RioTinto SimFer

Environmental and Social Impact Assessment

Simandou Mine and Rail Spur Project

Rio Tinto Simfer

Non-Technical Summary

April 2024

AMERI SARL
ETUDE - EXPERTISE - RECRUTEMENT

Knight Piésold CONSULTING

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Disclaimer

This document is a high-level summary of the findings of the Environmental and Social Impact Assessment that Rio Tinto Simfer conducted for the Simandou Mine and Rail Spur Project (the Project). The Project is being carried out by two Rio Tinto subsidiaries – Simfer S.A. (mine) and Simfer Infraco Guinée S.A. (rail spur).

This purpose of this document is to summarise the key findings of the ESIA into a succinct document that provides readers a non-technical overview of the work undertaken as part of the ESIA. For further details regarding the entire study please refer to the full ESIA.

1 Introduction to the Rio Tinto Simandou Project

1.1 Overview

The Simandou Project carried out by Rio Tinto's subsidiaries – Simfer S.A. (mine) and Simfer Infraco Guinée S.A. (rail spur) - involves the exploitation, transportation and export of world-class iron ore extracted from deposits located within the perimeters of mining concessions Blocks 3 and 4 of the Simandou mountain range in Guinea's N'zérékoré Region (Figure 1). The mining concession covering Blocks 3 and 4 is held by Simfer S.A.

Winning Consortium Simandou (WCS) holds, through a dedicated subsidiary, a neighbouring mining concession covering Blocks 1 and 2 of the Simandou mountain range (Figure 2).

This Environmental and Social Impact Statement (ESIA) covers the following components of the Project:

- the Ouéléba mine and associated infrastructure to be constructed and exploited by Simfer S.A.; and
- the Rail Spur and associated supporting infrastructure to be built by Simfer Infraco Guinea S.A., the subsidiary of Simfer Jersey Limited specialising in infrastructure.

In line with the State's vision of seeing the Simandou Project infrastructure co-developed by the Rio Tinto (and its partners) and WCS groups, various agreements have been or are in the process of being finalised under which the Simandou rail and port

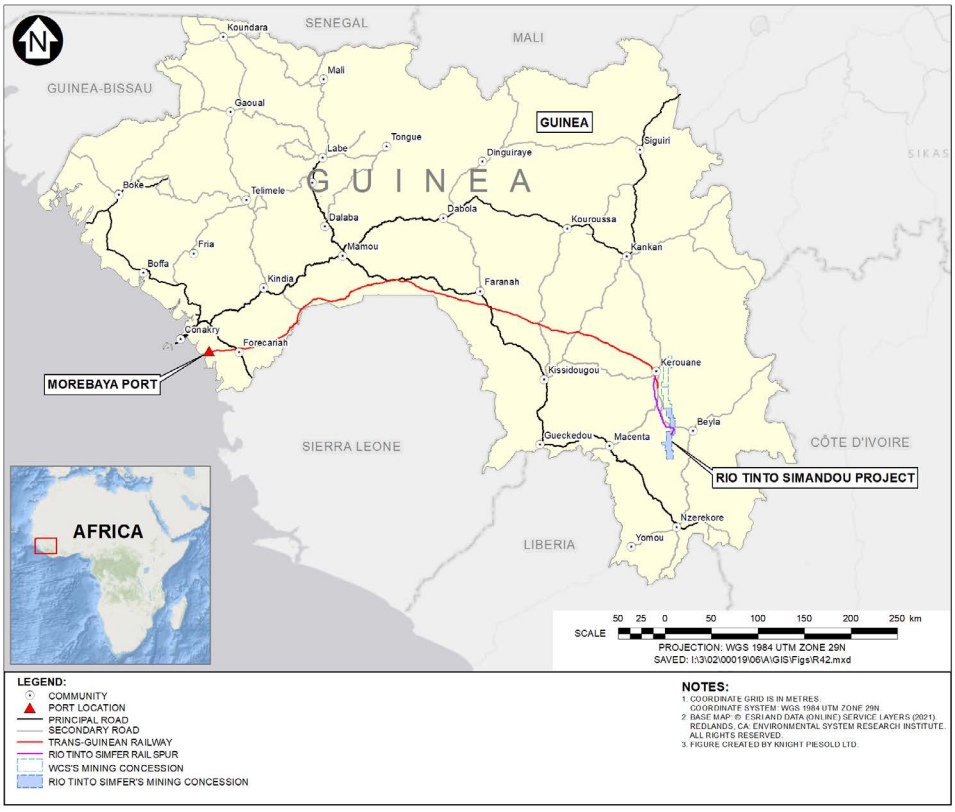


Figure 1 Project Location Map

infrastructure will be co-funded by Rio Tinto (and its partners) and WCS (or their respective affiliates), and their construction will be divided as follows:

- WCS and its affiliates will be responsible for constructing the main railway line, the railway branch connecting the WCS mining site (Blocks 1 and 2) to the main railway, and some port infrastructure located on the Morebaya River in Forécariah Prefecture in Maritime Guinea;
- Simfer Infraco Guinea S.A will be responsible for constructing a railway branch line (hereafter referred to as the rail spur) approximately 70 km from the Simfer S.A. mining site to the main railway line (hereafter referred to as the Trans-Guinean Railway), and some port infrastructure located on the Morebaya River in Forécariah Prefecture in Maritime Guinea.

Once completed, these infrastructures will be transferred to La Compagnie du TransGuinéen (CTG), a joint venture (JV) between the State, WCS and Rio Tinto. This JV will become the owner and operate them.

For the purposes of this ESIA, the term “Rio Tinto Simfer” used in the body of this ESIA and its Annexes will refer to, as the context requires, the following entities:

- Simfer S.A. for activities related to the mine; or
- Simfer Infraco Guinée S.A. for activities related to the rail spur; or
- Simfer S.A. and Simfer Infraco Guinea S.A. as co-promotors of this ESIA for the purposes of the Project

Simfer S.A. is owned by the Government of Guinea (15%) and Simfer Jersey Limited (85%). Simfer Jersey Limited is a joint venture between the Rio Tinto Group (53%) and Chalco Iron Ore Holdings (CIOH) (47%).

Rio Tinto is one of the largest mining companies in the world. Rio Tinto produces iron ore for steel, aluminium for cars and smart phones, copper for wind turbines, diamonds that set the standard for responsible sourcing, titanium for household products, and borates for crops that feed the world.

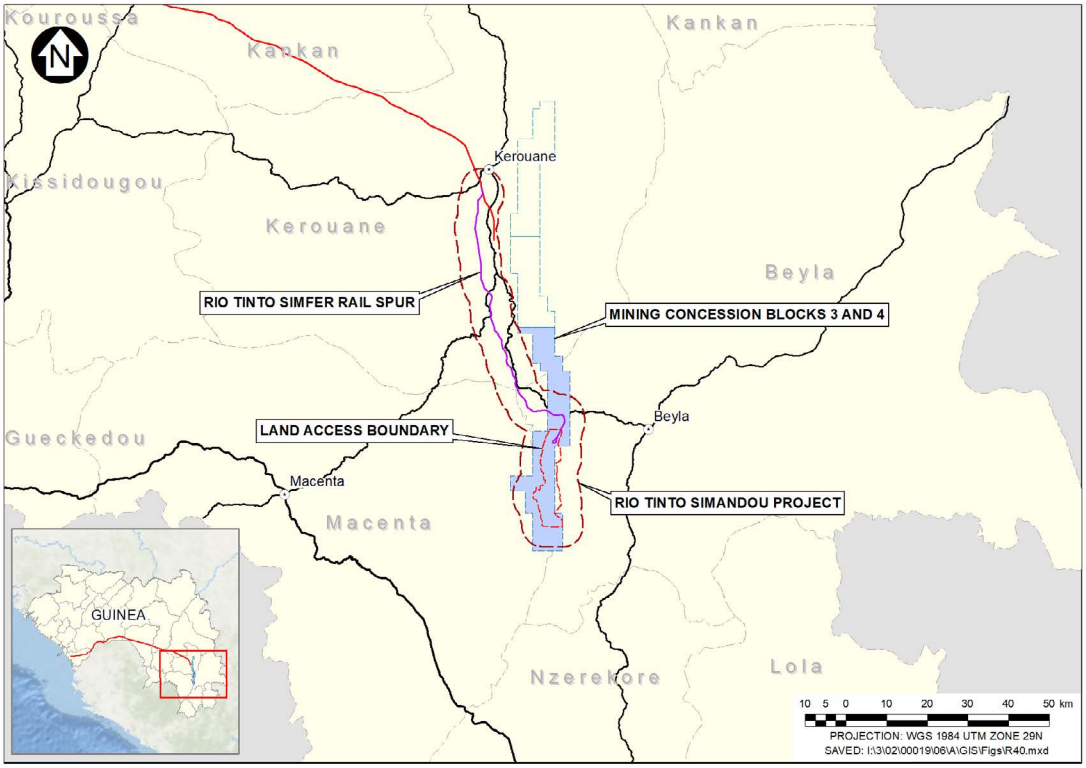


Figure 2 Mine and Rail Spur Overview Map

In fact, the raw materials it mines across the globe are essential to the end-products that continue to stimulate human progress – and support its journey towards net zero.

In 2022, Rio Tinto employed over 52,000 people at 60 operations and projects in 35 countries – providing employment in mines, smelters, and refineries, as well as sales offices, data centres and research and development labs.

The overall Simandou mining project is anticipated to be the largest integrated mining and infrastructure project ever developed in Africa. It will significantly contribute to the economy of Guinea by generating government revenues, creating jobs, increasing demand for local goods and services, and fostering social and economic development.

1.2 Project Setting

The Project is situated in the southern part of the Simandou Range in south-eastern Guinea. The

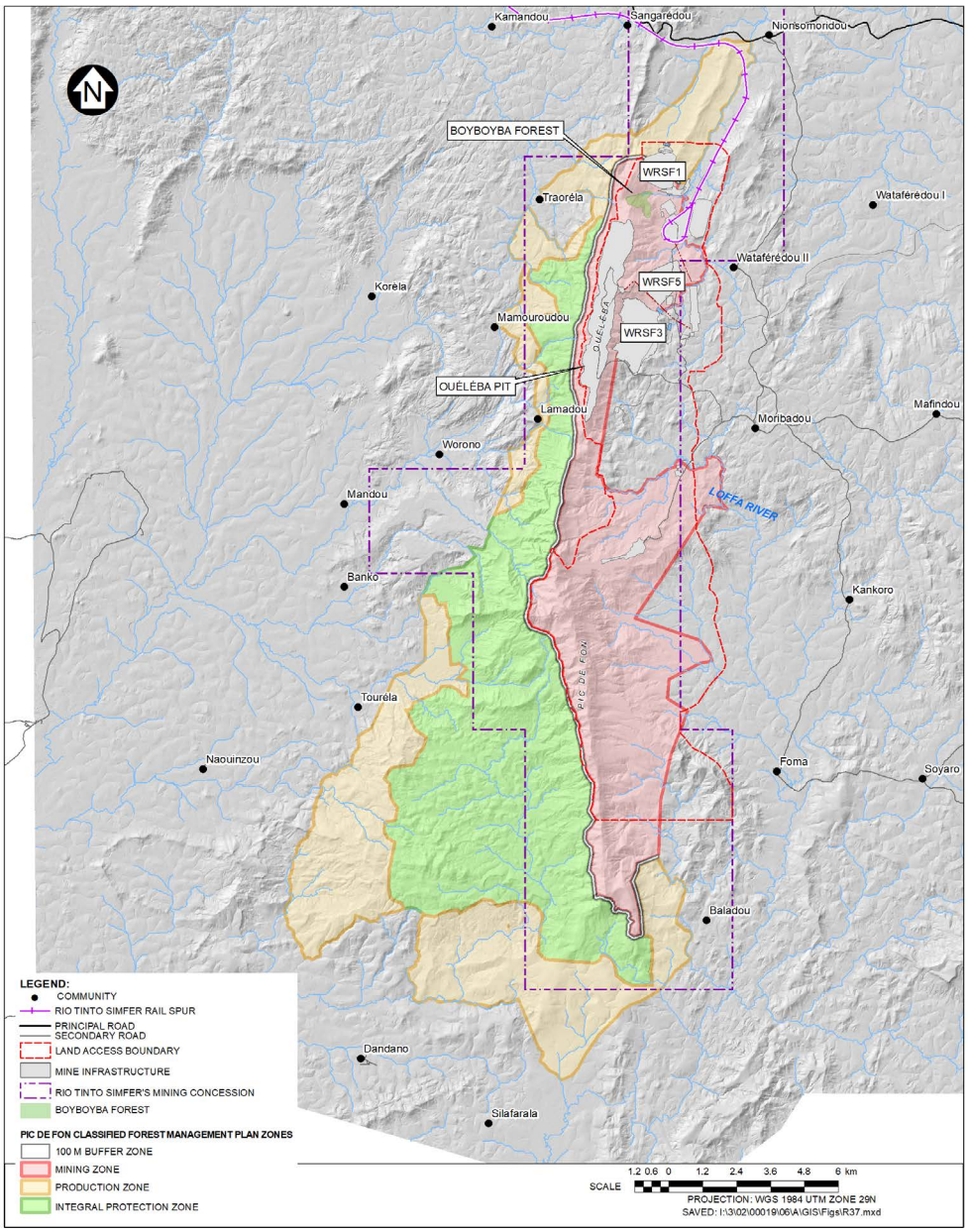


Figure 3 Project Setting in the Pic de Fon Classified Forest

Simandou Range follows a north-south axis and covers about 110 km. The southern range has its highest peak at Pic de Fon (Figure 3, south of the Ouéléba deposit) with an altitude of over 1,650 m. There is up to 700 m difference in elevation between the top of the range and the surrounding undulating plains.

The Ouéléba deposit is located within the Pic de Fon Classified Forest, an area of 252 km^2 that was established in 1953 mainly to protect water, forests, and soil resources (Figure 3). The Pic de Fon mine area was established through government process and integrated into the Pic de Fon Classified Forest Management Plan.

Simandou Ridge and Pic de Fon Classified Forest support a range of ecosystem types that follow an elevation gradient, from lowlands to submontane grasslands. The main habitats in the Classified Forest are submontane grassland on the crest of the ridge with forested spurs and ravines running off the sides. The area contains some of the best examples of these ecosystems in the region. The species assemblages found within these ecosystems are differentiated from the surrounding lowland habitats and have a high concentration of species of conservation interest.

Small populations of the Western Chimpanzee are found in the forest on the western side of the Simandou Range. The International Union for the Conservation of Nature (IUCN) elevated the conservation status of the Western Chimpanzee from “endangered” to “critically endangered” in 2016 (Humle et al., 2016). There are many vulnerable, endangered, critically endangered, and range-restricted plant and animal species present in the Project area.

The Simandou Range is an important surface water catchment and source of groundwater recharge. Perennial spring-fed streams that run through the steep-sided valleys provide water supply for ecosystems, local villages, and agriculture. The range also has an influence on local climate.

Simandou Range

1.3 Project Justification

Potential impacts must be viewed in light of the considerable benefits the Project holds for the people of Guinea and for other project stakeholders.

These include:

- **Economic Growth:** The Project has the potential to contribute significantly to Guinea's economic growth and long-term economic development. Guinea is estimated to have one of the world's largest untapped high-grade iron ore reserves. The extraction and export of iron ore will generate substantial revenue for the country, allowing for investments in infrastructure, education, healthcare, and other sectors.
- **Job Creation:** The Project will create numerous job opportunities, both directly and indirectly. From construction and operation of the mine and rail spur, to support services and local businesses, the Project will boost employment rates, reduce poverty, and enhance standards of living in the region.
- **Infrastructure Development:** To facilitate the Project, infrastructure investments will be required, such as roads, railways, ports, and power supply. These developments will not only support the mining operations but also improve the overall transportation and logistics network in Guinea, benefitting other industries and communities.
- **Revenue for Stakeholders:** Apart from Guinea, the Project will benefit other stakeholders, such as its shareholders (Rio Tinto and its partners, including the Republic of Guinea), investors, and international buyers. The high-quality iron ore from Simandou can attract global demand, providing a stable supply of raw materials for the steel industry and contributing to economic development worldwide.
- **Green Steel:** The premium-grade iron ore from Simandou will be a vital part of the energy transition, as steelmakers seek to reduce their carbon emissions.

Minimising environmental impact through proper mine planning, land rehabilitation, and biodiversity conservation will be key components of ensuring the Project's success. The Project will promote social development programmes, including education and healthcare initiatives, to uplift local communities.

Overall, the Project represents a transformative opportunity for Guinea and other stakeholders. It has the potential to spur economic growth, create jobs, develop infrastructure, generate revenue, and promote social and environmental responsibility. With careful planning and implementation, the Project can bring long-term benefits to Guinea while meeting international standards for sustainability and corporate responsibility.

1.4 Environmental and Social Studies

Rio Tinto Simfer's team has conducted a progressive and evolving programme of environmental and social studies from 2008 to 2023. These have included: (1) wide-ranging baseline surveys to collect data on physical, biological, social, and cultural conditions in the Project's area of influence; (2) inputs to siting facilities and the design of Project components; and (3) an extensive stakeholder engagement programme with government and affected local communities. Comprehensive baseline studies were conducted from 2008 to 2011 in support of a Social and Environmental Impact Assessment completed for the Project in 2012 (Section 1.5). Some monitoring continued beyond that period, followed by a substantial baseline studies update undertaken for the mine and rail spur components in 2022 and 2023.

A number of these studies will continue as part of ongoing monitoring and assessment. They will be used to inform successive project stages, including the detailed engineering phase, planning for construction and operation, and the implementation of social and environmental mitigation measures.

1.5 This Document

Major development projects require a comprehensive evaluation of the potential risks and impacts on the surrounding physical, biological, cultural, social, and socio-economic environment. The Project is classified as a Category A project according to Guinean Order 2023/1595, as well as the Equator Principles IV (Equator Principles Association, 2020),

requiring a detailed environmental and social impact assessment (ESIA). Once published, the ESIA will undergo a detailed review by the Agence Guinéenne d'Evaluations Environnementals (AGEE), the Guinean Government regulator responsible for the approval of ESIAs for projects in Guinea.

The ESIA update, prepared in 2023 and finalised in 2024, focuses on the Ouéléba mine and the associated rail spur connecting to the main rail line. Rio Tinto Simfer aims to produce 60mtpa of iron ore from the Ouéléba deposit, based on the capacity of the rail spur, for 26 years of operation, as described in the Project Conventions.

This ESIA builds on and provides an update to the earlier Social and Environmental Impact Assessment published in 2012 and approved by the Republic of Guinea in 2013. This earlier assessment considered the concurrent development of the Ouéléba and Pic de Fon deposits. While the development of the Pic de Fon deposit is anticipated in the future, the mineral resources and reserves are still being defined, and a mine plan for a mine at Pic de Fon has not yet been developed[1]. Once the mine plan is sufficiently developed, the mine at Pic de Fon will be subject to additional assessment. The Trans-Guinean Railway and port components that facilitate the export of ore were subject to separate ESIAs[2] (Artelia, 2022; KALAO International SAS, 2022), for which the Republic of Guinea has issued Certificates of Environmental Conformity (CCE).

The 2024 mine and rail spur ESIA is presented in two volumes:

- **Volume 1 :** Environmental and Social Impact Assessment (ESIA)
- **Volume 2 :** Environmental and Social Management Plan (ESMP)

1 Nonetheless, the current assessment has considered a future assumed footprint at Pic de Fon, for select subject areas for which it was important to offset the cumulative impacts of mining of both deposits.

2 These ESIAs supersede the ones undertaken in 2012 by Rio Tinto.

Boyboyba Forest

This document provides a Non-Technical Summary of Volume 1. It provides an overview and summary of the ESIA findings, focusing on the key social and environmental impacts arising from the construction, operation, and closure of the Rio Tinto Simfer Project and the mitigation measures necessary to manage these impacts.

This Non-Technical Summary of the ESIA is structured as follows:

- **Chapter 1** presents an overview of the Project.
- **Chapter 2** summarises the legal and administrative context.
- **Chapter 3** describes the Project and alternatives considered.
- **Chapter 4** outlines the stakeholder engagement programme followed for the ESIA.
- **Chapter 5** provides a summary of the environmental and social impacts and proposed mitigation measures.
- **Chapter 6** describes the approach to mine closure.
- **Chapter 7** describes translating the ESIA into the environmental and social management framework.
- **Chapter 8** describes the next steps in the ESIA process.

1.6 ESIA Team

Knight Piésold

The Simandou Mine and Rail Spur ESIA was prepared by international consultancy Knight Piésold Ltd. (KP), in collaboration with Guinean consultancy AMERI SARL (AMERI), as well as ESIA specialists from a broader ESIA team.

Knight Piésold is an employee-owned, global consulting firm providing specialist services in the mining, power, water resources, and infrastructure industries. The firm is comprised of engineers, environmental scientists, geoscientists, and technologists, focusing on what it can do best to create value for its clients at every stage of a project.

Founded in 1921, KP has a 1,200-person team operating from 28 offices across 16 countries. Its globally integrated team, together with its industry expertise and regional understanding, allows the firm to support clients in identifying and mitigating risk, navigating challenges, and achieving long-term success. The Canadian practice of KP led this assessment, with involvement of staff from its Ghana, Zambia, South Africa, and Peru practices. KP is an accredited ESIA Consultant in Guinea under Decree 2022/1647 (AGEE Decision D/2024/00021/MEDD/CAB/AGEE, dated March 22, 2024).

AMERI SARI

AMERI is a Guinean environmental consultancy that has been operating since 2008 (RCCM/GC-KAL/036/2011; NIF: 641916655, NUEMRO VAT: 2V; CNSS: 8204093650400/2014). It is an accredited ESIA Consultant in Guinea, in accordance with Decree 2022/1647 (AGEE Decision D/2024/00027/MEDD/CAB/AGEE, dated March 22, 2024).

The company's core areas of expertise include ESIAs, environmental audits, population and migration studies, socioeconomic and basic health studies, risk assessments, cultural heritage, and communities. The firm has a long history of consulting for both the public and private sectors in Guinea. AMERI has been involved with the Simandou Project since it started operating in 2008 and has also worked for other major mining interests in Guinea, including Le Compagnie des bauxites de Guinée (CBG), Guinea Alumina Corporation (GAC), and BHP Billiton, along with several international ESIA consultancies.

Broader ESIA Team

The KP-AMERI team was supported by a broader team of ESIA practitioners and discipline specialists from many International and Guinea-based consultancies, as follows:

- Creativa Consultants – project-induced migration
- Enviro-Africa - hydrocensus
- ERM – socioeconomics and resettlement
- Insuco – cultural heritage and resettlement
- Muller Acoustic Consulting Pty Ltd. – noise and vibration
- Sylvatrop Consulting – biodiversity and ecosystem services
- SRK Consulting (UK) Ltd. – geochemistry and water environment
- Shape Consulting – community health
- Triple R Alliance – human rights

2 Administrative and Legislative Framework

Ministerial names provided throughout the document are current as of production of the ESIA, but may change resulting from anticipated ministerial appointments.

2.1 The Guinean Regulatory Framework

The regulatory framework within which Environmental and Social Impact Assessments (ESIA) are now conducted in Guinea is defined by the 2023 Administrative Process for Environmental Assessments (Order A/2023/1595/MEDD/CAB/SGG of 05 May 2023). Other key Guinean environmental legislation includes but is not limited to the following:

- Presidential Decree 200/PRG/SGG/89 of 8 November 1989 on the legal status of classified installations;
- 2019 Environmental Code (Law No. L/2019/0034/AN of 04 July 2019)
- 1994 Water Code (Loi L/94/005/CTRN of February 14, 1994) and Decree A/2013/173/MEE/CAB/SGG) of February 12, 2013, concerning the procedures for establishing the protection perimeters of water catchments intended for human consumption and water supply works in rural and semi-urban areas;
- Law No. L/2011/006/CNT of September 9, 2011, modified on April 8, 2013, by the law L/2013/053/CNT, concerning modification of certain provisions of the Mining Code of the Republic of Guinea;
- Law No. L/2017/060/AN of December 12, 2017, concerning the Forestry Code of the Republic of Guinea;
- Land and State Code (L/99/013/AN of 30 March 1992);
- Urban Planning Code (L/98 nº 017/98 of 13 July 1998);
- Biodiversity legislation including:
  - 2018 Law on the Protection of Wildlife and hunting regulations (Loi ordinaire N° 2018/0049/AN of June 20, 2018);
  - Decree A/2019/5663/MEEF/CAB Attributions and Organization of the National Coordination of Control Posts for Wood, Non-wood and Wildlife Forest Products; and
  - Joint Decrees A/2020/1590/MEEF/MPAEM/SGG and A/2020/1591/MEEF/CAB/SGG concerning the protection of species of wild flora and fauna in the Republic of Guinea.

These are referenced as appropriate throughout the ESIA.

As required under the Environment Code, the ESIA will be submitted to the Minister responsible for the Environment and Sustainable Development (Ministère de l'Environnement et du Développement Durable or MEDD), to apply for a Certificate(s) of Environmental Comformity (CCE) for the Simandou Mine and Rail Spur Project. The AGEE (l'Agence Guinéenne d'Evaluation Environnementale), an entity of the MEDD, will commission a public enquiry or forum led by the AGEE through which the public will be entitled to express their comments on the Project and on the ESIA. During the public enquiry or forum, a Technical Committee on Environmental Analysis (CTAE) in collaboration with representatives of other national and regional authorities having an interest in the Project, will invite the Proponent (Rio Tinto Simfer) to respond to the issues raised during the public enquiry or forum. The CTAE will then make a recommendation on the acceptability of the ESIA to the Minister responsible for the MEDD who will then make a decision regarding the granting of a CCE.

Since the 2012 ESIA was approved, there have been changes to the national legislation, international guidelines and best management practices, and amendments to the Project Conventions. Therefore, when the Project re-activated, a new ESIA terms of reference (ToR) was developed and submitted to AGEE in March 2022. The ToR was evaluated and approved by the Minister of Environment and Sustainable Development in June 2023. The ESIA has been prepared based on those approved Terms of Reference.

2.2 Project Standards

Rio Tinto Simfer is committed to conducting its activities in compliance with Guinean legislation and regulatory requirements, while meeting international standards and best practice in terms of environmental conservation and human health and safety.

The Amended and Consolidated Convention de Base, a 2014[3] agreement signed by Simfer Rio Tinto Mining and Exploration Limited and the Republic of Guinea, governs the conditions of development and implementation of the mining project, including the Project Standards to be applied. Project Standards refers to international best practices in corporate governance, business ethics, sustainability and transparency, and the applicable international laws and legislation in force in relation to these matters. The following are identified as the Project Standards:

- Rio Tinto's Health, Safety, Environment and Community (HSEC) policies and standards
- Equator Principles IV (Equator Principles Association, 2020)
- International Finance Corporation's (IFC) Performance Standards on Social & Environmental Sustainability (IFC, 2012)
- Voluntary Principles on Security & Human Rights (The Voluntary Principles Initiative, 2021)
- World Economic Forum's Partnering Against Corruption Initiative (PACI; WEF, 2021)
- Transparency International's Business Principles for Countering Bribery (Transparency International, 2013)
- The Extractive Industries Transparency Initiative (EITI) Standard (EITI, 2023)
- Principles and Guidance required by the membership of the International Council on Mining and Metals (ICMM), of which Rio Tinto is a founding member (ICMM, 2019a,b,c; 2020; 2021a,b,c)

These are international voluntary agreements to which Rio Tinto already subscribes.

Rio Tinto's HSEC Policies and Standards are further described below.

2.3 Rio Tinto HSEC Policies and Standards

Rio Tinto is committed to excellence in environmental and social performance. It operates in accordance with strict corporate policies covering environmental and social responsibility, corporate governance and sustainability established under its a global code of business conduct, "The Way We Work." This framework sets out Rio Tinto's continuing commitment to undertaking its business with integrity. It requires the company to adhere to rigorous standards of corporate governance and contribute to sustainable development. The framework includes a series of publicly available policy statements, covering sustainable development, environment, communities, human rights, and health. These policies can be accessed via the Rio Tinto website.

Together, these national, international, and corporate standards establish a set of requirements by which the Rio Tinto Simandou Mine and Rail Spur Project will be designed and operated. These are in place to protect the environment and society from project-related adverse impacts and maximise the Project's benefits through design, construction, operation, and closure.

3 The Simandou Build-Operate-Transfer Convention (Simandou BOT Convention) was also signed in 2014 and is an agreement between the State, various entities of the Rio Tinto group (including Simfer S.A.) and other parties, to build, own and operate the rail and port infrastructure necessary for the transportation of the iron ore of the Project. The Simandou BOT Convention clearly defines the respective roles of Rio Tinto and WCS in the co-development of the Simandou Project concerning notably the infrastructure they will both have to respectively build in view of their transfer to CTG. Simfer Infraco Guinée S.A. was created for this very purpose.

3 The Project

3.1 Overview of the Mine and Rail Spur Project

The mining resource comprises 2.1 billion tonnes of high-grade iron ore contained within the Ouéléba pit, with the potential for further development approximately 5 km south at Pic de Fon. The mineral resources of the Pic de Fon deposit are still being defined. Each deposit is approximately 6 to 8 km in length, 1 to 1.5 km wide, and extends about 500 m below the surface. Ouéléba is the largest in terms of surface area.

Ore from the Ouéléba deposit will be mined in an open pit created by drilling and blasting the rock; it will then be loaded onto haul trucks and moved to primary and secondary crushers. The pit will develop progressively over the life of mine with phases of works progressing across the pit area. The pit will be formed by mining in “benches” (platforms down the side of the pit) until the base of the deposit is reached. The Ouéléba orebody is a major aquifer. As the pit is excavated, it will be dewatered using dedicated wells and by pumping from sumps located in the pit to keep the working area dry.

Once crushed, the ore will be transported down the mountain, via a conveyor system, to a stockyard located at the rail spur railhead at the base of the east side of the ridge. From the stockyard, the ore will be transferred onto ore wagons at the rail spur railhead for transport to the coast on the Rio Tinto Simfer rail spur, which connects to the Trans-Guinean Railway. The Trans-Guinean Railway connects the mine to a port in the Forécariah Prefecture on the Guinean coast.

Waste rock and low-grade ore will be generated during the extraction of saleable ore. The waste rock and low-grade ore will be hauled by truck from the pit to purpose-built mineral waste rock storage facilities (WRSFs) located at the mine pit periphery. Low-grade ore will be held in segregated areas for possible future use if market conditions make it commercially viable at a later date. Once sufficient space is available within the pits, mineral waste will be backfilled into the voids, reducing the volume of waste rock that needs to be disposed of out of pit.


Typical Stockyard

3.2 Permanent Infrastructure

The mine is located within a land access boundary with an area of 104.6 km^2 (10,460 ha), which includes safety and security zones around the works. Within this area, a total of approximately 1,860 ha will be occupied by the following mining areas and facilities:

- Open pit
- Waste rock storage facilities (WRSFs)
- Run of mine stockpile
- Haul roads and other access roads
- Primary and secondary crushers
- Conveyors
- Stockyard
- Train loadout facilities
- Explosives manufacturing facility
- Truck maintenance workshop

Non-process infrastructure required to support the mining operation will include:

- Worker accommodation camp
- Administration buildings
- Power supply and distribution
- Bulk fuel storage facilities
- Waste management facilities including a landfill, incinerator, and waste sorting facilities
- Medical facilities
- Helipad

The rail spur consists of:

- Approximately 70 km of track
- 908 m long km tunnel
- 5 major bridges and other water crossings
- Level crossings and designated wildlife crossings
- A rail loop, and mine end terminal (freight handling yard and bulk fuel storage)

The railway will be a 25-tonne axle load single-track with a design life of about 50 years.

3.3 Construction Activities

Construction of the mine is expected to take approximately 30 months, preceded by initial early works, which include the construction of access roads and camps, water supply and fuel storage facilities, quarries, and upgrades to the existing Beyla airstrip and the access road to the airstrip. The Rio Tinto Simfer rail spur and the development of logistics routes for delivering construction supplies to the mine are also key components for construction.

Additional temporary infrastructure that is required to support construction works include:

- A construction road adjacent to the rail spur
- Construction camps at the mine and along the rail spur
- Laydown areas and concrete batch plants
- Rock quarries and borrow pits
- Fuel storage facilities
- Explosives storage facilities

Structures not required for other purposes post-construction will be removed and the work areas will be cleaned and rehabilitated. As much as possible, the areas will be either returned to natural vegetation (for example, forest) or made available for safe use by the local community post-construction.

3.4 Potential for Extensions to the Mine Life

The mineral resource currently delineated in the Ouéléba deposit is aimed to support mining for approximately 26 years. However, further exploration work is also planned over the next 5 years to identify additional areas of potential mineralisation that may be mined in the future, including the Pic de Fon deposit.

3.5 Mine Closure

At the conclusion of mining saleable ore, the mine will be closed, and the land will be rehabilitated. A conceptual mine closure plan has been developed considering site closure options that will restore the land to its best future use. Closure planning is an iterative process, and ongoing technical studies as well as consultation with local stakeholders will feed into future refinements of the current closure concepts, in accordance with Rio Tinto's Mine Closure Standard.

Rail Construction Road Along the Trans-Guinean Railway (Courtesy of WCS)

3.6 Consideration of Alternatives

As a key component of the ESIA, feasible alternatives were examined to evaluate pathways for achieving Project objectives while minimising impacts on the environment and society. The feasible alternatives were evaluated based on their technical feasibility, cost-effectiveness, environmental acceptability, and social acceptability.

Key alternatives were considered in the following areas:

- **Mine production:** While the 2012 impact assessment considered concurrent mining of the Ouéléba and Pic de Fon deposits, the current preferred plan is to mine Ouéléba initially while the mineral resources continue to be defined in the Pic de Fon deposit. An aspirational production rate of 60 million tonnes per year was selected considering throughput constraints on the Trans-Guinean Railway and at the Morebaya port.
- **Ouéléba mining sequence:** The location and direction of mining of the Ouéléba deposit was considered, and it was determined that the deposit will be mined from north to south to delay disturbance impacts to the Western Chimpanzees located on the western side of the Simandou ridge.
- **Decarbonisation options:** Options for minimising greenhouse gas emissions were identified and remain under consideration, as Rio Tinto plans to meet its stated goal of net zero by 2050.
- **Placement of the mine infrastructure:** Infrastructure could be placed on either the east or west side of the Simandou ridge; the eastern alternative was selected based primarily on social and environmental considerations, including avoidance of direct impacts to the Western Chimpanzee.
- **Heavy Mobile Equipment Haul Roads:** Timely access to the top of the Ouéléba ridge is crucial for mine development, and few feasible alternatives exist because of the steep terrain, slope stability risks, and the presence of important biodiversity within the Boyboyba Forest.


Typical Example of a Conveyor

Several other more minor alternatives were also considered, including:

- Strategy for managing potentially acid forming waste rock
- Rail spur routing options
- Logistics supply route options
- Accommodation camp location
- Conveyor systems
- Mine closure options

4 Stakeholder Engagement

When undertaking environmental and social impact assessments it is customary for developers to identify and engage with relevant stakeholders through proactive and timely consultation and disclosure about the project and its impacts. Stakeholders include relevant regulatory and administrative bodies, communities affected by the project, and other interested parties such as local businesses, associations and cooperatives, Guinean and international non-governmental organisations (NGOs), and other interest groups.

4.1 Stakeholder Engagement Tools

A Stakeholder Engagement Plan for the Rio Tinto Simfer Simandou Project was first developed and implemented in 2011, ahead of completion of the 2012 impact assessment, and was recently updated as part of the ESIA study for the mine and rail spur project (included in Volume 2 of the ESIA). The Stakeholder Engagement Plan sets out the approach which the Project has followed to implement a robust, open, and transparent engagement programme with different groups of stakeholders, in accordance with Guinean legislation, IFC Performance Standards, other relevant international standards and Rio Tinto requirements. It also built on and was aligned with the existing public consultation and disclosure practices and systems which have been followed to date during planning for the Project.

A Grievance Mechanism (Volume 2) has also been developed and implemented in tandem with the Stakeholder Engagement Plan. It has been established to receive and facilitate resolution of concerns and grievances about the Project's environmental and social performance.

Rio Tinto Simfer has been recording its stakeholder engagements activities in a web-based software programme and database since 2011. This includes a listing of all stakeholders, and an entry for each stakeholder engagement event, including presentation materials and meeting notes. Rio Tinto Simfer's complaints register is also maintained within the same software programme.

4.2 Consultation from 2020 to 2022

Stakeholder consultations regarding the Project continued from 2011 through the dormant periods of the Project and resumed in 2020 when Rio Tinto Simfer resumed design work. Over the period of 2020 to 2022, community consultations were general in nature and were intended to notify the communities of the Project's resumption, including sharing progress on environmental and social baseline studies, and engineering studies.

Table 1 presents a summary of the number of consultation events of different types that were carried out over this period.

Table 1 Number of Stakeholder Engagement Events by Type from 2020 to 2022

Event Type	Number of Events			
	2020	2021	2022	Total
Ceremony	1	0	5	6
Community Forum	27	5	58	90
Consultation	2	1	127	130
Meeting	0	0	62	62
Negotiation	0	0	4	4
Phone	0	0	46	46
Other	0	0	2	2

Table 2 Number of Community Interaction During Environmental and Social Baseline Studies from 2020 to 2022

Community Interaction Type	Number of Interactions
Social Baseline Study	14
Pic de Fon Classified Forest Management Plan	17
Ecosystem Services	11
Land Acquisition	27
Community Health	10
Cultural Heritage	27
Community Forum	26

Considerable interactions with local communities were part of the environmental and social baseline studies conducted in 2021 and 2022, as shown in Table 2.

Feedback from those interactions is presented in the baseline study reports in the annexes of Volume 1, available at **https://riotintoguinee.com/en.**

4.3 2023 ESIA Community Forums

Two rounds of community forums to engage with local communities were undertaken in 2023 in support of the Project at the following locations:

- Beyla
- Nionsomoridou
- Kouankan
- Kérouané

The community forums occurred between February 28 and March 4 (the March 2023 community forums) and May 4 to 7, 2023 (the May 2023 community forums). Participants from the above-mentioned communities and surrounding communities were invited and included local leaders, village leaders, traditional leaders, Prefects, elders, women, and the youth. The meetings were organised and hosted by Rio Tinto Simfer's Communities and Social Performance (CSP) team and ESIA specialists from Rio Tinto, with support from the ESIA consultant team. The list of participating communities is shown on Figure 4.

The community forums occurred between February 28 and March 4 (the March 2023 community forums) and May 4 to 7, 2023 (the May 2023 community forums). At the March 2023 community forums, participants were asked to provide feedback on potential project impacts as well as respective mitigation measures (solutions). During the May 2023 community forums, AGEE was also in attendance, Rio Tinto Simfer presented how it had incorporated affected communities' comments on the Project's potential impacts and their recommended mitigations into the Project.

Rio Tinto Simfer delivers a presentation on the Project to Community Forum Participants in Beyla on February 28, 2023

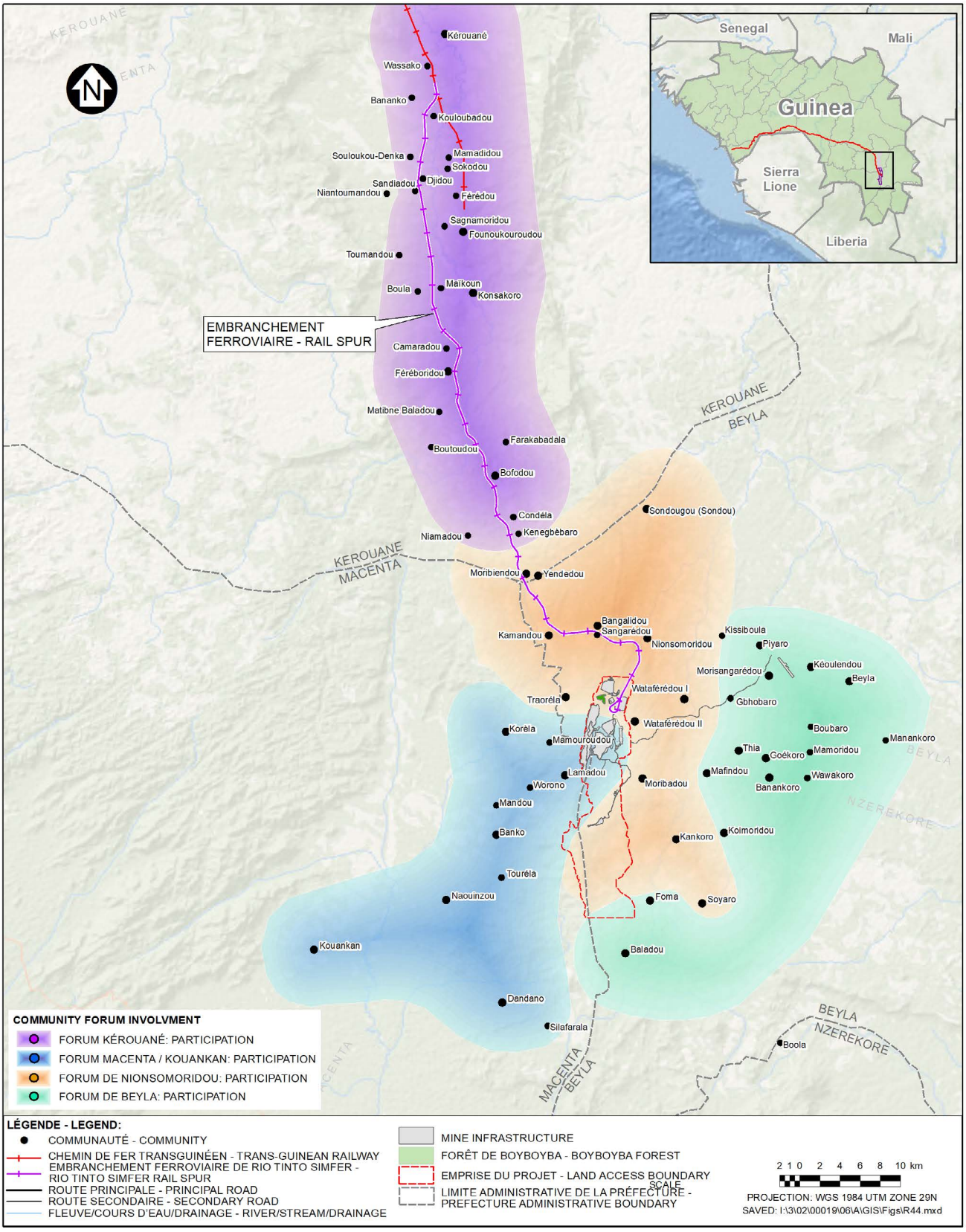


Figure 4 Community Involvement in the 2023 ESIA Community Forums

Table 3 presents a tally of the potential environmental and social impacts identified by the community forums. The most frequently discussed themes were the loss of arable land, water/air pollution, loss of biodiversity/ forests, losing respect for customs/culture/religion and increased disease.

Table 3 Environmental and Social Impacts Identified by Focus Groups in the 2023 Community Forums

Impact		Overall Frequency
Theme	**Sub-theme**	
Land Displacement	Loss of arable land	11
	Loss of villages/homes	6
	Destruction of plantations	9
	Loss of classified forests/biodiversity	9
Pollution	Air pollution from dust and smoke	9
	Train noise disturbance to people/animals	4
	Water pollution (rivers and groundwater)	11
	Increased global warming	4
Infrastructure	Construction of level crossings, loss of roads	3
	Train vibration causing cracks in buildings	3
Cultural/Social Impacts	Human Health (spread of disease)	8
	Relocation of Villages/homes	4
	Loss of culture, practises, religion	8
	Increased conflicts and insecurity	3
	In-migration	3
	Increased cost of living/poverty	5
	Increased unemployment	5
	Artisanal mining	1

Table 4 presents a tally of the proposed mitigation measures to the most frequently discussed themes at the community forums.

Table 4 Mitigation Measures / Solutions Identified by Focus Groups in the 2023 Community Forums

Mitigation Measures		Overall Frequency
Theme	**Sub-theme**	
Land Displacement	Construct new housing for the displaced	4
	Create forest, farmland and water management committees	10
	Manage and monitor classified forests	6
	Compensatory reforestation	8
Pollution	Dust and air quality management	4
	Install erosion and sediment controls	3
	Implement operating procedures for chemicals	3
	Maintain vehicles and equipment	2
Infrastructure	Grade rail crossings and create/maintain roads	6
	Drilling new water wells and drinking water supply	9
	Electrification of communities	3
	Pre-construction community surveys and repairs	1
	Train noise mitigations	2
Cultural/Social Impacts	Increase awareness on STDs/HIV/AIDS and other communicable diseases	7
	Raising awareness on respect for customs/culture/ religion	10
	Programmes for proper healthcare /hygiene/ sanitation/waste management	9
	In-migration management training	2
	Job creation opportunities (including females)	9
	Improve community security	4
	Support for youth/female education	6

The findings from the Community Forums were considered during the process of completing the impact assessment and are discussed in the ESIA Report. Key concerns raised by affected communities include:

- Prospects for employment and economic development
- Infrastructure needs in the local area
- Impacts of in-migration
- Loss of community ties within and between settlements
- Protection of forests and special species such as Western Chimpanzees
- Dust and noise
- Impacts on livestock
- Resettlement and compensation for loss of homes and land
- Requests for sponsorship and donations
- Behaviours of Simfer and its contractors
- Community development – a desire for more support, and some perceived inequality between villages
- Project stoppage

Following the submission of this ESIA report to the Guinean government, Rio Tinto Simfer will organise a third round of public consultations, whereby the ESIA Report will be made widely available for public comment, and its findings communicated to affected communities. All feedback received during this final round of consultations on the Project, its impacts and the proposed mitigation measured will be considered when developing the final design, planning construction, operation, as well as finalising and implementing the Environmental and Social Management Plan. Rio Tinto Simfer will also participate in AGEE-led stakeholder consultations as part of its review of the ESIA Report for the Project.

Focus Group Representative Presenting Results in Beyla (February 28, 2023)

Community Forum Participants in Nionsomoridou (March 1, 2023)

5 Summary of Environmental and Social Impacts Addressed in the ESIA

5.1 Overview

The Rio Tinto Simfer Project will be part of one of the largest iron ore mines to be constructed in Africa, with a large physical footprint in an environment characterised by a number of environmental and social sensitivities. The ESIA addresses the Project's impacts on the environment and local communities and is divided into separate chapters each addressing a particular topic.

Each chapter covers:

- **Baseline conditions:** The existing situation regarding the topic or subject of interest (for example, air quality, biodiversity, social conditions, etc.) that is used as the point of reference for assessing Project impacts.
- **Assessment methods:** Defining the study area, applicable legislations and standards, the sensitivity of receptors that will realise the impacts, and the criteria for evaluating the magnitude and significance of impacts.
- **Mitigation measures:** Measures which Rio Tinto Simfer proposes to take to avoid or minimise adverse impacts and to rehabilitate or offset when impacts are unavoidable, or to maximise the benefits of the Project through the way it is designed, built, and operated. These represent commitments that are carried forward in the Environmental and Social Management Plan that will be implemented during the Project.
- **Impact assessment:** Quantifying the significance of impacts after the identified mitigation measures have been applied. These are referred to as "residual impacts," and the significance of these residual impacts are rated to be: negligible, minor, moderate, or major, according to the criteria outlined earlier in the chapter.
- **Follow-up:** Any required follow-up to the assessment is identified, including possibly further study, the implementation of management plans and monitoring programmes, and if applicable, any plans to offset impacts of major significance.

The key topics addressed in the ESIA include:

- **Biodiversity and natural resources:** including vegetation, mammals, birds, amphibians and reptiles, and aquatic life, as well as geology and soils.
- **Atmospheric environment:** air quality, noise and vibration, local climate, climate change, and greenhouse gas emissions.
- **Water environment:** surface and groundwater quality and quantity.
- **Social and cultural environment:** cultural heritage, landscape and visual features, socioeconomics, land use and ownership, working conditions, Project-induced migration (PIM), community health and safety, ecosystem services, and human rights.

Each chapter discusses the interaction between the Project and the local community, with a specific focus on controlling effects associated with in-migration. These chapters also examine issues associated with the role ecosystems play in providing services of importance to people (food, water, shelter, cultural value, etc.) and the protection of human rights. Social and economic benefits to the local community and to Guinea are identified. The ESIA discusses how Rio Tinto Simfer will endeavour to enhance these benefits, while mitigating the adverse impacts.

A summary of these impact assessments follows.

5.2 Biodiversity and Natural Resources

5.2.1 Managing Biodiversity

Biodiversity has been identified as one of the most important environmental sensitivities requiring active management as part of the Simandou Mine and Rail Spur Project. The proposed mining activities will take place in an area designated since 1953 as the Pic de Fon Classified Forest, covering 252 km^2 from the northern tip of the Ouéléba ridge to the southern tip of the Simandou Range. This

area of high biodiversity value has been under growing threat from human pressures such as fire, agricultural encroachment, cattle grazing, artisanal mining, and bushmeat hunting. With the official adoption of the Pic de Fon Classified Forest Management Plan in 2010, a zoning of the area was formalised, and management rules established through a collective approach bringing together the Guinean government, local communities, biodiversity organisations, and Simfer. The Pic de Fon Classified Forest is now divided into a mining zone (where the deposits will be mined and infrastructure located), a fully protected area (to be protected from human activities), and a production area (where the community may undertake limited natural resource use activities).

Detailed investigations of the biodiversity of the mining area have been carried out since 2006. Initially, the studies focused primarily on the Classified Forest area and its immediate surroundings. More recently the scope was extended to other areas, with a view to developing an understanding of biodiversity value at a regional level and informing a biodiversity offset strategy. This is a strategy to compensate for any adverse residual impacts to high value habitats by improving similar habitats elsewhere.

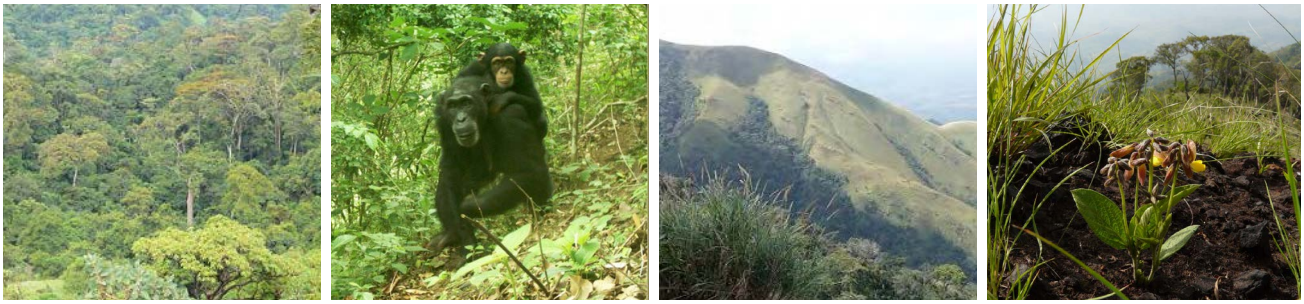
The studies commissioned by Rio Tinto Simfer have established a detailed knowledge base for the Pic de Fon Classified Forest, and some of the surrounding areas. The Classified Forest comprises habitats of major conservation significance, including threatened habitats such as high altitude ferralitic bowal grassland, submontane forest, and lowland forest. The importance of the Pic de Fon Classified Forest is highlighted by such international designations such as Key Biodiversity Area, Tropical Important Plant Area, and Important Bird Area. The entire Pic de Fon Classified Forest is considered Critical Habitat for numerous species following the IFC's Performance Standard 6 criteria for determining critical habitat.

The upland habitats of the Simandou Ridge host a large number of threatened species and species of limited range. In total there are 64 Critical Habitat Qualifying (CHQ) species according to the criteria of Performance Standard 6 of the IFC.

The Pic de Fon Classified Forest hosts a population of the Western Chimpanzee, listed as Critically Endangered on the IUCN Red List. Other mammal species of conservation interest identified include primate species such as the King Colobus and Diana Monkey and two Endangered bat species.

Birds of conservation interest include the Endangered Sierra Leone Prinia. Forest and submontane grassland habitats also support several species of frogs with high conservation interest, such as the Evening Squeaker, the Ziama Toothed Frog and the endemic Pic de Fon White-lipped Frog. Lastly, the streams and ponds of the Simandou watersheds host high freshwater biodiversity, including several fish species and two crab species of high conservation interest.

The Pic de Fon Classified Forest is botanically exceptionally important, only surpassed by Mont Nimba in Guinea. The Pic de Fon Classified Forest has at least 1,299 species including 55 IUCN threatened plants (Critically Endangered, Endangered, or Vulnerable), 38 CHQ species and at least five that are only found at Simandou such as the newly discovered and named *Gymnosiphon fonensis* (for Pic de Fon) and *Anacolosa denisea*.



From left to right: Submontane forest, Adult Female Western Chimpanzee with offspring, Typical submontane grasslands, *Eriosema triformum* grasses

Many of the most important species from a conservation perspective are those associated with the high-altitude habitats that tend to coincide with the iron ore deposit and these habitats and species are rare in Guinea. Some of the lower elevation habitats are also important for plants. Boyboyba Forest is a 45ha isolated patch of submontane forest just north of the Ouéléba mine area. It has proved exceptionally important and contains 80% of the known individuals (world-wide) of the Critically Endangered plant Keetia futa. Two Simandou plant species new to science were first found in the forest: *Psychotria sp. nov. aff humilis*, and *Anacolosa deniseae sp nov. ined*. Both will likely rate Endangered status when published after peer-review. This forest has the highest species diversity of *Gymnosiphon* species in West Africa, a type of saprophytic plant that cannot be transplanted or grown from seed. Previously only one species was known in West Africa and in Guinea but in this forest three species were found together at one site, including a species new to science (*Gymnosiphon fonensis*, Critically Endangered provisional) and *Gymnosiphon samoritoureanus* (Endangered).

Rio Tinto recognises that conservation and responsible biodiversity management are important business and societal issues. Rio Tinto has agreed to apply IFC guidance that requires net biodiversity gains for Critical Habitat and no net loss for Natural Habitat. For a project such as this, it means introducing measures to avoid, mitigate, reduce and manage the Project's direct impacts from the earliest conceptual design stage, right through construction, operation and closure. It also means supporting conservation projects in other areas of similar biodiversity value to "offset" adverse impacts that cannot be avoided or fully mitigated to deliver the goal of net positive gain.

The key biodiversity impacts associated with development of the mine and its infrastructure include direct habitat loss due to clearing of the mine footprint, hydrological impacts associated with mine dewatering, degradation of surface water quality due to erosion and sedimentation, increased natural resource use due to in-migration of people to the area, and the introduction of invasive species with the importation of earthmoving equipment. The biodiversity features potentially affected by these impacts are the high altitude and freshwater habitats,

Gymnosiphon fonensis (on the left) and Gymnosiphon samouritoureanus at Boyboyba (Kew, 2021)

the Western Chimpanzee population, and many of the specific conservation priority mammal, bird, amphibian and fish species as mentioned above. The avoidance and mitigation measures developed for the Project have focused on addressing these impacts.

Key measures intended to avoid direct impacts on the local population of Western Chimpanzee and high-altitude habitats of conservation priority include the placement of mine infrastructure and the rail loop on the eastern side of the Simandou ridge. The original mine plan had included a WRSF in the valley where Boyboyba Forest is located. Following the studies of that identified the importance of Boyboyba forest, the WRSF was relocated and a haul road was redesigned to avoid direct impacts to the forest. In addition, Rio Tinto Simfer has committed to direct management measures in and around the mine site, including protecting freshwater habitats and soils through engineering design and operational planning, reducing noise and light emissions where possible, providing wildlife crossings for the rail spur, and supporting on-going biodiversity investigations and conservation measures.

The sequencing of mine development has also been designed to provide opportunities for Western Chimpanzees to explore areas of lowland forest habitat within the Classified Forest which could provide alternative habitat. On-going management and conservation efforts will aim to increase the suitability of these areas for Western Chimpanzees as pressure from hunting, agricultural incursion and other human activities decreases.

Other areas of focus to address impacts on biodiversity include the development and implementation of measures to control the possible introduction of invasive alien species and the

transmission of human diseases to Western Chimpanzees and other species. Additionally, broader initiatives to control bushmeat hunting and the illegal trade in rare animals, animal products and plants will be explored, such as partnerships with government authorities and other stakeholders.

Despite these measures, the Project will have a negative impact on biodiversity including on Western Chimpanzees, Critical Habitat and CHQ species. While significant efforts have been expended to minimise those impacts, to achieve its goal of net gain and no net loss, Rio Tinto Simfer will implement an Offset Strategy to compensate for the residual impacts to biodiversity that are predicted to occur from the Project.

Ideally, offset areas will contain high value habitats and species similar to those predicted to be impacted by the mine. Conservation programmes in these offset areas will be developed and implemented in collaboration with the Government of Guinea, local communities and specialist conservation groups. A specific Western Chimpanzee offset programme will be developed.

5.2.2 Managing Impacts on Water

The Simandou Range forms the headwaters of four major rivers: the Dion and the Mala Rivers to the north (both tributaries of the Niger River); the Diani River to the southwest, which flows into Liberia; and the Loffa River to the southeast, a tributary of the Diani. Information on surface and groundwater flows and water quality has been collected since 2004, and the uses of water resources were surveyed across a wide area focusing on both community and biodiversity receptors. Numerical models have been developed to help understand the effects of mining on groundwater levels and the streams that emanate from the mountain.

Given the high elevation of the Ouéléba mine pits, and the absence of communities relying on groundwater resources on the mountain, the lowering of groundwater levels caused by dewatering the pits will have limited adverse impacts on existing groundwater supplies within local communities. However, the progressive excavation and dewatering of the mine pits may lead to material changes in the pattern of spring flows emanating from the mountain ridge. Impacts may also occur due to the


Waterfalls in Boyboyba Forest

diversion of surface water flows where the upper catchment areas of some streams are isolated within the footprint of the mine, or where WRSFs and flow retention structures are introduced. Such changes to the natural surface water patterns have the potential to affect community water resources, as well as terrestrial and freshwater ecosystems present along the flanks of the mountain. The ecological systems most at risk from changes in flow are the forest habitats on the western side of the ridge and species that rely on the streams.

To manage these impacts, Rio Tinto Simfer will develop a Mine Water Management System to provide an integrated approach to distributing dewatering flows and ensuring that discharges from the site meet established water quality criteria. Dewatering flows will be directed to protect sensitive catchments and provide water supplies to the operation. The aim will be to define flow compensation requirements to maintain adequate flows in streams used by the community or important for biodiversity before meeting operational requirements. Protection of water quality will be achieved by implementing appropriate sediment controls, collecting and treating any acid drainage that may occur, treating process effluents, and ensuring that emergency procedures are in place to manage leaks or spills of polluting substances.

If adequate flows are not available for local communities, especially in the event of increased demand from an influx of migrants into the area, Rio Tinto Simfer will work with and support the local authorities in planning community water supplies as

part of its Project-Induced Migration Management Plan.

5.2.3 Acid and Metalliferous Drainage

A common risk in mining is acid and metalliferous drainage (AMD). AMD is caused when rock containing sulphides is exposed or otherwise disturbed (for example, crushed) and becomes exposed to oxygen and water. This can lead to the formation of acidic conditions and the mobilisation of metals contained in the rock affecting water and soil quality. This is a potential concern during construction of the mine and rail spur when quarrying rock and excavating soils as well as when mineral waste is produced and stockpiled during mining.

Rio Tinto Simfer has undertaken extensive geochemical testing to develop an understanding of AMD potential from the mineral waste that will be produced during mining, and it has been established that the main risk will come from a small proportion (approximately 2%) of waste rock.

To manage this risk, Rio Tinto Simfer will implement an AMD Management Strategy developed for the Project. Studies are ongoing and a Mineral Waste Management Plan will be developed consistent with the Strategy that specifically focuses on AMD Management. This includes the identification of all potentially acid-forming and/or metal leaching material, safe containment of this material within the WRSF, and the collection and treatment of any polluted water leached from affected areas.

5.2.4 Erosion and Protection of Soils

Erosion is an issue commonly associated with mining and infrastructure projects. During rainfall events, disturbed soil and mineral waste material can be eroded by surface water run-off. This leads to loss of soil resources and high sediment levels in local streams, with effects on aquatic life and downstream users. Measures will be taken to limit erosion by designing mineral WRSFs to avoid exposing highly erodible material to run-off. In addition, Rio Tinto Simfer will construct sediment ponds downstream of areas at risk of erosion that will limit the slope of exposed rock faces, and by stabilising slopes on haul road embankments and other earthworks to minimise the speed of water run-off. Exposed surfaces will be rehabilitated as soon as possible after work is completed.

Development of the mine and its various facilities will also lead to sterilisation of soil resources beneath the works. Most soil formations identified in the Project area are impoverished tropical ferralitic soils and duricrusts of low fertility. To minimise impacts, viable topsoil will be removed before construction starts and saved for use in site rehabilitation. Soils will also be protected against contamination using best practice in the storage, transportation and distribution of fuel and any other potentially polluting substances.

Residual impacts on soil resources were of minor significance, except the risk of accidental spills, which was rated minor to moderate significance considering there remains a low risk of a large spill.

5.3 Pollution and Waste

5.3.1 Noise and Vibration

Major construction projects and mining can be sources of significant noise pollution. Existing noise levels in the area are low and typical of rural villages (people, animals, insects, traffic, music, etc.). In these circumstances, new and elevated sources of noise can cause disturbance for people and animals.

During construction, noise will be emitted from mobile earthmoving equipment, drilling and blasting, piling, general building works, and construction traffic at the mine and along the rail spur. Construction activity will predominantly occur during daylight hours, but nighttime construction may be required during certain periods of the construction schedule.

During mine operations, noise will be generated by drilling and blasting the ore; operating large excavators, haul trucks, conveyors, the crushing and screening plant; placing waste rock in stockpiles; and stacking and reclaiming ore from the stockyard and loading it onto trains. Mining operations will be 24-hours, seven days a week but blasting will only be undertaken during daylight hours. The trains will also emit short-term bursts of noise as they transit the rail spur.

Modelling has been used to predict the effect of the Project on the noise levels in villages surrounding the mine and these have been compared with

thresholds derived for daytime and nighttime noise levels defined by the Republic of Guinea, the International Finance Corporation, and the World Health Organisation (WHO).

Two types of noise impacts were considered:

- Intrusive noise impacts are measured relative to daytime and nighttime thresholds.
- Amenity noise impacts consider the increases in noise emissions at receptor locations relative to baseline noise levels.

Most of the modelled noise impacts are amenity-related as they represent a large increase over an assumed baseline noise level.

No significant noise impacts were predicted to occur from construction of the mine. Significant noise impacts can be avoided at 33 noise-sensitive receptors along the rail spur provided nighttime construction is avoided.

Mine operations will result in elevated noise levels in the six nearest villages, and this changes over the life of the mine. Negligible to minor significant amenity noise impacts are predicted at two villages: Nionsomoridou and Moribadou. Three communities will experience negligible to moderately significant impacts: Lamadou, Mamouroudou, and Traoréla. One village (Wataférédou II) will experience moderate impacts during most of the mine life except in the fifth year of mining, when impacts will be of major significance, without further mitigation.

Residual noise levels from rail spur operations are predicted to result in minor to major increases in noise levels from baseline levels during the daytime and nighttime periods. Twenty-seven (27) receptors (single dwellings) are predicted to experience major amenity noise impacts and 16 receptors (single dwellings) are predicted to experience moderate amenity noise impacts, even after mitigation has been applied.

A noise mitigation strategy has been developed to study these impacts further and to determine if these impacts can be further reduced to acceptable levels. This includes the following steps:

- Ground truthing of receptor locations to identify natural shielding and to measure site-specific baseline noise levels.
- Conduct revised noise modelling that incorporates site-specific baseline measurements, a three-dimensional terrain model, and the application of a wide array of additional mitigation measures (including low noise emission equipment) to determine if impacts can be lowered to acceptable levels.
- Implement the additional mitigation measures based on revised modelling.

Ultimately, receptors predicted to experience moderate to major significant impacts will be consulted and provided the option of resettlement. With resettlement, impacts will be reduced or eliminated.

Noise has the potential to affect animals, as well as people, and was considered in the biodiversity assessment. The effects of blasting was evaluated and major impacts on human receptors were unlikely to occur given the distance from villages. Noise has the potential to affect animals as well as people, and the impacts of blasting on animals, in particular chimpanzees, have also been considered. Although evidence suggests that species such as chimpanzees can become acclimatised, consideration must be given to the effects on nearby habitats. The introduction of blasting to the mine area will be gradual with smaller blasts early on, allowing animals to become accustomed to the disturbance. Blasting methods will be carefully designed (size of charge, drilling and detonation pattern, stemming of blast holes) to minimise noise and vibration and will follow a fixed schedule which will be communicated in the local area.

A noise and vibration monitoring programme will be developed and implemented to confirm the modelling results and ensure that the Project meets IFC standards. If impacts are determined to exceed IFC criteria the option to relocate and compensate affected people will be considered. With the measures presented above and the accompanying monitoring programme Rio Tinto Simfer will ensure noise and vibration standards are met.

5.3.2 Air Quality

Monitoring data has been collected over recent years around the mine and shows that air quality is generally good with only occasional elevated levels of pollution mostly caused by natural sources such

as the dust-laden Harmattan wind during the dry season, bushfire, or local activities – cooking, using fire to clear land, and emissions from old and poorly maintained vehicles.

Emissions associated with the Project will include dust from traffic moving on unsealed roads, earthworks, ore handling, crushers and stockpiles, and gaseous emissions from the combustion of fossil fuels in vehicles and from electricity generation.

Construction activities have the potential to create significant levels of dust, and hence, the use of dust suppressants will be important to reduce Project particulate matter emissions and dustfall to acceptable levels.

A computer model has been used to predict the effect of the Project on air quality. The predicted levels were compared to WHO air quality standards. Mine operations, if unmitigated, will generate emissions of dust under certain conditions which could lead to short-term impacts on ambient air quality in nearby villages (mainly Wataférédou I and II to the east, but also, Lamadou to the west, Nionsomoridou to the north and Foma to the southeast). Concentrations of nitrogen dioxide will also be slightly elevated under certain climatic conditions, though this is expected to be an infrequent occurrence.

Project emissions will result in air quality impacts to wildlife in the Boyboyba Forest of major significance for particulate matter and of moderate significance for nitrogen dioxide (NO_2), when adopting the WHO air quality standards in the absence of wildlife standards. Dust deposition in the Boyboyba Forest is predicted to be minor significance relative to thresholds adopted for the protection of vegetation. These impacts have been considered in the biodiversity assessment. Additional studies will be carried out in the detailed design phase to further reduced these impacts.

A number of control measures have been built into the design and operation of the mine, including the selection of plant and equipment meeting United States Environmental Protection Agency “Tier 2” emission standards, the use of fuel with restricted levels of sulphur (500 parts per million), the use of water sprays or other means of managing dust on roads in dry weather, variable height stackers to limit dust, and, most importantly, maintenance of ore moisture levels above a threshold at which dust generation is suppressed. Further studies are to be carried out in the detailed design phase. If additional dust control is found to be necessary, this will be incorporated into the design.

Rio Tinto Simfer will develop and implement an air quality monitoring programme to confirm the modelling results and compare the results of mitigation measures against WHO targets. Measures will be adapted and new technologies assessed to continually minimise emissions.

5.3.3 Local Climate Impacts

As a regionally important landscape feature, the Simandou mountain range has an influence on local climate, acting as a barrier to wind flow and influencing local rainfall and fog formation.

Recognising the importance of the Simandou Range on local climate, the United Kingdom Meteorological Office (UKMO) assessed potential impacts on climate from the change in ridge profile associated with mining both the Pic de Fon and Ouéléba pits. Using the latest understanding of atmospheric dynamics, global circulation models, and local scale meteorology, a numerical climate model was developed and supported by several years of climatic data provided by the Direction Nationale de la Météorologie de Guinée and site-specific meteorological stations operated by Rio Tinto Simfer.

A climate change assessment for the Project based on the information available from the Intergovernmental Panel on Climate Change from the Sixth Assessment Report (AR6). This study was based on General Circulation Models, a class of computer-driven models used to forecast weather, understand climate conditions, and project climate change. The study analysed potential climate trends for two assessment periods, namely, the near-term assessment period covering the years 2020–2049 (“2030s”) and the end-of-century period, from 2070 – 2099 (“2080s”).

The overall conclusion from this work was that the reduction to the height of the ridge will have a negligible impact on the amount of rainfall received directly around the mine (a reduction of approximately 1.3%). Over a wider area of 10 km

by 20 km (roughly 5 km either side of the ridge where mining will take place), the modelling shows that rainfall amounts will change by less than 0.5%. These predictions are much less than natural variability and less than the effect predicted to occur through climate change induced by global warming. Mining of the ridge is therefore not predicted to have a significant impact on local climate.

The near-term assessment period represents the period during which the mine is expected to be operational. Therefore, climate changes during this period are most likely to influence operational design and management. The end-of-century period reflects possible climate changes that may influence the latter years of operations and closure design. Post-closure design will consider increase in temperature and precipitation projected by the end of the century. In addition to that, flood frequency analysis used to establish design rainfall criteria will be adjusted to change in projected precipitation intensity.

5.3.4 Greenhouse Gas Emissions

Greenhouse gas (GHG) emissions are of concern because of their contribution to global climate change. It is good practice for any major project that results in significant quantities of GHG emissions to calculate these and identify mitigation measures to minimise the potential contribution to climate change.

The Project is estimated to generate an estimate of 24,940,484 tCO_2e over the 26-year operational life. The Project's average annual emissions (including the construction and operation phases) is estimated at 1,349,990tCO_2e, and are predicted to contribute approximately 6.4% of Guinea's forecasted unconditional annual emissions for 2030 (excluding land use change and forestry). During the 26-year operation phase this reduces to an annual average of 908,284 tCO_2e emissions, which is predicted to contribute to 4.3% of Guinea's projected unconditional emissions up to 2030 (excluding land use, land use change and forestry).

About 94.7% of total emissions from the Project will arise from the use of fuel for the operation of the Project, including mining, ore handling, power generation and rail and port operation. Approximately 5% of total emissions from the Project will arise from fuel use during construction. Land clearance has a minor contribution to the overall emissions from the Project, accounting for only 0.3% of total lifetime emissions. Measures for limiting GHG emissions have been built into the design of the Project, focusing on actions to reduce fuel use and improve energy efficiency. Rio Tinto Simfer operates a strict GHG policy for all its operations and this will be applied at Simandou Mine and Rail Spur Project. This will include the preparation and regular updating of a GHG and Energy Efficiency Action Plan focused on setting and meeting targets for improvements in emissions. GHG emissions will be monitored and reported throughout the Project lifetime, and opportunities for reduction will be considered wherever possible.

5.3.5 Resources Use and Non-Mineral Waste

The Project will utilise resources such as water, fossil fuels, and construction aggregates. With water conservation measures and the purchase of fuel offshore (so as to not deplete national reserves), the residual impacts will be of minor significance.

The operation will generate various other waste streams including construction waste, domestic waste from the workforce, office and kitchen waste, clinical waste from medical facilities, redundant plant and equipment, packaging waste, and various types of potentially hazardous waste from workshops, water treatment plants, spill clean-up and other activities. A modern landfill will be constructed that is expected to include specialist hazardous waste treatment and disposal arrangements. The details of this have yet to be finalised but all necessary permits required under Guinean law will be obtained prior to the establishment of these facilities. The site will be designed, built, and operated in accordance with strict international standards to ensure it has no significant impact on the environment and people in the surrounding area.

The loss of amenity of neighbouring areas due to litter, dust, odours, from waste handling, and disposal facilities was also identified as an impact. By implementing waste management practices consistent with international best practices, the residual impacts are expected to be of minor significance.

5.4 Cultural, Economic and Social Conditions

5.4.1 Identifying and Protecting Cultural Heritage

The history and the archaeology of Guinea has not been widely studied and is therefore poorly understood. However, it is apparent from the information that is available that Guinea has a long history of human occupation dating to the Early Stone Age (200,000 – 10,000 BC). The mine study area, located in the iron rich southeast of Guinea, provided an important resource for early Iron Age populations (500BC – AD 1,000) and there is archaeological evidence that iron smelting technology originated in West Africa. In addition to this archaeological heritage, modern Guinea has a strong tradition of living cultural heritage founded in the important role sacred sites play in community life. Trees, rocks and water are often identified as sites of spiritual significance and can be important as sacrifice sites and in rites of passage. As well as such physical sites, intangible traditions and cultural knowledge are also important cultural assets.

Development of the mine will disturb some known cultural heritage sites, with at least three known mineral working sites and four sacred sites falling within the footprint of the Project. In addition, an area of high archaeological potential has been identified within the Ouéléba pit using a GIS-based spatial analysis model, where it is likely that further mineral working sites will be found. It is also possible that more archaeological and living cultural heritage sites will be encountered in other areas of the mine and its infrastructure as works progress.


Inauguration Ceremony


Tumulus cultural heritage site (Insuco, 2023)

The locations of many sacred sites are highly guarded knowledge in order to respect the secrecy surrounding traditional sacred, religious and initiation rites. As such Rio Tinto Simfer has adopted a policy of site confidentiality: while the general locations of sensitive sites in the mine area will be mapped, their exact locations will only be shared with applicable regulatory authorities, and not disclosed in any public document.

To protect cultural heritage, Rio Tinto Simfer has developed a Cultural Heritage Management Plan which describes the processes, procedures, and resources that will be used by the Project to manage all cultural heritage found around the mine, including the provision for further studies to identify and evaluate sites prior to construction.

Where sites are identified, they will be avoided wherever possible. If they cannot be avoided, the Project will investigate archaeological sites and use rescue archaeology to preserve the remains. For all cultural heritage sites, the Project will consult communities regarding appropriate means for relocation, if possible, or compensation when relocation is not possible.

During construction of the Project, a “Chance Finds” procedure will be implemented to identify, protect, or rescue finds encountered on the ground. There will also be ongoing stakeholder engagement to identify and conserve cultural heritage assets. High importance will be placed on securing consent from Guinean authorities and from affected communities on the disturbance, or relocation, of cultural heritage sites.

The management plan will also include actions directed at protecting important aspects of the intangible cultural heritage of local people by supporting local cultural events and ensuring Rio Tinto Simfer understands and respects traditions that are important for local life.

Rio Tinto Simfer has adopted a Code of Conduct which will include provisions directed at preventing interactions with the local community by Project personnel which could interfere with or endanger local traditions.

The Cultural Heritage Management Plan will be implemented under the supervision of a specialist working group who will be responsible for overseeing the process and consulting with the relevant authorities on all issues relating to cultural heritage.

5.4.2 Changing the Local Landscape

Landscape and visual resources are defined as the combined components of topography, geology, forests, woodland, biodiversity, ridgelines, water courses and coastlines which contribute to landscape through the visual, aesthetic, or scenic quality of the environment. Landscape and visual impacts may occur when new elements are introduced into a landscape or existing elements are altered or removed leading to a change in the way stakeholders access, perceive, or experience landscape resources. Impacts can be assessed by reference to changes in the landscape as seen from key viewpoints from which individuals or groups of people can see the Project.

The prominence of the Ouéléba Ridge means that it is theoretically visible from long distances, but in practice the distance from which the human eye can discern landscape features in the Simandou range is limited by local climatic conditions to about 30 km.

The portion of the range within the mine area is a dominant visual feature. It has a series of separate peaks, reaching altitudes of 1,656 m at Pic de Fon and 1,132 m at Ouéléba. It is characterised by steep natural slopes intersected by a dense network of freshwater streams. The vegetation of the range consists of grassland on the ridgeline, high altitude forest galleries in the stream valleys transitioning to lowland forest and wooded savanna in the lowland areas.

The impact assessment on the landscape considers the visual aspect affected by the proposed mine by assessing visibility from locations from which people may be able to see the mine and its infrastructure. The ESIA considered changes in the landscape as seen from villages all around the ridge including Moribadou, Mafindou, Wataférédou I and II, Nionsomoridou, Traoréla and Foma.

The assessment used photomontages coupled with a terrain model, showing how mining activities would influence the profile of the Ouéléba ridge. The changes in ridge profile will occur over the life

Existing view from Wataférédou II

Future view from Wataférédou II once the mining has been completed (Note brown areas show mine works that will be revegetated at closure to mitigate impact.

of the mine and eventually they are predicted to be most noticeable from Moribadou, Wataférédou II and Traoréla. The impacts are predicted to be of major significance over the life of the mine as the profile of the ridge will be changed due to the development of the Ouéléba Pit and construction of the WRSFs. Progressive rehabilitation and awareness of planned changes will assist to mitigate the visual impacts.

Landscape and visual changes are common in open-pit mining. Rio Tinto Simfer has committed to measures that will help to mitigate visual impacts, including progressively revegetating disturbed areas wherever possible.

5.4.3 Contributing to the National and Local Economy

Guinea ranks 182 out of 191 countries on the United Nations Development Programme 2021 Human Development Index and 70% of the population lives on less than one US dollar a day. Levels of education are low, with a national literacy level of 45% in 2021 and much lower levels in rural areas. Access to health services is limited and only 19% of the population has access to adequate sanitation and 7% to potable water. The road network is sparse and road transport is often compromised by weather.

The Project provides an opportunity to foster economic development in Guinea and is expected to translate into a significant increase in Guinea's gross domestic product (GDP). Contributions will include the payment of wages to project employees and contractors, purchases of goods and services from local firms, tax payments, and direct social investment.

The workforce directly engaged in the construction at the mine is expected to peak at approximately 2,500, and another 3,750 people are expected to work on construction of the rail spur. Approximately 50% of this workforce will be recruited from Guinea, although skilled and management positions are likely to be sourced initially by people from locations outside of Guinea.

Once the mine is fully operational, the workforce at the mine is expected to be peak at around 2,050 Rio Tinto Simfer employees and another 1,400 contractors.

Indirect and induced employment (i.e., employment generated by other businesses, because of increased economic activity resulting from the Project) is expected to be significant. Rio Tinto Simfer is committed to filling as many roles as possible, including skilled labour positions, with local employees, and the company has committed to supporting education and professional training.

The Project will also provide significant opportunities for local procurement of goods and services, which will positively impact the development of Guinean businesses and the country's economy. For quality, health, safety and environmental reasons, Rio Tinto Simfer will need to select suppliers on the basis of their capabilities, but it will support supplier qualification programmes to improve the readiness of local businesses to bid for contracts.

Rio Tinto Simfer is committed to investing in communities living in proximity to the Project. Rio Tinto Simfer will contribute to community development across programmes covering education, professional training, sanitation, water, health, and infrastructure. To help target this effort, Rio Tinto Simfer is working on the development of a regional development strategy to facilitate linkages with national and local development initiatives and establish a consistent approach to community engagement and social investment in the regions affected by the Project.

5.4.4 Establishing a Social Management Framework

Rio Tinto Simfer is committed to investing in communities living in proximity to the Project. Rio Tinto Simfer will contribute to community development across programmes covering education, professional training, sanitation, water, health, and infrastructure. To help target this effort, Rio Tinto Simfer is working on the development of a regional development strategy to facilitate linkages with national and local development initiatives and establish a consistent approach to community engagement and social investment in the regions affected by the Project.

Rio Tinto Simfer has also developed a Social Management Framework (SMF) to provide a structure for the detailed design and implementation of measures to mitigate the adverse impacts of the

Project and maximise its benefits. A range of more detailed Social Management Plans will be developed as part of this framework.

The detailed design and implementation of these plans will be influenced by several factors, as outlined below:

- **Priorisation:** Rio Tinto Simfer will prioritise mitigation measures that address negative impacts and risks. Implementation timeframes will consider the Project schedule and prioritise measures responding to immediate needs, which may then be enhanced and expanded in subsequent years to foster broader and lasting benefits. Rio Tinto Simfer will also consider appropriate target populations for mitigation, prioritising those affected directly, by Project activities, indirectly, by in-migration pressures, as well as vulnerable groups.
- **Alignment:** Where possible, Rio Tinto Simfer will align its mitigation with the development policies and plans of local communities and government authorities and with objectives identified in relevant development forums.
- **Stakeholder Engagement:** Rio Tinto Simfer will endeavour actively to engage with a variety of stakeholders to consult, exchange information, and work in partnership on detailed design and implementation of mitigation measures. Consultation with Project-affected communities will be a critical priority. Any concerns regarding mitigation measures or Project activities will be managed through the Project Grievance Procedure, and the outcomes arising from grievance resolution will inform the evolution of mitigation. In addition, Rio Tinto Simfer will seek to support capacity building within government and civil society organisations to enhance their capabilities over time to participate in mitigation design, implementation, and monitoring. Rio Tinto Simfer's Stakeholder Engagement Plan describes the processes by which these engagements and partnerships will be managed, and their efficacy will be monitored, and the plan adapted as needed to support the achievement of Project goals.

5.4.5 Establishing Partnerships for Socio-Economic Development

When designing and implementing socio-economic and community programmes, Rio Tinto Simfer has partnered with, and will continue to partner with, Guinean institutions as well as international agencies and organisations, including multilateral donors such as the UN Population Fund (UNFPA) and the European Commission; and bilateral development agencies such as the French (AFD), German (GIZ) and American (USAID) development agencies.

Rio Tinto Simfer also collaborates with several Guinean NGOs and civil society organisations on its economic and community development programmes. These include: the Association for Community Development and Agro-Pastoralism (ADCAP) and the Centre for Support and Development of Community Initiatives (CADIC); AUDI (Actors United for Integrated Development) for agricultural programmes; PRIDE Finance and CAFODEC for microfinance programmes; and the Chamber of Mines of Guinea for HIV/AIDS treatment and prevention programmes.

For example, one vehicle for fostering local socio-economic development is the Guinean Programme d'Appui aux Communautés Villageoises (PACV), a national programme aimed at supporting Guinean communes in assessing their development needs and planning yearly development programmes. The PACV translates into the provision of technical support to communes in needs assessment, planning, programme and financial management, budget development, public tendering, and contractual management. It also provides for direct funding of commune development programmes. The PACV is managed by a national Guinean entity and supported by various international institutions such as the World Bank, the African Development Bank and bilateral development agencies. Rio Tinto Simfer has entered into a partnership with the programme, which includes funding to increase the effectiveness of the Project's financial contributions allocated to Project-affected communities for developmental programmes.

Rio Tinto Simfer will continue to seek partnerships with the Republic of Guinea, international agencies and organisations, and NGOs to design and implement socio-economic and community programmes in the future, as part of its Social Management Framework.

5.4.6 Controlling Project-induced Migration and its Effects

The Project is projected to give rise to high levels of in-migration, with the potential for large numbers of people to be attracted to the mine area in search of employment and economic opportunities.

The main locations where in-migrants are expected to converge, and where the risks of adverse impact from in-migration are highest, are identified as Beyla Town and nearby villages on the N1 road, the larger villages of Nionsomoridou and Moribadou, and the small settlements of Wataférédou I and II. Most of the in-migration is expected to occur during construction (2024-2025), but it is likely to continue during operations, but at a declining rate. The trend of population growth and increased pressure on land and housing experienced in recent years during exploration is therefore likely to continue for many years. Settlements may also experience short periods of rapid in-migration linked to perceptions of new opportunities associated with the Project development at various points in the Project lifetime, though such rapid population increases are likely to stabilise and even reverse rather quickly as actual levels of opportunity become evident.

The primary effects of uncontrolled in-migration will be the rapid increase in population and resulting expansion of towns and villages. If not adequately managed, this may result in a number of adverse impacts, notably in relation to water resources and pollution, loss of biodiversity and cultural heritage, conflicts over land and resources, and changes in social structures and community life and health.

The village of Lamadou

The primary tool for addressing the impacts of uncontrolled in-migration will be the implementation of a Project-Induced Migration Management Plan, in collaboration with relevant partners and the Government of Guinea.

Mitigation measures identified in the plan include:

- Avoiding or minimising PIM as far as possible by discouraging people from moving to the Project area.
- Managing and directing the flow of incoming migrants to suitable locations that have most capacity to accommodate in-migrants in accordance with regional planning objectives.
- Implementing mitigation measures to address the adverse environmental and social impacts, and maximise the benefits, of PIM.
- Implementation of regional economic development activities which involve collaborative, targeted initiatives and programmes in geographic zones sufficiently remote from the Project, to serve as a pull-factor away from the Project area and discourage PIM within the Project footprint.

In-migration will be monitored, and the plan updated as necessary throughout the life of the Project.

5.4.7 Impacts on Land Use and Access

The mine will occupy about 6,400 hectares of land which will no longer be accessible to local people. This will displace activities important for their livelihoods including grazing livestock, hunting, gathering fuelwood, harvesting timber, collecting food and medicinal plants, and some scattered cultivation. Much of the land occupied by the Project will be hilltop grassland and forest falling within the area of the Pic de Fon Classified Forest where many activities (grazing, collecting fuelwood, commercial logging, fishing and use of fire) are prohibited. The balance is mostly wooded grassland with small patches of cultivated agricultural land (lowland, plain and hillside) around the mine plant and rail loop.

The nearest settlements to the mine site are Nionsomoridou, Wataférédou I and II, Moribadou and Foma to the east of the ridge, and Traoréla and Lamadou to the west. Rio Tinto Simfer has developed the Project plan to minimise displacement of people from their homes as a result of the mine.

Rio Tinto Simfer recognises the importance of mitigating the Project's impacts on people who rely upon these land-based resources for their livelihoods. In finalising the design, it will therefore continue to circumvent land that is important to communities wherever possible, including routes used by people to access neighbouring villages, markets, land, and water.

Where occupation of useful land and disruption of access cannot be avoided, Rio Tinto Simfer will implement compensation for affected people in accordance with a Framework for Land Acquisition, Resettlement and Compensation (PARC) developed specifically for the Project in accordance with IFC Performance Standard 5 (Involuntary Resettlement). This PARC Framework will use in-kind compensation, financial compensation and other measures to fully restore, and where possible improve, the livelihoods of people and communities affected by the Project. This will be based on detailed surveys of their current situation and the impacts of the Project; and will be planned and implemented in full consultation with those affected.

5.4.8 Respecting Social Structures and Community Life

A project of this nature and scale, developed in a remote and less developed area, will have major impacts on local community life, both directly and through the influx of migrants. The ESIA examines these issues in terms of changes in social structures and arrangements in affected communities, considering pressures on land and resources and changes in social dynamics within and between settlements. There is likely to be pressure on housing, infrastructure and social services, as well as changes in traditional power structures and household arrangements as a result of new employment opportunities, economic expansion, and population growth.

During construction, the introduction of foreign workers will bring particular challenges. To manage these, Rio Tinto Simfer will aim to recruit local and Guinean workers wherever possible and will house migrant workers in a secure accommodation camp located at the site of the planned permanent camp near the village of Wataférédou I. A Code of Conduct for the workforce has been established, setting out rules designed to foster respectful, harmonious relationships between the Project workforce and the local community. Rio Tinto Simfer will engage with local authorities and traditional leaders in anticipating and managing change under the Social Management Framework, with a particular focus on managing in-migration, limiting pressures on infrastructure and services, and supporting local socio-economic development for the benefit of the entire community.

During operations, the aim will be to integrate the workforce into the local community, initially by encouraging new housing in Beyla, and progressively by moving to a predominantly Guinean workforce. Particular attention will be given to vulnerable groups within the community, identified as those who, due to their social position, are most likely to be affected by negative change and who may face obstacles to benefitting from positive impacts. The ESIA has identified certain vulnerable groups, a category that includes children, single women acting as household heads, the elderly, and people in poor health. Rio Tinto Simfer will continue working on the identification of vulnerable people and will implement dedicated approaches to target them as part of the Social Management Framework.

5.4.9 Protecting Community Health and Safety

Guinea, as a low-income country, with multiple political, socio-economic and health challenges, ranks low on the global human development index. Life expectancy, access to basic services, education and standards of living are low, all of which are important social determinants that influence national health outcomes. Despite progress made in the past decades, health outcomes in Guinea remain poor compared to similar countries in sub-Saharan Africa and the targeted objectives of the 2030 Sustainable Development Goals. The Ebola virus disease outbreak from 2014-2016, as well as the recent

Covid-19 pandemic highlighted the weakness of the Guinean health system and the limited financial and human capital available to support population health needs, especially in rapidly changing circumstances. There are challenges in all the main building blocks of the national health system, with a dependency on external technical and financial support from various health development partners.

Health studies commissioned by Rio Tinto Simfer over the years showed that the health infrastructure and services in the Project area are weak. Concerns have been raised by multiple stakeholders that an increase in healthcare demand resulting from a rapidly increasing population due to the presence of non-local Project workers and the attraction of job and opportunity seeking migrants would overburden this limited capacity. In addition, the movement of people and potential changes in the social fabric of the potential affected communities may give rise to an increased burden in communicable and sexually transmitted diseases. In addition, economic imbalances in an area of poverty also raises significant risk factors pertaining to women and young girls becoming vulnerable to approaches from men with disposable income.

The physical environment may also be impacted by the Project and the possible indirect impact of migration. In particular, this concerns the rapid development of settlements and housing without the requisite town planning or ability to provide basic services. The altered environment associated with migration may increase the risk for vector related diseases including malaria, diseases that may be associated with poor housing or overcrowding such as tuberculosis, meningitis and pneumonia and water, sanitation, and hygiene related conditions such as diarrhoea and typhoid fever. PIM will also impact water quality and availability as well as air quality, but the Project will develop management measures to reduce these to as low as reasonably practical.

The opportunistic movement of people to the area will increase the amount of road traffic and coupled with the logistics requirements of the Project, there may be an increased potential for road traffic accidents. The road network is poor, with unsafe driving practices in vehicles that are often unroadworthy and a non-existent post-crash response system. Pedestrians, especially children, may be especially vulnerable to vehicle accidents as they are often naïve to road safety practices.

As discussed in previous sections, the development of the Project will change the socio-economic circumstances in the local as well as wider area. The presence of a non-local workforce coupled with opportunistic in-migration may give rise to localised inflation of housing, food, and other basic services as well as an increased competition for already limited basic services such as water, sanitation, schooling, and healthcare services. These factors may increase the potential risks for communicable and zoonotic diseases as well as malnutrition. This may further lead to social disharmony if cultural and traditional values are eroded, inequalities develop, and social ills emerge.

The Project will seek to address any potential hazards that may lead to negative health impacts as well as supporting the health system in managing any negative health consequences. The development and implementation of a Project-Induced Migration Plan and an Environmental Management Plan will play central roles. However, management measures in the workplace to address community health and safety concerns will include:

- Development of accommodation and camp facilities to limit the need for the non-local workforce to reside in the local communities.
- Development and enforcement of codes of conduct to address the way in which non-local workers interact with the local community.
- Development of Project medical and emergency services to limit an increased burden on public medical facilities due to workforce demands.
- Development of a communicable disease management plan to address concerns such as HIV and AIDS, tuberculosis, sexually transmitted infections, malaria, and vaccine preventable diseases.
- Development of occupational health and safety measures to: i) limit the introduction of communicable diseases to the area from non-local workers and travellers; ii) road safety programmes including safe driving training, fitness to drive that includes fatigue management

and substance misuse programmes; iii) rail safety programmes; iv) development of employee assistance and wellness programmes; and v) emergency response services.
- Development of contractor management programmes to address the actions of contractor activities and the behaviour of their staff.

Through the Social Management Framework, the Project will seek to partner with various government departments including the Ministry of Health and Public Hygiene as well as development partners (for example non-governmental organisations) to support health systems strengthening and other aspects that may influence health outcomes, including:

- Supporting key national programmes in the Project area of influence including the National Malaria Control Programme, the National AIDS and Hepatitis Prevention Programme and OneHealth Programmes specially focussed on the risks for zoonotic disease.
- Supporting with outbreak preparedness and response protocols for diseases with outbreak potential.
- Supporting access to improved health services based on an universal health coverage approach by supporting primary health services and capacitating community cadres in specific communities.
- Supporting improvements in health infrastructure and systems.
- Supporting with basic water, hygiene, and sanitation services.
- Supporting with community safety initiatives, especially community road and rail safety including raising awareness and improving local emergency response capabilities.
- Supporting to establish a community health and safety forum so that potential cumulative impacts from other mines in the area can be addressed in a collective and strategic manner.

Finally, the Project will develop a community health and safety monitoring system to evaluate potential impacts and the effectiveness of mitigation measures.

5.4.10 Protecting the Workforce

Rio Tinto Simfer is fully committed to managing its workforce and providing labour conditions in line with Guinean legislation and international labour standards as defined by the International Labour Organisation and IFC Performance Standard 2 (Labour and Working Conditions). These include maintaining clear and equitable human resources policies, providing a balance between working hours and time off, providing appropriate wages and benefits, respecting workers organisations and their right to be represented, providing transparent mechanisms to allow collective negotiation, enforcing a non-discrimination and equal opportunities policy, protecting migrant workers, providing appropriate standards of worker accommodation, establishing fair and equitable retrenchment rules, providing appropriate grievance mechanisms, and applying the highest standards of health and safety. In particular, Rio Tinto Simfer will prohibit all forms of child labour and forced labour.

These commitments apply to all directly employed workers and to those employed via contractors during construction and operation. While recognising that employment terms may vary across the various companies working on the Project, Rio Tinto Simfer will nonetheless require that its contractors and subcontractors respect the same labour standards. While it has less ability to control and monitor the employment practices of other suppliers of goods and services, it will also require all suppliers to meet certain minimum standards. Contractor and supplier requirements will be enforced through Rio Tinto Simfer's contracting process and verified where appropriate through a supplier and subcontractor auditing process.

Through local supplier support programmes implemented within the Rio Tinto Simfer's Social Management Framework, Rio Tinto Simfer will also seek to support the adoption of improved labour practices by Guinean companies involved in the Project.

5.4.11 Respecting Human Rights

Rio Tinto Simfer is fully committed to respecting human rights in accordance with the UN Guiding Principles on Business and Human Rights (UNGPs) and the other international standards, internal policies and national laws that support human rights. As part of this commitment, Rio Tinto Simfer is implementing an ongoing process of human rights due diligence (HRDD) that includes

periodic assessment of human rights risks and impacts and ongoing mitigation, tracking and communications. The Human Rights assessment of the ESIA is focused on the integration of human rights considerations into the assessment of socio-economic and environmental impacts through the ESIA process, as required by Guinean regulations and international standards. This is the basis for the integration of human rights mitigation measures into the Project's Environmental and Social Management System. This integrated approach is critical for effective operationalization of human rights throughout the different functional areas of the Project and with the numerous contractors and sub-contractors who will be working on the Project—particularly during the construction phase.

The Human Rights assessment is organized around the list of "salient human rights issues" that have been prioritized based on the potential severity and likelihood of adverse impacts on the human rights of affected stakeholders. This focus on salient human rights issues reflects evolving good practice for HRDD whereby companies are encouraged to focus their attention on the most salient risks to people's rights.

The salient human rights issues described in the Human Rights assessment include:

- Information and consultation
- Grievance mechanisms
- Community health, safety and wellbeing as related to:
  - » Environmental impacts
  - » Influx (PIM)
  - » Worker interactions with communities
- Security
- Land access and use, including land acquisition and resettlement
- Labour rights for employees
- Workplace health and safety
- Inclusion and diversity
- Labour rights for contractors and supply chain
- Right to work
- Social investment

A Human Rights Management Plan (HRMP) has been prepared to guide the Project's general approach to ongoing HRDD in line with international standards and good practices. The HRMP also establishes a cross-functional Human Rights Collaboration Committee that will oversee the implementation of the various commitments and mitigation measures for the Project's salient human rights issues. In this regard, the Human Rights Collaboration Committee will develop and implement a Human Rights Action Plan that will be updated periodically and will include tailored Key Performance Indicators (KPIs) for each salient issue.

6 Planning for Mine Closure

After a period of steady operation at peak capacity, production rates will decrease, and mining will cease when the deposit is exhausted.

The anticipated mine plan indicates that closure will occur at Ouéléba after about 26 years of operations. Studies are ongoing to determine the potential for further extraction beyond this point. On completion of mining, the pit will be closed, and the ore handling and processing facilities will be decommissioned. This will entail the dismantling, demolition and removal of equipment and buildings; reshaping and re-contouring of land surfaces; and the rehabilitation of occupied areas. As much as possible, the land occupied by the mine and its infrastructure will be returned to its former land use. The mine pit, WRSFs and other works will be made safe for the community including the placement of barriers to discourage people from entering the old pit. A public education programme on safety issues associated with the open pit faces and pit lakes which will form at the bottom of the excavated areas will be conducted. A passive water management system will be implemented to ensure adequate protection for surrounding water resources in the absence of ongoing, active management by Rio Tinto Simfer.

The closure phase will also require the management of social issues including retrenchment of the workforce and the loss of local employment and business.

To mitigate the risks associated with mine closure, Rio Tinto Simfer has developed a conceptual Mine Closure Plan. The plan will be refined in consultation with relevant authorities, the workforce, and local communities, and it will aim to leave a rehabilitated mine site behind that is stable and non-contaminating, with a passive water management system in place. It will also aim to empower local communities to be self-reliant in creating livelihoods and providing and maintaining community services. The Plan has been developed conceptually prior to the start of operations and will be reviewed and updated at least every 5 years during operations. A detailed Mine Closure Plan will be completed and agreed with relevant stakeholders at least 5 years prior to the cessation of operations. The implementation and success of the Plan will be monitored until the site achieves an environmentally and socially acceptable, sustainable state.

7 Translating the ESIA into Environmental and Social Management

Through the ESIA, Rio Tinto Simfer has identified and committed itself to a number of environmental and social measures designed to mitigate adverse impacts and ensure benefits are maximised.

These are compiled in the Environmental and Social Management Plan (ESMP) presented in Volume 2 of the Rio Tinto Simandou Project ESIA. The Environmental and Social Management Plan presents how Rio Tinto Simfer and its contractors will implement the key aspects of Rio Tinto's Management System Standard and Communities and Social Performance Standard, and identifies the relevant environmental standards. It also describes how environmental and social performance will be delivered through the Simandou Project Environment and Social Management System (ESMS), including the development of detailed environmental and social programmes, plans and procedures on key issues, and monitoring and audit plans.

The Project's commitments register is presented as an annex of the ESIA. These are the commitments to implement environmental and social mitigation measures and monitoring programmes identified in the ESIA. Each commitment is set out with a clear statement of what will be done to mitigate adverse impacts and provide benefits, the phases of the Project to which it will apply (construction, operation, and closure), and the components to which it will apply (mine, rail spur, or both). Rio Tinto Simfer's Stakeholder Capacity-Building Programme, and the estimated cost to implement environmental and social management, are also presented as annexes to the ESMP.

Accompanying the ESMP in Volume 2 are discipline-specific management plans covering the following subjects:

- Monitoring
- Acid and metalliferous drainage
- Air quality, noise, vibration, and overpressure
- Land disturbance and rehabilitation
- Greenhouse gas emissions and energy management
- Non-mineral waste management
- Environmental emergency response
- Water management
- Mine closure
- Biodiversity management including offsetting
- Stakeholder engagement
- Grievance mechanisms
- Cultural heritage
- Community health and safety
- Traffic
- Human rights
- Compensation and Resettlement

8 Next Steps

As the ESIA has been completed, the results of the assessment will be disclosed to stakeholders for review and comment. This section outlines the activities planned for the next stage, involving the disclosure of this report and consultation on its findings with Project stakeholders. The processes for responding to feedback from stakeholders and for managing any potential grievances are also described.

8.1 ESIA Disclosure and Consultation

A programme of disclosure and stakeholder engagement is planned to run following the submission of the ESIA to the AGEE. This may run concurrently with the AGEE review process, but it will be independent of the formal process and run as part of normal Project stakeholder engagement. The aim of this programme is to provide directly affected communities and other project stakeholders with an opportunity to understand and comment on the results of the impact assessment and the proposed mitigation measures. The stakeholder engagement methods outlined in Section 4.3 and the Stakeholder Engagement Plan (Volume 2) will be implemented and will also include the following activities:

- The ESIA Report and accompanying leaflets and summary material will be published on the Simandou website at **https://riotintoguinee.com/** (French) and **https://riotintoguinee.com/en/** (English) and will be available to download at no cost.
- Hard copies of the report will be available for inspection at the following locations in Guinea and internationally:

Rio Tinto Simfer Immeuble Cocotier Coleah route Niger, Commune de Matam Conakry, République de Guinée	Rio Tinto Iron Ore Atlantic 6 St James's Square London SW1Y 4LD Royaume-Uni

- The Project camp at Canga and with Community Liaison officers in the local communities.
- Non-technical Summaries of the ESIA (summary of impacts and mitigations, including management plans) will be disseminated to affected communities in their local language by Community Liaison Officers.
- Publication of the report will be announced in newspaper advertisements and through press and media announcements in Conakry and across the prefectures affected by the Project.
- Sharing through the CPSES (Prefectural Environmental and Social Monitoring Committee).
- The ESIA Team will directly contact government departments and non-governmental organisations inviting their comment on the Project and its impacts.
- As part of the ESIA review by AGEE, workshops will be held in affected communities. Rio Tinto Simfer will comply with stakeholder requirements as per Article 51 of Order 1595.

In addition to these activities, a programme of mobile exhibition visits led by the Simandou Communities Department and field studies associated with planning for land acquisition, resettlement and compensation will be undertaken, visiting settlements throughout the Project area. These visits will provide the opportunity for communities affected by the Project to be consulted on the ESIA findings and allow local people to comment on the Project and its impacts prior to final decisions on design and construction. Meetings will be held in all villages directly affected by the Project. Local leaders, affected households and businesses, and special actors within the community including women and other potentially vulnerable groups will be invited and encouraged to attend.

The Project will also assist the Ministry of the Environment and Sustainable Development in organising formal public hearings as required by the Guinean ESIA Regulations.

8.2 Managing Stakeholder Feedback

Throughout the period of consultation, a formal comment and feedback system will operate. Comments and questions can be submitted to the Rio Tinto Simfer Project Team by various routes:

- By email to **simandou.eies@riotinto.com**
- By writing to:

Rio Tinto Simfer
ESIA Department
Immeuble Cocotier
Coleah route Niger, Commune de Matam
Conakry, République de Guinée

- Or to:

Rio Tinto Simandou ESIA
AMERI sarl
Immeuble Ecobank 1er étage
Commune de Ramoma, Hamdalaye
Conakry, République de Guinée

Knight Piésold Ltd.
#200-1164 Devonshire Ave
North Bay, ON P1B 6X7
Canada

- By raising a point or asking a question at a stakeholder event.
- By leaving a written comment at a stakeholder event.
- By raising an issue with the land acquisition planning team during village level consultations.

Comments can be submitted by any means (in person, in writing, by email) including on pre-printed feedback forms which will be made widely available. A copy of the feedback form is available on the website.

All comments made by stakeholders, whether in person, by mail or email, will be recorded in Rio Tinto Simfer's Stakeholder Register, and will be considered by the Project Team, finalising the methods for construction and operation, and updating and implementing the Environmental and Social Management Plan. Where questions are raised that require an individual response, this will be provided to the extent possible through the Community Liaison officers of CSP team. If any parties raise a grievance or complaint, these will be managed through the Rio Tinto Simandou Grievance Procedure (Volume 2).

Rio Tinto Simfer
ESIA Department
Immeuble Cocotier
Coleah route Niger, Commune de Matam
Conakry, République de Guinée

simandou.eies@riotinto.com