

Annex 5

Commewijne ROC

**Social Impact Assessment report produced as part of
the addendum ESIA for EBS power delivery project to
Upgrade and extend the Commewijne right bank
Distribution Grid**

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ABBREVIATIONS AND ACRONYMS

AI	Area of Influence
BO	Bestuursopzichter; Local staff in the communities employed by Ministry of Regional Development and Sport
CBB	Central Bureau for Citizens Affairs (<i>Centraal Bureau voor Burgerzaken</i>)
DC	District Commissioner (<i>Districtscommissaris</i>)
DR	District council members
EBS	Energie Bedrijven Suriname
ESIA	Environmental and Social Impact Assessment
GoS	Government of Suriname
ICOMOS	International Council on Monuments and Sites
LOC	Left bank of the Commewijne River
LVV	Agriculture, Animal Husbandry and Fisheries (<i>Landbouw, Veeteelt en Visserij</i>), Ministry of
MinOWC	Ministry of Education, Science and Culture
NVB	National Transportation Service (<i>Nationaal Vervoer Bedrijf</i>)
PV	Photo Voltaic
RGD	Regional Health Service (<i>Regionale Gezondheidsdienst</i>)
ROC	Right bank of the Commewijne River
ROS	Regional Development and Sports (<i>Regionale Ontwikkeling en Sport</i>), Ministry of
RR	Resort council members
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SBHF	Suriname Built Heritage Foundation
SIA	Social Impact Assessment
TCT	Transport, Communication and Tourism, Ministry of
VCM	Verenigde Cultuur Maatschappijen NV
WHS	World Heritage Site

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1. INTRODUCTION

This document (“ROC-SIA”) presents the social baseline study and impact assessment for the NV Energie Bedrijven Suriname (EBS) “Component 2.2 – Commewijne Project”, which is an addendum to the Environmental & Social Impact Assessment (ESIA) study carried out in 2019, for the preparation of four (4) Energy infrastructure projects under the initiative: Consolidating a Sustainable Energy Sector (SU-L1055).

2. METHODS

2.1 AREA OF IMPACT

The Area of Impact for this Social Impact Assessment (SIA) is the right bank of the Commewijne River (ROC, Figure 1), between Elizabethshoop in the west, and Alliance in the east. The SIA primarily focusses on the populated plantation lands in this area, and on infrastructure and services used by the people in the ROC.

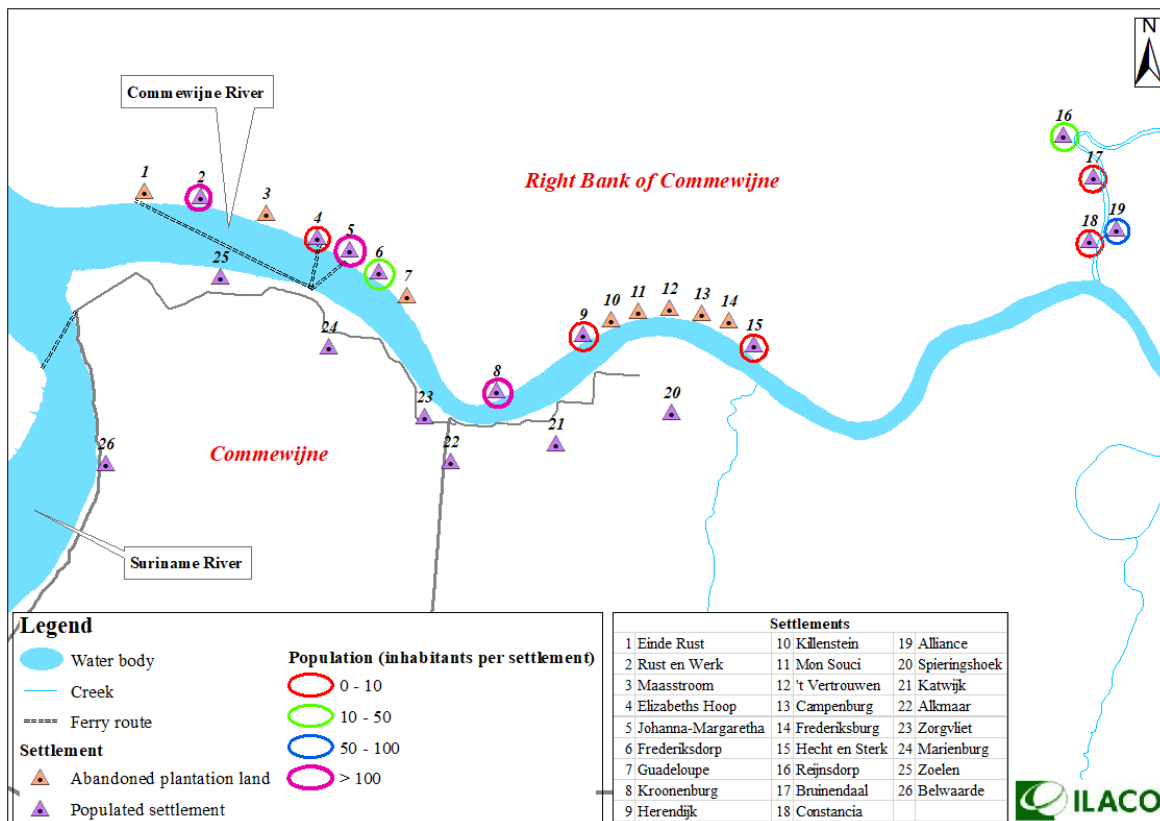


FIGURE 1. MAP OF AREA OF IMPACT

2.2 GENERAL APPROACH

The 2019 impact assessment for different EBS energy infrastructure projects included a SIA for the “Upgrade critical infrastructure Commewijne including solar plant Alliance”. In the context of this study, baseline data were collected for the right bank of the Commewijne River, with special attention paid to Alliance. Given the availability of recent baseline data, data collection for the present social baseline for the ROC was limited to an orientation visit to the area, a visit to the district government, a field visit to the ROC area, which included stakeholder consultations, and communication with the EBS Project Manager & Environmental Specialist of this project. This additional data collection allowed the social specialist team to assess the current situation and collect targeted information for the affected area.

During the orientation visit on May 04, 2021, the consultant held a consultation meeting with the District Commissioner of Commewijne, at the District Commissioner’s office in Nieuw Amsterdam. During the subsequent field visit (May 19, 2021), the consultant visited the following plantations: Johanna & Margaretha, Kroonenburg, Herendijk, Hecht en Sterk, Constantia, Alliance, and Reijnsdorp/Bakkie (Figure 1). During the field visit, the consultant was accompanied by four EBS staff members, among whom two were local staff for the target area.

The SIA was carried out in line with relevant IDB standards, notably:

- IDB OP 703: Environment and Safeguards Compliance
- IDB OP-710: Involuntary Resettlement.

2.3 PUBLIC CONSULTATION

A large general public meeting was not possible due to government restrictions on gatherings related to the COVID-19 pandemic. Therefore, the consultant contacted the most relevant stakeholders individually by phone, e-mail and in person. Landowners were traced with the help of EBS and referrals from others. In the case of the District Commissioner’s office, consultation was combined with data collection during the orientation visit (May 04, 2021).

Each consultation started with the consultant explaining the project and the ESIA to the stakeholder. Information was provided about the reason for the project, execution, and expected positive and negative impacts. In addition to consultations with local stakeholders in the area, different plantation landowners and managers were contacted by e-mail or phone to explain the project and ask about possible concerns. Examples of stakeholder questions and concerns included: Why is this project executed? Will EBS place lights along the trail beneath the power lines? Are there any plans for developments in this area? How far land-inward will the pylons be placed? Will cracks in the existing road be repaired?

All questions that the consultant could not answer were presented to EBS. The EBS answered the questions by e-mail, with the consultant in cc, so that the consultant could verify that all concerns were adequately addressed.

Even though this method of consultation did not allow for stakeholders to interact, the consultant is convinced that this was the best possible way during the COVID-19 pandemic to ensure that stakeholders were able to ask questions and voice their concerns. We also are convinced that all relevant stakeholders have been informed and heard through the site visit and additional targeted communication with key persons via phone and e-mail.

A list of consulted stakeholders is attached as ANNEX 1 and key remarks of stakeholder consultations can be found in ANNEX 2.

3. SOCIAL BASELINE

3.1 COMMEWIJNE DISTRICT

TABLE 1. COMMEWIJNE DISTRICT KEY INDICATORS

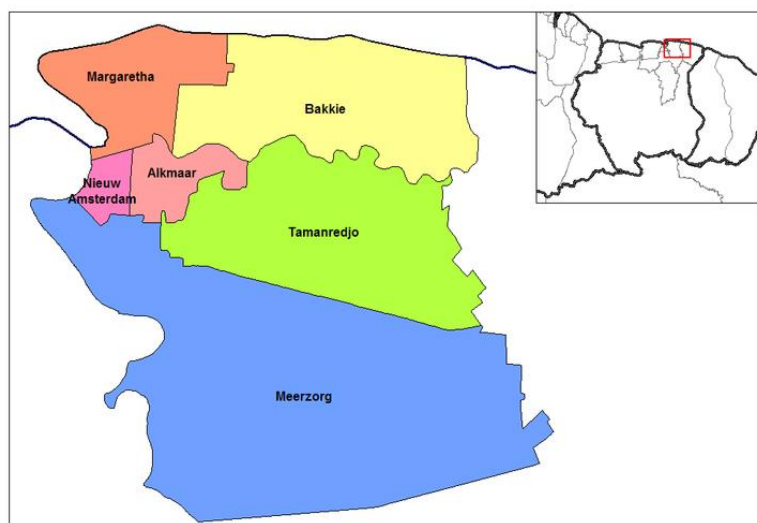
Population	31,420 (2012)
Population characteristics	Largest population segment is of Javanese ethnic descent (47%), followed by Hindustani (30%) and smaller numbers of Creoles, Maroons and others.
Indigenous populations	Very few individuals, no Indigenous communities
Educational facilities	There are several elementary schools. Continued education (middle school, high school and/or vocational education) can be followed in Nw. Amsterdam, Ellen, Meerzorg and Tamanredjo.
Health care facilities	Present in the whole district: one health center providing general services, one health center with extensive health services, five polyclinics, and five auxiliary polyclinics.
Electricity supply	Most locations
Clients pay for electricity?	Yes
Running water	Most locations
Telecommunication services available?	Yes
Accessibility	By boat or car from Paramaribo city

Commewijne district (2353 km²) is located along the coast of Suriname, just across the Suriname River from Paramaribo City. The capital of Commewijne is Nieuw Amsterdam. Other population centres are Tamanredjo, Meerzorg, Alkmaar, Mariënborg, Johanna & Margaretha, and Bakkie. Commewijne houses about 6 percent of the Suriname national population. Outside of the main population centres, populated areas are characterized by ribbon development e.g. Mariënborg.

Commewijne district counts six resorts. The ROC contains the resorts Margaretha and Bakkie (Figure 2). The land along both banks of the Commewijne River consists mostly of former plantations, where coffee, cacao and sugar were produced. The ROC Area of Indirect Impact consists entirely of former plantations. After emancipation (1863), virtually all enslaved Africans left the plantations. The population was replaced by contract labourers from India and Java (island within the Dutch East Indies, now Indonesia). The current population in the Area of Influence (AI) consists primarily of descendants of these contract labourers.

Main economic activities in the district are agriculture, animal husbandry, fishing and fish processing, forestry, tourism and trade.

FIGURE 2. RESORTS OF COMMEWIJNE



3.2 SOCIOECONOMIC AND PHYSICAL INFRASTRUCTURE OF THE ROC

3.2.1 PUBLIC FACILITIES

The ROC features approximately 60 former plantation lands (Annex 3). Most of these plantations have been abandoned and do not contain any economic activities. In 1965, the area counted 25 inhabited plantations, excluding Batavia (Pomona/Braamspunt) further West. Nowadays, in 2021, only eleven plantations in the ROC are still populated, among whom ten are located in the AI (Figures 1 and 3).

Four of the eleven populated plantations on the ROC feature an elementary school, namely: Alliance, Kroonenburg, Johanna & Margareta, and Rust en Werk. The latter plantation is not part of the Project area. Information about the schools in the project area is provided in Table 2.

The elementary school at Reijnsdorp closed about 10 years ago. One child from this plantation travels with the school boat to Alliance. At Constantia there is one 14-year old boy, but he no longer attends school. There are no children on the other populated plantations in the Project area.

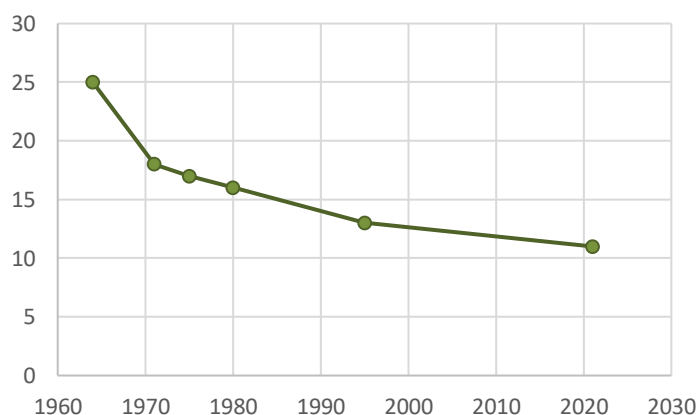


FIGURE 3. NUMBER OF POPULATED PLANTATIONS IN THE ROC (EXCL. BATAVIA)

TABLE 2. ELEMENTARY SCHOOLS IN THE ROC AREA

Name Plantation	Johanna & Margaretha	Kroonenburg	Alliance
Number of classes	8; pre-school and grades 1-6	8; pre-school and grades 1-6	8; pre-school and grades 1-6
Number of students	43	25	8 (incl. one from Reijnsdorp)

There are Regional Health Service (RGD) clinics in Alliance, Kroonenburg, and Johanna & Margaretha (Table 3). The clinics of Alliance and Kroonenburg are only operational biweekly on Thursdays, when a medical doctor visits. In case of an emergency, inhabitants of these plantations visit the RGD clinic of Alkmaar. The clinic at Alkmaar is open on Monday through Friday. The clinic of Johanna & Margaretha provides services five days a week through a local nurse and biweekly on Thursdays the medical doctor is available.

The national and district government are present through local offices in different communities. There are local government manager (*Bestuursopzichter-BO*) offices of the Ministry of Regional Development and Sports (ROS) in Kroonenburg and Johanna & Margaretha, and offices of the Ministry of Agriculture, Animal Husbandry and Fisheries (*Landbouw, Veeteelt en Visserij* - LVV) in Kroonenburg and Alliance. In Alliance, there also is an office of the Central bureau for Citizens Affairs (*Centraal Bureau voor Burgerzaken* - CBB).

None of the communities in the ROC are connected to the public drinking water network. Inhabitants of the area rely on rainwater, which is harvested from roof tops in large rainwater collection bins. The area is not connected to communication land lines, but mobile phone and internet reach is available throughout the area through the Telesur provider. From Kroonenburg to the west (Resort Margaretha), one also has mobile reach through the Digicel provider.

TABLE 3. INFRASTRUCTURE AND SERVICES PER POPULATED PLANTATION IN THE AREA OF IMPACT

Plantation	Land ownership	Clinic	Prayer house	Elementary school	Government offices
Frederiksdorp	Micronclean Worldwide, with share holders	No	No	No	No
Johanna & Margaretha	Government	Yes	Church, Mosque, Temple	Yes	BO office (ROS)
Elizabethshoop	Part VCM/Van Alen; part Rosiek family	No	No	No	No
Kroonenburg	Government	Yes	Mosque, Temple	Yes	LVV BO office (ROS)
Herendijk	VCM/Van Alen, land lease	No	No	No	No
Hecht en Sterk	Debisaran, land lease	No	No	No	No
Constantia	Government	No	No	No	No
Alliance	Government	Yes	Apostolic church, Mosque	Yes	CBB, LVV
Reijnsdorp/ Bakkie	Land lease to former contract labourers	No	Mosque, not operational	Closed	No
Bruinendaal		No	No	No	No

3.2.2 TRAFFIC, ACCESS AND TRANSPORTATION

There is no road access to the project area. To reach the ROC, one needs to cross the Commewijne River with one of the small ferry boats.

Public transportation is provided by a shuttle boat of the National Transportation Service (NVB -*Nationaal Vervoer Bedrijf*) of the Ministry of TCT (*Transport, Communicatie en Toerisme*). This vessel travels along the Commewijne River on Mondays, Wednesdays, Fridays, weekends and public holidays. It leaves Alliance at 6:30am to arrive in Reijnsdorp at 7am, and next travels back along Alliance to the west, picking up people on both sides of the Commewijne River. The final stop is Leliëndaal, on the left bank of the river. The NVB vessel does not stop at every plantation, but drivers may be willing to divert from their usual route and pick someone up at a plantation without boat stop (e.g. Constantia). By 16:00 the boat sails back to Alliance (and Bakkie). The boat carries approx. 20 passengers.

Boat traffic on the Commewijne River mostly consists of ferry boats, a government shuttle twice a day, and local fishers. Less frequently, larger barges use the Commewijne River to transport heavy equipment to mining areas in East Suriname. Also, occasionally, a larger ship uses the River to transport mining equipment for Newmont Suriname, also to East Suriname. Recently, local contractors were working to repair a dam near Constantia and Bakkie. On such occasions, the contractor uses a barge to transport his equipment. The Verenigde Cultuur Maatschappijen NV (VCM) uses a barge to transport cattle. This vessel is most active around Rust and Werk and does not go river upward beyond Herendijk.

Inhabitants in the eastern part of resort Bakkie, upstream from Kroonenburg, are relatively more isolated because there is no land way that connects these plantations to Kroonenburg and the other larger plantations. From resort Margaretha, there are more frequent ferry services to the Left Bank of the Commewijne River (LOC), which is connected to Paramaribo with a bridge. About a decade ago, it was still possible to drive a moped or bike on a dirt path from Bakkie to Kroonenburg, but this path is now largely overgrown with weeds and inaccessible beyond Constantia. Moreover, the sluices at a number of locations are collapsed and there are no bridges across the canals. A heritage tourism firm at Plantation Reijnsdorp is currently working on a project to open up the pathway to Kroonenburg to allow for bicycle tours along the plantations. This not-yet-prepared trail is currently known as the “bicycle trail”.

Different stakeholders commented on the nuisances of frequent flooding due to dilapidated infrastructure. For example, because the sluices of plantation Frederiksborg are broken, plantation Hecht and Sterk experiences a large influx of river water at every high tide. This water has destroyed the road, and is causing erosion. In planning placement of electricity pylons, restoration of nearby physical infrastructure (dams, trail, and sluices) should be considered to prevent damage to the energy infrastructure and guarantee accessibility.

3.2.3 LAND TENURE

The project foresees re-routing of the existing distribution line at the right bank of the Commewijne River by replacing old utility poles that are deteriorated, inundated or inconveniently placed. The new utility poles will, like the old ones, mostly be placed on the public maintenance strip. Yet to prevent flooding, they will be placed more land inward (mostly towards the north) in some locations. EBS aims to execute all the activities on public land. At the time of preparation of this report, the land tenure status of some of the lands in the ROC was not yet clear, but the EBS will consult with a surveyor before the construction phase starts (EBS, e-mail, 3 June 2021). The existing pathway will be used as much as possible to construct the distribution line. Where necessary, pylons will be placed on land that belongs to private land owners. In such cases, IDB Operational Policy (OP) 710 applies.

Plantation Alliance is entirely government land. Also at the proposed location of the solar power plant there are no land tenure claims of third parties. The Ministry of Agriculture, Animal Husbandry and fishing (LVV) is an important government stakeholder because this Ministry is responsible for lands where agricultural activities are

executed. The secondary roads fall under responsibility of the Ministry of Regional Development and Sports (ROS) and the ministry of Public Works (OW) is responsible for the bridges.

Several other plantations feature private land tenure titles. Table 3 lists land ownership of the populated plantations in the AI. Further west, the plantation Rust & Werk – also populated-, is titled to VCM. Among the unpopulated plantation lands, land title is unknown for most. Known land title holders included:

- 't Vertrouwen, titled to Hagemeijer.
- Mon Souci, titled to Moenne.
- Frederiksburg, titled to Oedit.

According to IDB policy OP-710 on Involuntary Resettlement and OP-703 on Environmental and Safeguards Compliance, no land take can happen without appropriate compensation at replacement value. Land take includes the placement of pylons on the land of private landowners, and RoW that traverses the land of private landowners. This applies to all Transmission Lines covered in the ESIA.

The EBS has standard procedures to deal with land title issues. These procedures have not been written down in an operational manual or guidance document. Nevertheless, the EBS uses standard (unwritten) procedures when confronted with land tenure issues. The EBS is only rarely confronted with necessity to place electricity pylons for transmission lines (110 kV or higher) on private land. In these cases EBS will negotiate with the owner to either buy the land or to settle for a lease. Also in the case of pylons for distribution lines (12kV and low voltage), EBS rarely encounters issues related to Right of Way on private land.

In Practice, when placing pylons on titled land, the EBS Legal Department contacts the landowner to discuss this matter. The EBS usually discusses the importance of the distribution line for the area with the landowner. In most cases the landowner has no objections and an agreement is signed between the EBS and the landowner (E. Kasban/F. Graanoogst, e-mail conversations 27-28 July). To date, EBS has not paid compensation in these cases, as agreements have been reached based on goodwill.

Because this project is part of an IDB loan agreement, the IDB Operational Policies (Ops) apply. These OPs are particularly important in dealing with landowners because the EBS does not have written procedures to deal with private land owners. Following IDB OP 7.10, in case pylons and Right of Way¹ (RoW) will be located in private land, EBS will buy the land or settle for a lease.

No involuntary resettlement is foreseen in the context of this project. All consulted land owners conveyed that they were willing to accommodate EBS pylons and RoW on their land. In the unlikely case of objection, the EBS will negotiate with the landowner until a mutually satisfactory agreement is reached (F. Graanoogst, EBS phone com. 31/08/2021).

3.3 POPULATION IN THE PROJECT AREA

At the time of the most recent census (2012), Commewijne district counted 31,420 inhabitants. The General bureau of Statistics does not provide more recent data. In that year, the two resorts of the ROC, Margaretha and Bakkie, counted, respectively, 756 and 447 individuals. The population in the ROC is dominated by men: 659 men versus 544 women lived in the ROC in 2012. Our interviews suggest that this gender imbalance is particularly prominent in the most eastern plantations of the ROC (Between Herendijk and Reijnsdorp/Bakkie).

¹ The legal right, established by usage or grant, to pass along a specific route through grounds or property belonging to another.

In the past decade, the population of Commewijne has consistently been growing as Commewijne has become a more affordable and quiet place to live for people working in Paramaribo. In 2019, 1,044 persons moved to Commewijne, while 706 persons left, for a total migration surplus of 338 individuals. Population growth, however, applies to the left bank of the Commewijne River, where several public and private allotment projects are being developed.

The AI, by contrast, is increasingly depopulated. In 1965, the national census counted 6438 persons living in the ROC. Less than 10 years later, in 1971 there were only 2811 persons still living in the ROC. Their numbers decreased to 1877 persons in 1980; 1442 persons in 1995; and 1203 persons in 2012. In 2021, the AI counted approximately 700 persons, but this figure included plantations Rust en Werk and Batavia, which are located in the ROC but outside of the project area. Annex 1 shows the population decline per still populated plantation in the ROC.

Particularly young families and young adults leave because of a lack of educational opportunities and employment. This was reported in all visited plantations, but the decrease has been most dramatic in the most eastern plantations (Resort Bakkie), most of which are deserted. In Herendijk and Hecht en Sterk, there are no more permanent inhabitants anymore other than a guard to keep an eye on the place (Table 4). At Herendijk an administrator passes by once in a while. In the past 20 years, approximately 10-15 families left Reijnsdorp/Bakkie to enjoy better services/facilities elsewhere, be less isolated, and provide their children with a better future. Meanwhile, no new families have settled at Reijnsdorp/Bakkie in the past few years. In Alliance, around 10 families left Alliance some 5 years ago, and circa two to three years ago, one more family left. Also in Kroonenburg and Johanna & Margaretha it was reported that “a lot” of families and youngsters had left to continue education, build a house on the other side of the Commewijne River, or go live in Paramaribo.

TABLE 4. POPULATION CHARACTERISTICS PER INHABITED PLANTATION

Plantation	Permanent residents	Transient Population	EBS connections	Ethnicity
Frederiksdorp	0	5-10*	9 (8 one owner)	Various
Johanna & Margaretha	~300-400 (80 households)	NA	93	~40 % Hindu, 60% Javanese, and mixed
Elizabethshoop	8-10 (4 households)	0	4	Hindustani
Kroonenburg	150-200	Several vacant houses	82	Hindustani and Javanese
Herendijk	1 guard	0	1	NA
Hecht en Sterk	1 guard	0	3	Hindustani
Constantia	7	2	8	5 Hindustani, 2 Javanese
Alliance	60-80 (~27 households)	NA	62	Most Javanese, also Hindustani and some others.
Reijnsdorp/Bakkie	25-26 (17 households)	~7 households	31	Most Javanese, 1 Hindustani, 1 Creole and 1 Dutch
Bruinendaal	3 males (3 households)	1 household	3	Javanese

TOTAL in Project area	~700 persons		404	Javanese, Hindustani, and a few others
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*The administrator and his family are always present, in addition there is administrative staff.

EBS has not conducted a study on the likelihood of population growth in the AI. Based on actual data from the target area, and the fact that limited new development (employment, secondary schools) are foreseen in the near future, the consultant projects a continuation of population decline.

Ethnically the population in the ROC consists mainly of people of Javanese and Hindustani (East-Indian) descent (Table 4), with a few selected other ethnicities. The dominant religions are Christianity and Islam, and a smaller number of individuals are Hindu. Within the ADI there are churches in Alliance (Apostolic) and Johanna & Margaretha. There are mosques in Johanna & Margaretha, Kroonenburg, Alliance, Rust en Werk, and Reijnsdorp/Bakkie, but the latter is inactive. Johanna & Margaretha and Kroonenburg feature a Hindu temple, and Johanna & Margaretha features an evangelical church.

3.4 VULNERABLE POPULATIONS

There are not many vulnerable populations in the Project area. Many households earn relatively low salaried incomes, if any, but they can supplement their food supply and income with planting and fishing and hunting. At all plantations people cultivate crops and fish for auto consumption. The various ethnic and religious groups live harmoniously together, and there are no signs of discrimination of specific minorities. There are no elderly homes; the elderlies are taken care of by their families.

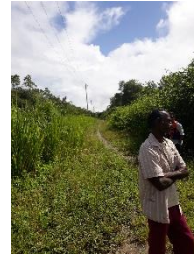
HERENDIJK		
		
<i>Bicycle trail facing south, with EBS distribution line</i>	<i>Coconut trees planted alongside the main canal of the plantation</i>	<i>Main sluice where the bike path crosses the canal</i>
HECHT en STERK		
		
<i>Residences</i>	<i>View of the dike (facing south)</i>	<i>Overgrown bicycle trail on the dam</i>
CONSTANTIA		



*Bridge leading to the residences
(facing west)*



One of the houses at Constantia



*Bike trail section leading towards
Bakkie (facing North)*

FIGURE 4. IMAGES CAPTURED DURING THE FIELD VISIT OF MAY 19, 2021

3.5 THE NORTH COMMEWIJNE CLUSTER

The Cluster acts as a spokesperson for the ROC plantations, and has initiated projects such as the rehabilitation of the bicycle trail in North Commewijne (see below). The North-Commewijne cluster comprises 17 companies and plantations in North Commewijne including Bakkie, Frederiksdorp, Katwijk (on the left bank), VCM/Van Alen and various others. The cluster works in partnership with different companies and organizations, including Staatsolie N.V., Grassalco, Vabi, GHFS, and the Ministry of Public Works. The managers of the tourism projects at plantations Frederiksdorp and Bakkie are the de facto group leaders.

3.6 ECONOMIC DEVELOPMENT

3.6.1 LIVELIHOOD ACTIVITIES

The main livelihood activities in the ROC are working at cattle farms, agriculture, fishing and tourism.

Cattle farming

In 1979, the family Van Alen took over Verenigde Cultuur Maatschappijen N.V. (VCM), which covers plantation Rust en Werk and neighbouring plantations, and transformed it into a blooming farm. In past years, the firm expanded and it now covers 11 connected plantations, with a 12th plantation Herendijk, further upstream. Today, VCM covers around 5,000 ha, harbouring over 5,600 cows, 550 sheep and goats, 40 buffalo's and 20 horses. Only Herendijk falls within the AI. Products from Herendijk (agricultural yield and beef) are sold at Rust en Werk in North Commewijne and in Paramaribo at the Rossignol stores.

There is not much cattle farming on the other plantations.

Tourism

Commewijne district is known for plantation tourism. Bicycle and boat-tours to visit the plantations are organised from Paramaribo. On the ROC, the most popular tourism destinations are Frederiksdorp, Reijnsdorp/Bakkie, and Johanna & Margaretha.

Frederiksdorp is a former 18th century coffee and cacao plantation, which owes its name to the first owner, a German named Johan Friedrich Knöffel. In the early 20th century, the plantation became neglected and in 1976 the plantation was bought by Hagemeijer. They used it for agriculture and cattle farming, and restored some of the plantation and its buildings, making the location suitable for tourism. In 2004, Frederiksdorp was declared a national monument. In 2016, Hagemeijer sold the plantation to a Dutch investor. Together with four shareholders, the investor has transformed Frederiksdorp into a luxury tourism resort with lodging facilities, a bar-restaurant and a swimming pool.

Johanna & Margaretha is the access point to Diana beach, which is a small stretch of sea turtle nesting beach near Braampunt. In the nesting and hatching seasons, tourists visit the plantation to watch these processes. In addition to Sea Turtle tours, the plantation offers plantation tours, dolphin watching tours, bird watching tours and swamp tours. Johanna & Margaretha has a developed tourism infrastructure with lodging locations and various small restaurants and bars. In addition, community members are working as tourist guides.

The former plantation Reijnsdorp, better known as Bakkie, was a former coffee and cacao plantation. Around 1902, plantation Reijnsdorp was bought by the government and parcelled out in small allotments for former contract labourers. In the early 2000s, a Surinamese-Dutch couple began to restore some of the old colonial structures and infrastructure, open up the Warapa Creek, and develop the plantation as a tourist attraction. Today, plantation Reijnsdorp features several well restored colonial buildings, lodging facilities, a small museum, and a bar-restaurant.

Agriculture and horticulture

The main agricultural producer in the ROC is plantation Alliance. In 1973, the government established the State firm Alliance with the aim of commercial citrus production – an addition to some other crops. Initially citrus was planted for export, but nowadays everything is for the Suriname market. The state firm employs 27 persons. In addition to working as public workers, these persons are also allowed to plant their own fruits and vegetables for auto-consumption or sale. People who do not work for the state also plant to sell at markets in Paramaribo or Commewijne.

Also in Constantia and Kroonenburg, agriculture and horticulture are a main source of income. Crops include cabbage, tomatoes, watermelon, and various other vegetables, which are sold in Paramaribo. One person who lives in Constantia works for the Alliance citrus plantation. Also in Reijnsdorp/Bakkie and at Herendijk, citrus, plantain, coconut, mango, among others, are planted commercially.

Fishing

Inhabitants of all visited plantations fish, either for auto-consumption or commercially. In Johanna & Margaretha, the majority of the population are fishers. Fish are especially caught in the swamps surrounding the community, and sold to middlemen from the community. About 80% of the yield is sold in Paramaribo. Also on the other plantations, people fish in the swamp areas or else in the river. We have not heard of people going out at sea to fish. Fish are sold locally or on the Commewijne or Paramaribo markets.

In Alliance, people fish only for own consumption.

Government

The government is one of the main employers in the ROC. All economically active persons at Alliance work public jobs; either at the state firm (run by the Ministry of Agriculture, Animal Husbandry and Fisheries – LVV), or with the Ministry of Education, Science and Culture (MinOWC), the Regional Health Service (RGD), the Central Bureau for Citizens Affairs (*Centraal Bureau voor Burgerzaken* - CBB), EBS, and the Ministry of Regional Development and Sport (ROS).

On other plantations, government jobs are less prominent, but still a considerable number of persons work for the MinOWC (teachers, maintenance, cleaning) and local government functions through the Ministry of Regional Development and Sport (resort council members -RR, district council members -DR, government managers – BO).

3.6.2 BUSINESSES

Private businesses in the ADI other than farming, fishing and tourism related businesses include:

- Supermarkets, bar-restaurants and a lottery stand in Johanna & Margaretha, Alliance, and Kroonenburg.
- Ferry services
- Small entrepreneurs such as a tailor.

Very few, if any, business opportunities will result from the project. All the goods to be used for constructing the 12 kV distribution line will be purchased from abroad except wooden/concrete poles. For the ROC area Bruinhart (wooden) poles will be used as experience from the EBS shows that the galvanic masts rust after a while, especially with the ROC area being close to the sea and thus the salinity probably being higher (speeds up the rusting process). Furthermore, to reduce costs of the project the contractor will make use of local accommodation (EBS, e-mail, 26 May 2021). It is unlikely that new businesses will be developed due to the improved energy provision in the ROC.

3.6.3 PLANNED DEVELOPMENT

Foreseen developments in Commewijne district include:

- Shore base facilities at Belwaarde and at Voorburg along resp. the Suriname River and the left bank of the Commewijne River (for Offshore Oil and Gas developments)
- Project of SWM at La Liberte (near Peperpot)
- Hydrogen project (opposite Alliance, along the LOC)
- Mariënborg area; land has been allocated for housing development projects and business creation.

(District Commissioner, pers. com. 04 May 2021)

None of these projects take place in the ROC, and it is very unlikely that these projects will affect population or business developments in the ROC. If the shore bases and the hydrogen project will indeed be developed, it is likely that most staff will be recruited in the larger population centres of the left bank of the Commewijne River, where it may be easier to find persons of certain skills levels.

No government projects are planned or foreseen in the ROC. Nevertheless, there are some private initiatives, such as from Verenigde Cultuur Maatschappijen NV (VCM) and Frederiksdorp and Reijnsdorp/Bakkie. VCM, which has its primary activities at Rust en Werk (outside of the project area), is expanding its cattle farming and horticulture to other locations in the ROC, including Herendijk. VCM is currently working on their expansion plan. Depending on the negotiations that are now underway, the need for energy will increase sharply. There is presently even talk of 2 Megawatts of power. The correct information will be known by the end of 2021. In the case that other projects in North Commewijne are further developed, it is possible that the VCM benefits from spin-off activities. Furthermore, in past years, both Frederiksdorp and Reijnsdorp/Bakkie have expanded the tourism potential of the ROC through the restoration of old buildings, providing information about, and access to, historic objects, and by rehabilitation of a 24 km long bicycle trail between Bakkie and Rust en Werk.

The bicycle trail project is one of the main current projects initiated by the North Commewijne cluster. The works at the bicycle trail is not advancing rapidly but there are some activities. For example, not long ago, the Suriname firm VABI built a steel bridge near Kroonenburg. Part of the trail is destroyed due to riverbank erosion and some of the dams have broken; moreover, the sluices across some of the plantation canals have disappeared as a result of year-long neglect. The Cluster plans to address this problem with support from the State Oil company Staatsolie N.V. The EBS used to be involved as a partner in activities of the cluster, but its support has not been consistent. EBS is responsible for clearing part of the trail that overlaps with its service route, but due to insufficient maintenance these areas are largely overgrown. The North Commewijne Cluster would like to see the return of EBS as a project partner, especially in light of planned electrification developments.

Due to the Covid-19 pandemic, international tourism has been virtually absent, and the developments have slowed down. It is not expected that, once Covid-19 is under control and tourism is possible again, tourism developments will drive a significantly increased demand in energy. It is possible that one or two small restaurants will be constructed along the route, but tourism in this area is not likely to boost the building of large hotels or other major tourist facilities.

3.6.4 EMPLOYMENT OPPORTUNITIES PROVIDED BY THE PROJECT

At the moment, EBS employs seven full-time staff members who are responsible for the ROC distribution network, of whom six are stationed in the ROC. During the operational phase of the project no additional (new) employees will be hired for operational and maintenance works (EBS, e-mail, 26 May 2021).

During the construction phase, various skilled and unskilled workers will be hired through contractors, including excavator operator (vegetation clearance), tractor operator (transportation of the poles), electrical line workers (setting up the poles and also stringing the cables), and boat operator (transportations of various materials).

In the case that workers will stay onsite, cooks will be needed. If materials are stored onsite, contractors will be approached to deliver security personnel.

The exact number of workers is not known yet (EBS, e-mail, 26 May 2021).

3.7 ARCHAEOLOGICAL RESOURCES, TANGIBLE HERITAGE, AND OTHER PLACES OF CULTURAL SIGNIFICANCE

In line with IFC performance standard 8 on cultural heritage, tangible cultural heritage refers to (i) tangible forms of cultural heritage, such as tangible moveable or immovable objects, property, sites, structures, or groups of structures, having archaeological (prehistoric), paleontological, historical, cultural, artistic, and religious values; and (ii) unique natural features or tangible objects that embody cultural values, such as sacred groves, rocks, lakes, and waterfalls (IFC PS 2012)²

The AI (Area of Impact) features various structures and locations that belong to tangible heritage, including historic buildings, historic infrastructure and objects, and archaeological sites. Frederiksdorp has the status of a national monument. No excavation or other physical works are planned in this area, and cultural heritage structures in this location will not be impacted. Most plantations feature historic colonial infrastructure such as sluices and walls, and there are historic buildings at the plantations Mariënbosch, Reijnsdorp and Alliance. It is not foreseen that construction works or other project activities will affect these structures. Precolumbian archaeological sites are not known in this area; the nearest known sites are located some 8 km east of Alliance, along the Motkreek.

The Warapa Creek running from the plantation Reijnsdorp to the Atlantic Ocean, in the east of the AI, is a place of specific historical value. Along the creek a number of abandoned plantations is present with several historical sites, such as a sugar factory with steam engines from 1830, a steam car, old locks and gates, tombs and the original 'ring dams' around which poisonous cacti were planted to prevent slaves from escaping. During excavations in the Warapa Creek, much objects of historical interest was unearthed, which is now on display in Bakkie's museum.

Also during excavation works on other plantations, historic objects have been found, mostly bottles from the colonial era. Because of the rich history of the entire ROC area, it is not unlikely that historic objects will be encountered during digging works to place the utility poles, but especially during the construction of new sections of the dam on which the electricity grid is placed at locations where the current bicycle path is damaged or at risk from river erosion.

Direct Project activities and activities indirectly resulting from the Project activities in the longer run, should comply with:

- Internationally recognized good practice as described in the ICOMOS (1990) Charter for the Protection and Management of the Archaeological Heritage.
- IDB guidelines on chance finds, as indicated in IDB Operational policy (OP) 7.03.

² https://www.ifc.org/wps/wcm/connect/a02b1f32-1d64-4454-a7c4-aac49c9daa04/PS8_English_2012.pdf?MOD=AJPERES&CVID=jiVQJ7k

- Chance find procedure in Appendix D of the Environmental and Social Management Plan
- Government of Suriname (GoS) Monuments Act (1963, revised 2002). In the 2002 revision, the Act established the Monuments Committee. The International Council on Monuments and Sites (ICOMOS), Suriname Built Heritage Foundation (SBHF), and the Monuments Committee are collaborating on providing proposed revisions to the Act to accommodate the Paramaribo WHS.
- The draft national guidelines of the Directorate of Culture of the Ministry of Education, Science and Culture (MinOWC) for immovable archaeological resources found during the course of the project. These guidelines are used internally to guide archaeological work, but they have not yet been officiated by the Minister.

Article 20.1 of the Monument Law stipulates that monuments found in excavations and on which no one can prove the right of ownership are owned by the state. 20.2. The owner of the land in which the monuments have been dug up is required to transfer the found monuments to the State and is entitled to a reimbursement amounting to half the value of those monuments. 20.3. Monuments found in an investigation may be transferred to a place suitable for their custody on the instructions of the Minister [of Education, Science and Culture].

Article 21 states that the finder, within thirty working days after the discovery must indicate the exact location, time, monument and particulars of the discovery to the District Commissioner (DC) of the district in which the discovery has been made who shall immediately notify the Minister.

The Project activities also should comply with a zoning standard for places of cultural importance and archaeological sites. If archaeological or cultural historical findings are made, relics and locations have to be reported immediately to the Ministry of Education, Science and Culture (MINOWC - *Ministerie van Onderwijs, Wetenschap en Cultuur*). The licensee and their staff, contractors or representatives will refrain from interfering in any way with such sites and / or relics.

3.8 ENERGY PROVISION

All communities in the ROC are connected to the national EBS power grid. A total of 404 EBS connections are listed in this area. According to consulted EBS staff, the network is now 26 years old and needs to be upgraded. Among others, there is material fatigue; e.g. insulators, brackets, and masts are weathering.

In the period 2019-2021 (through September), the ROC experienced 132 power outages, most of which were related to the power lines (Table 5). Most of the outages were due to unknown sources (Table 6). Of the known causes of power outages, most common were birds, lightning (probably) and trees. Based on feedback received from stakeholders, power failures for unknown causes are partly attributed to animals (opossums, monkeys) that sit or walk on the power lines and to tree branches that touch or fall on the lines. This happens relatively more often in the eastern part of the ROC because this area is relatively more forested. In addition, hard winds can cause the power lines to touch one another (EBS, pers. com. 07/10/21). EBS requires from the contracted firm that it delivers types of overhead line that prevent or mitigate outages as a result of animals and vegetation.

EBS data suggest that, in the past three years, most power outages have been the result of outages at pole CR-246 (Kroonenburg) (ibid).

TABLE 5. NUMBER AND AVERAGE TIME OF POWER OUTAGES IN THE ROC

Year	Line power outage ³		Transformer power outage ⁴	
	Number	Av. time	Number	Av. time
2019	52	03:53	6	05:16
2020	18	07:32	6	03:01
2021 - through sept	40	02:34	10	03:57
TOTAL	110	04:39	22	04:04

TABLE 6. NUMBER OF POWER OUTAGES CLASSIFIED BY CAUSE

Cause Description	Line	Transformer
Unknown	75	12
Birds	9	4
Lightning, probably	7	2
Tree fallen in net	5	2
Tree branches	3	-
Fallen pin from top of pole	2	-
Wind	2	-
Other (not specified)	2	1
Short circuit in the grid	1	1
Rotten power pole	1	-
Network weak	1	-
Defect isolator	1	-
Car collision of pole	1	-
	110	22

Consulted plantation inhabitants from Johanna & Margaretha and Kroonenburg reported that they did not experience many power outages. Others, such as the manager of the tourist resort at Frederiksdorp, a representative of the VCM, and the plantation owner of Mariënbosch (also plantation manager of Guadeloupe) did report frequent and lengthy power outages in recent weeks (Consultations July/August 2021). According to EBS, the outages are all over the ROC (EBS, e-mail, 26 May 2021).

Power outages are relatively more frequent in the eastern part of the ROC, between Reijnsdorp/Bakkie and Herendijk. In this area, there are in total 108 EBS connections. According to local area inhabitants, power failures

³ A line power outage is an outage in a relatively larger area, whereby all transformers behind the line cutout are not receiving power.

⁴ A transformer power outage is a power failure in one transformer, which services a group of houses. It concerns a relatively smaller area than a line power outage.

occur, on average, about one to two times a month. Power outages in this area usually last for a couple of hours, and are resolved the same day. Problems with the power supply were not mentioned as a reason for outmigration.

Maintenance is often delayed because some areas are difficult to reach, as grasses and weeds have taken over the access ways. This situation also hampers regular maintenance inspections. In order to resolve the problem of poor access, the EBS will need to:

- Repair broken dams and/or construct new dams
- Create a new path to reach the areas where poles are placed further land inward.
- Develop and reserve budget for a maintenance plan for the bike path

The department Distribution Maintenance coordinates vegetation management of the Right of Way. Vegetation management for the ROC occurs once every four years, most recently in December 2020 (EBS, e-mail, 13 October 2021). Contractors are hired to execute this work. In 2018, the EBS developed specifications for vegetation clearance works along and underneath the power lines in the ROC, including application forms for interested contractors. These contractors have to comply with the *Code of practice for personnel*, related to electrical safety for vegetation control work near live power lines.

Judging by the state of the vegetation growth underneath the electricity lines, the current method and/or frequency of maintenance is insufficient to ensure that EBS utility poles are accessible. The project description states that “Vegetation management will be undertaken in cooperation with all relevant institutions such as the Road Authority/Ministry of Public Works”. To date, however, there has been no agreement with these government agencies about their assistance in vegetation management.

Without a plan for maintenance of the ROC, it is likely that the transmission lines and pylons become difficult to access, maintain, and repair in the case of a power outage. The consultant emphasizes the importance for EBS to have a realistic and sustainable maintenance plan, as well as dedicated budget, for vegetation clearance in place prior to starting the project.

At plantation Alliance, an on-grid PV system is planned as part of the electrification improvement project. The planned installed capacity is 200 kWp.

4. POTENTIAL IMPACTS & PROPOSED MITIGATION MEASURES

Table 7 lists predicted project impacts, positive or negative, direct or indirect. The table also suggests mitigation measures, and predicts a residual impact that remains after application of the mitigation measures.

Affected Social Aspect	Impact Description	Impact Likelihood	Impact Characteristics and Magnitude	Impact Significance	Mitigation Measures (proposed or recommended)	Residual Impact
Improved energy supply	Redundancy in power supply; fewer power outages; more trust of local stakeholders in energy provision.	High	Direct; medium-term, small scale, reversible. Magnitude: Low	Negligible	Anticipate new requests for connections to the grid. Implement vegetation maintenance plan, including maintenance of constructed clay mounds, for distribution lines in the re-routing transect, and for the distribution line along the bike path for the period that this is not yet rehabilitated. And conduct inspections for those line sections that will be maintained by cooperating institutions (such as Ministry of Public Works/ Ministry of Regional Development and Sport) in order to check whether maintenance is in compliance with the EBS requirements.	Moderate Positive
Livelihood	Project provide temporary employment opportunities during construction and operation; excavator and tractor operators; boat transportation, maintenance.	High	Direct; short-term, small-scale, reversible. Magnitude: Low	Minor Positive	As much as possible: hire local field hands for temporary jobs. Promote local procurement of food and lodging.	Minor Positive
Livelihood	Longer term job creation in the area related to maintenance.	Small	Direct; long-term, small-scale, reversible. Magnitude: Low	Negligible	Hire local area inhabitants for maintenance of path underneath power lines.	Minor Positive
Construction noise and traffic	Piling and other construction activity may be a hindrance to local area inhabitants. Also, the main pathway and dams may be temporary blocked.	Medium	Direct; Short-term, small-scale, reversible. Magnitude: Low	Minor Negative	Warn area residents ahead of time of construction activities, specifying dates, duration, type of activities and expected hindrance.	Negligible

Hindrance of water traffic	During building of underwater cable, possible hindrance of water traffic or collisions.	Medium	Direct; Short-term, small-scale, reversible. Magnitude: Low	Minor Negative	Timely communication of water users through media messages (radio, newspaper) and billboards on landings, indicating dates, duration and locations.	Negligible
Tourism development	Rehabilitation of path beneath power lines, incl. repair of dams and bridges, can support rehabilitation of bicycle path related to tourism project.	Medium	Indirect; Medium-term, small-scale, reversible. Magnitude: Low	Negligible	Communication with North Commewijne cluster and specifically Bakkie tourism project about path.	Minor positive
Cultural Heritage	Disturbance of archaeological and other cultural heritage sites	Low	Direct; long-term, small-scale, and irreversible. Magnitude: High	Moderate Negative	Verify absence or presence of known historic and archaeological heritage sites with plantation populations once preferred locations for placement of utility poles are known. Follow Suriname draft guidelines and international best practice as described in this ESIA	Negligible
Land tenure	A few selected utility poles may have to be placed on land that has been titled to someone else.	Low	Direct; long-term; small-scale; reversible. Magnitude: Low	Minor Negative	Use standard EBS procedures to deal with land title holders on whose lands utility poles may need to be placed.	Negligible

The main potential positive impact of this project is that the population in the ROC will experience fewer power outages. The magnitude of this change is considered low, because the present annual number and duration of outages is not very high, and the number of potential Project beneficiaries is small and declining. With mitigation measures, the residual impact can be increased to moderate. Other potential positive impacts include temporary labour provision via contractors, and more permanent jobs for maintenance of the bicycle path.

Possible negative impacts include disturbance of cultural heritage sites and land tenure issues. In addition, during the construction phase local area inhabitants may be hindered by noise and traffic obstructions (land and water). With mitigation measures, residual impacts can be reduced to negligible (see Impact Table).

TABLE 7. IMPACT RATING TABLE

ANNEX 1. LIST OF CONSULTED STAKEHOLDERS

Date	Organization or function	Method of Contact	Location*
4 May 2021	District Commissioner	In person	DC Office, Nieuw Amsterdam
	District Secretary	In person	DC Office, Nieuw Amsterdam
	EBS staff; Project Manager	In person	ROC
	EBS staff; Electrical Engineer	In person	ROC
	EBS staff; Jr HSEQ Officer	In person	ROC
	EBS staff; Local Supervisor	In person	ROC
	Manager Alliance Plantation	In person	ROC
19 May 2021	EBS staff	In person	ROC
	EBS staff; Distribution Maintenance - Overhead Maintenance	In person	ROC
	EBS staff	In person	ROC
	Laborers working at the Van Alen farm	In person	Herendijk
	Guard	In person	Hecht en Sterk
	Resident	In person	Constancia
	Resident	In person	Bakkie / Reijnsdorp and Bruinendaal
	Resident	In person	Bakkie / Reijnsdorp and Bruinendaal
	Resident / EBS staff	In person	Alliance
	Resident / Schoolteacher	In person	Kroonenburg
	Resident / Tailor	In person	Johanna&Margaretha
	Resident / Business owner	In person	Johanna&Margaretha
9, 13, 14, 19, and 21 June 2021; 29 July 2021	Resident / Business owner Bakkie	Phone and Email	NA

22 June 2021	EBS staff	Phone	NA
29 July 2021, 2, 3, 6 August 2021	Manager Alliance Plantation	Email and Phone	NA
29 July 2021, 2, 6 August 2021	Manager Plantation Resort Frederiksdorp	Phone and Email	NA
2 and 6 August 202	Manager (VCM Plantations)	Phone and Email	NA
2, 3, 6 August 2021	Owners Plantation 't Vertrouwen	Phone and Email	NA
2 August 2021	Owner Plantation Mon Souci	Phone	NA
2 and 3 August 2021	Owner Plantation Mariënbosch and manager Plantation Guadeloupe	Phone	NA
3 August 2021	Owner Plantation Hecht en Sterk	Phone	NA
Various	EBS Sr. Environmental Technician	Email and Phone	NA
Various	EBS Electrical Engineer	Email	NA

ANNEX 2. KEY NOTES STAKEHOLDER CONSULTATIONS

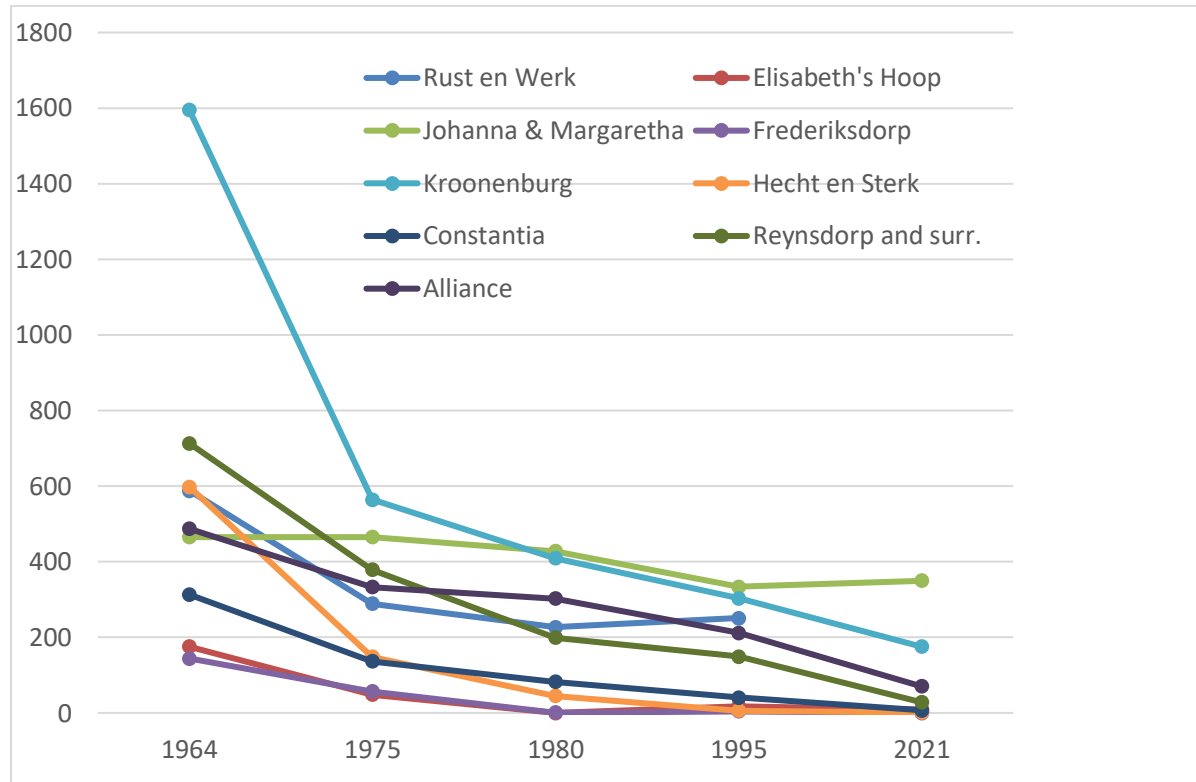
Key notes of consultations with stakeholders			
	Name stakeholder	Function	Feedback received from stakeholder (issues raised, comments provided)
1	Mr. F. Kurban	Manager Alliance Plantation	Mr. Kurban indicated that, only just recently, he had received a detailed description of the solar project -in writing- from the EBS. Although he welcomed the initiative, he will need some time to properly study the document provided to him, before he can offer his objective view on the matter.
2	Mr. B. Spek	Resident / Business owner Bakkie (a.k.a. Reijnsdorp)	Information was shared by Mr. Spek about the activities of the North Commewijne Tourism Cluster Project in the ROC, especially with regard to the 24 km bicycle trail that extends from Rust en Werk plantation to Bakkie. This information was relevant to disclose since the bike trail is situated alongside the distribution network of the EBS in the ROC area. Key information concerning land owners of the plantations located in the project area and information about plantation Bakkie was also provided by Mr. Spek. Some inquiries were made by Mr. Spek regarding (1) the financing of the proposed project and (2) whether the rehabilitation and lighting of the bike trail was included in the proposed project. The inquiries made were presented to the EBS and addressed afterwards. Additionally, Mr. Spek also informed whether the Project would perhaps consider placement of a fiber optic cable since internet communication is expensive and slow. The consultant noted that this may be more of a matter for Telesur rather than the EBS.
3	Mr. S. Zalman	Manager Plantation Resort Frederiksdorp	Mr. Zalman indicated that frequent power outages were experienced recently, about 2-3 times a week. Therefore, he has no objections to the proposed project if it will result in improved power supply.
4	Mr. C. van Dijk	Manager (VCM Plantations e.g. Herendijk)	Mr. van Dijk mentioned that the VCM management team welcomes the Project, because they are currently experiencing a lot of power failures and this Project will hopefully greatly reduce the risk of interruptions in the power supply. Furthermore, it was noted that N.V. VCM is currently working on an expansion plan and depending on the negotiations that are under way, the need for energy will increase considerably. The high-voltage grid will also need to be expanded by about 4 km. It would be appreciated if this power could be available after completion of this Project, and that it increases the feasibility for EBS. Additionally, perhaps it is worth considering instead of laying the underwater cable

			at Johanna & Margaretha, to do this at plantation Rust en Werk. The management team is open to a discussion about this and can possibly make space available.
5	Mr. A. Hagemeyer and Mr. M. Hagemeyer	Owners Plantation 't Vertrouwen	<p>Mr. M. Hagemeyer was of the opinion that the proposed Project is a good initiative. He asked a few questions about the Project (e.g. regarding construction activities), which were then presented to the EBS and addressed accordingly. Mr. A. Hagemeyer wondered whether the location chosen for placement of the underwater cable was appropriate, since it was understood that the Commewijne River was rather shallow near Johanna & Margaretha (based on information from the Maritime Authority Suriname-not confirmed by the consultant). There was concern about possible damage that could be caused to the underwater cable by large ships passing by. The consultant indicated that the underwater cable would be weighted down to avoid these kinds of situations.</p> <p>Moreover, Mr. A. Hagemeyer also asked if the EBS could consider taking the opportunity to install a fiber optic cable together with the underwater cable, since internet connection in the area was not great and modems are very expensive.</p>
6	Mr. J. Moenne	Owner Plantation Mon Souci	Mr. Moenne has no objections to the installation of electricity pylons further inland. He is currently repairing some dams in the area.
7.	Mrs. K. Debisarun	Owner Plantation Hecht en Sterk	Mrs. Debisarun stated that power outages occur almost daily. If there is a local power failure at Hecht en Sterk, the problem is repaired by the EBS. Mrs. Debisarun has no objections to the installation of electricity pylons further inland. The biggest problem experienced at Hecht en Sterk is flooding of the land. The cause of this can be attributed to the adjacent Frederiksborg plantation where the sluices have been broken for about 20 years. As a result, every time with high tide Hecht en Sterk gets inundated. (Note consultant: perhaps it is advisable that EBS repairs some of those dams and sluices, otherwise the power poles cannot be reached at high tide)
8.	Mr. S. Abdoelrahman	Owner Plantation Mariënbosch and manager Plantation Guadeloupe	At Mariënbosch there is a tourist resort, but now due to COVID there are no tourists. Mariënbosch and Guadeloupe are regularly visited by the owner/manager for maintenance purposes. Mr. Abdoelrahman has no objections to EBS moving the poles, but they have to look carefully at where the poles will be placed (the new locations). Previously, a pole was wrongly positioned and this seriously hindered maintenance activity. The mistake was corrected afterwards.

ANNEX 3. MAP OF FORMER PLANTATIONS IN THE ROC



ANNEX 4. POPULATION NUMBERS IN THE ROC



Sources: 1964: ABS; 1975: Van Trikt en Oostvriesland (1976); 1980: ABS; 1995: Population Registration Office at Nw Amsterdam, 1995; 2021: Estimates based on field visit.

Source for 1964-1995: Teunissen, P.A. 1997. Coastal Management Plan for the proposed Multiple-Use Management Area Commewijne-Marowijne Suriname