

Simandou Project

Class Social and Environmental Impact Assessment (SEIA)

Temporary Construction Workforce Accommodation and Logistical Supply Centres



Company:	Rio Tinto
Product Group:	Iron Ore
Business Unit:	Simfer SA
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Abbreviations

Abbreviation	Definition
BGEEE	Bureau guineen d'evaluation des etudes environnementales
CRD	Rural Development Committee (<i>Comité rurale de développement</i>)
EMP	Environmental Management Plan
EPCM	Engineering, Procurement, and Construction Management
ERM	Environmental Resources Management
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GPS	Global Positioning System
HSEC-MS	Health, Safety, Environmental and Communities Management System
IBA	Important Bird Areas
IFC	International Finance Corporation
KBA	Key Biodiversity Areas
LSC	Logistical Supply Centre
MD	Managing Director
MOF	Marine Offloading Facility
MSDS	Material Safety Data Sheet
NCP	National Content Plan
NGO	Non-Government Organisation
RTIOEP	Rio Tinto Iron Ore Expansion Projects
SEIA	Social and Environmental Impact Assessment
SEIS	Social and Environmental Impact Study
SEMP	Social and Environmental Management Plan
SEP	Stakeholder Engagement Plan
TB	Tuberculosis
TDS	Total Dissolved Solids
ToR	Terms of Reference
TSS	Total Suspended Solids
UNESCO	United Nations Education, Scientific and Cultural Organisation
WHO	World Health Organisation
WMP	Waste Management Plan
WWTP	Waste Water Treatment Plant

Glossary

Term	Definition
Affected Community	Local communities that are affected by a project either positively or negatively.
Alternatives Analysis	Analysis to examine feasible alternatives such as alternative project locations, designs or operational processes, or alternative ways of dealing with social and environmental impacts.
Associated Infrastructure	Infrastructure whose viability and existence depend exclusively on the Project and whose goods or services are essential for the successful operation of the Project.
Baseline Data	Data gathered during the Social and Environmental Assessment used to describe existing conditions in the area of the project, such as physical, biological, socio-economic, and labour conditions, including any changes before the project commences.
Bas Fonds	Wetlands of high productivity in lower valleys, mainly used for vegetables, cassava, sweet potatoes.
Biodiversity	Integrating concept that includes the ecosystems within which the people of the world live, as well as the multitude of species that are used by humankind for food, fibre, medicines, clothing and shelter. Biodiversity is the variety of life in all its forms, including genetic, species and ecosystem diversity.
Biodiversity Action Plan	Process which assess how the proposed activities affect biodiversity and renewable natural resources, determine how biodiversity and renewable natural resources can be managed as part of the client's activities and how adverse impacts can be mitigated and identifies responsibilities (internally and externally) and resources for management and mitigation.
Bonded Labour	Practice that by which forced labour is extracted by creating debt or other obligations not based on a valid and mutually beneficial economic purpose that must be worked off on terms that effectively prevent the worker's exit from the work.
Chance Find Procedure	A project-specific procedure that will operate if previously unknown cultural heritage resources, particularly, archaeological resources, are encountered during project construction or operation. The procedure includes record keeping and expert verification procedures, chain of custody instructions for movable finds, and clear criteria for potential temporary work stoppages that could be required for rapid disposition of issues related to the finds.
Child Labour	Work by children that is economically or likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development. Obligations on child labour are extended to the client's supply chain.
Consultation	Consultation involves two-way communication between the Project and the affected communities. The consultation process should be undertaken in a manner that is inclusive and culturally appropriate and that provides the affected communities with opportunities to express their views on a project risks, impacts and mitigations measures, and allows the client to consider and respond to them. The consultation process will ensure free, prior and informed consultation.
Ecosystem Services	The benefits that people obtain from ecosystems, including: • provisioning services (such as food, fibre, fresh water, fuel wood, biochemicals, genetic resources); • regulating services (such as climate regulation, disease regulation, water regulation, water purification, degradation of pollutants, carbon sequestration and storage, nutrient cycling); and • cultural services (spiritual and religious aspects, recreation and ecotourism,

Term	Definition
	aesthetics, inspiration, educational values, sense of place, cultural heritage).
Emergency Response Plan	Plan to address contingencies associated with process upset and accidental circumstances. They include clearly assigned responsibilities for the assessment of the degree of risk to life and property with procedures on whom to communicate different types of emergencies with and how.
Endemic species	A species that is only found in a particular region and nowhere else in the world. Since these species are not widespread and may be confined to only one or two protected areas, they are of great conservation concern.
Grievance	A grievance is a complaint or concern raised by an individual or organisation who judges that they have been adversely affected by the Project during any stage of its development. Grievances may take the form of specific complaints for actual damages or injury, general concerns about Project activities, incidents and impacts, or perceived impacts.
Grievance Procedure	Procedure developed by the Project in accordance with IFC requirements: - to receive and facilitate resolution of concerns and grievances about the client's environmental and social performance;. - procedure for workers (and their organizations, where they exist) to raise reasonable workplace concerns; and - procedure to receive and address specific concerns about compensation and resettlement that are raised by displaced persons or members of host communities.
Habitat	The locality or environment in which an animal lives.
Hazardous Waste	Substances classified as hazardous wastes possess at least one of four characteristics- ignitability, corrosivity, reactivity or toxicity – or appear on special lists.
HSEC-MS	See Social and Environmental Management System.
Infectious Disease	Illnesses that are attributable to specific infectious agents or their toxic products that arise through transmission of these agents or their products from an infected person, animal or inanimate reservoir to a susceptible host. Examples include water-borne, water-related, food-borne, respiratory diseases and sexually transmitted diseases.
Information Disclosure (also Public Disclosure)	The process of providing information to the affected communities and other stakeholders that is timely, accessible, understandable, and in the appropriate language(s). For projects with potential adverse impacts, information on the purpose, nature and scale of the project, the duration of proposed project activities, and any potential risks to and potential impacts on such communities should be included.
Intangible Cultural Heritage	Cultural knowledge, innovations and practices of communities embodying traditional lifestyles.
International Good Practice	The exercise of professional skill, diligence prudence and foresight that would reasonably be expected from skilled and experienced professional engaged in the same type of undertaking under the same or similar circumstances globally.
IUCN Red List	This list has been developed by the International Union for Conservation of Nature (IUCN) and the details the global conservation status of a wide range of biological species. List of species that are designated by the World Conservation Union (IUCN) to be critically endangered or endangered. The Red List website is http://www.redlist.org .
Landscape	A geographical mosaic composed of interacting ecosystems resulting from the influence of geological, topographical, soil, climatic, biotic and human interactions in a given area.
Mitigation measures	Designs, and methods for construction, operation and closure of a project that are introduced into the plans for a project, to prevent adverse impacts, where impacts cannot be prevented altogether, to reduce them as low as is technically and financially feasible, and to remedy or compensate for adverse effects, and measures to provide and enhance the positive benefits of a project.

Term	Definition
Modified habitats	Land and water areas where there has been apparent alteration of the natural habitat, often with the introduction of alien species of plants and animals, such as agricultural areas.
Natural habitats	Land and water areas where the biological communities are formed largely by native plant and animal species, and where human activity has not essentially modified the area's primary ecological functions.
Non-native species	An introduced, alien, exotic or non-indigenous species, or simply an introduction, is a species living outside its native distributional range, which has arrived there by human activity, either deliberate or accidental. Some introduced species are damaging to the ecosystem they are introduced into (<i>eg</i> weeds), others negatively affect agriculture and other human uses of natural resources, or impact on the health of animals and humans.
Occupational Health and Safety	Refers to the range of endeavours aimed at protecting workers from injury or illness associated with exposure to hazards encountered in the workplace or while working.
Pollution	Refers to both hazardous and non-hazardous pollutants in the solid, liquid or gaseous forms, and is intended to include other forms such as nuisance odours, noise, vibration, radiation, electromagnetic energy and the creation of potential visual impacts including light.
Primary forest	Forest which has never been subject to human disturbance, or has been so little affected by hunting, gathering and tree-cutting that its natural structure, functions and dynamics have not undergone any changes that exceed the elastic capacity of the ecosystem.
Protected areas	An area of land and/or sea especially dedicated to the protection of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means.
Ramsar site	Wetlands designated by the contracting parties for inclusion in the List of Wetlands of International Importance because they meet the Criteria established under the Ramsar Convention.
Resettlement and Compensation Policy Framework	Establishes the principles and procedure that will be followed in planning resettlement and awarding compensation to people who are physically or economically displaced by a project, including the process by which people can raise a grievance if they consider that have been adversely affected or unfairly treated.
Secondary habitats	Habitats that have been disturbed and / or is being restored, for example degraded forest recovering from selective logging or areas reclaimed after being cleared by slash-and-burn agriculture.
Simfer S. A.	A Guinean registered company and currently jointly owned by the Rio Tinto Group (95%), and the International Finance Corporation (IFC – 5%). The Government of Guinea has an option to acquire up to a 35% equity interest in Simfer S.A.
Social and Environmental Impact Assessment (SEIA)	The process of predicting and evaluating the social and environmental impacts and risks of a proposed project and identifying mitigation measures that will enable the project to meet the requirements of stakeholders, applicable laws and regulations, and any additional requirements for social or environmental performance identified by the Project, and so that impacts are as low as technically and financially feasible.
Social and Environmental Management Plan (SEMP)	A plan setting out all the proposed mitigation measures that the proponent of a project will take to prevent, reduce, remedy and compensate for adverse effects, and to maximise the benefits of the project. Also the plan for monitoring and auditing that will be undertaken to confirm compliance with the SEMP.
Social and Environmental Management System (SEMS)	Part of the client's overall management system for the project, the Social and Environmental Management System includes the organizational structure, responsibilities, policies, procedures and practices, and resources and is essential for successfully implementing the project-specific management plan developed through the social and environmental assessment of the project. A good management system

Term	Definition
	enables continuous improvement of the project's social and environmental performance, and can lead to improved economic, financial, social and environmental project outcomes (also referred to in Rio Tinto as the Health, Safety, Environmental and Communities Management System – HSEC-MS)
Stakeholder Engagement	Part of the Social and Environmental Assessment, stakeholder engagement is an ongoing process involving disclosure of information, consultation with affected communities, and the establishment of a grievance mechanism.
Weed	A plant whose presence is considered unwanted. Weeds may be unwanted for a number of reasons; they might be unsightly, or crowd out or restrict light to more desirable plants or use limited nutrients from the soil. They can harbour and spread plant pathogens that infect and degrade the quality of crop or horticultural plants. Some weeds are a nuisance because they have thorns or prickles, some have chemicals that cause skin irritation or are hazardous if eaten, or have parts that come off and attach to fur or clothes.
Working conditions	Conditions in the workplace and treatment of workers. Conditions in the workplace include the physical environmental, health and safety precautions and access to sanitary facilities. Treatment of workers includes disciplinary practices, reasons and process for termination of workers and respect for the workers personal dignity.

Simfer SA

Simandou Project

Temporary Construction Workforce Accommodation and
Logistical Supply Centres

Class Social and Environmental Impact Assessment

Non-Technical Summary

1 Introduction

This document is the non-technical summary of the Social and Environmental Impact Assessment (SEIA) prepared for development of a number of workforce accommodation camps (camps) and logistical supply centres (LSCs) to support construction of the Simandou Project. The Simandou Project is a world-scale iron ore mining project in The République de Guinée (Guinea), West Africa, being planned by Simfer S.A. (Simfer), a member of the Rio Tinto Group. Simfer holds a mining concession for the southern part of the Simandou range in south-eastern Guinea, in partnership with the International Finance Corporation and the Government of Guinea.

The Simandou Project also includes a trans-Guinean railway and a deepwater port for export of iron ore from the country. Significant construction activities for the Simandou Project are scheduled to commence in 2012 and a programme of advance works, including the planned camps and LSCs, is needed to prepare for the start of construction. This is the non-technical summary for the SEIA of these facilities. Further SEIAs are being prepared for other elements of advance works and the overall project SEIA will be completed in 2012.

At this stage camp and LSC site locations are still being planned. This SEIA does not therefore address the details of specific locations. Instead a “class” approach to the assessment of impacts has been adopted. In this approach, the proposed developments are considered as a “class” of projects for which a sectoral assessment has been undertaken taking into account the range of designs and locations which are expected to be developed. As the nature of the facilities are well understood, the potential social and environmental impacts can be confidently predicted. Generic measures designed to mitigate likely significant impacts at most sites can be reliably identified, ensuring that significant impacts are unlikely to occur. These measures are all set out in the Social and Environmental Management Plan for camps and LSCs which is presented in the SEIA Report and they will be applied at all sites. During planning for individual locations, detailed local conditions will be further investigated and if additional mitigation measures are needed to address local issues these will be identified and included in Site-specific Action Plans. Details of these will be presented in supplementary “Site Files”, as the plans for each location are confirmed.

The purpose of the Class SEIA Report is therefore to provide available information on the proposals for camps and LSCs, and to explain how they have been planned and will be designed to minimise the potential for adverse environmental and social effects and maximise the benefits of the works. This non-technical summary highlights the main features of the proposed developments, the main potential adverse impacts, and the mitigating measures designed to avoid, reduce, remedy or compensate for these. Positive opportunities are also identified.

2 The Project and its Baseline Environment

2.1 The Project

Approximately 30 Camps and LSCs are currently planned to support construction at the Simandou mine, along the railway and at the port location. Workforce camps will be developed using pre-fabricated accommodation units and will initially house 50 workers before being developed and expanded to accommodate between 200 and 5,000 persons, over an area of between 15 and 50 hectares. Catering, welfare and medical facilities will be provided for Project personnel on site. LSCs will include accommodation but will also provide other facilities to support construction of the Simandou Project including storage of materials and equipment, fuel supply, concrete batching and offices.

The workforce accommodated in camps is expected to come largely from outside Guinea and the camps will therefore be operated as secure sites with controlled access. Local people will be recruited wherever possible.

All sites will be equipped with the necessary utilities and infrastructure to support their operations including power generation, water supply, sewage treatment and waste management. Land will be acquired and cleared outside the boundary fence of each site as a buffer zone to provide clear lines of sight for security and provide protection from potential bushfires.

2.2 Site Selection

The planning of sites for these facilities is currently underway taking into account the needs of the Project and constraints and opportunities offered across the Project area. Social and environmental constraints such as villages, areas designated for the protection of biodiversity, water abstraction points, sites of importance for cultural heritage, *etc*, are important criteria used as part of strategic site selection and detailed planning of individual facilities. Where possible, sites will be located so as to avoid sensitive areas. Where this is not possible, environmental and social specialists will work with the engineering team and select locations to minimise overall impacts and maximise benefits for local communities and the environment.

Once locations are selected, the specific configuration of individual facilities will be developed in consultation with the local administration and the local community, and taking into account topography, land use and any site specific environmental and social features. The plans for individual sites will be set out in the Site Files and these will be developed in consultation with local stakeholders.

2.3 Access Roads and Other Associated Development

A key factor to be considered when determining site location is access. Camps and LSCs will be located near to existing roads wherever possible whilst also minimising distance to the Project construction areas. Where necessary, existing roads will be upgraded to allow passage of Project traffic including heavy goods vehicles. Some sections of new road are likely to be required to connect facilities to the existing road network.

The following other ancillary developments will be required at some locations:

- borrow pits to provide material for levelling the site and roadworks;
- surface or groundwater abstraction points for water supply; and
- small landfills for non-hazardous waste disposal.

All plans for site access and other facilities will be set out in the Site File for each location and where Government approvals are needed for any aspect of the development these will be obtained prior to start of work.

2.4 Development Phases

The construction of each facility is estimated to take approximately three months with the larger camps being developed in phases to respond to increased demand for accommodation as main project construction progresses. The facilities will then be operated for between three and five years to support construction of the Project. The majority of Camps and LSCs, together with their associated infrastructure, will be decommissioned and rehabilitated in accordance with a site-specific closure plan, unless alternative plans are developed in consultation and agreement with local communities and regulatory authorities.

3 Summary of Impacts and Mitigation Measures

3.1 Introduction

Impacts from camps and LSCs have been considered in relation to the following:

- the Physical Environment;
- the Biological Environment; and
- the Social Environment.

The following sections highlight the key potential impacts and the measures that will be taken to mitigate these at all camp and LSC development sites. The need for additional site-specific mitigation will be reviewed during the development of Site Files.

3.2 Impacts on the Physical Environment

3.2.1 Water and Soils

Site clearance and preparation will require the removal of existing vegetation and levelling of the ground. Topsoil stripping and stockpiling measures will be defined and planned prior to start of ground disturbance and implemented in an appropriate manner to minimise loss of valuable topsoil and maximise opportunities for site rehabilitation at a later date.

Ground disturbance and use of construction equipment could release sediment and other contaminants into water and soils. Where possible, construction activities will be organised to avoid work near watercourses. Activities that require the use of hazardous substances will be carried out in designated areas where any spills or discharges can be contained and managed in an appropriate manner. The use and storage of hazardous substances will be strictly controlled in line with international good practice. Ground disturbance will be avoided during periods of heavy rainfall and cleared areas will be re-vegetated as soon as possible following the completion of works. Site drainage, package treatment plants, sedimentation sumps and other on-site measures will be used where necessary to ensure compliance with strict water quality standards. These standards have been defined in consideration of international guidance to ensure appropriate protection of soil, receiving waters and downstream users.

Development of sites could potentially lead to disruption of natural drainage patterns, increasing the risk of flooding and adversely impacting local water supplies. Areas of potential flooding will be identified and avoided as part of the site selection process. The detailed design of camp locations will be developed in consideration of hydrological studies of the local area to ensure that existing sources of water supply will be maintained throughout construction, operation and rehabilitation.

The measures described will ensure that site selection, run-off and discharges are managed in an appropriate manner and significant impacts on water and soils are not likely to occur.

3.2.2 Air Quality

Dust generated during construction and operation could potentially cause adverse impacts on air quality affecting the health and welfare of people, crops and sensitive natural fauna and flora. The risk of adverse impacts will be minimised through careful site selection away from settlements and sites of importance for biodiversity where possible. Good construction practices will be implemented to control any dust and other emissions from activities and ensure compliance with air quality standards defined in consideration of international guidance. Significant impacts on air quality are unlikely to occur.

3.2.3 Noise

Noise and vibration from Project equipment and activities during construction and operation could potentially adversely affect the workforce, communities and sensitive fauna. Where possible, sites will be selected to avoid sensitive areas such as communities and areas of high biodiversity. Work areas will be clearly defined and demarcated to ensure that noisy activities are segregated from sensitive receptors where possible. Where this is not possible, measures will be implemented to manage site activities and avoid adverse noise impacts. For example, where necessary to avoid impacts, the Project will buy appropriate (quiet) equipment, provide screening within sites, consult local communities to determine appropriate working hours and train workers to operate machines and vehicles quietly.

3.2.4 Use of Resources and Waste

Inefficient use of resources such as water, construction materials and energy could potentially deplete supplies for local communities and other users and may also lead to unnecessary generation of waste and other emissions. A number of measures have been defined to mitigate potential impacts in this regard. Rainwater and recycled wastewater will be used where possible to reduce the demand for raw water. Provisions for supply and treatment of water will be incorporated into the design of the camps and LSCs to

ensure that Project requirements can be met without compromising existing local needs. Use of water will be tracked to monitor opportunities for improvement.

The detailed design of facilities will be developed in consideration of microclimatic factors (eg prevailing winds, solar aspect, elevation, shade) to avail of any opportunities for energy efficiency. Good site practices will be implemented to maximise energy efficiency and will include procurement of appropriate equipment, management of equipment use and monitoring of energy use to identify opportunities for improvement.

A Waste Management Plan (WMP) will be established defining how waste will be reduced, re-used, collected, managed, recycled and disposed of in an appropriate manner and in accordance with good international practice. Opportunities for waste reduction, re-use or recycling will be identified, developed and implemented where possible and appropriate. Where waste cannot be avoided, appropriate facilities will be provided to allow for collection, segregation of any hazardous materials, storage and disposal in appropriately designed facilities. Audits will be undertaken at planned intervals to assess compliance and ascertain the effectiveness of the WMP.

3.3 Impacts on the Biological Environment

3.3.1 Loss of Habitats

Development of camps, LSCs and associated infrastructure may cause loss or fragmentation of habitats of importance for wildlife and nature conservation. To facilitate strategic planning, sites that are protected or otherwise designated for their importance for biodiversity, including critical habitats, internationally designated sites, nationally protected areas, Classified Forests, and other areas of importance for species, habitats, ecosystem services or processes, have been mapped by competent environmental specialists. Where possible, a buffer of approximately 500 m will be maintained between these areas and camps, and if camps are required within these areas, then areas of modified habitats will be chosen and not areas of natural or critical habitat. Further, more detailed habitat characterisation, mapping and screening of important and sensitive habitats and species will be carried out during planning of specific camps and LSC locations with the aim of minimising the footprint of facilities in sensitive habitats so as to keep the loss of habitats of conservation value as low as possible. The detailed design and siting of facilities will be developed in consultation with the local administration and the local communities.

3.3.2 Impacts on Important Plants and Animals

Clearance of vegetation may lead to loss or displacement of important plant or animal species. The habitat mapping process described previously will include consideration of the potential for habitats to support priority plant and animal species with the aim avoiding and minimising loss of sensitive areas. Where important or sensitive species are located near sites they will be demarcated and clearly signposted and access to these areas will be prohibited to protect them from disturbance. Where practical, vegetation along rivers, drainage lines, gullies and gorges, will be protected with a buffer zone. Sensitive areas will be protected as far as possible, and any essential work in watercourses will be carefully managed to avoid adverse impacts on water flow, quality and aquatic fauna and flora.

Where the locations of camps and access roads lead to severance of routes used by priority species, passages will be developed where possible and these will be designed to suit the species in question and the environment and habitats being crossed. The design of bridges and culverts will include measures to allow movement of animals including fish, where possible.

Movement of vehicles, equipment and materials between different into development sites could introduce invasive, non-native and pest species and affect local fauna and flora, ecosystems and crops. High risk areas will be identified and effective hygiene procedures will be implemented for all personnel and equipment coming onto the site. Local species will be used during all rehabilitation activities. Ongoing maintenance and monitoring of work areas will include regular inspections for invasive, non-native species including weeds.

All personnel will be made aware of the importance of habitats, fauna and flora and of the measures needed to protect them.

Work activities in remote areas may lead to increased or reduced occurrence of bushfires and resultant habitat destruction. Risks of bushfire will be minimised by strict controls on burning of waste or vegetation only in designated and approved facilities. Emergency firefighting arrangements will be put in place to respond to fires including bushfires.

Non-routine events such as road accidents, chance-encounters with animals, and bushmeat hunting by Project personnel could potentially adversely affect fauna. Speed limits will be established where necessary to alert drivers to risks of fauna crossing roads and all drivers will be trained in safe driving practice. Non-essential travel at night and driving off road will be prohibited. Movements by Project personnel outside the site will be restricted to minimise disturbance offsite and avoid risks to species from hunting and gathering and purchase or sale of bushmeat will be strictly forbidden.

3.4 Impacts on the Social Environment

3.4.1 Physical and Economic Displacement of People Owning and Using Land and Other Resources

Development of Camps, LSCs and associated infrastructure could potentially cause physical or economic displacement of land of beneficial use to local communities. Careful siting of Camps, LSCs and associated infrastructure will prevent loss of homes and other land of importance to communities wherever possible and the detailed design of each facility will include consideration of local environmental or social constraints and any opportunities to minimise the footprint of facilities. Where impacts cannot be avoided, affected people will be compensated or resettled in accordance with international good practice as set out in the Project Resettlement and Compensation Policy Framework for Early Works presented in this SEIA Report.

3.4.2 Impacts on Local Communities

Location of camps near to existing communities presents both risks and opportunities to local people. Intrusion in local communities can lead to breakdown in existing community structures and livelihoods, pressure from in-migration, and erosion of cultural practices and traditions, but against this, employment for local people and opportunities for local businesses to supply goods and services can offer advantages for economic development. Local communities will be consulted during planning of camps and LSCs and prior to commencing activities, to ensure their views are taken into account and they understand the scale and nature of the proposed development and its location. As a general principle, larger camps will be located close to larger communities to maximise the potential for local employment and procurement, but camps will be kept away from smaller, more remote communities to minimise disruption of existing communal structures, livelihoods and ways of life. Risks of uncontrolled in-migration having an adverse impact on local communities and economies will be carefully considered in camp siting and design.

Movement of non-local workers will be strictly controlled to prevent inappropriate interaction with local people and a strict Code of Conduct governing activities and behaviour will apply to all Project personnel. All personnel will receive training in these requirements. Local goods and services will be used where possible, but onsite utilities, catering and recreational facilities will be provided so that camps and LSCs do not place unsustainable demands on limited local resources, facilities or amenities. If any significant interaction with communities is required, the work team will be accompanied by a member of Simfer's Communities Department.

A Grievance Procedure will operate for receipt, handling and resolution of any grievances from local people. This will be free, accessible to all, transparent, culturally appropriate and without retribution. The Simfer Communities Department will co-ordinate appropriate investigation and resolution of all grievances within a reasonable timeframe in accordance with the Simandou Project's established and approved processes.

3.4.3 Community Health, Safety and Security

Development of Camps and LSCs could have adverse impacts on the health and welfare of the local community as a result of discharges, emissions and wastes, introduction of disease into the area from non-local workers, increased risk of malaria from creation of breeding grounds for mosquitoes, and accidents.

Risks from pollution will be carefully controlled through the measures outlined in *Section 3.2*. A health management system will be implemented to ensure that all individuals are fit for work and illnesses are not introduced by Project personnel coming into contact with local people. All Camps and LSCs will be operated as closed camps as described previously, to manage and control any unauthorised interaction of non-local workers with communities. All Project personnel will be provided with appropriate induction training communicating the closed camp policy, health hazards, including HIV/AIDS and malaria along with the prevention and mitigation measures required. Partnerships will be actively sought with specialist external organisations to help deliver HIV education, awareness raising and treatment to employees, their dependents and where indicated by the Project multi-year community plan, to the broader community.

Specific attention will be given to prevention of malaria risk by avoiding creation of standing water on or around Project sites. Ongoing maintenance of work areas will include regular inspections for pest species. Risk of water-borne diseases will be minimised using appropriate treatment methods for water.

Emergency plans will be prepared for all sites taking into account potential impacts on local communities and measures needed to ensure the safety and security of individuals in this regard. Local authorities and affected communities will be provided with appropriate information communicating the nature and extent of any potential risk and impacts resulting from Project activities and procedures to be followed in the case of an unplanned accident or emergency.

Maintenance of security can be an issue at new developments because of the behaviour of inadequately trained security personnel. To avoid this all security personnel on the Simandou Project will be screened prior to employment by means of detailed interviews and enquiries into previous employment to avoid those who have previously been involved in abuse or violation of human rights. All security personnel will receive training on work procedures and on Project expectations for security behaviours and practices.

3.4.4 Cultural Heritage

Sites will be selected to avoid culturally sensitive locations such as sacred sites, places of worship and features linked to local traditions and practices. If any cultural artefacts are discovered during construction, work will stop and appropriate investigations will be undertaken, and any necessary measures taken to rescue, restore or mitigate any losses.

3.4.5 Local Employment and Procurement

Opportunities for local employment and sustainable use of local goods and services will be identified wherever possible and measures will be devised to maximise the potential for local hiring and procurement. Key community decision-makers will be consulted as part of identifying and developing these opportunities. Unskilled labour will be preferentially hired from the local communities but all enquiries for employment will be referred to Project Employment Offices in nearby towns and there will be no direct hiring of workers at the site. All speculative applications will be referred to the nearest employment office.

Monitoring will be carried out to track price inflation and identify areas where local availability of resources has been adversely affected by Project procurement. The Project will also work with suitable partners to support local capacity building.

3.4.6 Employment and Human Rights

Employment procedures and conditions will conform to international conventions with respect to protection of human rights. Use of child and forced labour and discrimination during recruitment and employment (including discrimination on grounds of gender, ethnicity, religion or age) will be strictly forbidden. Everyone

will be allowed free choice to accept or reject opportunities of employment. Labour and working conditions will be clearly communicated to potential workers as part of the recruitment process. Workers will have the right to form and to join trade unions, create their own worker committees and appoint worker representatives in accordance with the rights set out in the Guinea Labour Code. Salaries will be just and favourable ensuring workers and their families have an existence worthy of human dignity. HIV/AIDS screening will not be a requirement for recruitment or a condition of employment.

Requirements relating to Human Rights will be clearly communicated to all relevant personnel as part of training, and incorporated into labour contracts. Appropriate levels of auditing and verification will be carried out to monitor compliance with these requirements.

3.4.7 Employee Health, Safety and Welfare

Strict standards will be applied for protecting the health, safety and welfare of all Project personnel. Health and safety incidents will be reported, investigated and addressed in an appropriate and culturally sensitive manner.

Prayer rooms and other related facilities will be made available to meet the religious needs and customs of the workforce. Appropriate facilities and rest and recreational time will be provided to allow workers to manage fatigue and engage in recreational activities.

A fair, transparent, culturally appropriate and accessible Grievance Procedure will be available to all workers.

4 Overview and Next Steps

The process for strategic planning and detailed design of Camps and LSCs has been designed to avoid impacts as far as possible, and to minimise any impacts which cannot be avoided by adoption of the mitigation measures outlined here and set out in full in the Social and Environmental Management Plan. Specific impacts that may occur at particular locations, will be identified and assessed during the development of Site Files, and measures that are needed to mitigate these impacts will be defined in Site Action Plans. Simfer is committed to complying with all these requirements and this will be checked by regular monitoring, inspections and audits in accordance with Monitoring Plans developed for each site.

Site Files will be developed in consultation with local stakeholders and will be submitted to national and local government and local stakeholders prior to start of construction. These Site Files will present:

- details of the proposals for each site;
- plans for site closure and after-use;
- the justification for site selection and detailed layout;
- baseline conditions and any particular sensitivities on or around the site;
- an assessment of site-specific impacts; and
- details of specific social and environmental mitigation measures that will be implemented at the site in addition to the overarching mitigation proposals set out in this SEIA.

This SEIA is now being submitted to the Government of Guinea for consideration and approval. It is also being made available for review and comment by interested external stakeholders through dissemination to national, regional and local governmental authorities and non-governmental organisations, and publication on the web (at www.riotintosimandou.com/index_seia.asp). Copies of the full report can be obtained from the website or by request to Simfer at any of the contact points given below. Interested parties are invited to submit comments on the SEIA through the same contact points:

- on the Project website http://www.riotintosimandou.com/index_seia.asp;
- by email to Simfer at simandou.eise@riotinto.com;
- by visiting or writing to :

- SIMFER SA, Immeuble Kankan, Cité chemin de fer, BP 848, Conakry, République de Guinée ;
- Rio Tinto, 17 Place de Reflets, La Défense, Courbevoie, 92097 Paris ; and
- Rio Tinto, 2 Eastbourne Terrace, Paddington, London.

All submissions will be taken into account in finalising the proposals and the SEMP.

Simfer SA

Simandou Project

Temporary Construction Workforce Accommodation and Logistical Supply Centres

Class Social and Environmental Impact Assessment

Main Report

1 Introduction to the Project and the SEIA Report

1.1 Purpose of the SEIA Report

This document is the report of a Social and Environmental Impact Assessment (SEIA) prepared for part of a programme of advance works needed for the Simandou Mining Project. It covers the development of camps and supply bases needed for construction of the main project and is one of a series of advance works SEIA reports being submitted for the Simandou Project.

The Simandou Project is a world-scale mining project comprising:

- An open pit iron ore mine in the Simandou Range in south-eastern Guinea, approximately 600 km from the Guinean coast and 400 km from the Liberian coast, with an estimated resource capacity of 95 million tonnes per annum (mtpa).
- A Trans-Guinean railway of about 670 km to transport the ore from the mining concession to the Guinean coast.
- A new deepwater port located south of Conakry in the Forécariah prefecture.
- Various associated developments providing utilities and infrastructure to the project including construction materials, power, water, access and accommodation.

The Simandou Project is being developed by the Guinean-registered company Simfer S.A. (Simfer). Simfer is a member of the Rio Tinto Group, and holds a mining concession for iron ore over the southern part of the Simandou mountain range. The current shareholders of Simfer are Rio Tinto (95%) and the International Finance Corporation (IFC) – 5%). The mine will be operated by Simfer and the construction of the rail and port infrastructure will be carried out by a Special Purpose Vehicle (SPV) intended to be held 51% by the Government of Guinea and 49% by the shareholders of Simfer and its affiliates. The mine, rail and port developments, and their associated infrastructure are hereafter referred to as the Simandou Project. An SEIA for the full Simandou Project is in preparation and will be submitted to Government in 2012.

In preparation for the start of construction of the main project planned in 2012, Simfer wishes to develop a number of Camps, Logistical Supply Centres (LSCs) and associated infrastructure. As these works must be in place for the start of construction, an early application is being made for permission to develop these advance works. This document has been drafted to support that application. It reports the findings of a Social and Environmental Impact Assessment, developed in accordance with the requirements of the Guinean Environment Code and EIA Decree (see *Section 1.2* below).

The Camps and LSCs will be designed to house a temporary construction workforce of approximately 12,600 persons over a period of up to five years. The facilities will be located across the country including at the along the railway and near the port site. Further details are provided in *Chapter 2*.

The purpose of the SEIA report is to provide information on the proposed developments and to explain how they have been planned and designed to minimise the potential for adverse environmental and social effects and to maximise the benefits of the works.

The SEIA studies have been undertaken by an international team coordinated by Environmental Resources Management (ERM) and including a number of international and Guinean specialists. The key members of the SEIA team are introduced in *Annex A*.

1.2 SEIA and other Regulatory Requirements

1.2.1 Introduction

This SEIA has been prepared in accordance with the Guinean Environment Code ⁽¹⁾, Presidential Decree 199/PRG/SGG/89 on Environmental Impact Studies (the EIA Decree) ⁽²⁾, and Order 990/NRNE/SGG/90 on the content and methodology for impact studies ⁽³⁾. The assessment is also designed to comply with the requirements of the International Finance Corporation (IFC) ⁽⁴⁾ and Rio Tinto Group policies with respect to impact assessment.

1.2.2 Guinean EIA Legislation

The Environmental Code sets out the fundamental legal principles to be complied with when developing projects in order to ensure the protection of environmental resources and the human environment. Article 82 of title V of the Code specifies that where developments, works, or facilities may - given their size, the type of activities conducted there, or their impact on the natural environment - harm the environment, the petitioner or project owner shall establish and file with the ministry in charge of the environment an impact assessment that evaluates the direct or indirect impact of the project on the ecological balance in Guinea, the surroundings and quality of life for the local population, and more generally the protection of the environment

The EIA Decree defines the types of projects that require an Environmental Impact Study. There is no specific reference to Camps or LSCs. However, the developments that are proposed here are considered to fall under the definition of "Urbanisation", as set out in Class 9, and an Environmental Impact Study has therefore been undertaken.

In addition to the requirements relating to Impact Assessment, Simfer must also comply with all Guinean legislation relating to protection and management of the environment and social, socioeconomic and labour law, with international conventions which Guinea has ratified, and with IFC standards and guidance regarding environmental and social performance. *Annex B* provides a summary of relevant policy and legislation in Guinea and the regulatory and administrative structure, and identifies corporate and international standards applying to the Project.

1.3 Approach to the Assessment

The project plans envisage the development of Camps and LSCs across the Simandou Project area over a period of time. The first are likely to be developed early in 2012. Other sites will follow thereafter as construction progresses along the route of the rail corridor. As a result, the full details of all site locations have yet to be developed and for this reason a programmatic approach has been adopted for the assessment.

In this approach, the Camps and LSCs are considered as a "class" of development for which a generic assessment has been undertaken taking into account the range of designs and locations which are expected to be developed. At this stage the assessment is not site-specific and more detailed site-specific information will be developed in "Site Files" for each location as the plans for each site are finalised.

This Class SEIA is being submitted to Government for approval in the same way as a conventional SEIA in order to establish approval-in-principle for the class of project. The supplementary Site Files will be submitted for information, as individual sites are defined. These will:

(1) Code for the Protection and Development of the Environment, Ordinances 045/PRG/87 and 022/PRG/89

(2) Presidential Decree 199/PRG/SGG/89 codifying Environmental impact Studies

(3) Arrêté 990/NRNE/SGG/90 Establishing the Content and Methodology for Environmental Impact Studies.

(4) IFC requirements are set out in the IFC Policy on Environmental and Social Sustainability and its supporting Performance Standards and EHS Guidelines – see <http://www.ifc.org/policyreview>

- identify the specific site and describe the proposed development at that site including the design of the facility, and plans for its construction, operation and, where necessary, closure;
- describe local environmental and social conditions identifying any features of importance;
- assess site-specific impacts insofar as these may be additional to or different from those assessed in the Class SEIA; and
- propose any supplementary and site-specific mitigation insofar as this may be additional to or different from that set out in the Class SEIA to address specific sensitivities (eg proximity to settlements, watercourses, areas of importance for biodiversity).

In preparing each Site File, Simfer will undertake any necessary surveys and studies and will consult with local stakeholders including affected communities to ensure their views are taken into account. A template for these Site Files is provided in *Annex C*.

The key steps in the Class SEIA approach have been designed to align with conventional SEIA and are outlined in *Table 1.1*.

Table 1.1 Summary of the Class SEIA Process

Stage	Summary of Approach
Scoping and Stakeholder Engagement	The assessment has been scoped to ensure it is focused on the significant environmental and social impacts which may arise from Camps, LSCs and associated infrastructure. This involved a systematic consideration of the potential for interaction of Project activities with features in the environment and communities to identify where significant impacts could potentially occur. The results of scoping were documented in the draft Terms of Reference, agreed with Government, and formed the basis for planning the SEIA. The Terms of Reference are introduced in <i>Chapter 3</i> and relevant information is provided in <i>Annex D</i> . Scoping also took into account the results of consultations on the draft Terms of Reference, which were published in September 2011, and discussed at a series of stakeholder engagement events during September and October. Further information regarding these stakeholder engagement events is provided in <i>Chapter 3</i> .
Baseline development	For the key issues identified in scoping, available information on the current environmental and social conditions was gathered with particular emphasis on sensitive aspects potentially affected by the Project. Reconnaissance visits were undertaken to potential sites in August 2011 and more detailed baseline studies and surveys will be conducted for individual sites as these are selected. The results will be reported in Site Files. The "Project area", as referred to in this SEIA Report, comprises the area within which the mine, rail and port for the Simandou Project will be developed. Camps, LSCs and associated infrastructure will typically be located within or close to this area. Baseline conditions within the Project area are therefore considered indicative of the actual conditions that will be encountered when developing Camps, LSCs and associated infrastructure and provide sufficient basis for assessing likely impacts and identifying suitable mitigation measures associated with this class of development.
Alternatives	As part of the Class SEIA approach, alternatives are currently being considered at a strategic level. Siting guidance has been developed and is being used by the Engineering Team in drawing up Project proposals. Consideration of alternatives will continue during the preparation of the Site Files for individual sites. The site selection process is described in more detail in <i>Chapter 2</i> .

Stage	Summary of Approach
Impact assessment	This stage was focused on predicting how environmental and social conditions may change from the baseline as a result of constructing, operating and, where appropriate, closing the Camps, LSCs and associated infrastructure. In the Class SEIA approach, this assessment is conducted at a strategic level. The results of this assessment are presented in <i>Chapters 4, 5 and 6</i>. The focus was on identifying significant impacts (<i>ie</i> the most important and the impacts with the potential to cause greatest harm) including both positive and negative effects. As the location of individual sites is confirmed, the potential for site-specific impacts will be considered in consultation with the local administration and community and presented in the Site File for the specific location.
Mitigation measures	Where the potential for significant impacts was identified, measures to avoid, reduce, remedy or compensate for adverse impacts and to maximise benefits have been identified. These include requirements relating to the siting and design of Camps, LSCs and associated infrastructure and the methods to be adopted during construction, operation and closure of sites. The mitigation measures that have been defined are described in <i>Chapters 4, 5 and 6</i>. As the location of individual sites is confirmed, the need for any additional site-specific mitigation will be considered in consultation with the local administration and community and presented in the Site File for the specific location.
Social and Environmental Management Plan	All mitigation measures are presented in <i>Chapters 4, 5 and 6</i>. Simfer is committed to implementing these measures through its existing Health, Safety, Environment and Communities (HSEC) Management System and a detailed Social and Environmental Management Plan (SEMP) for Camps and LSCs is presented in <i>Annex J</i>. This identifies all the measures to be implemented during design, construction, operation and closure of Camps and LSCs identified in <i>Chapters 4 to 6</i>. This will be further developed to identify the responsibilities, and monitoring and auditing to be carried out to ensure the commitments are met. The SEMP will be accompanied by a Framework for Land Acquisition, Compensation and Resettlement detailing how acquisition of land for the facilities will be managed in accordance with international good practice. The Management System and SEMP are discussed in <i>Chapter 7</i>. Details relating to additional site-specific mitigation will be provided in individual Site Action Plans as these are prepared.
Reporting, Disclosure and Approval	The final stage in the SEIA process is the publication and dissemination of this draft SEIA Report. The report is being submitted to Government for consideration and will be disclosed for comment by interested stakeholders through a further programme of consultations as described in <i>Chapter 3</i>. All comments will be considered in finalising the proposals, the SEIA and the Social and Environmental Management Plan (SEMP) for Camps and LSCs. Simfer will also plan a programme of continuing engagement with stakeholders during development of the individual sites including operation of a grievance procedure to ensure effective management of any grievances.

1.4 Structure of the Report

The remainder of this report is organised as follows.

- *Chapter 2 Project Description:* provides a description of the proposed Camp, LSC and associated infrastructure developments including indicative design information, a description of the site selection process, and a description of activities to be undertaken during construction, operation and closure. This section also explains how alternatives are being considered as Camp and LSC locations are developed and refined.

- *Chapter 3 Scoping and Stakeholder Engagement*: presents a summary of the scoping process that was carried out to develop the Terms of Reference and the stakeholder engagement activities undertaken to date. This chapter also described the plans with respect to ongoing stakeholder engagement in the future.
- *Chapters 4 to 6* present the potential impacts of Camps, LSCs and associated infrastructure on the Physical Environment, Biological Environment, People and Communities. The mitigation measures that will be employed to minimise the risk of potential adverse impacts are also presented. Each chapter provides:
 - an introduction to the topic and to the sources and types of impact addressed in the chapter (*ie* the scope);
 - an outline of the types of baseline conditions likely to be encountered; and
 - a description of the impacts and the mitigation measures that will be adopted to avoid, reduce, remedy or compensate for adverse impacts and to provide benefits.
- *Chapter 7* presents the HSEC Management System for the Project and the SEMP.

Table 1.2 identifies where the information required by Order 990 on the Content and Methodology for Impact Studies can be found in the report.

Table 1.2 Meeting the Requirements of Order 990 on Content of Environmental Impact Studies

Information required by Order 990	Location in Report
1. Description of the Project including its objectives, location, cost, date of investment and schedule for implementation	See <i>Chapter 2</i>
2. Analysis of the baseline state of the environment, in particular elements susceptible to being affected by the development (sites, natural riches, landscape, socio-economic way of life and culture of the people)	For physical environment including geology, pedology, hydrogeology, hydrology/oceanography, noise and air quality – see <i>Chapter 4, Section 4.2</i> For natural environment, fauna and flora – see <i>Chapter 5, Section 5.2</i> For human environment including socio-economic conditions and cultural heritage – see <i>Chapter 6, Section 6.2</i>
3. Analysis of the effects of the Project on the environment	For impacts on the physical environment – see <i>Chapter 4, Section 4.3</i> For impacts on the natural environment see <i>Chapter 5, Section 5.3</i> For impacts on the human environment, see <i>Chapter 6, Section 6.4, Section 6.3</i>
4. The reasons for choice of the site	See <i>Chapter 2, Section 2.2</i>
5. Measures envisaged to prevent, reduce and if possible compensate for damaging effects and an indication of their cost and effect	See <i>Annex J</i> All costs of mitigation are included in the planned budget for the Project. The effect of mitigation measures is described.

1.5 Next Steps

In accordance with good impact assessment practice and the requirements of the EIA Decree, this SEIA Report will be disclosed interested parties to help them understand the risks, impacts and opportunities associated with the Project, and provide them with an opportunity to comment, and for their comments to be

considered by the Government and by Simfer in finalising the proposals and implementing the Project. This will be done:

- by publication of the SEIA report on the Project website
http://www.riotintosimandou.com/index_seia.asp;
- through consultation with government agencies, and national and international non-governmental organisations; and
- through consultations with local communities during the planning of individual sites and preparation of Site Files

Copies of the report are available on the website, can be obtained on request by applying to Simfer at simandou.eise@riotinto.com, and can be viewed at Rio Tinto and Simfer offices at:

- SIMFER SA, Immeuble Kankan, Cité chemin de fer, BP 848, Conakry, République de Guinée ;
- Rio Tinto, 17 Place de Reflets, La Défense, Courbevoie, 92097 Paris ; and
- Rio Tinto, 2 Eastbourne Terrace, Paddington, London.

A feedback process has been established for stakeholders to provide comments via the web, email, by post or in person, and all submissions will be taken into account in finalising the proposals and the SEMP.

2 Project Description

2.1 Introduction

As described in *Chapter 1*, the Simandou Project comprises a mine, a rail, a port and associated infrastructure, with main construction activities scheduled to commence in 2012. A programme of advance works comprising Camps, Logistical Supply Centres (LSCs) and associated infrastructure is required to facilitate these construction activities. These advance works are referred to as “the Project” and are described further in this chapter.

Camps and LSCs are designed to house construction workers and will include additional facilities required to support construction activities and co-ordinate logistics. Associated infrastructure will include access roads, borrow pits, water infrastructure and waste management facilities. The details of individual sites will be described as part of developing the Site File for each location. Indicative information is provided in this chapter.

2.2 Indicative Design of Camps and LSCs

Approximately 30 Camps and LSCs are currently planned. All facilities will open initially as a 50-person starter-camp occupying an area of approximately 3.5 ha. They will then be developed and expanded to accommodate between 200 and 5,000 persons, with an area of between 15 and 50 ha. A typical layout for a 50-person facility and a 2,600-person facility are shown in *Annex G*. These rectangular camp layouts are indicative only and the precise dimensions and shape of each facility will be designed to fit the specific site. A narrow strip of land will be acquired and cleared outside the boundary fence as a buffer zone to provide clear lines of sight for security and provide protection from potential bushfires.

As shown in the layout plans, camp facilities will typically include prefabricated office accommodation blocks together with catering, welfare and recreational facilities. Accommodation blocks will sit on plinths rather than on a solid foundation. Utilities and services will include generator sets for power supply, communication towers, bulk fuel storage areas, water purification and storage areas, laundry facilities, sewage treatment facilities, waste management areas, vehicle parking, maintenance bays and stores. On-site emergency services will include medical facilities and a small fire station. Some sites will include concrete batching plants, storage areas for cement and aggregate, and laboratory facilities. A number of sites may have a helipad. All sites will be securely fenced with inner and outer security fencing. Site drainage will be provided, linked to perimeter drainage channels and sized to divert storm water from the surrounding area.

The total number of Camps and LSCs, as described in this section, may vary depending on the extent to which mobile field camps can be developed as an alternative option. Indicative information for mobile field camps is provided in *Section 2.4.1*.

2.3 Site Selection Process for Camps and LSCs

2.3.1 Overview

To facilitate effective spatial planning of the Project and minimise the potential for adverse environmental and social impacts, a process has been developed to guide site selection and planning for Camps and LSCs. This process involves two phases: strategic planning for site selection in line with agreed principles, and detailed planning of the layout of each individual site following site reconnaissance. Routine checks and audits will be carried to verify the effectiveness of this process and the decisions taken in this regard.

2.3.2 Strategic Planning

The following principles are being adopted in the selection of locations for Camps and LSCs:

- sites should be located along, or near to, existing roads where possible to minimise the need for new infrastructure and resulting environmental and social impacts;

- where new or improved roads are needed the potential benefits for communities should be considered in planning;
- sites should be located as close as possible to construction work areas to minimise transport distance for workers and materials, reducing greenhouse gas emissions, dust generation and water consumption;
- sites should be located at least 5 km away from small settlements to minimise risk of influx and adverse impacts on local communities. If camps are required within these areas, then areas of modified habitats will be chosen and not areas of natural or critical habitat;
- larger sites (ie 800+ people) should be located near larger settlements to facilitate local employment and local opportunities for provision of goods and services to the Project;
- sites should be selected to avoid and to maintain a buffer of 500 m around areas of critical and priority habitat and sites protected or otherwise designated for their importance for biodiversity, including internationally designated sites (eg Ramsar sites), nationally protected areas, Classified Forests, and to avoid significant adverse impacts on other areas of importance for species, habitats, ecosystem services or processes, as identified by social and environmental specialists;
- a 50 m buffer should be maintained around any significant waterbody or watercourse to minimise disruption of water features and natural drainage:
- sites should be selected to avoid displacement of any homes and to minimise displacement of resources of importance to communities and livelihoods including:
 - high quality agricultural land including *bas fonds* and rice fields;
 - community forests;
 - sites of importance for cultural heritage including sites important for historical or archaeological reasons or for their current significance in local culture and traditions; and
 - other community resources.
- preference should be given to sites located on land currently owned or leased by the Company.

Areas and features presenting constraints as noted above are being defined and mapped by competent environmental and social specialists and taken into account as part of the site selection process. Current information is presented in *Annex I*.

As part of the planning for Camps and LSCs, and in association with wider planning for the Simandou Project, studies are also being undertaken to understand the potential for cumulative adverse impacts on water resources in the catchments affected by the Project. These studies are identifying the current and future water requirements of upstream and downstream users, and the flow regime and quality required to maintain resources for potable and irrigation uses and for ecosystem integrity. The findings will be used to ensure that appropriate and viable water sources are identified for construction and operation of all facilities and significant adverse impacts on communities and the environment are avoided.

2.3.3 Site-Specific Planning

As part of developing the Site File for each location, site-specific potential social and environmental impacts are being considered, evaluated and documented. Prior site reconnaissance is identifying on-site conditions including slope, topography, geology and soils, vegetation, existing areas of ground clearance, potential access points, and sensitive features to be avoided. Where natural habitats are used, layouts will be designed to use areas of degraded habitat as far as possible. During this reconnaissance, environmental and community specialists will:

- consult local stakeholders to identify any community and environmental interests including important resources or sensitive areas to be avoided and to plan mitigation of site-specific impacts;

- develop well-defined boundaries defining the area of required ground disturbance and ensure that this area is as small as possible;
- negotiate agreements for use of land in accordance with the land acquisition, compensation and resettlement framework that has been defined for this Project presented in *Annex F*; and
- consult stakeholders on options for decommissioning/closing and long term use of the site.

The information that is collected as part of this process will be used to develop the detailed design of each site. This information will be documented as part of the Site File and communicated to and agreed with relevant parties within the local administration and community leaders.

2.4 Associated Infrastructure

2.4.1 Mobile Field Camps

Mobile Field Camps (MFCs) may be set up to provide temporary accommodation and storage for materials and equipment. The camps will move with the work front and all facilities are likely to be truck-mounted. MFCs will typically comprise truck-mounted accommodation units, catering facilities, medical facilities, ablutions, water treatment facilities and mobile fuel storage tanks. All vehicles will be provided with appropriate containment where necessary to facilitate collection and temporary storage of discharges (eg sewage) and transportation to an appropriate disposal site

Field camps will be located in areas suitable for temporary use, avoiding the need for clearance of vegetation and ground levelling as much as possible. If ground clearance is required, the planning, preparation and decommissioning of the area will follow the same approach as described in *Section 2.5*.

2.4.2 Access Roads

Camps and LSCs will be located near to existing roads as far as possible and existing roads will be upgraded where necessary. Some sections of new road are likely to be required to connect facilities to the existing road network.

Roads will typically be sealed (or re-sealed) if they are major roads, they are currently already sealed or they are likely to be used by the Project for long periods. Sealed roads will typically comprise compacted sub-bases of crushed aggregate overlain with a seal of bitumen or asphalt.

Roads will typically be unsealed and gravelled if they are minor roads, they are currently unsealed or they are likely to be only used by the Company for short periods of time. Gravel roads will typically incorporate a layer of gravel, underlain by a sub-grade treatment layer.

All roads will incorporate effective drainage and erosion protection, including grading from the centre line to manage surface runoff. Roads will be designed to ensure no increase in risk of local flooding. Strict safety standards will apply and may require creation of level hard shoulders, modification of camber, provision of berms and barriers, and cutting back trees and overgrown vegetation.

In line with the site selection criteria for Camps and LSCs, where new roads are required to access Camps and LSCs, they will be routed to avoid existing settlements, minimise displacement of land used by communities for agriculture and forestry and avoid other sensitive receptors (sites of importance for biodiversity and cultural heritage, rivers, etc) as far as possible.

Where existing routes are upgraded to provide access, works will be undertaken within the existing road corridor where possible. If significant disruption to existing settlements and land uses such as agriculture would occur, bypasses will be provided to minimise adverse impacts.

2.4.3 Supply of Materials

Sand, gravel and other fill material will be required for development Camps and LSCs and their access roads. Where possible, material will be acquired from existing sources and by reuse of waste material (eg spoil from construction areas), however, some local borrow pits are likely to be required.

In this specific context, a “borrow pit” is defined as an area:

- close to the construction work area;
- used temporarily for short term extraction of soft materials (sands, gravels and earth) solely for the purpose of the Project;
- where the pit can be excavated using mobile excavators, and simple extraction methods *ie* scraping of the ground surface (no blasting); and
- where the depth of extraction does not exceed 6m or penetrate the water table whichever is the shallower.

Where borrow pits are required, sites will be identified and developed in consultation with competent environmental and social specialists and the local administration, and will be reported in Site Files. New borrow pits will be located in accordance with the following principles.

- Small borrow pits (<0.5 ha) will be located at least 100 m from the nearest existing residence or community facilities, and from any site identified as of importance for biodiversity or cultural heritage. Larger sites will maintain separation of at least 250 m for sites of more than 0.5 ha, and 500 m for sites of more than 1ha.
- Borrow pits will be located at least 50 metres from the nearest waterbody or watercourse. Sediment traps will be installed to prevent entry of sediments into water and excavations will be designed to minimise disruption of natural drainage.
- Borrow pit locations will be identified in consideration of the local hydrogeological regime and the potential for groundwater changes between wet and dry seasons.
- Loss of productive land (agricultural land including fallow agricultural land that will be tilled/planted in the future) will be avoided wherever possible.
- Where land is owned or used by third parties, borrow pits will only be developed where compensation and/or resettlement have been arranged in accordance with the Project policy.

On completion of excavations all borrow pits will be closed and rehabilitated taking into account community safety and potential opportunities for future beneficial use of the site.

The locations of borrow pits will be detailed in plans and drawings of the works and measures for management of environmental and social impacts will be detailed in the Site File for individual Camps and LSCs.

2.4.4 Water Infrastructure

Water supplies for will be obtained from either lagoons holding water diverted from rivers, or boreholes (where lagoons are not possible). Lagoons will typically be approximately 30 m by 80 m and 3 m deep. Water will be diverted from the watercourse to the lagoon where it will be treated by settlement (*eg* silt traps) and disinfection (*eg* ultraviolet filters). The turnover period for water in the lagoon will be approximately 48 hours and any unused water will be diverted back to the river. A small parking area will be provided for water trucks to collect water for delivery to the construction work front. Boreholes are likely to be developed

in a number of locations where sustainable surface water resources, providing water of appropriate quality or quantity, are not available. These boreholes will vary in depth, depending on the depth to groundwater, and abstraction rates depending on camp size. All water from boreholes will be disinfected using UV treatment to ensure appropriate quality.

2.4.5 Waste Disposal

Waste disposal will be minimised by adopting good waste management practices as described in *Chapter 4*. Small, modern package incinerators will be used to dispose of waste arising at camps and LSCs. A number of local landfills are likely to be required. These will be small, shallow sites developed as private facilities, managed by Project personnel, and used only for disposal of inert and non-hazardous wastes associated with the Project. Suitable disposal routes for hazardous waste streams are currently being finalised.

2.5 Construction of Camps and LSCs

Construction of the facilities will involve the following activities:

- establishing a temporary mobile field camp and temporary access for the construction team; field camps will typically comprise tented accommodation and catering facilities, prefabricated modular, welfare, waste and wastewater management facilities, temporary mobile fuel storage areas and small mobile asphalt batching plants;
- marking out the Camp or LSC site and erecting fencing;
- clearing existing vegetation and grading, rolling and resurfacing to create a flat area on which to erect the Camp or LSC;
- sourcing of fill material and aggregates from existing sources or new borrow pits;
- installation of site drainage;
- erection of accommodation blocks and other units;
- establishment of hardstanding for laydown areas, roads, paths, parking *etc*;
- creation of lagoon or borehole for water supply; and
- installation of water and sewage treatment, power generation and distribution, lighting, waste management facilities, *etc*.

The construction of each camp is estimated to take about three months with the larger camps being developed in phases to respond to increased demand for accommodation as main project construction develops. During site preparation and construction, a photographic record will be maintained to assist in monitoring the works and planning site rehabilitation after closure.

2.6 Operation of Camps and LSCs

Camps and LSCs will be operated for between three and five years to support construction of the Simandou Project.

The facilities will be designed to be self-sufficient during operation including on-site power and water supply, waste treatment and waste management. Access into and out of sites will be strictly controlled. Non-essential travel will not be permitted. Apart from locally employed personnel, individuals will only leave the camp on specific authorised work-related missions. Vehicles that are not in use at the work fronts will be parked on-site. Fuel storage, re-fuelling and vehicle maintenance will be carried out in designated locations within the camp facility, in areas where adequate containment for spills of fuel or oil is provided. Fuel and

aggregate may be stored at Camps or LSCs while awaiting transfer to the work front. On-site services including medical facilities, spill response equipment and firewater trucks will provide support to the workfronts in the case of medical, fire or environmental emergency.

2.7 Site Closure

Following completion of construction of the Simandou Project, some accommodation for operational workers will be required at the mine and port and along the railway, but the demand will be significantly less than that required during construction, requiring a small number of sites. As a result, the majority of Camps and LSCs, together with their associated infrastructure, will be decommissioned and rehabilitated in accordance with a site-specific closure plan, unless alternative plans are developed in consultation and agreement with local communities and regulatory authorities.

Rehabilitation will involve removal of all imported materials, equipment and waste material for disposal in an appropriate manner. Engineered drainage controls which are obviously visible and which are no longer required, will be removed. Soil will be tilled and sites re-graded with topsoiling and re-planting/seeding with local native species. Measures will be taken to ensure that ongoing drainage of the area occurs in a manner that minimises the risk of future erosion and/or slope instability and areas are profiled to blend in with the natural surrounds. Access roads will also be tilled and spread with topsoil to facilitate rehabilitation.

Following completion of all rehabilitation works the area will be checked to verify that rehabilitation has been completed in an appropriate manner

2.8 Contractor Management

Simfer will ensure that the environmental and social standards and commitments described in this document and in the SEMP, are implemented by all parties involved in the work, including contractors, subcontractors and suppliers of goods and services.

3 Scoping and Stakeholder Engagement

3.1 Introduction

As set out in *Section 1.3*, an initial scoping exercise was carried out to identify the potential significant impacts associated with development of the Project and plan the Social and Environmental Impact Assessment (SEIA). The results of this were reported as part of the Simandou Project SEIA Terms of Reference submitted to Government in August 2011 ⁽¹⁾. The section of the Terms of Reference referring to the Camps, LSCs and associated infrastructure is presented in *Annex C*. This identifies the main topics that form the basis for the impacts addressed in the later chapters of this SEIA Report.

To assist the Government in reviewing the Terms of Reference, a formal presentation was made to the Guinean Bureau for Evaluation of Environmental Studies (BGEED) and representatives from the BGEED were accompanied on a field visit to show them the types of locations planned for the Project and to discuss the scope of the SEIA.

Following this, the views of other stakeholders regarding the proposed Project and the scope of the SEIA were sought through a programme of consultations undertaken for the wider Simandou Project. The aim was to ensure that the views and concerns of stakeholders were considered as part of the impact assessment process, that the SEIA process focused on likely impacts of most importance to stakeholders, and that mitigation plans took into account the views and expectations of stakeholders. In this context, a stakeholder is defined as a person who has an interest in the Project, either as an individual or as a representative of a group.

3.2 Stakeholder Consultations

Stakeholder consultation involved dissemination of information about the Project to government authorities and a series of stakeholder events in September and October. A national conference was held in Conakry on September 19th and was attended by an invited audience from national, regional, prefectural and local government, non-governmental organisations, academic and research institutions, community representatives and the media. Following the national conference, a series of stakeholder events were held in the ten prefectures affected by the Simandou Project.

At least two weeks prior to each event, local leaders including Prefects and Governors were formally invited to attend and were asked to communicate the events to relevant stakeholders, including Sub-Prefects and traditional leaders, within their respective communities. The prefectural events were also open to members of the public, and were publicised by local leaders and through announcements on local rural radio stations. The locations and dates for the events are identified in *Table 3.1*, with an estimate of the number of attendees at each event and the number of comment forms received. Summary attendance lists are provided in *Annex D*. As shown in the annex, the meetings were typically attended by representatives from national, regional, prefectural levels and local government, community leaders, non-governmental organisations, members of the public and representatives from the local media.

Table 3.1 Stakeholder Consultation Events

Location	Prefecture	Date	Approx no. of participants	No. of comment forms
Conakry	Conakry	19 September 2011	170	95
Forécariah Centre	Forécariah	22 September 2011	170	171
Kindia Centre	Kindia	4 October 2011	120	79
Tokonou	Kankan	4 October 2011	240	49
Albadaria	Kissidougou	5 October 2011	500	47

(1) The full Terms of Reference covered the main Simandou Project but specific sections were included relating to the planned early works including the programme of Camps and LSCs.

Location	Prefecture	Date	Approx no. of participants	No. of comment forms
Mamou Centre	Mamou	6 October 2011	160	119
Douako	Kouroussa	6 October 2011	350	132
Faranah Centre	Faranah	11 October 2011	160	149
Kérouané Centre	Kérouané	11 October 2011	200	34
Macenta Centre	Macenta	13 October 2011	200	67
Beyla Centre	Beyla	18 October 2011	280	69
TOTAL			2,550	1,011

At each event, participants were provided with brochures describing the proposed developments and information regarding where the Terms of Reference could be obtained (on the web or in hard copy). Participants were also provided with a feedback form to facilitate submission of their comments. The brochures, Terms of Reference and feedback forms were also available on the Simandou SEIA website and copies were provided to national ministries and agencies, non-governmental organisations, governorate and prefectural authorities. Feedback forms could be handed in on the day, submitted on-line or returned by email or by hand to Simfer and to Simandou Project offices and infoshops in Beyla and Kérouané. Feedback on the advance works Terms of Reference was requested within 30 days.

As shown in *Table 3.1*, a total of approximately 2,500 individuals attended the consultation events and more than 1,000 feedback forms have been received thus far. A wide variety of issues were raised during the events as summarised in *Annex D*. It should be noted that the consultations covered the main Simandou Project, as well as the Camps, LSCs and associated infrastructure, and the comment period remains open for the Simandou Project. The majority of comments received relevant to Camps and LSCs related to the following key issues:

- the site selection process and proposed locations;
- the resettlement and compensation process;
- employment opportunities, particularly for the young; and
- potential impacts on local communities due to dust and other Project-related emissions.

3.3 Future Stakeholder Engagement

A continuing programme of stakeholder engagement is planned during the next stages of the Project. This SEIA Report will be disseminated to national, regional and local government authorities and national and international non-governmental organisations, and their comments will be considered in finalising the class assessment and Social and Environmental Management Plan. The disclosure period will run for approximately 30 days following submission of the draft SEIA Report to the Government of Guinea. During this disclosure period the draft report will be:

- available on the Rio Tinto website at http://www.riotintosimandou.com/index_seia.asp;
- available on request by applying to Simfer at simandou.eise@riotinto.com; and
- available for review at Rio Tinto and Simfer offices:
 - Simfer SA, Immeuble Kankan, Cité Chemin de Fer, BP 848, Conakry, République de Guinée
 - Rio Tinto Simfer SA Info Centres at Beyla and Kérouané;
 - Rio Tinto, 17 Place de Reflets, La Défense, Courbevoie, 92097 Paris ; and
 - Rio Tinto, 2 Eastbourne Terrace, Paddington, London.

The feedback process that has been established for the Terms of Reference will continue during the disclosure period. Stakeholders can provide comments via the website, by email to the address shown above and by post or in person at any of the Rio Tinto offices listed previously.

Any comments received during this disclosure period will be reviewed and considered by the SEIA team in finalising the SEMP and developing detailed site proposals. In cases where a response is necessary, one will be provided within 30 days of receipt of the comment.

More detailed consultation with local stakeholders (affected people and nearby communities) will take place during the detailed planning for each Camp and LSC and the development of the Site Files. The results of this will be reported in the Site Files.

Once the final planning for individual sites is complete the process of obtaining access to land will commence with planning for compensation and/or resettlement for any affected people, assets and resources. Local land owners and users will be consulted as part of this process to determine appropriate arrangements for acquisition or temporary leasing of the land and to agree compensation for any displacement of existing land uses (refer to *Annex F* for further information in this regard).

All comments received from stakeholders will be recorded in the Stakeholder Register for the Simandou Project. This register will be made available when the SEIA for the Simandou Project is published in 2012.

3.4 Grievance Procedure

Throughout this process a Grievance Procedure will operate to ensure that any grievances are received, considered and resolved in accordance with international good practice. In this context, a grievance is defined as a complaint or concern raised by an individual or organisation who judges that they have been adversely affected by the Project during any stage of its development. Grievances may take the form of specific complaints for actual damages or injury, general concerns about Project activities, incidents and impacts, or perceived impacts.

The Grievance Procedure will follow the approach currently operating in the area of the mine. This is a simple and transparent process designed to be culturally appropriate and readily accessible to all parties within affected communities, and to operate at no cost and without retribution. The procedure will not impede access by stakeholders to other judicial or administrative remedies. Individuals and groups can lodge grievances by various means including, in person, by mail or email to any of Simfer's satellite offices in Beyla, Kérouané, Moribadou, Macenta, Mamou and Forécariah, to members of Simfer's Communities Team who regularly visit local affected communities, and via the website (http://www.riotintosimandou.com/index_seia.asp) and the Simandou email address (simandou.eise@riotinto.com). A written record of all grievances is maintained and effective resolution of grievances in a timely manner is facilitated by appropriate means including dialogue and site visits.

The Grievance Procedure has already been communicated to communities in the area of the mine. It was also communicated during all of the stakeholder engagement events completed to date and will continue to be communicated as part of ongoing stakeholder engagement.

4 Impacts on the Physical Environment

4.1 Introduction and Scope

The primary purpose of Social and Environmental Impact Assessment (SEIA) is to identify the impacts that the Project will have on environment and communities, and identify mitigation measures to avoid, reduce, remedy or compensate for adverse impacts and maximise any benefits. This chapter focuses on the impacts the Project may have on the Physical Environment. The scope of this chapter includes all primary impacts associated with the physical footprint of the Project and the Project's emissions to soils, air, water and land. The key topics of relevance in this regard are:

- geology and hydrogeology;
- soils;
- hydrology;
- land use;
- air quality and climate;
- noise and vibration; and
- resource use and waste.

Land-take and emissions associated with the Project also have the potential to have secondary impacts on sites and features of importance for biodiversity, and on people and communities. These impacts are described in *Chapter 5* and *Chapter 6*.

4.2 Baseline Conditions

4.2.1 Geology and Hydrogeology

The Project area (*i.e.* the area of the Simandou Project within which Camps and LSCs will be developed) falls broadly within four Geological Units, all characterised by similar hydrogeological conditions. The distribution of these four units is described in *Table 4.1* and shown in *Annex I*.

Table 4.1 Geological Units Relevant to the Project area

Geological Unit	Locations
Precambrian Basement Unit: characterised by crystalline granitic and gneissic rocks. Occasional intrusive masses of dolerite, gabbro and/or diorite, characteristic of intrusions and volcanic rocks.	• Occurs in more than two-thirds of the Project area • Concentrated to the east in Upper Guinea • Also occurs in Forécariah
Ancient Palaeozoic and Upper Proterozoic Volcanic-Sedimentary Unit: primarily encompasses volcano-sedimentary rock formations.	• Occurs as small areas scattered throughout areas of Upper Guinea • Also occurs within in a limited area of Lower Guinea
Recent Sedimentary Unit (Includes marine and deltaic sand and clay deposits)	• Occurs along the coast
Mesozoic Unit of Intrusions and Volcanic Rocks	• Typically occurs in Guinea as small massifs: once in Upper Guinea, and once in Middle Guinea

The geology of the Project area is dominated by formations with hard, crystalline, igneous and sedimentary rocks, very low interstitial porosity and a variable degree of fracturing. This type of geology is characterised by low primary porosity and hydraulic properties are often determined by secondary porosity (*ie* joints and fractures). This typically gives rise to discontinuous aquifers. Three types of aquifers typically occur and the productivity of these varies depending on fracture connectivity and material:

- Type 1: Frequently comprises three main soil horizons (a lateritic crust, an argillic alteration layer, and a layer of granular sand). The thickness of the saturated layer varies but is typically 10 to 20 m in granite and gneiss.
- Type 2: Fissure aquifers: Found under laterites. This type comprises a zone of highly fissured, decomposed rock on top of a firm rock stratum. Joints/fractures may be open or may be filled with the products of decomposition, thus reducing permeability. Thickness of the layer varies but is typically 40 to 50 m in granite and gneiss.
- Type 3: Major fault/fracture zones: These zones may be hundreds of kilometres in length. They are generally very deep and subvertical. They often have horizontal fractures and crush zones where groundwater can flow freely.

Direction of groundwater flow varies from location to location within the Project area. Within the mining concession, conceptual models indicate that the groundwater system is particularly complex. Along the railway, groundwater flow is expected to follow the topography, especially in the upper saturated zones. The depth to groundwater will vary with season, lithology and topography. Significant amounts of water may be stored in the upper decomposed zone. Deeper circulation of water may also occur via underlying fissures and fractures.

Groundwater in Guinea is mainly extracted for domestic uses. According to the Food and Agriculture Organisation (FAO) ⁽¹⁾, most villages obtain their drinking water from wells, with a smaller number using surface water sources. At a national level, water is not generally considered a scarce resource but access to good quality water is an issue. Only 51% of Guinea's population has access to improved drinking-water sources ⁽²⁾. Within urban areas, 78% of the population has access to improved sources but this reduces to approximately 38% in rural areas ⁽³⁾. Wells are often hand-dug or have been developed by Non-Governmental Organisations (NGOs) or international organisations. In some areas, wells can be dry for two to three months during the dry season.

Sampling of groundwater undertaken for the Simandou Project indicates that there are some exceedances of World Health Organisation (WHO) standards for metals in drinking water (magnesium, nickel, barium, lead, selenium and uranium). Where these occur, they are thought to occur due to natural sources *ie* geology. In coastal areas during the wet season, water from shallow wells is generally slightly brackish, whilst water from deeper, drilled wells tends to be fresh.

A preliminary examination of groundwater vulnerability along the rail corridor has been carried out based on consideration of the nature of the surface deposits (lateritic crust), the type of material in the unsaturated zone and the typical characteristics of the aquifer formations. Laterite soils are relatively common in the Project area and are typically considered vulnerable to contamination. However, the rock formations underlying the laterite crust are often not very permeable (with the exception of the fractured areas) and this would limit the potential for migration of potential contaminants to deeper levels. Susceptibility to contamination from human activities is more likely to occur in areas of shallow, porous soil, or where fractured rock outcrops, and in areas where groundwater returns to the surface *eg* at groundwater-fed watercourses and springs. Susceptibility will increase if protective layers of soil are removed during ground-clearing.

(1) FAO 2005 *Système d'information de la FAO sur l'eau et l'agriculture – Guinée*

<http://www.fao.org/nr/water/aquastat/countries/guinea/indexfra.stm>, as referenced in the Social and Environmental Baseline Report for the Rail, SNC Lavalin, 2008

(2) FAO 2005 *Système d'information de la FAO sur l'eau et l'agriculture – Guinée*

<http://www.fao.org/nr/water/aquastat/countries/guinea/indexfra.stm>, as referenced in the Social and Environmental Baseline Report for the Rail, SNC Lavalin, 2008

(3) FAO 2005 *Système d'information de la FAO sur l'eau et l'agriculture – Guinée*

<http://www.fao.org/nr/water/aquastat/countries/guinea/indexfra.stm>, as referenced in the Social and Environmental Baseline Report for the Rail, SNC Lavalin, 2008

4.2.2 Soils

Soils in the east of the Project area are typically loose and dominated by regolith (dust, soil and broken rock). These soils are considered to be of low agricultural value. Many areas are susceptible to erosion, which further limits agricultural potential. Between the prefectures of Mamou and Kindia, lithic, compacted soils occur, and in the prefecture of Kindia, these lithic soils lie on top of predominantly ferruginous crust or hardpan. These lithic soils are considered to be of no value to agriculture.

Along the rail corridor, soil type and quality tends to vary with altitude. In high-altitude areas, soils are typically of poor quality and productivity because of particularly high iron concentrations. These soils typically include a lateritic duricrust, due to the presence of iron oxides and free alumina. They are generally thin, and often occur in areas of low vegetation density. These areas are therefore very susceptible to erosion and removal of overlying vegetation can exacerbate this existing susceptibility. In contrast, soils occurring at lower altitudes are often richer and thicker. Hydromorphic soils regularly occur along watercourses and are considered to be of intermediate value, supporting a variety of food crops, vegetables and fruits. Seasonal flooding can contribute valuable alluvial deposits increasing productivity. However, these soils are also susceptible to erosion and high levels of run-off and agricultural activity can quickly lead to significant soil degradation.

In coastal and inter-tidal areas, soils of high agricultural value are limited in distribution but can occur near the coast and support important salinity-tolerant species including rice. Vegetation, including mangroves, often offers some protection against erosion and if this vegetation is removed, the effect of erosive processes can increase dramatically and reduce soil quality and productivity.

4.2.3 Hydrology

Guinea has a particularly dense hydrographic system, with over 1,600 rivers and streams originating on the two mountain plateaus of Fouta Djallon and the Guinean Ridge. Most of West Africa's major rivers, including the Senegal, Gambia, Koliba, Rio Grande, Fataha, Konkouré, Kaba, Kolenté and Niger (the largest river in West Africa), have their source in these mountains ⁽¹⁾. Guinea is therefore often regarded as West Africa's water reservoir. From the Fouta Djallon, water flows in all directions:

- west to the Komba and Konkouré rivers;
- east to the Senegal River;
- north to the Gambia River basin; and
- south to the Kaba and Kolenté rivers.

A review of data from hydrometric stations around the Project area ⁽²⁾ indicates that flow rates vary significantly from location to location and through the year. The water regime is directly related to rainfall and in many areas precipitation is recognised to generate increases in groundwater levels and base flow rates in watercourses. During the wet season, lowland valley areas can be flooded, while during the dry season, flows may be limited to groundwater discharge. Watercourses therefore occasionally run dry as groundwater levels drop towards the end of the dry season.

The Project area runs through nine major drainage basins and is dominated by the Niger, Kaba and Kolenté catchments. The major rivers, and the basins to which they relate, are identified in *Table 4.2* and shown in the map included in *Annex I*.

(1) FAO 2005, *Système d'information de la FAO sur l'eau et l'agriculture – Guinée*

<http://www.fao.org/nr/water/aquastat/countries/guinea/indexfra.stm>, as referenced in the Social and Environmental Baseline Report for the Rail, SNC Lavalin, 2008

(2) The DNGRE (Direction Nationale de la Gestion des Ressources en Eau, or National Water Resources Management Authority) operate a network of 86 hydrometric stations across 16 drainage basins in Guinea. Seven of these hydrometric stations are located upstream and downstream of the Project area.

Table 4.2 Hydrographic Systems within the Project Area

Drainage Basin		Watercourses within the Project Area
Name	Total Area (km ²)	
St. Paul	20,350	---
Niger	75,989	Milo, Baoula, Balé, Niandan, Mafou, Niger
Kaba	19,180	Mongo, Kaba, Pinsell, Doundouko, Mamou
Kolenté	7,844	Kora, Kolenté, Killissi
Mélororée	730	Mélororée, Morékaniya, Yembalé, Kakountokhouré, Galiguiridé
Tannah	324	Tannah
Salatouk	51	Kabendo
Diguipali	177	---
Kabendo	61	Salatouk

Surface water is predominantly used for agriculture, primarily for crop irrigation, with a small proportion used for cattle farming, and only at low levels for domestic and industrial use. Where irrigation occurs, the most common crop is rice, followed by potatoes.

Surface water sampling programmes undertaken by Project personnel at the mine site and along the rail corridor in 2006 to 2009, indicate that water quality is generally good. Samples were typically warm and cloudy, with close-to-neutral pH and low alkalinity. The dissolved solids concentration was low for all samples, which was consistent with the low electrical conductivity values measured. The analyses indicate that most nutrients, the vast majority of trace metals, and major anion/cautions, only occurred in low concentrations or below detection limits. Overall, the sampled water generally met WHO drinking water quality guidelines for all parameters analysed, although a few sampling stations had fluoride, cadmium, lead, manganese and faecal coliform bacteria concentrations above recommended levels. Elevated metal levels are likely to arise from natural sources eg geology. Localised faecal coliform contamination is likely to be caused by people and livestock.

As discussed in *Section 4.2.2*, areas of hydromorphic soil occur within 500 to 1000 m of major rivers and are indicative of flooding. These soils are often temporarily or permanently saturated, due to seasonal flooding and a fluctuating water table. Upper and Lower Guinea are recognised to be especially prone to flooding because of the geomorphology of the area, the water regime of the rivers and the intensity of the rainfall ⁽¹⁾. Flooding also often commonly occurs in parts of Lower Guinea exposed to tidal regimes in addition to seasonal river flow patterns. Tidal amplitude in coastal areas is considerable, and tides may reach up to 30 km inland.

4.2.4 Land Use

Productive land use within the Project area is predominantly for agriculture. Small communities practise subsistence agriculture using traditional cultivation methods. Where population densities are low, the ongoing sustainability of farming is maintained through the implementation of a fallow cycle. In more densely populated areas, or areas where arable lands are scarce, agriculture is more intensive and fallow periods are often reduced in response to increased demand for agricultural produce.

Between the mine and Kérouané, land cover is dominated by savanna and fallow agricultural land. This is not typically used for long-term crop production but it is used by local communities for a wide range of less

(1) FAO 2004, *Système d'information de la FAO sur l'eau et l'agriculture – Guinée*

<http://www.fao.org/nr/water/aquastat/countries/guinea/indexfra.stm>, as referenced in the Social and Environmental Baseline Report for the Rail, SNC Lavalin, 2008

intensive uses including pasture land, slash and burn agriculture and harvesting of non-timber forest products. The use of savanna changes over time and cover is often highly modified by human interaction. It is frequently burnt, for not only slash and burn agriculture, but also to clear weeds and renew vegetation.

Small areas of more productive agricultural lowlands are found in areas of hydromorphic soil near watercourses. These areas are known as *bas fonds*. Traditional cultivation methods are practised but double cropping with higher yields is often possible because water is available throughout the year. Rice is typically the dominant crop, but areas may be left fallow or used for vegetable cultivation and livestock grazing for periods of one to two years.

Hillside agriculture is also practiced within the Project area and typically occurs at higher elevations, along paths or roads that are easily accessible for communities. Slash and burn techniques are commonly practiced and crop yields are typically lower than in *bas fonds* due to poorer soil conditions. Crop rotations are commonly used to maintain soil productivity. For example, a cleared plot may be planted with rice in the first year, followed by cereals or cassava in the following year, after which the plot is left fallow. Large areas of over 100 ha may be planted, but fallow periods of four to seven years are often required to maintain long-term productivity.

Agricultural plains cover large areas at lower elevations and typically occur along major rivers, outside the *bas fonds*. Soil in these areas is typically good quality but these areas rarely flood and therefore are drier than the *bas fonds*. This limits the type of crops that can be planted, and the frequency of cultivation. Rice is the dominant crop and these areas are usually cultivated each year, although they may occasionally be left fallow for six months to a year.

Settlements within the Project area are dominated by traditional rural villages comprising a number of individual family units surrounded by community forest and agricultural lands. Each unit comprises a group of traditional round huts with thatched roofing. Small areas supporting subsistence farming by households are frequently located within settlement or nearby. Coffee, cacao and palm cultivation often occur within village and community forests. As villages become larger, round, thatched housing is frequently replaced by rectangular houses with tin roofing. Larger villages are typically located along main roads, although some occur close to productive agricultural lands in areas further from main roads. Villages may also support outlying camps, occupied or used on a temporary or seasonal basis. These include:

- agricultural hamlets: temporary housing close to agricultural lands, and typically used during the dry season;
- peul camps: established by herders near grazing lands. These camps were historically temporary, but are increasingly becoming more permanent; and
- hunting camps: temporary housing close to hunting grounds and typically used for short periods by individuals engaged in hunting.

Moving west from Kérouané towards Faranah, land uses remain similar to that described previously but with slightly denser settlements and more plantation and village forest. Village forests are located close to villages, used, and protected by the local community as an important source of natural resources such as fruit, wood, bushmeat and medicine. These forests also act as a protective barrier against bushfires and they can be of cultural importance. Some are managed as agroforestry plantations.

West of Faranah the density of lowland agriculture and settlements reduces slightly as elevation increases and there is more hillside agriculture and dense forest. In addition, a number of distinctive areas of *bowal* are identifiable. These areas are characterised by wooded grassland on hills or between valleys. Land use in these areas is similar to savanna except growth of trees is typically limited by soil type or quality, rather than by human interference.

Beyond the mountains, in the Prefectures of Kindia and Forécariah, wetlands become more prevalent. Inland wetlands are characterised by saturated soils and hydrophilic vegetation with freshwater marsh and swamp land. Estuarine wetlands are commonplace in coastal areas. Rice fields are present in both inland

and coastal wetlands and become the dominant agricultural land use near the coast. Remaining land is predominantly mangrove forest and village lands.

4.2.5 Climate

All areas of Guinea are considered to have a tropical climate, as defined by the Köppen climate classification system. Tropical climates are characterized by constant high temperature with all twelve months of the year having average temperatures of at least 18 °C. In Conakry the year-round average high is 29 °C and in Upper Guinea, approximately 30°C. High humidity is also characteristic of this type of climate with levels in Upper Guinea averaging 80%.

The Project area includes two subclasses of tropical climate.

- Areas near the port and mine have a tropical monsoon climate. This type of climate typically results from the monsoon winds that change direction according to the season. In the case of Guinea, this climate arises because of close proximity to the coast and the influence of the Harmattan ⁽¹⁾, which brings dry, dusty conditions and reduced precipitation during winter months. The wet season is slightly longer than in other areas of Guinea and can last from April to November. Extreme precipitation levels occur. For example, Conakry averages nearly 4,300 mm of precipitation per year.
- Inland areas along the rail corridor have a tropical rainforest climate. In these areas, climate is dominated by the Doldrums Low Pressure System all year round, and climatic variations between the different seasons are less significant. Annual rainfall is typically between 1,500 and 2,000 mm but all twelve months have average precipitation of at least 60 mm. The dry season tends to be more pronounced in the east of Guinea, with higher rainfall in the west. Thunderstorms typically occur at the beginning and end of the wet season, with the most violent storms occurring in June and October. These are often accompanied by torrential rain and lightning, which can start bushfires.

The climate, and in particular, the high rainfall levels, contribute to the creation of Guinea's complex hydrographic system, as described in *Section 4.2.3*.

4.2.6 Air Quality

The Project area is generally rural and is not generally affected by substantial anthropogenic sources of air pollution such as industry and traffic. Air quality is typically good, but seasonal variations do occur with high levels of particulates during the dry season, particularly when the Harmattan blows, and during bush fires.

4.2.7 Noise and Vibration

Noise levels are typically low and characteristic of undeveloped rural areas. Sources are generally limited to local road traffic, human activity and animals. Local road traffic noise can be high due to the high use of motorbikes and trucks that are often poorly maintained and poor road surfaces. Traffic typically commences at daylight, continues intermittently through the day, and reduces significantly, as darkness falls. Noise levels are typically higher during local events such as market-days. Night-time noise from insects and frogs is often significant.

4.3 Prediction, Evaluation and Mitigation of Impacts

4.3.1 Introduction

Table 4.3 presents the assessment of potential impacts on the physical environment, due to Camps, LSCs and associated infrastructure. Impacts are considered under the following headings:

1. Geology and Hydrogeology

(1) The Harmattan is a dry and dusty West African trade wind, which typically blows south from the Sahara into the Gulf of Guinea between November/December and March/April.

2. Soils, Run Off and Flooding
3. Pollution of Soils and Water
4. Air Quality
5. Noise and Vibration
6. Resources and Waste

The mitigation measures needed to avoid, reduce, remedy or compensate adverse impacts are also identified in the table. These measures will be implemented, where relevant, in all areas where Camps, LSCs and associated infrastructure are required. As part of developing the Site File for each specific site, Project personnel will survey the area and consult local authorities and affected communities to identify and agree any supplementary measures required at particular locations. Site-specific mitigation measures and consultation will be reported in the Site Files for each location.

4.3.2 Summary of Key Issues

The key issues identified relating to impacts on the physical environment and mitigation measures for the impacts are summarised below.

Geology, Hydrogeology, Surface Water and Soils

Site clearance and preparation will require the removal of existing vegetation and levelling of the ground. Topsoil stripping and stockpiling measures will be defined and planned prior to start of ground disturbance and implemented in an appropriate manner to minimise loss of valuable topsoil and maximise opportunities for site rehabilitation at a later date.

Ground disturbance and use of construction equipment could release sediment and other contaminants into water and soils. Where possible, construction activities will be organised to avoid work near watercourses. Activities that require the use of hazardous substances will be carried out in designated areas where any spills or discharges can be contained and managed in an appropriate manner. The use and storage of hazardous substances will be strictly controlled in line with international good practice. Ground disturbance will be avoided during periods of heavy rainfall and cleared areas will be re-vegetated as soon as possible following the completion of works. Site drainage, package treatment plants, sedimentation sumps and other on-site measures will be used where necessary to ensure compliance with strict water quality standards. These standards have been defined in consideration of international guidance to ensure appropriate protection of soil, receiving waters and downstream users.

Development of sites could potentially lead to disruption of natural drainage patterns, increasing the risk of flooding and adversely impacting local water supplies. Areas of potential flooding will be identified and avoided where possible as part of the site selection process. The detailed design of camp locations will be developed in consideration of hydrological studies of the local area to ensure that existing sources of water supply will be maintained throughout construction, operation and rehabilitation.

The measures described will ensure that site selection, run-off and discharges are managed in an appropriate manner and significant impacts on water and soils are not likely to occur.

Air Quality

Dust generated during construction and operation could potentially cause adverse impacts on air quality affecting the health and welfare of people, crops and sensitive natural fauna and flora. The risk of adverse impacts will be minimised through careful site selection away from settlements and sites of importance for biodiversity where possible. Good construction practices will be implemented to control any dust and other emissions from activities and ensure compliance with air quality standards defined in consideration of international guidance. Significant impacts on air quality are unlikely to occur.

Noise

Noise and vibration from Project equipment and activities during construction and operation could potentially adversely affect the workforce, communities and sensitive fauna. Where possible, sites will be selected to avoid sensitive areas such as communities and areas of high biodiversity. Work areas will be clearly defined and demarcated to ensure that noisy activities are segregated from sensitive receptors where possible. Where this is not possible, measures will be implemented to manage site activities and avoid adverse noise impacts. For example, where necessary to avoid impacts, the Project will buy appropriate (quiet) equipment, provide screening within sites, consult local communities to determine appropriate working hours and train workers to operate machines and vehicles quietly.

Use of Resources and Waste

Inefficient use of resources such as water, construction materials and energy could potentially deplete supplies for local communities and other users and may also lead to unnecessary generation of waste and other emissions. A number of measures have been defined to mitigate potential impacts in this regard. Rainwater and recycled wastewater will be used where possible to reduce the demand for raw water. Provisions for supply and treatment of water will be incorporated into the design of the camps and LSCs to ensure that Project requirements can be met without compromising existing local needs. Use of water will be tracked to monitor opportunities for improvement.

The detailed design of facilities will be developed in consideration of microclimatic factors (eg prevailing winds, solar aspect, elevation, shade) to avail of any opportunities for energy efficiency. Good site practices will be implemented to maximise energy efficiency and will include procurement of appropriate equipment, management of equipment use and monitoring of energy use to identify opportunities for improvement.

A Waste Management Plan (WMP) will be established defining how waste will be reduced, re-used, collected, managed, recycled and disposed of in an appropriate manner and in accordance with good international practice. Opportunities for waste reduction, re-use or recycling will be identified, developed and implemented where possible and appropriate. Where waste cannot be avoided, appropriate facilities will be provided to allow for collection, segregation of any hazardous materials, storage and disposal in appropriately designed facilities. Audits will be undertaken at planned intervals to assess compliance and ascertain the effectiveness of the WMP.

Table 4.3 Prediction, Evaluation and Mitigation of Impacts on the Physical Environment

Potential Impact	Mitigation	Assessment of Residual Impact
1. Geology and Hydrogeology		
Construction of Camps, LSCs and associated infrastructure could give rise to: Loss of resources of importance for geology and interruption of hydrogeological conditions and groundwater flows.	- Local groundwater conditions will be taken into account in the siting of all facilities. Locations where springs occur or where the water table is close to the surface will be avoided as far as possible. - The area of hardstanding within sites will be kept to the minimum necessary for the works in order to maintain natural recharge of the water table. - Borrow pits will not be excavated below the water table.	Camps, LSCs and associated infrastructure will be designed to avoid intrusion below the water table, maintain groundwater flows and avoid significant impacts on hydrogeological conditions.
Risk of pollution of groundwater from intentional discharges and accidental releases during construction and operation.	See <i>Pollution of Soils and Water</i> for measures to mitigate this risk.	
Reduction in availability of groundwater resources for other users as a result of abstraction for construction and operation of Camps, LSCs and associated infrastructure.	See <i>Resources and Waste</i> for measures to mitigate this risk.	
2. Soils, Run-off and Flooding		
Clearing of vegetation, levelling of sites, and removal and storage of soils during construction could lead to loss of soil and pollution of nearby watercourses by sediment inflows. Natural drainage patterns could also be interrupted causing changes in hydrological conditions in the	- The area to be cleared at each site will be kept to the minimum necessary for the works and will be clearly demarcated to prevent unnecessary disturbance of soils outside the boundary. - Land susceptible to flooding will not be avoided where possible. - Disturbance of soils will be avoided during heavy rainfall. Activities with the potential to cause significant erosion will be carried out during the dry season as far as possible. - Site drainage will be designed to minimise the potential for uncontrolled run-off, taking into account site-specific factors such as available space, gradient, catchment size, expected flows, and upstream and downstream uses of receiving watercourses. Perimeter drainage channels will be installed to divert stormwater from the surrounding area and prevent waterlogging.	The measures to manage erosion, manage site run-off and protect soil identified here will ensure that significant impacts are unlikely to occur.

Potential Impact	Mitigation	Assessment of Residual Impact
surrounding area and increasing risks of flooding Soil quality may be adversely compacted by structures and traffic. Soils cleared from sites and stored for future use may be degraded, eroded or compacted due to inappropriate handling and storage.	10. Impacts of site run-off on surface waters will be controlled by use of measures such as attenuation ponds, rock gabions, sediment traps/sumps, armoured drainage lines, water bars and drainage diversion structures. Where possible, outlets will discharge into vegetated areas and not to exposed soil. Riparian vegetation and vegetation along drainage lines, gullies and gorges, will be protected and retained where practical to provide natural attenuation of flows. . 11. Areas of hardstanding will be minimised and accommodation blocks will be placed on corner blocks rather than solid foundations to protect soils. 12. Cleared areas will be tilled, and re-vegetated as soon as possible after completion of construction to minimise areas of exposed, bare soil. 13. Construction activities, operations and movement of vehicles outside designated areas and transport routes will be prohibited. 14. Topsoil will be removed and stockpiled separately for future use. 15. Long-term soil stockpiles will be located and designed to avoid compaction, and covered or seeded to prevent erosion. 16. Where there is the potential for slope instability measures will be taken to minimise risk of slope collapse and associated impacts on soils. 17. Once construction of the Simandou Project is complete, some facilities will be closed and either handed over to the local administration and community for future use or removed and the site rehabilitated. Site rehabilitation will include appropriate measures to ensure that natural drainage patterns are reinstated as far as possible and no impacts on drainage or flooding persist after the site has been decommissioned.	
3. Pollution of Soils and Water		
Construction activity could lead to release of sediments and other contaminants into surface waters.	18. As far as possible no work will be undertaken within 50 m of any surface waterbody. Where this is not possible, additional measures will be taken to ensure that pollution of water resources does not occur. 19. Refuelling, maintenance and washdown of vehicles and equipment will only occur in designated areas, located at least 50 m from the nearest waterbody, and provided with appropriate secondary containment measures. Only approved chemicals will be used in these areas. 20. See also <i>Soils, Run-Off and Flooding</i> for measures to minimise entry of sediments into surface waters during construction.	Sediments and other contaminants will be managed to minimise the risk of pollutant releases and ensure that significant impacts are unlikely to occur.
Discharges of sanitary effluents (sewage), and other site effluents, during construction	21. Sewage will be collected and treated in package treatment plants to achieve the following discharge standards prior to release into the environment.	Treatment of all discharges to meet internationally accepted standards will prevent

Potential Impact	Mitigation	Assessment of Residual Impact																														
and operation could lead to pollution of nearby watercourses.	<table border="1"> <thead> <tr> <th colspan="3">Sewage Treatment Plant Discharge Criteria for Camps, LSCs and associated infrastructure</th></tr> <tr> <th>Parameter</th><th>Units</th><th>Discharge Limit Value</th></tr> </thead> <tbody> <tr> <td>pH</td><td>pH units</td><td>6 – 9</td></tr> <tr> <td>Chemical Oxygen Demand (COD)</td><td>mg/l</td><td>125</td></tr> <tr> <td>Total Nitrogen</td><td>mg/l</td><td>10</td></tr> <tr> <td>Total Phosphorus</td><td>mg/l</td><td>2</td></tr> <tr> <td>Oil and Grease</td><td>mg/l</td><td>10</td></tr> <tr> <td>Total Suspended Solids</td><td>mg/l</td><td>50</td></tr> <tr> <td>Total Coliform Bacteria</td><td>MPN/100 ml</td><td>400</td></tr> <tr> <td colspan="3">Source: IFC General EHS Guidelines April 2007</td></tr> </tbody> </table> 22. All treatment plants and discharge points will be regularly inspected and maintained. 23. An emergency response plan will be developed for unplanned spills and discharges. 24. All treatment plant and discharge points will be regularly maintained and inspected and monitoring of discharge quality will be undertaken to ensure correct operation.	Sewage Treatment Plant Discharge Criteria for Camps, LSCs and associated infrastructure			Parameter	Units	Discharge Limit Value	pH	pH units	6 – 9	Chemical Oxygen Demand (COD)	mg/l	125	Total Nitrogen	mg/l	10	Total Phosphorus	mg/l	2	Oil and Grease	mg/l	10	Total Suspended Solids	mg/l	50	Total Coliform Bacteria	MPN/100 ml	400	Source: IFC General EHS Guidelines April 2007			significant adverse impacts on receiving waters.
Sewage Treatment Plant Discharge Criteria for Camps, LSCs and associated infrastructure																																
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Intentional or accidental releases of hazardous substances used during construction or operation of the facilities could lead to contamination of soils, surface waters and/or groundwater.	25. All hazardous substances to be used on site during construction or operation will be reviewed, evaluated and approved by competent personnel prior to being introduced or used in any area. As part of the approval process, the relevant Material Safety Data Sheets (MSDSs) will be reviewed to identify any measures required to ensure appropriate management of the specific substance. MSDSs will be available at the point of use and all hazardous materials will be clearly labelled. 26. Refuelling of vehicles and equipment will only occur in designated areas that are provided with appropriate containment measures. 27. Biodegradable lubricants will be used wherever possible. 28. Refuelling, maintenance and washdown of vehicles and equipment will only occur in designated areas, located at least 50 m from the nearest waterbody, and provided with appropriate secondary containment measures. Only approved chemicals will be used in these areas. 29. An effective preventative maintenance programme will be established to ensure that all equipment that uses or contains any hazardous materials (including fuel, oil, etc) is inspected regularly and maintained in good working order. Inspection and maintenance records will be available for review at all reasonable times.	Careful selection of materials, control of material handling and use, adoption of thorough spill prevention and emergency response plans, and training of personnel in their use, will ensure that significant impacts are not likely to occur																														

Potential Impact	Mitigation	Assessment of Residual Impact
	30. Work areas will be laid out to ensure that storage areas for hazardous materials are located in well-ventilated area as far as possible from sensitive receptors including offices, heavily trafficked areas or areas where people eat, smoke or sleep, and away from ignition sources. 31. Hazardous materials will only be stored and handled in designated areas provided with appropriate secondary containment measures. 32. Storage areas for hazardous materials will be designed to include secondary containment structures capable of containing the largest of 110% of the largest tank or 25% of the combined tank volumes. Secondary containment will be made of impervious, chemically resistant material and will be designed to prevent contact between incompatible materials in the event of a release. 33. Where practical all equipment, containers and distribution lines (including pipes, valves and taps), containing hazardous materials, will be located above ground. These will all be provided with appropriate containment to minimise the risk of uncontrolled or undetected releases of hazardous materials. Storage areas will be located at least 50 m from any surface water. 34. Site drainage systems and bunds will be inspected, cleaned as necessary and properly maintained. All waste and effluent from these operations shall be collected for safe disposal. Inspections for leaks on all flanges and valves on over-ground pipes used to transport materials other than water will be carried out at regular intervals. 35. Spill kits will be available in areas where spills could potentially occur and will be appropriate for the volume and types of hazardous material in use.	
4. Air Quality		
Dust from construction activities and borrow pits, and emissions from fuel combustion could cause adverse impacts on air quality affecting the health and welfare of people, crops and sensitive natural fauna and flora.	36. Dust suppression systems (e.g. water carts will be used to dampen down areas when there is risk of high dust emissions affecting sensitive receptors. 37. Long term soil stockpiles and stores of friable material will be covered or vegetated to reduce the potential for dust where possible. 38. Speed controls will be implemented where appropriate to minimise dust creation by vehicles travelling on un-made roads. 39. Vehicles carrying friable materials will be enclosed or sheeted in dry and windy weather. 40. Driver training will include awareness-raising regarding appropriate driving speeds to minimise dust emissions during different weather conditions. 41. Loading, unloading and handling of dusty materials will only be carried out in designated areas. Drop heights will be minimised and where necessary windshields will be fitted (skirts, shrouds or enclosures) to control windblown dust.	The risk of adverse impacts on people and other receptors due to dust and other emissions during construction and operation will be minimised by siting Camps, LSCs and associated infrastructure away from settlements and sites of importance for biodiversity. Adoption of the other measures identified here will minimise the risk of any
Air emissions from sources such	42. For operational phase, the following ambient air quality targets will apply at the nearest	

Potential Impact	Mitigation	Assessment of Residual Impact																										
as generators, concrete batching plants and road traffic during operation could cause adverse impacts on air quality affecting sensitive receptors such as people and sensitive fauna and flora.	sensitive receptor. If ambient pollutant levels exceed these guideline values, the Project will not cause a 25% increase in measured ambient levels. <table border="1"> <thead> <tr> <th>Pollutant</th><th>Averaging Period</th><th>Guideline value in $\mu\text{g}/\text{m}^3$</th></tr> </thead> <tbody> <tr> <td rowspan="2">Particulate Matter (PM_{10})</td><td>1-year</td><td>20</td></tr> <tr> <td>24-hour</td><td>50</td></tr> <tr> <td rowspan="2">Particulate Matter ($\text{PM}_{2.5}$)</td><td>1-year</td><td>10</td></tr> <tr> <td>24-hour ⁽¹⁾</td><td>25</td></tr> <tr> <td rowspan="2">Sulphur Dioxide (SO_2)</td><td>24 hour</td><td>20</td></tr> <tr> <td>10 minute</td><td>500</td></tr> <tr> <td rowspan="2">Nitrogen Dioxide (NO_2)</td><td>1-year</td><td>40</td></tr> <tr> <td>1-hour</td><td>200</td></tr> <tr> <td></td><td></td><td></td></tr> </tbody> </table> (1) PM 24-hour value is the 99th percentile Source: IFC Environmental, Health and Safety Guidelines 2007 43. An effective preventative maintenance programme will be established to ensure that all equipment is maintained in good working order for the duration of its use and does not adversely impact air quality due to inadequate maintenance or damage. 44. Electricity generators will be of modern design meeting up to date specifications for emission standards 45. Concrete batching, and crushing and screening plants (including mobile plants) will be fitted with dust extraction and/or suppression systems. 46. Storage facilities such as bunkers, tanks and silos will be designed, constructed and operated to minimise fugitive emissions of dust, hydrocarbons etc. 47. Use of ozone depleting substances such as chlorofluorocarbons (CFCs), halons, carbon tetrachloride, trichloroethane and halogenated hydrobromofluorocarbons (HBFCs) will not be permitted.	Pollutant	Averaging Period	Guideline value in $\mu\text{g}/\text{m}^3$	Particulate Matter (PM_{10})	1-year	20	24-hour	50	Particulate Matter ($\text{PM}_{2.5}$)	1-year	10	24-hour ⁽¹⁾	25	Sulphur Dioxide (SO_2)	24 hour	20	10 minute	500	Nitrogen Dioxide (NO_2)	1-year	40	1-hour	200				residual impact from emissions.
Pollutant	Averaging Period	Guideline value in $\mu\text{g}/\text{m}^3$																										
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Activities related to construction and operation of Camps, LSCs and associated infrastructure could lead to an increase in the risk of bushfires by introducing new ignition sources associated with equipment and workers.	48. To avoid black smoke from laying of asphalt, bitumen will not be heated with open flame burners or overheated, pots/tanks of bitumen will be covered, and any spills will be contained and immediately cleaned up. 49. Strict controls will be in place to minimise the risk of bushfires being caused accidentally by Project activities including: - a ban on unauthorised open fires; - design of flammable substance stores in accordance with good international standards for	Strict controls will be adopted to control open burning and smoke emissions, and to minimise the risk of fire. Fire fighting resources and trained crews will be in place to respond if fire occurs from																										

Potential Impact	Mitigation	Assessment of Residual Impact											
Open fires on site will also provide a source of smoke and other emissions with the potential to affect air quality on site and in the surrounding area.	fire safety including fitting flame arresting devices to vents, segregation of incompatible substances, engineered earthing and lightning protection; - fitting of earthing and lightning protection to other structures vulnerable to lightning strike; - control of hot work such as welding using a strict permit to work system; and - creation of a 20 m wide firebreak in the buffer zone outside the site boundary. 50. Emergency response plans and fire fighting arrangements will be put in place to respond to fire including natural bushfires. Trained fire crews will be available in each camp and all personnel will be trained in communication of fire-related hazards and first response. Adequate water supplies for use in the case of a fire will be established in critical locations.	either natural or Project-related sources.											
5. Noise and Vibration													
Noise and vibration from Project equipment and activities during construction and operation of the facilities, may cause disturbance of noise sensitive receptors including the workforce, communities and sensitive fauna, especially from noisy activities at night.	51. All facilities will be designed and operated to ensure that noise levels do not exceed the following thresholds at the nearest sensitive receptor during normal construction and operation. Sensitive receptors include accommodation units within the site. If existing noise levels exceed these threshold values, the Project will not cause more than a 3dB increase in measured ambient levels. <table border="1"> <thead> <tr> <th rowspan="2">Project Phase</th><th colspan="2">Ambient Noise Threshold Values</th></tr> <tr> <th>Daytime (07.00 – 22.00)</th><th>Night-time (22.00 – 07.00)</th></tr> </thead> <tbody> <tr> <td>Construction</td><td>75 dB(A) L_{Aeq} (daytime period)</td><td>50 dB(A) L_{Aeq} (night-time period)</td></tr> <tr> <td>Operation</td><td>55 dB(A) L_{Aeq} (1 hr)</td><td>45 dB(A) L_{Aeq} (1 hr)</td></tr> </tbody> </table> Source:: IFC Environmental, Health and Safety Guidelines 2007 52. Advance notice will be given to communities if short-term noisy activities are to take place, which could cause these levels to be exceeded. 53. Measures to minimize noise during construction and from activities taking place in the open air during operations will include: - locating and orientating equipment to maximise the distance, and to direct noise emissions away from sensitive areas; - using buildings, earthworks and material stockpiles as noise barriers where possible; - soft starting of equipment and turning off equipment when not in use. 54. Noise and vibration potential will be considered when purchasing vehicles and equipment in accordance with Rio Tinto's established Buy Quiet policy. Equipment that emits tonal or low frequency noise will be avoided where possible. 55. Noisy equipment located near sensitive receptors will be fitted with appropriate noise and	Project Phase	Ambient Noise Threshold Values		Daytime (07.00 – 22.00)	Night-time (22.00 – 07.00)	Construction	75 dB(A) L _{Aeq} (daytime period)	50 dB(A) L _{Aeq} (night-time period)	Operation	55 dB(A) L _{Aeq} (1 hr)	45 dB(A) L _{Aeq} (1 hr)	Most sources associated with Camps, LSCs and associated infrastructure will be localised and short term but where noisy activities are taking place close to homes or near habitats used by sensitive fauna, significant impacts may occur, especially from exceptional activities and at night. The risk of adverse impacts on people and other receptors during construction and operation will be minimised by siting Camps, LSCs and associated infrastructure away from settlements and sites of importance for fauna that could be disturbed by noise and by adopting good practice measures to control sources of noise and vibration.
Project Phase	Ambient Noise Threshold Values												
	Daytime (07.00 – 22.00)	Night-time (22.00 – 07.00)											
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Operation	55 dB(A) L _{Aeq} (1 hr)	45 dB(A) L _{Aeq} (1 hr)											

Potential Impact	Mitigation	Assessment of Residual Impact
	vibration abatement devices such as silencers, mufflers and noise enclosures. 56. An effective preventative maintenance programme will be established to ensure that all equipment is maintained in good working order for the duration of its use and does not emit excessive noise or vibration due to inadequate maintenance or damage. 57. Working hours and activities will be carefully managed to minimise adverse noise and vibration impacts especially at night. 58. All personnel will be made aware of the importance of minimising noise and the measures that are required to achieve this.	
Road traffic during construction and operation of Camps, LSCs and associated infrastructure has the potential to cause adverse impacts on communities near roads used by Project vehicles during construction or operation.	59. Where new roads are created to access Camps, LSCs and associated infrastructure these will be located away from communities to minimise the risk of significant noise impacts. 60. Where existing roads are used and passage of traffic through communities could cause significant noise impact, strict speed limits will be applied to minimise noise near homes and other sensitive buildings (schools, place of worship, clinics, etc) close to the road. 61. Roads will be designed so that day time noise levels outside the nearest noise sensitive building (homes etc) will not exceed 70 dB(A) measured as $L_{Aeq(daytime)}$, or if existing noise levels exceed this figure, so that noise levels will not increase by more than 3 dB (using the same measure). (Source: IFC EHS Guidelines for Toll Roads, 2007) 62. Where necessary to avoid unacceptable noise levels within communities a bypass will be provided to take Project traffic away from communities. 63. The surface of existing roads used to access camps will be improved to reduce the potential for noise and vibration from passing traffic. 64. Strict controls on routing of Project-traffic will be implemented to ensure traffic moves only on designated routes and at agreed times. 65. All drivers will be trained in good driving practice to minimise noise and vibration from vehicles. 66. All Project vehicles and roads will be maintained to prevent excessive noise and vibration caused by inadequate maintenance or damage.	Careful siting and design of new and improved roads, improvements in existing road conditions, and controls on Project vehicles, will minimise the risk of significant noise impacts from Project traffic.
6. Resources and Waste		
Inefficient use of energy and other resources could lead to unnecessary consumption, generation of waste and other emissions.	67. Energy efficiency, water efficiency, greenhouse gas emissions and waste generation will be considered in the selection and purchasing of all materials and equipment to be used in construction and operation of Camps, LSCs and associated infrastructure. 68. Measures to reduce energy use will be implemented where feasible including avoiding unnecessary operation of equipment, vehicles, lighting etc. 69. Microclimatic factors at each site (eg prevailing winds, solar aspect, elevation, shade) will be taken into account in developing layouts to take advantage of natural factors that will reduce	The environmental impacts from resource use in construction and operation of Camps, LSCs and associated infrastructure will be small, but efficient use of resources and minimising waste will

Potential Impact	Mitigation	Assessment of Residual Impact
	energy use. 70. Trees will be retained within the site boundary where possible, to take advantage of natural shade. 71. Water and energy use will be monitored to identify trends and opportunities for improvement.	nevertheless be considered at all stages of development in accordance with Rio Tinto corporate policy and standards.
Construction and operation of Camps, LSCs and associated infrastructure will require supply of water for activities such as road making, maintenance activities, potable use and processes such as concrete batching. Abstraction of water from wells and rivers has the potential to adversely affect supply for existing communities and ecosystems.	72. The provisions for water supply for construction and operation of individual Camps, LSCs and associated infrastructure will be defined in the Site Files and water will not be abstracted for any location until appropriate mitigation has been defined to ensure that significant impacts on communities are unlikely to occur. No water will be abstracted without the prior approval of the relevant authorities. 73. Water meters will be installed on all abstraction points and water use will be monitored and recorded to maximise efficiency of water use and minimise waste. 74. Preventative maintenance and regular inspection of water tanks and pipes will be undertaken to minimise the risk of leaks and remedial actions will be implemented as soon as possible. 75. Recycling of water will be undertaken where practical and safe.	Water supply for construction and operation of Camps, LSCs and associated infrastructure will be carefully planned and designed so that there is no adverse impact on other users.
Ineffective management of waste and waste management facilities could lead to excessive use of material resources and pollution of soils and water in the vicinity of disposal sites.	76. A Waste Management Plan (WMP) will be established for each Camp and will include: • clear objectives and targets with respect to waste management; • an analysis of types/quantities of waste to be produced by the facility; • an analysis of potential opportunities to reduce, reuse or recycle waste in accordance with the Waste Management Hierarchy (reduction, re-use, recycling, disposal) and a description of how this will be achieved at the site; • a description of roles, responsibilities and resources to ensure that the objectives and targets are achieved; • procedures governing the handling, treatment and disposal of all wastes; and • verification procedures for appropriate assessment of contractors and third-party facilities used for waste transport, management and disposal. 77. All wastes will be collected and managed in facilities providing for segregation of inert, non-hazardous and hazardous waste. 78. Waste collection stations will be positioned in easily accessible locations close to the point where waste is generated and will be clearly marked for segregation of waste. Waste will be removed from work areas at regular intervals and will not be allowed to accumulate on-site in undesignated areas. Inspections will be carried out regularly to identify and rectify inappropriate practices, including littering	All areas and activities will be managed to minimise the waste produced by the Project. Where required landfill sites associated with Camps, LSCs and associated infrastructure will be designed and managed in accordance with international best practice to minimise the risk of adverse effects on the surrounding environment.

Potential Impact	Mitigation	Assessment of Residual Impact
	79. Inert construction and demolition waste will be used in site preparation where possible. 80. Other wastes will be re-used or recycled wherever possible. 81. All residual wastes will be treated and disposed of at facilities providing appropriate means for safe disposal. Where necessary this may be by transport to offsite and Project-specific waste treatment and disposal sites. 82. Landfilling of waste will only be permitted if all other options to reduce, reuse or recycle have been exhausted, and will be used only for disposal of inert and non-hazardous wastes. If landfills are required, they will be small, shallow sites (located above the water table) and will be designed and operated in accordance with best practice requirements including the IFC EHS Guidelines for Waste Management Facilities (2007). 83. Burning of waste will not be permitted except in purpose built incineration facilities. 84. Medical wastes will be incinerated or transported to Conakry for suitable disposal. 85. Procedures for management of hazardous wastes encountered during demolition and site clearance will be clearly defined. 86. Accurate records will be maintained for waste materials entering and leaving worksites, to ensure traceability of waste material from source to final destination. Records will detail the source, type and quantity of waste as well as the date of transport, the carrier being used to transport the waste, and the final destination. 87. Materials will be stored correctly to reduce damage and waste. 88. All personnel will be trained in the appropriate management of waste in accordance with the WMP. 89. Any organisations contracted to transport, manage or dispose of waste, and any facility used for the processing, storage or disposal of waste, will be in the possession of all necessary permits and authorisations. The Company will confirm this prior to using any external facility and will audit their operations to ensure compliance with Project requirements. 90. Waste materials that can be safely reused or recycled may be donated to local communities following an appropriate risk assessment by HSEC personnel. All donations will be managed through Simfer's Communities Department.	

5 Impacts on the Biological Environment

5.1 Introduction and Scope

This chapter focuses on the impacts the Project may have on the Biological Environment. The key topics of relevance in this regard are:

- habitats;
- species (flora and fauna); and
- ecosystem services and processes.

In many cases, significant impacts on habitats, flora and fauna can be eliminated through effective mitigation of impacts on the physical environment, as described in *Chapter 4*. This chapter therefore focuses on aspects and impacts that require mitigation measures additional to those already described in *Chapter 4*. Significant impacts on the biological environment may potentially lead to secondary impacts on communities that depend on biological resources. These types of impacts, and any necessary mitigation, are discussed in *Chapter 6*.

5.2 Baseline Conditions

This section describes the broad habitat types and designations that occur in the areas where Camps, Logistical Supply Centres (LSCs) and associated infrastructure may be developed. Given that biodiversity, interests are site-specific, and the locations of Camps and LSCs are still to be confirmed, this description aims to provide an overview of the types of habitats and designated areas found across the Simandou Project area. This includes an overview of designated sites and protected areas. Designated conservation areas for biodiversity are areas considered worthy of preservation and enhancement because of special conservation interests relating to habitats, species, ecosystem services and processes. A number of national and international designated conservation areas apply in Guinea. The type and extent of protection provided by each designation varies, as described in *Annex H*. Further detail will be provided in Site Files for specific locations including characterisation of habitats within and around the specific site, boundaries of nearby designated and protected areas, and records of important or sensitive species. Site Files will also include a discussion of any ecosystem services provided by habitats, fauna and flora associated with the site. Services in this regard may include provisioning services (e.g. food, fibre or fuel species from hunting gathering or fishing habitats), protective services such as flood storage and cultural services ⁽¹⁾ (e.g. species, landscapes and sites that are culturally valued).

Within the mining concession, east of the Simandou range, lowland areas are dominated by savanna, wooded grassland and woodland. West of the Simandou range areas are dominated by semi-deciduous lowland forest and secondary forest. Cultivated areas, plantation and fallow land occur west of the concession area and these habitats are typically considered to be of low-medium importance due to degradation by human activity. Highland areas within and around the mine are dominated by three main habitats of critical importance with respect to biodiversity, due to their rarity and fragility: submontane grassland (including rock outcrops and seasonal swamps), transitional submontane grassland-forest areas and evergreen submontane forest. Habitats within the mining concession have been identified as supporting several Conservation Priority Species but none are located within or near the expected locations of camps and LSCs near the mine. Further details will be provided in the Simandou Project SEIA.

A number of designated conservation areas are also located in the area of the mine. The mining concession overlaps areas of the Pic de Fon Classified Forest (CF), which covers an area of approximately 250 km². It was created mainly to protect the soil against erosion in areas of rugged topography and to protect water sources and forests ⁽²⁾. Pic de Fon CF comprises approximately 55% natural habitats and 45% modified habitats and is a recognised Key Biodiversity Area (KBA) ⁽³⁾. The Pic de Fon CF would likely qualify as an

(1) Nonmaterial benefits obtained from an ecosystem, such as spiritual enrichment, intellectual development, reflection, religious experience and recreation. It comprises knowledge systems, social relations, aesthetic values and appreciation of nature, as defined by UNEP, 2009.

(2) Decree No. 8113 SE/F.

(3) Rio Tinto and Conservation International (2008) The Conservation International Partnership

Important Bird Area if assessed⁽¹⁾. It is also one of the most northerly areas of the Guinean Forests of West Africa Biodiversity Hotspot⁽²⁾, and harbours important species assemblages.

The Fon Tibé Priority Area for Biodiversity Conservation also occurs near the proposed mine⁽³⁾. This mountainous area is dominated by semi-humid forests. It includes parts of the Pic de Fon CF and the Pic de Tibé CF and is the source of several of the region's major rivers. According to Conservation International, biological priorities include mammals, amphibians and reptiles and the main social and economic threats are agriculture, hunting, logging, shifting cultivation, deforestation, water pollution and mining⁽⁴⁾. The ecosystems of Bia Complex and Bero-Tétini both lie to the east of the concession and are both Priority Areas for Biodiversity Conservation⁽⁵⁾. The CFs of Milo and Mont Bero are located to the south of the mining concession.

More widely, the region of Guinée Forestière is recognised to be one of the major geo-botanical subdivisions of Africa⁽⁶⁾ and the most wooded region of Guinea. Studies have indicated that the CFs of this region constitute just 1.1% of Guinea's land area, but represent 27.6% of the remaining national forest cover.

North and west of the mining concession, along the rail corridor as far as Faranah, the majority of designated areas have been considerably affected by human activities and areas of original forest and habitat have been significantly cleared and degraded. The dominance of savanna habitat is an indicator that plant cover has been under considerable anthropogenic pressure from local communities.

South of Faranah, the rail corridor overlaps part of the Niger-Mafou Ramsar site for approximately 100 km. This site covers a very large flat area (approximately 1 million ha with a mean altitude of 350 m) in the prefectures of Kouroussa and Faranah, between and around the rivers Niger and Mafou. The area is dominated by permanent and seasonal rivers and freshwater marshes, where water is available throughout the year. Areas adjacent to these rivers are often seasonally flooded creating rich alluvium plains that are used for agriculture. Water quality is good, but is under threat due to cotton-growing and the increased use of pesticides. The area has been little altered by human intervention and large areas of primary dry forest (which exist nowhere else in the region) support high levels of biodiversity (as described later in this section).

The Simandou Project also passes through a small section of the Upper Niger National Park (UNNP) buffer zone. The park comprises two parts; the core protected area that is distant from the rail alignment, and a buffer zone. Both are managed by the Government in cooperation with local communities and with the support of local forestry administrations. The core area includes the Kouya CF. In the buffer area local people are encouraged to use the resources of the park in a sustainable way and farming and the collecting of non-timber forest products is permitted. With its diverse mix of habitats, the UNNP is home to many different species. However, there are few endemics⁽⁷⁾. The UNNP is also part of a Biosphere Reserve covering an area of approximately 650,000 ha. The Project area does not overlap with the reserve.

Habitats in the area of Mamou are dominated by savanna (grassland, wooded grassland and forest) interspersed by areas of mountain forest, semi-deciduous and evergreen lowland forest and secondary forest. Areas of cropland and fallow land also occur in localised areas, typically around rivers or near villages. As mentioned previously, savanna and lowland forest habitats and cultivated areas are typically considered to be of low to medium value in terms of biodiversity.

(1) The CF not listed by BirdLife as an IBA but as a result of its great avifaunal diversity, the presence of species of global conservation concern, and its assemblage of restricted-range and biome-restricted bird species, it would qualify as an IBA if officially assessed (McCullough 2004; Ekstrom 2005).

(2) http://www.biodiversityhotspots.org/xp/hotspots/west_africa/Pages/default.aspx accessed 25.10.11

(3) Conservation International 2001, as referenced in the Social and Environmental Baseline Report for the Mine, SNC Lavalin, 2008

(4) Conservation International, 2001a and 2001b, as referenced in the Social and Environmental Baseline Report for the Mine, SNC Lavalin, 2008

(5) Conservation International 2001, as referenced in the Social and Environmental Baseline Report for the Mine, SNC Lavalin, 2008

(6) Institut de Recherche Agronomique de Guinée (IRAG) Notice explicative sur le zonage de la Moyenne Guinée, Haute Guinée et Guinée Maritime. <http://www.cta.int/partners/irag/>, as referenced in the Social and Environmental Baseline Report for the Rail, SNC Lavalin, 2008

(7) Camara *et al.* 2005, as referenced in the Social and Environmental Baseline Report for the Rail, SNC Lavalin, 2008

Between Mamou and Kindia, the areas along the Guinea, Sierra Leone and Liberia borders are sparsely populated. Anthropogenic pressures on these areas have been significantly less than in other areas. The Mamou highlands form part of the Guinean Forests of West Africa Biodiversity Hotspot and the areas close to the country borders are considered critical habitat for a number of conservation priority species including endemic birds, reptiles and chimpanzees ⁽¹⁾.

The rail corridor also passes through the Fouta Djallon Priority Area for Biodiversity Conservation ⁽²⁾. This area is the source of many of West Africa's major rivers and is one of Guinea's main agricultural regions. It is dominated by relatively degraded woodland savanna. At elevations above 800 m, the savanna gradually gives way to dense montane forest. These forest areas typically support rich biodiversity, including noteworthy mature stands of *Parinari exelsa* (Kura) ⁽³⁾. However, anthropogenic pressures in these areas have led to natural habitats being progressively replaced by brush and grassland. Social and economic threats include hunting, bush fires, cultivation, human settlement, overgrazing, soil erosion, unregulated fishing, deforestation, overexploitation, disruption of rivers and streams, habitat degradation and mining ⁽⁴⁾.

The CFs of Soyah (8,000 ha approximately) and Pinselli (12,000 ha approximately) are also located in this area. This is one of Guinea's least densely populated areas and habitat destruction is less extensive here than in other parts of Guinea. These two forests are both priority sites for chimpanzee conservation. A Great Apes Survival Partnership (GRASP) project ⁽⁵⁾ is currently being run by the United Nations Environmental Programme (UNEP) in the area and a fulltime forest management officer is employed to oversee the management of both areas.

The rail corridor then turns southwest, entering the coastal plains. There are no designated areas for biodiversity conservation here. Within the coastal plains, the Simandou Project passes through part of the Kounounkan CF near the town of Moussayah. This CF lies within the Guinean Forests of West Africa Hotspot and is an IBA and KBA. The Saraboli CF (850 m²) is also in the area of Forécariah on the Guinea-Sierra Leone border.

In the area of the port, savanna habitat becomes relatively rare, and terrestrial and coastal habitats are dominated by cultivated and fallow land, and tracts of mangrove. The majority of habitats are modified, and significant degradation has occurred in many areas due to anthropogenic activities. Cultivated areas are also very common. Rice fields are prevalent, and occur along both banks of the Morebaya River. Small areas of secondary lowland forest occur between the Morebaya and Forécariah Rivers and many areas are dominated by oil palm (*Elaeis guineensis*). Guinea still has approximately 2,200 km² of mangroves, which constitutes approximately one quarter of West Africa's total mangrove habitat ⁽⁶⁾. Mangrove forests occur as three types: riverine mangrove is found mostly along channels up to 10 km inland; fringe mangroves cover only small areas close to the coast; and basin mangrove found is found at higher altitudes than riverine mangrove. Mangroves of high conservation value occur in the port area. These areas provide critical habitat for some important species (eg manatees) and mangrove ecosystems provide important services eg nursery areas of commercial fish, coastal protection from storms and erosion. Along the coast, small areas of salt marsh, sandbanks, rocky shores and beaches also occur, and support some important species (eg sea turtle). Significant disturbance has already occurred in this area due to anthropogenic activities.

(1) Tolisano & Gauthier, 2007, as referenced in the Social and Environmental Baseline Report for the Rail, SNC Lavalin, 2008

(2) Conservation International, 2001a and 2001b, as referenced in the Social and Environmental Baseline Report for the Rail, SNC Lavalin, 2008

(3) Institut de Recherche Agronomique de Guinée (IRAG). No date of publication. Notice explicative sur le zonage de la Moyenne Guinée, Haute Guinée et Guinée Maritime. <http://www.cta.int/partners/irag/>, as referenced in the Social and Environmental Baseline Report for the Rail, SNC Lavalin, 2008

(4) Conservation International, 2001a and 2001b, as referenced in the Social and Environmental Baseline Report for the Rail, SNC Lavalin, 2008

(5) Programme run by the United Nations Environment Programme (UNEP) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) with the objective of lifting the threat of imminent extinction faced by great apes including chimpanzees (Pan troglodytes) across their ranges in equatorial Africa and south-east Asia.

(6) USAID (2007) Guinea Biodiversity and Tropical Forests 118/119 Assessment. Prepared by the Biodiversity Analysis and Technical Support Team.

5.3 Prediction, Evaluation and Mitigation of Impacts

5.3.1 Introduction

Table 5.1 presents the assessment of potential impacts on the biological environment, due to Camps, LSCs and associated infrastructure. Impacts are considered under the following headings.

1. Degradation and loss of habitats
2. Direct impacts on plants
3. Direct impacts on animals including mammals, birds amphibians, reptiles and fish
4. Severance of routes used by wildlife
5. Non-routine impacts associated with bushfires, collisions and chance-encounters
6. Invasive species and pests
7. Unsustainable use of resources (including bushmeat hunting)
8. Light pollution
9. Impacts associated with pollution of the physical environment

The mitigation measures needed to avoid, reduce, remedy or compensate adverse impacts are also identified in the table. All the measures identified here will be implemented, where relevant, in all areas where Camps, LSCs and associated infrastructure are required. As part of developing the Site File for each specific site, Project personnel will undertake local surveys and consult local authorities and affected communities to identify and agree any supplementary measures required at particular locations. Site-specific mitigation measures and consultation will be reported in the Site Files for each location.

5.3.2 Summary of Key Issues

The key issues identified relating to impacts on the biological environment and mitigation measures for these impacts are summarised below.

Loss of Habitats

Development of camps, LSCs and associated infrastructure may cause loss or fragmentation of habitats of importance for wildlife and nature conservation. To facilitate strategic planning, sites that are protected or otherwise designated for their importance for biodiversity, including critical habitats, internationally designated sites, nationally protected areas, Classified Forests, and other areas of importance for species, habitats, ecosystem services or processes, have been mapped by competent environmental specialists. Where possible, a buffer of approximately 500 m will be maintained between these areas and camps. Further, more detailed habitat characterisation, mapping and screening of important and sensitive habitats and species will be carried out during planning of specific camps and LSC locations with the aim of minimising the footprint of facilities in sensitive habitats so as to keep the loss of habitats of conservation value as low as possible. The detailed design and siting of facilities will be developed in consultation with the local administration and the local communities.

Impacts on Important Plants and Animals

Clearance of vegetation may lead to loss or displacement of important plant or animal species. The habitat mapping process described previously will include consideration of the potential for habitats to support priority plant and animal species with the aim avoiding and minimising loss of sensitive areas. Where important or sensitive species are located near sites they will be demarcated and clearly signposted and access to these areas will be prohibited to protect them from disturbance. Where practical, vegetation along rivers, drainage lines, gullies and gorges, will be protected with a buffer zone. Sensitive areas will be protected as far as possible, and any essential work in watercourses will be carefully managed to avoid adverse impacts on water flow, quality and aquatic fauna and flora.

Where the locations of camps and access roads lead to severance of routes used by priority species, passages will be developed where possible and these will be designed to suit the species in question and

the environment and habitats being crossed. The design of bridges and culverts will include measures to allow movement of animals including fish, where possible.

Movement of vehicles, equipment and materials between different into development sites could introduce invasive, non-native and pest species and affect local fauna and flora, ecosystems and crops. High risk areas will be identified and effective hygiene procedures will be implemented for all personnel and equipment coming onto the site. Local species will be used during all rehabilitation activities. Ongoing maintenance and monitoring of work areas will include regular inspections for invasive, non-native species including weeds.

All personnel will be made aware of the importance of habitats, fauna and flora and of the measures needed to protect them.

Work activities in remote areas may lead to increased or reduced occurrence of bushfires and resultant habitat destruction. Risks of bushfire will be minimised by strict controls on burning of waste or vegetation only in designated and approved facilities. Emergency firefighting arrangements will be put in place to respond to fires including bushfires.

Non-routine events such as road accidents, chance-encounters with animals, and bushmeat hunting by Project personnel could potentially adversely affect fauna. Speed limits will be established where necessary to alert drivers to risks of fauna crossing roads and all drivers will be trained in safe driving practice. Non-essential travel at night and driving off road will be prohibited. Movements by Project personnel outside the site will be restricted to minimise disturbance offsite and avoid risks to species from hunting and gathering and purchase or sale of bushmeat will be strictly forbidden.

Table 5.1 Prediction, Evaluation and Mitigation of Impacts on the Biological Environment

Potential Impact	Mitigation	Assessment
1. Degradation and loss of habitats		
Development of camps and their associated infrastructure may cause fragmentation and loss of important habitats of high conservation value.	1. Appropriate habitat characterisation and mapping and screening of important and sensitive habitats and species will be carried out by competent environmental specialists during siting and design for individual camps and LSCs. 2. Where possible, camps, LSCs and their associated infrastructure will be located at least 500 m from sites protected or otherwise designated for their importance for biodiversity including internationally designated sites (e.g. Ramsar sites), nationally protected areas, Classified Forests, and other areas of importance for species, habitats, ecosystem services or processes, including critical habitats as identified by social and environmental specialists. 3. Where possible, new borrow pits will be located at least 250 m from important habitats and at least 500 m if a borrow pit occupies more than 1ha. 4. The footprint of sites and associated infrastructure will be minimised through careful planning of layouts and consideration of site-specific factors. 5. Driving within watercourses, or on their banks, will be forbidden, except where necessary to construct a particular structure. If work in watercourses is required, measures will be implemented to ensure significant impacts on aquatic habitats do not occur.	Significant degradation and loss of habitats of high conservation value will be avoided through strategic and detailed planning of camps, LSCs and associated infrastructure in accordance with the criteria set out in <i>Section 2.3</i> .
2. Direct impacts on flora		
Clearance of vegetation may lead to loss of important flora species.	6. Planning for individual sites will identify any significant plant species and these will be avoided wherever possible. Where significant species cannot be avoided, species will be relocated if possible to other suitable locations that will not be disturbed, under the supervision of qualified botanists. 7. Where important or sensitive flora species are located near sites they will be demarcated and clearly signposted and access to these areas will be prohibited. 8. Ground clearing in sensitive areas upstream of habitats of high conservation value for biodiversity will only be permitted with an appropriately engineered drainage design. 9. Vehicles and equipment will only be used in designated areas. Movement outside of these areas will be strictly prohibited. 10. Riparian vegetation and vegetation along drainage lines, gullies and gorges, will be protected, where practical with a buffer zone.	Appropriate macro-siting and micro-siting of infrastructure will facilitate avoidance of important and sensitive flora species.

Potential Impact	Mitigation	Assessment
	11. Measures will be implemented to ensure that cleared areas are revegetated as soon as possible.	
3. Direct impacts on fauna including mammals, birds, amphibians, reptiles and fish		
Development of Camp and their associated infrastructure could lead to displacement of important or sensitive fauna or disturbance of habitats used by animals.	12. Planning for individual sites will identify any significant fauna in or near the site and these will be avoided wherever possible. 13. Areas used by important or sensitive fauna will be demarcated and clearly signposted and access to these areas will be prohibited. 14. Where possible, areas to be cleared will be worked from one side to another, or from the centre out, to prevent animals becoming trapped. 15. Trenches or holes created during site works will be rendered safe for fauna species when unattended through covering or provision of an egress ramp. 16. Snakes and other important or dangerous species, occurring within work areas, will only to be captured by trained personnel and will be released unharmed, where possible. 17. Non-routine impacts associated with potential road collisions, bushfires and chance-encounters are addressed later in this section.	Appropriate macro-siting and micro-siting of Project infrastructure will facilitate avoidance of important and sensitive fauna species. Good construction practices will be implemented to minimise the potential for adverse impacts during construction. Significant adverse impacts during operation are not considered likely to occur.
4. Severance of routes used by wildlife		
Development of camps and access roads may lead to severance of routes used by priority species for feeding, breeding and migration, including watercourses.	18. Where sites or new access roads would cross important routes used by priority species, locations and alignments will be selected to avoid severance of these routes where possible. Where severance of an important route used by priority species cannot be avoided, crossing facilities will be provided (overpasses, underpasses, culverts) where possible. 19. The design of bridges and culverts will include measures to avoid adverse impacts on movement of animals including freshwater species along watercourses.	Infrastructure will be sited and designed to minimise adverse impacts on routes used by animals.
5. Invasive, non-native flora and fauna species and weeds		
Movement of vehicles and equipment between different areas of the Project could lead to introduction of invasive and weed species and have adverse effects on local ecosystems.	20. Strict hygiene procedures will be implemented for equipment used on sites and all vehicles and machinery will be inspected and cleaned to ensure decontamination prior to mobilisation between high risk areas. Appropriate documentation will be provided as evidence that this process has been completed. 21. All plant species introduced for the Project will be reviewed and approved by specialists prior to use on site. Non-native species will not be authorised unless a formal risk assessment has been completed and approved by relevant stakeholders. 22. Ongoing maintenance and monitoring of work areas will include regular	Spread of invasive, non-native and weed species will be minimised through effective equipment hygiene procedures and facility maintenance procedures in high-risk areas. Significant impacts are not likely to arise.

Potential Impact	Mitigation	Assessment
	inspections for invasive, non-native species including weeds and measures will be implemented to remove unwanted species. Method used to control or prevent such species will not cause adverse impacts on the environment or communities. 23. Induction training for all personnel will include appropriate information regarding invasive, non-native fauna and flora and the importance of reporting in this regard.	
6. Non-routine impacts associated with bushfires, collisions and chance-encounters		
Work activities in remote areas may lead to increased or reduced occurrence of bush fires and resultant habitat destruction preventing natural regeneration of fire-sensitive forest species (for example) or fire dependent colonising species.	24. Burning of waste or vegetation will only occur in designated and approved facilities 25. Strict controls will be in place to minimise the risk of bushfires being caused accidentally by Project activities including: • a ban on unauthorised open fires; • design of flammable substance stores in accordance with good international standards for fire safety; • fitting of earthing and lightning protection to other structures vulnerable to lightning strike; • control of hot work such as welding using a strict permit to work system; and • creation of a fire break in the buffer zone outside the site boundary. 26. Emergency fire fighting arrangements will be in place to respond to fire including natural bushfires. Trained fire crews will be available in each camp and all personnel will be trained in communication of fire-related hazards and first response. Adequate water supplies for use in the case of a fire, will be established in critical locations.	The potential risk of uncontrolled bushfires will be minimised as much as possible through effective control of ignition sources and work practices to minimise the risk of significant adverse impacts.
Wildlife may be harmed by traffic collisions and chance-encounters	27. Measures will be taken to minimise the risk of collisions between animals and vehicles. Signposts and speed limits will be established where necessary to alert drivers to risks of fauna crossing roads. Non-essential travel at night and driving off road will be prohibited. 28. Induction training for all Project personnel will facilitate identification of key priority species by all personnel. Project personnel will be provided with appropriate instruction regarding the procedures to be followed if important fauna or flora are encountered during the course of work.	Effective management of occupational safety and non-routine safety risks will ensure that risks associated with work activities and areas are minimised and sensitive habitats, flora and fauna are not exposed to these risks.
7. Unsustainable use of resources (including bushmeat hunting)		
Presence of camps and LSCs may lead to increased hunting, trade in bushmeat, land clearance for agriculture and unsustainable use of	29. All camps will be closed and movement of project personnel of site will be restricted to essential trips only. 30. Camp and LSCs will include on-site catering facilities. Purchase or sale of bushmeat by or within these facilities will be strictly forbidden. Local resources will	Camps and associated infrastructure will use resources in a sustainable manner. In-migration will be

Potential Impact	Mitigation	Assessment
local resources.	only be used by the Project if the resources can be used in a sustainable manner. 31. Sustainable water resources will be identified to avoid impacts on flows and aquatic ecosystems 32. Firearms will be prohibited in all work areas and accommodation. Local Project personnel will be strictly forbidden from engaging in hunting, selling or purchasing bushmeat during work hours. Inspections of Camps, LSCs, work areas and Project vehicles will be carried out where necessary to verify compliance. 33. Induction training for all Project personnel will include communication of relevant information regarding bushmeat hunting and important local resources. Project personnel will engage local stakeholders to manage potential impacts in this regard.	minimised as much as possible to avoid induced unsustainable use of resources.
8. Light pollution		
Lighting of Camps, LSCs and associated infrastructure may disturb sensitive fauna species in nearby habitats.	34. Impacts from light emissions will be minimised through: • use of low emission lighting; • use of directional lighting, aimed towards the area where light is needed and away from any sensitive receptors; and • restrictions on non-essential travel after dark. If any driving after dark is required, drivers and operators will use low beam headlights as much as possible.	Potentially significant impacts associated with lighting will be avoided through appropriate selection, use and management of light sources.
9. Impacts associated with pollution of the physical environment		
Project activities and emissions (including noise) may have impacts on the physical environment (air, water, soils etc), leading to habitat degradation and reduced species occurrence.	35. See <i>Chapter 4</i> for measures to control impacts on biodiversity from pollution during construction and operation of camps, LSCs and their associated infrastructure.	Potential significant impacts on the physical environment will be avoided through effective implementation of the mitigation measures detailed in <i>Chapter 4</i> . Significant secondary impacts on biodiversity are therefore not likely to occur.

6 Impacts on People and Communities

6.1 Introduction and Scope

This chapter focuses on the impacts the Project may have on people and communities. The key topics of relevance in this regard are:

- the economy, development and livelihoods;
- demographics and migration;
- cultural heritage;
- community health, safety and security; and
- labour and working conditions including workers rights and occupational health and safety.

In many cases, significant impacts on people and communities will be avoided through effective mitigation of impacts affecting the physical and biological environment including controls on pollution of air, water, soils, and on dust and noise, as described in *Chapter 4* and *Chapter 5*. This chapter focuses on other impacts of a social nature, where mitigation additional to that described in preceding chapters will be required.

6.2 Baseline Conditions

6.2.1 Economy, Development and Livelihoods

The Gross Domestic Product (GDP) of Guinea in 2010 was US\$ 4.5 billion ⁽¹⁾. More than 70% of Guinea's people are thought to live below the international poverty line of US\$1.25 per day ⁽²⁾. Approximately 75% of the Guinean population work in agriculture, mainly for subsistence.

The Project area is dominated by rural areas traditionally dependent on subsistence agriculture. In rural areas, 36% of households are unable to acquire adequate food through their own production and purchases ⁽³⁾. Landholdings tend to be quite small and traditional cultivation methods are used with little use of technologies such as irrigation. The main crops are rice (the staple food), sweet potatoes, cassava, peanuts, maize and millet ⁽⁴⁾. Some commercial plantations grow crops such as palm oil, mango, oranges and cashew nuts ⁽⁵⁾. Other cash crops include coffee, cacao, cotton and fruit, depending on soil type and local climate ⁽⁶⁾. Livestock keeping and animal husbandry are important in many areas. Communities keep chickens, sheep and goats and sometimes cattle. Income is generated through the sale of livestock and animal products e.g. milk, fat and butter. Hunting and freshwater fishing (in the dry season) provide further sources of subsistence for communities, and villages with forests nearby typically use forest resources to support their livelihoods. Transhumant pastoralists use migration corridors in some areas and sometimes conflict with sedentary farmers ⁽⁷⁾.

Rural communities are generally quite self-sufficient, in that they source all the goods and services that they require from within their own village or nearby communities. Many traditionally operated exclusively on a barter system. Larger villages in some areas are starting to develop service-based economies but this typically only involves a small number of individuals ⁽⁸⁾. Monetisation of society is occurring and this has led

(1) International Monetary Fund – World Economic Outlook Database, 2011:

<http://www.imf.org/external/pubs/ft/weo/2011/02/weodata/index.aspx> last accessed 11.10.11

(2) SNC Lavalin Environment 2010: Social and Environment Baseline Study – Simandou Project Rail Component Volume C –Social Baseline Final Report

(3) International Monetary Fund (IMF) Guinea Poverty Reduction Strategy 2007- 2020 (PRSP-2) as reported in SNC Lavalin Environment 2010: Social and Environment Baseline Study – Simandou Project Mine Component Volume B –Social Baseline Final Report

(4) SNC Lavalin Environment 2010: Social and Environment Baseline Study – Simandou Project Mine Component Volume B –Social Baseline Final Report

(5) Ibid

(6) Ibid

(7) SNC Lavalin Environment 2008 ; Étude de caractérisation sociale et environnementale de base pour le chemin de fer – Rapport provisoire

(8) SNC Lavalin Environment 2010: Social and Environment Baseline Study – Simandou Project Mine Component Volume B –Social Baseline Final Report

to younger people seeking salaried positions, rather than employment in more traditional agricultural activities ⁽¹⁾. Women in rural areas are recognised to be particularly vulnerable to being time and consumption poor, which means they are working long hours generating a very low income ⁽²⁾. As discussed in *Chapter 4*, coastal areas have some of the richest agricultural land in the country. This land is utilised fully and as such, there is little opportunity for existing users to extend their activities into new areas. Crops grown in these coastal areas are typically of higher economic value than those grown elsewhere in the country and include rice, red pepper, eggplant, watermelon and okra. Fishing is also important in coastal areas although it is usually a secondary economic activity used to supplement agricultural livelihoods ⁽³⁾. Fishing is generally undertaken by the male head of the household, with fish trading being typically undertaken by women. Other livelihood activities include shellfish collection, rice growing, market gardening and salt harvesting. Commercial fishing companies operate in the area of Île Kabak and these companies often provide credit to local fishermen to encourage purchase of fishing equipment, local trade and the loyalty of the fishermen ⁽⁴⁾.

6.2.2 Employment

As outlined in *Section 6.2.1*, most people are involved in subsistence-based activities associated with agriculture and fishing, with some crops grown for cash. According to the World Bank ⁽⁵⁾, women account for more than half of the agricultural labour force (53%) and are responsible for approximately 80% of food production in Guinea, but are typically unpaid and involved in subsistence farming ⁽⁶⁾. Men in Guinea typically control 75% of cash cropping and agricultural income ⁽⁷⁾.

In the mine area, wage employment, on average, provides approximately 3% of household income ⁽⁸⁾. Wage employment is relatively new in the area, and is closely linked to Rio Tinto's operations ⁽⁹⁾. Communities have high expectations with respect to future opportunities for employment at the Simandou Project ⁽¹⁰⁾. The percentage of people involved in wage employment along the rail corridor is believed to be even lower than near the mine and in many areas, there are no significant employers. Near the port, subsistence activities also dominate, although there is some limited wage employment associated with fishing activities and other industry.

6.2.3 Education

In 2010, the enrolment rate to primary schools in Guinea was 72.7% (both sexes) with 75.6% of enrolled pupils reaching Grade 5 ⁽¹¹⁾. Both rates have increased significantly in the last ten years. Literacy rates tend to be low (in 2010, only 29.5 % of the population age 15 and over could read and write ⁽¹²⁾), but are increasing amongst youth (15 to 24 years old) due to increased enrolment. In 2010, 46.6% of youth were literate ⁽¹³⁾.

Enrolment rate to secondary schools is very low (16.8% in 2005). In rural areas in particular, few children attend secondary school. Preliminary studies along the rail corridor have indicated that more than 70% of

(1) SNC Lavalin Environment 2010: Social and Environment Baseline Study – Simandou Project Mine Component Volume B –Social Baseline Final Report

(2) Country Briefing Guinea; The Human Rights and Business Portal; The Danish Institution for Human Rights. 2010

(3) SNC Lavalin Environment 2008 : Étude de caractérisation sociale et environnementale de base pour le port – Rapport provisoire

(4) Ibid

(5) World Bank, 2004. Évaluation de la situation de genre en Guinée: rapport de synthèse FYW4. Washington, D.C. p. 34

(6) SNC Lavalin Environment 2010: Social and Environment Baseline Study – Simandou Project Mine Component Volume B –Social Baseline Final Report

(7) World Bank, 2004. Évaluation de la situation de genre en Guinée: rapport de synthèse FYW4. Washington, D.C. p. 34

(8) SNC Lavalin Environment 2010: Social and Environment Baseline Study – Simandou Project Mine Component Vol B –Social Baseline Final Report

(9) SNC Lavalin Environment 2010: Social and Environment Baseline Study – Simandou Project Mine Component Vol B –Social Baseline Final Report

(10) Ibid

(11) Country Briefing Guinea; The Human Rights and Business Portal; The Danish Institution for Human Rights. 2010

(12) World Bank 2009. Working Long Hours and Having No Choice: Time Poverty in Guinea, Policy Research Working Paper 4961. Washington, D.C. p39.

(13) Country Briefing Guinea; The Human Rights and Business Portal; The Danish Institution for Human Rights. 2010

villages have access to a school within the village or within 3km⁽¹⁾. Low attendance rates are therefore attributed to other factors, including the demand for children to work to support the family.

Gender inequality also exists. The literacy rate for women (18.1%) is much lower than for men (42.6%). Women tend to receive less education than men for cultural reasons (including early marriage) and economic reasons (including schooling costs).

6.2.4 Land Tenure

Livelihoods within the Project area are predominantly agro-pastoral and good, productive land is an important resource supporting these activities. Guinean legislation recognises the State as the owner of the land, but also establishes and recognises the right to private property, and recognises customary ownership rights to land (refer to *Annex B* and *Annex F* for further information). Under the Domain and Land Tenure Code (2), the State has private property rights to all “vacant or unclaimed land” and to the public domain (i.e. land allocated to provide public services and/or used by the public). The State also has the right to expropriate land where a public interest has been established, to regulate land uses for the purposes of urban or rural development and, where the public interest warrants, establishing servitudes.

Property rights in Guinea are typically weakly enforced and are recognised as lacking transparency⁽³⁾. In urban areas, land is commonly registered with a formal title, but this is rare in rural areas, where land ownership rights tend to be customary. Traditionally, land is owned by the founding family of the village and acquired by households through inheritance, as gifts or through extended families⁽⁴⁾. The views and decisions of founding families, village elders and local administrators therefore play an important role in terms of determining property rights and management. Communal lands also commonly occur within the Project area. This land is used by villagers for animal husbandry (pasture, transhumance of cattle, water sources) and gathering natural resources such as wild fruit, wood etc. Non-residents of the village can use communal lands if they obtain permission from the local village chief.

6.2.5 Demographics and Migration

In 2005, the demographic profile of Guinea had the following key features⁽⁵⁾:

- the rural population constituted 65% of the total population;
- women marginally outnumbered men, accounting for 52% of the population; and
- the proportion of children under the age of 15 years was 48.4%.

A diverse mix of ethnic groups, religions and nationalities live in and around the Project area. Ethnic groups including the Konianké, Guerzé, Toma Mania and Peul typically live peacefully together. Conflicts and disputes are typically limited to localised areas. None of Guinea's 16 ethnic groups constitute a majority, and ethnic discrimination does not appear to occur systematically⁽⁶⁾.

The majority of the population of Guinea is Muslim (85%)⁽⁷⁾. Christians (8%) and people with indigenous beliefs (7%) also exist in small numbers⁽⁸⁾.

Parts of the Project area are located close to national borders with Côte d'Ivoire, Liberia and Sierra Leone. People are permitted to move freely between these countries, as members of the Economic Community of West African States (ECOWAS), and many people regularly cross the border pursuing livelihood

(1) Koppert, G. and Barry, M.I., Rio Tinto Simandou Value Enhancement Study Rail and Port. 2010

(2) Order No. 0/92/019; March 30, 1992

(3) Country Briefing Guinea; The Human Rights and Business Portal; The Danish Institution for Human Rights. 2010

(4) Koppert, G. and Barry, M.I., Rio Tinto Simandou Value Enhancement Study Rail and Port. 2010

(5) Direction Nationale de la Statistique (DNS) and ORC MACRO, 2006. Enquête Démographique et de Santé, Guinée 2005.

Calverton, Maryland, U.S.A. : DNS and ORC Macro as presented in SNC Lavalin Environment 2010: Social and Environment Baseline Study – Simandou Project Mine Component Volume B –Social Baseline Final Report

(6) Country Briefing Guinea; The Human Rights and Business Portal; The Danish Institution for Human Rights. 2010

(7) Ibid

(8) Ibid

opportunities. Refugees from neighbouring war-torn countries have also often fled to Guinea, where they are typically accepted peacefully despite the additional demand this can put on existing scarce resources.

Evidence of migration is provided by the population of Guinée Forestière, which increased steadily between the 1980s and 1996 causing population density to grow from 29 to 45 persons per square kilometre ⁽¹⁾. It is estimated that at one stage more than 10% of the population of Guinée Forestière were refugees, accounting for approximately 739,000 people. Guineans also regularly cross borders and emigrate. From 2004 to 2007, the United Nations Commission for Human Rights worked with the Guinean government to assist the voluntary repatriation of many Guineans who had emigrated during Sekou Touré's regime ⁽²⁾.

Within Guinea, employment opportunities are one of the major drivers of migration. Migration from rural villages to major cities (including Conakry) is relatively common, especially for young people. Such migration can be seasonal or permanent. Industry, including large-scale and artisanal mining, has traditionally been associated with in-migration, placing pressure on existing infrastructure and resources ⁽³⁾.

Significant in-migration has already occurred in the area of the mine. Two distinct types of migrants are identified: employees of Simfer and its contractors, and opportunistic workers moving to the area in search of employment. Opportunistic workers have often travelled long distances in search of work and economic opportunities from across Guinea and neighbouring countries ⁽⁴⁾. As a result of opportunistic in-migration, the villages of Nionsomoridou, Moribadou and the town of Beyla have grown significantly in recent years and this is already placing increased demands on resources, food, housing, goods and services ⁽⁵⁾. In-migration in the area of the rail corridor ⁽⁶⁾ and in port ⁽⁷⁾ is not linked to the Simandou Project at present, but in-migration may occur as people become more aware of the Project, although the level of opportunity associated with the railway and port, and more specifically for the advance development of Camps and LSCs will be small.

6.2.6 Cultural Heritage

The country of Guinea forms part of West Africa, an area whose prehistoric past witnessed large-scale population migrations, interregional trade, warfare and the rise of urbanism in prehistoric times. There is archaeological evidence that iron smelting technology actually originated in West Africa as early as 2000 BC and was later adopted in the Mediterranean and beyond in the first century BC. Stone Age remains in West Africa may hold clues to the development and migration of early humans, and the iron-rich southern regions of Guinea would have provided an important resource for Iron Age populations of the region. Guinea's coastline has also made it an attractive place to settle and trade from prehistoric times to the present, and even today the ruins of French colonial plantations dot the coast.

In historic times, Guinea's location between the three great medieval empires - Ghana, Mali and Songhai - would have fostered sweeping cultural shifts as Islam first took root and spread within the African continent. Despite the wealth of historical texts detailing the Islamic Medieval period and the availability of colonial-period documents, very few archaeological studies have actually been conducted within Guinea's borders, so relatively little is known of Guinea's pre-history. West Africa has received the least amount of archaeological research of any region of the world due to European perceptions on the African past, low visibility in forested areas, and modern political shifts that have presented difficulties for conducting research in many parts of the sub-continent. Since 1979, when West Africa was recognized as the home of several prehistoric urban civilizations, archaeological research has slowly increased in intensity. Due in part to political reasons, however, comparatively little is yet understood about how wider historic trends played out within the modern borders of Guinea.

(1) SNC Lavalin Environment 2010: Social and Environment Baseline Study – Simandou Project Mine Component Volume B –Social Baseline Final Report

(2) Ibid

(3) Ibid

(4) Ibid

(5) Ibid

(6) SNC Lavalin Environment 2008: Étude de caractérisation sociale et environnementale de base pour le chemin de fer – Rapport provisoire

(7) SNC Lavalin Environment 2008: Étude de caractérisation sociale et environnementale de base pour le port – Rapport provisoire

Throughout West Africa, landscape plays a central role in the social identity of various cultural and ethnic groups. While certain landscapes will have nuanced meanings for different groups, some general cultural trends also exist. For example, many landscape elements represent intense nodes of spiritual power and are considered sources of powerful occult knowledge. In some cases, these locations can be indistinguishable from the larger surrounding area but historical or mythical events may have occurred at the location, conferring high cultural significance. In other cases, a sacred landscape may include easily discernable natural features such as caves or mountains to which histories or foundation beliefs are attached.

Despite the lack of previous investigation into Guinea's archaeological and living cultural heritage, recent cultural heritage surveys conducted by Project personnel have identified at least 146 sites to date, mainly in the area of the mine and port. Almost all villages include a cemetery (sometimes containing tombs of the village's founders), religious place of worship (mosque or church) and sacred or mythical sites where one goes to ask the spirits' grace (small haunted or sacred forests on a hillside, sacred ponds, or special trees, grottos, rocks, etc.) Sacred sites and sacred forests occur as mountains, former villages, ruins etc. These sites are visited by villagers to invoke the spirits and to pay their respects by making offerings and carrying out other rituals. In some areas, their significance is slowly diminishing, as people replace their beliefs in animistic rituals with mainstream Muslim religion, which forbids beliefs and rituals relating to these locations ⁽¹⁾. However, in other areas, hybridization is occurring and ritual activities and religious beliefs often include aspects of both Islam and the indigenous concepts. Initiation sites also commonly occur, where male circumcisions, female excisions, and other initiation ceremonies are carried out and offerings made.

6.2.7 Community Health

Generally, the health of the population in Guinea is poor, as evidenced by low life expectancy (49 for males, 55 for females) and the high under-five mortality rate (142 per 1000 live births). Most years of life lost (a measure of premature mortality) are assigned to communicable diseases (73%) while non-communicable diseases account for just 19% and the remainder (8%) are due to injuries ⁽²⁾.

Malaria is endemic in Guinea and is one of the leading causes of death in the country ⁽³⁾. Field studies undertaken within the Project area indicate that malaria is a significant health issue and is one of the main reasons why individuals seek medical treatment from both modern and traditional sources ⁽⁴⁾.

Other communicable diseases that are of concern in Guinea, and contribute to years of life lost, include diarrhoeal diseases, measles, respiratory infections and tuberculosis (TB) ⁽⁵⁾. The high level of diarrhoeal diseases is likely to be linked to poor hygiene and sanitation methods in communities, as this can lead to contamination of water sources. Baseline studies undertaken close to the mine indicate that 57% of wells used by the communities for water were contaminated with coliform bacteria.

In 2005, the Guinea Demographic Health Survey (GDHS) estimated that the national Human Immunodeficiency Virus - HIV prevalence rate for Guinea was 1.5%, with a clear predominance in urban areas and amongst women. Homosexuality is illegal in Guinea and persons living with HIV/AIDS face stigmatization ⁽⁶⁾. According to the United Nations, prevalence of HIV amongst mineworkers has increased to 5.2% compared to the national average ⁽⁷⁾. This was corroborated at a regional level, where mineworkers

(1) Koppert, G. and Barry, M.I., Rio Tinto Simandou Value Enhancement Study Rail and Port. 2010

(2) WHO Country Profiles Guinea available at: <http://www.who.int/gho/countries/gin.pdf>. Last Accessed 11.10.11

(3) *ibid*

(4) Newfields, 2010 Baseline Health Survey: Mining area and SNC Lavalin Environment December 2008 ; Étude de caractérisation sociale et environnementale de base pour le chemin de fer – Rapport provisoire ; SNC Lavalin Environment December 2008 ; Étude de caractérisation sociale et environnementale de base pour le port – Rapport provisoire

(5) WHO – Country Health Profile – 2006 available at <http://www.afro.who.int/en/guinea/country-health-profile.html> last accessed 11.10.11

(6) Country Briefing Guinea; The Human Rights and Business Portal; The Danish Institution for Human Rights. 2010

(7) United Nations General Assembly Special Session (UNGASS) Country Progress Report on HIV/AIDS in Guinea in 2008 as described in Newfields, 2010 Baseline Health Survey: Mining area

had a reported prevalence of 10.2% in the Guinée Forestière ⁽¹⁾. HIV prevalence is likely to be higher again amongst sex workers. Survey findings in communities close to the mine indicate that knowledge and awareness of HIV/AIDS transmission routes and prevention methods are inconsistent. Significant stigma continues to be associated with sexually transmitted diseases and condom use ⁽²⁾.

Other reported diseases include:

- Typhoid Fever - a bacterial disease transmitted through the ingestion of food or drink contaminated by the faeces or urine of infected people. Symptoms include high fever, malaise, headache, constipation or diarrhoea, rose-coloured spots on the chest, and enlarged spleen and liver ⁽³⁾.
- Meningitis – an inflammation of the meninges, the covering of the brain and spinal cord. It is most often caused by infection (bacterial, viral, or fungal) ⁽⁴⁾.
- Leprosy - caused by bacteria transmitted via droplets from the nose and mouth of untreated patients with severe disease. The disease can cause nerve damage, leading to muscle weakness and atrophy, and permanent disabilities ⁽⁵⁾.
- Schistosomiasis (bilharzia) - a parasitic disease caused by flatworms (transmitted by freshwater snails), whose larvae penetrate the skin of people in the water. In urinary schistosomiasis, there is progressive damage to the bladder, ureters and kidneys. In intestinal schistosomiasis, there is progressive enlargement of the liver and spleen, intestinal damage, and hypertension of the abdominal blood vessels ⁽⁶⁾.
- Onchocerciasis (river blindness) - a parasitic disease caused by filarial worms. It is transmitted through the bites of infected black flies. As the worms die in the body they cause a variety of conditions, including blindness, skin rashes, lesions, intense itching and skin depigmentation ⁽⁷⁾.

Lack of adequate nutrition and anaemia is also an issue in Guinea and can lead to stunted growth in children and issues during pregnancy. A quarter of Guinea's 9.8 million people are moderately or severely food insecure and chronic malnutrition rose by 50% between 2005 and 2010 ⁽⁸⁾. Lack of adequate food and associated malnutrition is often linked to poverty, the high cost of food and low availability of productive land ⁽⁹⁾.

Accurate data relating to potential alcohol or drug abuse is limited in Guinea. Evidence from baseline studies near the mine indicates that alcohol use is limited (only 9% of those surveyed reported that they drank). However 88% of respondents felt that drug abuse was an issue in the community they lived in ⁽¹⁰⁾.

Baseline surveys in the mine area also indicated that hypertension also commonly occurs – 65.7% of those surveyed reported some form of hypertension.

Access to healthcare, including maternal and childcare, is limited due to a lack of infrastructure and human resources as well as the cost of seeking health treatment ⁽¹¹⁾. The situation appears to have worsened in recent years and in rural areas, traditional healers are used by many communities ⁽¹⁾.

(1) Stat View International. Analyse de situation des IST/VIH/SIDA en Guinée as described in Newfields, 2010 Baseline Health Survey: Mining area

(2) Newfields, 2010 Baseline Health Survey: Mining Area

(3) WHO: http://www.who.int/topics/typhoid_fever/en/ last accessed 11.10.11

(4) WHO: <http://www.who.int/topics/meningitis/en/> last accessed 11.10.11

(5) WHO: <http://www.who.int/topics/leprosy/en/> last accessed 11.10.11

(6) WHO: <http://www.who.int/topics/schistosomiasis/en/> last accessed 11.10.11

(7) WHO: <http://www.who.int/topics/onchocerciasis/en/> last accessed 11.10.11

(8) Country Briefing Guinea; The Human Rights and Business Portal; 2010

(9) Newfields, 2010; Baseline Health Survey: Mining Area: SNC Lavalin Environment December 2008 ; Étude de caractérisation sociale et environnementale de base pour le port – Rapport provisoire and SNC Lavalin Environment December 2008 ; Étude de caractérisation sociale et environnementale de base pour le chemin de fer – Rapport provisoire

(10) Newfields, 2010; Baseline Health Survey: Mining Area

(11) Newfields, 2010; Baseline Health Survey: Mining Area

6.2.8 Community Safety and Security

According to the World Health Organisation (WHO), accidents close to roads and involving vehicles are a significant issue in Guinea ⁽²⁾. Poor infrastructure, old vehicles and low levels of driver awareness and training are all contributing factors, making driving and walking near roads hazardous. These same factors also ensure that transportation by boat and ferry is also often hazardous, on both rivers and at the coast. Other common safety hazards include natural hazards such as dangerous fauna (eg snakes), bushfires and physical hazards such as uneven terrain.

Subsistence living, in areas of poverty, often leads to high risk tolerance amongst communities as individuals are often routinely forced to engage in dangerous activities in order to survive, and without having the capacity to implement appropriate provisions to ensure their personal safety. The equipment and materials are rarely subject to any quality control, or are not well understood by the user, and therefore often represent hazards in themselves. Within communities, awareness and education regarding safety hazards and risk management tends to be relatively low. High levels of illiteracy in many areas and linguistic diversity do not facilitate written communication of safety messages. Dangerous work areas typically have to be clearly demarcated with access strictly controlled.

The security of communities in Guinea is influenced by the political climate and in particular, the recent and planned presidential and legislative elections, which have lead to protests and demonstrations. Protests and demonstrations have typically been centred around larger settlements as well as in the capital Conakry ⁽³⁾ where opposing sides have strongholds. Security forces are recognised to be a constant source of instability, and are reported to be engaged in human rights abuses, corruption and criminality ⁽⁴⁾. In border areas rebel activities, smuggling and migration of people have led to conflict affecting local security. Organised bandits are also reported to operate on countryside roads along the border. Short-term violent clashes in Guinée Forestière have occurred between rival ethnic groups related to latent communal tensions or beliefs.

6.2.9 Labour and Working Conditions

The Republic of Guinea has been a member country of the International Labour Organization since 1959 and 79 conventions are currently proposed for ratification ⁽⁵⁾. The Labour Code (Order No. 003/PRG/SGG/88) provides a legal framework covering all aspects of labour and working conditions and is considered one of the most modern in West Africa. The Social Security Code (Act L/94/006/CTRN) governs the collection and distribution of the national social security funds for labour-related health insurance and social initiatives. The Code also details the responsibilities of the employer, and how the fund can be used in the event of a work-related accident or illness. A summary of relevant information relating to working in conditions is provided in *Table 6.1*.

Table 6.1 Working Conditions

Category	Coverage
Labour law prohibits discrimination on the grounds of	Sex, birth, race, ethnicity, language, political opinions, philosophical or religious beliefs
Legally mandated annual leave International standard: 3 weeks	2 workdays per month
Weekly working hours International standard 48	48

(1) Newfields 2010 Health Impact Assessment Scoping Study - Port Site

(2) WHO Country Health Profile – 2006 available at <http://www.afro.who.int/en/guinea/country-health-profile.html> last accessed 11.10.11

(3) CRG Country Risk Forecast and Travel Security Online – Guinea 03/10/11 <http://www.crg-online.com/Page.aspx?pg=11535> last accessed 11.10.11

(4) Country Briefing Guinea; The Human Rights and Business Portal; The Danish Institution for Human Rights. 2010

(5) SNC Lavalin Environment August 2010: Social and Environment Baseline Study – Simandou Project Mine Component Volume B – Social Baseline Final Report

Category	Coverage
Mandated weekly rest period International standard 24 consecutive hours each seven days	24
Minimum age for admission to full-time employment International standard 15 (14 in selected states)	16
Age at which compulsory education ends	12
Paid maternity leave International standard: 14 weeks	98 calendar days
Overtime pay International standard: 1.25 times regular wage	Unclear
Minimum monthly wage	No minimum wage ⁽¹⁾
Working hours	10 hours per day or 48 hours per week

As shown in the table, the minimum age for employment is 16 years. Workers and apprentices under the age of 18 are not permitted to work at night, for more than 10 consecutive hours, or on Sundays.

Although this legal framework exists, it is the case that rules relating to labour and working conditions are poorly enforced and child labour is recognised to be significant issue in Guinea in both rural and urban areas. According to the Danish Institute of Human Rights ⁽²⁾, approximately 20% of the total working population are children and half of Guinea's children under the age of 15 are employed, many working under hazardous conditions.

The rights to join trade unions, bargain collectively and strike are generally respected in practice, and trade unions play a strong role in Guinean society. The high rate of informal labour, however, limit its influence. Only approximately 167,000 workers are unionised ⁽³⁾.

The Guinea Labour Code defines general provisions regarding occupational health and safety (OH&S), including the requirement for companies of 500 or more to have a doctor available on the premises. However, according to the Danish Institute for Human Rights, the Guinean government has not established a set of practical workplace health and safety standards and violations are common ⁽⁴⁾. The majority of work is carried out using manual labour, rather than mechanized systems or technology. Understanding of basic measures needed to manage occupational health and safety tends to be very low. Significant OH&S training and education programmes are required prior to employing individuals to undertake potentially hazardous work or work in hazardous areas.

6.2.10 The Role of Women

Guinean legislation recognises equality between men and women, and prohibits discrimination on the grounds of sex. Laws exist promoting the equality of men and women in the workplace and equal rights to work, pay and parental leave. Women have the right to vote, the right to access land, the right to inherit their deceased husbands goods and equal rights to education. Violence against women is prohibited under the penal Code, with some restrictions, and forced marriage is punishable by law.

(1) The Labour code sets out the right to a minimum wage and the right of the Government to define what this wage is but a minimum wage has not been defined or adopted to date. In addition, there have been differences historically in the treatment (pay and conditions) between women and men.

(2) Country Briefing Guinea; The Human Rights and Business Portal; 2010

(3) Country Briefing Guinea; The Human Rights and Business Portal; 2010

(4) Country Briefing Guinea; The Human Rights and Business Portal; 2010

In practice, however, these laws are rarely upheld. Gender discrimination occurs commonly in the work place and women are paid less than men. Sexual harassment is common in the formal sector in urban areas and is not penalized by employers.

Societal discrimination against women is also widespread in Guinea, and is recognised to be particularly prevalent in rural areas. For example, customary practices in villages in the Project area dictate that women do not have land rights, typically do not obtain the inheritance of their deceased husbands, have little influence in decision-making at any level, and are customarily given by their parents to early, forced or polygamous marriages, or chosen by their husbands. The effect of this gender bias on education levels is noted in *Section 6.2.3*. Women are often barred from accessing land or other productive resources, or engaging in income-generating activities. Violence against women and female genital mutilation is practiced in all regions and among all religious and ethnic groups. Girls are typically circumcised without a competent medical practitioner and in unhygienic conditions.

Within the Simandou Project area, women play a significant role in the economy of the family. The involvement of women in livelihood and subsistence activities is noted in *Section 6.2.1*. In many cases, the income of men is used for expenditure associated with housing and family ceremonies and the women's income pays for food, clothing, healthcare, education and other expenses associated with children. For this reason, women's incomes may be particularly important and any reduction of their incomes can significantly adversely impact the health and well-being of the family, and particularly children

6.3 Prediction, Evaluation and Mitigation of Impacts

Table 6.1 presents the assessment of potential impacts on the socio-economic conditions and health of people and communities, due to Camps, LSCs and associated infrastructure. Impacts are considered under the following headings.

1. Physical and Economic Displacement
2. Cultural Heritage
3. Community Health
4. Community Safety and Security
5. Worker-Community Interactions
6. In-Migration and Resource Use
7. Employment Opportunities
8. Procurement of Goods
9. Human Rights
10. Labour and Working Conditions – Employee Health, Safety and Welfare

The mitigation measures needed to avoid, reduce, remedy or compensate adverse impacts are also identified in the table. These measures will be implemented, where relevant, in all areas where Camps, LSCs and associated infrastructure are required. As part of developing the Site File for each specific site, Project personnel will consult local authorities and affected communities to identify and agree any supplementary measures required at particular locations. Site-specific mitigation measures and consultation will be reported in the Site Files for each location.

6.3.1 Summary of Key Issues

The key issues identified relating to impacts on people and communities and mitigation measures for these impacts are summarised below.

Physical and Economic Displacement

Development of Camps, LSCs and associated infrastructure could potentially cause physical or economic displacement of land of beneficial use to local communities. Careful siting of Camps, LSCs and associated infrastructure will prevent loss of homes and other land of importance to communities wherever possible and the detailed design of each facility will include consideration of local environmental or social constraints and any opportunities to minimise the footprint of facilities. Where impacts cannot be avoided, affected people

will be compensated or resettled in accordance with international good practice as set out in the Project Resettlement and Compensation Policy Framework for Early Works presented in this SEIA Report.

Cultural Heritage

Sites will be selected to avoid culturally sensitive locations such as sacred sites, places of worship and features linked to local traditions and practices. If any cultural artefacts are discovered during construction, work will stop and appropriate investigations will be undertaken, and any necessary measures taken to rescue, restore or mitigate any losses.

Community Health, Safety and Security

Development of Camps and LSCs could have adverse impacts on the health and welfare of the local community as a result of discharges, emissions and wastes, introduction of disease into the area from non-local workers, increased risk of malaria from creation of breeding grounds for mosquitoes, and accidents.

Risks from pollution will be carefully controlled through the measures outlined in *Section 3.2*. A health management system will be implemented to ensure that all individuals are fit for work and illnesses are not introduced by Project personnel coming into contact with local people. All Camps and LSCs will be operated as closed camps as described previously, to manage and control any unauthorised interaction of non-local workers with communities. All Project personnel will be provided with appropriate induction training communicating the closed camp policy, health hazards, including HIV/AIDS and malaria along with the prevention and mitigation measures required. Partnerships will be actively sought with specialist external organisations to help deliver HIV education, awareness raising and treatment to employees, their dependents and where indicated by the Project multi-year community plan, to the broader community.

Specific attention will be given to prevention of malaria risk by avoiding creation of standing water on or around sites. Ongoing maintenance of work areas will include regular inspections for pest species. Risk of water-borne diseases will be minimised using appropriate treatment methods for water.

Emergency plans will be prepared for all sites taking into account potential impacts on local communities and measures needed to ensure the safety and security of individuals in this regard. Local authorities and affected communities will be provided with appropriate information communicating the nature and extent of any potential risk and impacts resulting from Project activities and procedures to be followed in the case of an unplanned accident or emergency.

Maintenance of security can be an issue at new developments because of the behaviour of inadequately trained security personnel. To avoid this all security personnel on the Simandou Project will be screened prior to employment by means of detailed interviews and enquiries into previous employment to avoid those who have previously been involved in abuse or violation of human rights. All security personnel will receive training on work procedures and on Project expectations for security behaviours and practices.

Interaction with Local Communities, In-migration and Resource Use

Location of camps near to existing communities presents both risks and opportunities to local people. Intrusion in local communities can lead to breakdown in existing community structures and livelihoods, pressure from in-migration, and erosion of cultural practices and traditions, but against this, employment for local people and opportunities for local businesses to supply goods and services can offer advantages for economic development. Local communities will be consulted during planning of camps and LSCs and prior to commencing activities, to ensure their views are taken into account and they understand the scale and nature of the proposed development and its location. As a general principle, larger camps will be located close to larger communities to maximise the potential for local employment and procurement, but camps will be kept away from smaller, more remote communities to minimise disruption of existing communal structures, livelihoods and ways of life. Risks of uncontrolled in-migration having an adverse impact on local communities and economies will be carefully considered in camp siting and design.

Movement of non-local workers will be strictly controlled to prevent inappropriate interaction with local people and a strict Code of Conduct governing activities and behaviour will apply to all Project personnel. All personnel will receive training in these requirements. Local goods and services will be used where possible, but onsite utilities, catering and recreational facilities will be provided so that camps and LSCs do not place unsustainable demands on limited local resources, facilities or amenities. If any significant interaction with communities is required, the work team will be accompanied by a member of Simfer's Communities Department.

A Grievance Procedure will operate for receipt, handling and resolution of any grievances from local people. This will be free, accessible to all, transparent, culturally appropriate and without retribution. The Simfer Communities Department will co-ordinate appropriate investigation and resolution of all grievances within a reasonable timeframe in accordance with the Simandou Project's established and approved processes.

Local Employment and Procurement

Opportunities for local employment and sustainable use of local goods and services will be identified wherever possible and measures will be devised to maximise the potential for local hiring and procurement. Key community decision-makers will be consulted as part of identifying and developing these opportunities. Unskilled labour will be preferentially hired from the local communities but all enquiries for employment will be referred to Project Employment Offices in nearby towns and there will be no direct hiring of workers at the site. All speculative applications will be referred to the nearest employment office.

Monitoring will be carried out to track price inflation and identify areas where local availability of resources has been adversely affected by Project procurement. The Project will also work with suitable partners to support local capacity building.

Employment and Human Rights

Employment procedures and conditions will conform to international conventions with respect to protection of human rights. Use of child and forced labour and discrimination during recruitment and employment (including discrimination on grounds of gender, ethnicity, religion or age) will be strictly forbidden. Everyone will be allowed free choice to accept or reject opportunities of employment. Labour and working conditions will be clearly communicated to potential workers as part of the recruitment process. Workers will have the right to form and to join trade unions, create their own worker committees and appoint worker representatives in accordance with the rights set out in the Guinea Labour Code. Salaries will be just and favourable ensuring workers and their families have an existence worthy of human dignity. HIV/AIDS screening will not be a requirement for recruitment or a condition of employment.

Requirements relating to Human Rights will be clearly communicated to all relevant personnel as part of training, and incorporated into labour contracts. Appropriate levels of auditing and verification will be carried out to monitor compliance with these requirements.

Employee Health, Safety and Welfare

Strict standards will be applied for protecting the health, safety and welfare of all Project personnel. Health and safety incidents will be reported, investigated and addressed in an appropriate and culturally sensitive manner.

Prayer rooms and other related facilities will be made available to meet the religious needs and customs of the workforce. Appropriate recreational facilities and rest and recreational time will be provided to allow workers to manage fatigue and engage in recreational activities.

A fair, transparent, culturally appropriate and accessible Grievance Procedure will be available to all workers.

Table 6.1 Prediction, Evaluation and Mitigation of Impacts on People and Communities

Potential Impact	Mitigation Measure	Assessment of Residual Impact
1. Physical and Economic Displacement of People, Property and Other Assets and Resources		
Development of Camps, LSCs and associated infrastructure may cause physical displacement of homes and community facilities and economic displacement by occupying land in existing beneficial uses. These may include individual or community use of land for cultivation, grazing, hunting, forest products, water supply and other purposes.	1. Camps, LSCs and associated infrastructure will be sited to avoid any displacement of peoples' homes and their community facilities such as market areas, community buildings, wells, schools, places of worship, medical centres, etc as far as possible. Where displacement is unavoidable, decisions on siting of facilities will be taken in consultation with the local administration and the local community to ensure their views and wishes are taken into account to minimise adverse impacts on individuals and communities. 2. Camps, LSCs and associated infrastructure will be sited to minimise impact on use of highly productive agricultural land such as <i>bas fonds</i>, rice fields, community forests and land used for hunting and gathering food and other produce. Water bodies used for fishing activities and community water supply will also be avoided where possible. 3. The layout of Camps, LSCs and associated infrastructure will be designed to minimise displacement of other beneficial land uses and resulting impacts on affected people and communities. 4. Where displacement of people, property or beneficial land uses is unavoidable, the Project will develop and agree a plan for compensation (including livelihood restoration) of affected people, in consultation with the affected households and the community, and in accordance with the Resettlement and Compensation Policy Framework for Early Works (see <i>Annex F</i>). 5. If road improvements cannot be completed without significant physical or economic displacement, temporary bypasses may be built for Project traffic. 6. Where practical a 50m buffer will be maintained around highly productive or intensively farmed agricultural lands such as <i>bas fonds</i> or rice fields (including areas that are currently fallow) and community forests to avoid disruption of cultivation.	Significant adverse impacts will be avoided through careful siting of Camps, LSCs and associated infrastructure. Implementation of the Resettlement and Compensation Policy Framework will ensure that any residual impacts are mitigated by compensation for affected people and communities.
2. Cultural Heritage		
The construction and operation of Camps, LSCs and associated infrastructure may lead to: • displacement or damage to	7. When undertaking reconnaissance for individual sites for Camps, LSCs and associated infrastructure the team will undertake field survey and consultation with local communities to identify any sites or features of importance for cultural heritage. This will include both tangible features or sites and locations of	Likely significant impacts on cultural heritage sites will be avoided through careful siting of Camps, LSCs and associated

Potential Impact	Mitigation Measure	Assessment of Residual Impact
cultural heritage sites within the Project boundary; • harm to the value, amenity or setting of sites and features in the vicinity of the works; and • restrictions on access to such sites. Sites and features of importance could include tangible features such as buried archaeology ruins (both already known and sites discovered during the works), natural features (trees, rocks, water), standing buildings or other structures including places of worship or pilgrimage, and sites with associations to historic events (battles, migrations, etc), Cultural heritage values can also include intangible values such as local traditions and practices, which could be disturbed or interrupted by the works or the intrusion of new people and practices into an area.	intangible cultural importance. 8. To the extent possible, facilities will be located at least 100 metres from sites of cultural importance to protect their cultural value, amenity and setting. Where this distance cannot be achieved, effective protection measures will be devised on a case-by-case basis in consultation with the local community 9. If a site or feature of cultural importance cannot be avoided the Project will consult the local community to determine the mitigation that is required. This may include relocation of moveable features, excavation and recording of archaeological sites. 10. If a site is located close to the facility the area will be clearly marked out and if necessary fenced to prevent encroachment by Project personnel or activities and to protect it from accidental disturbance. Such sites will be inspected regularly to confirm no inadvertent or unreported damage has occurred and to identify any risk of harm from the Project. 11. The location of any identified sites will be recorded using GIS for future reference when planning site developments and ground disturbance. The exact location and significance of any sites will be restricted to the minimum number of people required to ensure effective protection of the area. 12. If a cultural heritage site is damaged in any way, this will be treated as an incident, investigated and managed in accordance with the approved incident management procedures established for the Project. If any grievance should arise in this regard, this will be managed in accordance with the approved Grievance Procedure established for the Project. 13. Although many of the Camps, LSCs and associated areas will be located in areas where soils are thin and the potential risk of encountering buried archaeology is low, the Project will operate a Chance Finds Procedure in accordance with IFC Performance Standard 8. If any finds are encountered, work will cease immediately and temporary protection of the area will be established. The find will be reported and relevant specialists will be appointed to determine an appropriate course of action. 14. All Project personnel will be required to respect local cultural traditions and religious festivals, funerals and other traditional events. Induction training for all personnel will include appropriate cultural awareness training. 15. Inspections will be carried out during the works and after their completion to verify that measures have been implemented as planned.	infrastructure. Potential impacts on intangible cultural heritage will be carefully managed and avoided where possible by minimising the potential for inappropriate interactions between workers and communities and enforcing an appropriate Code of Conduct.

Potential Impact	Mitigation Measure	Assessment of Residual Impact
3. Community Health		
Pollution of air, water or soils and release of hazardous substances could cause adverse impacts on the health and welfare of people in the surrounding area. Inappropriate management of waste or camp and LSC facilities could lead to increased occurrence of pest species (including vermin, flies, mosquitoes).	16. Risks to the health of people caused by pollution of air, water and soils or from use of hazardous materials and disposal of hazardous waste, will be managed in accordance with the measures set out in <i>Chapter 4</i>. 17. A high standard of housekeeping will be maintained at all times throughout all facilities. 18. Pools of standing water will be eliminated where possible to minimise the availability of breeding grounds for mosquitoes. 19. Ongoing maintenance of work areas will include regular inspections for pest species. Appropriate management strategies will be implemented to manage any pests that may arise and may include use of approved pesticides etc. Methods used to control or prevent pests will not cause adverse impacts on the environment or communities. 20. Risk of water-borne diseases will be minimised using appropriate treatment methods for water.	Populations of pest species and vectors of disease will be carefully managed to minimise the potential spread of illnesses and infective diseases.
Interaction between workers and communities could lead to increased occurrence and transmission of communicable diseases. Prostitution may lead to increases in prevalence of STDs including HIV/AIDS. Lack of awareness and education concerning health hazards may contribute to a rise in the spread of communicable diseases.	21. A health management system will be established to ensure that all individuals are fit for work and illnesses are not introduced by Project personnel coming into contact with local people. 22. When undertaking risk assessments for occupational health hazards potential impacts on community health and safety will be considered alongside worker health and safety, and mitigation measures will be adopted, including health surveillance where appropriate, to provide appropriate levels of protection. 23. Camps and LSCs will include medical facilities and services appropriate to the nature and scale of activities carried out at that site and surrounding areas. 24. All Project personnel will be provided with appropriate induction training communicating the closed camp policy, health hazards, including HIV/AIDS and malaria along with the prevention and mitigation measures required. 25. Awareness posters regarding relevant hazards, including HIV/AIDS and malaria, will be posted and maintained in areas regularly used by workers. 26. Workers will be encouraged to attend HIV Awareness Programmes offered by the Company. The programmes will be developed in consideration of demands for prevention measures, awareness and education, voluntary counselling, testing, treatment, monitoring and evaluation. 27. Partnerships will be actively sought with specialist external organisations to deliver HIV education, awareness raising and treatment to employees, their	Inappropriate behaviour by Project personnel will be carefully managed to minimise the potential spread of illnesses and infective diseases. Specific efforts will be made to manage risks associated with HIV/AIDS in accordance with established Company standards.

Potential Impact	Mitigation Measure	Assessment of Residual Impact
	dependents and the broader community.	
4. Community Safety and Security		
Non-routine events such as fires and road accidents could potentially be caused by Project personnel or occur Camps, LSCs and associated work areas. Unauthorised access to work sites, by members of the community, could lead to individuals being exposed to safety hazards such as hazardous materials, electricity and equipment.	28. The measures described in <i>Chapter 4</i> will minimise the potential risk of non-routine events such as fires and road accidents and ensure that Project personnel have the capacity to respond to any such events in an appropriate manner and mitigate the potential for harm to communities. 29. Access to all sites will be strictly controlled using appropriate security provisions. Work areas will be clearly demarcated and signposted using pictorial signage to indicate and communicate hazards. 30. All risk assessment and emergency response planning will consider potential impacts on local communities and measures needed to ensure the safety and security of individuals in this regard. 31. Local authorities and affected communities will be provided with appropriate information communicating the nature and extent of any potential risk and impacts resulting from Project activities and procedures to be followed in the case of an unplanned accident or emergency. Training will be organised where necessary as identified by means of risk assessment.	Effective management of occupational safety and non-routine safety risks, along with site security, will ensure that risks associated with work activities and areas are minimised and local communities are not exposed to potential significant impacts.
Use of inappropriate force by security personnel in the event of an incident could compromise the safety and security of individuals from local communities.	32. Site security will be managed in accordance with the Voluntary Principles on Security and Human Rights for the extractive sectors. 33. Security personnel will be screened prior to employment by means of detailed interviews and inquiries will be made to investigate previous employment experience and records avoid those who have previously been involved in abuse or violation of human rights. 34. Work procedures, including a code of conduct, will be defined for security personnel to clearly established expected and accepted behaviours and practices. These procedures will be communicated as part of induction and appropriate training will be provided to ensure ongoing adherence to Company expectations in this regard. 35. The Project will develop appropriate disaster and emergency response plans. Security personnel will receive appropriate training regarding the different security-related scenarios that might arise, procedures to be followed in the case of each scenario, their roles and responsibilities during an emergency/security incident, and appropriate responses to different emergency scenarios that might arise. 36. Appropriate supervision will be provided by senior competent personnel to ensure	Trained, competent and adequately supervised security personnel will minimise the potential for safety and security risks and impacts affecting local communities.

Potential Impact	Mitigation Measure	Assessment of Residual Impact
	that established procedures are being applied by security personnel and training has been understood by the relevant security personnel. 37. Firearms will be strictly forbidden at any work area or facility. Security personnel will not be permitted to carry firearms or knives. 38. If community members express grievances in relation to the conduct of security personnel or activities, the Project will respond to the grievance in accordance with the Project 's established Grievance Procedure. 39. Security arrangements will be explicitly communicated to all relevant stakeholders including workers and representatives of affected communities.	
5. Worker-Community Interactions		
The presence and activities of workers at the Camps, LSCs and associated infrastructure could lead to communities feeling threatened. They may experience, or perceive, an increased risk of privacy invasion, crime or violence. Relations with the local community could be disturbed because of prostitution, gambling, drug abuse, and other antisocial or culturally unacceptable behaviours. Unauthorised movements for workers outside Camps, LSCs and work areas may lead to acts of trespass and damage to local land, crops or property. Influx of Project personnel and people looking for work may lead to reduced community cohesion as new cultures, traditions and customs are introduced to an area.	40. Local stakeholders will be consulted prior to commencing activities: - to understand their views regarding the siting and management of Camp, LSC and associated infrastructure; - to ensure administration and communities are aware of the activities that are planned, any impacts that may occur; and - to agree any management measures that may be required in consideration of specific local factors, conditions, or stakeholders. 41. All camps and LSCs will be operated as closed camps with controlled entry and exit for non-local workers. Transport directly to and from the work area and the camp or LSC will be organised and controlled. Non-local workers will only be permitted to leave camps, LSCs or work areas on specific work-related missions authorised by an appropriate supervisor. Appropriate levels of security will be provided at all camps, LSCs and work areas to ensure that this policy is upheld. 42. Appropriate catering and recreational facilities will be provided so that camps, LSCs and worksite are self-sufficient to avoid any need to to use local settlements for facilities or amenities. 43. If significant interaction with communities is required, the work team will be accompanied by a member of Simfer's Communities Department. 44. A Code of Conduct for Project Personnel will be developed detailing rules to be upheld to minimise the risk of anti-social behaviours. Appropriate disciplinary procedures will be developed and enforced to ensure that the Code of Conduct is upheld by all workers. 45. All Project personnel will be provided with appropriate induction training that will include communication of the Code of Conduct, the closed camp policy for non-local workers, associated disciplinary procedures, and any cultural sensitivities	The potential for unauthorised interactions with communities will be minimised and any such interactions will be carefully managed in an appropriate manner to avoid potential adverse impacts on people or communities.

Potential Impact	Mitigation Measure	Assessment of Residual Impact
	relevant to worker activities and work areas. 46. Induction training will also include communication of the procedures in place to ensure appropriate management of grievances and the requirement for all personnel to report any grievance within 24 hours of receipt. 47. Simfer's Communities Department will co-ordinate appropriate investigation and resolution of all grievances within a reasonable timeframe in accordance with the Simandou Project's established and approved grievance procedure.	
6. In-Migration and Resource Use		
Individuals may migrate to the local area of Camps, LSCs and associated infrastructure seeking job opportunities. This influx of new people to existing communities could lead to conflicts, as existing communities may feel threatened by newcomers and increased demand for resources depletes limited existing supplies, overwhelms existing provision or inflates prices. Resources in this regard may include food, housing, goods, infrastructure, services and natural resources such as firewood, medicinal plants, water and forest products. Depletion of food supplies could lead to adverse impacts on community nutrition.	48. Sites will be selected in consideration of the need to discourage in-migration and consequent impacts on local communities. 49. A buffer zone will be established and maintained around the perimeter of the Camps and LSCs to discourage individuals from moving into areas at the site boundary. 50. Supplies for camps and LSCs will be obtained locally where there are sustainable local sources available but will be imported into the area where suitable local resources are not available. 51. All employment will be managed via Local Employment Offices, which will be established in existing large settlements with capacity to accommodate population growth. Any individuals who approach work areas or camp and LSC facilities will be referred to the nearest Employment Office. No employment will be offered directly at Project sites. 52. An influx/in-migration management plan will be developed for the Project in consultation with the relevant local authorities setting out measures to manage in-migration to avoid adverse impacts on local communities. 53. Changes in local populations and demographics will be monitored where in-migration is considered a significant risk. 54. Measures will be taken to ensure that abstraction of water for camps and LSCs will not lead to significant adverse impacts on water resources for local use.	Careful siting of Camps, LSCs and associated infrastructure, and the implementation of a closed Camp policy will help minimise potential in-migration of individuals seeking opportunities. Ongoing vigilance and strategy development will continue during the course of the Project to inform developing strategies in this regard at a local level.
7. Employment Opportunities		
Direct and indirect employment may subsidise or replace subsistence livelihoods and be of economic benefit to those who find employment. Community relations may be adversely affected if employment	55. An Employment Plan will be developed to define requirements and procedures to be followed by all Project personnel when identifying and developing employment opportunities, managing employees, recording and reporting employment data, terminating work contracts, and other labour-related issues. This plan will comply with the Guinea Labour Code. 56. The Employment Plan will take into account expected fluctuations in demand for	Recruitment and employment will be carefully managed so as to maximise potential opportunities for local people, manage community expectations in this regard and

Potential Impact	Mitigation Measure	Assessment of Residual Impact
opportunities are not managed in an appropriate and transparent manner.	employment and local community expectations during different phases of development of camps and LSCs. 57. The Employment Plan and any local employment opportunities will be communicated in a transparent and culturally appropriate manner. 58. When advertising employment opportunities, the Project will clearly define the skills, qualifications and experience required for the available positions. 59. All employment-related decisions, including hiring, placement, promotion, benefits, training, discipline and dismissals, will be based solely on the skills, experience, performance and qualifications of employees and applicants. 60. Local Employment Offices will be established at key locations to facilitate access to employment opportunities for local candidates with appropriate skill-sets and to discourage in-migration to remote or sensitive areas. 61. Unskilled labour will be preferentially hired from the local communities. 62. A vocational training plan will be prepared to provide vocational training opportunities to the local population to increase their chances of obtaining employment. In addition, selected community employees will receive skills training to allow them to progress from unskilled to semi-skilled/skilled positions.	avoid potentially significant impacts.
8. Procurement of Goods and Services		
Procurement of local and Guinean goods and services for Camps, LSCs and associated infrastructure would assist local economies, livelihoods and incomes. However, it could also deplete resources available for other members of the community, decreasing food and resource security and leading to localised price inflations.	63. Opportunities for sustainable local procurement of goods and services will be identified wherever possible and measures will be devised to maximise the potential of these opportunities. Key community decision-makers will be consulted as part of identifying and developing opportunities. 64. The Project will work with suitable partners in Guinea to identify suitable suppliers and, where relevant, implement initiatives to support local capacity building. Where appropriate, procurement targets will be defined in consideration of what is possible and in consultation with potential suppliers. 65. Local prices will be monitored to identify any areas where local availability of resources has been adversely affected by Project procurement.	Procurement of local goods and supplies will be carefully managed to maximise the potential for positive economic benefits for local communities and will ensure that significant adverse impacts are unlikely to occur.
9. Human Rights		
Inappropriate management of the Camps, LSCs and associated infrastructure could lead to real, or perceived, curtailment of worker human rights (e.g. right to liberty).	66. The Project will be managed so as to: • comply with the Universal Declaration of Human Rights and Rio Tinto's Global Human Rights Policies; • comply with all relevant legislation (including the Guinean Labour Code) and	Worker rights and working conditions will be clearly communicated to workers in a transparent manner prior to commence of employment, and

Potential Impact	Mitigation Measure	Assessment of Residual Impact
	International Labour Organisation (ILO) conventions; • ensure appropriate management of labour-related risks; and • adhere to the Voluntary Principles on Security and Human Rights, as devised by companies in the extractive sectors together with governmental and non-governmental organisation. 67. Use of child labour will be strictly forbidden. Contractors, suppliers and recruitment agencies will not hire workers under the age of 16 and employment of young workers between 16 and 18 years will only be for light work of limited duration, where the work does not interfere with primary education, and is not dangerous or harmful to the physical, mental or moral development of young workers. 68. Use of forced labour will be strictly forbidden. Everyone will be allowed free choice to accept or reject opportunities of employment. 69. Labour and working conditions will be clearly communicated to potential workers as part of the recruitment process and will include communication of conditions relating to the closed camp policy and key relevant worker hazards and risks. 70. Workers will have the right to form and to join trade unions and create their own worker committees and worker representatives in accordance with the requirements and rights set out in the Guinea Labour Code. 71. Salaries will be just and favourable ensuring the worker and the worker's family have an existence worthy of human dignity. 72. Discrimination because of race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth, actual or perceived HIV status or other status will be strictly forbidden. 73. HIV/AIDS screening will not be a requirement for recruitment or a condition of employment. 74. Requirements relating to Human Rights will be clearly communicated to all relevant personnel as part of training, and incorporated into labour contracts. 75. Appropriate levels of auditing and verification will be carried out to monitor compliance with these requirements. 76. The Project will establish appropriate procedures facilitating the reporting of non-compliances and grievances by Project personnel and stakeholders and ensuring that any reported incidents are addressed in an appropriate and culturally sensitive manner.	enforced by employers, to ensure adherence to established norms and international standards. Appropriate auditing will be undertaken by Project personnel to monitor compliance in this regard and ensure that significant impacts do not occur.

Potential Impact	Mitigation Measure	Assessment of Residual Impact
10. Labour and Working Conditions - Employee Health, Safety and Welfare		
Inappropriate management of occupational health and safety hazards could lead to unsafe working conditions and accidents, injuries or illnesses amongst workers. Mental health issues associated with remote/enclosed living may arise e.g. low morale, isolation and loss of family attachments, boredom, stress, anxiety or a general reduction of wellbeing Differences in nationality, religion, ethnicity and gender may lead to discrimination and harassment during daily work. Resentments may arise if working conditions vary between different worker groups and these variations cannot be appropriately justified.	77. Employment procedures and conditions will conform to international standards with respect to protection of human rights, as set out in the previous section. 78. Employment practices and working conditions will conform to the requirements of IFC Performance Standard 2 (Labour and Working Conditions), the Government of Guinea Labour Code and ILO Standards. 79. Worker accommodation will be designed taking into account 'guidelines developed by the IFC and European Bank for Reconstruction and Development (EBRD). 80. Prayer rooms and other related facilities will be made available to meet the religious needs and customs of the workforce. 81. Appropriate facilities and rest and recreational time will be provided to allow workers to manage fatigue and engage in recreational activities. 82. Rules with respect to alcohol consumption and drug prohibition will be defined, to ensure that all Project personnel are fit for work and do not pose a danger to themselves or others. 83. Where different standards of accommodation are provided, procedures will be established governing allocation of accommodation and will be documented and communicated in a transparent manner to all affected personnel. Allocation of accommodation based on ethnicity or nationality will not be permitted. 84. Strict procedures will be adopted for hazard identification and risk assessment and for definition and implementation of appropriate mitigation measures to ensure a safe workplace. Relevant information will be communicated to all Project personnel. 85. The Project will establish strict procedures facilitating the reporting of health and safety incidents and ensuring that any reported incidents are addressed in an appropriate and culturally sensitive manner. 86. A fair, transparent, culturally appropriate and accessible Grievance Procedure will be available to all workers.	Employee health, safety, welfare and working conditions will be managed in accordance with international good practice standards to ensure that significant adverse impacts do not occur.

7 Management of Social and Environmental Impacts and Risks

7.1 Introduction

This chapter sets out how the Project will deliver the mitigation measures identified in the preceding chapters and any site specific additional mitigation identified for individual Camps and LSCs. This will be done through the Project's overarching Management System, a Social and Environmental Management plan (SEMP) for all Camps and LSCs, and Site Action Plans for individual locations.

Simfer has been operating in Guinea for more than 10 years. Over that period, robust procedures have been developed to manage social and environmental risks and impacts associated with exploration activities. These procedures form part of an integrated Health, Safety, Environment and Communities Management System (HSEC-MS) that has been developed to conform to relevant Rio Tinto ⁽¹⁾, IFC ⁽²⁾ and legal requirements. This HSEC-MS provides a framework to ensure systematic identification and management of social and environmental aspects of the Project in accordance with the requirements of the international standard for Environmental Management Systems ISO14001. The HSEC-MS sets out:

- the Project's policy, objectives, programme and targets for achieving continuous improvement in social and environmental performance;
- the way in which the Project identifies its social and environmental impacts and risks and the legal and other requirements that apply to each;
- the allocation of roles and responsibilities for social and environmental performance and how the Project ensures that people are qualified and competent to fulfil these responsibilities;
- how the Project communicates internally and with its external stakeholders;
- how the Project achieves operational control over its performance and prevents and responds to emergencies through detailed plans and procedures; and
- how the Project monitors and evaluates its performance.

This Management System will apply at all Camps and LSCs and will be used to ensure that all the mitigation measures identified in this SEIA, together with any other requirements deriving from national legislation, or from international conventions and other agreements or standards relevant to the Project, are implemented during the design, construction, operation and, where appropriate, closure of the facilities.

7.2 The Social and Environmental Management Plan for Camps and LSCs

To support the management system, all the mitigation measures identified here, and all other requirements, have been captured in a Social and Environmental Management Plan (SEMP) for Camps and LSCs. A draft of this document is presented in *Annex J* and this will be developed for each site to provide a Site Action Plan complying with the standards set out in *Table 7.1*. Further details are provided in *Section 7.3*.

(1) Rio Tinto HSEQ Management System Standard (Rio Tinto Group, Version 2, 2006 which is consistent with ISO 14001 (Environment), OHSAS 18001 (Health and Safety), AS/NZS 4801 (Health and Safety) and ISO 9001 (Quality)

(2) International Finance Corporation, (2012), Performance Standard 1: Assessment and Management of Social and Environmental Risks and Impacts

Table 7.1 Summary of Relevant Requirements Relating to SEMP's and Action Planning

Source	Relevant Requirements
IFC Performance Standard 1	A Social and Environmental Management Plan will: • be consistent with the organisation's policy and objectives; • describe mitigation and performance improvement measures and actions with a view to addressing all relevant social and environmental risks and impacts; • incorporate/reflect a combination of operational procedures, practices, plans, legal agreements and other related supporting documents; • be applied across the project and organisation taking into account primary suppliers and contractors affiliated with the company, as well as encompassing all sites, facilities and activities relating to the project; • reflect the outcome of any relevant consultations with affected communities; • facilitate compliance with applicable national and international laws and regulations, as well as with the requirements of IFC Performance Standards (PS) 1-8 ¹ • be developed to a level of detail and complexity commensurate with the risks and impacts identified; and • include mechanisms by which individuals can respond to the results of ongoing monitoring and review, and any unforeseen events or changes in circumstances. A SEMP will include: • required actions and/or required outcomes as and where appropriate; • prioritisation of actions; • measures of performance, where possible, using a combination of performance indicators, targets, or acceptance criteria to facilitate ongoing mitigation and monitoring over defined time periods; • estimates of suitable resources required for implementation; and • clear definition of responsibilities recognising, where relevant, the role of third parties.
Rio Tinto's HSEQ Management System Standard	Action plans will include: • clear identification and categorisation of actions; • formal agreement that the actions will be implemented; • prioritisation of actions; • assignment of responsibilities, resources and schedules for implementation; • implementation of actions; • tracking and reporting against implementation; • monitoring and verifying the effectiveness of the actions implemented and ongoing communication of action status; and • analysis of trends to communicate long term performance.

7.3 Development of Site Specific Action Plans

The SEMP set out in *Annex J* will apply to all camps and LSCs and will be based on the generic mitigation measures identified in this SEIA. In addition, site-specific mitigation may be identified to address particular local issues identified during the detailed planning of each site and its associate infrastructure. These will be developed in consultation with the local administration and the local community and will be recorded in the Site Files. Together with the general SEMP they will form the Social and Environmental Action Plan for each individual site. This will include a detailed Monitoring and Auditing Plan for the site as outlined in *Annex C*.

(1) International Finance Corporation Updated Sustainability Framework, 2012

7.4 Resources and Responsibilities

Rio Tinto will be responsible for ensuring that the environmental and social standards and commitments described in this document and set out in the SEMP and individual Site Action Plans are implemented by all parties involved in the work, including contractors and subcontractors.

The Project Director will have overall accountability for ensuring that all activities are carried out in compliance with legal requirements, international standards, the HSEC-MS, SEMP and Site Action Plans. As part of this role, the Project Director will ensure that adequate financial and technical resources are allocated to ensure appropriate development, maintenance and implementation of the SEMP and Site Action Plans for Camps and LSCs.

The Project Director will also ensure that appropriate arrangements are made to maintain training, competency and awareness for all Project personnel. Competency profiles and selection criteria will be developed for all roles in consideration of requisite training, education, skills and/or experience.

Health, Safety, Environmental and Social Specialists will support the ongoing operation of the HSEC-MS and ensure that all relevant requirements are clearly communicated to Project personnel. Procurement Specialists and Human Resources Specialists will support the development of effective and transparent systems for management of suppliers and contractors and for labour-related issues. These specialists will regularly audit and inspect activities to verify and communicate compliance with legal requirements, international standards (including IFC and Rio Tinto standards) and Project-specific requirements.

At a local level, Site Managers will be responsible for implementation of the Site Action Plan and for ongoing supervision of day-to-day activities. At various stages of the project, contractors will be commissioned to undertake specific activities. These contractors will only be engaged on the condition that they operate at all times in accordance with the Project HSEC-MS, take ownership of the risks and potential impacts associated with their activities, implement the mitigation measures that are required, as detailed in the SEMP and Site Action Plans, and effectively manage risks and potential impacts. Site Managers will provide sufficient oversight to ensure that this occurs and social and environmental impacts and risks are managed in an appropriate manner.

7.5 Management of Change

If circumstances at a site change the Site Manager will be responsible for ensuring that the Site Action Plan is reviewed so that it remains appropriate to the impacts and risks arising at the site. All changes will be documented, communicated and approved prior to implementing the change in accordance with the Project HSEC-MS. The Action Plan will also be reviewed in the event of any adverse occurrences or incidents, to ensure that appropriate measures are taken to prevent recurrence. Information will be shared with other sites so that they can also implement necessary measures.

7.6 Monitoring and Audit

Monitoring and auditing processes will be implemented to check the implementation and effectiveness of mitigation measures and determine compliance with agreed standards set out in *Chapters 4, 5 and 6*. The monitoring and audit plan will ensure significant risks are adequately monitored and actions taken. This will include weekly site inspections to check implementation of mitigation measures at a local level, quarterly site audits and an annual review of the adequacy of the HSEC-MS.

- Site Inspections will check that measures are being implemented on a routine basis.
- Quarterly Audits will check that the Site Action Plan is being implemented. The scope of these audits will be clearly defined using a risk-based approach and will focus on high-risk areas and activities at each site. An audit team will be appointed and will develop an audit programme and protocol covering all Camp and LSC locations. Audits will examine:

- management plans or other documents: where specifically required under the SEMP eg Waste Management Plan, monitoring plans, procedures;
 - specifications, drawings and finished works: to show that mitigation measures have been planned into the design of the works and implemented in the finished structure;
 - permits demonstrating that appropriate authorisations have been obtained prior to work commencing;
 - monitoring records: to check that environmental standards are being met;
 - incident records: verifying that incidents are being reported effectively, and appropriately investigated and corrective and preventive actions identified; and
 - other records: to demonstrate that required activities have been carried out eg inspection reports, reports of pre-construction surveys, records of community liaison, training records.
- Annual reviews will check that the project's policy, objectives and targets are being met and will include assessment of:
 - the effectiveness of the Project HSEC-MS, including procedures relating to definition of responsibilities, allocation of resources and verification of competency;
 - implementation of mitigation and monitoring measures set out in the SEMP and Site Action Plans;
 - compliance with legislative and regulatory requirements and standards, including any licences, permits and obligations arising from these;
 - implementation of resettlement and compensation of people affected by physical or economic displacement in accordance with the Resettlement and Compensation Policy Framework and with detailed resettlement and compensation plans for each site;
 - implementation of appropriate actions for engagement with external stakeholders in compliance with the Simandou Project Stakeholder Engagement Plan;
 - satisfactory operation of the Grievance Procedures for external stakeholders and workers; and
 - implementation of corrective actions identified through the site inspections and audits.

The results of annual reviews will be made available to the public as part of the annual Sustainable Development Report for the Simandou Project.

Appropriate corrective and/or preventive measures will be defined, initiated and tracked through to completion for all issues identified during the course of any inspection, audit or review, in accordance with procedures laid out in Simfer's HSEC-MS.

Annex A

Study Team

A1 SEIA Study Team

Topic	Name	Organisation	Role/ Title	Qualifications	Years
Project management	Karen Raymond	ERM	Project Director and Environmental Impact Lead	BSc Chemistry MSc Environment and Pollution Control IEMA Principal EIA Practitioner IEMA EIA Practitioner Examiner	38
	Sabine Hoefnagel	ERM	Social Impact Lead	Masters in Law University of Amsterdam Masters in Law, University of New York	15
	Richard Fontaine	SNC-Lavalin	Baseline Study Team Director	BSc.A. (Forest Eng.), L.L.B. (Law), M.B.A	21
	Robert Auger	SNC-Lavalin	Baseline Study Team former Project Manager	BEng., MSc.A. (Civil Eng.)	21
	Libby Schroenn	ERM	SEIA Social Lead	BE Economics, Industrial Psychology BCom Economics, Environmental Economics	15
	Alec Martin	ERM	SEIA Environment Lead	BSc Geography Hons Physical Geography MSc Sustainable Management of Water Environment	10
	Colin Maciver	ERM	Project Manager	MA Environmental Planning	4
Mine Team	Peter Southern	ERM	Component Director	B. Sc Murdock University	30
	Camille Maclet	ERM	Component Manager	MEng Environmental	15

Topic	Name	Organisation	Role/ Title	Qualifications	Years
				and Earth Resources Engineering	
Rail Team	Eamonn Barrett	ERM	Component Director	BA Anthropology PhD Tropical Ecology	25
	Sarah Dewsbury	ERM	Component Manager	BA Geography MSc Coastal Zone Management	10
Port and Marine Offloading Facility Team	Maarten Kuijper	ERM	Component Director	MSc Marine Biology MSc Tropical Coastal Management	19
	Alec Martin	ERM	Component Manager	BSc Geography Hons Physical Geography MSc Sustainable Management of Water Environment	10
Early works and Infrastructure Team	Caroline Kennedy	ERM	Component Manager	BSc Environmental Science MSc Environmental Management	6
Social Impact Specialists	Philippa Spence	ERM	In-Migration	BA Social Anthropology and English BA Hons Social Anthropology PDM Human Resources	10
	George Koppert	SNC-Lavalin	Social Baseline	BSc Maths applied to Social Sciences MSc Human Nutrition and Applied Statistics PhD Anthropology	14

Topic	Name	Organisation	Role/ Title	Qualifications	Years
	Catherine Sabinot	SNC-Lavalin	Social and Fishers	BSc Biology of Organisms MSc Environmental Science PhD Ethanoecology	12
	Mark Divall	SHAPE Consulting Ltd	Health	MB, ChB PG diploma in Anaesthesia PG diploma in Occupational Medicine and Health	14
	Graeme Rodgers		In-Migration	B.A. (Hons) Social Anthropology and Psychology M.A. Social Anthropology Ph. D Social Anthropology	15
	Callie Phillips	ERM	Health, Safety and Security Lead	B. Med.Sc Medical Science MSc Epidemiology	5
	Michael Hall	ERM	Land Use, Impact Assessment	BSc Zoology MSc Environmental Technology	4
Socio-economics	Kerryn McKune Desai	ERM	Socio-economic	B.Soc.Sc Environmental & Geographical Science, Social Anthropology, Archaeology B.A Hons Environmental & Geographical Science MA Geography of Third World Development	10

Topic	Name	Organisation	Role/ Title	Qualifications	Years
	-	Cabinet AMERA	Environmental and socio-economic expertise	-	-
	-	LA Granada Enterprises Inc.	Social sustainable development	-	-
	Susan Novak	SNC-Lavalin	Baseline Socio-economist	MEDes, B.Arch., B.A. (philosophy)	25
	France Séguin	SNC-Lavalin	Socio-economic Baseline	Master (International Development), B.A. (Communication)	20
	Julie Forget	SNC-Lavalin	Socio-economic Baseline	M.A.(Development Economics), B.Eng.(Industrial Eng.)	15
	Caroline-Anne Perreault	SNC-Lavalin	Socio-economic Baseline	M.Sc.(Urban Studies), B.A.(Geography)	10
	Brigitte Ditner	SNC-Lavalin	Socio-economic Baseline	Ph.D. (Sociology)	35
	Fodé Mamadou Camara, Dantily Diakit�, Amadou Diallo, Ma�mouna Diallo, Mady Diawando, Mohamed Lamine Dioubat�, David Ni�r�k� , Niabalamou, Massa Guilavogui Abdoulaye Ibrahima Tour�, Augustin Sakouvogui	SNC-Lavalin	Baseline Sociologist	Various	
Geology, Hydrology, hydrogeology	Mark Raynor and Peter Baur	Water Management Consultants (now Schlumberger Water Services (SWS))	Development, management, and environmental protection of water resources	Various	
	Peter Southern	ERM	Soils and Geology	BSc Murdock University	30
	Hugo Marais	ERM	Groundwater and Hydrogeology	BSc Geology, Zoology BSc (Hons) Hydrogeology MSc Geology	10
	Tim Smith	ERM	Inland freshwater	BSc Physics MSc Engineering Hydrology CEng Chartered Engineer	22
Marine	Maarten Kuijper	ERM	Marine Environment	MSc Marine Biology MSc	19

Topic	Name	Organisation	Role/ Title	Qualifications	Years
Environment				Tropical Coastal Management	
	Alec Martin	ERM	Marine Biodiversity	BSc Geography Hons Physical Geography MSc Sustainable Management of Water Environment	10
Noise	Rod Linnett	ERM	Noise and Vibration	Mech eng associate diploma	18
	Claude Chamberland	SNC-Lavalin	Noise Baseline	B.Sc., M.Sc. (Mechanical Eng.)	21
Air Quality	Chris Hazel- Marshall	ERM	Air Quality	BSc Environmental Risk Management Ph.D Air pollution and cardiovascular health effects	13
	Alexandre Couture	SNC-Lavalin	Air Quality and Noise	-	-
Climate	Kate Fradley	ERM	Microclimate	BSc Physics with Satellite Technology MSc Applied Meteorology	1
	Karen Fisher	ERM	GHG and Global Climate	BSc (Hons) Biology MSc Aquatic Resources Management Postgraduate certificate Environmental life cycle management	8
Biodiversity	Eamonn Barrett	ERM	Biodiversity	MA, PhD	25
	Beth Seldon	ERM	Terrestrial/ Freshwater Biodiversity	BSc Wildlife Biology MSc Wildlife Conservation and Management	4
	Helen Temple	The Biodiversity Consultancy	Biodiversity Specialist	BSc (Animal & Plant Biology), Sheffield, 1st class PhD (Zoology), Cambridge	16

Topic	Name	Organisation	Role/ Title	Qualifications	Years
	Véronique Tuffeli	SNC-Lavalin	Biologist	B.Sc., M.Env. (Biology)	28
	Jonathon Ekstrom	The Biodiversity Consultancy	Biodiversity	B.Sc, M.Sc	12
	Chantal Roy	SNC-Lavalin	Biodiversity Specialist	B.Sc. (Biology)	24
	Dominique Auger	SNC-Lavalin	Biologist	B.Sc, M.Env. (Biology)	10
Specialist information on biodiversity provided by individual scientists					
Amphibian and reptile	Christian Brede	University of Würzburg, Experimentelle Stammzell		PhD	-
	Annika Hillers	Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam		-	-
	Mohamed Alhassane Bangoura	Programme de conservation de la biodiversité des Monts Nimba		-	-
	Joseph Doumbouya	Centre d'Etude et de Recherche en Environnement (CERE), Université de Conakry		-	-
	Eli Kpogomou	Centre de Gestion de l'Environnement des Monts Nimba et Simandou (CGENS)		-	-
	Kaman Camara	SNC-Lavalin	Herpetofauna Specialist	-	-
	Bernard Doré	Programme de conservation de la biodiversité des Monts Nimba		-	-
	Gaspard Théa	SNC-Lavalin	Herpetofauna Specialist	-	-
Freshwater Fish	Philippe A. Lalèyè	Faculty of Agriculture Sciences University of Abomey-Calavi		Diploma (Agronomy)	22
	Mambi Magassouba	Centre National des Sciences		M.Sc. (Ichthyology)	29

Topic	Name	Organisation	Role/ Title	Qualifications	Years
		Halieutiques de Bousoura (CNSHB)			
	Sékou Camara	Centre National des Sciences Halieutiques de Bousoura (CNSHB)		-	-
Flora	Martin Cheek,	Royal Botanic Gardens, Kew		B.Sc (Hons), M.Sc, D.Phil	20
	Susana Baena, Yvette Harvey, Xander van der Burgt, Charlotte Couch, Laura Pearce, Iain Darbyshire, Sharon Laws	Royal Botanic Gardens, Kew		Various	
	Barthelemy Tchiengue, Gaston Achoundong	Herbier National Camerounais		Various	-
	Martin Etuge	Conservation Research on Endangered Species (CRES)	-	-	-
	Elias Ndivé	Limbe Botanic Garden	-	-	-
	Jean-Louis Holié, Nicolas Delamou	N'Zérékoré Forestry Center	-	Various	-
	Thomas Williams Seydou Cissé	Rio Tinto Environment Department	-	Various	-
	Alphonse Traoré, Fatoumata Fofana, Pépé Haba, Pierre Haba	Guinée Écologie	-	Various	-
	Boubacar Diallo	Herbier de Séré	-	--	-
Use of Natural resources	Watta Camara	N'Zérékoré Forestry Centre		-	-
	Salim Kouyaté	N'Zérékoré Forestry Centre		-	-
Ecosystems Services	Emily Cooper	ERM	Ecosystem Services	BA Biology MSc Environment	7

Topic	Name	Organisation	Role/ Title	Qualifications	Years
				and Development	
Landscape	Peter Austin	ERM	Landscape and Visual Impacts	BSc Urban and Regional Planning, Landscape Architecture Graduate Diploma Landscape architecture, Masterplanning. Urban Design	30
Cultural Heritage	Doug Park	ERM	Cultural Heritage	B.Sc, PhD	10
	Djibril Tamsir Niane	SNC-Lavalin	Historian	-	-
Legal Framework	Monya Pelchat	SNC-Lavalin	Environmental Analyst	B.Sc.A, B.A., M.Sc. (Civil Eng. & Geographer)	15
	Laurent Lopez-Parodi	ERM	Government Relations	L.L.M. (Law)	8
GIS	Ingrid Gjrov	ERM	GIS Manager	B.Sc Planning for tourism and area analysis M.Sc Urban Planning	4
	Christian Laliberté, Laurence Bathalon, Mélanie Dupré, Christian Laroche, René Aubut	SNC-Lavalin	GIS Specialists	Various	

Annex B

Policy, Administrative & Regulatory Review

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B1 Introduction

This annex sets out the legal and administrative context for the Project, including brief summaries of selected legislation and standards concerning environmental and social issues that may be applicable. It does not seek to provide comprehensive details of all relevant Guinean legislation.

Simfer, as part of the Rio Tinto Group, through its application to construct and operate the Project, is committed to meeting the spirit and intent of a number of international, national, provincial policies, guidelines, laws and regulations. These include the following.

- Internal Corporate mandates, policies and best practices commitments;
- Guinean legislation and regulations including all necessary permits and approvals;
- International law;
- IFC Performance Standards; and
- Good International Industry Practice (GIIP) that helps define leading industry practices.

This regulatory and administrative framework is described in the following sections, along with the targets for environmental and regulatory compliance and a summary of the status of project permitting.

B2 Corporate Commitments

Rio Tinto is a world leader in finding, mining and processing the earth's mineral resources. Key Rio Tinto operating principles include protecting the health & safety of its employees, contributing to sustainable development and conducting business with integrity. Rio Tinto aims to work closely with host countries and communities, respecting their laws and customs and ensuring a fair share of benefits and opportunities ⁽¹⁾. Rio Tinto's reputation for acting responsibly is embedded in the way Rio Tinto operates and is based on Rio Tinto's core values of Accountability, Respect, Teamwork and Integrity. These values are expressed through the principles and standards of conduct set out in *The Way We Work*. These define the way Rio Tinto manages the economic, social and environmental challenges of its operations and are important to fulfilling Rio Tinto's commitment to contribute to sustainable development. The key principles set out in *The Way we Work* can be summarised as follows.

- **Safety-** We are committed to an incident and injury free workplace. Our Goal is zero harm.
- **Health-** We are committed to protecting health and wellbeing.
- **Employment-** We respect the right and dignity of employees throughout our own operations and those of our business partners.
- **Drugs and alcohol impairment-** We must not possess or consume illegal drugs, or be impaired by alcohol or drugs, while working on Rio Tinto business or premises.
- **Security and business-** We are committed to protecting our employees, assets and reputation, and ensuring the resilience of our operations when confronted by crises, site disasters or any instance that might affect business continuity.
- **Human Rights-** We support and respect human rights consistent with the Universal Declaration of Human Rights and actively seek to ensure we are not complicit in human rights abuses committed by others.
- **Communities and indigenous peoples-** We set out to build enduring relationships with our neighbours that demonstrate mutual respect, active partnership, and long-term commitment.
- **Land access-** We seek to get the widest possible support for our proposals throughout the lifecycle of our activities.
- **Environment-** Excellence in environmental performance and product stewardship is essential to our business success.

As the developer of the Simandou Project, Simfer will abide by the Rio Tinto values and will comply with *The Way We Work*. In abiding by these values and by complying with *The Way We Work*, Simfer is committed to the sustainable development of Guinea and its people and aims to protect and develop Guinean's environmental resource and its people over the long term. Simfer is committed to the health & safety of its employees and the wider communities on which its activities will have an impact.

Simfer intends to implement systems for managing environment, health and safety and community issues across the Simandou Project based on corporate principles embedded in *The Way We Work*. Simfer will develop the capabilities and support mechanisms necessary to administer its social and environmental management plans. Implementation will be based on raising the level of awareness of social and environmental requirements, expectations, and benefits throughout the Project. Health, safety, environmental and community protection and development are amongst the highest Project priorities.

(1) Rio Tinto, "*The Way We Work*", our global code of business conduct; December 2009

In addition to *The Way We Work*, Rio Tinto also supports a number of international voluntary commitments, agreements and conventions as follows.

- Extractive Industries Transparency Initiative
- Global Sullivan Principles of Social Responsibility
- International Chamber of Commerce Charter for Sustainable Development
- International Council on Mining and Metals Sustainable Development Framework
- International Labour Organisation (ILO) Declaration on Fundamental Principles and Rights at Work
- International Labour Organisation Convention 169: Concerning Indigenous and Tribal Peoples in independent Countries
- Kimberley Process
- OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions
- OECD Guidelines for Multinational Enterprises
- Transparency International
- Business Principles for Countering Bribery
- United Nations Global Compact
- United Nations Universal Declaration of Human Rights
- Sources Voluntary Principles on Security and Human Rights
- World Economic Forum- Global Corporate Citizenship Initiative CEO Statement
- World Economic Forum- Partnering Against Corruption Initiative (PACI)
- Principles for Countering Bribery.

Rio Tinto has taken into the above into account when setting out its proposals for the Project.

B3 Guinean Government and Administration

B3.1 Government Structure

The Government of Guinea is lead by a president elect for five year terms. Presidential candidates must receive a majority of the votes cast to be elected president and it is possible for the president to be elected for a second term. Once a winning candidate has been announced, The President appoints a Prime Minister who nominates 33 ministers who form the government. Alongside the elected President, the system requires that the Minister of Defence and Commander in Chief of the Army jointly lead the government for the duration of the term.

In March 2010, a 155 member National Transition Council (CNT) was appointed and has since acted as the national legislature. CNT members come from a diverse background, including academics, opposition party members, trade unionists and representatives of civil society groups. Legislative elections are scheduled for December 2011 and will see the CNT dissolved and new government created.

Guinea operates a civil law system based on the French model. It accepts the International Criminal Court systems and implements International Court of Justice requirements with reservations. The most recent constitution is dated 7 May 2010.

Guinea has a hierarchal system of government delivered through eight Regions, each led by a Governor and 33 Prefectures and 1 'special zone' (Conakry) each prefecture led by a Prefect supported by a council of appointed ministers. The prefectures are subdivided into 335 sub-prefectures. There are also 33 Urban Districts (*Communes Urbaines*) headed by elected mayors and 304 Rural Development Communities (CRDs *Communautés Rurals de Développement*) headed by elected presidents.

B3.2 Institutional Framework

The government has established a number of Ministries led by appointed Ministers and Ministers of State. Each Ministry delivers and implement specific responsibilities on behalf of The President. The Ministers have the authority to issue consents for development which relate to their administrative areas The key Ministers who may be involved in regulation and granting permits and other approvals relevant to the Simandou Project include, but are not limited to, the Ministers of Mines and Geology, Environment, Territorial Administration and Decentralisation Habitat, Urbanism and Construction, Health and Public Hygiene, Transport and Agriculture.

B4 Legislative Framework Applicable to the Project

B4.1 Environmental Legislation and Policy

The Code for the Protection and Development of the Environment, Ordinances 045/PRG/87 and 022/PRG/89 (also known as the Environmental Code) establishes the administrative and legal framework in Guinea to enable the Guinean State to deliver on its constitutional obligation to provide for a clean and healthy environment to every person in Guinea.

The Environmental Code is the cornerstone of environmental protection in Guinea and sets out the fundamental legal principles to be complied with to ensure the protection of environmental resources and the human environment.

Title I sets out the general principals applicable in relation to environmental protection in Guinea and sets out the administrative structures in charge of administering environmental protection activities in Guinea and provides that the Ministry for natural resources, energy and the environment is the key administrative institution for the protection and management of environmental resources in Guinea. The Act creates a National Committee to help the Ministry in formulating the national policy for environmental protection. Title II provides for the protection of specific resources such as the soil and sub-soil; inland waters; the sea and its resources and the air.

Title III provides for the protection and valorisation of environmental resources and the human environment. Title IV deals with nuisance and covers a broad range of topics. Chapter I deals with waste management; of particular interest Article 60 provides that waste must be treated to eliminate or reduce the negative impacts on human health, natural resources, fauna, flora and the overall quality of the environment. Article 66 provides that wastewaters and other liquid wastes originating from industrial or commercial installations such as quarries or mines must be treated by physical, biological or chemical means before being disposed of. Chapter II deals with installations requiring an environmental permit (also known as classified installations) and provides that these installations must obtain a permit before construction or operation commences. This permit is delivered jointly by the Ministry of Environment and the Ministry of Industry and Small and Medium Enterprises. Chapter III deals harmful or dangerous chemical substances and Chapter IV deals with noise and odour nuisance.

Title V provides for the administrative procedures and financial arrangements applicable in Guinea. Chapter I establishes the procedure for environmental impact assessment. Article 82 sets out that the developer or the project manager must submit an environmental impact study to the relevant regulatory authority for projects, structures or installations that may, by their size or the nature of their activities, have an impact on the environment. Article 83 of the Environment Code provides for a Ministerial Decree to set out a list of activities that may require an environmental impact study and also provide for a Ministerial Order to provide the content, methodology and the procedure to follow in relation to the environmental impact study. Article 83 provides, however, that the study must include a baseline assessment of the site and the environment the proposed development will be located in; an assessment of the foreseeable impacts that the Project/development may have on the natural and human environment; a synopsis of the mitigation measures proposed by the developer to eliminate, reduce or compensate the negative impacts that the Project may have and an estimate of the costs associated with these measures. A description of the alternatives and the reasons why, from an environmental protection perspective, the Project envisaged was selected. Chapter II of Title V deals with emergency plans and Chapter III provides for a financial fund dedicated to environmental protection.

Title VI deals with offences and penalties and Title VII deals with miscellaneous arrangements.

B4.2 Environmental Planning and EIA Legislation

Article 82 of Title V of the Environmental Code (Ordinances 045/PRG/87 and 022/PRG/89) sets out that the developer or the project manager must submit an environmental impact study to the relevant regulatory authority for projects, structures or installations that may, by their size or the nature of their activities, have an impact on the environment. Article 83 of the Environmental Code then provides for a

Ministerial Decree to set out a list of activities that may require an environmental impact study and also provide for a Ministerial Order to provide the content, methodology and the procedure to follow in relation to the environmental impact study.

Presidential Decree 199/PRG/SGG/89, made under Article 82 of the Environmental Code, sets out the projects which require an environmental impact assessment (EIA) study ⁽¹⁾. This is a framework Decree in relation to EIA. It sets out the projects that require an EIA and the content of the EIA study. Simfer activities that are likely to fall under the scope of the EIA Decree include the construction and/ or development of harbours; mining and quarrying activities; construction of airports, railway lines and roads; and all sites that would be classified as a Class I classified installation.

Order 990/ NRNE/SGG/90, made under Art 7 of Decree 199/PRG/SGG/89, establishes the content, methodology, and procedures to be complied with when carrying out an environmental impact assessment. This Order sets out that the Environmental Impact Study must have five sections:

- The first section must summarily describe the Project including its aim(s); geographical location; estimated build costs; the date the investment decision was made and the timeline for the Project.
- The second section should describe the baseline of the site and the surrounding environment, concentrating especially on the aspects that may be affected by the Project such as sites, natural resources, landscapes, and the socio-economic and cultural landscape of populations). Topics to be covered in relation to the Project include geology and pedology; hydrogeology; hydrology; fauna and flora; landscape and visual; air pollution and noise/ odour nuisance; traffic and infrastructure; social and socio-economics.
- The third section should assess the impacts of the Project on the environment in respect of, in particular, landscape and visual; fauna and flora, the natural environment and biological interactions and, if applicable, nuisances (noise, vibration, odour etc); on public hygiene and the cultural heritage.
- The fourth section sets out the reasons why, especially from the point of view of the protection of the environment, the Project, in its present form, has been selected. In particular, this section should address the selection of the site and the selection of the various production processes that have been chosen.
- The fifth section details the measures envisaged by the developer to eliminate, reduce, or mitigate the negative impacts of the Project, including cost estimates to put these measures into action.

Environmental impact studies that do not provide sufficient details in the sections detailed above will be required to justify and explain the gaps by citing the costs or technical implications that would be involved in closing these gaps as per Art.3 and 4 of Decree 199/PRG/SGG/89. The National Directorate for the Environment may however, in compliance with Art.4 of Decree 199/PRG/SGG/89 request additional submissions to be made to complement the environmental impact study.

Article 9 of Order 990/ NRNE/SGG/90 provides for the publicity arrangements depending on whether the Project is to be (or not) subjected to a public enquiry.

Chapter II of Order 990/ NRNE/SGG/90 deals with the procedure relating to the environmental impact study. Article 10 states that all environmental impact assessment studies must gain the approval of the Environmental Minister (on the recommendation of the National Directorate for the Environment) within three months or within the timeline fixed by other relevant legal texts as necessary. Article 11 provides for work to be suspended by Order of the Environment Minister if an environmental impact assessment study has not been submitted or if the procedure for submitting such a study has not been complied with. Article 12 establishes the role of the National Directorate for the Environment in ensuring that mitigation measures presented in the environmental impact study and agreed upon in the planning Order are complied with.

(1) Note that this assessment is entitled a Social and Environmental Impact Assessment and is designed to meet the Guinean requirements for EIA and also IFC and Rio Tinto corporate policies requiring consideration of social as well as environmental issues.

B4.3 Interaction between Environmental Planning and Permitting Legislation

Presidential Decree 200/PRG/SGG/89, made under Article 73 of the Environmental Code, on the Regulatory Regime for Classified Installations in relation to the Protection of the Environment sets out the administrative and financial provisions applicable to classified installations. Classified Installations are installations which by the nature of their activities or the actual volume of activities undertaken require permitting under Guinean environmental legislation.

Order 03/8003/PRG/SGG lists all industrial activities which fall under the scope of Decree 200/ PRG/SGG/89 and for which an integrated permit is required. This Order sets, for each industrial activity, thresholds that reflect the level of potential harm arising from the activity and for which different obligations will apply. Industrial sites are classified as Class I or Class II sites depending on the level of harm to the environment.

Simfer activities that may potentially fall under the scope of the classified installation regime include vehicle maintenance workshops (category 23); any activities involving the crushing, screening of rocks or mineral or associated activities (category 29); treatment of waste including land filling of waste or incineration of waste (category 42); the storage of explosives (category 45); the storage of heavy fuel (category 49) and/ or LPG (category 50); the storage of fuel (59 to 62); the washing of minerals (category 65).

Article 2 of Presidential Decree 200/PRG/SGG/89 provides that the owner or the operator of a classified installation must request its environmental permit at the same as its building permit. A building permit will need to be obtained prior to the construction of any building as per Article R221-1 of the Urban Development Code. However, a building permit can only be obtained only after the environmental permit for a classified installation has been obtained.

B4.4 Land Law and Policy

There are a number of Guinean laws applicable to the Project that control the use of land and the built environment. The role of land law legislation in Guinea is three fold:

- Ensure that environmental protection is considered at the level of policy making. These plans set the basic ground rules for action on the environment in any particular area. These plans are generally drafted at the national and/ or regional levels and must be read in conjunction with central government policy documents;
- Ensure control over the development process through the use of planning permission/ building permit which needs to be obtained from the local planning authority before development can take place. In most instances, a building can only be obtained if the authorities have given a positive decision to the development through the environmental impact assessment process; and
- Ensure environmental protection through the use of conditions, agreements etc. related to environmental protection on a grant of planning permission/ building permit via, for example, the need to obtain an environmental permit (also known as a classified installation permit) before production can begin.

The Urban Code (Law L/98 No 017/98) sets out that the Guinean State is responsible for the management and development of the national territory. This control is exercised through the national land development plan (also known in French as the *Schéma National d'Aménagement du Territoire-SNAT*) and the Regional Development Master Plans (*Plans Directeurs d'Aménagement Régionaux, PDAR*), which provide the different level of governments with the tools to influence development at a policy making level.

In addition to the Urban Code, the Guinean Government has published the Declaration of Land Policy in the Rural Environment (Decree D/ 2001/037/PRG) which is aimed at promoting rural economic and social development by securing rural land rights and rules in favour of agricultural development, improving sustainable resource management, and allowing the development of a transparent and equitable land market. This Decree is the strategic framework for rural land management.

At a local level, the Code on Local Government, which provides for the decentralisation of powers from Central Government defines the local communities' competencies, missions, domain and assets as well as the boundaries for community intervention. This Code defines the local communities' roles and responsibilities in land use management. The local council must give its opinion prior to every investment projects and all soil occupation / exploitation. Local communities share with the State the responsibility for land use management.

The cornerstone of property rights in Guinea is the Fundamental law of the Republic of Guinea which proclaims that the right to own property is guaranteed. This law expressly recognises the right to private property ownership in Guinea. With regards to expropriation, it states that: "no one can be expropriated if it is not for the wider public interest and only if it is accompanied by fair and prior compensation."

The Land Code (L/99/013/AN) sets out the over-arching legal framework that sets out the rules applicable to land in Guinea. It reinforces and underlines the right of private ownership in accordance with the general principle set forward by the Fundamental law. The Land Code primarily deals with registered properties and provides for the registration of properties through the use of titles, leases and deeds. It defines two land registration procedures:

- Through the land ownership plan: it is a simple administrative document, not in itself a property title, which is held at the urban municipality level for towns and at the rural development community level for rural areas; and
- Through the land ownership registration: this results in the deliverance of a full ownership deed and the document will be held by the land ownership conservation service.

In practice, these land registration procedures have not been comprehensively implemented in rural areas. Although most of the Land Code provisions relate to registered property, Article 39 can be interpreted as recognising customary rights. It defines land owners as physical persons or legal entities that can demonstrate peaceful, personal, continuous (in excess of thirty years) and bona fide occupation of a dwelling as an owner.

The Land Code also sets out provisions for expropriation in the public interest. The Land Code does not however provide detailed provisions with regards to the level of compensation over and above the general principal of fair compensation set out in Article 55. Article 69 also states that: "compensation must cover the whole of the quantifiable and known loss incurred as a direct result of the expropriation".

The Land Code also provide for the need to obtain a building permit before building occurs.

B4.5 Mining Legislation and Policy

Law L/95/036/CTRN of 30 June 1995 relating to the Mining Code of the Guinean Republic, and subsidiary legislation made under this law, establishes the legal framework relating to the ownership and rights to minerals and covers prospection, exploration, exploitation, storage, transport, commercial exchange and transformation of mineral substances and the tax system associated with these activities. Liquid and gaseous hydrocarbons do not fall under the scope of this Law.

Article 16 of the Mining Code sets out that mining or quarrying activity must be undertaken in an environmentally friendly way in compliance with the requirements of the Environmental Code. Firms must take necessary measures to prevent pollution of the environment; treat waste, emissions to air and discharges to the environment; protect forests and water resources.

The Mining Code also sets out requirements, in Chapter II on health & safety at work, applicable to the health & safety of workers (see *Section 2.4.8*).

Article 11 of the Mining Code on Mining Conventions provides that a mining convention will be drawn for all mining permits and mining concessions. This document will set out the rights and obligations of all parties

participating in a mining project and will set-out the legal, financial and fiscal and social framework applicable to these parties for the duration of the Convention.

Rio Tinto signed with the Government of the Republic of Guinea a framework mining convention on the 26th November 2002. This Convention provides the legal, administrative, financial, tax and customs and social framework in which Simfer will be able to carry out its research and prospection activities within the limits of its exploration concession in order to determine the presence of iron ore that may be exploited on a commercial basis. This Convention provides for Simfer activities to include iron ore concentration and transportation activities with a view to allow the efficient workings of the iron ore and allows for Simfer to set-up and manage the necessary heavy infrastructure for the transport and onward distribution of the iron ore. This Convention also sets out the general and business conditions under which the Project will be undertaken. This Convention is established under the Mining Code and deals with iron ore.

This Convention will be, alongside the Mining Code, the primary legal instrument that will regulate Simfer early work activities in relation to the Simandou Project. Article 37 of this Convention deals with the protection of the environment and cultural heritage and provides that Simfer must comply with the applicable Guinean environmental, health & safety, security and well-being legislation and international best practices as applicable to the mining sector.

Article 37.2 of the Mining Convention provides that Simfer must, for all investment programmes relating to mining projects in the Concession area carry out an environmental and social impact assessment. The assessment will include mitigation measures to reduce the negative impacts of the Project including a programme to rehabilitate impacted sites. The assessment will also include a monitoring programme. The scope of these assessments will be agreed between Simfer and the State within 6 months of the Mining Convention being signed.

Article 37.4 provides that in the instance that an archaeological find is made within the Concession area, an appropriate assessment by a competent person will have to be carried out prior to the production phase and costs will have to be born by Simfer. If Simfer discovers archaeological artefacts, it must ensure that these are not moved or removed and that the administration is contacted as soon as possible. Simfer also pledges to participate financially, to a reasonable level, to any rescue attempt.

B4.6 Forestry Legislation and Policy

The Forestry Code (81/PRG/SGG/89) sets out the legal framework in Guinea with regards to the protection of forests. It is the cornerstone of forestry legislation in Guinea and covers all aspects of commercial, conservation and community use of forests. The Forestry Code details the requirements relating to the classification, management, usage, protection and replanting of Guinean forests. It also sets out the role of the Forestry police. Article 58 provides that trees (with very few exceptions) cannot be felled without a licence. When trees are located in an area covered by a forestry management plan, the felling licence can only be in line with the forestry management plan (Art. 59).

Section 2 of the Forestry Code deals with the protection of forestry resources.

Section 3 deals with bush fires.

Section 4 deals with reforestation.

Section 5 deals with customary rights.

Section 6 sets up the national forestry fund.

Section 5 establishes the forestry police and provides for the procedure when investigating offences, sets out the types of offences, the punishment linked to these offences (typically monetary fines, custodial sentences or remedial works).

Section 6 provides for the final administrative provisions with regards to this Code.

B4.7 Biodiversity Legislation and Policy

The Code of Protection of Wildlife and Rules of the Hunt (L/99/038/AN) sets out the legal framework for the protection, conservation and management of wildlife and its habitats; and provides for the right to hunt to be

recognised. This text also provides for some rules on hunting and aims to promote the sustainable use of animal species and ensure their sustainability for the satisfaction of human needs.

B4.8 Marine Legislation and Policy

Decree 201/PRG/SGG/89, made under Articles 32 to 39 of the Environmental Code, sets out the legal framework for the control of pollution in the marine environment. Article 4 of the Decree sets out that all vessels, within Guinean territorial waters must comply with the Guinean Environmental Code, this Decree and all applicable legal texts made under these. A vessel is defined as any type of structure used in the marine environment including ships, submarines, platforms, fixed and floating structures.

Chapter II deals with discharges from vessels and accidents at sea. Article 14 of the Decree prohibits hydrocarbon releases to the marine environment except under very specific circumstances.

Chapter III deals with discharges from land based structures to the marine environment. Chapter III makes provisions for discharges from land-based structures that have the potential to impact the marine environment to be prohibited or permitted by the Environmental Regulator.

Chapter IV deals with discharges from offshore platforms or structures used for exploration or extraction purposes. Article 30 prohibits any hydrocarbons or mixed discharges that may impact public health, marine fauna or flora; or impact the coastal economic development or tourism.

Chapter V deals with marine wrecks.

Annex I of the Decree lists substances for which discharges are prohibited, while Annex II lists substances for which discharges subject to permitting.

B4.9 Guinean Extractive Industries Transparency Initiative (ITIEG)

Guinea was accepted as an EITI Candidate country on 27 September 2007, but temporarily suspended its EITI Candidate status in December 2009, with EITI Board's approval, in view of the difficult political situation in the country. Following a request from the democratically elected Guinean government, Guinea's suspension was lifted and its candidate status reinstated by the EITI Board on 1 March 2011.

The Extractive Industries Transparency Initiative (EITI) is a global standard that promotes revenue transparency. It is founded on a process initially developed from the EITI Principles at the EITI Conference in 2003 ⁽¹⁾. The Standard is underpinned by the EITI Principles and the EITI Criteria. In short, the EITI requires companies to publish what they pay in taxes and royalty payments and governments to publish what they receive by applying a robust yet flexible methodology for monitoring and reconciling company payments and government revenues at the country level. The process is overseen by participants from the government, companies and national civil society. The EITI Board and the International Secretariat are the guardians of the EITI methodology internationally ⁽²⁾.

The aims of the EITI are to:

- ensure the transparency of the payments and revenues made by companies in the extractive industry and the payments received by governments by the companies in the extractive industry;
- make this information public and to enhance dialogue with civil society and the general public; and
- ensure the good use of the wealth generated as an engine for growth and to contribute to sustainable development and poverty reduction.

(1) <http://eiti.org/eiti/principles>

(2) EITI Factsheet, 3 May 2011

The ultimate aim of a candidate EITI country is to achieve compliant status under the Standard. This is achieved by undergoing validation against the EITI Standard, which provides an independent assessment of the status of a country implementing the EITI and what measures they should take to make better and faster progress. This assessment is carried out by an independent auditor, using the Validation Grid and Indicator Assessment Tools as outlined in the EITI Rules. The EITI Board, through the EITI Secretariat, oversees the Validation process. The EITI Board reviews all Validation Reports. To achieve Compliant status a country must complete an EITI Validation within 2 years of becoming a Candidate Country. Once a country is Compliant, the country must undergo Validation at least every 5 years, or upon the request from the EITI International Board.

If the Board considers that the country meets all of the EITI Indicators, the country will be designated as EITI Compliant. Where the validation report shows that a country has made progress but does not meet all the EITI Indicators, the country will remain a Candidate. Where Validation shows that no meaningful progress has been achieved, the Board may revoke the country's candidate status.

The administrative structures of the EITI in Guinea (also known as EITIG) were created as early as June 2005 and immediately started work on implementing the ITIE Principles and Standard. These structures are as follows.

- The Overseeing Committee. Its role is to exercise strategic oversight of the Steering Committee. It reviews progress against the plan and the budget to achieve validation against the Standard. Its aim is to remove any roadblocks;
- The Steering Committee, is a multi-stakeholder group in charge of implementation and follow up of the EITI in Guinea. It comprises 24 members, including 12 members from the Civil Service. It includes the Ministers in charge of mines and economy and finance; the president of the chambers of mine and the president of the national civil societies. It is chaired by the Prime Minister ;
- The Executive Committee was eliminated and replaced by two commissions in charge of the collection, processing and the audit of payment data ; and the other one responsible for communicating and capacity building; and
- The Executive Secrétariat is in charge of managing, organising and carrying out the activities of the ITIE in Guinea.

B4.10 Workers Protection

The Social Security Code (L/94/006/CTRN) is the primary source of legislation in Guinea for the protection of workers and their families against economic or social poverty and hardship that could result from any significant loss of earnings. This Code sets out the legal framework to protect workers and their families from such hardship and provides for a number of social protection regimes including retirement pension funds, invalidity funds and survivors funds; work accidents and occupational illnesses funds; family support fund, illnesses fund and sanitary and social fund. All workers, falling under the scope of the Work Code, will fall under the scope of the social security regime. The Code provides for indemnities to be collected from employees and employers; and also provides for the redistribution of monies collected via a number of indemnities to be paid out when employees fall ill, retire, raise children etc. Simfer will ensure that employees are registered as per the requirements of the Code.

Decree D/253/24/PRG on Occupational health creates a national department of occupational medicine within the Guinean Health Ministry; and sets out the roles and responsibilities of this Department. This Decree also sets a number of key requirements in relation to the monitoring of employees health in relation to medical exams (pre-employment and on an annual basis, whilst in employment; or when returning to work following a period of illness in order to determine the employee's fitness to work)

In addition to the Social Security Code, the National Framework Convention on mining and quarrying activities and the mining industry and Order 1386/MASE/DNTLS on the categorisation of workers in the private sector regulates the relationship between the employers who have signed the Convention and the

unions for mines, quarries and the mining industry for companies that principally operate in the mines, quarries and mining industry sector. Simfer, as an employer that has signed the Convention, will fall under the scope of the Convention.

Key requirements under the Convention include the following.

- The requirement for Rio Tinto to comply with the current framework, set out by legislation and convention, with regards to work hours, compensation (in terms of time off) and overtime.
- The requirement for Rio Tinto to comply with current health & safety legislation and set-up health & safety committees whose purpose is to support the set-up of health & safety management programmes, their management and implementation to protect workers.
- The Requirement for Rio Tinto to comply with the relevant health & safety legislation, including Art.193 & 194 of the Work Code on occupational health medicine. Simfer is not limited by the law and can offer additional benefits over and above what is prescribed by law.

B4.11 Health, Safety and Environment

The Labour Code is the primary source of legislation governing employment practices and labour relations in Guinea. The Code does not apply to civil servants, but applies to all private sector employees. It prohibits forced or compulsory labour. It establishes the rules for hiring and termination of employment; rules in relation to work conditions including salary entitlement, maximum work hours and overtime; employee benefits such as holiday pay and retirement pay. The Code also sets out requirements in relation to the health & safety protection of employees. It makes provisions for the creation of employers unions and trade unions and sets out rules for trade union representation within the workplace; employee membership in labour unions, as well as setting out rules for dispute negotiations and collective bargaining. It provides for the creation of a specialised administrative branch of the state (Work Inspectorate) and a specialised branch of the legal system to deal with the implementation of, and compliance with, Labour laws.

In addition to the Labour Code, the Mining Code also sets out requirements, in Chapter II on health & safety at work, applicable to the health & safety of workers. Article 133 of the Mining Code provides that persons (including bodies corporate like Simfer) undertaking mining or quarrying activities must comply with the highest standards of health & safety as set by the Mining Ministry in collaboration with the Ministry in charge of Public Health and the Work Ministry. Companies are required to submit their health & safety policy (describing their health & safety arrangements) to the National Directorate of Mines. Article 134 provides a mechanism for addressing any sub-standard health & safety performance in the mining or quarrying sector. Article 135 prohibits under sixteen year olds from working in the mining or quarrying industry.

B4.12 International Obligations and Commitments

In addition to its national laws, Guinea is a signatory to a number of international conventions, co-operative agreements and legal obligations concerned with environmental and social issues (see *Table B4.1*), which have contributed to shaping and influencing the development of policy, guidelines and regulations that are applicable to the Project.

Table B4.1 Main International Conventions and Agreements Signed by Guinea

Convention	Date of Ratification/ Accession	Key Objectives
Convention on Climate Change	Guinea ratified the Convention in May 1993 and it entered into force in March 1994.	192 countries around the world joined an international treaty, the United Nations Framework Convention on Climate Change, that sets general goals and rules for confronting climate change. The ultimate objective of the Convention is to stabilise greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous human interference with the climate system. The Convention provides that countries must meet the Convention objectives primarily through national measures.
Kyoto protocol to the United Nations Framework Convention on Climate Change	Guinea accepted the Kyoto protocol in September 2000.	This Protocol has been accepted by the Guinean Government in September 2000 and it came into force in February 2005. Guinea is not an Annex I Party to the Protocol and therefore does not, currently, have to meet a specific greenhouse gas emission reduction target. There is currently no Guinean specific legislation implementing the Kyoto Protocol in Guinea.
Vienna Convention for the Protection of the Ozone Layer	Guinea acceded to the Vienna Convention in June 1992 and the Convention came into force in September 1992.	Guinea ratified the Vienna Convention and the Montreal Protocol in June 1992. The Convention provides for the international legal framework to protect the ozone layer. Guinea has not, to date, adopted specific legal instruments to implement the Convention in its legal system.
The Montreal Protocol on Substances that Deplete the Ozone Layer	Guinea ratified the Montreal Protocol in June 1992.	The Montreal Protocol on Substances That Deplete the Ozone Layer (a protocol to the Vienna Convention for the Protection of the Ozone Layer) is an international treaty designed to protect the ozone layer by phasing out the production of a number of substances believed to be responsible for ozone depletion. The treaty was opened for signature on September 16, 1987, and entered into force on January 1, 1989. Guinea ratified the Montreal Protocol in June 1992. The Protocol provides for the international legal framework to protect the ozone layer by setting out phasing-out targets and schedules for the substances (chlorofluorocarbons and hydro chlorofluorocarbons) listed in the Protocol. The Protocol allows developing countries (meeting specific requirements listed in the Protocol), in order to meet their basic domestic needs, to delay for ten years their compliance with the control measures set out in the Protocol. This means that the implementation of the Montreal Protocol in Guinea may occur in the future. In addition, the Protocol is addressed to the signatory States and does not directly apply to Simfer's activities in Guinea. Simfer's activities could be indirectly impacted by the Protocol if Guinea had adopted specific legal instruments to implement the Protocol in its legal system, however, there is currently no Guinean specific legislation implementing the Montreal Protocol in Guinea.
Convention on the Conservation of Migratory Species of Wild Animals	Guinea is a party to this Convention which came into force in August 1993.	The convention aims to ensure the conservation of Migratory Species and Natural Environment by an intergovernmental co-operation. The convention sets out to conserve wild flora and fauna and their natural habitats; promote co-operation between states; monitor and control endangered and vulnerable species; and to assist with the provision of assistance concerning legal and scientific issues. This convention was transposed into Guinean legislation via the Guinean Code of Protection of Wildlife and Rules of the Hunt.

Convention	Date of Ratification/ Accession	Key Objectives
Convention on Biological Diversity	Guinea ratified this Convention in May 1993.	The objective of this Convention is to develop national strategies for the conservation and sustainable use of biological diversity. It is often seen as the key document regarding sustainable development. The Convention has three main goals: conservation of biological diversity (or biodiversity); sustainable use of its components; and fair and equitable sharing of benefits arising from genetic resources. This Convention has been transposed at a national level in Guinea with the Code of Protection of Wildlife and Rules of the Hunt.
African Convention for Nature Conservation and the Conservation of Natural Resources	Not yet ratified by Guinea.	This Convention aims for the conservation and rational use of soil, water, flora and fauna resources. The objectives of this Convention are: to enhance environmental protection; to foster the conservation and sustainable use of natural resources; and to harmonize and coordinate policies in these fields with a view to achieving ecologically rational, economically sound and socially acceptable development policies and programmes. It has not been possible to confirm, based on publicly available information, whether Guinea has ratified this Convention and/ or whether it has transposed the requirements of this Convention into Guinean legislation.
Convention concerning the Protection of the World Cultural and Natural Heritage	Not yet ratified by Guinea.	This Convention aims to protect the world cultural and natural heritage. This Convention provides for the creation of an intergovernmental committee for the protection of the world cultural and natural heritage and its associated fund. Information available in the public domain shows that Guinea has not ratified the Convention to date. Guinea is therefore unlikely to have transposed the Convention in its national legislation at this moment in time.
Ramsar Convention on Wetlands	Guinea is a party to this Convention, which came into force in March 1993.	The Convention on Wetlands of International Importance, called the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. The Convention uses a broad definition of the types of wetlands covered in its mission, including lakes and rivers, swamps and marshes, wet grasslands and peatlands, oases, estuaries, deltas and tidal flats, near-shore marine areas, mangroves and coral reefs, and human-made sites such as fish ponds, rice paddies, reservoirs, and salt pans. Guinea has signed and ratified this Convention and it came into force in March 1993. Guinea has submitted national reports on the implementation of the RAMSAR Convention in Guinea which show that the Guinean government has taken some steps to implement the Convention; however it appears that Guinea does not have a national policy on the management of wetlands.
Basel Convention	26.04.95 (accession but not ratification)	Control of Transboundary Movements of Hazardous Wastes and their Disposal.
United Nations Convention on the Law of the Sea	Guinea ratified this Convention in September 1985 and the Convention came into force in November 1994	The United Nations Convention on the Law of the Sea (UNCLOS), also called the Law of the Sea Convention or the Law of the Sea treaty, is the international agreement that defines the rights and responsibilities of nations in their use of the world's oceans, establishing guidelines for businesses, the environment, and the management of marine natural resources. It has not been possible to confirm, based on publicly available information, whether it has transposed the requirements of this Convention into Guinean legislation.

Convention	Date of Ratification/ Accession	Key Objectives
Convention for the Cooperation in the Protection and Development of the Marine and Coastal Environment of the Western and Central African Regions	Guinea is a party to this Convention. The Convention came into force in August 1984.	The Convention for the Cooperation in the Protection and Development of the Marine and Coastal Environment of the Western and Central African Regions (also known as the Abidjan Convention) covers the marine environment, coastal zones and related inland waters falling within the jurisdiction of the States of the West and Central African Region, from Mauritania to Namibia inclusive. It is a comprehensive umbrella agreement for the protection and management of the marine and coastal areas and lists the sources of pollution which require control: pollution from ships, dumping, land based sources, exploration and exploitation of the sea-bed, and pollution from or through the atmosphere. It also identifies environmental management issues from which co-operative efforts are to be made: coastal erosion, specially protected areas, combating pollution in cases of emergency; and environmental impact assessment. There are also articles on scientific and technological co-operation and liability and compensation. It has not been possible to confirm, based on publicly available information, whether the Guinean Government has transposed the requirements of this Convention into Guinean legislation.
Convention to Combat Desertification (A/AC.241/27)	Guinea has signed and ratified this Convention and it came into force in September 1997.	The objective of this Convention is to combat desertification and mitigate the effects of drought in countries experiencing serious drought and/or desertification, particularly in Africa. The Convention aims to achieve this through effective action at all levels, supported by international cooperation and partnership arrangements, in the framework of an integrated approach which is consistent with Agenda 21, with a view to contributing to the achievement of sustainable development in affected areas. Guinea has signed and ratified this Convention and it came into force in September 1997. Guinea has also produced a national action plan against desertification. It appears, from a review of Guinean legislation that there is no specific additional national legislation dealing with desertification, but that the aims and objectives of the Convention have been incorporated into existing legislation such as the Environmental Code, the Mining Code etc.
Extractive Industries Transparency Initiative	Guinea is a candidate country under the EITI	Guinea's candidate status was reinstated on 1 March 2011, following the temporary suspension of its candidate status in 2009 in light of the political difficulties experienced by the country. The aim of the EITIG is to ensure the transparency of the payments and revenues made by companies in the extractive industry operating in Guinea and the payments received by the Guinean government from these companies.

Convention	Date of Ratification/ Accession	Key Objectives
World Heritage Convention (UNESCO)	The Convention came into force in 1975. Guinea ratified the Convention in March 1979.	The Convention aims to promote cooperation among nations to protect the world's natural heritage and cultural properties that is of such outstanding universal value that its conservation is important for current and future generations. The Convention defines the kind of natural or cultural sites which can be considered for inscription on the World Heritage List; and sets out the duties of States Parties, of which Guinea is one of, in identifying potential sites and their role in protecting and preserving them. By signing the Convention, each country pledges to conserve not only the World Heritage sites situated on its territory, but also to protect its national heritage. The <i>Mount Nimba Strict Nature Reserve</i> was established by Decree in 1944 and declared as a biosphere reserve in 1980. Guinea has listed the <i>Mount Nimba Strict Nature Reserve</i> on the list of world heritage in danger in 1992. The Guinean government has also listed the cultural landscape of the <i>Mount Nimba</i> range on the tentative list of cultural sites to be protected under the Convention.
Freedom of Association and Collective Bargaining, Convention 1948 (87)	Guinea ratified Convention 87 in January 1959.	The Freedom of Association and Protection of the Right to Organize Convention, 1948 (No. 87) establishes the right of all workers and employers to form and join organizations of their own choosing without prior authorization, and lays down a series of guarantees for the free functioning of organizations without interference by the public authorities. It has not been possible to confirm, based on publicly available information, whether the Guinean Government has transposed the requirements of this Convention into Guinean legislation.
Right to Organise and Collective Bargaining Convention 1949 (98)	Guinea ratified Convention 98 in March 1959.	The Right to Organise and Collective Bargaining Convention 1949 (98) provides for protection against anti-union discrimination, for protection of workers' and employers' organizations against acts of interference by each other, and for measures to promote and encourage collective bargaining. It has not been possible to confirm, based on publicly available information, whether the Guinean Government has transposed the requirements of this Convention into Guinean legislation.
Elimination of Discrimination in Respect of Employment and Occupation (111)	Guinea ratified Convention 111 in September 1960.	The Convention on the Elimination of Discrimination in Respect of Employment and Occupation provides that member states pursue a national policy designed to promote, by methods appropriate to national conditions and practice, equality of opportunity and treatment in respect of employment and occupation, with a view to eliminating any discrimination in respect thereof. It has not been possible to confirm, based on publicly available information, whether the Guinean Government has transposed the requirements of this Convention into Guinean legislation.
Worst Forms of Child Labour Convention 1999 (182)	Guinea ratified Convention 182 in June 2003.	The Worst Forms of Child Labour Convention 1999 provides that each member who ratifies the Convention must take immediate and effective measures to secure the prohibition and elimination of the worst forms of child labour as a matter of urgency. This includes slavery, trafficking, prostitution and pornography, forced labour and recruitment into militia, as well as occupations that harm the child's safety, morals or health. It has not been possible to confirm, based on publicly available information, whether the Guinean Government has transposed the requirements of this Convention into Guinean legislation.

Convention	Date of Ratification/ Accession	Key Objectives
Minimum Age Convention 1973 (138)	Guinea ratified Convention 138 in June 2003.	The ILO Minimum Age Convention, 1973 (No.138) sets the age below which children should not be in work at 15 (or 14 if a country's economic status requires that in the short term). Two years before they reach this minimum legal age, children can do 'light work' -- non-hazardous work for no more than 14 hours a week, and that does not interfere with schooling. Children under the minimum working age who are engaged in more than light work are in child labour. UNICEF additionally considers a child to be in child labour if they do domestic work for 28 hours or more a week.
Safety and Health in Mines Convention 1995 (176)	Guinea has not, to date, ratified this Convention.	The Convention applies to all mines (except mines that have been exempted by a competent national authority where the protection afforded at these mines under national law and practice is not inferior to that which would result from the full application of the provisions of the Convention). Each State which ratifies the Convention, must following consultations with the most representative organizations of employers and workers concerned, formulate, carry out and periodically review a coherent policy on safety and health in mines.

B5 International Standards Applicable to the Project

B5.1 Applicable IFC Performance Standards and EHS Guidelines

International Finance Corporation (IFC) Performance Standards, and accompanying Guidance Notes, are utilised by financial institutions to define clients' roles and responsibilities for managing social and environmental risks and impacts of their projects. These standards are internationally recognised and are therefore also regularly applied to projects that are not necessarily seeking IFC support. IFC Performance Standards relate to both conducting an SEIA as well as to the technical performance standards of the Project.

The IFC Performance Standards comprise:

- Performance Standard 1: Assessment and Management of Social and Environmental Risks and Impacts
- Performance Standard 2: Labour and Working Conditions
- Performance Standard 3: Resource Efficiency and Pollution Prevention
- Performance Standard 4: Community Health, Safety and Security
- Performance Standard 5: Land Acquisition and Involuntary Resettlement
- Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- Performance Standard 7: Indigenous Peoples
- Performance Standard 8: Cultural Heritage

The social dimension of these standards encompass (i) labour standards and working conditions including occupational health and safety and (ii) community impacts such as public health, safety and security, gender equality, impacts on Indigenous Peoples and cultural heritage, involuntary resettlement, and affordability of basic services.

The Project will also demonstrate best practice in relation to a number of voluntary IFC General and Industry Sector EHS Guidelines. The EHS Guidelines contain performance levels and measures that are generally considered to be achievable in new facilities at reasonable costs by existing technologies ⁽¹⁾. The Project proponent is thus aiming to conform to the intent and spirit of these standards and guidelines. The Project Proponent will work in partnership with the Guinean government, communities and other stakeholders to address relevant and applicable specific recommendations from these standards and guidelines. A high level summary of the requirements of the IFC Performance Standards that are applicable to the Project, is presented in *Table B5-1*.

PS7 will not apply as there are no defined indigenous peoples in Guinea.

(1) Application to existing facilities may involve the establishment of site-specific targets.

Table B5-1 Applicable IFC Performance Standards

Performance Standard	Requirements	Relevant Requirements
<i>Performance Standard 1: Social and Environmental Assessment and Management System</i>	- Establish and maintain a Social and Environmental Management System incorporating: (i) Social and Environmental Assessment; (ii) management program; (iii) organizational capacity; (iv) training; (v) community engagement; (vi) monitoring; and (vii) reporting; - Social and Environmental Assessment to be based on: accurate project description; appropriate social and environmental baseline data; and consider applicable laws and regulations, conventions; - Analyse key risks and impacts within project's area of influence: (i) the primary project site(s) and related facilities; (ii) associated facilities (iii) areas potentially impacted by cumulative impacts; and (iv) areas potentially affected by impacts from unplanned but predictable developments caused by the project that may occur later or at a different location; - Risks and impacts will also be analysed for the key stages of the project cycle; - Avoid, minimize, mitigate, or compensate adverse impacts; - Project-affected groups and local NGOs must be consulted about the potential effects; - Public Consultation and Disclosure Plan (PCDP) which establishes the framework for executing public consultation in a way which is transparent and captures relevant stakeholder feedback. - Establish and manage a program (Management Program) to consist of operational policies, procedures, mitigation and performance improvement measures and actions that address the identified social and environmental risks and impacts.	- International SEIA in line with international expectations (IFC) - Regulatory EIA which meets Guinean requirements - SEMS and SEMP identifying how adverse impacts and risks will be managed and mitigated - SEP that will be updated throughout SEIA process to reflect ongoing stakeholder engagement - Grievance Procedure - Timely Disclosure of impacts and proposed mitigation measures - Stakeholder comments to be integrated into final SEIA and SEMP
<i>Performance Standard 2: Labour Conditions</i>	- Create good working conditions and manage the worker relationship; - Protect the work force, do not employ child or forced labour; - Provide workers with a safe and healthy work environment; - Use commercially reasonable efforts to contract non-employee workers; - Consider any adverse impacts associated with supply chains.	- Health and safety procedures to be incorporated into SEMP - Where feasible execute a preferential employment policy that gives local workers an opportunity to benefit from the project
<i>Performance Standard 3: Pollution Prevention and Abatement</i>	- Apply pollution prevention and control technologies and practices that are best suited to avoid, minimize or reduce adverse impacts on human health and the environment while remaining technically and financially feasible and cost-effective. - Energy Efficiency: Examine and incorporate in its operations resource conservation and energy efficiency measures, consistent with the principles of cleaner production. - Promote the reduction of project-related GHG in a manner appropriate to the nature and scale of project operations and impacts; - The project-specific pollution prevention and control techniques should be applied during the entire project life-cycle.	- SEIA to consider environmental standards set out in national law and in IFC General and relevant sectoral EHS Guidelines, 2007 - Comply with International Standards for Energy Efficiency and Cleaner Production - Quantify emissions - Evaluate options for reducing of offsetting disturbance and emissions

Performance Standard	Requirements	Relevant Requirements
<i>Performance Standard 4: Community Health, Safety and Security</i>	• Evaluate the risks and impacts to the health and safety of the affected community throughout whole life cycle from both routine and non-routine circumstances; • Establish appropriate preventive measures to address them; • Infrastructure and Equipment Safety: Design, construct, and operate and decommission project in accordance with good international industry practice. • Hazardous Materials Safety: Prevent or minimise the potential for community exposure to hazardous materials that may be released by the project. Special attention to delivery/removal of hazardous waste/ products along transportation routes. • Environmental and Natural Resource Issues: Avoid or minimise the exacerbation of natural hazards, such as landslides or floods that could arise from land use changes • Community Exposure to Disease: Prevent or minimise the potential for community exposure to water-borne, water-based, water-related, vector-borne disease, and other communicable diseases that could result from project activities. • Where specific diseases are endemic in communities in the project area of influence, the client is encouraged to explore opportunities during the project life cycle to improve environmental conditions that could help reduce their incidence. • Emergency Response Plan: Inform affected communities of significant potential hazards in a culturally appropriate manner. Assist and collaborate with the community and the local government agencies in their preparations to respond effectively to emergency situations. • Employee/Contractor safety: provide security safeguards based on international practices in terms of hiring, rules of conduct, training, equipping and monitoring of such personnel and applicable laws	• Health and safety procedures to be incorporated into SEMP • Design project elements, especially Tailings Storage Facility, Waste Rock Disposal Facility, Flood Water Catchments & Diversion structures etc. to minimise risk from natural hazards such as flooding, soil erosion, earthquake • Disease and Health Management Plan which covers all workers for the Project • Pre-employment medicals • Access to medical check-ups, education about communicable diseases (such as STDs) • Emergency Response Plan: to be prepared in consultation with communities and local government • SEP to include plan for stakeholder engagement on emergency response issues •
<i>Performance Standard 5: Land Acquisition and Involuntary Resettlement</i>	• Compensation and Benefits for Displaced Persons: When displacement cannot be avoided, the client will offer displaced persons, and communities, compensation for loss of assets at full replacement cost and other assistance to help them improve or at least restore their standards of living or livelihoods. • Where livelihoods of displaced persons are land-based, or where land is collectively owned, the client will offer land-based compensation, where feasible. • Mitigate socio-economic impacts from land acquisition; • Improve livelihoods of those displaced and living conditions at resettlement sites; • Special requirements for Physically and Economically Displaced Persons; • If resettlement is required, these requirements are achieved through the development of a Resettlement Action Plan (RAP) which incorporates: consultation, compensation, income restoration, monitoring.	• Project Design: Avoid or at least minimize involuntary resettlement • Inform groups who may be affected by land acquisition • SEP to include plan for consultation with those affected by land acquisition and resettlement • Special grievance procedure to be established for persons affected by physical or economic displacement • Demonstrate that due process has been followed for compensating existing land users

Performance Standard	Requirements	Relevant Requirements
Performance Standard 6: Biodiversity Conservation and Sustainable Natural Resource Management	• Evaluate project impacts on biodiversity (during SEIA) and adopt measures to eliminate or reduce, paying particular attention to the problems of habitat destruction; • Special requirements for “protected areas” and “critical habitats”.	• Evaluate impacts on biodiversity (during SEIA) • Adopt measures to eliminate or reduce adverse impacts
<i>Performance Standard 8: Cultural Heritage</i>	• Comply with relevant national law on the protection of cultural heritage • Cultural Heritage impacts during the impact assessment process, and (ii) include a “Chance-find Procedure” for archaeological relics; • Consult with affected communities if the project may affect cultural heritage.	• Cultural Heritage Investigation • Chance-find Procedure to be implemented during construction

B6 Mining Concession and Mining Convention

Simfer S.A., a member of the Rio Tinto Group, holds a mining concession for iron ore over the Southern part of the Simandou mountain range in the Republic of Guinea.

A mining agreement convention between the Guinean government and Simfer S.A., which was ratified by a law passed and signed in February 2003 (Mining Convention), as well as a Settlement Agreement signed between the same parties on 22 April 2011, defines the legal framework applicable to the Simandou project.

The mining concession for the exploration and mining of iron ore over the Southern part of Simandou was granted by decree (Decree D/2011/134/PRG/SGGD2006/008/PRG/SGG) to Simfer on April 22, 2011. This decree was issued pursuant to the Mining Convention and the Settlement Agreement.

Annex C

Site File Template

Simandou Project

Social and Environmental Impact Assessment for Construction Workforce Accommodation and Logistical Supply Centres

Site File: <<*Location*>> *Logistical Supply Centre No. YYY*

Company: Rio Tinto
Product Group: Iron Ore
Business Unit: Simfer S.A.
Doc Ref: XX VX00
Date: DD Month YYYY

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Annex A: Technical Information

Annex B: Record of Stakeholder Consultation

Annex C: Site Social and Environmental Action Plan

Annex D: Site Monitoring and Audit Programme

1 Introduction

Provides an introduction and explains the context of the document including:

- the proposed Camp/LSC;
- explanation of context of the Class SEIA approach; and
- description of the purpose of this Site File in relation to the Class SEIA, and the additional site-specific information to be presented.

2 Project Description

Description of the specific development planned at this location, including:

- Relevant maps.
 - a national and local map showing the location of the site; and
 - a detailed plan of the site boundary and associated infrastructure, overlain on aerial photography.
- Specifications for on-site and associated facilities – accommodation, welfare facilities, storage, fuel handling, concrete batching, other construction-related processes, power supply, water supply, sewage treatment, waste disposal, *etc.*
- Discussion on alternatives considered, and the justification for the site election.
- Summary of the construction plan for the facility.
- Overview of the operation of the facility.
- Description of the current planned closure scenario for the facility.

3 Stakeholder Engagement

- Description of stakeholder engagement activities undertaken during planning for the facility Identifying dates, times, locations and names/positions of stakeholders involved in the process. Detailed records to be documented in *Annex B*.
- Summary of the comments and views expressed by stakeholders and explanation of how they have been taken into account in planning for the facility.

4 Description of the Baseline Environment

4.1 Introduction

Document sources of information - maps, aerial photography, satellite imagery, baseline studies, published information, site visits and consultation with members of local communities

4.2 On-Site

Description of the conditions and features on site and in areas to be occupied by the facility and its associated infrastructure, including:

- physical conditions;
- vegetation and habitats;
- soils;
- water resources;
- current land use and land ownership; and
- vehicle/ pedestrian access routes to and from and near the site

4.3 Surrounding Areas

Description of the conditions and features in the area surrounding the site and its associated infrastructure, including:

- physical conditions;
- local habitats and any significant species of fauna or flora;
- water resources;
- surrounding land use and ownership, including any sensitive or important areas;
- surrounding land ownership;
- existing infrastructure in the area;
- religion and ethnicity of people living near the site;
- livelihoods in the local communities;
- potential for the local community to supply goods or services to the site; and
- specific health, safety or security issues in the local community.

5 Site-Specific Impacts and Mitigation

Assessment of the magnitude and significance of any impacts specific to the site (including positive impacts/opportunities), and details of site specific commitments to mitigation and monitoring.

These will be presented in the Site Social & Environmental Action Plan included in *Annex C* and the Monitoring Programme in *Annex D*.

Annexes

A Technical Information

Supplementary maps, drawings and specifications.

B Records of Stakeholder Consultations

Stakeholder Engagement Record	
Date	
Time	
Site	
Location	
Participants	
Key issues or concerns	

C Site Action Plan

Impact/ Issue	Site Specific Mitigation	Compliance Indicators	Responsibilities & Resources

D Site Monitoring and Audit Plan

Impact/ Issue	Monitoring plan (parameters, frequency, measuring locations, methods)	Standards for satisfactory performance	Responsibilities & Resources

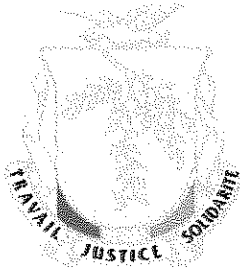
Annex D

Terms of Reference

Approval by Government of Guinea Ministry of Environment

Part A Proposed SEIA Overview and Methodology

Part D Construction Workforce Accommodation and Logistical
Supply Centres



Conakry, le 12 OCT. 2011

MINISTRE DELEGUE A L'ENVIRONNEMENT
AUX EAUX ET FORÊTS

Le Ministre

N° . 0630 /MDEEF/CAB/2011

A

Monsieur Andrew TAPIN
Directeur Général par intérim
Rio Tinto- SIMFER S.A.

CONAKRY

Objet : Approbation des Termes de
Référence de l'EIES du projet SIMFER.

Monsieur,

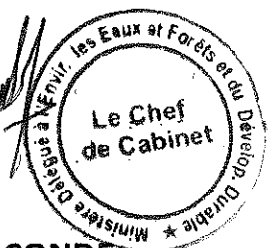
Suite à votre courrier N/R-334/2011/AT/SIMFER, j'ai l'honneur de vous informer qu'après analyse des termes de référence (TDR) de l'étude d'impact environnemental et social du projet cité en objet par les services compétents de mon Département, lesdits TDR sont jugés conformes à la législation environnementale et ainsi, ils peuvent être jugés recevables.

Par ces motifs, le promoteur peut entreprendre les activités nécessaires à la réalisation des études d'impact environnemental et social du projet conformément à la procédure en vigueur.

Veuillez recevoir, Monsieur le Directeur Général, l'expression de ma franche collaboration.

P/LE MINISTRE P.O
Le Chef de Cabinet

Elhadj Mamady CONDE



Simfer SA

Simandou Project

Social and Environmental Impact Assessment Terms of Reference

PART A

Proposed SEIA Overview and Methodology

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A2 MAIN PROJECT OVERVIEW A-2

A3 LEGAL AND REGULATORY CONTEXT A-3

A4 APPROACH AND METHODOLOGY TO BE ADOPTED FOR THE SEIA.....A-4

A1 Introduction

The Simandou Project ("Project") is located in eastern Guinea, approximately 600km from the Guinean coast and 400km from the Liberian coast. The concession licence-holder and project company is Simfer S.A., which is currently owned 5% by International Finance Corporation (IFC) and 95% by the Rio Tinto Group. In April 2011, the Republic of Guinea and Simfer S.A. (Simfer) signed a Settlement Agreement, which confirms Simfer's title to a southern part of Simandou. The Settlement Agreement provides the Republic of Guinea with the right to progressively take a stake of up to 35% in Simfer (the Mine) and, a 51% stake in a separate company to be created (known as a special purpose vehicle the "SPVA") to build, own and operate the Project's (Rail & Port) Infrastructure. The Settlement Agreement also acknowledges the proposed participation by Aluminium Corporation of China Limited (Chinalco) through a Joint Venture with Rio Tinto.

Significant high grade resources have been determined by Simfer., which are expected to form the basis of a mining operation with an estimated resource capacity of 95Mpta. The Project will produce a high grade "sinter fines" product. The open pit could be mined by conventional truck and shovel methods although in-pit crushing and conveying options are currently being assessed. Simfer plans to use a combination of hydropower and diesel powered generation to provide electricity to on-site processing plant. The transport infrastructure requirements for the project involve a new port and up to 700km railway to the Project site.

The Simandou Project will be subject to the Guinean Environmental Code and to subsidiary decrees, orders and guidance¹ which require Environmental Impact Studies to be completed before the development can commence. Rio Tinto's own corporate policies and standards also require a comprehensive Environmental Impact Study to be undertaken as part of project planning and decision-making, as do the policies and standards of IFC². In line with corporate and international standards Simfer proposes that its impact studies will address social as well as environmental issues. The term Social and Environmental Impact Study (SEIA) is therefore used throughout the remainder of the present document.

In accordance with Guinean law and guidance the first step in the SEIA procedure is for the Minister for the Environment to issue a Terms of Reference for the studies. The aim of the Terms of Reference is to ensure that the SEIA covers all the aspects of the project and all the potential significant impacts at a level of detail that is sufficient to allow an informed decision to be made about approval of the project. To do this, the Terms of Reference will define the project and its potential impacts on the environment and communities, and set out the proposed approach to the Impact Study, the experience that is needed to prepare the study and the timetable for its completion.

This document presents a draft of the Terms of Reference for the Project for consideration by the Minister for the Environment. Following issue of the Final Terms of Reference by the Minister, Simfer will complete the preparation of impact studies in compliance with the requirements of the Republic of Guinea.

In order to meet the target for first commercial ore production by mid 2015, set out in the Settlement Agreement, the SEIA is being undertaken in a number of parts to allow certain works to start in advance of the main Project. This Draft Terms of Reference is therefore presented in a number of parts relating to different components of the works for which separate SEIA Reports will be submitted. The timetable for each SEIA is set out in the individual Terms of Reference for each component. The main Simandou Project SEIA is programmed to be submitted in March 2012 and will incorporate the results of the earlier assessments.

The components for which Terms of Reference are presented here are:

- The main Simandou Project, including the Mine, Railway and Port

1 Code de l'Environnement of the Republic of Guinea; Presidential Decree 199/PRG/SGG/89 on Environmental Impact Studies; Arrêté 990/ NRNE/SGG/90 establishing the content and methodology for Environmental Impact Studies; and Ministère de l'Agriculture de l'Elevage de l'Environnement des Eaux et Forêts, Service National des Etudes et d'Evaluation Environnementale « Les Etudes d'Impact sur l'Environnement : Termes de Reference pour les Etudes d'Impact Environnemental & Social & Guide d'Evaluation » ; Version 03/2007.

2 Simfer will follow the policies and guidance established by its joint venture partner IFC (the International Finance Corporation) in its Policy on Social & Environmental Sustainability 2006 and the supporting Performance Standards, Environmental, Health and Safety Guidelines, and other referenced sources of guidance. Reference will also be made to the currently proposed updates to the IFC's policy and performance standards – see <http://www.ifc.org/ifcext/policyreview.nsf/Content/Home>

- A Marine Offloading Facility required for construction; and
- Construction Workforce Accommodation and Logistic Supply Centres.

Further Terms of Reference will follow relating to a hydroelectric project at Lolema, and further possible construction-related early works such as quarries, road improvements, and water supply.

These Draft Terms of Reference have been prepared by the international specialist consultants Environmental Resources Management (ERM). ERM has been appointed by Simfer to undertake the SEIA for the Project including development of the Draft Terms of Reference. The international consulting firms SNC Lavalin, Tractabel, Schlumberger Water Services, The Biodiversity Consultancy and several other international specialist organisations and individuals, are also involved in the studies, as are a number of Guinean organisations who are undertaking baseline surveys and other research for the assessment.

The remainder of Part A of this document provides an overview of the general approach to the SEIA and is organised as follows:

- Section A2 provides an overview of the main project;
- Section A3 presents the legal and regulatory context for the SEIA for all components of the works; and
- Section A4 describes the general approach and methodology to be adopted for the SEIA.

Parts B to D then present more specific details for each project component covered by this document:

- Part B: The Simandou Project Mine, Railway and Port Development.
- Part C: The Pioneering Marine Offloading Facility; and
- Part D: Construction Workforce Accommodation and Logistical Support Centres.

In each case the following information is presented:

- Sections B1 – D1: a description of the proposed works;
- Sections B2 – D2: the proposed scope of the assessment
- Sections B3 – D3: the planned SEIA Report structure;
- Sections B4 – D4: the SEIA team; and
- Sections B5 – D5: the SEIA timetable.

If as planning for the Simandou Project proceeds it proves necessary to propose other advance works which require SEIA, for example relating to dredging, supply of materials, development of supporting infrastructure (roads, etc) or early development of other elements of the main project, further Terms of Reference for these additional early works will be prepared, as adjuncts to this document, for Government consideration and approval.

A2 Main Project Overview

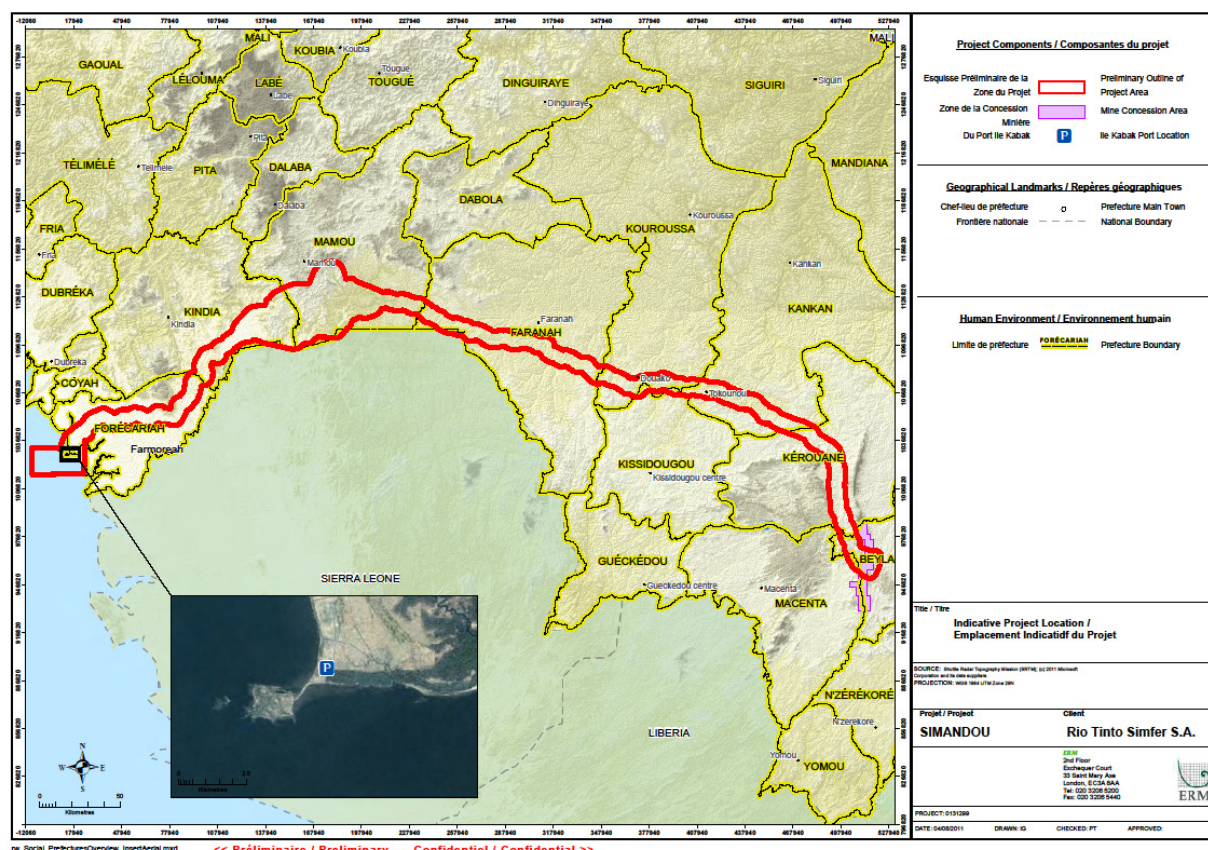
The Simandou Project comprises three main components:

1. an iron ore mine in the Simandou Range in south-eastern Guinea with an estimated resource capacity of 95MTpa;
2. a Trans-Guinean railway of up to 700 km to transport the ore from the mining concession to the Guinean coast;

3. a new deepwater port currently planned to be located south of Conakry in the Forécariah prefecture.

The location of the mining concession and indicative locations for the rail line and port area are illustrated in *Figure A2.1*. Further details of the main Project are provided in Part B.

Figure A2.1 Overview of the Simandou Project



A3 Legal and Regulatory Context

The Code for the Protection and Development of the Environment, (Ordinances 045/PRG/87 and 022/PRG/89) also known as the Environmental Code sets out the fundamental legal principles to be complied with to ensure the protection of environmental resources and the human environment. Article 82 of Title V of the Environmental Code imposes an obligation on developers of projects which are likely to have a significant impact on the environment, to conduct an Environmental Impact Study and submit this to the Minister for the Environment prior to the construction of a Project, allowing evaluation of the direct and indirect impacts of the Project on the ecological equilibrium of the environment of Guinea, the quality of life of the people and the protection of the environment.

Presidential Decree 199/PRG/SGG/89 issued under Article 82 of the Environmental Code sets out the projects which by virtue of their size or nature of their activities require an Environmental Impact Study. The list of works for which an impact study is required is set out in the Annexe to the decree and includes:

- 2e: Works for the construction and management of ports;
- 4e: Mines
- 5e: Construction of railways.

An Environmental Impact Study is therefore required for all main components of the Simandou Project.

The subsequent *Arrêté* 990/ NRNE/SGG/90 issued under Art 7 of Decree 199/PRG/SGG/89, establishes the content and methodology for environmental impact studies.

The procedure for an EIS provides for the Minister for the Environment to issue a project-specific Terms of Reference which provides details on the project to be assessed, the issues to be addressed, the environmental experts who will conduct the EIS and the steps to be followed. This document presents a draft of the Terms of Reference for consideration by the relevant authorities.

A4 Approach and methodology to be adopted for the SEIA

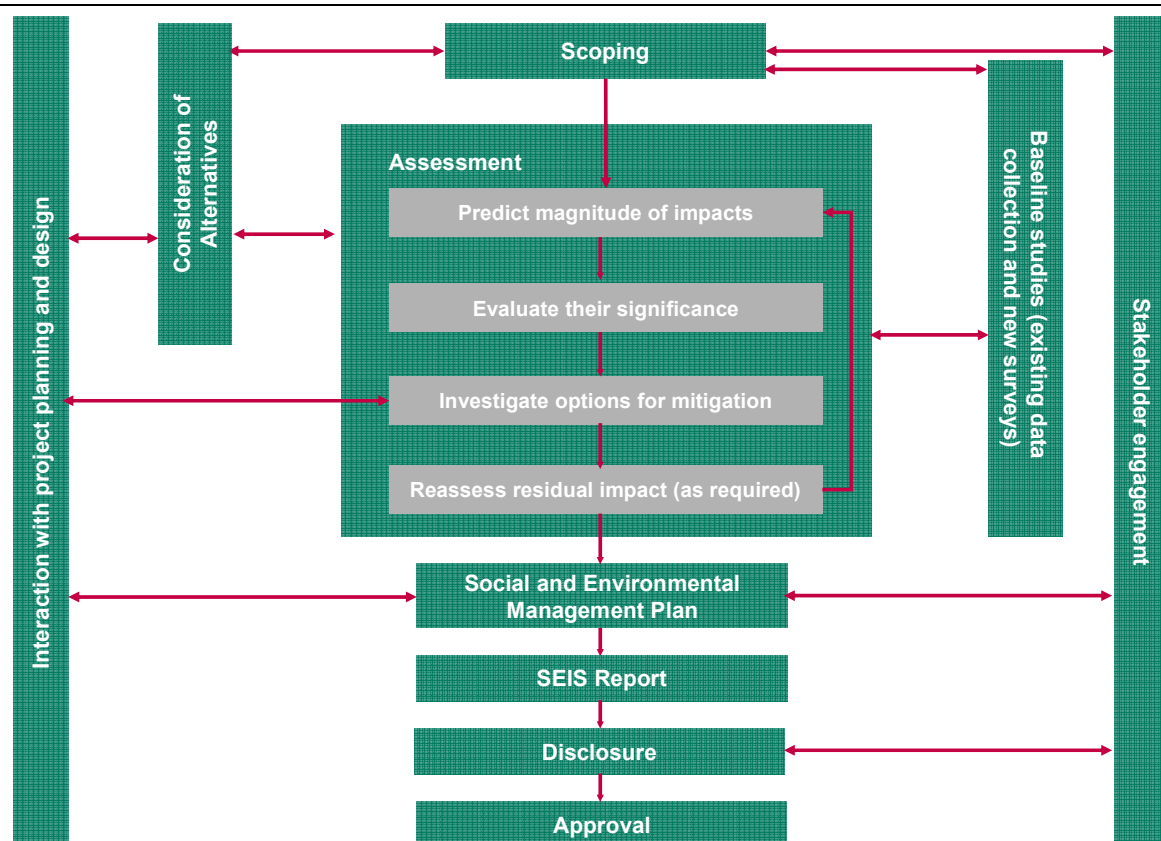
A4.1 Overview of Methodology

The social and environmental impact assessment for the Project will be undertaken in accordance with the guidelines and procedures identified in this Terms of Reference. It will follow a systematic process of:

- establishing baseline conditions in the physical, natural, cultural, social and socio-economic environment of the area potentially affected by the Project;
- predicting and evaluating the positive and negative changes in these baseline conditions that will result from construction, operation and closure of the Project, i.e. the impacts of the Project ; and
- identifying the measures that Simfer. will take to avoid, reduce, remedy, offset or compensate for adverse impacts, and to provide or enhance benefits from the project.

The proposed approach for the assessment is shown schematically in *Figure A4.1* and the key steps are described below.

Figure A4.1 SEIA Approach



The key steps in the process are outlined in *Table A4.1* and detailed further below.

Table A4.1 Summary of the SEIA Process

Stage	Summary of Approach
Scoping	Scoping is designed to ensure the process is focused on the significant environmental and social impacts which may arise from the Project. It involves a systematic consideration of the potential for interaction of project components and activities with features in the environment to identify where significant impacts are likely to occur. The results of scoping are presented in this Draft Terms of Reference and for the basis for planning the assessment studies. The scope will be kept under review and updated as new data emerges from baseline studies and as the SEIA proceeds. The SEIA will also take into account the results of consultations undertaken on the Project.
Baseline development	For the key issues identified in scoping, available information on the current environmental and social conditions will be gathered. Particular emphasis will be placed on sensitive aspects which are potentially affected by the Project including its immediate location and the surrounding environment. Baseline field studies and surveys will be conducted where necessary. The future development of baseline information in the absence of the Project will also be considered. This future No Project scenario will provide the baseline against which the impacts of the Project will be predicted and evaluated. (Note: a substantial programme of baseline survey work has already been completed for the Simandou Project and further surveys are currently underway to address the outstanding gaps in knowledge).
Alternatives	Where alternatives exist for the siting or design of particular components of the Project these will be considered in collaboration with the engineering design team. The SEIA will appraise the environmental and social impacts of these alternatives as an input to the selection of preferred options. The results will be presented in the SEIA report. The rationale behind siting of the project and selection of the proposed design and construction techniques will be presented from a technical, environmental and social perspective.

Stage	Summary of Approach
Impact assessment	This stage is focused on predicting how environmental and social conditions will change from the baseline as a result of constructing and operating the Project and where relevant decommissioning, closing and rehabilitating the site. Quantitative and qualitative information on the nature, magnitude, spatial extent, duration and likelihood of change will be predicted and each impact will then be evaluated to determine its significance for the environment and society by reference to established standards and norms. The focus will be on identifying the significant impacts (ie the most important and the impacts with the potential to cause greatest harm). The assessment will also review all possible impacts in order to determine which are likely to be significant. Positive benefits provided by the Project will be identified.
Mitigation measures	Measures to avoid, reduce or remedy adverse effects, and where this is not possible to provide compensation by offering resources or facilities to replace those that are lost will be identified and agreed with the Project engineering team and Simfer. These mitigation measures may include amendments to the Project design or methods to be adopted during construction or operation of the Project. The aim is to minimise adverse effects and provide or enhance environmental and social benefits.
Assessment of residual impacts	Where feasible mitigation measures are identified impacts will be reassessed to determine residual impacts after mitigation.
Social and Environmental Management Plan (SEMP)	All mitigation measures will be presented in a Social and Environmental Management Plan (SEMP). These will be set out as commitments made by Simfer. The SEMP will also describe how the measures will be implemented during the detailed design, construction and operation of the Project. It will detail the responsibilities and resources for implementation, the timing, and monitoring and auditing to be carried out to ensure all mitigation commitments are met. The SEMP will also identify requirements for training and capacity building within the project and amongst other stakeholders including government. The social aspects of the SEMP will incorporate a Land Acquisition, Compensation and Resettlement Policy Framework detailing how expropriation of land for the Project will be managed in accordance with international good practice. The SEMP will also reference more detailed supporting plans for managing particular aspects of the social and environmental impacts of the project including plans for influx management, cultural heritage, community development, waste and water management, and detailed land acquisition, compensation and resettlement.
Consultation and Stakeholder Engagement	During the SEIA the team will seek the views of interested parties. This information will be taken into account in the assessment and reflected in the proposals for mitigation. Once complete the SEIA Report will be disclosed for comment from all interested stakeholders. All comments will be considered in finalising the Project proposals and the SEMP. The SEMP will be accompanied by a Stakeholder Engagement Plan. This plan will detail how the Project will continue to engage with stakeholders during development including operation of a Grievance Mechanism to handle complaints from affected people.
Reporting, Disclosure and Approval	The final stage in the SEIA process is the preparation of the SEIA Report presenting all the findings of the impact studies. This will be submitted to Government for consideration. The report will be disclosed to the public and other stakeholders for review and comment. Once the disclosure and consultation process is complete the findings of the studies and the results of consultation will be taken into account by Government in making its decision on whether to approve the project and on any conditions to be attached to that approval.

A4.2 Scoping

During Scoping the Project and predicted interactions with communities and the environment will be reviewed to determine what are likely to be significant impacts, and to plan the work required to assess these impacts. This Terms of Reference has been produced following Scoping.

To undertake scoping effectively it is important to clearly define the Project, how the area of influence is defined, and the broad types of impacts that need to be considered in the assessment. The approach that will be followed in defining the Project, the resultant area of influence and the types of impacts to be addressed within the SEIA are described below.

Definition of the Project and its Area of Influence

In the SEIA a **Project** should be clearly defined to include all actions and activities which are a necessary part of the development. This will include all the main components of the Project and also any related and ancillary facilities without which the Project cannot proceed. This includes utilities, infrastructure, accommodation, etc. It should also include any other developments or activities which can be expected to follow as a necessary consequence of the Project even if not within the responsibility of Simfer. Examples may include migration of people into an area or new roads built by the government to meet increased demand for traffic caused by the project. This approach will be followed for all components of the Simandou Project.

Impacts will also be assessed for all **Phases** of the Project from initial site preparation and advance works, through construction and operation to closure, decommissioning and restoration of sites.

Impacts will be assessed throughout the **Area of Influence** of the Project. This will vary depending on the type of impact being considered, but in each case the area will be defined to include all that area within which it is considered that significant impacts could occur. This will take into account:

- the physical extent of the proposed works, defined by the limits of land to be acquired or used temporarily or permanently for the construction and operation of the Project;
- the nature of the baseline environment, the source of impact and the manner in which the impact is likely to be propagated beyond the Project boundary.

For example, losses of existing land uses are likely to be confined to those areas physically disturbed by the works, whilst the effects of noise could be experienced at some distance, and air pollution may be dispersed over long distances or even have regional or global effects. The proposed area of influence (study area) for each type of impact will be defined in the respective chapters of the SEIA Report.

Some impacts could extend across national boundaries, for example as a result of changes in animal migration or patterns of cattle herding, and the assessment will include these **Trans-Boundary** effects.

Types of Impact

The assessment will consider both **Positive and Negative** impacts on all aspects of the **Physical, Natural, Cultural, Social and Socio-Economic** environment.

Positive or beneficial impacts will be those which are considered by the SEIA team, taking in to account the views of external stakeholders, to present an improvement on the situation without the Project (the baseline) or to introduce a new desirable factor. Negative or adverse impacts will be the reverse.

Aspects of the environment to be considered will include:

- the physical environment including:
 - geology and soils;
 - land and topography;
 - hydrology and hydrogeology;
 - microclimate and global climate
 - surface and ground water resources including marine and freshwater;

- air quality;
- noise, vibration, light and other forms of radiation;
- the biological or natural environment including:
 - aquatic and terrestrial habitats and ecosystems;
 - flora and fauna and their biodiversity;
 - protected areas;
 - useful services provided by natural systems (referred to as ecosystem services)
- the cultural environment including:
 - tangible and intangible sites and features of archaeological, historic, traditional, cultural, aesthetic interest;
 - cultural traditions, practices and events;
 - the landscape and visual amenity;
- the social and socioeconomic environment including:
 - people and their homes, lands, other resources and assets;
 - the characteristics and structures of communities;
 - population and demographics;
 - human health, welfare, amenity, safety and security;
 - lifestyles including livelihoods, employment and incomes;
 - economic activities including industry and commerce, tourism, fisheries, agriculture and forestry;
 - community facilities such as schools, hospitals and leisure facilities;
 - utilities and infrastructure (power, water, sewerage, waste disposal, transport);
 - services such as health care, education and access to goods;
 - local, regional and national economies.

When discussing different aspects of the environment we will distinguish between **Resources** that is features of the environment such as soils, water resources, habitats, species, etc which are valued by society for their intrinsic worth and/or their social or economic contribution, and **Receptors**, that is people and communities who may be affected by the Project.

Timeframe

The assessment will address impacts with different temporal characteristics:

- **Permanent** impacts that will arise from irreversible changes in conditions such as the removal of physical features during construction;
- **Temporary** impacts that will arise during **short term** activities such as construction and decommissioning; and
- **Long term** impacts that will arise over the **operation** of the Project or occur as the environment recovers after its **closure**.

Short term, temporary impacts will cease on completion of the relevant activities although there may be a period before the environment returns to its previous condition. Long term impacts will continue over the life of the Project and during restoration, and may vary during this period, but will ultimately cease when the Project ceases although the environment may take some time to recover.

Other temporal characteristics of impacts (continuous or intermittent, one-off or recurrent) and their frequency and timing (e.g. seasonality) will also be taken into account.

Routine and Non-Routine Impacts

Development of the Project raises the potential for impacts to arise from both planned and unplanned events. The SEIA will therefore assess both:

- **routine** impacts resulting from planned activities within the Project; and
- **non-routine** impacts arising from:
 - unplanned or accidental events within the Project such as accidents involving spills of hazardous substances;
 - natural hazards and other external events affecting the Project such as seismic activity and flooding.

The impact of non-routine events will be assessed in terms of the Risk ie taking into account both the consequence of the event and the probability of occurrence (Risk = probability x consequence).

Direct, Indirect and Induced Impacts

Impacts can also be characterised according to whether they are **direct** (primary) impacts arising from activities associated with the Project or **indirect** (secondary and higher order) impacts that follow on as a consequence of these. So for example construction can lead to emissions of dust with a direct effect on air quality. Dust dispersion can then affect nearby agricultural fields possibly causing adverse effects on the quality and/or quantity of crops and the livelihoods of farmers. Dust can also result in soiling of buildings and materials with effects on amenity for users and added costs for maintenance.

Projects can also have **induced** impacts by stimulating other developments to take place which are not directly within the scope of, or essential to, the development of the Project. So for example, road improvements may encourage people or businesses to move into an area, and as a result lead to building of new homes which will have their own impacts. Whilst these possible developments are not part of the Project, they are caused at least in part by the Project and they will therefore be considered in the assessment.

Cumulative Impacts

The potential for the Project to have **cumulative** impacts with other activities and with known or committed developments such as other major mines or more informal artisanal mining, taking place in the area at the same time will also be taken into account in the assessment. Where other developments are already underway or committed they will be addressed by incorporating them into the future baseline for the Project (ie the No Project situation against which the impacts of the Project are assessed). If there are other developments which are still in planning but have yet to be formally approved the impacts of these will be considered alongside the impacts of the Project so that a full picture is provided of the possible future situation.

A4.3 Baseline Studies

To provide a baseline against which the impacts of the Project can be assessed, an important part of the SEIA will be to establish the conditions that would prevail in the absence of the Project – the Baseline. Baseline studies have already been undertaken in particular areas and additional baseline data is being collected, drawing upon information from:

- existing sources including government agencies, research organisations, publications;
- consultations with stakeholders;
- review of maps, satellite images and aerial photographs of the Project location and its surrounding area; and
- field studies designed to fill gaps in the data where this is needed to enable assessment of impacts.

The details of sources and survey methods will be fully described in the SEIA Report.

When assessing the impacts of projects, it is important to recognize that the baseline is likely to change significantly from the existing situation, as a result of changes in population, land use and economic activity, and through other developments independent of the Project. The baseline for this Project will therefore be defined by considering how current conditions will develop in the future without the Project (the “No Project” scenario).

A4.4 Assessment of Impacts

A4.4.1 Introduction

The assessment of impacts will follow an iterative process considering four questions:

1. Prediction - What will happen to the environment and communities as a consequence of this Project?
2. Evaluation - Does this impact matter? How important or significant is it?
3. Mitigation – If it is significant can anything be done to avoid or reduce adverse effects or enhance benefits?
4. Residual Impact – Is the impact still significant after mitigation?

The approach to these steps is outlined below.

A4.4.2 Predicting the Magnitude of Impacts

The impact assessment will describe what will happen to the environment and communities by predicting the magnitude of impacts and quantifying this to the extent practicable. The term “magnitude” is used here to encompass various possible dimensions of the predicted impact including:

- the nature of the change (what is affected and how);
- size, scale or intensity;
- geographical extent and distribution;
- duration, frequency, reversibility, etc; and
- where relevant, the probability of the impact occurring as a result of accidental or unplanned events.

It will also include any uncertainty about the occurrence or scale of the impact¹. Magnitude therefore describes the actual change predicted to occur in a resource or receptor (e.g. the area and duration over which air or water become polluted and the increase in concentration of the pollutant; the degree and probability of impact on the health or livelihood of a local community; the probability of injuries or deaths as the result of an accident).

Magnitude can be predicted using a range of different methods depending on the nature of the impact. As an example, noise and air quality impacts are typically predicted using standard mathematical models developed for calculating the effects of sources on ambient noise levels and concentrations of air pollution. Direct impacts on land use and habitats can be calculated from maps of the project footprint. However, some impacts which are less amenable to mathematical or physical representation are predicted using the professional knowledge and experience of experts, for example in areas such as biodiversity. The approach employed for this Project will be detailed for each type of impact in the relevant chapters of the SEIA.

To assist in the next step of evaluating significance (see A4.4.3), the magnitude of impacts will be graded taking into account all the various dimensions, to determine whether an impact is of small, medium or large magnitude. This scale is defined differently according to the type of impact and depending on the circumstances. For quantifiable impacts such as noise, numerical values are used whilst for other topics a qualitative classification is necessary.

The details of how magnitude is predicted and described for each impact will be explained in the relevant chapters of the SEIA Report.

A4.4.3 Evaluation of Significance

The next step in the assessment will be to take the information regarding the magnitude of impacts, and explain the importance to society and the environment. This will allow stakeholders to understand how important issues are when considering the Project. This is referred to as Evaluation of Significance.

There is no statutory or agreed definition of significance however, for the purposes of this assessment, the following practical definition is proposed:

An impact will be judged to be significant if, in isolation or in combination with other impacts, it should, in the judgement of the SEIA team, be reported in the SEIA Report so that it can be taken into account in the decision on whether or not the Project should proceed and if so under what conditions.

This recognises that evaluation requires an exercise of judgement and that judgements may vary between parties involved in the process (including regulators, experts, affected people and the general public). The evaluation of impacts that is presented will be based on the judgement of the SEIA Team, informed by reference to legal and international standards and policy, current good practice and the views of stakeholders as expressed through the consultation process.

Criteria for assessing the significance of impacts will be clearly defined for each type of impact taking into account whether the Project will:

- Cause legal or accepted environmental standards to be exceeded – e.g. air, water or soil quality, noise levels – or make a substantial contribution to the likelihood of standards being exceeded; or
- Adversely affect protected areas or features or valuable resources – these include protected nature conservation areas, rare or protected species, historic features, important sources of water supply; or
- Conflict with established government or international policy e.g. to reduce greenhouse gas emissions, recycle waste, improve health, protect human rights, etc.

(1) A distinction is made here between the probability of impact arising from a non-routine event such as a seismic event or fire, and the uncertainty inherent in making predictions about what will happen in the future. For example it may not be certain that health will be affected by air emissions or that jobs will be obtained by local people. This is different from estimating the probability of an unplanned event occurring. Uncertainty can be expressed by describing the predicted outcome using a range rather than a single value, by placing confidence limits around the prediction, or by estimating the likelihood of the prediction being correct.

Where standards are not available or provide insufficient information on their own to allow evaluation of impacts, significance will be evaluated taking into account the magnitude of the impact and the value or sensitivity of the affected resource or receptor. Magnitude will be defined as described in the previous section (A4.4.2). The value of a resource will be judged taking into account its quality and its importance as represented, for example, by local, regional, national or international designation, its importance to the local or wider community, or its economic value. The sensitivity of receptors, for example a household, community or wider social group, will take into account their likely response to the change and their ability to adapt to and manage the effects of the impact.

Magnitude and value/sensitivity will be looked at in combination to evaluate whether an impact is significant and if so its degree of significance. The principle is illustrated in *Figure A4.2*. The grades apply to both positive and negative impacts.

Figure A4.2 Evaluation of Significance

Sensitivity/Value of Resource/Receptor	Magnitude of Impact		
	Small	Medium	Large
Low	Not significant	Minor	Moderate
Medium	Minor	Moderate	Major
High	Moderate	Major	Critical

The specific criteria used to evaluate significance for each type of impact will be clearly defined in the impact assessment. It should be made clear that the distinctions between grades cannot be considered as clear cut and judgments as to magnitude, value or sensitivity, and significance involve careful weighing up of a range of factors by the SEIA Team.

A4.5 Mitigation

Impact assessment is designed to ensure that decisions on Projects are made in full knowledge of likely impacts on the environment and society. A vital step within the process is the identification of measures that can be taken to ensure impacts are as low as reasonably practicable.

This will be done by identifying where significant impacts could occur and then working with the Project team to identify reasonably practical ways of mitigating those impacts as far as possible. These measures will be agreed with Simfer and integrated into the Project proposals.

Where a significant impact is identified, a hierarchy of options for mitigation will be considered to identify the preferred approach:

- Avoid at source – remove the source of the impact, for example by relocating a component of the Project to avoid a sensitive site.
- Abate at source – reduce the source of the impact, for example by controlling the emission of dust or noise.
- Attenuate – reduce the impact between the source and the receptor, for example by installing a noise barrier between an industrial facility and neighbouring communities.
- Abate at the receptor – reduce the impact at the receptor, for example by providing noise insulation in nearby buildings.
- Remedy – repair the damage after it has occurred, for example by cleaning up accidental spills during construction.

- Compensate / Offset – replace a lost or damaged resource with a similar or a different resource of equal value, for example by resettling displaced businesses into new premises, or providing monetary compensation for loss of business.

Mitigation will also include measures to provide or enhance positive benefits from the Project, so for example by providing employment opportunities, and improving the chances of these being available to local people by setting up training in the required skills.

Consideration will be given to achieving mitigation of impacts by various means including:

- Changes in the design of the Project, for example relocating structures, incorporating noise barriers into the design, and designing structures to minimise their visual impact.
- Selection of particular approaches and methods for construction, for example using bored rather than driven piling or electrical rather than diesel powered equipment.
- Adoption of measures to control impacts during construction and operation, such as covering of dusty materials, installation of oil interceptors, adoption of emergency spill plans, and traffic management.

All these types of measures will be considered in the assessment and proposals discussed and agreed with Simfer. and presented in a Social and Environmental Management Plan (SEMP) for the Project. Where detailed measures cannot be presented as formal commitments at this stage in the Project, a clear commitment will be given to achieving a specified level of environmental performance and to finalizing specific measures at a later stage. Proposals will also be set out for monitoring implementation of mitigation and providing regular reports for external stakeholders as part of the Social and Environmental Management System for the Project. The SEMP will also identify means to build capacity in Guinea manage and regulate potential impacts.

A4.6 Assessing Residual Impacts

Following agreement on feasible mitigation the SEIA team will re-assess the impacts taking into account the mitigation adopted within the Project. Where significant residual impacts remain after mitigation further options will be examined and impacts re-assessed in consultation with the Project team. This will continue until they are considered to be as low as reasonably practicable. The significant residual impacts remaining at the end of this process will be described in the SEIA Report with commentary on the proposed mitigation. The degree of significance attributed to residual impacts will reflect the level of consideration the SEIA team considers should be given in reaching decisions on the Project.

- **Critical** impacts will be avoided.
- Any residual **Major** impacts, whether positive or negative, will warrant substantial consideration, when compared with other environmental, social or economic costs and benefits, in deciding whether or not the Project should proceed. Conditions should be imposed to ensure adverse major impacts are strictly controlled and monitored and beneficial impacts are fully delivered.
- Residual **Moderate** impacts are considered be of reducing importance to the decision, but still warrant careful attention to conditions regarding mitigation and monitoring, to ensure best available techniques are used to keep adverse impacts as low as reasonably practicable, and to ensure beneficial impacts are delivered.
- **Minor** impacts will be brought to the attention of the decision-maker but are identified as warranting little if any weight in the decision. Adequate mitigation should be achieved using normal good practice and monitoring should be carried out to confirm that impacts do not exceed predicted levels.

A4.7 Interface with the Design Team

The SEIA team will gather information for the assessment on the design, construction and operation of the Project. As impacts are investigated the results will be discussed with them and feasible mitigation measures discussed and integrated into the Project where possible. All agreed measures will be described in the SEIA Report and SEMP.

A4.8 Stakeholder Engagement

During the SEIA the team will also consult with stakeholders to understand their views and concerns relating to the Project and to collect information about the local environment and community. This information will be taken into account in the assessment and in the identification of appropriate mitigation measures for the Project.

Once the SEIA Report is completed and submitted to Government for review and approval it will be made widely available for public comment and its findings will be disseminated to affected communities. All comments made on the Project, its impacts and the proposed mitigation will be considered in finalising the Project design, the methods for construction and operation, and the detailed Social and Environmental Management Plan.

Simandou Project

Social and Environmental Impact Assessment Terms of Reference

PART D

Construction Workforce Accommodation and Logistical Supply Centres

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D1 Description of the proposed works;

D1.5 Introduction

This section provides a high level description of the proposals for design, construction, operation and decommissioning of the construction workforce accommodation camps and logistical supply centres. The present description is intended to provide a general overview of the scope of the Project, details of which will be elaborated on in the SEIA.

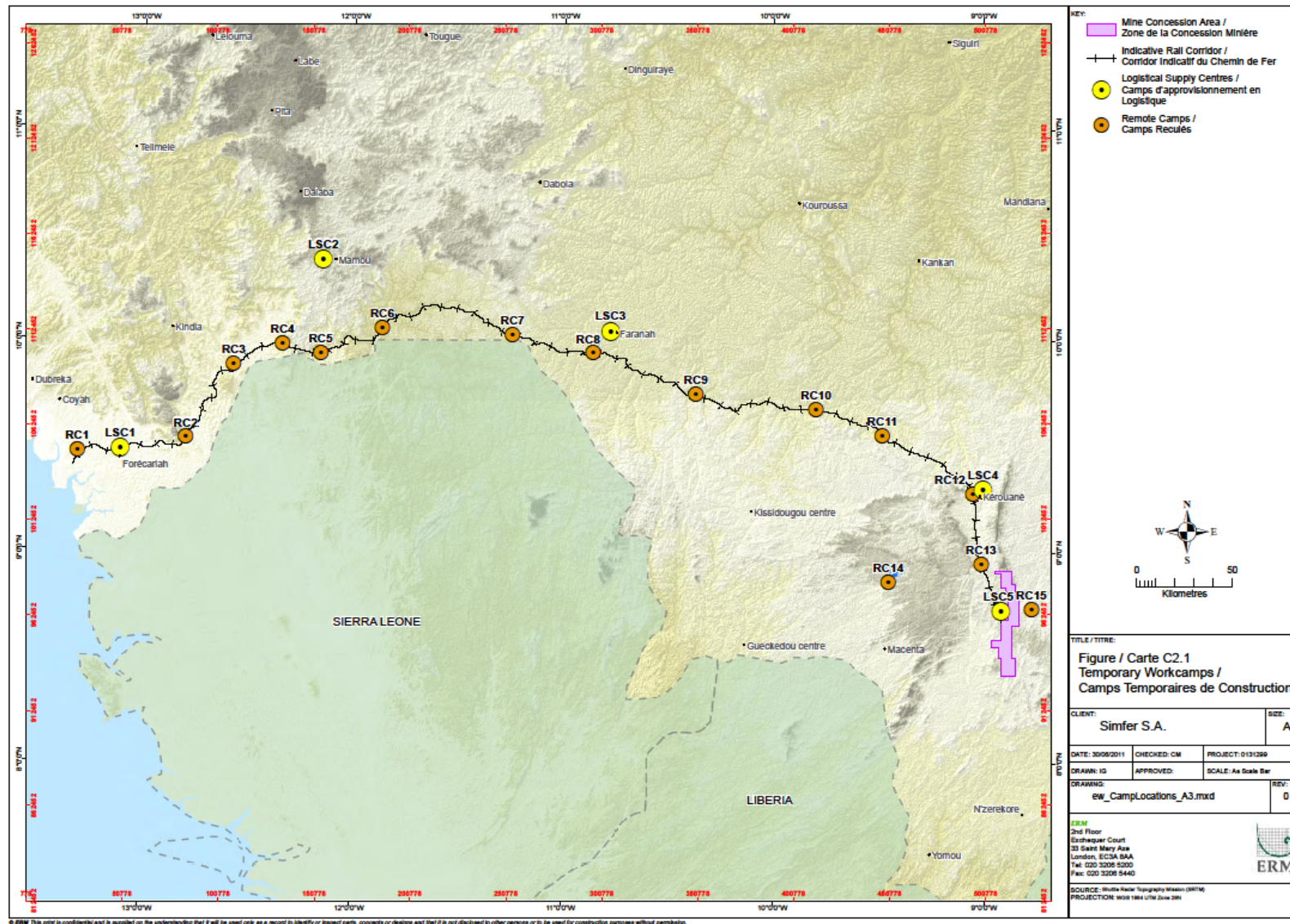
A total of approximately twenty sites are proposed comprising of five logistical supply centres (LSC) and 15 remote camps (RC). The approximate locations of the LSC's and RC's are shown on *Figure D1.1* and listed in *Table D1.1* together with details of their estimated areas and numbers of workers to be accommodated.

Table D1.1 Construction Workforce Accommodation Camps and Logistical Supply Centres

Site	Peak Capacity	Prefecture	Size
Logistics Supply Centres			
LSC1	2600	Forécariah	700 x 3000m
LSC2	600	Mamou	700 x 700m
LSC3	200	Faranah	500 x 500m
LSC4	200	Kerouane	500 x 500m
LSC5	800	Beyla	700 x 1000m
Remote Camps			
RC1	2600	Forecariah	700 x 3000m
RC2	600	Forecariah	700 x 700m
RC3	600	Kindia	700 x 700m
RC4	600	Kindia	700 x 700m
RC5	600	Kindia	700 x 700m
RC6	600	Mamou	700 x 700m
RC7	200	Faranah	500 x 500m
RC8	200	Faranah	500 x 500m
RC9	200	Kouroussa	500 x 500m
RC10	200	Kankan	500 x 500m
RC11	200	Kankan	500 x 500m
RC12	200	Kerouane	500 x 500m
RC13	400	Kerouane	700 x 500m
RC14	200	Macenta	500 x 500m
RC15	800	Beyla	700 x 1000m

An additional five remote camps with a peak population of 100 workers each, may be required to support an accelerated construction schedule. The required locations for these additional camps will not be known until commencement of construction activities, however, they will meet all the requirements for siting, design, construction, operation and decommissioning that are developed through the SEIA for the currently proposed locations.

Figure D1.1 Indicative Camp Locations



Further details of the Logistical Supply Centres, Remote Camps and an example accommodation layout are provided below.

D1.6 Logistical Supply Centres

Logistical Supply Centres (LSCs) will be located in strategic areas enabling logistical support and management control within reasonable distance of key sections of the Project.

Each LSC will consist of the following:

1. A graded area, with drainage and adequate surfacing. The area will be fenced and lit for security and operations.
2. Prefabricated accommodation blocks
3. Offices for Project staff and contractors
4. Communications
5. Medical Facility
6. Fire Station
7. Guard House
8. Power supply
9. Potable water supply and storage for LSC supply and to supply field portable tanks.
10. Construction water supply and storage for dust control and fire protection
11. Waste disposal facilities
12. Fuel storage and dispensing
13. Transport Support
 - a. Bus Parking and loading/unloading
 - b. Helipad
 - c. Truck Unloading
14. Facilities to support a resident road maintenance fleet
 - a. Parking
 - b. Maintenance Workshop/Office/Parts Storage
 - c. Vehicle/Equipment washdown facility
15. Warehousing and Laydown areas
16. Precast Yard for use by contractors
17. Concrete Manufacture, Cement and Aggregate Storage
18. Testing Laboratory

D1.7 Remote Camps

The Remote Camps (RC's) are planned principally to provide accommodation for the construction workforce. They will be located at the mine and the port, at approximately 50 km intervals along the rail alignment, and at the Lolema Hydroelectric Dam site. Remote camps will include accommodation blocks for workers together with catering, welfare and leisure facilities, generator sets for power supply, fuel storage, water supply, laundry, sewage treatment and waste disposal. Other facilities on site will include company offices, vehicle parking and maintenance bays, and stores. All sites will be securely fenced with inner and

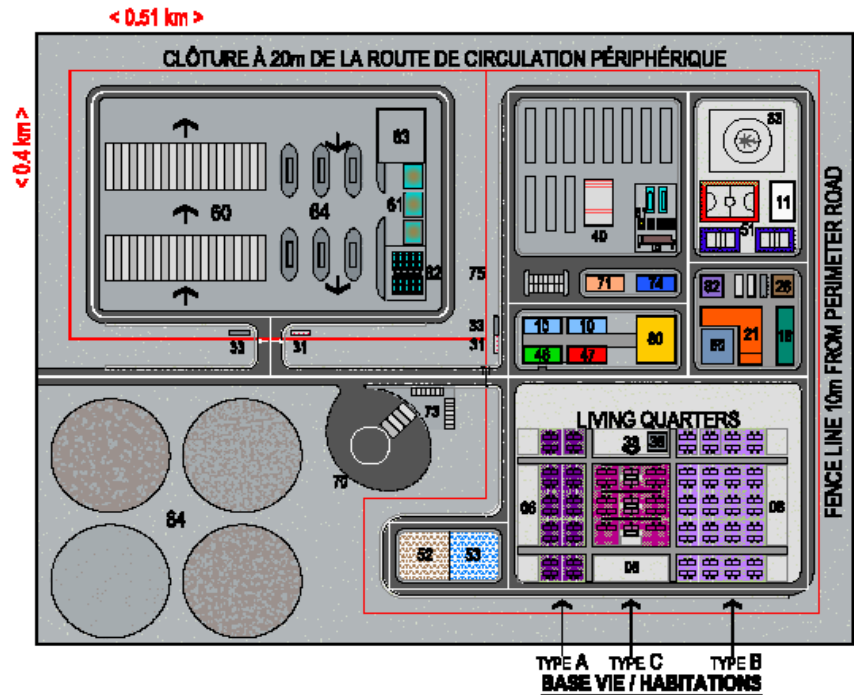
outer security fencing. All accommodation will be designed in accordance with IFC guidance on Workers Accommodation¹.

D1.8 Accommodation layout

A generalised layout for construction workforce accommodation is illustrated in *Figure D1.2*. This layout will be used as the basis for the accommodation element of both LSC's and RC's.

¹ http://www.ifc.org/ifcext/sustainability.nsf/Content/Publications_GPN_WorkersAccommodation

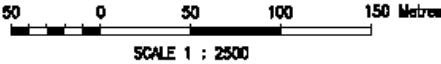
Figure D1.2 Example Accommodation layout



200-PERSON CAMP. 20 HECTARES RC 7, 8, 9, 10, 11, 12, 14, (7 CAMPS)
CAMP DE 200 PERSONNES. 20 HECTARES CAMPS ÉLOIGNÉS 7, 8, 9, 10, 11, 12, 14 (7 CAMPS)

LEGEND	LÉGENDE
06. EXPANSION 6 UNITS	EXTENSION POSSIBLE POUR 6 UNITÉS
10. OFFICES/ SHOP	BUREAUX/ MAGASIN
11. GYM/RECREATION	SALLE DE SPORT
16. WET MESS	BAR
21. KITCHEN/ DINER	LA CUISINE/ SALLE À MANGER
26. LAUNDRY	BLANDERIE
31. GATEHOUSE	LOGE D'ENTRÉE
33. ABLUTION BLOCKS	POINTS D'EAU POUR ABLUTIONS
36. PRAYER SHELTER	ABRI POUR LA PRIÈRE
40. LAYDOWN/WAREHOUSE	ZONE DE STOCKAGE / ENTREPÔT
46. CLINIC	CLINIQUE
47. FIRE STATION	SÉCURITÉ INCENDIE
50. FLAG/TOOLBOX TALKS	DRAPÉAU/ZONE DE RASSEMBLEMENT
51. FOOTBALL/ MULTI-PURPOSE SPORTS COURTS	TERRAIN DE FOOTBALL/ TERRAIN MULTI-SPORTS
52. SEWAGE TREATMENT	ÉPURATION DES EAUX USÉES
53. WATER PURIFICATION	STATION DE PRODUCTION D'EAU POTABLE
60. LARGE VEHICLE PARKING	PARKING VÉHICULES ENCOMBRANTS
61. BULK LUBE STORE	RÉSERVOIRS DE LUBRIFIANTS
62. BULK FUEL STORE	RÉSERVOIRS DE CARBURANTS
63. WORKSHOP	ATELIER
64. FUEL PUMPS	POMPES À ESSENCE
70. BUS DROP OFF/ PICKUP	STATION DE BUS
71. VEHICLE WASHDOWN	LAVAGE DES VÉHICULES
73. VISITORS	VISITEURS
74. CAMP MAINTENANCE	SERVICE D'ENTRETIEN
75. MUSTER AREA	ZONE DE RASSEMBLEMENT
80. HEAD END COMPOUND/RADIO MAST	COMMUNICATIONS / MATÉRIEL ÉLECTRONIQUE / MÂT D'ANTENNE
81. GEN SETS/ DIESEL DAY TANKS/ SUBSTATION	GROUPE ÉLECTROGÈNES/ CUVES DE DIESEL/ SOUS-STATION
82. FOOD STORE	RÉSERVE DE NOURRITURE
83. HELIPAD	HÉLIPORT
84. AGGREGATE STOCKPILES	ENTREPOSAGE DE GRANULATS

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7 July 2011



D1.9 Siting

Siting of the construction workforce accommodation camps and logistical supply centres is based primarily on proximity to workfronts which will be required to construct the Mine, Port and Rail components of the Simandou Project.

The precise boundaries of final sites will be chosen so as to avoid or minimise

- loss of people's homes, agricultural land and productive forests;
- impacts on neighbouring land uses and communities for example, from noise, lighting, social intrusion, pressure on local infrastructure;
- areas of importance for biodiversity and natural resources such as Ramsar Convention wetland sites, national parks, classified forests and important migration routes;
- sites identified as important for historical or archaeological reasons or for their current significance in local culture and traditions;
- disruption of water features, including lakes, rivers, streams and boreholes.

D1.10 Construction

Construction of LSC and RC sites will involve:

- upgrading of existing access roads or creation of new roads where needed;
- site clearance and levelling;
- bringing in prefabricated buildings, equipment and other materials required to establish the required camp;
- erection of temporary accommodation blocks and other buildings; and
- installation of facilities for site drainage, sewage treatment and disposal, potable water supply, power generation by diesel-powered generators, lighting, fuel unloading, fuel storage and distribution, waste management and storage – much of this equipment is likely to be portable plant.

Construction equipment will include earthmoving equipment for site preparation, graders and trucks and other road construction equipment. Buildings, storage tanks and sewage treatment units will be brought in as pre-fabricated modules.

Construction material for site preparation and roads will be sourced from within the site perimeter or from established suppliers or by developing new quarries to supply the works. If new quarries are required these will be included in the Workcamps SEIA or in a separate SEIA relating to Project quarries.

The construction of each camp is estimated to take about 3 months with larger sites being developed in phases as the need for construction support ramps up during the main Project construction period.

D1.11 Operation

Once their construction is complete, LSCs and RCs will operate throughout the construction of the main Simandou Project.

The LSCs will act as regional hubs for transport and servicing all Simandou Project construction requirements within their region.

The Remote Camps will provide accommodation to construction workers during the period of the Project programme where works are undertaken near to their location.

D1.12 Decommissioning

On completion of construction the majority of the construction workforce accommodation camps and logistical supply centres will be closed and decommissioned, although it is possible that some LSCs will remain in place to provide services to the operation of the Simandou Project over the long term. If this is the case the impacts of their ongoing operation and eventual closure or handover to local authorities for further use will be addressed within the main Simandou Project SEIA.

On closure sites will either be cleared, rehabilitated and returned to their previous condition and use, or turned to new uses such as housing or use by local enterprises. Options for future uses will be investigated and agreed between Simfer, local stakeholders and local and national authorities.

D2 Proposed scope of the assessment

The primary purpose of the Draft Terms of Reference is to identify the likely significant impacts of the construction workforce accommodation and logistical supply centres so that assessment of these can be planned as part of the SEIA. This section outlines what are expected to be the impacts from each phase of development of the camps and centres, providing an initial view on the likely magnitude and significance of impacts and outlining how they will be assessed. In undertaking this initial assessment consideration has been given to the guidance provided by the Ministry of Environment on Environmental Impact Studies¹, together with the international standards for SEIA established by IFC and Rio Tinto's own corporate policies and standards. The methodology for the SEIA is described in Part A of this document and the work schedule is presented in Section D5. The likely significant impacts have been elaborated on in *Table D2.1*. The key impact topics of interest are:

- Geology, Soils and Contaminated Land;
- Impacts on Surface Water (Hydrology) and Ground Water (Hydrogeology);
- Biodiversity, Nature Conservation and Ecosystem Services;
- Landscape and Visual Impacts;
- Cultural Heritage;
- Noise and Vibration;
- Air Quality and Climatic factors;
- Traffic;
- Displacement of Land Uses, Property and People;
- Community Health and Safety;
- Social and Socio-Economic Impacts; and
- Employment and Working Conditions.

The following information is provided for each topic:

- **Sources of impact:** The potential causes or sources of impact during construction, operation and decommissioning;
- **Potential impacts of significance:** discussion of the types of impact that could occur from the Project based on available information on the Project and the baseline environment; and
- **Proposed assessment approach:** an outline of the work required to complete the assessment.

¹ Ministère de l'Agriculture de l'Élevage de l'Environnement des Eaux et Forêts, Service National des Etudes et d'Évaluation Environnementale ; Les Etudes d'Impact sur l'Environnement : Termes de Référence pour les Etudes d'Impact Environnemental & Social & Guide d'Évaluation ; Version 03/2007

Table D2.1 Potential Significant Effects of the Construction Workforce Accommodation Camps and Logistical Supply Centres

Topic	Sources of Impact	Initial assessment of likely significant impacts	Proposed approach to assessment
Geology and Soils	Removal of topsoil during site clearance and preparation during construction and reinstatement after decommissioning.	There is the potential for loss of soil resources from the various camp locations. If there are soil resources of high value for agriculture on site this could be significant. See also section on land use. On closure of the sites all topsoil should be reinstated and there may be opportunity for improving soils as part of the site restoration for future productive use.	The assessment will consider the quality and use of soil resources at the site and determine whether these are considered to be significant. If so measures will be identified to mitigate this loss.
	Spills of hazardous materials and disposal of waste on land during construction and operation during construction and operation.	Intentional or accidental discharges of liquid waste or deposit of solid waste on land could cause contamination of soils affecting ecosystems, underlying groundwater and future use of the land for agriculture etc after closure of the sites. Includes risk of spills during refuelling and maintenance of equipment.	The assessment will consider the types of materials to be used and handled on site and effluents and wastes that will be generated during construction and operation and where there is the risk of significant impacts from accidental or intentional releases to the environment, measures to mitigate these will be identified.
	Soil erosion during construction and operation.	Vegetation and topsoil will be cleared from each camp location, presenting a risk of increased soil erosion by wind or water. Some sites may be on or near steep gradients, and there may be watercourses at some sites which could potentially be impacted. During operation erosion may continue as a risk where soils remain exposed.	The assessment will consider the quality and use of soil resources at the sites and determine whether these are particularly vulnerable to erosion. If so measures will be identified to mitigate this and protect watercourses.
	Acid sulphate leaching from soils during construction and operation.	Earthworks on sites will expose soil to the atmosphere which was previously buried. There is the potential for acid sulphate leaching to occur with impacts on materials used in workcamp structures.	Assessment of the likelihood of acid sulphate leaching occurring will be undertaken prior to construction.
Hydrology and Hydrogeology	Site clearance and levelling during construction.	If occupation of the construction workforce accommodation camps and logistical supply centres displaces or requires the diversion of surface water resources this could have an impact on existing uses of those resources on site or downstream and on downstream aquatic flora and fauna and fisheries.	The assessment will confirm whether there are important surface water resources which could be affected by the Project.
		Development of the construction workforce accommodation camps and logistical supply centres could displace boreholes used by the local community for water supply. Loss of this resource could be a significant impact.	The assessment will confirm whether there are boreholes within the Project sites and if so measures to mitigate their loss will be identified. Mitigation measures will be developed in consultation with the affected groups.

Topic	Sources of Impact	Initial assessment of likely significant impacts	Proposed approach to assessment
		Development of the construction workforce accommodation camps and logistical supply centres presents the potential for adverse impacts on inland surface waters and groundwater with potential impacts on users of these resources and ecosystems that depend upon them.	The assessment will identify the hydrological and hydrogeological regime in the camp areas and characterise groundwater sources and surface watercourses through review of existing information, baseline surveys where required and consultation with users. A surface and ground water management plan will be developed for both construction and operation phases.
	Discharges of liquid effluents to surface and ground water during construction and operation.	Intentional or accidental discharges of liquid waste onto the ground (including sewage) or deposit of solid waste on land could cause contamination of soils and groundwater. Discharges into water could cause significant impact on water quality, and on downstream users of water resources, ecosystems, fauna and flora, and fisheries.	The assessment will consider the types of materials to be used and handled on site during construction and operation and where there is the risk of significant impacts from accidental or intentional releases to the environment, measures to mitigate these will be identified.
	Water usage during operation.	The construction workforce accommodation camps and logistical supply centres will require a water supply for potable use, and LSCs with concrete batching plants will also require a potentially significant volume of water for use in concrete production. provision of these supplies will impact on local water resources and could affect water supplies used by local communities.	The assessment will ascertain through surveys and consultation the sources of water for community use, assess whether community water sources will be impacted, and identify mitigation measures where required.
Biodiversity and nature conservation	Habitat loss as a result of land take during construction. and development of neighbouring areas as a result of induced in-migration	The land take for the sites will result in the loss of existing habitat with consequent impacts on species and biodiversity, and the ecosystem services provided by these resources.	The assessment will provide general habitat characterisation and mapping of important and sensitive habitats and species within the study area and identify how these may be affected by camp construction and operation. The assessment will also consider the impact of land take on the provision of services by ecosystems affected by the Project, taking into account the value provided by those services to local communities and user groups.
	Transport during construction and operation.	Construction and operation of the construction workforce accommodation camps and logistical supply centres has the potential to introduce significant traffic to the local area. Noise, dust and road traffic have the potential to adversely affect plant, animal and human populations in the area.	Appropriate mapping and characterisation will be conducted to confirm the presence of species or habitats of conservation interest and measures will be identified to mitigate the impacts.

Topic	Sources of Impact	Initial assessment of likely significant impacts	Proposed approach to assessment
	Fragmentation of habitats (including those providing ecosystem services) during construction and operation.	The construction workforce accommodation camps and logistical supply centres may fragment and separate habitats which are currently connected and offer corridors for wildlife movement, or that provide ecosystem services to users of a specific resource (fuel wood, medicinal plants, food etc). Severance of these corridors could adversely effect fauna species dependent on these corridors for feeding, breeding or migration.	Appropriate mapping and characterisation of important and sensitive habitats and species will be carried out within the study area of each camp location. Characterisation and mapping of ecosystem services within the study area and engagement with potentially affected users, communities and local authorities. This will confirm the presence of species or habitats of conservation interest and measures will be identified to mitigate the impacts.
	Reinstatement of habitats after decommissioning.	On decommissioning there will be the opportunity to reinstate habitats and create new habitats of potential benefit for biodiversity.	
	Introduction of alien species during construction and operation	Materials and equipment may be brought into Guinea during both construction and operation of the sites, and could be contaminated with alien invasive or predatory species which could be introduced into and harm local ecosystems	Impacts from alien introductions will be examined by reference to experience elsewhere in Guinea and worldwide and a quarantine system will be developed to minimise to risks
Landscape and visual	Change in land use during construction and operation.	The construction workforce accommodation camps and logistical supply centres will change the landscape and visual character of their local area. In view of the scale of some of the larger sites and the introduction of 24 hour lighting into a rural area, the impact is likely to affect the visual environment of local communities.	An assessment will be made of the changes to the landscape and views for local people. Where mitigation is warranted, suitable measures will be identified.

Topic	Sources of Impact	Initial assessment of likely significant impacts	Proposed approach to assessment
Cultural heritage	Site preparation and clearance during construction and operation.	The land to be used for construction workforce accommodation camps and logistical supply centres may include sites and features of cultural importance. Sites of tangible cultural heritage (historic buildings, buried archaeology) located within the Project footprint would be directly affected and sites nearby could be affected by impacts on their setting. The construction workforce accommodation camps and logistical supply centres could also cause impacts on sites or practices of importance for their intangible cultural heritage values through direct impacts, disturbance to the setting of locations, and changes in communities and socio-economic conditions. This in turn may put the customs and practices associated with these sites and with traditional ways of life at risk. Intangible cultural heritage may also be affected due to in-migration of people from elsewhere disturbing local cultures and traditions. Positive impacts could also occur if sites that are currently under threat can be protected effectively.	Sites of importance for cultural heritage will be mapped and characterised through field work, consultation and modelling. Direct impacts through land take will be identified and indirect effects through changes in setting and socio-economic and demographic conditions will be assessed. Mitigation measures will be defined in consultation with stakeholders and set out in a Cultural Heritage Management Plan including prior investigation of high priority sites and operation of a chance find procedures for the protection or preservation of any sites of value and intangible cultural heritage discovered during construction or operation.
Noise and vibration	Site preparation, earthworks, piling, dredging and other operations during construction. Traffic during construction and operation. LSC operations.	Construction and operational activities have the potential to cause noise impacts in areas where ambient noise pollution levels are currently very low. Noise during the night is likely to be particularly evident in residential areas.	The impacts of noise emissions on ambient noise levels will be predicted and compared with established IFC and WHO noise thresholds. Measures will be identified to mitigate significant impacts.
Air quality	Site preparation, earthworks, piling, dredging and other operations during construction. Air emissions from energy use, including power generation, concrete batching and other sources during camp operations.	Construction and operation activities and associated traffic have the potential to cause air impacts in areas where ambient air pollution levels are currently very low. Combustion emissions from power generation will result in emissions of green house gases (GHG) and traffic and dust from storage of materials and concrete batching could have adverse impacts in nearby residential areas and on agriculture.	The impacts of air emissions on ambient air quality will be assessed to establish the likely impact of these emissions in sensitive areas along the roads and in the vicinity of the construction workforce accommodation camps and logistical supply centres and laydown areas in comparison with national and international (IFC and WHO) standards. Measures will be identified to mitigate significant impacts. GHG emissions will be monitored and measures to reduce emissions will be identified.

Topic	Sources of Impact	Initial assessment of likely significant impacts	Proposed approach to assessment
Road Traffic	Transport of personnel, goods, materials and equipment.	Development of the construction workforce accommodation camps and logistical supply centres will introduce significant new traffic to the local area and require substantial improvements to existing road infrastructure. This may bring benefits to local communities and the local economy by improving access but there will be increased risks from dust, noise and risk of traffic accidents affecting local people and livestock. The construction of roads may cause the severance of traditional community access routes.	Requirements for new and improved roads will be defined and estimates will be made of traffic flows. Benefits for local people and businesses in terms of improved accessibility on local roads and adverse impacts from severance and traffic accidents will be assessed and mitigation identified where appropriate. Community views on perceived risks to access and needs for emergency preparedness will also be taken into account.
Displacement of land uses, property and people	Permanent and temporary land take from construction of the construction workforce accommodation camps and logistical supply centres and access roads.	Permanent and temporary land take to facilitate construction and operation of the camps and access roads to them, will result in economic and/or physical displacement of people living in or using the impacted area. Where they are dependant on subsistence farming or other land-based resources loss of land will have a particular adverse impact on livelihoods.	The assessment will identify existing land ownership and land use within the permanent and temporary Project footprint. An assessment will be carried out to determine the impact on the residents, farmers, other users of land-based resources and on their associated livelihoods. Mitigation measures including compensation and resettlement in accordance with international standards will be identified in consultation with stakeholders.
Community health and safety	Hazards associated with traffic, in-migration and social tension during construction and operation.	There may be increased risks to community health and safety around the construction workforce accommodation camps and logistical supply centres. Potential impacts could include reduction in access to resources for local people, pressure on housing and infrastructure, and potential for antisocial activities in local communities.	Project policies and procedures will be compared with international good practice to determine that all appropriate measures are being taken to protect workers and the public. This will include risks from vector borne, water borne, food borne, respiratory and sexually transmitted diseases. Where possible, hazards will be eliminated or “designed out”. Management/mitigation measures that are appropriate will be developed where required. The measures that are developed will also be reflected in the existing site H&S risk registers and other relevant H&S management plans.
Social and socio-economic impacts	Presence of construction workforce accommodation camps and logistical supply centres in proximity to local communities. Changes in access to land and resources.	Socio-economic transformation related to the presence of the construction workforce accommodation camps and logistical supply centres in the form of in-migration, monetisation, economic growth, changes in access to infrastructure and services, (e.g. education, health), expectations for and conflict over jobs, land and resources have the potential to cause a changes in traditional social structures and value systems, affecting social roles and status (such as those of women and youth seeking wage employment). This may affect traditional family and community support networks.	An assessment will be carried out of potential vulnerabilities based on socio-economic profiling, household level surveys and consultation in the area of the proposed construction workforce accommodation camps and logistical supply centres. The nature and potential magnitude of changes in current social networks and economy will be determined. Mitigation measures will be identified that increase the resilience to social and socio-economic changes.

Topic	Sources of Impact	Initial assessment of likely significant impacts	Proposed approach to assessment
	Opportunities for local employment and provision of goods and services to the construction workforce accommodation camps and logistical supply centres.	The establishment of construction workforce accommodation camps and logistical supply centres in the vicinity of existing settlements will offer the potential for local people to be employed in suitable positions within the workforce accommodation camps and for local businesses to provide goods and services. This will be of benefit to the local economy and communities and benefits can be improved by focus to local procurement where this is feasible.	The assessment will investigate the scope for local procurement of workers, goods and services for the camps and identify measures that can be taken to maximise these opportunities.
	In-migration.	The establishment of construction workforce accommodation camps and logistical supply centres will raise the prospect of influx of people from outside the area seeking opportunities. This will need to be carefully managed within the framework of applicable law and practice to ensure in-migration does not adversely affect established local communities and to prevent increased risks to health safety, security and welfare.	The assessment will consider the potential for in-migration and identify ways of managing any influx to minimise adverse impacts and maximise benefits for the local community. This will include consideration of principles to guide the detailed siting and design of the workforce accommodation and logistical supply centres in relation to nearby communities.

D3 SEIA Report Structure

The proposed structure of the SEIA Report for the Workforce Accommodation Camps and Logistical Supply Centres is outlined in *Table D3.1*. The proposed outline covers the requirements of *Arrêté 990/ NRNE/SGG/90* in a structure designed to ensure all the required information is provided in a convenient and easily understandable manner.

Table D3.1 Proposed Structure of the SEIA Report

0. Non-Technical Summary	Provides a concise and easy to understand summary of the findings of the SEIA.
1. Introduction	Includes background to the Project, the proponent, the legal context and need for a SEIA and the methodology adopted. Detailed information on environmental and social legislation applying to the Project and the administrative and policy context will be provided in an annex. The members of the SEIA Team and their qualifications will also be identified in an annex.
2. Project description,	The Project description will provides details on the locations, design, construction, operation and decommissioning of the camps and centres and explain the background to their development and alternatives considered. The estimated costs for development of the Project will be monitored, as well as the schedule for completion. Further information on siting and appraisal of alternatives will be presented in an annex and explain the reasons why, from an environmental perspective, the Project was retained.
3. Scoping and Stakeholder Consultations	This chapter will present the results of the current scoping studies and summarise the views and concerns of external stakeholders as expressed during the SEIA consultations. The views of stakeholders will be taken into account in the following assessment chapters. A full report on the results of stakeholder consultations will be presented in an annex.
Impact Chapters by topic	Each topic chapter will provide the following information:
4. Impacts on Land Use and Property	an introduction to the topic and to the sources and types of impact addressed in the chapter (ie the scope);
5. Geology and Soils	a description of methods and sources used to characterise the baseline and to predict and evaluate impacts with a note of any difficulties or limitations;
6. Hydrology and Hydrogeology	a description of the baseline relevant to the topic;
7. Marine Physical Environment	a description of the impacts, planned mitigation and how this will avoid or reduce impacts, and evaluation of the significance of the residual impacts after mitigation;
8. Marine Biodiversity, Flora and Fauna	discussion of cumulative impacts, where relevant.
9. Terrestrial Biodiversity, Flora, Fauna and Ecosystem Services	Supporting information will be provided in annexes where needed.
10. Landscape and Visual Impacts	
11. Archaeology and Cultural Heritage	
12. Noise and Vibration	

13. Odours, Air quality and Climatic Factors	
14. Traffic and Infrastructure	
15. Social and Socio-Economic Impacts	
15. Social and Environmental Management Plan	This section will provide a framework for the mitigation measures to be implemented, including a policy framework for land acquisition, compensation and resettlement planning and a stakeholder engagement plan and grievance policy for the remaining stages of the work. A detailed Social and Environmental Management Plan describing all the proposed mitigation measures from the Impact Assessment will be presented in an annex. The costs associated to each of these mitigation measures will be described.
Annexes	

D4 Proposed SEIA Team

The SEIA team will be led by Environmental Resources Management Limited (ERM)¹ and will include specialists in the following disciplines which are considered to be relevant to the assessment of impacts identified in Section D2:

- Biodiversity;
- Geology, soils and erosion;
- Hydrology and surface water resources;
- Hydrogeology and groundwater resources;
- Noise and vibration;
- Air quality;
- Landscape and visual impact;
- Cultural heritage;
- Land use and resettlement;
- Socio-economic impact, development and livelihoods;
- Community health and safety; and
- Employment and working conditions.

The SEIA Team will be led by environmental professionals with more than 25 years experience in the field and all specialist studies will be undertaken under the supervision of suitably qualified experts with at least 15 years experience.

D5 Proposed SEIA timetable

The proposed schedule for completion of the SEIA is set out in *Figure D5.1*. The current planned schedule envisages submission of the SEIA Report to the Minister of the Environment in October 2011 and issue of approval for the temporary construction work camps by January 2012.

¹ ERM is a member of the UK Institute of Environmental Management and Assessment EIA Quality Mark Scheme. ERM's Project Director is a registered as a Principal EIA Practitioner and is a Practitioner Examiner with the Institute.

Figure D5.1 SEIA Schedule

Activity	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Agreement on Terms of Reference							
Baseline data collection							
Stakeholder consultations							
Appraisal of alternatives and selection of preferred site							
Impact assessment and mitigation planning							
SEIA Report and SEMP submission to Government							
Disclosure and consultation							
Government review and decision-making							

Annex E

Stakeholder Engagement Records

Evénement / Event	<i>Conférence Nationale de Lancement de l'Etude d'Impact Social et Environnemental (EISE) pour le Projet Simandou</i> National Conference for the launch of the Social and Environmental Impact Assessment (SEIA) for the Simandou Project
Lieu / Location	<i>Hotel Novotel</i> Hotel Novotel
Date	19 Sept 2012
Durée / Time	10.30am - 5.30pm
Président / Chair	<i>Le ministère de l'environnement et Le ministère des mines</i> Ministry of Environment and the Ministry of Mines
Liste des présents / Attendance List	
<i>Approximativement 200 personnes ont participé à l'atelier. Parmi les personnes présentes, on peut citer :</i> <i>des représentants du Gouvernement guinéen (Ministère des Mines, Ministère de l'Environnement, Ministère de l'Urbanisme, Ministère de l'Agriculture, Ministère de la Décentralisation) ;</i> <i>des représentants du BGEEE et du CNSES ;</i> <i>les gouverneurs de Kindia, Mamou et N'Zérékoré;</i> <i>les préfets ou leur représentant de Forécariah, Kindia, Mamou, Faranah, Kouroussa, Kankan, Kissidougou, Macenta, Kérouané and Beyla;</i> <i>les sous-préfets de Ouré-Kaba, Banankoro, Konsankoro, Sikhourou, Douako, Moussayah, Sandeniah, Tiro, Marella, Heremakonon, Soyah, Madina Oula, Tokonou, Kérouané, Nionsomoridou, Kaliah, Albadariah</i> <i>les maires de Forecariah, Beyla;</i> <i>des représentants des organisations onusiennes (UNHCR, ONUSIDA, UNESCO, UNICEF, UNDP, FAO) ;</i> <i>des représentants d'ONG (Ecologie, Faisons Ensemble, AVODEK, Pride Guinée) ;</i> <i>des représentants d'institutions internationales de financement (SFI, AFD, GIZ) ;</i> <i>des représentants de la presse ;</i> <i>des représentants de Rio Tinto Simfer (relations gouvernementales, approbations environnementales, communications, communautés etc); et</i> <i>des représentants du cabinet ERM.</i> Approximately 200 people participated in the workshop. Among the attendees were: - representatives from the Government of Guinea (Ministry of Mines, Ministry of Environment, Ministry of Urbanism, Ministry of Agriculture, Ministry of Decentralisation); - representatives from the BGEEE and the CNSES; - the governors of Kindia, Mamou and N'Zérékoré; - the prefets or prefets' representatives of Forécariah, Kindia, Mamou, Faranah, Kouroussa, Kankan, Kissidougou, Macenta, Kérouané and Beyla; - the sous-prefets of Oure-Kaba, Banankoro, Konsankoro, Sikhourou, Douako, Moussayah, Sandeniah, Tiro, Marella, Heremakonon, Soyah, Madina Oula, Tokonou, Kérouané, Nionsomoridou, Kaliah, Albadariah - the mayors of Forecariah, Beyla; - UN representatives (UNHCR, ONUSIDA, UNESCO, UNICEF, UNDP, FAO); - representatives from NGOs (Guinée Ecologie, Faisons Ensemble, AVODEK, Pride Guinée); - representatives of international financing organisations (IFC, AFD. GIZ); - representatives from the press; - representatives from Rio Tinto Simfer (Government Relations, Environmental Approvals, Communications, Communities etc); and - representatives from ERM.	

Résumé des questions et des commentaires reçus / Summary of Questions and Comments Received

Les questions et préoccupations des participants de la conférence de Conakry ont essentiellement porté sur:

- *l'emplacement exact du Projet (et notamment l'alignement du rail) ;*
- *la protection de l'environnement (et notamment la protection des forêts classées et de la biodiversité) ;*
- *le processus de consultation qui sera mené par le Projet (quand et de quelle manière ce processus sera-t-il réalisé ?) ;*
- *la proximité de corridor du train avec la frontière sierra-léonaise ainsi que les problèmes de sécurité que cela pourrait entraîner ;*
- *le processus de l'EISE (comment une EISE est-elle réalisée ?) ;*
- *le processus du PARC (notamment le processus de compensation et l'implication des populations dans le processus) ; et*
- *une recommandation : les TdRs devraient être largement publiés et distribués aux autorités locales.*

The principal questions and concerns related to:

- the Project's exact footprint (and mainly the rail alignment);
- the protection of the environment (mainly for the protection of classified forests and for the biodiversity);
- the consultation process that is going to be undertaken by the Project (when and how is it going to be undertaken?);
- the proximity of the rail alignment with the Leonese border and the safety issues that it could create;
- the SEIA process (how is a SEIA being undertaken?);
- the PARC process (mainly about the compensation process and the population's involvement); and
- a recommendation: the ToRs should be widely publicised and distributed to all local authorities.

Evénement / Event	<i>Atelier préfectoral de lancement de l'Etude d'Impact Social et Environnemental (EISE) du Projet Simandou, Forécariah, le 22 septembre 2011.</i> Prefecture Workshop for the launch of the Social and Environmental Impact Assessment (SEIA) for the Simandou Project
Lieu / Location	<i>Hotel Malaika à Forécariah</i> Malaika hotel in Forecariah
Date	22 Sept 2011
Durée / Time	10am - 4pm
Président / Chair	<i>Mme Cissé Sarangbè Camara, Gouverneur de Kindia et Mme Hadja Leno Mariama, Préfet de Forécariah</i> Mrs Cissé Sarangbè Camara, Governor of Kindia and Mrs Hadja Leno Mariama, Prefet of Forécariah
Liste des présents / Attendance List	
<i>Approximativement 170 personnes ont participé à l'atelier. Parmi les personnes présentes, on peut citer:</i> <i>la Gouverneure de la Région de Kindia;</i> <i>la Préfet de Forécariah;</i> <i>les sous-préfets de Kaback et Maférényah;</i> <i>le maire de la commune urbaine de Forécariah;</i> <i>un représentant du Ministère des Mines;</i> <i>un représentant du Ministère de l'Administration du Territoire et de la Décentralisation;</i> <i>des représentants des services techniques préfectoraux (agriculture, éducation, santé, agriculture etc);</i> <i>des représentants de la police et de la gendarmerie nationale;</i> <i>le directeur de la radio rurale locale;</i> <i>des représentants de Rio Tinto Simfer (relations gouvernementales, approbations environnementales, communications, communautés etc); et</i> <i>des représentants du cabinet ERM.</i> Approximately 170 people participated in the workshop. Among the attendees were: - the Governor of Kindia region; - the Prefet of Forecariah; - the sous-prefets of Kaback and Maférényah; - the Mayor of the urban district of Forécariah; - a Ministry of Mines' representative; - a Ministry of Territorial Administration and Decentralisation's representative; - representatives of the prefectural technical services (Agriculture, education, health, etc.); - representatives of the police and the gendarmerie; - the local rural radio director; - representatives from Rio Tinto Simfer (Government Relations, Environmental Approvals, Communications, Communities etc); and - representatives from ERM.	
Résumé des questions et des commentaires reçus / Summary of Questions and Comments Received	
<i>Les questions et préoccupations des communautés de la préfecture de Forécariah ont essentiellement porté sur:</i> <i>les opportunités d'emploi offertes par le Projet, notamment pour les jeunes;</i> <i>l'appui que Rio Tinto compte apporter aux organisations et associations locales ainsi qu'aux activités génératrices de revenus;</i> <i>le processus de compensation en cas de réinstallation (comment seront fixées les compensations ? existera-t-il des différences entre les familles ?);</i> <i>le choix des sites de réinstallation en cas de réinstallation (les populations seront-elles impliquées dans ce choix ? comment éviter les mauvaises expériences passées ?); et</i> <i>la protection de l'environnement le long du rail et en mer pour les pêcheurs (quelles mesures seront-</i>	

elles prises pour la protection et la restauration des couverts végétaux ? les pêcheurs pourront-ils continuer à pêcher ?).

The communities' principal questions and concerns related to:

- the Project's employment opportunities, particularly for the young;
- Rio Tinto's support to local organisations and associations and for income generating activities;
- the resettlement compensation process (how will the compensation rates be set? will there be differences between families?);
- the selection of host sites in case of resettlement (will the local population be involved in the choice? how will bad experiences from the past be avoided?); and
- the protection of the environment alongside the rail and at sea for fishermen (what measures will be taken for the protection and restoration of plant cover? will the fishermen still be able to go fishing?).

Evénement / Event	<i>Atelier préfectoral de lancement de l'Etude d'Impact Social et Environnemental (EISE) du Projet Simandou, Kindia, le 4 Octobre 2011.</i> Prefecture Workshop for the launch of the Social and Environmental Impact Assessment (SEIA) for the Simandou Project
Lieu / Location	<i>Maison des Jeunes de Kindia</i> Kindia youth house
Date	4 Oct 2011
Durée / Time	10.20am - 4.20pm
Président / Chair	<i>Mme Cissé Sarangbè Camara, Gouverneur de Kindia et M. Condé Drame, Préfet de Kindia</i> Mrs Cissé Sarangbè Camara, Governor of Kindia and Mr Condé Drame, Prefet of Kindia
Liste des présents / Attendance List	
<i>Approximativement 117 personnes ont participé à l'atelier. Parmi les personnes présentes, on peut citer:</i> <i>Mme le Gouverneur de la Région Administrative de Kindia;</i> <i>M. le Préfet de Kindia;</i> <i>les représentants du Ministère de l'Environnement des Eaux et Forêts;</i> <i>les représentants du MATD (Ministère de l'Administration du Territoire et de la Décentralisation);</i> <i>le maire de la commune urbaine de Kindia;</i> <i>les inspecteurs régionaux et les directeurs préfectoraux des différents départements ministériels à Kindia;</i> <i>les sous-préfets de Sougueta, Madina-Oula, Kolentin;</i> <i>les représentants religieux et les sages de la ville de Kindia;</i> <i>les représentants de la jeunesse, d'ONGs et des femmes de Kindia.</i> <i>des représentants de Rio Tinto Simfer (relations gouvernementales, approbations environnementales, communications, communautés, etc.); et</i> <i>des représentants du cabinet ERM.</i> Approximately 117 people participated in the workshop. Among the attendees were: - the Governor of Kindia administrative region; - the Prefet of Kindia; - representatives of the Ministry of Environment, Waters and Forests; - representatives of the Ministry of Territorial Administration and Decentralisation; - the mayor of the urban district of Kindia; - the regional inspectors and prefectural directors of the different ministry services in Kindia; - the sous-prefets of Sougueta, Madina-Oula and Kolentin; - the religious representatives and the elders of Kindia; - representatives of the Youth, NGOs and Women of Kindia; - representatives from Rio Tinto Simfer (Government Relations, Environmental Approvals, Communications, Communities etc); and - representatives from ERM.	
Résumé des questions et des commentaires reçus / Summary of Questions and Comments Received	
<i>Les questions et préoccupations des communautés de la préfecture de Kindia ont essentiellement porté sur:</i> <i>les opportunités d'emploi offertes par le Projet, notamment pour les jeunes;</i> <i>le traitement du minerai sur place (pourquoi ne pas traiter le minerai en Guinée ?);</i> <i>le tracé final du chemin de fer;</i> <i>l'usage du chemin de fer (le train va-t-il transporter des passagers ?);</i> <i>les villages concernés par la réinstallation (comment savoir qui sera impacté et réinstallé ?);</i> <i>le processus de compensation;</i> <i>le choix des sites de réinstallation;</i> <i>l'impact du Projet sur les voies de transhumance (quelles sont les mesures envisagées par le Projet pour les voies de transhumance qui sont dans la zone du Projet ? Et pour la transhumance entre 2 CRD, surtout à Sanguéta ?);</i>	

- *la présence d'autres sociétés (d'autres sociétés vont-elles suivre Rio Tinto dans l'exploitation du fer ? quelles relations Rio Tinto entretient-elle avec les autres sociétés minières ?);*
- *les dispositions qui seront prises pour sécuriser le chemin de fer et éviter la détérioration des rails;*
- *une remarque: Rio Tinto doit toujours se présenter aux autorités locales lorsque ses employés travaillent dans une zone.*

The community's principal questions and concerns related to:

- the Project's employment opportunities, particularly for the young;
- the ore treatment in Guinea (why not treat the ore in Guinea?);
- the exact rail alignment;
- the exact use of the railway (will it transport passengers?);
- the villages impacted by the resettlement (how is it possible to know who will be impacted and who will be resettled?);
- the compensation process;
- the selection of host sites;
- the Project's impact on transhumance paths (what are the measure considered by the Project for the transhumance paths that are inside the Project's area? And for the transhumance between two CRD, especially at Sangueta?);
- the presence of other companies (will other companies follow Rio Tinto in the iron exploitation ? what are the relations between Rio Tinto and the other mining companies?);
- the arrangement that will be taken to ensure the security of the railway and avoid the degradation of the rails;
- a remark: Rio Tinto should always warn the local authorities when its employees are working in the area.

Événement / Event	<i>Atelier préfectoral de lancement de l'Etude d'Impact Social et Environnemental (EISE) du Projet Simandou, Tokonou (Préfecture de Kankan), le 4 octobre 2011.</i> Prefecture Workshop for the launch of the Social and Environmental Impact Assessment of the Simandou Project
Lieu / Location	<i>Maison des Jeunes de la CRD de Tokonou</i> CRD youth house in Tokonou
Date	4 Oct 2011
Durée / Time	10.30am - 5pm
Président / Chair	<i>M. Mohamed V Kéita, Gouverneur de Kankan</i> Mr Mohamed V Kéita, Governor of Kankan
Liste des présents / Attendance List	
<i>Environ 240 personnes ont participé à l'atelier. Parmi les participant(e)s, on peut citer:</i> <i>le préfet de Kankan;</i> <i>les Sous-préfets (entrant et sortant) de Tokonou;</i> <i>le Maire de la CRD de Tokonou;</i> <i>le représentant du Ministère des Mines;</i> <i>le représentant du Ministère de l'Administration du Territoire et de la Décentralisation;</i> <i>les directeurs des services techniques rattachés de la région et de la préfecture de Kankan (agriculture, éducation santé, environnement, etc...);</i> <i>les représentants de la gendarmerie et de la police;</i> <i>le directeur de la radio rurale locale;</i> <i>des représentants de Rio Tinto Simfer (relations gouvernementales, approbations environnementales, communications, communautés etc); et</i> <i>des représentants du cabinet ERM.</i> Approximately 240 people participated in the workshop. Among the attendees were: - the prefect of Kankan; - the sous-prefets (entering and exiting) of Kankan; - the Mayor of the urban district of Tokonou; - a Ministry of Mines' representative; - a Ministry of Territorial Administration and Decentralisation's representative; - representatives of Kankan's prefectural technical services (agriculture, education, health, etc.); - representatives of the police and the gendarmerie; - the local rural radio director; - representatives from Rio Tinto Simfer (Government Relations, Environmental Approvals, Communications, Communities etc); and - representatives from ERM.	
Résumé des questions et des commentaires reçus / Summary of Questions and Comments Received	
<i>Les questions et préoccupations des communautés de la sous-préfecture de Tokonou ont essentiellement porté sur:</i> <i>les opportunités d'emploi offertes par le Projet, notamment pour les jeunes de la sous-préfecture de Tokonou;</i> <i>l'inquiétude de la population quant à la manière dont il sera possible de traverser le rail, notamment pour le bétail et les enfants;</i> <i>l'appui que le Projet peut apporter dans la réalisation d'infrastructures (routes, électricité, téléphone etc.);</i> <i>l'inquiétude sur la perte de liens communautaires au sein d'une même communauté ou entre deux villages qui seraient séparés par le rail;</i> <i>les mesures d'accompagnement qui seront prises en cas de réinstallation; et le tracé exact du chemin de rail afin de déterminer les villages et terres qui seront impactés</i> The communities' principal questions and concerns related to:	

- the Project's employment opportunities particularly for Tokonou sub-prefecture's young;
- the population's concerns over how it will be possible to cross the railway, especially for cattle and children;
- the support Rio Tinto intends to bring in the development of new infrastructure (road, electricity, telephone, etc.);
- the concerns over the loss of community ties within a community or between two villages separated by the railway line;
- the transition measures to be taken in case of resettlement; and
- the exact rail alignment in order to determine which villages and land will be impacted.

Événement / Event	<i>Atelier préfectoral de lancement de l'Etude d'Impact Social et Environnemental (EISE) du Projet Simandou, Albadariah (Préfecture de Kissidougou), le 5 octobre 2011.</i> Prefecture workshop for the launch of the Social and Environmental Impact Assessment (SEIA) of the Simandou Project
Lieu / Location	<i>Maison des Jeunes de la CRD d'Albadariah</i> CRD youth house in Albadariah
Date	5 Oct 2011
Durée / Time	10am - 5pm
Président / Chair	<i>M. Sébastien Tounkara, Préfet de Kissidougou</i> Mr Sébastien Tounkara, Prefet of Kissidougou
Liste des présents / Attendance List	
<i>Environ 500 personnes ont participé à l'atelier. Parmi les participant(e)s, on peut citer:</i> <i>le préfet de Kissidougou;</i> <i>le maire de la commune urbaine de Kissidougou;</i> <i>le sous préfet d'Albadariah;</i> <i>le Maire de la CRD d'Albadariah;</i> <i>le représentant du Ministère des Mines;</i> <i>le représentant du Ministère de l'Administration du Territoire et de la Décentralisation;</i> <i>le directeur préfectoral de l'environnement;</i> <i>le représentant de la gendarmerie et de la police;</i> <i>la directrice de la radio rurale de Kissidougou;</i> <i>le représentant de l'AGP (Agence Guinéenne de Presse);</i> <i>la confrérie des chasseurs d'Albadariah;</i> <i>des représentants de Rio Tinto Simfer (relations gouvernementales, approbations environnementales, communications, communautés etc.); et</i> <i>des représentants du cabinet ERM.</i> Approximately 500 people participated in the workshop. Among the attendees were: - the prefet of Kissidougou; - the mayor of the urban district of Kissidougou; - the sous-prefet of Albadariah; - the mayor of the urban district of Albadariah; - a Ministry of Mines' representative; - a Ministry of Territorial Administration and Decentralisation's representative; - the prefectural director for the environment; - representatives of the police and the gendarmerie; - the Kissidougou local rural radio director; - an AGP's representative of the (Guinean Press Agency); - the Albadariah hunters confederation; - representatives from Rio Tinto Simfer (Government Relations, Environmental Approvals, Communications, Communities etc); and - representatives from ERM.	
Résumé des questions et des commentaires reçus / Summary of Questions and Comments Received	
<i>Les questions et préoccupations des communautés de la sous-préfecture d'Albadariah ont essentiellement porté sur:</i> <i>les opportunités d'emploi et de formation offertes par le Projet, notamment pour les jeunes;</i> <i>l'inquiétude de la population quant à la manière dont il sera possible de traverser le rail, notamment pour le bétail et les enfants;</i> <i>l'impact du train, et notamment du bruit du train, sur les populations et la faune (le bruit va-t-il entrainer un déplacement de la faune, ce qui serait mauvais pour les chasseurs ?);</i> <i>l'appui que le Projet peut apporter dans le développement de nouvelles infrastructures (eau, routes,</i>	

électricité, téléphone etc.) et dans le soutien aux infrastructures communautaires existantes (notamment les écoles);

- la nature de la compensation en cas de perte d'un champ ou d'une case (la personne déplacée sera-t-elle compensée en nature ou en liquide ? si elle est compensée en liquide, combien de temps recevra-t-elle de l'argent ? devra-t-elle reconstruire elle-même sa case ou sera-t-elle aidée ?); et*
- le soutien que le Projet compte apporter aux femmes, et notamment en femmes chefs de famille*

The communities' principal questions and concerns related to:

- the Project's employment and training opportunities, particularly for the young;
- the population's concerns over how it will be possible to cross the railway, especially for cattle and children;
- the impact from the train, especially the noise, on the population and fauna (will the noise cause displacement of the fauna, which would be an issue for hunters ?);
- the support that Rio Tinto intends to bring for the development of new infrastructures (water, roads, electricity, phones etc) and for existing community infrastructures (especially schools);
- the nature of the compensation in case of the loss of a field or a hut (will the resettled person be compensated financially or in-kind? If they do receive money, how long will they receive it for? Will they have to rebuild their house on their own or will they be helped?); and
- Rio Tinto's support for women, especially those that are head of their household.

Événement / Event	<i>Atelier préfectoral de lancement de l'Etude d'Impact Social et Environnemental (EISE) du Projet Simandou, Mamou, le 6 Octobre 2011.</i> Prefecture Workshop for the launch of the Social and Environmental Impact Assessment (SEIA) for the Simandou Project
Lieu / Location	<i>Salle de Conférence de Mamou</i> Mamou's conference room
Date	6 Oct 2011
Temps / Time	10am - 6pm
Président / Chair	<i>M. Diallo Amadou Oury, Gouverneur de Mamou</i> Mr Diallo Amadou Oury, Governor of Mamou
Liste des présents / Attendance List	
<i>Approximativement 160 personnes ont participé à l'atelier. Parmi les personnes présentes, on peut citer:</i> <i>Monsieur le Gouverneur de la Région Administrative de Mamou;</i> <i>Monsieur le Préfet de Mamou;</i> <i>le représentant du Ministère de l'Environnement;</i> <i>le représentant du Ministère de l'Administration du Territoire et de la Décentralisation;</i> <i>les sous-préfets de Soyah, Ouré Kaba et les Présidents des CRD;</i> <i>les religieux, notabilités et sages de Mamou;</i> <i>les représentants de la société civile;</i> <i>les représentants des cadres des services déconcentrés de Mamou,</i> <i>des ONGs;</i> <i>des jeunes et femmes de Mamou;</i> <i>des représentants de Rio Tinto Simfer (relations gouvernementales, approbations environnementales, communications, communautés, etc.); et</i> <i>des représentants du cabinet ERM.</i> Approximately 160 people participated in the workshop. Among the attendees were: - the Governor of Mamou region; - the Prefet of Mamou; - a Ministry of Environment's representative; - a Ministry of Territorial Administration and Decentralisation's representative; - the sous-prefets of Soyah, Oure Kaba and the presidents of the CRDs; - religious representatives, notables and elders of Mamou; - representatives from the civil society; - representatives of the staff of the decentralised services of Mamou; - NGOs; - youth and women of Mamou; - representatives from Rio Tinto Simfer (Government Relations, Environmental Approvals, Communications, Communities etc); and - representatives from ERM.	
Résumé des questions et des commentaires reçus / Summary of Questions and Comments Received	
<i>Les questions et préoccupations des communautés de la préfecture de Mamou ont essentiellement porté sur:</i> <i>les opportunités d'emploi offertes par le Projet (notamment pour les jeunes et lors des phases de construction et d'exploitation);</i> <i>le traitement du minerai sur place (pourquoi ne pas traiter le minerai en Guinée ?);</i> <i>le tracé final du chemin de fer;</i> <i>la réhabilitation du chemin de fer Conakry-Kankan;</i> <i>les villages concernés par la réinstallation (comment savoir qui sera impacté et réinstallé ?);</i> <i>le processus de compensation;</i> <i>le choix des sites de réinstallation;</i>	

- *les dispositions concernant la sécurisation du chemin de fer surtout dans les zones frontalières avec la Sierra Leone;*
- *la crainte de l'abandon des travaux agricoles au profit des travaux de la mine;*
- *les travaux de construction des tunnels (y aura-t-il des opérations de prospection dans la zone pour savoir si du minerai est exploitable dans ces montagnes ?); une remarque: Rio Tinto doit toujours se présenter aux autorités locales lorsque ses employés travaillent dans une zone.*

The community' principal questions and concerns related to:

- the Project's employment opportunities, particularly for the young;
- the ore treatment in Guinea (why not treat the ore in Guinea?);
- the exact rail alignment;
- the rehabilitation of the Conakry-Kankan railway;
- the villages impacted by the resettlement (how is it possible to know who will be impacted and who will be resettled?);
- the compensation process;
- the selection of host sites;
- the arrangement regarding the secure of the railway, particularly near the border with Sierra Leone;
- the fear of the renunciation of farming to the benefit of mining works;
- the tunnels construction works (will there be prospecting operations in the area to know if there is some exploitable ore?);
- a remark: Rio Tinto should always warn the local authorities when its employees are working in the area.

Evénement / Event	<i>Atelier préfectoral de lancement de l'Etude d'Impact Social et Environnemental (EISE) du Projet Simandou, Douako (Préfecture de Kouroussa), le 6 octobre 2011.</i> Prefecture Workshop for the launch of the Social and Environmental Impact Assessment of the Simandou Project
Lieu / Location	<i>Maison des Jeunes de la CRD de Douako</i> CRD youth house in Douako
Date	6 Oct 2011
Durée / Time	9.30am - 4.15pm
Président / Chair	<i>M. Mohamed Douty Oularé, Préfet de Kouroussa</i> Mr Mohamed Douty Oularé, Prefet of Kouroussa
Liste des présents / Attendance List	
<i>Environ 350 personnes ont participé à l'atelier. Parmi les participant(e)s, on peut citer:</i> <i>le préfet de Kouroussa;</i> <i>le sous préfet de Douako;</i> <i>le Maire de la CRD de Douako;</i> <i>le secrétaire général chargé des collectivités décentralisées;</i> <i>le secrétaire général des affaires administratives;</i> <i>le représentant du Ministère des Mines;</i> <i>le représentant du Ministère de l'Administration du Territoire et de la Décentralisation;</i> <i>le directeur de préfectoral de l'éducation;</i> <i>la directrice préfectorale de la santé;</i> <i>le directeur préfectoral de l'agriculture;</i> <i>le chef de la section mines et carrières;</i> <i>le représentant de la radio rurale locale;</i> <i>un journaliste de la RTG (Radio Télévision Guinéenne);</i> <i>une délégation de ressortissants de Douako à Conakry;</i> <i>des représentants de Rio Tinto Simfer (relations gouvernementales, approbations environnementales, communications, communautés etc.); et</i> <i>des représentants du cabinet ERM.</i> Approximately 350 people participated in the workshop. Among the attendees were: - the prefet of Kouroussa; - the sous-prefet of Douako; - the mayor of the urban district of Douako; - the General Secretary responsible for Decentralised Communities; - the General Secretary of Administrative Affairs; - a Ministry of Mines' representative; - a Ministry of Territorial Administration and Decentralisation's representative; - the prefectural director of education; - the prefectural director of health; - the prefectural director of agriculture; - the head of the mine and quarry section; - a representative of the local rural radio; - a RTG's journalist (Guinean Radio Television); - a delegation Douako's ressortissants living in Conakry; - representatives from Rio Tinto Simfer (Government Relations, Environmental Approvals, Communications, Communities etc); and - representatives from ERM.	

Résumé des questions et des commentaires reçus / Summary of Questions and Comments Received

Les questions et préoccupations des communautés de la sous-préfecture de Douako ont essentiellement porté sur:

- *les opportunités d'emploi offertes par le Projet, notamment pour les jeunes;*
- *l'inquiétude de la population quant à la manière dont il sera possible de traverser le rail, notamment pour le bétail et les enfants;*
- *l'appui que le Projet compte apporter au développement de nouvelles infrastructures (routes, électricité et téléphone) et aux infrastructures existantes (écoles et postes de santé);*
- *le processus de compensation (les personnes déplacées sont-elles compensées en nature ou en liquide ? reçoivent-elles une compensation financière à vie ou durant la durée de vie du Projet ? les infrastructures communautaires sont-elles également réinstallées à l'identique ?);*
- *le choix des sites de réinstallation (les populations sont-elles impliquées dans ce choix ? le nouveau site de réinstallation sera-t-il similaire au site original ?); et les impacts du Projet sur les chasseurs.*

The stakeholders' principal questions and concerns related to:

- the Project's employment opportunities, particularly for the young;
- the population's concerns over how it will be possible to cross the railway, notably for cattle and children;
- the support Rio Tinto intends to bring in the development of new infrastructures (roads, electricity and telephone) and for existing community infrastructures (especially schools and health centres);
- the resettlement compensation process (will the resettled people receive financial or in-kind compensation? will the financial compensation be received for life or only for the duration of the Project? will the community infrastructures also be reinstalled exactly as they were?);
- the selection of host sites (will the local population be involved in the choice? will the new site be similar to the original one?); and
- the Project's impacts on hunters.

Evénement / Event	<i>Atelier préfectoral de lancement de l'Etude d'Impact Social et Environnemental (EISE) du Projet Simandou, Faranah, le 11 Octobre 2011.</i> Prefecture Workshop for the launch of the Social and Environmental Impact Assessment (SEIA) for the Simandou Project
Lieu / Location	<i>Salle de Conférence de Faranah</i> Faranah's conference room
Date	11 Oct 2011
Durée / Time	10.20am - 4pm
Président / Chair	<i>M. Doumbouya Mohamed Lamine, préfet de Faranah</i> Mr Doumbouya Mohamed Lamine, Prefet of Faranah
Liste des présents / Attendance List	
<i>Approximativement 160 personnes ont participé à l'atelier. Parmi les personnes présentes, on peut citer:</i> <i>Monsieur le Préfet de Faranah;</i> <i>les représentants de la commune urbaine de Faranah;</i> <i>les cadres des services déconcentrés régionaux et préfectoraux;</i> <i>les représentants des sous-préfectures de Tiro, Marela, Sandenia, Banian, Heremakono et Nialia;</i> <i>les représentants des sages de Faranah et de la ligue islamique régionale et préfectorale;</i> <i>le conseil paroissial;</i> <i>l'Eglise Baptiste, protestante, évangélique et la paroisse de Faranah;</i> <i>le représentant du Ministère de l'Environnement;</i> <i>le représentant du Ministère de l'Administration du Territoire et de la Décentralisation;</i> <i>les représentants de la société civile (Syndicat des Transporteurs, chambre de commerce et d'Agriculture, ONGs);</i> <i>les représentants des institutions d'enseignement supérieur et de recherche;</i> <i>des représentants de Rio Tinto Simfer (relations gouvernementales, approbations environnementales, communications, communautés, etc.); et</i> <i>des représentants du cabinet ERM.</i> Approximately 160 people participated in the workshop. Among the attendees were: - the Prefet of Faranah; - representatives of the urban district of Faranah; - the staff of the regional and prefectural decentralised services; - representatives from the sous-prefectures of Tiro, Marela, Sandenia, Banian, Heremakono and Niala; - representatives of the elders of Faranah and of the regional and prefectural Islamic league; - the Parish assembly; - the Baptist, Protestant and Evangelic Churches and the Parish of Faranah; - representatives of the Ministry of Environment; - representatives of the Ministry of Territorial Administration and Decentralisation; - representatives of the civil society (NGOs, transport union, chamber of commerce and agriculture); - representatives of the education and research institutions; - representatives of Rio Tinto Simfer (Government Relations, Environmental Approvals, Communications, Communities etc); and - representatives of ERM.	
Résumé des questions et des commentaires reçus / Summary of Questions and Comments Received	
<i>Les questions et préoccupations des communautés de la préfecture de Faranah ont essentiellement porté sur:</i> <i>les opportunités d'emploi offertes par le Projet (notamment pour les jeunes et lors des phases de construction et d'exploitation);</i> <i>le traitement du minerai sur place (pourquoi ne pas traiter le minerai en Guinée ?);</i> <i>le tracé final du chemin de fer;</i> <i>les villages concernés par la réinstallation (comment savoir qui sera impacté et réinstallé ?);</i>	

- *le processus de compensation (et notamment le délai d'indemnisation);*
- *le choix des sites de réinstallation;*
- *la possibilité de réhabiliter la gare routière de Faranah en même temps que l'aéroport sera réhabilité;*
- *la localisation des travaux préliminaires et des bases vies;*
- *la gestion des déchets miniers pendant les travaux et l'exploitation;*
- *les mesures à mettre en place pour protéger l'environnement, notamment sur le parc du Haut Niger et les milieux aquatiques;*
- *la gestion des croisements entre le chemin de fer et la route nationale; et*
- *les mesures de protection à prendre concernant l'élevage.*

The communities' principal questions and concerns related to:

- the Project's employment opportunities, particularly for the young and during the construction and exploitation phases;
- the ore treatment in Guinea (why not treat the ore in Guinea?);
- the exact rail alignment;
- the villages impacted by the resettlement (how is it possible to know who will be impacted and who will be resettled?);
- the compensation process (and mainly the compensation Temps / Timeframe);
- the selection of host sites;
- the possibility to rehabilitate Faranah's bus station at the same Temps / Time than the airport;
- the early works' and camps' Lieu / Location;
- the management of mining wastes during exploitation;
- the measures to put in place to protect the environment, notably in the Haut Niger national park and on the aquatic milieu;
- the management of the cross-road between the railway and the national road; and
- the measures to put in place regarding stockbreeding.

Événement / Event	<i>Atelier préfectoral de lancement de l'Etude d'Impact Social et Environnemental (EISE) du Projet Simandou, Kérouané, le 11 Octobre 2011</i> Prefecture Workshop for the launch of the Social and Environmental Impact Assessment (SEIA) of the Simandou Project
Lieu / Location	<i>Maison des Jeunes de la CRD de Kérouané</i> CRD youth house in Kérouané
Date	11 Oct 2011
Temps / Time	9.30am - 4.30pm
Président / Chair	<i>Mme Cissé Sarangbè Camara, Gouverneur de Kindia (et ressortissante de Kérouané) et M. le Secrétaire General de la préfecture</i> Mrs Cissé Sarangbè Camara, Governor of Kindia (and Kerouane's ressortissante) and the Mr. Executive Secretary of the prefecture
Liste des présents / Attendance List	
<i>Approximativement 200 personnes ont participé à l'atelier. Parmi les personnes présentes, on peut citer:</i> <i>la Gouverneure de la Région de Kindia;</i> <i>le secrétaire administratif de la préfecture de Kérouané;</i> <i>le maire de la Commune Urbaine de Kérouané;</i> <i>les sous-préfets de Damaro, Banankoro, Soromayah et Sibiribaro;</i> <i>un représentant du Ministère des Mines;</i> <i>un représentant du Ministère de l'Administration du Territoire et de la Décentralisation;</i> <i>un représentant du Ministère de l'Environnement;</i> <i>des représentants des services techniques préfectoraux (agriculture, éducation, santé, agriculture etc.);</i> <i>le chef de la section Forêts;</i> <i>des représentants de la police et de la gendarmerie;</i> <i>le directeur de la radio rurale locale;</i> <i>des représentants de Rio Tinto Simfer (relations gouvernementales, approbations environnementales, communications, communautés etc.); et</i> <i>des représentants du cabinet ERM.</i> Approximately 200 people participated in the workshop. Among the attendees were: - the Governor of Kindia; - the Executive Secretary for Kérouané prefecture; - the Mayor of the urban district of Kérouané; - the sous-prefets of Damaro, Banankoro, Soromayah and Sibiribaro; - a Ministry of Mines' representative; - a Ministry of Territorial Administration and Decentralisation's representative; - a Ministry of environment's representative; - representatives of the prefectural technical services (agriculture, education, health, etc.); - the head of the Forest section; - representatives of the police and the gendarmerie; - the local rural radio director; - representatives from Rio Tinto Simfer (Government Relations, Environmental Approvals, Communications, Communities etc); and - representatives from ERM.	
Résumé des questions et des commentaires reçus / Summary of Questions and Comments Received	
<i>Les questions et préoccupations des communautés de la préfecture de Kérouané ont essentiellement porté sur:</i> <i>les opportunités d'emploi offertes par le Projet, notamment pour les jeunes;</i> <i>la possibilité de rénover l'aéroport de Kérouané;</i> <i>la méconnaissance des populations sur la perte par le Projet des blocks 1 et 2 (les populations attendaient le retour d'une base d'opérations du Projet à Kérouané);</i>	

- *le processus de compensation (les personnes déplacées sont-elles compensées en nature ou en liquide ? reçoivent-elles une compensation financière à vie ? quelles sont les mesures de transition ?);*
- *le choix des sites de réinstallation (comment le Projet compte-t-il s'assurer que les sites de réinstallation sont libres et qu'il n'y aura pas de conflits domaniaux ?);*
- *la restauration et remise en état des sites miniers (quelles sont les mesures prises par le Projet ? la restauration est-elle menée au fur et à mesure du Projet ou a la fin du Projet ?);*
- *l'approvisionnement en eau de Kérouané (la source d'eau de la ville sera-t-elle impactée par les travaux du Projet ? les populations déplacées seront-elles réinstallées près d'une source d'eau ?); et*
- *les impacts environnementaux des travaux sur les populations (du fait de fumées et d'odeurs suffocantes) et sur les espèces protégées (singes, chimpanzés et éléphants).*

The communities' principal questions and concerns related to:

- the Project's employment opportunities, particularly for the young;
- the possibility to renovate Kérouané's airport;
- the lack of knowledge of the population on the loss of blocks 1 & 2 by the Project (the population was waiting for the return of an operation base in Kérouané);
- the resettlement compensation process (will the resettled people receive in-kind or financial compensation? will the financial compensation be for life? what are the transition measures?);
- the choice of the host site (how will the Project assure that the host sites are available and that there won't be any land conflicts);
- the restoration and rehabilitation of mine sites (what are the measures being taken by the Project ? will the restoration be managed as the Project progresses or at the end of the Project ?);
- the water supply in Kérouané (will the town's water source be impacted by the Project works ? will the resettled populations be resettled close to a water source ?); and
- the environmental impacts of the construction work on the population (smoke and suffocating odours) and on the protected species (monkeys, chimpanzees and elephants).

Evénement / Event	<i>Atelier préfectoral de lancement de l'Etude d'Impact Social et Environnemental (EISE) du Projet Simandou, Macenta, le 13 Octobre 2011.</i> Prefecture Workshop for the launch of the Social and Environmental Impact Assessment (SEIA) for the Simandou Project
Lieu / Location	<i>Maison des Jeunes de Macenta</i> Macenta youth house
Date	13 Oct 2011
Temps / Time	9.30am - 4.30 pm
Président / Chair	<i>M. Mory Diallo, préfet de Macenta</i> Mr Mory Diallo, prefet. of Macenta
Liste des présents / Attendance List	
<i>Plus de 200 personnes ont participé à cette consultation. Parmi les personnes présentes, on peut citer:</i> <i>le préfet de Macenta;</i> <i>un représentant du Ministère de l'Administration du Territoire et de la Décentralisation;</i> <i>un représentant du Ministère des Mines;</i> <i>un représentant du Ministère de l'Environnement;</i> <i>le secrétaire général des affaires administratives de la préfecture;</i> <i>le chef de la délégation spéciale de la commune urbaine de Macenta (qui fait office de Maire);</i> <i>le juge de paix de Macenta;</i> <i>le commandant de l'escadron départemental de Macenta;</i> <i>le commissaire de la police de Macenta;</i> <i>le sous-préfet de Kouankan;</i> <i>le directeur de la radio rurale locale;</i> <i>le correspondant de l'AGP (Agence Guinéenne de Presse);</i> <i>des représentants de Rio Tinto Simfer (relations gouvernementales, approbations environnementales, communications, communautés etc.); et</i> <i>des représentants du cabinet ERM.</i> Over 200 people participated in the workshop. Among the attendees were: - the prefet of Macenta; - a Ministry of Territorial Administration and Decentralisation's representative; - a Ministry of Mines' representative; - a Ministry of the Environment's representative; - the General Secretary of Administrative Affairs for the prefecture; - the head of the special delegation of the urban district of Macenta (which serves as the Mayor's office); - the judge of Macenta; - the Commander of the Macenta squadron department; - the Macenta Police Commissioner; - the sous-préfet of Kouankan; - the local rural radio director; - an AGP (Guinean Press Agency) correspondent; - representatives from Rio Tinto Simfer (Government Relations, Environmental Approvals, Communications, Communities etc); and - representatives from ERM.	
Résumé des questions et des commentaires reçus / Summary of Questions and Comments Received	
<i>Les questions et préoccupations des communautés de la préfecture de Macenta ont essentiellement porté sur:</i> <i>les opportunités d'emploi et de formation offertes par le Projet, notamment pour les jeunes;</i> <i>le soutien que Rio Tinto Simfer compte apporter au développement d'infrastructures routières (afin de désenclaver les villages de la préfecture) et sociales;</i> <i>la perte de cultures pérennes au sein de la forêt classée du Pic de Fon;</i>	

- *les mesures d'accompagnement et de transition pour les personnes réinstallées du fait du Projet;*
- *les impacts pour la population et pour les espèces protégées du fait notamment des poussières et pollutions engendrées par le Projet; et*
- *l'itinéraire du rail et la localisation des villages qui seront impactés.*

The community's principal questions and concerns related to:

- the Project's employment and training opportunities, especially for the young;
- the support Rio Tinto intends to bring for the development of road infrastructures (so as to open up the villages in the prefecture) and of social infrastructure;
- the loss of perennial crops within the Pic de Fon classified forest;
- the transition measures for those resettled due to the Project;
- the impacts for the population and protected species due especially to dust and pollution caused by the Project; and
- the exact rail alignment and the Lieu / Location of villages that will be impacted.

Evénement / Event	<i>Atelier préfectoral de lancement de l'Etude d'Impact Social et Environnemental (EISE) du Projet Simandou, Beyla, le 18 Octobre 2011</i> Prefecture Workshop for the launch of the Social and Environmental Impact Assessment (SEIA) for the Simandou Project, Beyla
Lieu / Location	<i>Maison des Jeunes de Beyla</i> Beyla's youth house
Date	18 Oct 2011
Temps / Time	10 am - 5 pm
Président / Chair	<i>M. Kourouma El Hadj Amadou, préfet de Beyla</i> Mr Kourouma El Hadj Amadou, prefet of Beyla
Liste des présents / Attendance List	
<i>Les questions et préoccupations des communautés de la préfecture de Macenta ont essentiellement porté sur :</i> <i>les opportunités d'emploi et de formation offertes par le Projet, notamment pour les jeunes ;</i> <i>le soutien que Rio Tinto Simfer compte apporter au développement d'infrastructures routières (afin de désenclaver les villages de la préfecture) et sociales ;</i> <i>la perte de cultures pérennes au sein de la forêt classée du Pic de Fon ;</i> <i>les mesures d'accompagnement et de transition pour les personnes réinstallées du fait du Projet ;</i> <i>les impacts pour la population et pour les espèces protégées du fait notamment des poussières et pollutions engendrées par le Projet ; et</i> <i>l'itinéraire du rail et la localisation des villages qui seront impactés.</i> Approximately 280 people participated in the workshop. Among the attendees were: - the prefet of Beyla; - a Ministry of Territorial Administration and Decentralisation's representative; - a Ministry of the Environment's representative; - the General Secretary of Administrative Affairs for the prefecture; - the Mayor of the Urban Commune of Beyla; - an AGP (Guinean Press Agency) correspondent; - representatives from Rio Tinto Simfer (Government Relations, Environmental Approvals, Communications, Communities etc); and - representatives from ERM.	
Résumé des questions et des commentaires reçus / Summary of Questions and Comments Received	
<i>Approximativement 280 personnes ont participé à cette consultation. Parmi les personnes présentes, on peut citer :</i> <i>le préfet de Beyla ;</i> <i>un représentant du Ministère de l'Administration du Territoire et de la Décentralisation ;</i> <i>un représentant du Ministère de l'Environnement ;</i> <i>le secrétaire général des affaires administratives de la préfecture ;</i> <i>le maire de la commune urbaine de Beyla ;</i> <i>un représentant de Agence Guinée Presse (AGP) ;</i> <i>des représentants de Rio Tinto Simfer (relations gouvernementales, approbations environnementales, communications, communautés etc.) ; et</i> <i>des représentants du cabinet ERM.</i> The community's principal questions and concerns related to: - Rio Tinto's support in community infrastructures, and mainly in water wells and roads; - the Project's employment and training opportunities, especially for the illiterates; - the compensation process (how will the compensation calculation be made? how will it be possible to fairly replace a field in production by a new field which just got harvested?);	

- the construction of a workers' city in the prefecture of Beyla;
- the use of the local rural radio to communicate with all the population of the prefecture;
- the management of mining waste.

Annex F

Policy Framework for Resettlement and Compensation for Early Works

F1 Introduction

This document provides an overview of the proposed methodology to mitigate the adverse impacts of physical and economic displacement which are likely to occur during the pre-construction phase of Early Works for the Simandou Project. The policies, approach and implementation mentioned herein have been developed from the Draft “Plan d’Action de Réinstallation et de Compensation”, i.e. the Resettlement and Compensation Framework required to be implemented for the Simandou Project ⁽¹⁾. This document references the International Performance Standard 5 ⁽²⁾ on “Land Acquisition and Involuntary Resettlement” and related guidance notes and the Rio Tinto Communities’ Policies ⁽³⁾.

It should be noted that the responsibility of acquisition of land needed to develop the project components under Early Works rests with Simfer S.A. Simfer S.A. is currently in the process of drafting a Memorandum of Understanding (Projet de Protocole d’Accord) with the Ministry of Mines, Ministry of Energy and Environment and the Ministry of Urbanism, Habitat & Construction which will define the legal framework and the modalities of implementation of land acquisition, compensation and resettlement for Early Works of the Simandou Project.

This document highlights the principles and approach to resettlement for Early Works that the project is committed to. In parallel, each project component under Early Works, i.e. the Pioneering MOF, the Worker Camps, the Quarries etc. will each have a separate “Plan d’Action de Réinstallation et de Compensation” which will provide specific details of the project affected families, the nature and intensity of displacement (physical and/or economic), the compensation details at a community and household level and resettlement and rehabilitation.

F1.1 Principles of Resettlement and Compensation

Simfer S.A will commit to the following key principles to acquire land and implement resettlement and compensation for the Early Works of the Simandou Project:

1. Minimization of adverse impacts: Negative/ adverse impacts of the project will be avoided or minimized, to the extent possible;
2. Minimization of displacement: Where feasible, avoid or at least minimize physical and economic displacement by exploring alternative project designs and locations wherever feasible;
3. Consideration of both physical and economic displacement: impacts from permanent or temporary land acquisition (*please refer to temporary land access procedure developed for the project attached as annexure*) on assets and livelihoods will be mitigated, with both physical and economic displacement (severance of livelihoods) taken into consideration;
4. Compensation at Replacement Value: The project will compensate both physical and economic impacts of land acquisition at full replacement value;
5. Opportunity Cost: The determination of compensation will take into account the opportunity cost of the land and/or asset affected to the extent feasible;
6. Livelihood restoration: Affected livelihoods will be restored as a minimum, or preferably improved, and living conditions of affected households will be improved. A robust monitoring mechanism will ensure that livelihood restoration is regularly tracked;
7. Recognition of customary rights: The project will recognize customary land ownership, and to the extent

(1) The PARC Framework covers the whole project and “establishes principles, procedures, entitlements, eligibility criteria and broad implementation plan” that will be valid for the duration of the entire project;

(2) The Simandou Project commits to plan, document and implement any resettlement in accordance with the spirit and tenets of the updated IFC OS 5 that will be applicable from January 2011 onwards;

(3) http://www.riotinto.com/documents/Library/Communities_policy.pdf

feasible, align with, the different layers of land rights identified in the local land tenure system and develop appropriate entitlements and compensation plans;

8. Consultation and Disclosure: The project will be transparent in disclosing information related to the project and entitlements and people's participation will be sought across the lifecycle of the project. Consultations will continue during the implementation of resettlement and rehabilitation works;
9. Grievance Mechanism: An effective and accessible grievance redressal mechanism will be established at the project level to ensure speedy resolution of grievances/disputes. Representation of the community will be ensured in the grievance redressal mechanism;
10. Minimizing impacts on Heritage Sites and Community Assets: The project will to the extent possible and feasible avoid impacts on cultural and heritage sites as well as community assets;
11. Vulnerable Groups: The project will recognize that vulnerable groups have special needs and require specific measures and safeguards to ensure they are not further marginalised;
12. Timely Compensation: The project will avoid construction activities prior to completion of compensation and full resettlement

Simfer will also ensure that:

1. The compensation is paid only the rightful and eligible person. It will be ensured that compensation is delivered directly to affected households or individuals rather than to a third party (village elder or a government official etc) for further distribution to affected households or individuals;
2. To the extent possible/ feasible and acceptable to PAPs offer resettlement housing including provision of agricultural land by prioritizing land for land exchanges (of equivalent potential and size to the lost land and closer to their habitation);
3. PAPs' are assisted in restoring their affected livelihoods. Provisions of transitional assistance, rehabilitation grant etc will be considered for ensuring livelihood restoration to pre project levels;
4. The implementation of RAP and its outcomes is monitored and evaluated as part of a transparent process involving independent parties;
5. Impact on host communities and neighbouring villages is minimized to the extent possible;
6. Adverse impacts on access routes, common property resources and other community sensitivities are minimized to the extent possible. Wherever unavoidable the project will provide alternatives for such losses and restore/strengthen community resources

F1.1.1 Applicable Regulatory Framework

The land acquisition, resettlement and compensation for Early Works for the Simandou Project will be developed and implemented in accordance with the following:

- The Land Rights and Domanial Code (1992) which applies to urban and rural land and to both private and domanial (public) land - articles 54 to 83 contain detailed provisions related to expropriation for public interest.
- The Mining Code (1995) which sets out provisions for land occupation and compensation as relevant to mines and quarries and which is likely to be revised/amended in the near future.
- Relevant customary and traditional laws.

- IFC's Performance Standards (and the revised standards, applicable from January 2012), in particular the provisions of the fifth Performance Standard (IFC PS 5) on Land Acquisition and Involuntary Resettlement.
- Rio Tinto's global Communities Standard.

There is an established institutional and legal framework for the expropriation of land and assets in the Republic of Guinea as defined by the Land Rights and Domanial Code (1992). According to the Fundamental Law (revised by the decree of May 2002) *"no one can be deprived of property except where public interest has been established, and this only subject to fair and prior compensation."* For the Early Works, Simfer S.A. intends to acquire land through negotiated settlements and have thus committed compliance to the IFC Performance Standards which necessitate measures additional to those required by the Guinean legal framework.

Notably, areas wherein the Resettlement and Compensation Policy for Simandou adopts extended requirements are in provision for:

- land-for-land compensation rather than cash compensation provided by Guinean law;
- provision of compensation is at replacement cost and is viewed as one of many elements within a comprehensive rehabilitation strategy ("no worse-off if not better-off" requirement);
- whatever the legal recognition of their occupancy, all people must be compensated following the same principles as legally recognized owners ("treat customary and formal rights equally to the extent possible in devising compensation rules and procedures". The Land Code (1992) recognizes the rights of "bona fide" occupants;
- loss of opportunity cost must be taken into account in compensating impact on land-use, commercial assets etc;
- prior consultation and consideration of alternatives with the affected parties and development of a specific Resettlement Action Plan for each affected party;
- special consideration of vulnerable groups and indigenous people;
- a grievance mechanism; and
- monitoring and final check on completion.

F1.2 Eligibility and Entitlements

The nature and type of land-based impacts due to the land requirement for components under the Early Works will be identified through the Social and Environmental assessment process. These impacts are likely to include, but not be limited to:

- physical and/or economic displacement of owners, occupiers and users of the land;
- adverse land-based impacts of marginalization of land-holdings, landlessness; and
- impacts on access/severance to common property resources and community-owned assets.

The land requirements for Early Works has the potential to lead to impacts on several stakeholders who can be identified in the following broad groups as potentially eligible for entitlement and other benefits:

- general community/villagers;
- lineage elders and founding families;
- individual or a nuclear family unit;
- fishing communities;

- a household or *concession* which may be composed of several families;
- land users and occupants such as tenants, sharecroppers etc;
- transhumant herders;
- vulnerable communities and families;
- users of common property resources; and
- sacred, religious, cultural and heritage sites.

A site specific *Plan d'Action de Reinstallation et Compensation* (PARC) will be developed for each element of the Early Works and will detail the extent and severity of these impacts at the particular site, the units and the proposed entitlements, in accordance with the broad principles outlined in this document, on the basis of which the affected persons will typically be entitled to the following types of compensation and assistance:

- compensation for loss of land, crops / trees etc;
- compensation for structures (residential/ commercial) and other immovable assets;
- preferential employment and skill building support;
- compensation and assistance for loss of income;
- wage-based and enterprise-based loss of income and opportunity;
- compensation and assistance for loss of common resource (like sea, forest) dependent livelihoods;
- assistance for resettlement, relocation and rehabilitation;
- replacement and shifting of community assets;
- strengthening/rebuilding and/or restoration of community resources/ assets/facilities.

F1.3 Resettlement and Compensation Process

The proposed process to be followed for the resettlement and rehabilitation of project affected families for Early Works is described in this section and specific responsibilities are identified in *Figure A.1*. It should be noted that this process does not replace the existing legal mechanisms and hence a “*Project de Protocole d'Accord*” has been initiated to provide a legal basis for this approach.

F1.3.1 Responsibilities

The land acquisition for Early Works will be undertaken on the basis of negotiated settlements with project-affected families and communities and hence it is not directly linked to the government-led expropriation process under the “*Project d'Interet Nationale* (PIN)” and the “*Decret d'Utilite Publique*” (DUP). In accordance with the “*Project de Protocole d'Accord*” that is being finalized, the responsibilities for planning resettlement and compensation will be shared between Simfer and the Government of Guinea.

Simfer will be obliged to identify and inform the Government of the exact technical details and land requirements in order to fulfil its obligations for the construction and operation of the Early Works. Simfer will undertake the processes prior to resettlement and compensation, i.e. identification of land parcels and owners, planning compensation and resettlement options, agreement on resettlement options. The implementation of the PARC will then be coordinated with the relevant authorities of the Government of Guinea, particularly the Ministry of Urbanism, Habitat & Construction and the authorities at the level of each prefecture and sub-prefecture. Simfer will complete the required land transaction procedures and ensure that all project affected families are adequately compensated and resettled (if required) prior to start of onsite construction activities.

F1.3.2 Disclosure and Agreement of the PARC Framework

The PARC Framework for the entire Simandou Project (inclusive of the Early Works) is currently being reviewed. This will be discussed and agreed with the Government as the overall Framework for all resettlement and compensation required for the Simandou project. A series of consultations have been planned to disclose the PARC Framework at a prefecture level and obtain inputs on the principles and entitlements of the same.

F1.3.3 Land & Asset Inventory and Socio-economic Survey

This stage will identify affected people, communities and economic interests impacted by the specific land requirements for Early Works. As land tenure and management in the Republic of Guinea is customary a census and survey will be conducted to cover all affected people including private landowners, tenants, other holders of rights to land and any person occupying or using the land for shelter, business or other sources of livelihood including squatters.

Prior Information to the Affected Communities

Simfer S.A Communities' staff will inform the communities in the project area about the Simandou project, the proposed dates of the survey and its purpose. This process will also request the village leaders/founding fathers to deliberate among themselves the customary processes they would like to trigger in deciding land ownership and rights as well as entitlements. There is a strong possibility that many areas will have ambiguous land ownership as well as land access/user rights and the majority of claimants may not have a legal or documented evidence of land they claim to own or have rights to use so preparing the communities for these deliberations will be crucial as to not lose time during the surveying period.

Survey, Census and Inventory

The teams will simultaneously conduct (a) a survey of affected land parcels; (b) a household survey of the land owner, user, occupier etc; and (c) an asset inventory of land-use, number of assets, trees etc. This is likely to kick-start with visits/discussions with the village chief and council of elders. The survey will also include/document all cultural assets that may be affected as a part of the resettlement process.

Verification of the Survey and Inventory

On the basis of the survey/census and asset inventory, the field team will be required to develop a *proforma/land and asset description* which should be verified by the land owner/user and vetted by the government representative. The survey will also include community consultations to understand community impacts and to identify the vulnerable groups in addition to the PAFs.

Box F.1 Establishment of a Cut-off Date

Eligibility for resettlement and compensation will be determined by a cut-off date which shall be the last date of the census and asset inventory survey specific to each project component and each project location due to the geographical extent and spread of the project. The census and survey will identify only those affected parties with interests in the land on or before that date to avoid unnecessary and potentially fraudulent claims for compensation.

Persons who encroach on the area after the cut-off date will not be entitled to compensation or any other form of resettlement assistance (this applies in particular to persons informally/ illegally occupying land). The concept of the cut-off date will be communicated potential affected persons and the local authorities prior to the survey and the actual cut-off date will be subsequently communicated across prefectures and sub-prefectures. The local community will be allowed to put forth all claims and grievances which will then be addressed through the Grievance Mechanism that is formulated by Simfer.

F1.3.4 Valuation of Affected Assets

The valuation of land and assets to be impacted will be undertaken through a specific Market Valuation study and will be linked to the Ministry of Agriculture. The valuation study will establish replacement value for all structures, assets and land that can be potentially impacted and these will be vetted by the representatives of the relevant government authorities. The valuation study will also define methods for establishing monetary compensation but also options.

F1.3.5 Resettlement Options and Entitlements

Design Entitlements Resettlement Measures

The information obtained through the census survey will be analyzed for sources of primary, secondary and supplementary income. This will be carried out in parallel with surveying and analysing the current socio-economic contexts of the project area, demand for goods and services, availability of support services like credits and current skill pool and labour requirements (to match with what the displaced families have). The PARC team in consultation with the affected persons will also need to identify new economic opportunities, such as land based opportunities, strategic opportunities in the project, or skill based livelihood opportunities.

Developing income/livelihood restoration programmes

Other livelihood restoration measures are also expected to be important elements of the mitigation strategy. These packages will be developed including specific actions to enable people to restore and where possible enhance their existing livelihoods, or to allow them to develop new skills and capacities suited to alternative livelihoods. The livelihood restoration programmes will emphasize on specific provisions for vulnerable groups, women etc.

Identification of relocation sites

If temporary or permanent physical resettlement is the preferred solution, potential host sites will be identified and where appropriate outline plans prepared in consultation with the host area administration. This would also include plan for housing, environmental management, infrastructure and social services at the resettlement site to cater to both the affected families as well as the impacted host community. The proposal for relocation sites will be discussed with the respective host communities in order to consider their feedback on the same.

F1.3.6 Public Consultation and Participation

Consultation and participation by the affected communities and individuals is an essential element of the land acquisition, compensation and resettlement process. Throughout the process there will be consultation and involvement of affected parties. Affected parties will be made aware of, and understand:

- the plans for development of the property or land;
- their options and rights pertaining to resettlement and compensation;
- technically and economically feasible options for compensation and resettlement;
- the process of and proposed dates for compensation and resettlement;
- the availability of compensation at full replacement cost for loss of assets and services; and
- other assistance available to maintain or improve their living standards.

F1.3.7 PARC Preparation

Considering the project components' diversity and their locations, separate PARC plans are being envisaged for each aspect of the Early Works under the umbrella of the PARC framework agreed with the Government. Each Plan will have a baseline, an entitlement matrix, specific institutional arrangements, resettlement process details and rehabilitation measures. The overarching entitlement framework, processes and management measures will have already been defined in the PARC framework such as consultation, disclosure, grievance redress. A household-level entitlement plan for each family will be prepared detailing the exact entitlements due to each family.

The details of entitlement frameworks, livelihood restoration plans and framework of the household level plans will be disclosed and approved by the affected communities. Consultations will be carried out at the sub-prefecture and/or CRD level across the footprint area for each project component.

Simfer will agree the Entitlement Matrix of each of the PARCs for the specific Early Works Components with Government and thereafter disclose the plans to the project affected families across the project components and seek feedback and comments.

F1.3.8 Implementation

After the finalisation of the household level plans, Simfer will implement these, including ensuring that each Project Affected Person has received compensation and other entitlements and there is formal sign off by Government and Simfer, rolling out the other entitlements and rehabilitation measure, physical resettlement, any grievances are in parallel addressed, getting physical possession of the land. Simfer will also be advised and guided by the Government of Guinea on the physical resettlement aspects of the PARC, (i.e. construction of transit accommodation; demolition of structures; construction of permanent resettlement sites and shifting of people) if these are required for Early Works.

F1.3.9 Grievance Process

Throughout the PARC process for Early Works, affected parties and the local community in general, will have access to Simfer's established Grievance Mechanism that has been developed to be consistent with Performance Standard 1 and will be in addition to existing legal institutions, such as the Land Commissions. The procedure will receive and address any concerns about land requirement, measurement, census and compensation that are raised by displaced parties or affected communities.

It will cover grievances concerning the conduct of any aspect of the resettlement process including non-fulfilment of contracts, levels of compensation, or seizure of assets without compensation. It will also be available for raising complaints about any other aspect of the development including concerns from neighbours or other external parties about disturbance during construction, aspects of the design, traffic issues, jobs or impact on local services or amenity.

The grievance process will be administered by the Simfer Communities Team in consultation with the local authorities and traditional village councils where relevant. The grievance will be simple and will seek to resolve issues informally as far as possible.

F1.3.10 Monitoring and Evaluation

The PARC for each project component under Early Works will include a mechanism (established under the PARC framework) to monitor progress against its implementation. Monitoring indicators of the PARC process for will be derived from the socio-economic baseline survey for the project impacted people. The indicators in *Table A.1* illustrate how the resettlement process and impact mitigation can be tracked.

Table F.1 Indicative Monitoring Indicators

Aspect	Monitoring Indicators
Impact Indicators	
Identification of Project Affected Families	- Number of PAFs to get physically displaced/ economically displaced/ physically and economically displaced; - Loss of income/livelihood sources (at family/household as well community level); - Resolution of grievances (number of grievances, resolution time, satisfaction levels, awareness etc).
Residual Impacts	- Have special needs of vulnerable groups been addressed?; - Absorption of affected people into project/ancillary activities; - Extent of replacement for natural resource dependence.
Compensation	- Timing of compensation payment (before/after acquisition); - Any deductions and associated transaction costs of compensation payments; - Comparison of compensation vis-à-vis replacement value by tracking other land transactions.
Process Indicators	
Resettlement	Is there any transparent mechanism for dispute settlement?

Aspect	Monitoring Indicators
Planning & Implementation	• Is the resettlement process in accordance to local regulatory requirements? • Has the entitlement framework been vetted by the local community/impacted persons? • Criteria for choice of resettlement/relocation site.
Grievance Mechanism	• What types of grievances have been identified & what were outcomes? • Percentage of grievances resolved by traditional channels versus government channels versus project-specific.
Outcome Indicators	
Livelihood Restoration	• Change in the average income per person, per household; • Change in source of income; • What livelihood restoration initiatives have been implemented specifically targeting vulnerable groups? • Have the project-affected families benefited from the Project related activities? • Has the community benefited from the community development programmes?
Satisfaction levels of PAPs	• How do PAPs assess the extent to which their quality of life & livelihood has been restored? • Satisfaction with compensation/entitlements/process; • Do they feel they have been actively involved in the process?

At the end of the PARC implementation for each sub-component, a third-party/independent audit will be undertaken to determine whether the process of implementation and outcomes of the land acquisition and resettlement comply with the project's legal frameworks and principles.

Annex G

Additional Design Information

ACCOMMODATION UNITS

LIGHT VEHICLES

ACCOMMODATION UNITS

HEAVY VEHICLES/ BUSES

LEGEND

ACCOMMODATION UNIT TYPES - 2600 PERSONNE

TYPE A: 2-PERSON UNIT/ ENSUITE BATHROOM, 260 UNITS, 520 PERSONNEL
TYPE B: 2 x 2-PERSON UNIT, 260 UNITS, 1040 PERSONNEL
TYPE C: 8-PERSON UNIT, 130 UNITS, 1040 PERSONNEL +

SEPARATE ABUTMENT BLOCK PER 2 UNITS

07. 30-PERSON OFFICE (RTIO)
09. 00-PERSON OFFICE
10. CAMP ADMIN/SECURITY/INDUCTION/ SHOP
11. RECREATION/ GYM x 4
16. WET MESS x 4
21. KITCHEN DINER (TYPE E) x 2
22. MAINTENANCE BUILDING TYPE C/ VEHICLE WASH
26. LAUNDRY (TYPE C) x 4
31. GOURDHOUSE/ TURNTILES. LSC Camp Type A/C Camp Type B & C
32. TOILET BLOCK x 17
36. PRAYER SHELTAR (face long elevation to Makkah) x 3
37. LSC MEDICAL CENTER
40. LANDOWN (10,000m²)
41. WAREHOUSE (LSC Camp No. 50-Block LSC Camp No. 100-Block / LSC No. 200-Block)
46. RC FIRST AID POST
47. FIRE STATION
48. TESTING LABORATORY
50. FLAG RAISING/ TOOLBOX TALKS
51. SPORTS FIELDS x 4
52. SEWAGE TREATMENT
53. WATER PURIFICATION
60. HEAVY VEHICLES (40 PARKING SPACES SHOWN)
61. BULK OIL STORE
62. BULK FUEL STORE
63. HEAVY VEHICLE WORKSHOP
65. WYF WASHDOWN. Including oil/water treatment/ salt traps/ filter
65. FUELLING STATION/ ALL VEHICLES
70. BUS/DUMP OFF PICK-UP x 2
71. LIGHT VEHICLE PARKING FOR OFFICERS
80. COMMS HEADEND RADIO TOWERS
81. GENSET/DYI TANK SUBSTATION x 3
82. KITCHEN/ WET MESS DELIVERIES/ STORE
83. HELIPAD
- → → BURIED FUEL LINES
- → → BURIED UTILITIES - SEWER/ WATER/ ELECTRIC
- → → EMERGENCY RESPONSE VEHICLES ONLY

LÉGENDE

TYPES D'UNITÉ D'HEBERGEMENT • 2600 PERSONNEL S

TYPE A: SALLE DE BAIN /UNITE POUR 2 PERSONNES, 260 UNITES POUR 520 PERSONNELS
TYPE B: 1 x UNITE POUR 2 x 2 PERSONNES, 260 UNITES POUR 1040 PERSONNELS
TYPE C: 1 UNITES POUR 8 PERSONNES, 130 UNITES POUR 1040 PERSONNELS +

BLOC SANITAIRE SEPARÉ PAR 2 UNITÉS

- 07. 30- BUREAU DU PERSONNEL
- 09. 00- BUREAU DU PERSONNEL
- 10. BLOC ADMINISTRATIF (SECURITE/INDUSTRIATION/BOULOTIE
- 11. SALLE DE SPORT x 4
- 16. BAR x 4
- 21. CUISINE SALLE A MANGER x 2
- 22. BATIMENT DE MAINTENANCE TYPE C / LAVAGE DE VEHICULES
- 26. BUANDERIE x 4
- 31. GUERITE / TOURNIQUETS x 4
- 33. BLOC SANITAIRE x 13
- 36. ABRIS POUR LA PRIERE x 7
- 37. CENTRE MEDICAL -CSL
- 40. ZONE DE STOCKAGE / ENTREPOT
- 46. POSTE DE SECOURS
- 47. CASERNE DE POMPIERS
- 48. LABORATOIRE D'ANALYSE
- 50. DRAPEAU/ZONE DE RASSEMBLEMENT
- 51. TERRAIN DE FOOTBALL/ TERRAIN MULTI-SPORTS x 4
- 52. TRAITEMENT DES EAUX USEES
- 53. STATION DE PURIFICATION D'EAU POTABLE
- 60. PARKING VEHICULES LOURD (40 PARKING SPACES)
- 61. RESERVOIRS POUR LUBRIFIANTS
- 62. RESERVOIRS POUR DIESEL
- 63. ATELIER POUR VEHICULES LOURDS
- 64. ZONE DE VEHICULES LOURDS Y COMPRIS TRAITEMENT DES LIMON PEGE GRASSE/ TRANCHES FILTRANTES
- 65. STATION SERVICE / TOUT VEHICULE
- 70. STATION DE BUS
- 71. PARKING POUR VEHICULES LEGERES
- 80. CANTINE / MONTRES ELECTRONIQUE / MAT D'ENTEN
- 81. GROUPE ELECTROGENES MAGSIN DE DIESEL/ SOUS-STATION
- 82. CUISINE/ LIVRAISONS/ MAGASIN
- 83. HELPPOINT

→ RESEAUX DE CARBURANT ENTREE

→ RESEAUX DIVERS ENTREE

→ ACCES RESERVE AUX VEHICULES D'URGENCE

2600-PERSON CAMP. 45 HECTARES
LSC 1, RC 1 (2 CAMPS)

LIGHT VEHICLES

NOT FOR CONSTRUCTION
PRELIMINARY

HEAVY VEHICLES/ BUSES

DRAWN	DB	07/10/1
CHECKED	IM	
ENGINEER	IM	
LEAD ENGINEER	JN	
ENG. MANAGER	DN	
PROJ. MANAGER		
CLIENT APPROVAL		

11	RioTinto
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SIMANDOU PROJECT
LSC & RC TEMPORARY CONSTRUCTION CAMPS
2600 PERSON CAMP LAYOUT

RIO TINTO IRON ORE
AS MANAGER FOR SIMFER SA

THIRD ANGLE
PROJECTION

SCALE 1:1250
DRAWING NUMBER
PROJECT NUMBER PN10250

REVISIONS	A	25/08/11	ISSUED FOR INTERNAL REVIEW
	B	07/10/11	ISSUED FOR CLIENT COMMENT
REV	DATE	DESCR	

IM	AB	AB	JN	DN				REVISIONS
DB	IM	IM	JN	DN				
BY	CKD	ENG	LE	EM	PM	CL		

SCALE 1 - NEW		
REV	DATE	DESCRIPTION

BY	CKD	ENG	LE	EM	PM	CL
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	DRAWN	
	CHECKED	
	ENGINEER	
	LEAD ENGINEER	
	ENG. MANAGER	
	PROJ. MANAGER	
	CLIENT APPROVAL	

DB	07/10/1
IM	
IM	
JN	
DN	

RioTinto SIMANDOU PROJECT LSC & RC TEMPORARY CONSTRUCTION CAMPS 2600 PERSON CAMP LAYOUT	RIO TINTO IRON ORE AS MANAGER FOR SIMFER SA	THIRD ANGLE 
	SCALE 1:250 DRAWING NUMBER	REV B
	PROJECT NUMBER PNT0250	

Annex H

Legally Protected and Other Designated Areas for Biodiversity

H1 Designated Conservation Areas for Biodiversity

Designated conservation areas for biodiversity are areas considered worthy of preservation and enhancement because of special conservation interests relating to ecosystems, habitats, species, ecosystem services and processes. A number of national and international designated conservation areas apply in Guinea. The type and extent of protection provided by each designation varies as described in *Table H.1*.

Table H.1 Designations relevant to the Project

Designation	Description and Relevance in Guinea
Biodiversity Hotspot	- Defined by Conservation International; not protected by law, but recognised internationally. - Areas characterised by exceptional levels of plant endemism and also by serious levels of habitat loss. To qualify as a hotspot, an area must: - Contain at least 1,500 endemic species of vascular plant; and - Have lost at least 70 % of its original natural habitat. - One Biodiversity Hotspot occurs in Guinea - the Lowland Forests of West Africa – home to more than a quarter of Africa's mammals including more than 20 species of primate.
Biosphere Reserves – legally protected	- Defined by UNESCO's Man and the Biosphere (MAB) Program; not protected by law, but recognised internationally and defined using criteria defined at the Seville conference of 1995. - Part of a worldwide network of protected areas designated with the intention of developing a balanced relationship between people and nature and promoting knowledge exchange, research, monitoring, education and training. - Usually organised into three separate zones: - a core area enjoying long-term protection where biological diversity can be conserved and research and other undisruptive activities can be conducted; - a buffer zone used for cooperative activities, including environmental education, recreation, ecotourism and applied and fundamental research; and - an external transition area that may accommodate a number of agricultural activities, human settlements or other forms of sustainable resource development. - Guinea has four biosphere reserves: Nimba Mountains, Ziama Massif, Badiar and Upper Niger.
Classified Forest (CF) - legally protected	- Designated by the National Government. Not officially a Protected Area, either in Guinea, or in international terms, but have become de facto protected areas in Guinea and are included in IUCN Category VI "Managed Resource Protected Areas" in recognition of the fact that they are managed mainly for the sustainable use of natural ecosystems - Typically created ⁽¹⁾: - to preserve soil from erosion in areas of steep topography; - to prevent degradation of the country's forest resources and to protect forests as a source of energy and lumber; and - to protect water sources. - Stewardship not typically rigorous, and only those that are either very isolated or of cultural significance are still partially intact. - Most are severely degraded, for a variety of reasons: logging, land clearing, bush fires, overgrazing, etc. - Guinea has 162 Classified Forests covering a total land area of 1,182,133 ha (4.8

(1) Unité Nationale pour la diversité biologique, 1997

(2) Unité Nationale pour la diversité biologique, 1997

Designation	Description and Relevance in Guinea
	% of the country's total area) ⁽²⁾ .
Endemic Bird Areas (EBA)	- Designated by BirdLife International and recognised internationally - Regions of the world where the distribution of two or more restricted range species overlap (where restricted range is defined as <50,000 km²) - Guinea is part of one EBA – the Upper Guinea Forests, which extends from Guinea and Sierra Leone in the west through to Liberia, Côte d'Ivoire and Ghana to Togo in the east, and a few kilometres inland
Important Bird Area (IBA)	- Designated by BirdLife International and internationally recognised - Recognised only if it meets certain internationally agreed and standardised criteria: - vulnerability (presence of threatened bird species); - irreplaceability (presence of restricted-range bird species and migratory or congregatory bird species); - distinct assemblages (biome-restricted bird species); and - must be amenable to conservation action and management. - Ideally, should be large enough to support self-sustaining populations of as many as possible of the key bird species for which it was identified or, in the case of migrants, fulfil their requirements for the duration of their presence - Guinea has approximately 18 Important Bird Areas ⁽¹⁾
Key Biodiversity Area (KBA)	- Identified by BirdLife International and internationally recognised. - Many KBAs in Guinea have been identified by Conservation International, the Critical Ecosystem Partnership Fund and various partners including Guinée Écologie - Areas of critical importance for the conservation of global biodiversity. - Identified using criteria that were originally defined by BirdLife International for IBAs incorporating a unified multi-taxonomic approach that covers plants, mammals, amphibians, reptiles, birds and crustaceans. - Must meet at least one of the following criteria: - Regularly accommodate a significant number of threatened species assessed under IUCN Red List Categories and Criteria. - Support a significant number of restricted-range species; - Support an assemblage of species confined to a particular distribution or reproductive range or habitat type (biome); and - Constitute a congregating site for reproduction or accommodate a large number of migratory species. 28 KBAs have been designated to date, accounting for approximately 5% of Guinea's total land area ⁽²⁾.
National Parks National Nature or Wildlife Reserves – legally protected	- Designated by the National Government. Not recognised internationally as 'true' protected areas by IUCN (i.e. Categories I-IV) - Areas dedicated to the conservation of biodiversity, wildlife, landscapes and geological formations that have scientific or special aesthetic value - Strict controls are typically implemented to preserve habitats and species. It is prohibited, except in unusual cases, to capture animals, damage lairs, collect eggs, destroy vegetation in any way, travel off-road, park outside of designated parking areas, bear weapons, fly over at low altitude or use the land for farming, grazing, forestry or mining ⁽³⁾. - Only five areas have been classified to date in Guinea: two National Parks (Badiar and Haut Niger) and two Wildlife Reserves (Kankan and Blanche Island). Guinea

(1) BirdLife International, 2008

(2) Kebele, no date given

(3) Unité Nationale pour la diversité biologique, 1997

(4) Brugiere and Kormos 2009

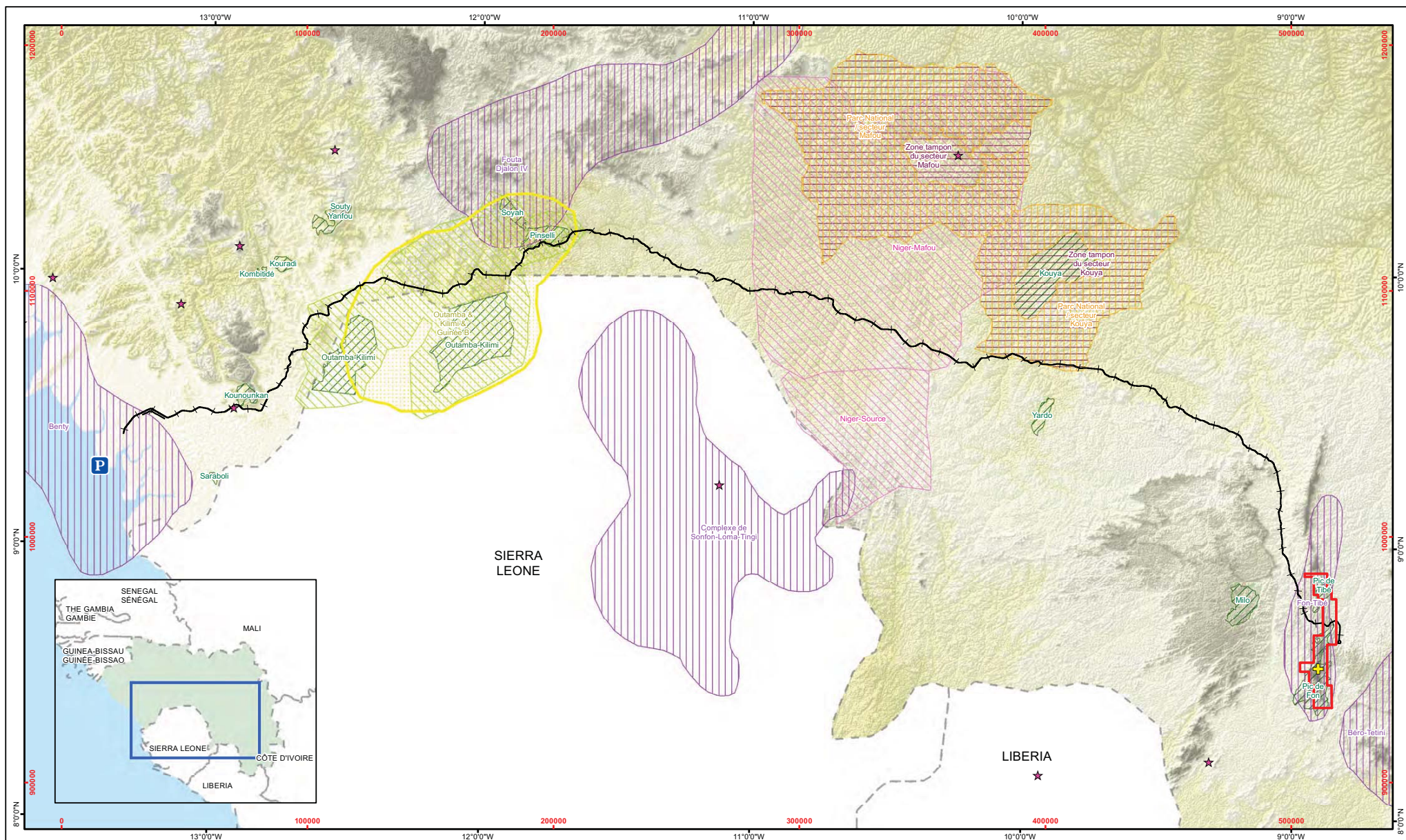
Designation	Description and Relevance in Guinea
	has one of the smallest networks in the world, in terms of number of sites and percentage of the country's land area ⁽⁴⁾ .
Ramsar sites -- legally protected	• Designated under The Ramsar Convention (The Convention on Wetlands of International Importance, especially as Waterfowl Habitat) adopted as an international treaty for the conservation and sustainable utilisation of wetlands at Ramsar, Iran, in 1971. • Designated to promote the conservation and wise use of wetlands by national action and international cooperation as a means to achieving sustainable development throughout the world. • Wetlands are selected based on their international significance in terms of ecology (and particularly waterfowl), botany, zoology, limnology or hydrology. • Guinea has 16 Ramsar sites, accounting for a total land area of approximately 2.6 million ha ⁽¹⁾
Priority Area for Biodiversity Conservation	• Defined as part of a Conservation Priority Setting Process Workshop led in Ghana in 1999, lead by Conservation International. • Have not been peer reviewed and are not recognised internationally • Identified through review of existing documents and reports, based on eight biological components: plants, mammals, birds, reptiles and amphibians, insects, freshwater and marine ecosystems, and biogeography. • Overlap with, and therefore reinforce, the strength of the KBA designations.
Priority site for populations of Western chimpanzee – Great Apes Survival Project (GRASP)	• GRASP is a project of the United Nations Environment Programme and the United Nations Educational, Scientific and Cultural Organization with an aim to work against the threat of extinction faced by chimpanzees and other ape and primate species across their ranges in equatorial Africa and south-east Asia. • Priority sites for populations of Western chimpanzee identified by GRASP include the Outamba-Kilimi site designated as a 'very important priority area', a status below the 'extremely important priority area' designation. GRASP have established a Regional Action Plan for the Conservation of Chimpanzees in West Africa.
Transboundary Protected Area	• An area of land and/or sea that straddles one or more boundaries between states, sub-national units such as provinces or regions, autonomous areas and/or areas beyond the limit of national sovereignty or jurisdiction, whose constituent parts form a matrix that contributes to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and which are managed co-operatively through legal or other effective means ⁽²⁾. • STEWARD (Sustainable and Thriving Environments for West African Regional Development) biodiversity program in Sierra Leone funds the Outamba-Kilimi National Park (on the Sierra Leone side of the border). STEWARD have been approached by the Jane Goodall Institute (JGI) for the designation of a Transboundary Alliance for Biodiversity and Livelihoods Alternatives (TABALA) (the TABALA Project) and by the Global Environmental Facility (GEF) for the introduction of a transboundary designated area

(1) Ramsar Sites Database, 2007

(2) IUCN, 1994

Annex I

Maps



Key / Légende: Indicative Rail Corridor / Corridor Indicatif du Chemin de Fer Mine Concession Area / Zone de la Concession Minière Port Location / Emplacement du Port Important Bird Area / Grande aire à oiseaux Key Biodiversity Areas / Zone de biodiversité clé Protected Area - Chimpanzee / Zone protégée - Chimpanzé		Biological Diversity Priority Conservation Zone / Aire de conservation prioritaire de la diversité biologique Biosphere Reserve / Réserve de biosphère TABALA Protected Area - Ramsar / Zone protégée - Ramsar Classified Forest / Forêt classée National Park / Parc national		CLIENT: Rio Tinto Simfer S.A. ERM PROJECTION: WGS 1984 UTM Zone 29N	Titre: Terrestrial Biodiversity Overview / Vue d'ensemble de la biodiversité terrestre Figure: ew_TerrestrialBioDivOverview.mxd
DATE: 14/11/2011 Dessiné par: IG		Vérifié par: CK Approuvé par: KR		Projet: 0131299 Echelle: 1:1,500,000 Rev: 1.00	

Annex J

Social and Environmental Management Plan for Temporary Construction Workforce Accommodation and Logistical Supply Centres and their Associated Infrastructure

Social and Environmental Management Plan for Camps, LSCs and Associated Infrastructure

Topic	Mitigation Measure	Timing
Physical Environment		
Geology and hydrogeology	1. Local groundwater conditions will be taken into account in the siting of all facilities and roads. Locations where springs occur or where the water table is close to the surface will be avoided as far as possible.	Siting
Geology and hydrogeology	2. The area of hardstanding within sites will be kept to the minimum necessary for the works in order to maintain natural recharge of the water table.	Design
Geology and hydrogeology	3. Borrow pits will not be excavated below the water table.	Siting Design
Soils, Run-off and Flooding	4. The area to be cleared at each site (including for roads) will be kept to the minimum necessary for the works and will be clearly demarcated to prevent unnecessary disturbance of soils outside the boundary.	Design
Soils, Run-off and Flooding	5. Disturbance of soils will be avoided during heavy rainfall. Activities with the potential to cause significant erosion will be carried out during the dry season as far as possible.	Construction
Soils, Run-off and Flooding	6. Site and road drainage will be designed to minimise the potential for uncontrolled run-off, taking into account site-specific factors such as available space, gradient, catchment size, expected flows, and upstream and downstream uses of receiving watercourses. Perimeter drainage channels will be installed to divert stormwater from the surrounding area and prevent waterlogging.	Design
Soils, Run-off and Flooding	7. Impacts of site and road run-off on surface waters will be controlled by use of measures such as attenuation ponds, rock gabions, sediment traps/sumps, armoured drainage lines, water bars and drainage diversion structures. Where possible, outlets will discharge into vegetated areas and not to exposed soil. Riparian vegetation and vegetation along drainage lines, gullies and gorges, will be protected and retained where practical to provide natural attenuation of flows.	Design
Soils, Run-off and Flooding	8. Areas of hardstanding will be minimised and accommodation blocks will be placed on corner blocks rather than solid foundations to protect soils.	Design
Soils, Run-off and Flooding	9. Cleared areas will be tilled, and re-vegetated as soon as possible after completion of construction to minimise areas of exposed, bare soil.	Construction
Soils, Run-off and Flooding	10. Construction activities, operations and movement of vehicles outside designated areas and transport routes will be prohibited.	Construction Operation
Soils, Run-off and Flooding	11. Topsoil will be removed and stockpiled separately for future use.	Construction
Soils, Run-off and Flooding	12. Long-term soil stockpiles will be located and designed to avoid compaction, and covered or seeded to prevent erosion.	Design
Soils, Run-off and Flooding	13. Where there is the potential for slope instability measures will be taken to minimise risk of slope collapse and associated impacts on soils.	Design
Soils, Run-off and Flooding	14. Once construction of the Simandou Project is complete, some facilities will be closed and either handed over to	Closure

Topic	Mitigation Measure	Timing																														
Flooding	the local administration and community for future use or removed and the site rehabilitated. Site rehabilitation will include appropriate measures to ensure that natural drainage patterns are reinstated as far as possible and no impacts on drainage or flooding persist after the site has been decommissioned.																															
Pollution of Soils and Water	15. As far as possible no work will be undertaken within 50 m of any surface waterbody. Where this is not possible, additional measures will be taken to ensure that pollution of water resources does not occur.	Design Construction Operation																														
Pollution of Soils and Water	16. Refuelling, maintenance and washdown of vehicles and equipment will only occur in designated areas that are located at least 50 m from the nearest waterbody and provided with appropriate containment measures. Only approved chemicals will be used in these areas.	Design																														
Pollution of Soils and Water	17. Sewage will be collected and treated in package treatment plants to achieve the following discharge standards prior to release into the environment. <table border="1"> <thead> <tr> <th colspan="3">Sewage Treatment Plant Discharge Criteria for Camps, LSCs and associated infrastructure</th></tr> <tr> <th>Parameter</th><th>Units</th><th>Discharge Limit Value</th></tr> </thead> <tbody> <tr> <td>pH</td><td>pH units</td><td>6 – 9</td></tr> <tr> <td>Chemical Oxygen Demand (COD)</td><td>mg/l</td><td>125</td></tr> <tr> <td>Total Nitrogen</td><td>mg/l</td><td>10</td></tr> <tr> <td>Total Phosphorus</td><td>mg/l</td><td>2</td></tr> <tr> <td>Oil and Grease</td><td>mg/l</td><td>10</td></tr> <tr> <td>Total Suspended Solids</td><td>mg/l</td><td>50</td></tr> <tr> <td>Total Coliform Bacteria</td><td>MPN/100 ml</td><td>400</td></tr> <tr> <td colspan="3">Source: IFC General EHS Guidelines April 2007</td></tr> </tbody> </table>	Sewage Treatment Plant Discharge Criteria for Camps, LSCs and associated infrastructure			Parameter	Units	Discharge Limit Value	pH	pH units	6 – 9	Chemical Oxygen Demand (COD)	mg/l	125	Total Nitrogen	mg/l	10	Total Phosphorus	mg/l	2	Oil and Grease	mg/l	10	Total Suspended Solids	mg/l	50	Total Coliform Bacteria	MPN/100 ml	400	Source: IFC General EHS Guidelines April 2007			Design Construction Operation
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Pollution of Soils and Water	18. All treatment plants and discharge points will be regularly inspected and maintained.	Construction Operation																														
Pollution of Soils and Water	19. An emergency response plan will be developed for unplanned spills and discharges	Construction Operation																														
Pollution of Soils and Water	20. All treatment plant and discharge points will be regularly maintained and inspected and monitoring of discharge quality will be undertaken to ensure correct operation.	Construction Operation																														

Topic	Mitigation Measure	Timing
Pollution of Soils and Water	21. All hazardous substances to be used on site during construction or operation will be reviewed, evaluated and approved by competent personnel prior to being introduced or used in any area. As part of the approval process, the relevant Material Safety Data Sheets (MSDSs) will be reviewed to identify any measures required to ensure appropriate management of the specific substance. MSDSs will be available at the point of use and all hazardous materials will be clearly labelled.	Construction Operation
Pollution of Soils and Water	22. Refuelling of vehicles and equipment will only occur in designated areas that are provided with appropriate containment measures.	Construction Operation
Pollution of Soils and Water	23. Biodegradable lubricants will be used wherever possible.	Construction Operation
Pollution of Soils and Water	24. An effective preventative maintenance programme will be established to ensure that all equipment that uses or contains any hazardous materials (including fuel, oil, etc) is inspected regularly and maintained in good working order. Inspection and maintenance records will be available for review at all reasonable times	Construction Operation
Pollution of Soils and Water	25. Work areas will be laid out to ensure that storage areas for hazardous materials are located in well-ventilated area as far as possible from sensitive receptors including offices, heavily trafficked areas or areas where people eat, smoke or sleep, and away from ignition sources	Design
Pollution of Soils and Water	26. Hazardous materials will only be stored and handled in designated areas provided with appropriate secondary containment measures.	Design
Pollution of Soils and Water	27. Storage areas for hazardous materials will be designed to include secondary containment structures capable of containing the largest of 110% of the largest tank or 25% of the combined tank volumes. Secondary containment will be made of impervious, chemically resistant material and will be designed to prevent contact between incompatible materials in the event of a release	Design
Pollution of Soils and Water	28. Where practical all equipment, containers and distribution lines (including pipes, valves and taps), containing hazardous materials, will be located above ground. These will all be provided with appropriate containment to minimise the risk of uncontrolled or undetected releases of hazardous materials. Storage areas will be located at least 50 m from any surface water.	Design
Pollution of Soils and Water	29. Site and road drainage systems and bunds will be inspected, cleaned as necessary and properly maintained. All waste and effluent from these operations shall be collected for safe disposal. Inspections for leaks on all flanges and valves on over-ground pipes used to transport materials other than water will be carried out at regular intervals.	Construction Operation
Pollution of Soils and Water	30. Spill kits will be available in areas where spills could potentially occur and will be appropriate for the volume and types of hazardous material in use.	Construction Operation
Air Quality	31. Dust suppression systems (e.g. water carts will be used to dampen down areas when there is risk of high dust emissions affecting sensitive receptors.	Construction
Air Quality	32. Long term soil stockpiles and stores of friable material will be covered or vegetated to reduce the potential for	Construction

Topic	Mitigation Measure	Timing																										
	dust where possible.																											
Air Quality	33. Speed controls will be implemented where appropriate to minimise dust creation by vehicles travelling on un-made roads.	Construction Operation																										
Air Quality	34. Vehicles carrying friable materials will be enclosed or sheeted in dry and windy weather.	Construction Operation																										
Air Quality	35. Driver training will include awareness-raising regarding appropriate driving speeds to minimise dust emissions during different weather conditions.	Construction Operation																										
Air Quality	36. Loading, unloading and handling of dusty materials will only be carried out in designated areas. Drop heights will be minimised and where necessary windshields will be fitted (skirts, shrouds or enclosures) to control windblown dust.	Construction Operation																										
Air Quality	37. For operational phase, the following ambient air quality targets will apply at the nearest sensitive receptor. If ambient pollutant levels exceed these guideline values, the Project will not cause a 25% increase in measured ambient levels. <table border="1"> <thead> <tr> <th>Pollutant</th><th>Averaging Period</th><th>Guideline value in $\mu\text{g}/\text{m}^3$</th></tr> </thead> <tbody> <tr> <td rowspan="2">Particulate Matter (PM_{10})</td><td>1-year</td><td>20</td></tr> <tr> <td>24-hour</td><td>50</td></tr> <tr> <td rowspan="2">Particulate Matter ($\text{PM}_{2.5}$)</td><td>1-year</td><td>10</td></tr> <tr> <td>24-hour ⁽¹⁾</td><td>25</td></tr> <tr> <td rowspan="2">Sulphur Dioxide (SO_2)</td><td>24 hour</td><td>20</td></tr> <tr> <td>10 minute</td><td>500</td></tr> <tr> <td rowspan="2">Nitrogen Dioxide (NO_2)</td><td>1-year</td><td>40</td></tr> <tr> <td>1-hour</td><td>200</td></tr> <tr> <td colspan="3">(1) PM 24-hour value is the 99th percentile Source: IFC Environmental, Health and Safety Guidelines 2007</td></tr> </tbody> </table>	Pollutant	Averaging Period	Guideline value in $\mu\text{g}/\text{m}^3$	Particulate Matter (PM_{10})	1-year	20	24-hour	50	Particulate Matter ($\text{PM}_{2.5}$)	1-year	10	24-hour ⁽¹⁾	25	Sulphur Dioxide (SO_2)	24 hour	20	10 minute	500	Nitrogen Dioxide (NO_2)	1-year	40	1-hour	200	(1) PM 24-hour value is the 99 th percentile Source: IFC Environmental, Health and Safety Guidelines 2007			Operation
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Air Quality	38. An effective preventative maintenance programme will be established to ensure that all equipment is maintained in good working order for the duration of its use and does not adversely impact air quality due to inadequate maintenance or damage.	Construction Operation																										
Air Quality	39. Electricity generators will be of modern design meeting up to date specifications for emission standards	Design																										
Air Quality	40. Concrete batching, and crushing and screening plants (including mobile plants) will be fitted with dust extraction	Design																										

Topic	Mitigation Measure	Timing														
	and/or suppression systems.															
Air Quality	41. Storage facilities such as bunkers, tanks and silos will be designed, constructed and operated to minimise fugitive emissions of dust, hydrocarbons etc.	Design Construction Operation														
Air Quality	42. Use of ozone depleting substances such as chlorofluorocarbons (CFCs), halons, carbon tetrachloride, trichloroethane and halogenated hydrobromofluorocarbons (HBFCs) will not be permitted.	Construction Operation														
Air Quality	43. To avoid black smoke from laying of asphalt, bitumen will not be heated with open flame burners or overheated, pots/tanks of bitumen will be covered, and any spills will be contained and immediately cleaned up.	Construction Operation														
Air Quality	44. Strict controls will be in place to minimise the risk of bushfires being caused accidentally by Project activities including: • a ban on unauthorised open fires; • design of flammable substance stores in accordance with good international standards for fire safety including fitting flame arresting devices to vents, segregation of incompatible substances, engineered earthing and lightning protection; • fitting of earthing and lightning protection to other structures vulnerable to lightning strike; • control of hot work such as welding using a strict permit to work system; and • creation of a 20 m wide firebreak in the buffer zone outside the site boundary.	Construction Operation														
Air Quality	45. Emergency response plans and fire fighting arrangements will be put in place to respond to fire including natural bushfires. Trained fire crews will be available in each camp and all personnel will be trained in communication of fire-related hazards and first response. Adequate water supplies for use in the case of a fire will be established in critical locations	Construction Operation														
Noise and vibration	46. All facilities will be designed and operated to ensure that noise levels do not exceed the following thresholds at the nearest sensitive receptor during normal construction and operation. Sensitive receptors include accommodation units within the site. If existing noise levels exceed these threshold values, the Project will not cause more than a 3dB increase in measured ambient levels. <table border="1"> <thead> <tr> <th rowspan="2">Project Phase</th><th colspan="2">Ambient Noise Threshold Values</th></tr> <tr> <th>Daytime (07.00 – 22.00)</th><th>Night-time (22.00 – 07.00)</th></tr> </thead> <tbody> <tr> <td>Construction</td><td>75 dB(A) L_{Aeq} (daytime period)</td><td>50 dB(A) L_{Aeq} (night-time period)</td></tr> <tr> <td>Operation</td><td>55 dB(A) L_{Aeq} (1 hr)</td><td>45 dB(A) L_{Aeq} (1 hr)</td></tr> <tr> <td colspan="3">Source: IFC Environmental, Health and Safety Guidelines 2007</td></tr> </tbody> </table>	Project Phase	Ambient Noise Threshold Values		Daytime (07.00 – 22.00)	Night-time (22.00 – 07.00)	Construction	75 dB(A) L_{Aeq} (daytime period)	50 dB(A) L_{Aeq} (night-time period)	Operation	55 dB(A) L_{Aeq} (1 hr)	45 dB(A) L_{Aeq} (1 hr)	Source: IFC Environmental, Health and Safety Guidelines 2007			Design Construction Operation
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Source: IFC Environmental, Health and Safety Guidelines 2007																
Noise and vibration	47. Advance notice will be given to communities if short-term noisy activities are to take place which could cause these levels to be exceeded.	Construction Operation														
Noise and vibration	48. Measures to minimize noise during construction and from activities taking place in the open air during operations will include:	Design Construction														

Topic	Mitigation Measure	Timing
	• locating and orientating equipment to maximise the distance, and to direct noise emissions away from sensitive areas; • using buildings, earthworks and material stockpiles as noise barriers where possible; • soft starting of equipment and turning off equipment when not in use	Operation
Noise and vibration	49. Noise and vibration potential will be considered when purchasing vehicles and equipment in accordance with Rio Tinto's established Buy Quiet policy. Equipment that emits tonal or low frequency noise will be avoided where possible.	Design
Noise and vibration	50. Noisy equipment located near sensitive receptors will be fitted with appropriate noise and vibration abatement devices such as silencers, mufflers and noise enclosures.	Design
Noise and vibration	51. An effective preventative maintenance programme will be established to ensure that all equipment is maintained in good working order for the duration of its use and does not emit excessive noise or vibration due to inadequate maintenance or damage.	Construction Operation
Noise and vibration	52. Working hours and activities will be carefully managed to minimise adverse noise and vibration impacts especially at night.	Construction Operation
Noise and vibration	53. All personnel will be made aware of the importance of minimising noise and the measures that are required to achieve this.	Construction Operation
Noise and vibration	54. Where new roads are created to access Camps, LSCs and associated infrastructure these will be located away from communities to minimise the risk of significant noise impacts. Bypasses will be provided to take Project traffic away from communities, where necessary to avoid unacceptable noise levels within communities.	Siting
Noise and vibration	55. Where existing roads are used and passage of traffic through communities could cause significant noise impact, strict speed limits will be applied to minimise noise near homes and other sensitive buildings (schools, place of worship, clinics, etc) close to the road.	Construction Operation
Noise and vibration	56. Roads will be designed so that day time noise levels outside the nearest noise sensitive building (homes etc) will not exceed 70 dB(A) measured as LAeq(daytime), or if existing noise levels exceed this figure, so that noise levels will not increase by more than 3 dB (using the same measure). (Source: IFC EHS Guidelines for Toll Roads, 2007)	Design
Noise and vibration	57. The surface of existing roads used to access camps will be improved to reduce the potential for noise and vibration from passing traffic.	Design
Noise and vibration	58. All drivers will be trained in good driving practice to minimise noise and vibration from vehicles.	Construction Operation
Resources and Waste	59. Energy efficiency, water efficiency, greenhouse gas emissions and waste generation will be considered in the selection and purchasing of all materials and equipment to be used in construction and operation of Camps, LSCs and associated infrastructure.	Design
Resources and Waste	60. Measures to reduce energy use will be implemented where feasible including avoiding unnecessary operation of equipment, vehicles, lighting etc.	Construction Operation

Topic	Mitigation Measure	Timing
Resources and Waste	61. Microclimatic factors at each site (eg prevailing winds, solar aspect, elevation, shade) will be taken into account in developing layouts to take advantage of natural factors that will reduce energy use.	Design
Resources and Waste	62. Trees will be retained within the site boundary where possible, to take advantage of natural shade.	Design
Resources and Waste	63. Water and energy use will be monitored to identify trends and opportunities for improvement.	Construction Operation
Resources and Waste	64. The provisions for water supply for construction and operation of individual Camps, LSCs and associated infrastructure will be defined in the Site Files and water will not be abstracted for any location until appropriate mitigation has been defined to ensure that significant impacts on communities are unlikely to occur. No water will be abstracted without the prior approval of the relevant authorities.	Design Construction Operation
Resources and Waste	65. Water meters will be installed on all abstraction points and water use will be monitored and recorded to maximise efficiency of water use and minimise waste.	Design
Resources and Waste	66. Preventative maintenance and regular inspection of water tanks and pipes will be undertaken to minimise the risk of leaks and remedial actions will be implemented as soon as possible.	Construction Operation
Resources and Waste	67. Recycling of water will be undertaken where practical and safe.	Construction Operation
Resources and Waste	68. A Waste Management Plan (WMP) will be established for each Camp and will include: • clear objectives and targets with respect to waste management; • an analysis of types/quantities of waste to be produced by the facility; • an analysis of potential opportunities to reduce, reuse or recycle waste in accordance with the Waste Management Hierarchy (reduction, re-use, recycling, disposal) and a description of how this will be achieved at the site; • a description of roles, responsibilities and resources to ensure that the objectives and targets are achieved; • procedures governing the handling, treatment and disposal of all wastes; and • verification procedures for appropriate assessment of contractors and third-party facilities used for waste transport, management and disposal.	Construction Operation
Resources and Waste	69. All wastes will be collected and managed in facilities providing for segregation of inert, non-hazardous and hazardous waste.	Construction Operation
Resources and Waste	70. Waste collection stations will be positioned in easily accessible locations close to the point where waste is generated and will be clearly marked for segregation of waste. Waste will be removed from work areas at regular intervals and will not be allowed to accumulate on-site in undesignated areas. Inspections will be carried out regularly to identify and rectify inappropriate practices, including littering	Design Construction Operation
Resources and Waste	71. Inert construction and demolition waste will be used in site preparation where possible and other wastes will be re-used or recycled wherever possible. .	Construction
Resources and Waste	72. All residual wastes will be treated and disposed of at facilities providing appropriate means for safe disposal. Where necessary this may be by transport to offsite and Project-specific waste treatment and disposal sites.	Construction Operation

Topic	Mitigation Measure	Timing
Resources and Waste	73. Landfilling of waste will only be permitted if all other options to reduce, reuse or recycle have been exhausted, and will be used only for disposal of inert and non-hazardous wastes. If landfills are required, they will be small, shallow sites (located above the water table) and will be designed and operated in accordance with best practice requirements including the IFC EHS Guidelines for Waste Management Facilities (2007).	Construction Operation
Resources and Waste	74. Burning of waste will not be permitted except in purpose built incineration facilities.	Construction Operation
Resources and Waste	75. Medical wastes will be incinerated or transported to Conakry for suitable disposal.	Construction Operation
Resources and Waste	76. Procedures for management of hazardous wastes encountered during demolition and site clearance will be clearly defined.	Construction
Resources and Waste	77. Accurate records will be maintained for waste materials entering and leaving worksites, to ensure traceability of waste material from source to final destination. Records will detail the source, type and quantity of waste as well as the date of transport, the carrier being used to transport the waste, and the final destination.	Construction Operation
Resources and Waste	78. Materials will be stored correctly to reduce damage and waste.	Construction Operation
Resources and Waste	79. All personnel will be trained in the appropriate management of waste in accordance with the WMP.	Construction Operation
Resources and Waste	80. Any organisations contracted to transport, manage or dispose of waste, and any facility used for the processing, storage or disposal of waste, will be in the possession of all necessary permits and authorisations. The Company will confirm this prior to using any external facility and will audit their operations to ensure compliance with Project requirements.	Construction Operation
Resources and Waste	81. Waste materials that can be safely reused or recycled may be donated to local communities following an appropriate risk assessment by HSEC personnel. All donations will be managed through Simfer's Communities Team.	Construction Operation

Topic	Mitigation Measure	Timing
Biological Environment		
Degradation and loss of habitats	82. Appropriate habitat characterisation and mapping and screening of important and sensitive habitats and species will be carried out by competent environmental specialists during siting and design for individual camps, LSCs and their associated infrastructure.	Siting Design
Degradation and loss of habitats	83. Where possible, camps, LSCs and their associated infrastructure will be located at least 500 metres from sites protected or otherwise designated for their importance for biodiversity including internationally designated sites (e.g. Ramsar sites), nationally protected areas, Classified Forests, and other areas of importance for species, habitats, ecosystem services or processes, including critical habitats as identified by social and environmental specialists.	Siting
Degradation and loss of habitats	84. Where possible, new borrow pits will be located at least 250 metres from important habitats and at least 500 metres if a borrow pit occupies more than 1ha.	Siting
Degradation and loss of habitats	85. The footprint of sites and associated infrastructure will be minimised through careful planning of layouts and consideration of site-specific factors.	Design
Degradation and loss of habitats	86. Driving within watercourses, or on their banks, will be forbidden, except where necessary to construct a particular structure. If work in watercourses is required, measures will be implemented to ensure significant impacts on aquatic habitats do not occur.	Construction Operation
Impacts on plants	87. Planning for individual sites will identify any significant plant species and these will be avoided wherever possible. Where significant species cannot be avoided, species will be relocated if possible to other suitable locations that will not be disturbed, under the supervision of qualified botanists.	
Impacts on plants	88. Where important or sensitive flora species are located near sites they will be demarcated and clearly signposted and access to these areas will be prohibited.	Construction Operation
Impacts on plants	89. Ground clearing in sensitive areas upstream of habitats of high conservation value for biodiversity will only be permitted with an appropriately engineered drainage design.	Construction
Impacts on plants	90. Vehicles and equipment will only be used in designated areas. Movement outside of these areas will be strictly prohibited.	Construction Operation
Impacts on plants	91. Riparian vegetation and vegetation along drainage lines, gullies and gorges, will be protected, where practical with a buffer zone.	Design
Impacts on plants	92. Measures will be implemented to ensure that cleared areas are revegetated as soon as possible.	Construction
Impacts on animals	93. Areas used by important or sensitive fauna will be demarcated and clearly signposted and access to these areas will be prohibited.	Construction Operation
Impacts on animals	94. Where possible, areas to be cleared will be worked from one side to another, or from the centre out, to prevent animals becoming trapped.	Construction
Impacts on animals	95. Trenches or holes created during site works will be rendered safe for fauna species when unattended through covering or provision of an egress ramp.	Construction

Topic	Mitigation Measure	Timing
Impacts on animals	96. Snakes and other important or dangerous species, occurring within work areas, will only to be captured by trained personnel and will be released unharmed, where possible.	Construction Operation
Severance of routes used by wildlife	97. Where sites or new access roads would cross important routes used by priority species, locations and alignments will be selected to avoid severance of these routes where possible. Where severance of an important route used by priority species cannot be avoided, crossing facilities will be provided (overpasses, underpasses, culverts) where possible.	Siting Design
Severance of routes used by wildlife	98. The design of bridges and culverts will include measures to avoid adverse impacts on movement of animals including freshwater species along water courses.	Design
Introduction of invasive species and pests	99. Strict hygiene procedures will be implemented for equipment used on sites and all vehicles and machinery will be inspected and cleaned to ensure decontamination prior to mobilisation between high risk areas. Appropriate documentation will be provided as evidence that this process has been completed.	Construction Operation
Introduction of invasive species and pests	100. All plant species introduced for the Project will be reviewed and approved by specialists prior to use on site. Non-native species will not be authorised unless a formal risk assessment has been completed and approved by relevant stakeholders.	Construction
Introduction of invasive species and pests	101. Ongoing maintenance and monitoring of work areas will include regular inspections for invasive, non-native species including weeds and measures will be implemented to remove unwanted species. Method used to control or prevent such species will not cause adverse impacts on the environment or communities.	Construction Operation
Introduction of invasive species and pests	102. Induction training for all personnel will include appropriate information regarding invasive, non-native fauna and flora and the importance of reporting in this regard.	Construction Operation
Non-routine impacts on fauna and flora	103. Burning of waste or vegetation will only occur in designated and approved facilities.	Construction Operation
Non-routine impacts on fauna and flora	104. Strict controls will be in place to minimise the risk of bushfires being caused accidentally by Project activities including: • a ban on unauthorised open fires; • design of flammable substance stores in accordance with good international standards for fire safety; • fitting of earthing and lightning protection to other structures vulnerable to lightning strike; • control of hot work such as welding using a strict permit to work system; and • creation of a fire break in the buffer zone outside the site boundary.	Construction Operation
Non-routine impacts on fauna and flora	105. Emergency fire fighting arrangements will be in place to respond to fire including natural bushfires. Trained fire crews will be available in each camp and all personnel will be trained in communication of fire-related hazards and first response. Adequate water supplies for use in the case of a fire, will be established in critical locations.	Construction Operation
Non-routine impacts on fauna and flora	106. Measures will be taken to minimise the risk of collisions between animals and vehicles. Signposts and speed limits will be established where necessary to alert drivers to risks of fauna crossing roads. Non-essential travel at night and driving off road will be prohibited.	Construction Operation
Non-routine impacts on	107. Induction training for all Project personnel will facilitate identification of key priority species by all personnel.	Construction

Topic	Mitigation Measure	Timing
fauna and flora	Project personnel will be provided with appropriate instruction regarding the procedures to be followed if important fauna or flora are encountered during the course of work.	Operation
Unsustainable use of resources of importance for biodiversity	108. All camps will be closed and movement of project personnel of site will be restricted to essential trips only	Construction Operation
Unsustainable use of resources of importance for biodiversity	109. Camp and LSCs will include onsite catering facilities. Purchase or sale of bushmeat by or within these facilities will be strictly forbidden. Local resources will only be used by the Project if the resources can be used in a sustainable manner.	Construction Operation
Unsustainable use of resources of importance for biodiversity	110. Sustainable water resources will be identified to avoid impacts on flows and aquatic ecosystems	Design
Unsustainable use of resources of importance for biodiversity	111. Firearms will be prohibited in all work areas and accommodation. Local Project personnel will be strictly forbidden from engaging in hunting, selling or purchasing bushmeat during work hours. Inspections of Camps, LSCs, work areas and Project vehicles will be carried out where necessary to verify compliance.	Construction Operation
Unsustainable use of resources of importance for biodiversity	112. Induction training for all Project personnel will include communication of relevant information regarding bushmeat hunting and important local resources. Project personnel will engage local stakeholders to manage potential impacts in this regard.	Construction Operation
Light pollution	113. Impacts from light emissions will be minimised through: • use of low emission lighting; • use of directional lighting, aimed towards the area where light is needed and away from any sensitive receptors; and • restrictions on non-essential travel after dark. If any driving after dark is required, drivers and operators will use low beam headlights as much as possible.	Design Construction Operation

Topic	Mitigation Measure	Timing
Socio-Economic Environment		
Physical and Economic Displacement	114. Camps, LSCs and associated infrastructure will be sited to avoid any displacement of peoples' homes and their community facilities such as market areas, community buildings, wells, schools, places of worship, medical centres, etc as far as possible. Where displacement is unavoidable, decisions on siting of facilities will be taken in consultation with the local administration and the local community to ensure their views and wishes are taken into account to minimise adverse impacts on individuals and communities.	Siting
Physical and Economic Displacement	115. Camps, LSCs and associated infrastructure will be sited to minimise impact on use of highly productive agricultural land such as <i>bas fonds</i> , rice fields, community forests and land used for hunting and gathering food and other produce. Water bodies used for fishing activities and community water supply will also be avoided where possible.	Siting
Physical and Economic Displacement	116. The layout of Camps, LSCs and associated infrastructure will be designed to minimise displacement of other beneficial land uses and resulting impacts on affected people and communities.	Design
Physical and Economic Displacement	117. Where displacement of people, property or beneficial land uses is unavoidable, the Project will develop and agree a plan for compensation (including livelihood restoration) of affected people, in consultation with the affected households and the community, and in accordance with the Resettlement and Compensation Policy Framework for Early Works (see Annex F).	Siting
Physical and Economic Displacement	118. If road improvements cannot be completed without significant physical or economic displacement, temporary bypasses may be built for Project traffic.	Siting
Physical and Economic Displacement	119. Where practical a 50m buffer will be maintained around highly productive or intensively farmed agricultural lands such as <i>bas fonds</i> or rice fields (including areas that are currently fallow) and community forests to avoid disruption of cultivation.	Siting
Cultural heritage	120. When undertaking reconnaissance for individual sites for Camps, LSCs and associated infrastructure the team will undertake field survey and consultation with local communities to identify any sites or features of importance for cultural heritage. This will include both tangible features or sites and locations of intangible cultural importance.	Siting
Cultural heritage	121. To the extent possible, facilities will be located at least 100 metres from sites of cultural importance to protect their cultural value, amenity and setting. Where this distance cannot be achieved, effective protection measures will be devised on a case-by-case basis in consultation with the local community	Siting
Cultural heritage	122. If a site or feature of cultural importance cannot be avoided the Project will consult the local community to determine the mitigation that is required. This may include relocation of moveable features, excavation and recording of archaeological sites.	Design
Cultural heritage	123. If a site or feature of cultural importance is located close to the facility the area will be clearly marked out and if necessary fenced to prevent encroachment by Project personnel or activities and to protect it from accidental disturbance. Such sites will be inspected regularly to confirm no inadvertent or unreported damage has	Construction Operation

Topic	Mitigation Measure	Timing
	occurred and to identify any risk of harm from the Project.	
Cultural heritage	124. The location of any identified sites will be recorded using GIS for future reference when planning site developments and ground disturbance. The exact location and significance of any sites will only be communicated to the minimum number of people required to ensure effective protection of the area.	Design
Cultural heritage	125. If a cultural heritage site is damaged in any way, this will be treated as an incident, investigated and managed in accordance with the approved incident management procedures established for the Project. If any grievance should arise in this regard, this will be managed in accordance with the approved Grievance Procedure established for the Project.	Construction
Cultural heritage	126. Although many of the Camps, LSCs and associated areas will be located in areas where soils are thin and the potential risk of encountering buried archaeology is low, the Project will operate a Chance Finds Procedure in accordance with IFC Performance Standard 8. If any finds are encountered, work will cease immediately and temporary protection of the area will be established. The find will be reported and relevant specialists will be appointed to determine an appropriate course of action.	Construction
Cultural heritage	127. All Project personnel will be required to respect local cultural traditions and religious festivals, funerals and other traditional events. Induction training for all personnel will include appropriate cultural awareness training.	Construction Operation
Cultural heritage	128. Inspections will be carried out during the works and after their completion to verify that measures have been implemented as planned.	Construction Operation
Community Health, Safety and Security	129. A high standard of housekeeping will be maintained at all times throughout all facilities.	Construction Operation
Community Health, Safety and Security	130. Pools of standing water will be eliminated where possible to minimise the availability of breeding grounds for mosquitoes.	Construction Operation
Community Health, Safety and Security	131. Ongoing maintenance of work areas will include regular inspections for pest species. Appropriate management strategies will be implemented to manage any pests that may arise and may include use of approved pesticides etc. Methods used to control or prevent pests will not cause adverse impacts on the environment or communities.	Construction Operation
Community Health, Safety and Security	132. Risk of water-borne diseases will be minimised using appropriate treatment methods for water.	Construction Operation
Community Health, Safety and Security	133. Risks to health and welfare will be minimised by the measures identified for control of soil and water pollution, air and noise emissions, and use of hazardous substances	Construction Operation
Community Health, Safety and Security	134. A health management system will be established to ensure that all individuals are fit for work and illnesses are not introduced by Project personnel coming into contact with local people.	Construction Operation
Community Health, Safety and Security	135. When undertaking risk assessments for occupational health hazards potential impacts on community health and safety will be considered alongside worker health and safety, and mitigation measures will be adopted, including health surveillance where appropriate, to provide appropriate levels of protection.	Construction Operation
Community Health,	136. Camps and LSCs will include medical facilities and services appropriate to the nature and scale of activities	Design

Topic	Mitigation Measure	Timing
Safety and Security	carried out at that site and surrounding areas.	
Community Health, Safety and Security	137. All Project personnel will be provided with training communicating the closed camp policy, health hazards, including HIV/AIDS and malaria along with the prevention and mitigation measures required.	Construction Operation
Community Health, Safety and Security	138. Awareness posters regarding relevant hazards, including HIV/AIDS and malaria, will be posted and maintained in areas regularly used by workers.	Construction Operation
Community Health, Safety and Security	139. Workers will be encouraged to attend HIV Awareness Programmes offered by the Company. The programmes will be developed in consideration of demands for prevention measures, awareness and education, voluntary counselling, testing, treatment, monitoring and evaluation.	Construction Operation
Community Health, Safety and Security	140. Partnerships will be actively sought with specialist external organisations to deliver HIV education, awareness raising and treatment to employees, their dependents and the broader community.	Construction Operation
Community Health, Safety and Security	141. Measures will be taken to minimise the potential risk of non-routine events such as fires and road accidents and ensure that Project personnel have the capacity to respond to any such events in an appropriate manner and mitigate the potential for harm to communities.	Construction Operation
Community Health, Safety and Security	142. Access to all sites will be strictly controlled using appropriate security provisions. Work areas will be clearly demarcated and signposted using pictorial signage to indicate and communicate hazards.	Construction Operation
Community Health, Safety and Security	143. All risk assessment and emergency response planning will consider potential impacts on local communities and measures needed to ensure the safety and security of individuals in this regard.	Construction Operation
Community Health, Safety and Security	144. Local authorities and affected communities will be provided with appropriate information communicating the nature and extent of any potential risk and impacts resulting from Project activities and procedures to be followed in the case of an unplanned accident or emergency. Training will be organised where necessary as identified by means of risk assessment.	Construction Operation
Community Health, Safety and Security	145. Site security will be managed in accordance with the Voluntary Principles on Security and Human Rights for the extractive sectors.	Construction Operation
Community Health, Safety and Security	146. Security personnel will be screened prior to employment by means of detailed interviews and inquiries will be made to investigate previous employment experience and records to facilitate avoidance of individuals who have previously been involved in abuse or violation of human rights.	Construction Operation
Community Health, Safety and Security	147. Work procedures, including a code of conduct, will be defined for security personnel to clearly established expected and accepted behaviours and practices. These procedures will be communicated as part of induction and appropriate training will be provided to ensure ongoing adherence to Company expectations in this regard.	Construction Operation
Community Health, Safety and Security	148. The Project will develop appropriate disaster and emergency response plans. Security personnel will receive appropriate training regarding the different security-related scenarios that might arise, procedures to be followed in the case of each scenario, their roles and responsibilities during an emergency/security incident, and appropriate responses to different emergency scenarios that might arise.	Construction Operation
Community Health, Safety and Security	149. Appropriate supervision will be provided by senior competent personnel to ensure that established procedures are being applied by security personnel and training has been understood by the relevant security personnel	Construction Operation

Topic	Mitigation Measure	Timing
Community Health, Safety and Security	150. Firearms will be strictly forbidden at any work area or facility. Security personnel will not be permitted to carry firearms or knives.	Construction Operation
Community Health, Safety and Security	151. If community members express grievances in relation to the conduct of security personnel or activities, the Project will respond to the grievance in accordance with the Project 's established Grievance Procedure.	Construction Operation
Community Health, Safety and Security	152. Security arrangements will be explicitly communicated to all relevant stakeholders including workers and representatives of affected communities.	Construction Operation
In-migration	153. Sites will be selected in consideration of the need to discourage in-migration and consequent impacts on local communities. A buffer zone will be established and maintained around the perimeter of the Camps and LSCs to discourage individuals from moving into areas at the site boundary.	Siting
In-migration	154. Supplies for camps and LSCs will be obtained locally where there are sustainable local sources available but will be imported into the area where suitable local resources are not available.	Construction Operation
In-migration	155. All employment will be managed via Local Employment Offices, which will be established in existing large settlements with capacity to accommodate population growth. Any individuals who approach work areas or camp and LSC facilities will be referred to the nearest Employment Office. No employment will be offered directly at Project sites.	Construction Operation
In-migration	156. An influx/in-migration management plan will be developed for the Project in consultation with the relevant local authorities setting out measures to manage in-migration so as to avoid adverse impacts on local communities.	Construction Operation
In-migration	157. Changes in local populations and demographics will be monitored where in-migration is considered to be a significant risk.	Construction Operation
In-migration	158. Measures will be taken to ensure that abstraction of water for camps and LSCs will not lead to significant adverse impacts on water resources for local use.	Design
Local Employment and Procurement	159. An Employment Plan will be developed to define requirements and procedures to be followed by all Project personnel when identifying and developing employment opportunities, managing employees, recording and reporting employment data, terminating work contracts, and other labour-related issues. This plan will comply with the Guinea Labour Code.	Construction Operation
Local Employment and Procurement	160. The Employment Plan will take into account expected fluctuations in demand for employment and local community expectations during different phases of development of camps and LSCs.	Construction Operation
Local Employment and Procurement	161. The Employment Plan and any local employment opportunities will be communicated in a transparent and culturally appropriate manner.	Construction Operation
Local Employment and Procurement	162. When advertising employment opportunities, the Project will clearly define the skills, qualifications and experience required for the available positions	Construction Operation
Local Employment and Procurement	163. All employment-related decisions, including hiring, placement, promotion, benefits, training, discipline and dismissals, will be based solely on the skills, experience, performance and qualifications of employees and applicants	Construction Operation
Local Employment and	164. Local Employment Offices will be established at key locations to facilitate access to employment opportunities	Construction

Topic	Mitigation Measure	Timing
Procurement	for local candidates with appropriate skill-sets and to discourage in-migration to remote or sensitive areas.	Operation
Local Employment and Procurement	165. Unskilled labour will be preferentially hired from the local communities.	Construction Operation
Local Employment and Procurement	166. A vocational training plan will be prepared to provide vocational training opportunities to the local population to increase their chances of obtaining employment. In addition, selected community employees will receive skills training to allow them to progress from unskilled to semi-skilled/skilled positions.	Construction Operation
Local Employment and Procurement	167. Opportunities for sustainable local procurement of goods and services will be identified wherever possible and measures will be devised to maximise the potential of these opportunities. Key community decision-makers will be consulted as part of identifying and developing opportunities.	Construction Operation
Local Employment and Procurement	168. The Project will work with suitable partners in Guinea to identify suitable suppliers and, where relevant, implement initiatives to support local capacity building. Where appropriate, procurement targets will be defined in consideration of what is possible and in consultation with potential suppliers.	Construction Operation
Local Employment and Procurement	169. Local prices will be monitored to identify any areas where local availability of resources has been adversely affected by Project procurement.	Construction Operation
Human Rights	170. The Project will be managed so as to: • comply with the Universal Declaration of Human Rights and Rio Tinto's Global Human Rights Policies; • comply with all relevant legislation (including the Guinean Labour Code) and International Labour Organisation (ILO) conventions; • ensure appropriate management of labour-related risks; and • adhere to the Voluntary Principles on Security and Human Rights, as devised by companies in the extractive sectors together with governmental and non-governmental organisation.	Construction Operation
Human Rights	171. Use of child labour will be strictly forbidden. Contractors, suppliers and recruitment agencies will not hire workers under the age of 16 and employment of young workers between 16 and 18 years will only be for light work of limited duration, where the work does not interfere with primary education, and is not dangerous or harmful to the physical, mental or moral development of young workers.	Construction Operation
Human Rights	172. Use of forced labour will be strictly forbidden. Everyone will be allowed free choice to accept or reject opportunities of employment.	Construction Operation
Human Rights	173. Labour and working conditions will be clearly communicated to potential workers as part of the recruitment process and will include communication of conditions relating to the closed camp policy and key relevant worker hazards and risks.	Construction Operation
Human Rights	174. Workers will have the right to form and to join trade unions and create their own worker committees and worker representatives in accordance with the requirements and rights set out in the Guinea Labour Code.	Construction Operation
Human Rights	175. Salaries will be just and favourable ensuring the worker and the worker's family have an existence worthy of human dignity.	Construction Operation
Human Rights	176. Discrimination because of race, colour, sex, language, religion, political or other opinion, national or social origin,	Construction

Topic	Mitigation Measure	Timing
	property, birth, actual or perceived HIV status or other status will be strictly forbidden.	Operation
Human Rights	177. HIV/AIDS screening will not be a requirement for recruitment or a condition of employment.	Construction Operation
Human Rights	178. Requirements relating to Human Rights will be clearly communicated to all relevant personnel as part of training, and incorporated into labour contracts.	Construction Operation
Human Rights	179. Appropriate levels of auditing and verification will be carried out to ensure Project compliance with all required mitigation measures relating to Human Rights.	Construction Operation
Human Rights	180. The Project will establish appropriate procedures facilitating the reporting of non-compliances and grievances by Project personnel and stakeholders and ensuring that any reported incidents are addressed in an appropriate and culturally sensitive manner.	Construction Operation
Employment Terms and Working Conditions	181. Employment practices and working conditions will conform to the requirements of IFC Performance Standard 2 (Labour and Working Conditions), the Government of Guinea Labour Code and ILO Standards.	Construction Operation
Employment Terms and Working Conditions	182. Worker accommodation will be designed taking into account 'guidelines developed by the IFC and European Bank for Reconstruction and Development (EBRD).	Design
Employment Terms and Working Conditions	183. Prayer rooms and other related facilities will be made available to meet the religious needs and customs of the workforce.	Design
Employment Terms and Working Conditions	184. Appropriate facilities and rest and recreational time will be provided to allow workers to manage fatigue and engage in recreational activities.	Design
Employment Terms and Working Conditions	185. Rules with respect to alcohol consumption and drug prohibition will be defined, to ensure that all Project personnel are fit for work and do not pose a danger to themselves or others.	Construction Operation
Employment Terms and Working Conditions	186. Where different standards of accommodation are provided, procedures will be established governing allocation of accommodation and will be documented and communicated in a transparent manner to all affected personnel. Allocation of accommodation based on ethnicity or nationality will not be permitted.	Construction Operation
Employment Terms and Working Conditions	187. Strict procedures will be adopted for hazard identification and risk assessment and for definition and implementation of appropriate mitigation measures to ensure a safe workplace. Relevant information will be communicated to all Project personnel.	Construction Operation
Employment Terms and Working Conditions	188. The Project will establish strict procedures facilitating the reporting of health and safety incidents and ensuring that any reported incidents are addressed in an appropriate and culturally sensitive manner	Construction Operation
Employment Terms and Working Conditions	189. A fair, transparent, culturally appropriate and accessible Grievance Procedure will be available to all workers.	Construction Operation

Potential Impact	Mitigation	Assessment
local resources.	only be used by the Project if the resources can be used in a sustainable manner. 31. Sustainable water resources will be identified to avoid impacts on flows and aquatic ecosystems 32. Firearms will be prohibited in all work areas and accommodation. Local Project personnel will be strictly forbidden from engaging in hunting, selling or purchasing bushmeat during work hours. Inspections of Camps, LSCs, work areas and Project vehicles will be carried out where necessary to verify compliance. 33. Induction training for all Project personnel will include communication of relevant information regarding bushmeat hunting and important local resources. Project personnel will engage local stakeholders to manage potential impacts in this regard.	minimised as much as possible to avoid induced unsustainable use of resources.
8. Light pollution		
Lighting of Camps, LSCs and associated infrastructure may disturb sensitive fauna species in nearby habitats.	34. Impacts from light emissions will be minimised through: • use of low emission lighting; • use of directional lighting, aimed towards the area where light is needed and away from any sensitive receptors; and • restrictions on non-essential travel after dark. If any driving after dark is required, drivers and operators will use low beam headlights as much as possible.	Potentially significant impacts associated with lighting will be avoided through appropriate selection, use and management of light sources.
9. Impacts associated with pollution of the physical environment		
Project activities and emissions (including noise) may have impacts on the physical environment (air, water, soils etc), leading to habitat degradation and reduced species occurrence.	35. See <i>Chapter 4</i> for measures to control impacts on biodiversity from pollution during construction and operation of camps, LSCs and their associated infrastructure.	Potential significant impacts on the physical environment will be avoided through effective implementation of the mitigation measures detailed in <i>Chapter 4</i> . Significant secondary impacts on biodiversity are therefore not likely to occur.