEM climate model
Source: NEX-GDDP (NASA Earth Exchange Global Daily Downscaled Projections), 2017, elaborated by IDB; map created with IDB ATLAS

Annual mean precipitation



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GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS, Fick, S.E. and R.J. Hijmans, 2017. WorldClim 2: new 1km spatial resolution climate surfaces for global land areas. *International Journal of Climatology* 37 (12): 4302-4315. The development of WorldClim v2 was supported by a grant from Feed the Future to the Geospatial and Farming Systems Consortium of the

Map 12. Annual mean precipitation

Source: ESRI Living Atlas. Fick, S.E. and R.J. Hijmans, 2017. WorldClim 2: new 1km spatial resolution climate surfaces for global land areas. International Journal of Climatology 37 (12): 4302-4315; map created with IDB ATLAS

Total annual precipitation values.

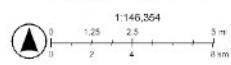
Paramaribo: 2.110 mm

Kwamalasamutu: 1.897 mm

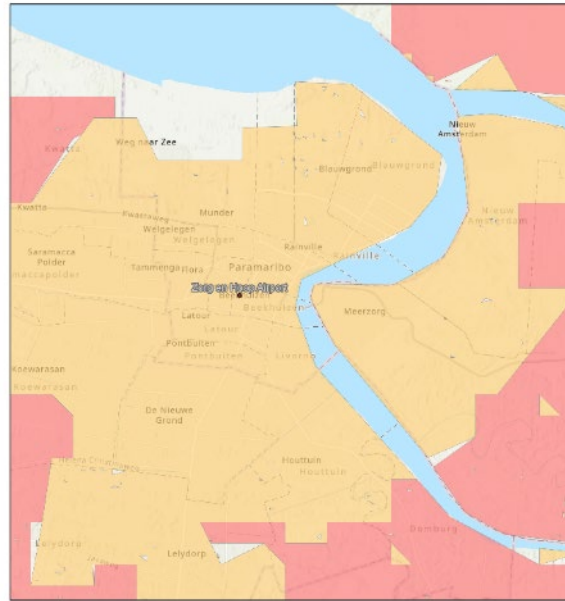
Riverine flooding hazard Paramaribo



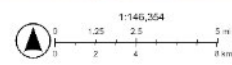
9/4/2024



Riverine flooding hazard Paramaribo with climate change



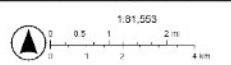
9/4/2024



Riverine flooding hazard Kwamalasamutu



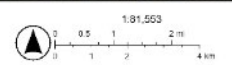
9/3/2024



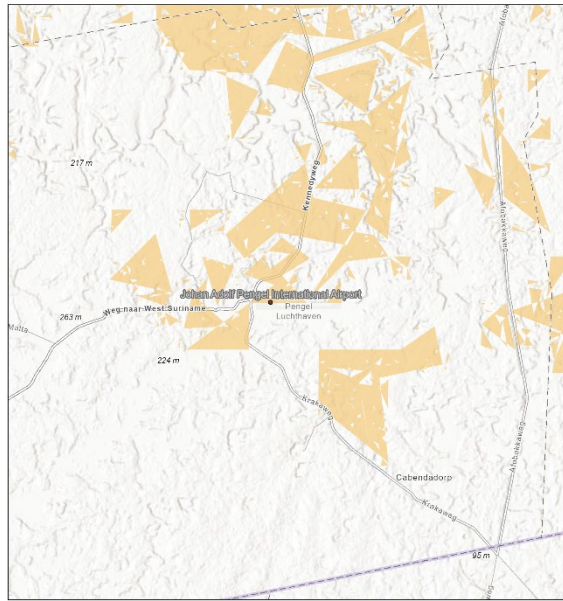
Riverine flooding hazard Kwamalasamutu with climate change



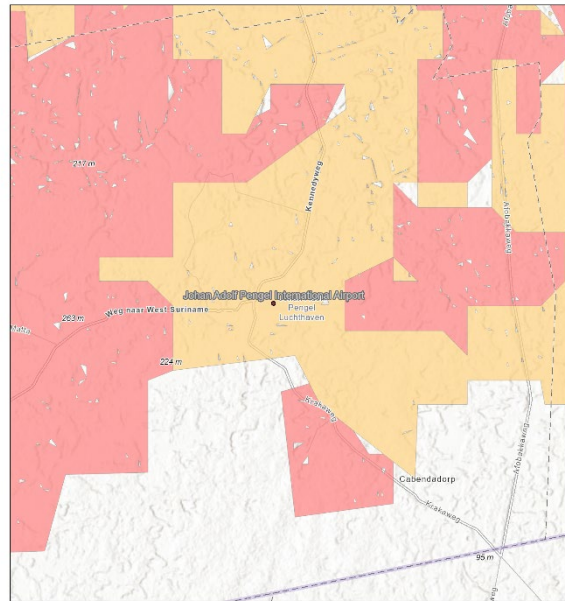
9/3/2024



Riverine flooding hazard PBM



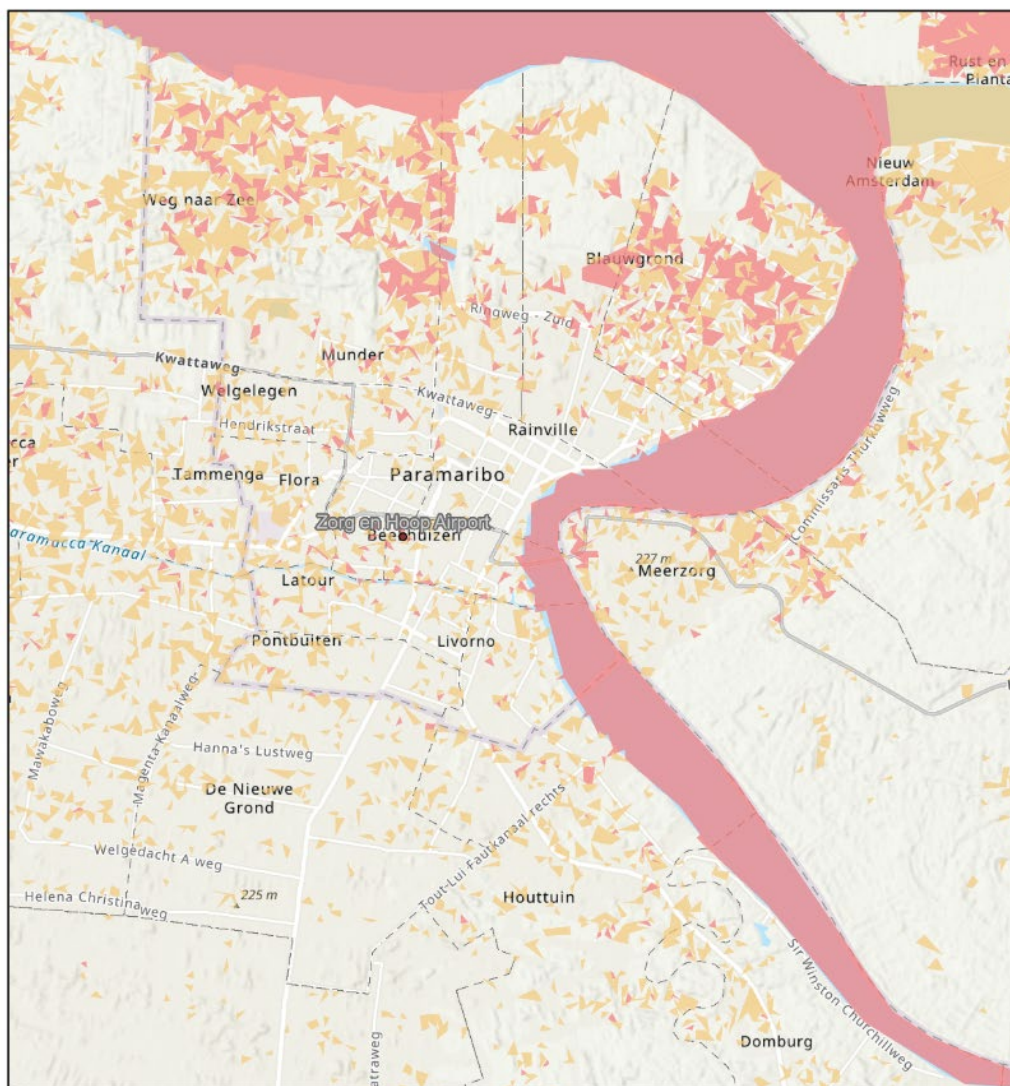
Riverine flooding hazard PBM with climate change



Maps 13. Riverine flooding hazard for Zorg En Hoop, Kwamalasamutu, and PBM International Airport with and without climate change. Source: UNISDR, GAR Atlas, and ISIMIP (2017), elaborated by IDB; map created with IDB ATLAS

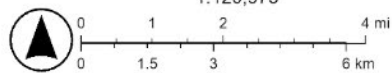
Riverine_Flooding_Hazard
Moderate
High

Sea level rise



9/3/2024

- Project sites
- Sea Level Rise with Climate Change
 - Moderate
 - High
- World Hillshade

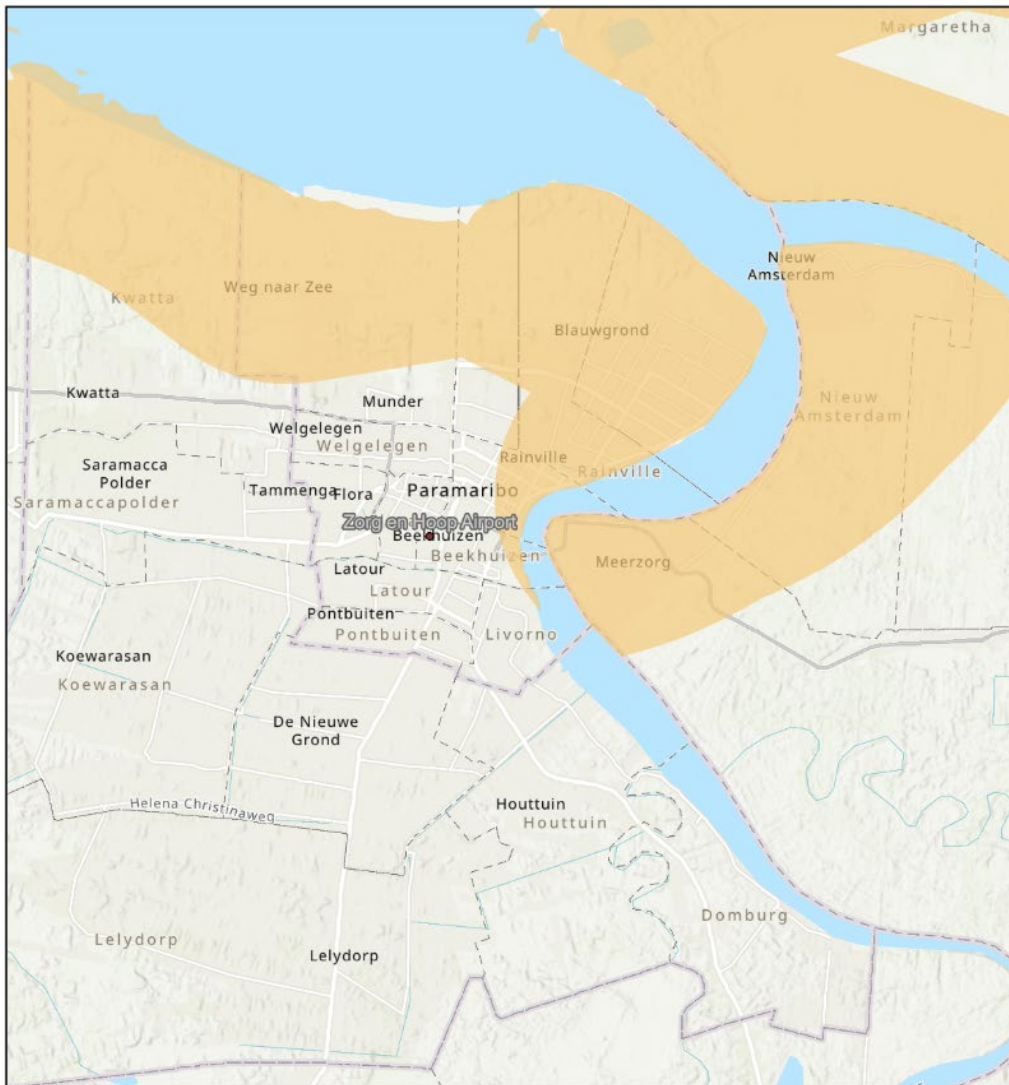


Esri, NASA, NGA, USGS, GISat, Esri, TomTom, Garmin, Foursquare, METV
NASA, USGS

Map 14. Sea level rise hazard with climate change

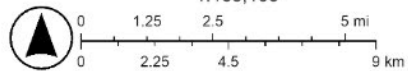
Source: NASA (2017). NASA's Land Processes Distributed Active Archive Center (LP DAAC). Shuttle Radar Topography Mission (SRTM), elaborated by IDB; map created with IDB ATLAS

Tsunami hazard



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- Project sites
- Tsunami Hazard
 - Moderate
- World Hillshade

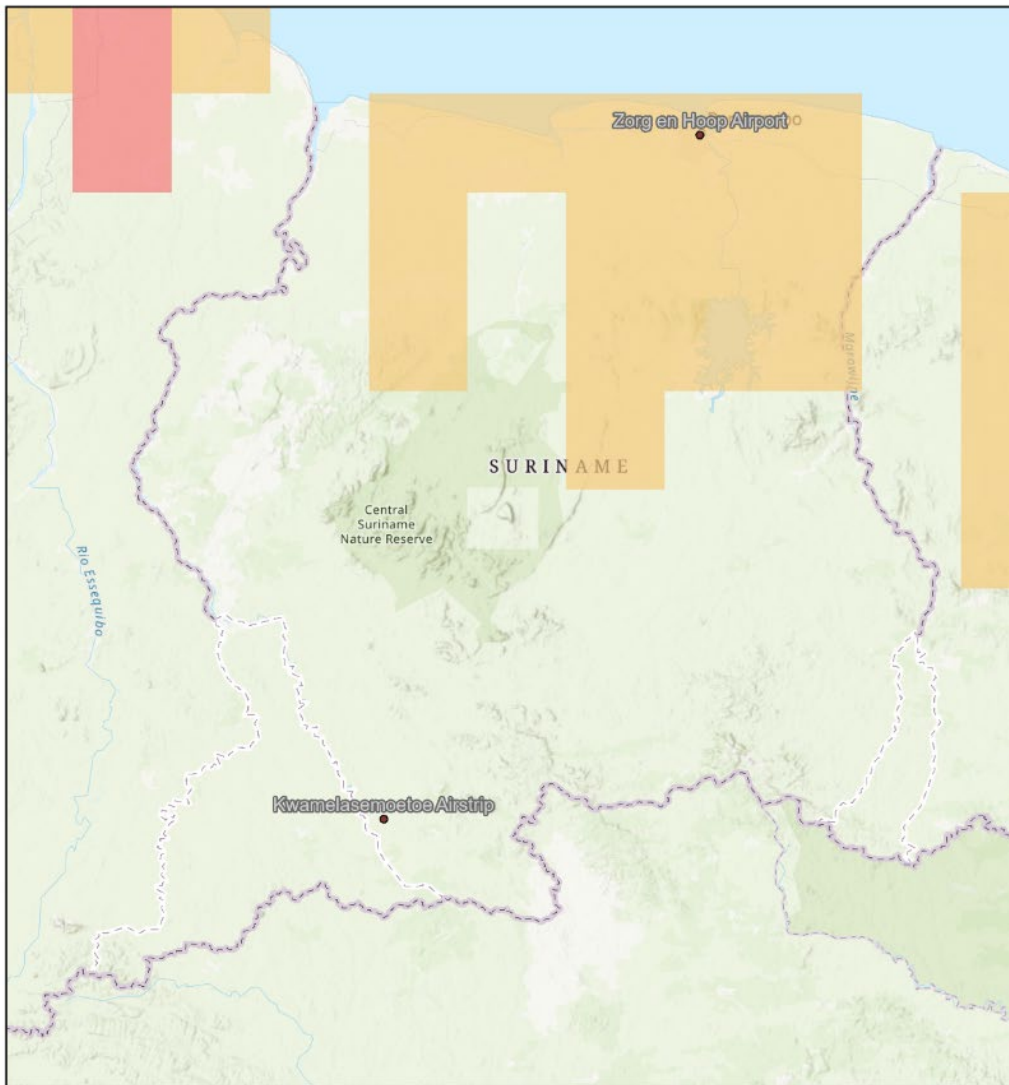


Esri, CGIAR, USGS, GISdata, Esri, TomTom, Garmin, Foursquare, METV, NASA, USGS

Map 15. Tsunami hazard (RP 475 years)

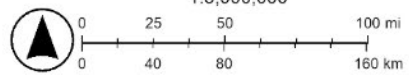
Source: UNISDR, GAR Atlas, elaborated by IDB; map created with IDB ATLAS

Water supply scarcity



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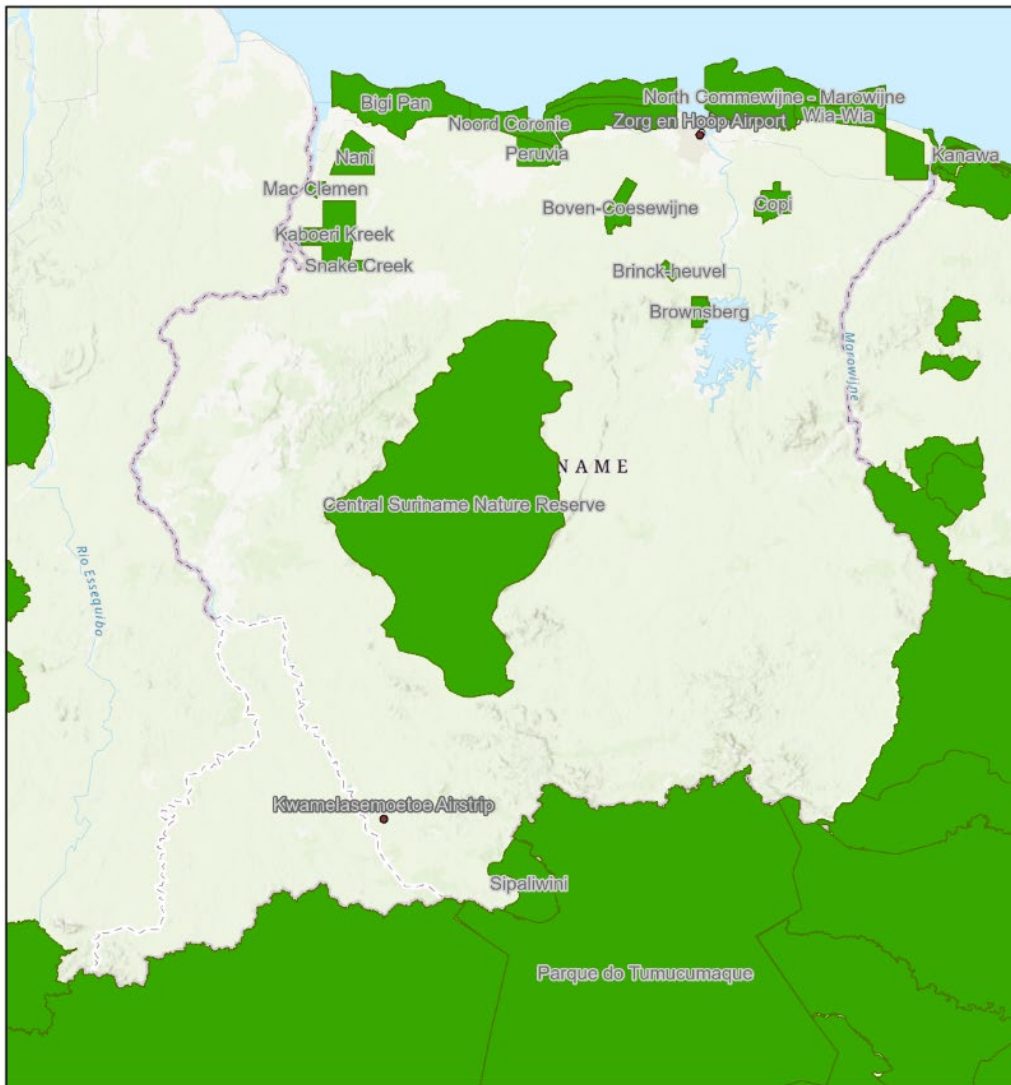
- Project sites
- Water Supply Scarcity Hazard with Climate Change
 - Moderate
 - High
- World Hillshade



GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS

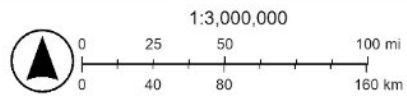
Map 16. Water supply scarcity hazard with climate change
Source: ISIMIP (2017), elaborated by IDB; map created with IDB ATLAS

Protected Areas



9/3/2024

- Project sites
- Protected Areas points
- Protected Areas polygons
- World Hillshade



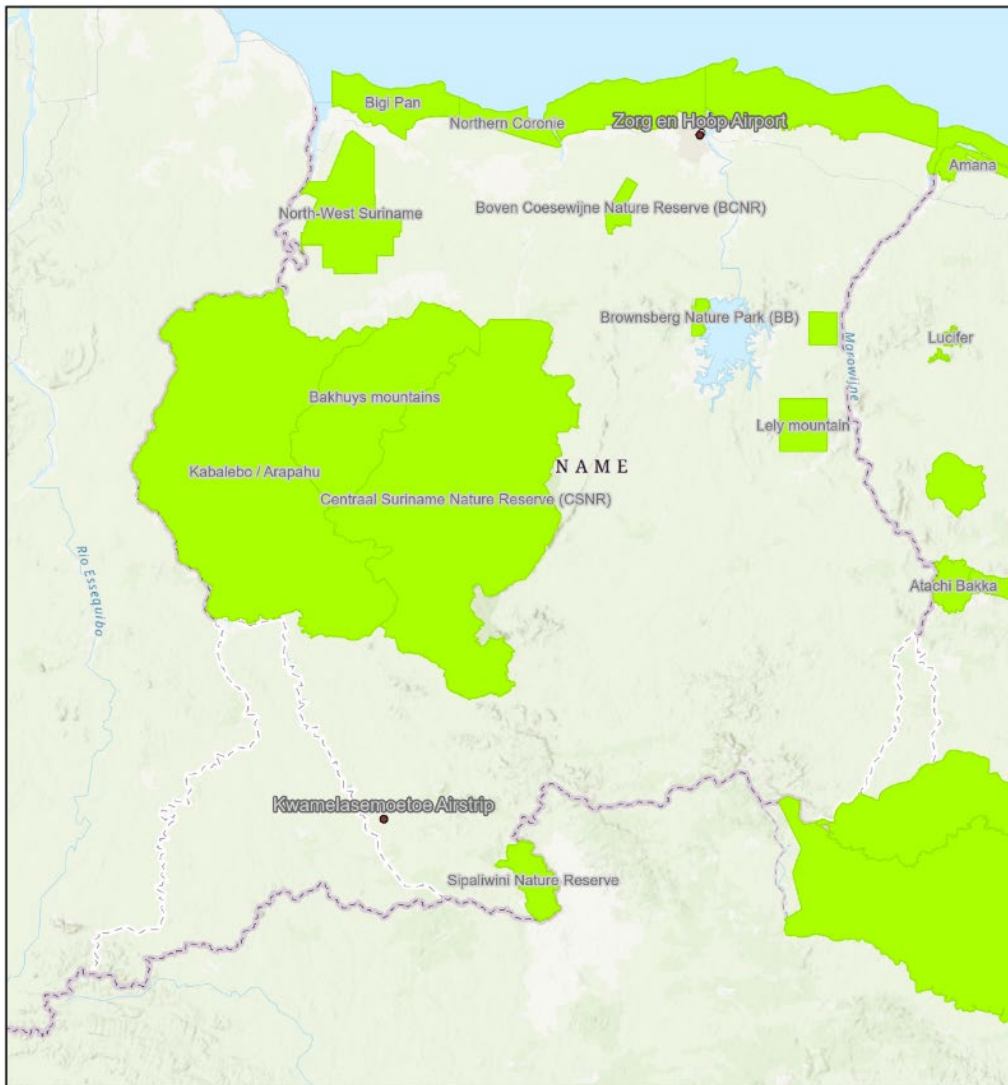
GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS

Map 17. Protected Areas

Source: World Database on Protected Areas (WDPA) (managed by UNEP World Conservation Monitoring Centre); map created with IDB ATLAS

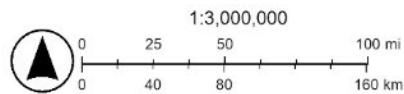
The Protected Area west of Paramaribo is named Noord Saramacca (label not shown).

Key Biodiversity Areas



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- Project sites
- Key Biodiversity Areas polygons
- World Hillshade

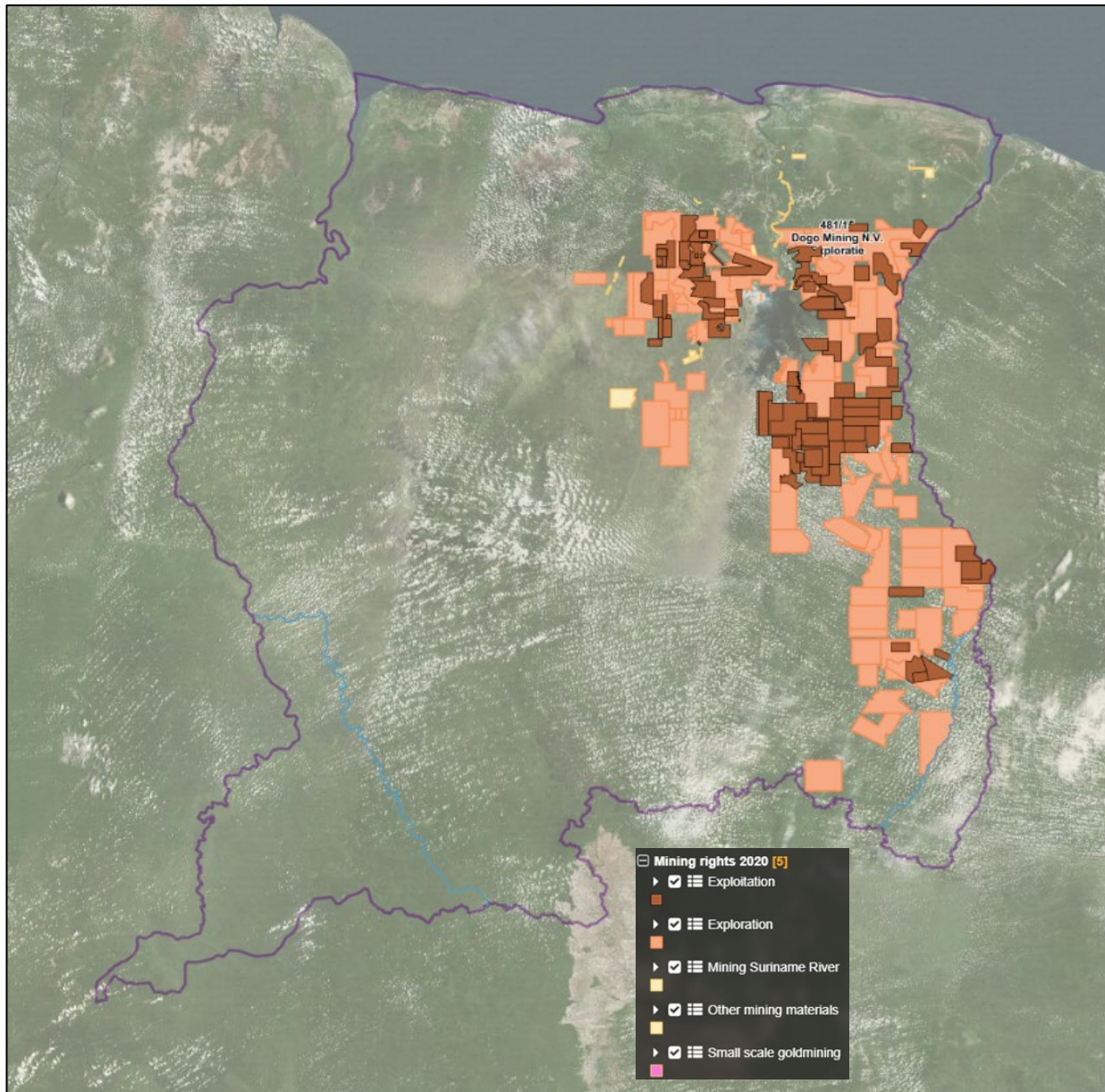


GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS

Map 18. Key Biodiversity Areas (KBA)

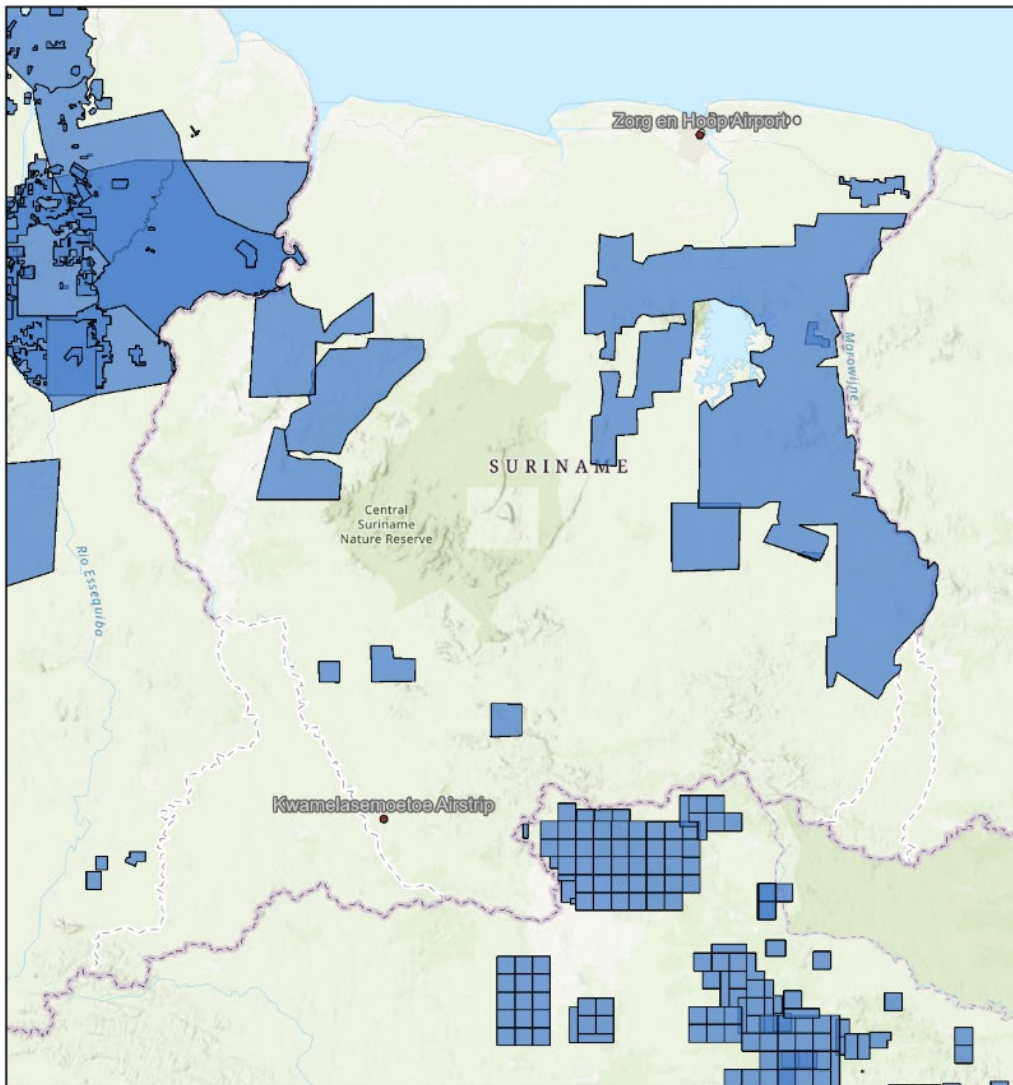
Source: World Database of Key Biodiversity Areas (managed by BirdLife International); map created with IDB ATLAS

The KBA west of Paramaribo is named *Northern Saramacca*: the one to the east is named *Northern Commewijne / Marowijne* (labels not shown).



Map 19. Mining rights in 2020. Disputed territories are represented between blue and purple lines, as shown in Map 1.
 Source: GONINI - National Land Monitoring System of Suriname (<https://gonini.org/>)

Mining zones



9/3/2024

- Project sites
- Amazon Network of Georeferenced Social and Environmental Information (RAISG) - Mining Zones in the Amazon 2020 - mineria2020
- World Hillshade



1:3,000,000

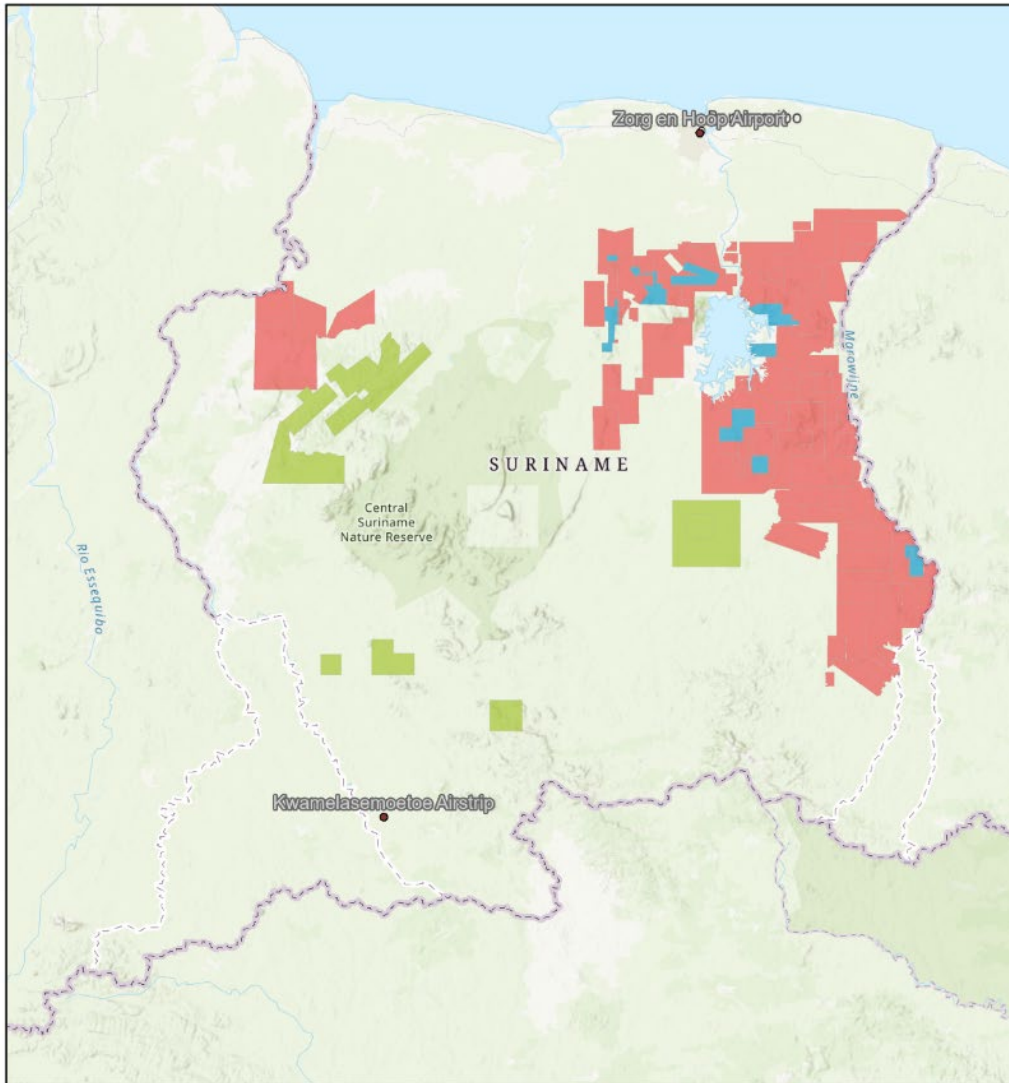
0 25 50 100 mi
0 40 80 160 km

GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS

Map 20. Mining zones in 2020

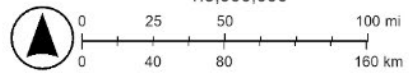
Source: Amazon Network of Georeferenced Social and Environmental Information (RAISG) – mineria 2020; map created with IDB ATLAS

Mining activity



9/3/2024

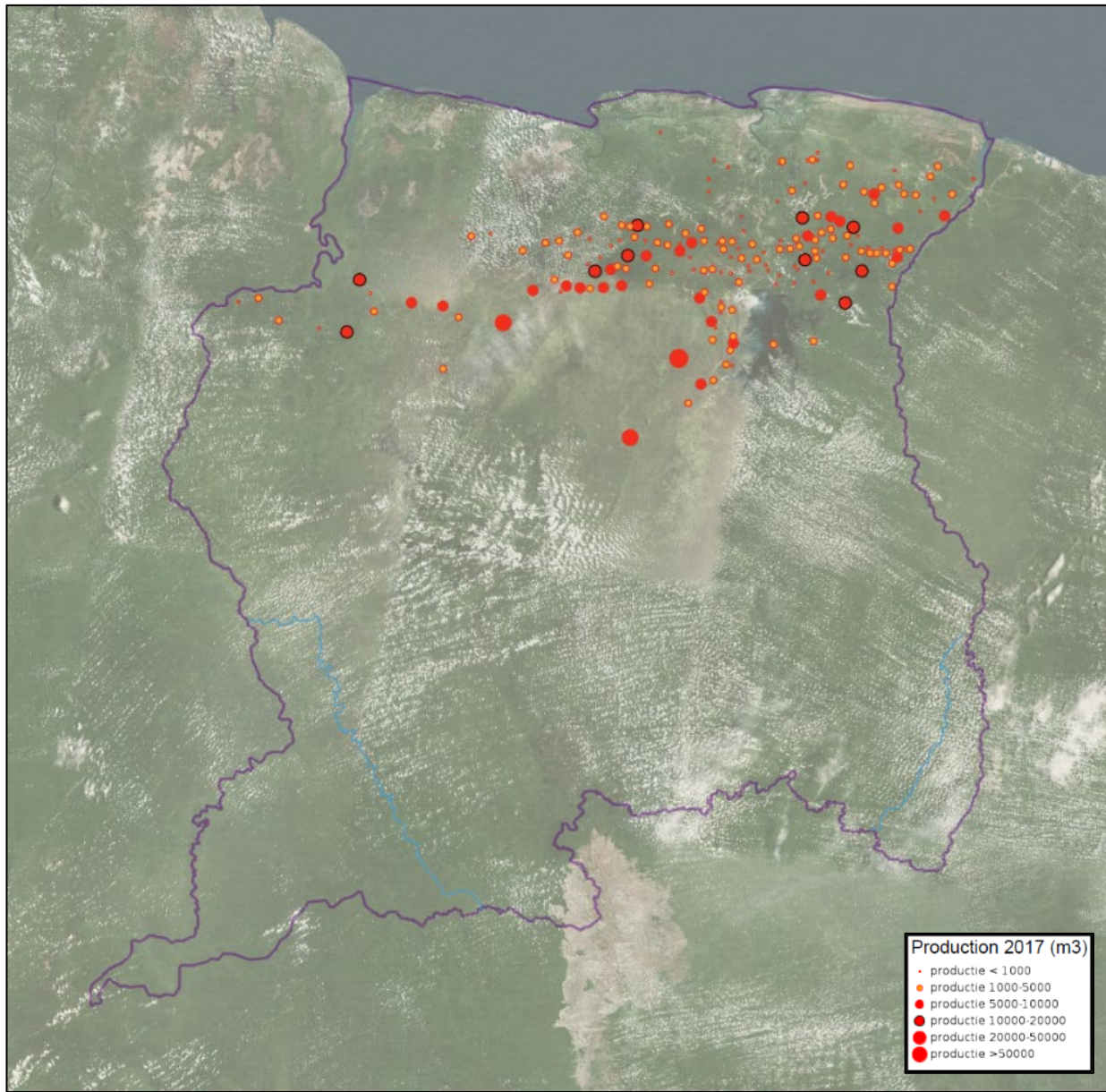
- Project sites
- Gold concessions
- Gold exploration
- Gold exploitation
- Other minerals
- World Hillshade



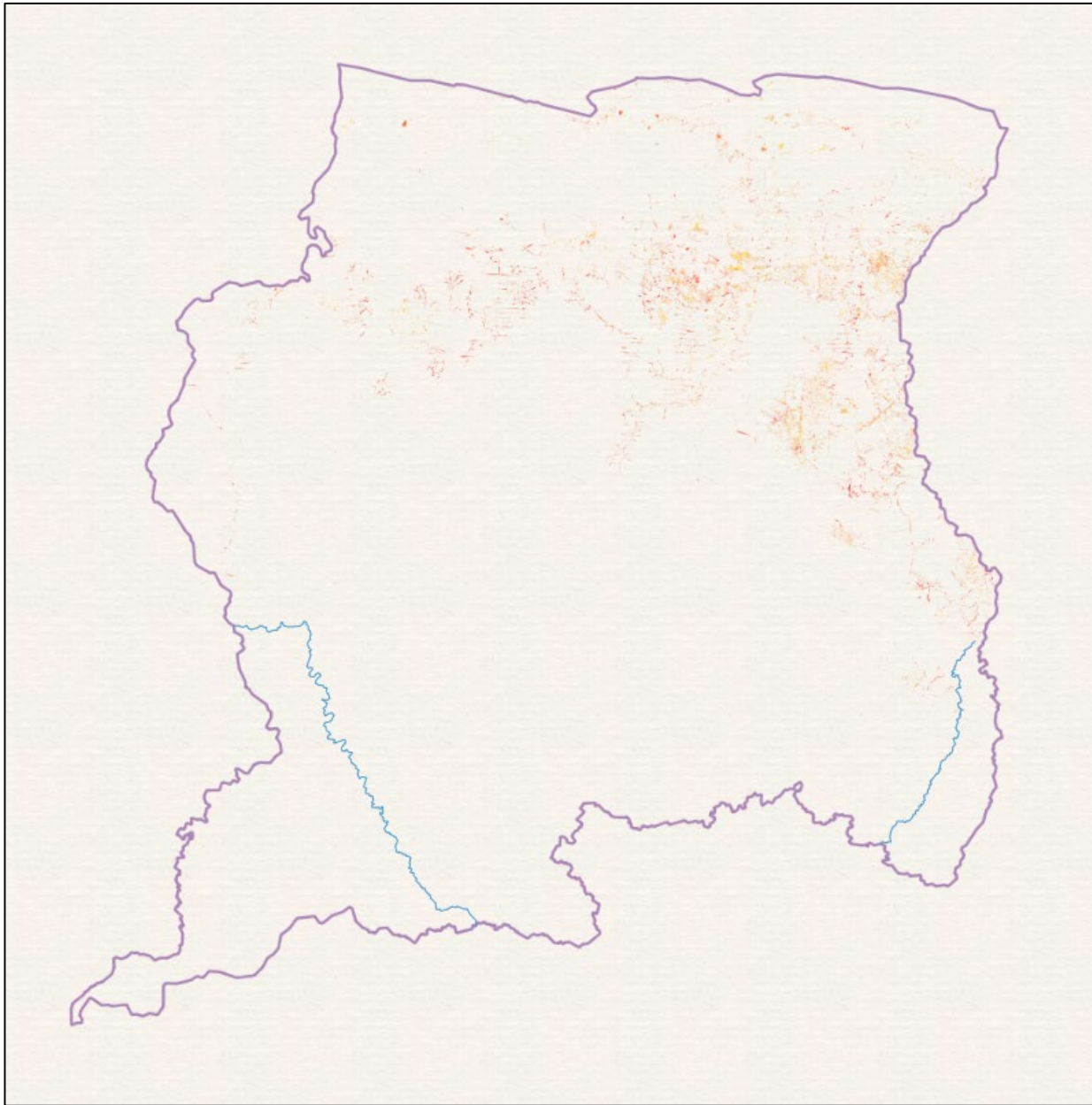
GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS

Map 21. Types of mining activity

Source: ArcGIS Online, Feature layer by user "rbhola"; map created with IDB ATLAS

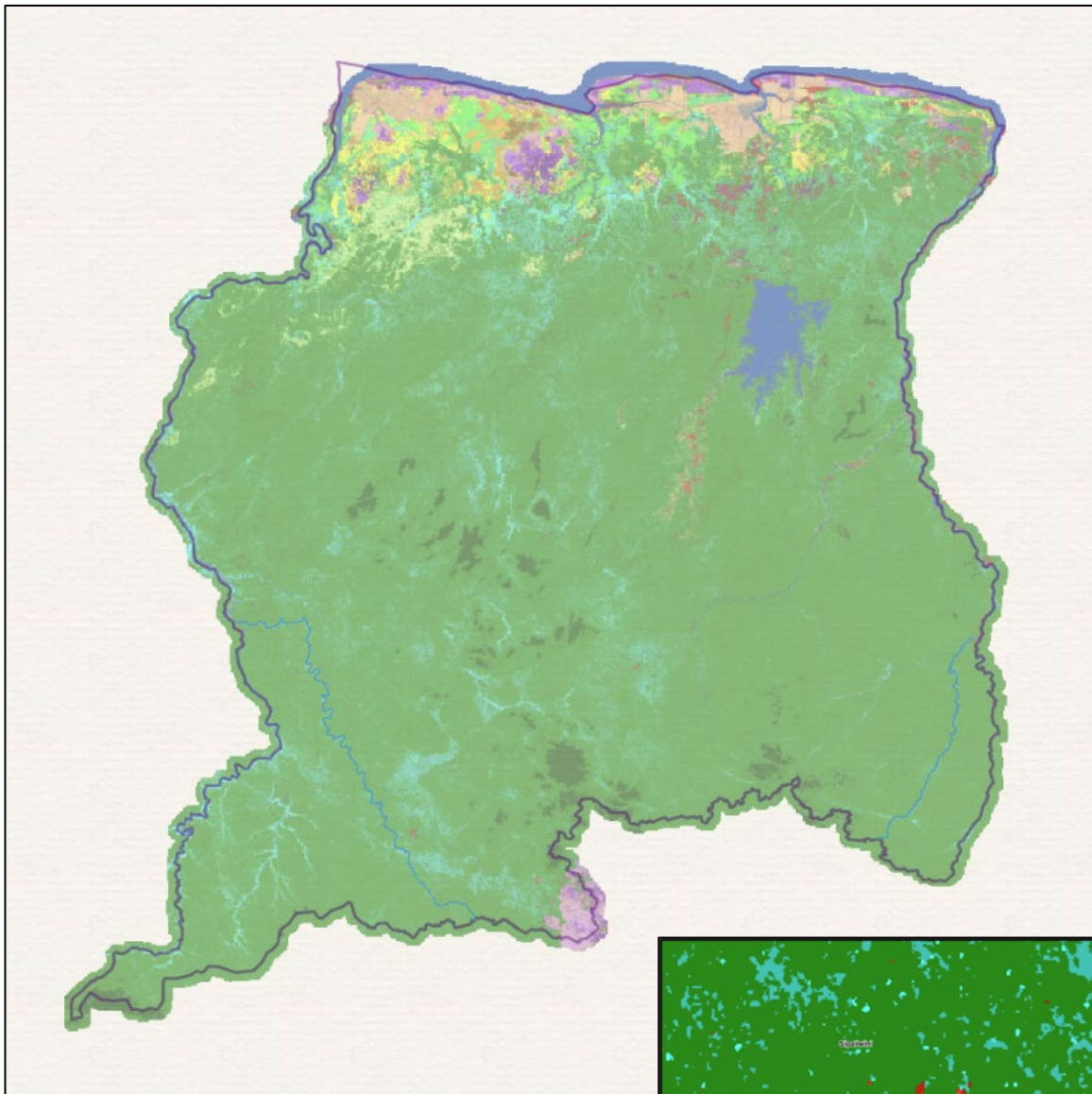


Map 22. Roundwood production in 2017. Disputed territories are represented between blue and purple lines, as shown in Map 1.
Source: GONINI - National Land Monitoring System of Suriname (<https://gonini.org/>)



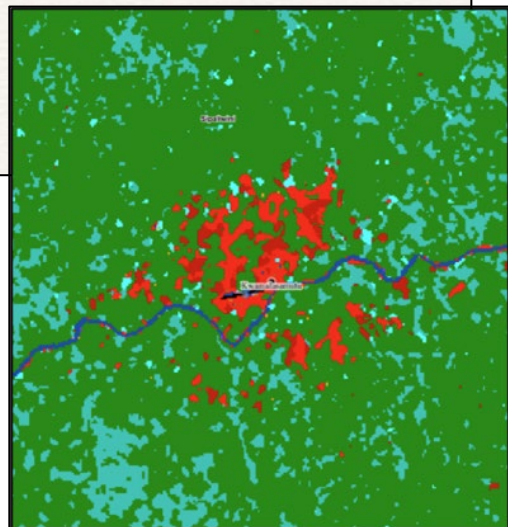
Map 23. Total deforestation between 2000 and 2023. Disputed territories are represented between blue and purple lines, as shown in Map 1.

Source: GONINI - National Land Monitoring System of Suriname (<https://gonini.org/>)



LEGEND

Creek forest [Kreekbos]	Herbaceous dry [Gras]
Marsh forest [Drasbos]	Marsh forest-2 / Creek-2 (interior) [Drasbos]
Swamp forest [Zwampbos]	Mountain forest [Bergbos]
High dryland forest [Hoog drooglandbos]	Secondary forest [Secundair bos]
Savanna forest [Savannebos]	Barre [Kale bodem]
Scrub / low savanna shrubs [Struik savanne]	Roads [Wegen]
Mangrove forest [Mangrovebos]	Water [Water]
Closed palm marsh forest [Drasbos met hoge palmen]	Cultivated-1 [Cultuurland-1]
Semi-open palm marsh forest [Drasbos met palmen]	Cultivated-2 [Cultuurland-2]
Open palm marsh forest [Drasbos met lage palmen]	Cultivated-3 [Cultuurland-3]
Herbaceous-1 (seasonally flooded) [Gras]	Cultivated-4 [Cultuurland-4]
Herbaceous-2 [Gras]	Cultivated-5 [Cultuurland-5]
Scrub-2 / Woodland savanna [Laag savannebos]	Cultivated-6 [Cultuurland-6]
	Urban (Paramaribo)

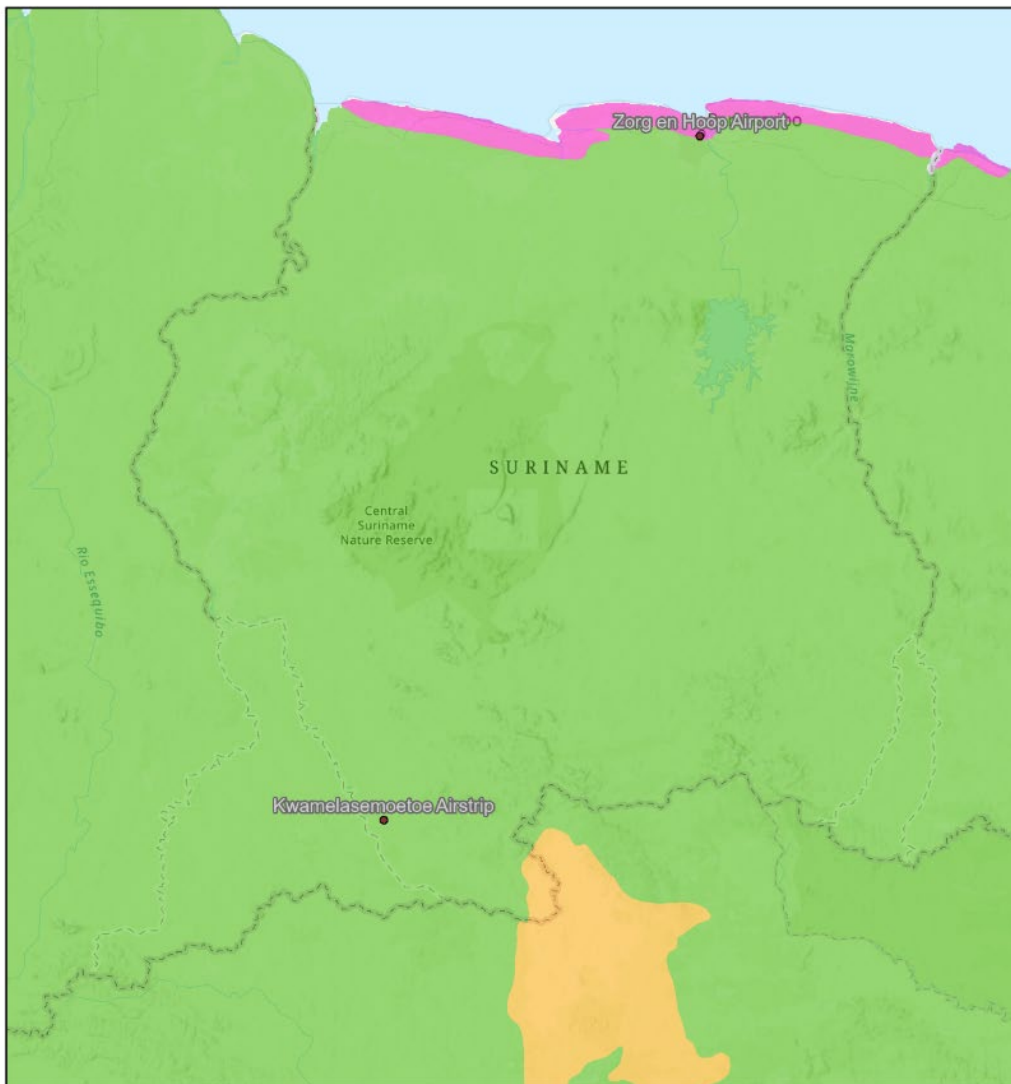


Map 24. Vegetation map (2010). Disputed territories are represented between blue and purple lines, as shown in Map 1.

Below is a zoom on Kwamalasamutu.

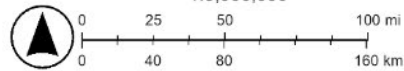
Source: GONINI - National Land Monitoring System of Suriname (<https://gonini.org/>)

Ecoregions and Biomes



9/19/2024

- Project sites
- RESOLVE Ecoregions and Biomes
 - Mangroves
 - Tropical & Subtropical Grasslands, Savannas & Shrublands
 - Tropical & Subtropical Moist Broadleaf Forests
- World Hillshade



GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS

Map 25. Ecoregions and biomes

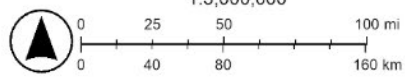
Source: ESRI Living Atlas. Bioscience, An Ecoregions-Based Approach to Protecting Half the Terrestrial Realm DOI: <https://doi.org/10.1093/biosci/bix014>; map created with IDB ATLAS

Terrestrial ecosystems



9/19/2024

- Project sites
- World Terrestrial Ecosystems
 - Sub Tropical Moist Forest on Mountains
 - Sub Tropical Moist Forest on Hills
 - Sub Tropical Moist Cropland on Mountains
 - Sub Tropical Moist Grassland on Mountains
 - Sub Tropical Moist Shrubland on Mountains
 - Sub Tropical Moist Forest on Tablelands
 - Tropical Dry Cropland on Plains
 - Tropical Dry Shrubland on Plains
 - Tropical Dry Forest on Plains
 - Tropical Moist Forest on Mountains
 - Tropical Moist Cropland on Mountains
 - Tropical Moist Cropland on Plains
 - Tropical Moist Cropland on Hills
 - Tropical Moist Settlement on Plains
 - Tropical Moist Forest on Hills
 - Tropical Moist Forest on Tablelands
 - Tropical Moist Cropland on Tablelands
 - Tropical Moist Settlement on Mountains
 - Tropical Moist Shrubland on Plains
 - Tropical Moist Shrubland on Hills
 - Tropical Moist Shrubland on Mountains
 - Tropical Moist Cropland on Mountains
 - Tropical Moist Cropland on Hills
 - Tropical Moist Settlement on Hills
 - Tropical Moist Grassland on Mountains
 - Tropical Moist Sparsely or Non-vegetated on Hills
 - Tropical Moist Grassland on Tablelands
 - Tropical Moist Shrubland on Tablelands
 - Tropical Moist Settlement on Tablelands
 - Tropical Moist Sparsely or Non-vegetated on Tablelands
 - World Hillshade
 - Tropical Moist Grassland on Plains
 - Tropical Moist Sparsely or Non-vegetated on Plains



USGS, TNC, ESRI, GISaot, Esri, TomTom, Garmin, FAO, NOAA, USGS, Esri, USGS

Map 26. Terrestrial ecosystems

Source: ESRI Living Atlas. USGS, The Nature Conservancy, and Esri; map created with IDB ATLAS

World Terrestrial Ecosystems: Tropical Moist Settlement on Plains

World Terrestrial Ecosystems: Tropical Moist Forest on Hills

Landforms: Plains

Landforms: Hills

Landcover/Vegetation: Settlement

Landcover/Vegetation: Forest

Paramaribo: Climate Region: Tropical Moist

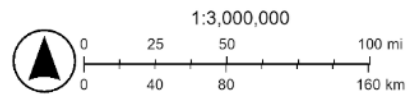
Kwamalasamutu: Climate Region: Tropical Moist

Indigenous Territories



9/3/2024

- Project sites
- Indigenous Territories
 - NO TITULADO
 - TITULADO



GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS

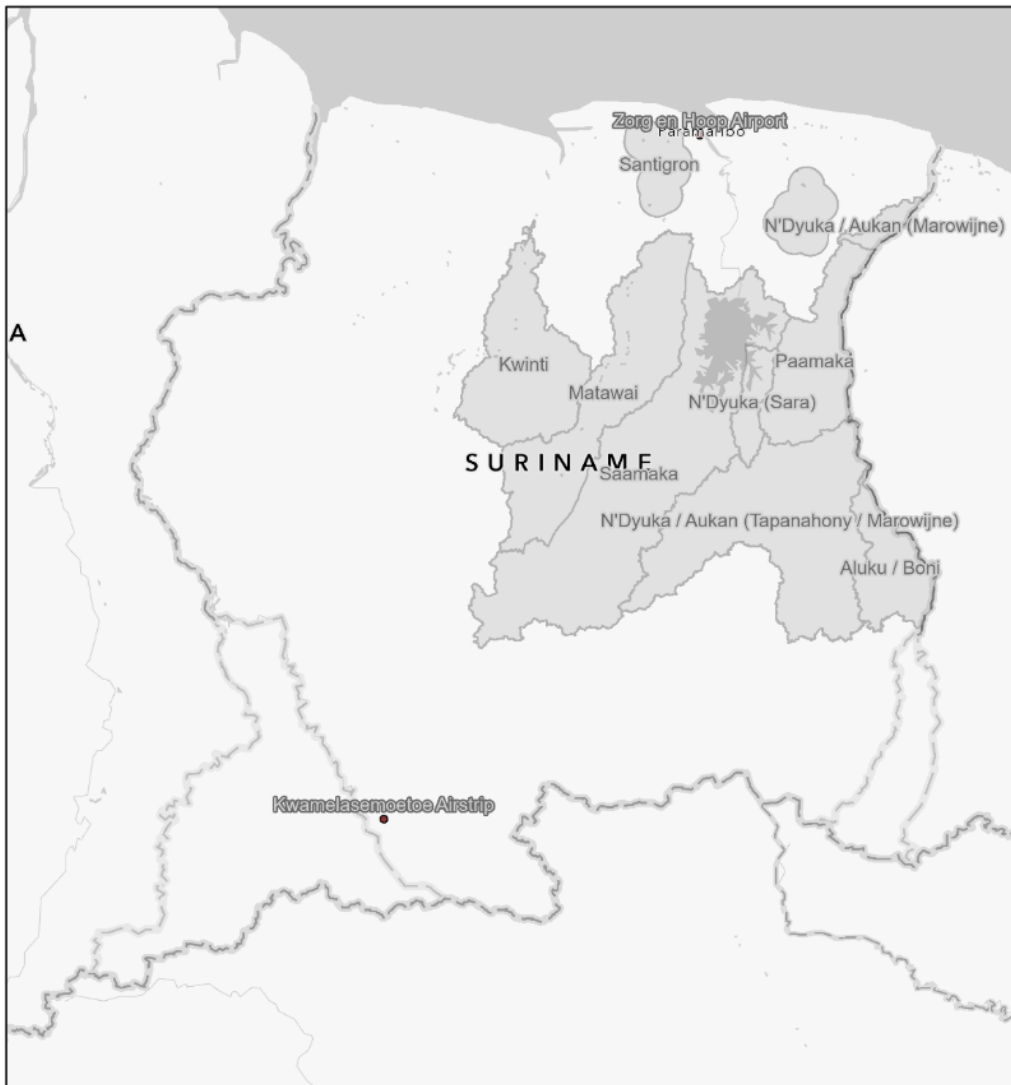
Map 27. Indigenous Territories

Source: Amazon Conservation Team (2019); map created with IDB ATLAS

Grey areas: non-titled territories

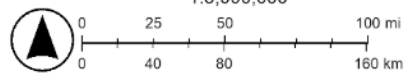
Blue areas: titled territories

Afro-descendant Territories



9/3/2024

- Project sites
- Afro-descendant Territories
- NO TITULADO

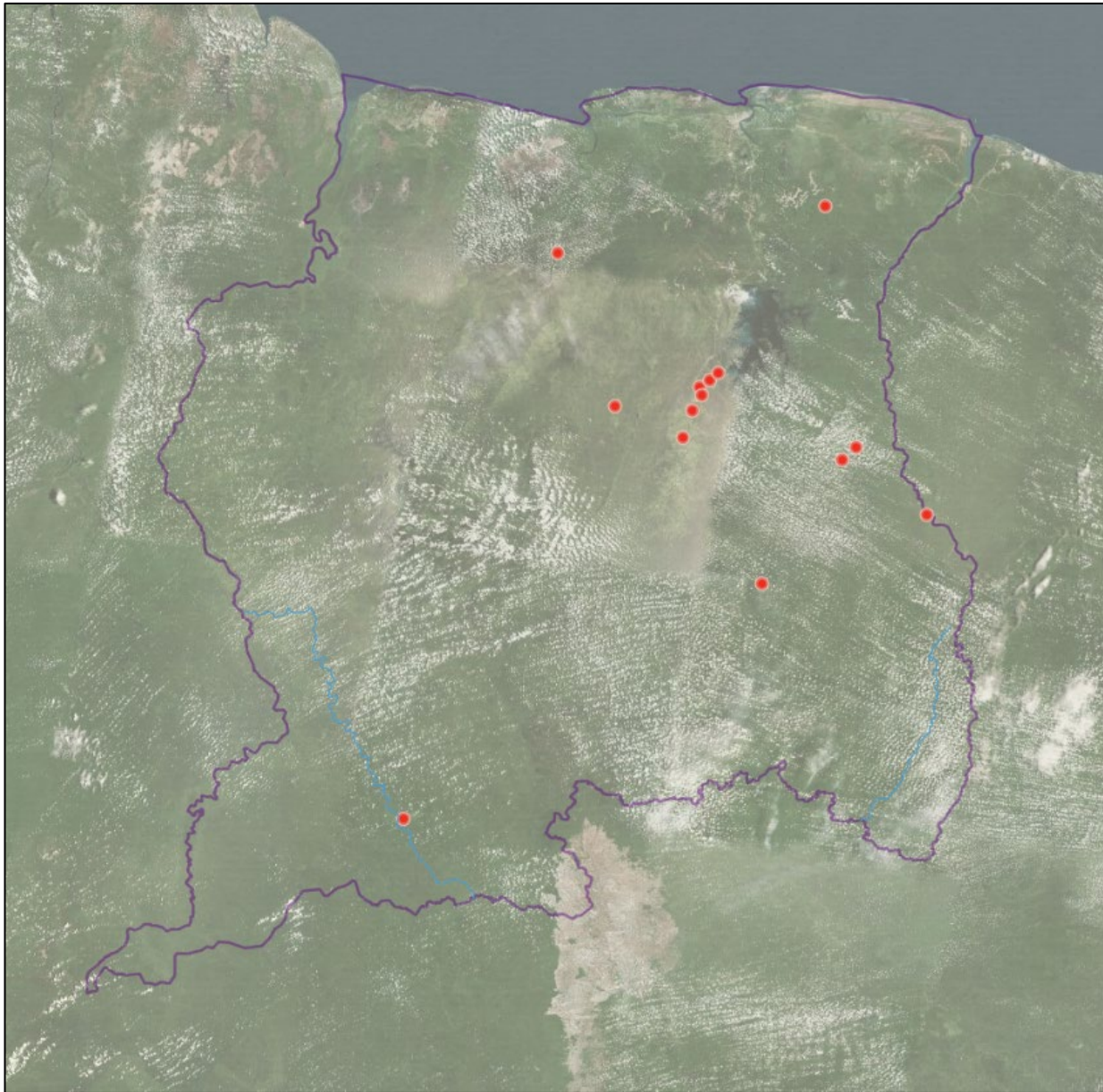


GISsat, Esri, TomTom, Garmin, FAO, NOAA, USGS

Map 28. Afro-descendant Territories

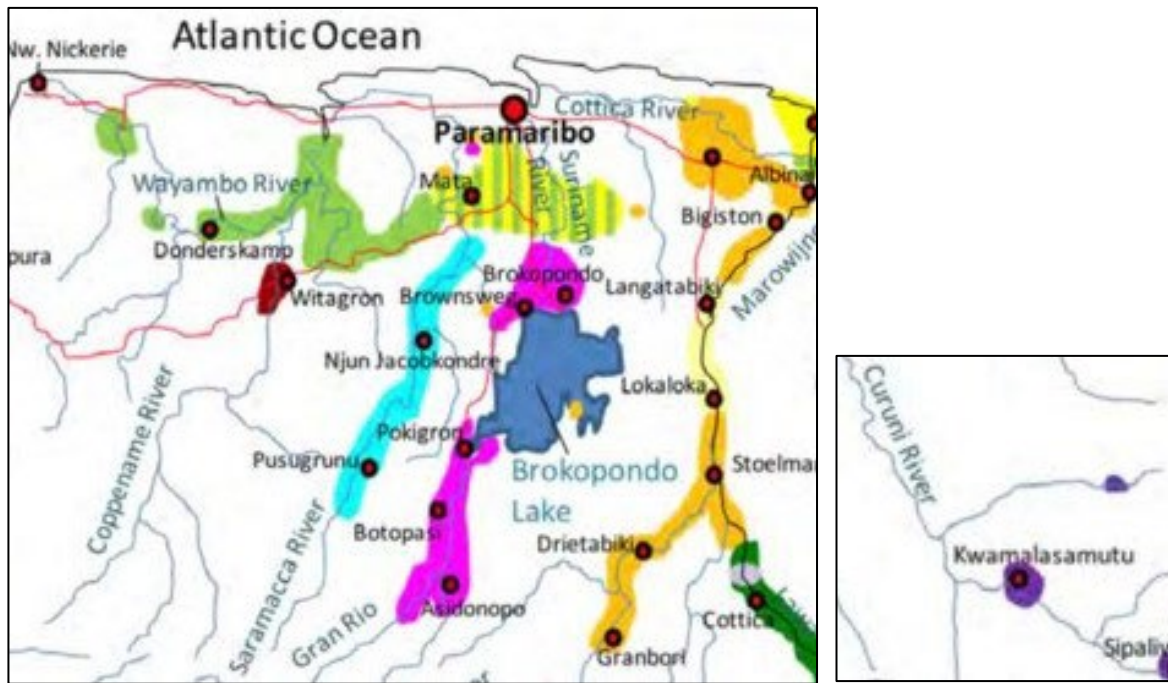
Source: ISA-RAISG (2016) and Amazon Conservation Team (2019); map created with IDB ATLAS

Grey areas: non-titled territories



*Map 29. RAC villages. Disputed territories are represented between blue and purple lines, as shown in Map 1.
Source: GONINI - National Land Monitoring System of Suriname (<https://gonini.org/>)*

The Redd+ Assistants Collective (RAC) is a collective of representatives of Indigenous communities living in the interior of Suriname. The Redd++ assistants represent the traditional leaders from the different communities in Suriname. These are: Trio's, Wajana's, Arowakken, Caraiben, Saramaccaners, Aucaners, Paramaccaners, Aluku's, Matuariërs, Kwinti's.



Map 30. Demarcation of indigenous and maroon lands in the project areas (Heemskerk, M.)

Source: Report commissioned by the Gordon and Betty Moore Foundation and Amazon Conservation Team Suriname. (2009).

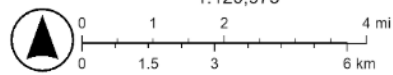
http://mariekeheemskerk.org/Reports/Demarcation_final_May2009.pdf

UNESCO sites



9/3/2024

- Project sites
- UNESCO sites - World Heritage Convention
- Cultural



Map data © OpenStreetMap contributors, Microsoft, Facebook, Inc. and its affiliates, Esri Community Maps contributors, Map layer by Esri

Map 31. UNESCO site in Paramaribo.

Source: World Heritage Convention; map created with IDB ATLAS



Map 32. Location of Werehpai/Iwana Samu Protected Areas and Kwamalasamutu.
Source: Plan EHS from Conservation International, 2010.

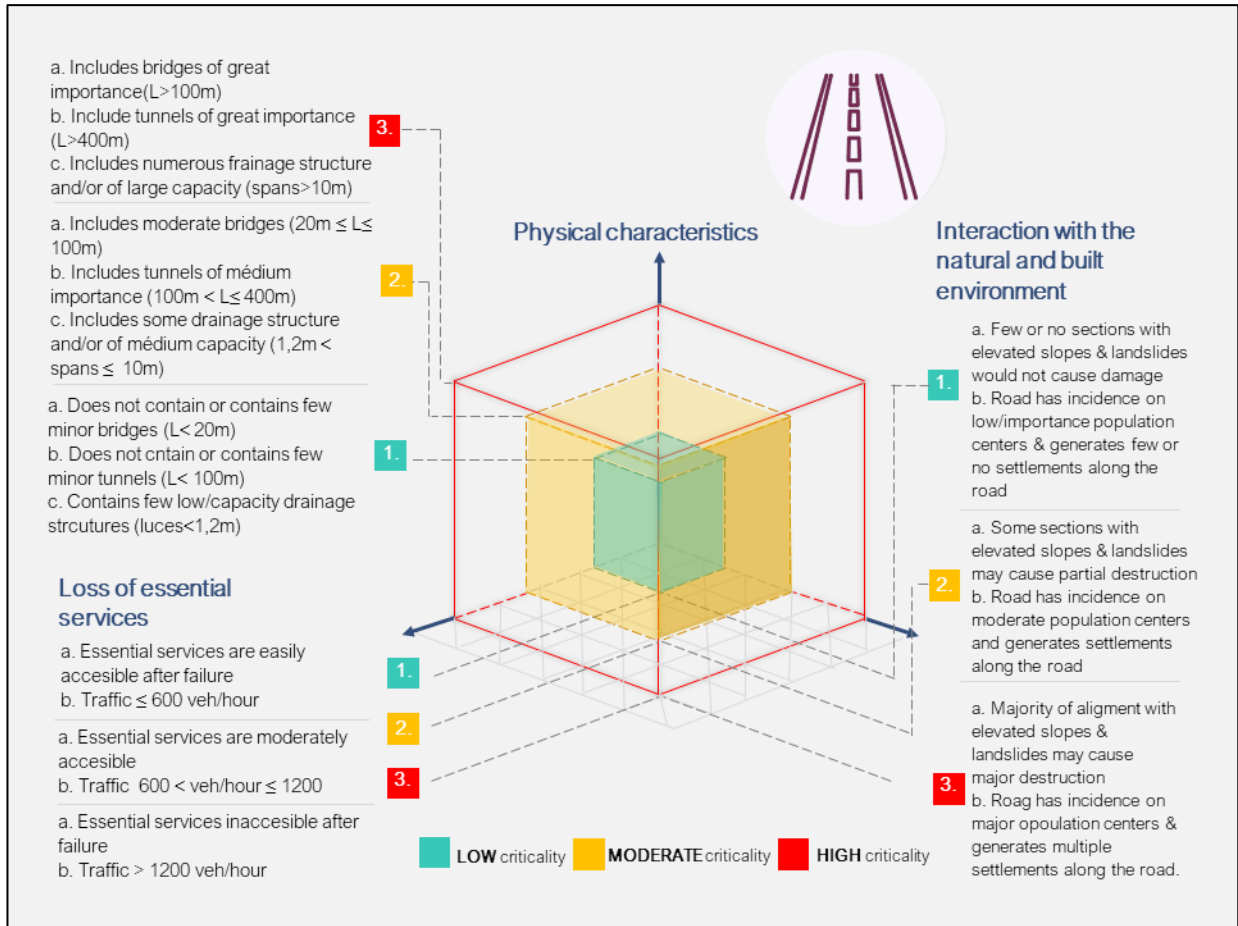


Figure 1. Criticality and vulnerability cube