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# **NEW BUGESERA INTERNATIONAL AIRPORT ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT REPORT- SOCIO-ECONOMICS**

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## 18. SOCIO-ECONOMICS

### 18.1 Introduction

This chapter of the ESIA Report presents an assessment and evaluation of the socio-economic impacts (including community health and safety), for both the construction and operation phases of the Proposed Project. This chapter is accompanied by the following technical appendix:

- Technical Appendix 18.1: Key Informant Interview Semi-Structured Questionnaire and List of Surveyed Villages.

### 18.2 Policy, Legal and Administrative Framework

#### 18.2.1 Policies

##### 18.2.1.1 Vision 2020<sup>1</sup>

Rwanda's Vision 2020 (hereafter referred to as 'Vision 2020') was launched in 2000 and *"seeks to fundamentally transform Rwanda into a middle-income economy by the year 2020"*. The programme goals include:

- Good governance;
- An efficient state;
- Skilled human capital, including education, health and information technology;
- A vibrant private sector;
- Developing world-class physical infrastructure; and
- Modern agriculture and livestock management.

The Proposed Project complies with Vision 2020 as the airport will be a significant contribution to achieving world-class infrastructure and will assist private-sector growth by expanding external connections thus benefitting sectors such as trade and tourism.

##### 18.2.1.2 Economic Development and Poverty Reduction Strategy II (EDPRS II), 2013-2018<sup>2</sup>

As described by HE Paul Kagame, President of Rwanda, *"The Second Economic Development and Poverty Reduction Strategy (EDPRS 2) is a launch into the home straight of our Vision 2020"*. It aims to consolidate and build on the achievements of EDPRS 1 and move Rwanda quickly and effectively toward its goal of reaching middle-income status in the relatively near future (2020).

One of the key EDPRS 2 thematic areas is Economic Transformation and within this thematic area is Priority 2: Increasing the external connectivity of Rwanda's economy and boosting exports by key actions including building of a new international airport in Bugesera District and expanding RwandAir. It is stated that this airport will be the single largest investment in Rwanda's history and is the second most important infrastructure priority after investments in the electricity sector. Annex 4 of EDPRS II provides District Economic Transformation Priorities and the Bugesera District priorities, which are to:

- Promote tourism activity on virgin sites around the lakes Rumira, Mirayi, Kirimbi and Kidogo;

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<sup>1</sup> Republic of Rwanda Ministry of Finance and Economic Planning, 2000. Rwanda Vision 2020.

<sup>2</sup> Republic of Rwanda Ministry of Finance and Economic Planning, 2013. Economic Development and Poverty Reduction Strategy II 2013 – 2018

- Promote private investment in fish farming in suitable lakes and other surface waterbodies;
- Increase infrastructure development through the construction and operationalisation of an industrial park, hotels and guest houses targeting Bugesera; and
- Develop airport opportunities that will attract business, investors, services providers and tourists that will boost employment outside the agriculture sector.

In terms of Kicukiro District, one of the priorities is:

- Improve road networks through the construction and rehabilitation of existing roads;
- Developing road junctions and fly-overs; and
- Expanding the width of existing main roads and attracting more private companies to the public transport system.

#### 18.2.1.3 National Human Settlement Policy (Updated Version, 2009)<sup>3</sup>

The first Human Settlement Policy was implemented after the 1994 genocide to accommodate survivors and refugees who had been living in exile since 1959. Through this policy, people were grouped in large villages known as "imidugudu" and the policy was aimed at encouraging the development of rural centres into planned settlement and restructuring of unplanned residential areas in urban areas to improve the living conditions of the population. The updated National Human Settlements Policy (2009) (NHSPR) is based on eleven fundamental principles that recognise that:

- The fundamental right of every citizen to housing and determined to provide the population with easy access to decent housing and to protect and improve the conditions of housing and residential areas;
- There is a commitment to establishing human settlement in both urban and rural areas with priority to the vulnerable groups;
- The type of human settlement recognised in Rwanda is the planned as opposed to unplanned and scattered settlement and that a town development plan is a pre-requisite to any type of development;
- Access by everybody to basic goods, infrastructure and services and to collective amenities is a determining element for the quality of life in settlement sites in both urban and rural areas and that eviction and expropriation operation should be in line with the fundamental rights of dwellers especially the right to a rehousing of almost similar condition with previous dwelling in terms of size and to financial conditions compatible with revenues of the households concerned; and
- The development of human settlement should enhance economic development, employment and social progress.

Additional principles include sustainable human settlements in line with environmental requirements, active participation of public and private sectors, non-governmental organisations and households, involvement of families in the design, development and management of their housing, gender equality in the laws and programs relating to human settlements and concern for HIV/AIDS and youth employment issues.

The main objective of the policy for urban areas is to improve the settlement conditions of the urban population aimed at implementing the poverty reduction strategy by: the rational use of land; controlled growth of population clusters; matching the demand and the supply of building

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<sup>3</sup> [http://www.rha.gov.rw/fileadmin/user\\_upload/Documents/NATIONAL\\_HUMAN\\_SETTLEMENT\\_POLICY\\_IN\\_RWANDA.pdf](http://www.rha.gov.rw/fileadmin/user_upload/Documents/NATIONAL_HUMAN_SETTLEMENT_POLICY_IN_RWANDA.pdf)

plots; organising a financing system; organising and coordinating structures for the management of human settlement; and developing the building industry. In rural areas, the main objective of the policy is to improve existing system of human settlements for sustainable socio-economic development which include rationalisation of land use; establishment of new homes; improvement of their quality; the rational management of land; improvement of the agricultural production; the creation of other income generating activities; the establishment of basic facilities closer to the population, the strengthening of the role of local communities in the management of human settlement and the organization of the human settlement financing system.

#### *18.2.1.4 National Urbanization Policy of 2015<sup>4</sup>*

The National Urbanization Policy was adopted in December 2015 and sets the framework for the governmental, non-governmental and private interaction in the country's urbanisation process in support of sustainable development. It sets the principles for coordinated strategies and actions supported by urban planning documents, development of urban areas at high density, inclusive urban areas providing quality of life and conditions for economic growth. The policy is organised into four policy pillars:

- Co-ordination: The aim is to ensure multilevel institutional coordination and effective urban planning and management, applying appropriate tools and ensuring coherence between different types of planning and coherent action;
- Densification: The aim is to use land efficiently by phasing investment strategically and integrate green principles within development, applying principles and standards guiding the development of efficiently serviced urban neighbourhoods to high population numbers within urban areas and preserve valuable natural and agricultural resources;
- Conviviality: The aim is the assurance of quality of life in all facets, with social inclusion and cultural preservation as integral parts of urbanization; and
- Economic Growth: The aim is to achieve economic growth which is sustainable and guided by green economic criteria, whereby urban centres are centres for innovation and entrepreneurship and sources for socio-economic services and opportunities.

The 'Densification Pillar' specifically relates to human settlements by providing urban planning guidelines to improve living standards for human settlements; develop land for human settlement sustainability while allocating valuable land resources and location guidelines for urban land uses and facilities; develop housing, socio-economic facilities, and technical infrastructure according to needs of the people, and apply basic standards to site requirements of development; and plan utilities, facilities and services accordingly, with principles for urban land uses and adequacy of facilities to serve a human settlement.

#### *18.2.1.5 The Public Transport Policy and Strategy of Rwanda 2012<sup>5</sup>*

One of the priority target areas of the transport sector based on the Economic Development Poverty Reduction Strategy<sup>6</sup> (EDPRS) of Rwanda is targeted towards economic transformation one of which aims to increase the external connectivity of Rwanda's economy and to boost exports by building a new international airport and expanding RwandAir.

The main aim of the Public Transport Policy and Strategy for Rwanda is to reduce traffic congestion, energy use and pollution, thereby increasing mobility and accessibility of people

<sup>4</sup> [http://www.kigalicity.gov.rw/fileadmin/Template/Documents/policies/Rwanda\\_National\\_Urbanization\\_Policy\\_2015.pdf](http://www.kigalicity.gov.rw/fileadmin/Template/Documents/policies/Rwanda_National_Urbanization_Policy_2015.pdf)

<sup>5</sup> Republic of Rwanda Ministry of Infrastructure, 2012. Public Transport Policy and Strategy of Rwanda

<sup>6</sup> Republic of Rwanda Ministry of Finance and Economic Planning, 2013. Economic Development and Poverty Reduction Strategy II 2013 – 2018.

and goods through the development of an appropriate public transportation system. This in turn will contribute more efficiently to the growth of the national economy, economic development and poverty reduction.

More specifically, the Air Transport Policy's overall objective is to develop domestic air services through the establishment of domestic airports and to establish new or improved external air links with full Instrument Landing System facility driven by a knowledgeable and skilful force. Specific objectives related to air public transport include *inter alia*:

- Enhance safety and security of air services;
- Capacity building;
- Strengthen legal and institutional framework, and improve service delivery system; and
- To make Rwanda an Aviation Hub of the Region by offering up-to-date, attractive air transport infrastructure and a more competitive national carrier.

The policy contains four principles, one of which aims to promote improved access to reliable and safe air transportation for socio-economic development of the country, enhance quality of life and facilitate expansion of trade and tourism as well as to promote private sector participation for the improvement in the level of air transport services.

#### 18.2.1.6 Rwanda HIV and AIDS National Strategic Plan July 2013–June 2018<sup>7</sup>

This National Strategic Plan (NSP) is the result of more than a year of preparatory work, starting with the development of Rwanda's second Economic Development and Poverty Reduction Strategy 2013–2018 (EDPRS2), which confirmed the response to the human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV/AIDS) as a cross-cutting national development priority. It is aligned with other key national priorities and strategies such as Vision 2020 and the Health Sector Strategic Plan as well as international targets, such as Millennium Development Goals (MDGs) and new guidelines in the management of HIV. Drafting of the NSP was guided by a number of core principles: national mobilisation and ownership, equity and human rights, gender equity, integration of HIV services into the national health system, cost effectiveness of interventions and national capacity building.

The NSP recognises that consolidating the HIV/AIDS gains of the last few years, and ensuring progress in a cost-effective manner, will require focused attention on the needs of specific 'at-risk' groups, such as female sex workers and sero-discordant couples<sup>8</sup>. The NSP has the following three key goals:

- Lowering the new infection rate by two thirds from an estimated 6,000 per year currently to 2,000;
- Halving the number of HIV-related deaths from 5,000 to 2,500 per year; and
- Ensuring that people living with HIV have the same opportunities as all others.

To achieve these goals, three main levers of intervention will be applied: prevention of new infections, care and treatment, and HIV/AIDS impact mitigation.

#### 18.2.1.7 The Rwanda Tourism Policy 2009<sup>9</sup>

The overall objective of the Rwanda Tourism Policy is to promote and increase tourism revenues in a sustainable manner, generate profits for re-investment and job creation. This will be achieved through the development of new distinctive market-led products that will be positioned

<sup>7</sup> [http://www.nationalplanningcycles.org/sites/default/files/country\\_docs/Rwanda/final\\_nsp\\_2013-2018.pdf](http://www.nationalplanningcycles.org/sites/default/files/country_docs/Rwanda/final_nsp_2013-2018.pdf)

<sup>8</sup> Couples in which one partner is infected by HIV and the other is not.

<sup>9</sup> Republic of Rwanda Ministry of Trade and Industry, 2009. Rwanda Tourism Policy.

to promote sustainable tourism. This will result in spatial and socio-economic balance to the distribution of tourism benefits. This includes environmental, social and economic elements for sustainable development.

The policy provides for a resource base that supports tourism and that an environmental assessment must be conducted prior to permitting development activities to occur, which may affect the tourism industry. The Proposed Project will result in additional flights into the country, resulting in an increase of visitors and therefore boosting tourism in the region.

#### *18.2.1.8 The Occupational Safety and Health Policy, 2006*

The policy<sup>10</sup> provides for strategy objectives, scope, guiding principles, policy strategies, coordination and alignment of institutional roles and activity strategy, harmonisation of legislation and standard strategies, inspection strategies, preventive measures, skills development and competent strategies, and integrated information system strategies. The policy provides guidelines to cover areas that support the development and implementation of an effective occupational, health and safety systems.

#### **18.2.2 Legal Framework**

The main elements of the legal framework, directly relevant to the socio-economic impact assessment, are the laws relating to land, land ownership, expropriation and asset valuation and payment of compensation. The key laws and other legal instruments are presented below with emphasis given to the current law dealing with expropriation in the public interest<sup>11</sup>.

##### *18.2.2.1 Organic Law N° 08/2005 of 14/07/2005 Determining the Use and Management of Land in Rwanda*

This organic law determines the use and management of land in Rwanda. It also presents the principles that are respected in terms of legal rights regarding on any land in the country as well as all other assets on land whether 'natural' or 'artificial'.

##### *18.2.2.2 Ministerial Order No. 002/16.01 of 2010 on Determining the Reference Land Price outside the Kigali city*

The purpose of this order is to provide land prices to be used, in expropriation, in areas outside Kigali city.

##### *18.2.2.3 Law No. 43/2013 of 2013 Relating to Governing Land in Rwanda*

This Law determines modalities of allocating, acquisition, transfer, use and management of land in Rwanda. It also establishes the principles applicable to rights recognised over all lands situated on Rwanda's national territory and all rights united or incorporated with land, whether naturally or artificially.

##### *18.2.2.4 Law No. 32/2015 of 2015 Relating to Expropriation in the Public Interest*

This Law provides procedures relating to expropriation in the public interest. Article 3 of the law stipulates that the government has the authority to carry out expropriation and that no person shall hinder the implementation of expropriation on a pretext of self-centred justifications and no land owner shall oppose any underground or surface activity carried out on his or her land with an aim of public interest. In case it causes any loss to him or her, he or she shall receive just compensation. Chapter IV addresses the valuation of land proposed for expropriation and identifies properties to be valued for fair and just compensation to be land and activities that

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<sup>10</sup> Republic of Rwanda, 2006. Occupational Health and Safety Policy.

<sup>11</sup> Law No. 32/2015 of 2015 Relating to Expropriation in the Public Interest

were carried out on the land including different crops, forests, buildings or any other activity aimed at efficient use of land or its productivity. Payment of fair compensation is addressed in Section 2 whereby compensation can be paid in in the Rwandan currency or in any other form mutually agreed upon by the expropriator and the person to be expropriated. Article 36 addresses the timeframe for payment of compensation that must be paid within a period not exceeding one hundred and twenty (120) days from the day of its approval by the district or City of Kigali Council or the relevant Ministry. Once compensation has been received by the expropriated person, they will have a period not exceeding one hundred and twenty (120) days to relocate; if physical relocation is required. However, the person to be expropriated will not be allowed to plant crops that require more than one hundred and twenty (120) days of growth before they can be harvested.

### 18.2.3 International Standards

#### 18.2.3.1 International Finance Corporation Performance Standards

The following International Finance Corporation Performance Standards (IFC PSs) apply to the assessment of socio-economic impacts:

- IFC PS1: Assessment and Management of Environmental and Social Risks and Impacts  
IFC PS1 establishes the importance of managing environmental and social performance throughout the lifecycle of a project by means of: an integrated assessment to identify the environmental and social impacts, risks, and opportunities of the project; effective Affected Community engagement through disclosure of project-related information and consultations;
- IFC PS2: Labour and Working Conditions  
IFC PS2 establishes the need for workers' rights regarding with respect to issues such as recruitment, employment terms and conditions, role of workers' organizations, and access to a workers' Grievance Mechanism not only for those directly employed but also, to varying extent, for third-party workers (contractors) and companies in the supply chain. It requires actions to provide a safe and healthy working environment;
- IFC PS4: Community Health, Safety and Security  
IFC PS4 outlines specific requirements for mitigating any potential for community exposure to risks and impacts arising from inter alia equipment and infrastructure accidents, releases of hazardous materials and communicable diseases. The key objectives are:
  - To anticipate and avoid adverse impacts on the health and safety of the Affected Community during the project life from both routine and non-routine circumstances; and
  - To ensure that the safeguarding of personnel and property is carried out in accordance with relevant human rights principles and in a manner, that avoids or minimizes risks to the Affected Communities;
- IFC PS5: Land Acquisition and Involuntary Resettlement  
IFC PS5 recognises that Project-related land acquisition and restrictions on land use and/or access to land and other resources could have adverse effects on communities or persons that use the land, and therefore, PS5 outlines objectives for avoiding or minimising involuntary physical resettlement. Appropriate measures should be implemented to mitigate adverse impacts on physically and/or economically displaced persons through appropriate compensation for lost or impaired assets and/or lost/impaired access to assets, such as loss of a subsistence or commercial livelihood. Compensation must be accompanied



by livelihood restoration measures to ensure that livelihoods of those physically and/or economically displaced are restored to pre-displacement levels and, to extent feasible, are improved;

- IFC PS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

Certain sections of IFC PS6, particularly those dealing with ecosystem services, also, are applicable;

- IFC PS7: Indigenous Peoples

At the beginning of ESIA work; IFC PS7: Indigenous Peoples was potentially applicable and work was undertaken to determine its applicability, as presented below. IFC PS7 states that the, *".... applicability of this Performance Standard is established during the environmental and social risks and impacts identification process"*.

Rwanda government policy and practice is ethnically 'blind' insofar as it only recognises Rwandans. Ethnically Rwanda consists of Tutsi, Hutu and Twa (also known as BaTwa) peoples. The Twa ethnic group has a significantly lower population compared to the other ethnic groups; however, current official statistics do not record information, such as the populations of these groups. However, it does recognise the existence of 'historically marginalised populations'.

The Draft ESIA Report (2010) briefly outlines, in the socio-economic environment section, information relating to the Hutu, Tutsi and the Twa. Twa are mentioned in the context of Rwanda, but not specifically in terms of the previously proposed project's Area of Influence (AoI) and it is not clear whether any of these groups were/are present in the previously proposed project's AoI. Further, the Draft ESIA Report (2010) does not identify whether any of these groups are an indigenous people.

Consideration of the history and characteristics of the Hutu and Tutsi shows that neither the Hutu nor the Tutsi meet the set of IFC PS7 criteria for identification as an indigenous people or a 'historically marginalised population'. The Rwandan Twa are members of a wider ethnic group commonly known as 'pygmies'<sup>12</sup>), originally a mostly forest-dwelling hunter-gatherer culture, which subsequently entered into an economic relationship (exchange of goods/products) with 'Bantu' sedentary agriculturalists in several Great Lakes countries, including Rwanda. Over time, individual Twa groups often became a 'caste' within the wider 'Bantu' culture. In many cases, Twa now live on the margins of politically and culturally dominant ethnic groups with many of the attendant disadvantages.

As there is no mention of indigenous people or reference to IFC PS7 within the existing project-related documentation, investigations occurred to determine if there were any 'historically marginalised populations' or Twa living within the 10 km 'distance criterion' applied to the Airport Area and the Expressway, initially, to identify Affected Communities for consultation purposes (See Chapter 7: Stakeholder Identification and Engagement).

Based on the results of local-level consultations with Affected Communities, local government entities and locally-based NGOs, no Twa communities were found to be located within the original 10 km 'distance criterion'. However, mention was made, during certain consultations, that Twa households were resident in Nyarugati Village in Kanazi Cell, Nyamata Sector, which is outside the 10 km 'distance criterion'.

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<sup>12</sup> The term 'pygmies' is often considered to be a pejorative; however, it remains in general usage and is used, also, by some members of groups classed as 'pygmies' in self-identification.

Based on the results of the investigations, it is concluded that no 'historically marginalised populations' or Twa are present, in sufficient numbers, in the vicinity of the Proposed Project to constitute a community or group that meets the following IFC PS7 criterion,

*"This Performance Standard applies to communities or groups of Indigenous Peoples who maintain a collective attachment, i.e., whose identity as a group or community is linked, to distinct habitats or ancestral territories and the natural resources therein. It may also apply to communities or groups that have lost collective attachment to distinct habitats or ancestral territories in the project area, occurring within the concerned group members' lifetime, because of forced severance, conflict, government resettlement programs, dispossession of their lands, natural disasters, or incorporation of such territories into an urban area."*

Also, the Twa households in Nyarugati Village are too distant from the Proposed Project Area sites to be considered as belonging to an 'Affected Community'. Therefore, on this basis, it is further concluded that IFC PS7 is not applicable to the Proposed Project.

#### 18.2.3.2 Human Rights

IFC PS1 states that: *"...each of the Performance Standards has elements related to human rights dimensions that a project may face in the course of its operations. Due diligence against these Performance Standards will enable the client to address many relevant human rights issues in its project"*. Since this ESIA Report is aligned with IFC's PSs (except for IFC PS7 which is not applicable), it is believed that all key impacts on human rights are addressed adequately.

### 18.3 Assessment Methodology

#### 18.3.1 Scope

The scope of the socio-economic assessment for the Proposed Project Area has been defined through a scoping process, which identified potentially sensitive receptors and potentially significant impacts. The outcome of the scoping process was documented in the Scoping Report<sup>13</sup>.

Based on the scoping process conclusions, baseline data collection and an impact assessment were undertaken as detailed below. These included consideration of the following:

- Labour and working conditions;
- Land acquisition and livelihoods;
- Community, health, safety and security;
- Influx (unplanned in-migration);
- Economy, employment and livelihoods; and
- Food security and livelihoods.

#### 18.3.2 Baseline Characterisation

Social baseline data collection was implemented through two main approaches:

- A review of secondary data; and
- Key Informant Interviews (KIIs) to obtain primary data.

In addition, members of the ESIA team undertook reconnaissance-type visits to areas around the Airport Area and the Expressway. These provided useful social information, such as an

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<sup>13</sup> Ramboll Environ, 2017. NBIA Terms of Reference/Scoping Report.

understanding of the variety of settlement patterns, relationship of settlement locations to topography, and livelihood links to natural resources, such as surface waterbodies.

#### 18.3.2.1 Review of Secondary Data

Secondary data were obtained from:

- National and local governmental entities/authorities, primarily, the National Institute of Statistics of Rwanda;
- Online materials prepared by a variety of organisations/companies; and
- Reports, plans and programmes, prepared by international organisations, such as multi-lateral banks and members of the UN family.

All these data sources were accessed via the internet.

First, a review of the section entitled 'Socio-economic Environment' contained in: TPS and GIBB Africa (2010) *Proposed New Bugesera International Airport (NBIA) Environmental & Social Impact Assessment (ESIA): Draft Report* was undertaken. The data/information presented in this section is based, in part, on a survey (March 2010) of 1,963 households located in the three Rilima cells of Karera, Ntarama and Kimaranzara; focusing on the households directly affected by the previously proposed airport project, that is those that were living within the designated airport site (an area of approximately 25 km<sup>2</sup>).<sup>14</sup> Although undertaken seven years ago, it is expected that most of the survey results will reflect the situation for similar rural households in the area expected to be affected by the Proposed Project, despite the rapid economic growth and poverty reduction that has occurred in Rwanda. As such, they provide a useful way to ground-truth the official national, provincial and district-level statistics. This survey is referenced in the text below as '2010 ESIA survey'.

It was found that almost all statistical data, issued by the GOR and/or local government entities, pertain to the following levels of government: nation; province and district. Data for the two lower levels of local government: sectors and cells, are not easily available. The most recent census was held in 2012 and, therefore, most datasets refer to 2012 or earlier. However, other sources provide more recent and current data. Key sources of social data used to create the social baseline are referenced as appropriate in the text.

#### 18.3.2.2 Key Informant Interviews

To obtain data applicable at the village level and to balance the data available at district level, 40 key informant interview (KIIs) were organised. The informants were village leaders from villages involved in stakeholder consultations. A semi-structured questionnaire was used to obtain data (see Technical Appendix 18.1 for a list of the villages and a copy of a completed questionnaire). The questionnaire was used by all interviewers to provide consistency in all interviews in terms of topic coverage and recording responses.

The utility of the village-level survey relies on the accurate and up-to-date knowledge of the leader regarding not only village 'facts', such as population level and existing infrastructure status, but also his/her perception of trends and their key characteristics. Therefore, to make this survey as effective as possible, village leaders were given advance guidance on the types of information to be requested at the interview, so that they had time for preparation or research prior to the interview.

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<sup>14</sup> The people living within this area and/or using land in this area have been compensated for their assets, which were acquired by MININFRA, as a preparatory step in making the site ready for the proposed airport. Following the compensation process, these people have left the site and it is now free of human occupancy and other land use activities.

There are some uncertainties in this approach to data acquisition. Even when village leaders are given notice of topics to be covered in survey interviews, it is possible that some of the information they provide is not accurate. Where village leaders responded to questions on certain trends/changes in their settlements, it should be noted that information given by them in the form of perceptions, beliefs or understandings may not have been shared by other inhabitants or supported by official statistics.

### 18.3.3 Construction and Operation Phases Methods of Assessment

The expected significant impacts were assessed and then evaluated, for significance level, using the general methodology contained in Chapter 3: Impact Assessment Methodology, as well as with application of the following inputs:

- Determining the socio-economic Area of Influence (AoI) (see Section 18.3 below);
- ESIA team observations in the field;
- Consideration of the baseline situation;
- Results of stakeholder consultations;
- Expert knowledge and judgement; and
- Previous experience from ESIA work on similar projects or projects in similar social and environmental settings.

### 18.3.4 Significance Criteria

The significance of an impact is determined by a combination of receptor sensitivity and impact magnitude.

Below criteria for allocating sensitivity to a receptor and magnitude to an impact are presented for socio-economic and community health and safety impacts respectively (Table 18-1 to Table 18-4). A matrix for combining receptor sensitivity and impact magnitude to allocate the level of significance to an impact is presented in Chapter 3.

<b>Table 18-1: Receptor Sensitivity – Socio-Economic</b>	
<b>Sensitivity</b>	<b>Criteria</b>
High	An already vulnerable receptor with very little capacity and means to adapt to a given change and maintain/improve quality of life.
Medium	A receptor with limited capacity and means to adapt to a given change and maintain/improve quality of life.
Low	A receptor with some capacity and means to adapt to a given change and maintain/improve quality of life.

<b>Table 18-2: Impact Magnitude – Socio-Economic</b>	
<b>Sensitivity</b>	<b>Criteria</b>
High	An impact that is likely to affect large numbers of groups and/or people or businesses (with number depending on the local context) irrespective of both time-scale and reversibility.
Medium	An impact that is likely to affect a moderate number of groups and/or people or businesses (with number depending on the local context) and which may or may not be reversible.

<b>Table 18-2: Impact Magnitude – Socio-Economic</b>	
Low	An impact that is likely to affect a small number of people (with number depending on the local context) and which is likely to be temporary (up to two years) and reversible.
Very Low	An impact that is unlikely to have a measurable or noticeable effect on the wellbeing of people so that the baseline conditions will be materially unaffected.

<b>Table 18-3: Receptor Sensitivity – Community Health and Safety</b>	
<b>Sensitivity</b>	<b>Criteria</b>
High	<p>Receptors with poor understanding of the risks posed by a Project and how to avoid/minimise them.</p> <p>Receptors such as the young, very old or disabled with high sensitivity to changes in environmental health determinants, such as air quality and noise levels.</p> <p>Receptors such as the poorest, those with low social status and/or marginalised groups with high sensitivity to changes in social health determinants because they have restricted access to medical care, complaint procedures or community representatives able to act in their interests.</p> <p>Receptors sharing resources constantly with the Project such as users of roads, tracks, wild foods and marine resources.</p> <p>Receptors that normally engage in high risk behaviours which make them more sensitive to changes in risk. For example, members of the community who drive dangerously along roads used by construction traffic; those who purchase or provide unprotected sex.</p>
Medium	Receptors likely to experience temporary inconvenience as a result of changes in environmental or social determinants of health. They may share resources occasionally with the project, such as two peak uses of roads each day. They have some, but not complete, understanding of the risks posed by a Project. Have some effective knowledge about Project risks and scoping strategies available
Low	Receptors with effective coping strategies who feel little or no challenge to their wellbeing as a result of project activities. They may share resources with the project occasionally and broadly understand the risks associated with a Project.

<b>Table 18.4 Impact Magnitude – Community Health and Safety</b>	
<b>Sensitivity</b>	<b>Criteria</b>
High	An impact that is expected to cause an increase in mortality greater than 1% and/or 10% additional morbidity (illness/injury) irrespective of both time-scale and reversibility.
Medium	An impact that expected to cause an increase in mortality up to 1% and/or more than 1% additional morbidity (illness/injury). Morbidity (illness/injury) increase may or may not be reversible and, when reversible, may result in an inability to work for a period of at least 1 month.
Low	An impact that is expected to cause an increase in acute and/or chronic morbidity (illness/injury) of less than 1% which is likely to be temporary (up

<b>Table 18.4 Impact Magnitude – Community Health and Safety</b>	
	to 1 year) and reversible, and may result in an inability to work for a period of at least 2 weeks.
Very Low	An impact that is unlikely to have a measurable or noticeable effect on the wellbeing of people so that the baseline conditions will be materially unaffected.

#### 18.3.5 Assumptions and Limitations

Key assumptions and limitations are as follows:

- It was found that almost all statistical data, issued by the Government of Rwanda and/or local government entities, pertain to the following levels of government: national; provincial and district. Data for the two lower levels of local government, sectors and cells, are not easily available. The most recent census was held in 2012 and, therefore, most datasets refer to 2012 or earlier; and
- As mentioned above, even taking into account that village leaders were given notice of topics to be covered in the survey interviews, it is possible that some of the information they provided was not accurate. Where village leaders responded to questions on certain trends/changes in their settlements, it should be noted that information given by them in the form of perceptions, beliefs or understandings may not have been shared by other inhabitants or supported by official statistics.

### 18.4 Baseline Conditions

#### 18.4.1 Socio-Economic Area of Influence (AoI)

The Proposed Project has the potential to cause social impacts within the defined Area of Influence (AoI). The AoI can be considered as the combination of a series of defined areas (sub-AoIs) nested within a spatial hierarchy (each area being the focus of a specific combination of impact types according to the location and type of project activities), as follows:

- Rwanda: is the AoI at the macro-level social and economic impact of construction and operation of the Proposed Project will affect receptors at the national level;
- Certain linear 'corridors' within the Eastern, Kigali and Southern provinces: these 'corridors' potentially constitute a sub-AoI for noise impacts as aircraft taking off and landing will follow designated flight paths and for a limited period they will be flying at relatively low altitudes and thus likely to impact receptors near these flight paths. As all flight paths, will centre on the airport, which is in the Eastern Province (but close to the borders with the other two provinces), and given that the impacts will be most pronounced when/where aircraft are flying at low altitudes, these impacts are expected to be experienced not only primarily in the Eastern Province but also in the Kigali and Southern provinces;
- Bugesera, Nyarugenge, Kicukiro, Rwamagana and Ngoma districts: This area is a sub-AoI as it will experience both direct and indirect and social impacts from construction and, particularly, operation of the airport. Most of the impacts will be experienced within Bugesera District as the areas of the other districts that fall under the two buffer zones are relatively small. Also, a small section of the Expressway is in Kicukiro District; and
- Rilima Sector within Bugesera District: will be a sub-AoI for most of the construction and operational impacts related to the Proposed Project, linked infrastructure (such as the Expressway) and Associated Facilities. The Proposed Project Area is approximately 25.5

km<sup>2</sup> and is located almost entirely in the Rilima Sector. The Proposed Project occupies almost 30% of the land area in this sector.

The social baseline presented below focuses, primarily, on Bugesera District (with some information on the sectors most affected by the Proposed Project) and villages in the sectors most affected.

#### 18.4.2 Rwanda: Overview

The Rwandan National Institute of Statistics (2012) has written a high-level account of recent socio-economic changes in Rwanda<sup>15</sup>: and a summary is presented in this 'Overview' section with additions from other sources, which provide more current data/information (see footnotes). Following the genocide, in the mid-1990s, rapid population growth occurred which, was considered by the national government to contribute to poverty, malnutrition and poor health among the population as well as to environmental degradation. Rwanda still has a high population growth and density. Between the 2002 and 2012 censuses the population grew at an average annual rate of 2.3% (this is projected to reach 2.53 by 2106)<sup>16</sup>. According to the 2012 census, the population density was 415 inhabitants per km<sup>2</sup>. This was 321 inhabitants per km<sup>2</sup> in 2002 whereas in sub-Saharan Africa the average population density is 23 inhabitants per km<sup>2</sup>. Ethnically (excluding foreigners residing in Rwanda), Rwanda consists of Tutsi, Hutu and Twa (also known as BaTwa) peoples. The Twa ethnic group has a significantly lower population compared to the other ethnic groups; however, official statistics do not record the sizes of the populations of these groups. Rwanda government policy and practice is ethnically 'blind' insofar as it only recognises Rwandans. However, it does recognise the existence 'historically marginalised populations' (a category which includes the Twa).

The 1994 genocide severely damaged Rwanda's fragile economic base, significantly impoverished the population, particularly women, and temporarily stalled the country's ability to attract private and external investments. However, Rwanda has made substantial progress in stabilising and rehabilitating its economy. GDP has rebounded: between 2001 and 2015, real gross domestic product (GDP) growth averaged about 8% per annum (admittedly from a low base) and inflation has been reduced to single digits (the rate for 2016 was 7.3%<sup>17</sup> and currently the rate (consumer price index) for year-on-year July 2017 is 9.4%<sup>18</sup>, but this is expected to decline in the future). The inflation rate in rural areas is higher than the urban rate thus affecting the rural population, which tends to be poorer, disproportionately as the main increases have been in food, non-alcoholic beverages, housing and utility services (water, electricity, gas) and fuels. Similarly, Rwanda's GDP *per capita* has increased from less than USD 200 in 1994 to USD 644 in 2012.

There have been development successes over the last decade, which include high economic (GDP) growth and rapid poverty reduction (39% of the population lived below the poverty line in 2013/2014<sup>19</sup> according to government statistics, compared to 57% in 2006) and, since 2005, reduced inequality (measured by the Gini coefficient it has reduced from 0.49 in 2011 to 0.45 in 2014<sup>20</sup>). Building on the successes, the second Economic Development and Poverty Reduction

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<sup>15</sup> National Institute of Statistics of Rwanda (NISR), Ministry of Finance and Economic Planning (MINECOFIN) [Rwanda], 2012. Rwanda Fourth Population and Housing Census. Thematic Report: Mortality

<sup>16</sup> <https://www.cia.gov/library/publications/the-world-factbook/geos/rw.html>

<sup>17</sup> <http://statistics.gov.rw/publication/rwandas-cpi-73-pct-year-year-december-2016>

<sup>18</sup> <https://tradingeconomics.com/rwanda/inflation-cpi>

<sup>19</sup> National Institute of Statistics of Rwanda, 2013/2014. Rwanda Poverty Profile Report. <http://www.statistics.gov.rw>

<sup>20</sup> <http://www.worldbank.org/en/country/rwanda/overview>

Strategy II (2013-2018)<sup>21</sup> aims to achieve the following goals by 2018: raising GDP *per capita* to USD 1,000; achieving less than 30% of the population below the poverty line; and less than 9% of the population living in extreme poverty.

Despite its significant socio-economic achievements, Rwanda remains a poor rural country with almost 90% of the population engaged in agriculture (mainly at the subsistence level) and some mineral and agro-processing. The country's limited resources, mainly agricultural, are not sufficient to ensure the dietary needs of its population. Subsistence crops are produced on family farms (less than one hectare on average in 1993), which are shrinking more and more because of population pressure and inheritance patterns.

Other sectors of the economy, for example commercial farming (coffee, tea, and pyrethrum), crafts and small/medium enterprises remain at a modest scale. The secondary sector (processing of raw materials, food manufacturing, textile manufacturing and other industries employs 2.6% of the labour force, and the tertiary sector (provision of services to consumers; including a wide range of businesses such as financial institutions, schools and restaurants) employs a further 10.0%. The country has few mineral resources. Minerals exports declined 40% in 2009 and 2010 due to the global economic downturn and are only gradually recovering.

Rwanda faces important challenges, in particular: likely continuing relatively high population growth rate; high overall and increasing population density, pressure on land and other natural resources; and fragmentation of land holdings (reducing agricultural cost-effectiveness). These factors will hinder the government's efforts to reduce poverty and prevent environmental degradation.

#### 18.4.3 Bugesera District

##### 18.4.3.1 Demographics

Administratively, the Proposed Project Area is located within Bugesera District, one of seven districts of the Eastern Province<sup>22</sup>. Bugesera District ranks third in terms of its population size, within the Eastern Province, accounting for 361,914 (14% of the province's population). The Rilima Sector has a population of 26,203, which corresponds to 7% of the population of the district. The average annual growth rate is 3.1%. Due to its relative size compared to other districts its population density is amongst the lowest for all districts (280 people per km<sup>2</sup> compared to 415 per km<sup>2</sup> for Rwanda). The district's population is predominantly rural: 92.0% of the resident population lives in rural areas compared to 8.0% in urban areas. By sector there are distinct differences, Rilima Sector has no urban dwellers while neighbouring Nyamata District is the most urbanised sector with 48.9% of its population residing in urban areas<sup>23</sup>.

The age profile of the district shows that approximately 52% (189,754) people are aged between 16-64 years (economically active), followed by those aged between 0-15 years (45%). The population above 65 represents 3%.<sup>24</sup> Thus, the dependency ratio (ratio of population considered to be dependent, that is under 15 and over 64 years, to those of working age, that is over 15s and under 64 years) is relatively high, at approximately 90%. This ratio is higher than the ratio for Rwanda which is likely to be between 80 to 85% (based on a figure of 82.7%

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<sup>21</sup> [http://www.rdb.rw/uploads/tx\\_sbdownloader/EDPRS\\_2\\_Main\\_Document.pdf](http://www.rdb.rw/uploads/tx_sbdownloader/EDPRS_2_Main_Document.pdf)

<sup>22</sup> Bugesera District Development Plan (2013-2018). Accessed from [http://www.bugesera.gov.rw/fileadmin/user\\_upload/Bugesera\\_District\\_DDP\\_2012-17\\_Final.pdf](http://www.bugesera.gov.rw/fileadmin/user_upload/Bugesera_District_DDP_2012-17_Final.pdf).

<sup>23</sup> National Institute of Statistics of Rwanda, 2012. District Profile, Bugesera. <http://www.statistics.gov.rw>.

<sup>24</sup> District Profile, Bugesera. Accessed from <http://statistics.gov.rw/publication/eicv-3-bugesera-district-profile>.



in 2013/2014)<sup>25</sup>. The high dependency ratio means that those of working age in the District are responsible for supporting a significant number of dependents placing considerable strain on livelihood strategies and the resources that support them.

At the national level, the average household size is 4.6 individuals per household (2013 - 2014 figures)<sup>26</sup>. Three households out of ten (29%) are headed by women. Female-headed households are more common in rural areas (30%) than in urban areas (24%). Bugesera District has the second lowest percentage of female-headed households of all provinces/districts excluding Kigali Province<sup>27</sup>. The 2010 ESIA survey recorded a figure of 36.4 female-headed households which is high compared to the current District situation and may reflect specific local and historical conditions.

Migration data produced by the National Institute of Statistics of Rwanda is based on lifetime migration and recent migration which are defined as follows:

- A lifetime migrant is a person whose residence at the time of the census (conducted in 2012) is different from their place of birth; and
- A recent migrant is a person whose residence at the time of the census is different from his previous one in the last five years preceding the census.

At the district level, Bugesera District ranks the third lowest regarding lifetime in-migrants and the second lowest with respect to recent in-migrants and had the highest number of lifetime and recent out-migrants (Figure 18-1 and Figure 18-2)<sup>28</sup>. The net positive migration for recent migrants contrast with the situation for lifetime migrants; possibly suggesting an increase in the attraction of Bugesera District to those who have made decisions to migrate recently. It is possible that the Proposed Project has been a contributor to decisions to in-migrate by those who have moved recently. This potential 'pull' factor does not disguise the historical reality that, in recent years, net negative migration has been occurring.

It is reasonable to assume that most in-migration occurs for economic reasons; therefore, most in-migrants to Eastern Province are not attracted to Bugesera District as they do not consider it to the best destination in terms of economic opportunity. This implies that Bugesera District is not economically advanced compared to other districts of Rwanda. The relatively high out-migration figures would seem to support this view.

The 2010 ESIA survey found that 36.5% of the respondents migrated from other places within the country to the Proposed Project Area. This could be due, in part to knowledge of the Proposed Project as villages in its vicinity report in-migration due to the Proposed Project (Section 18.4.4). This is slightly higher than the equivalent figure for in-migration to Bugesera District (approximately 28%) in 2012, but the difference could be accounted for by specific local factors and changing migration patterns over time.

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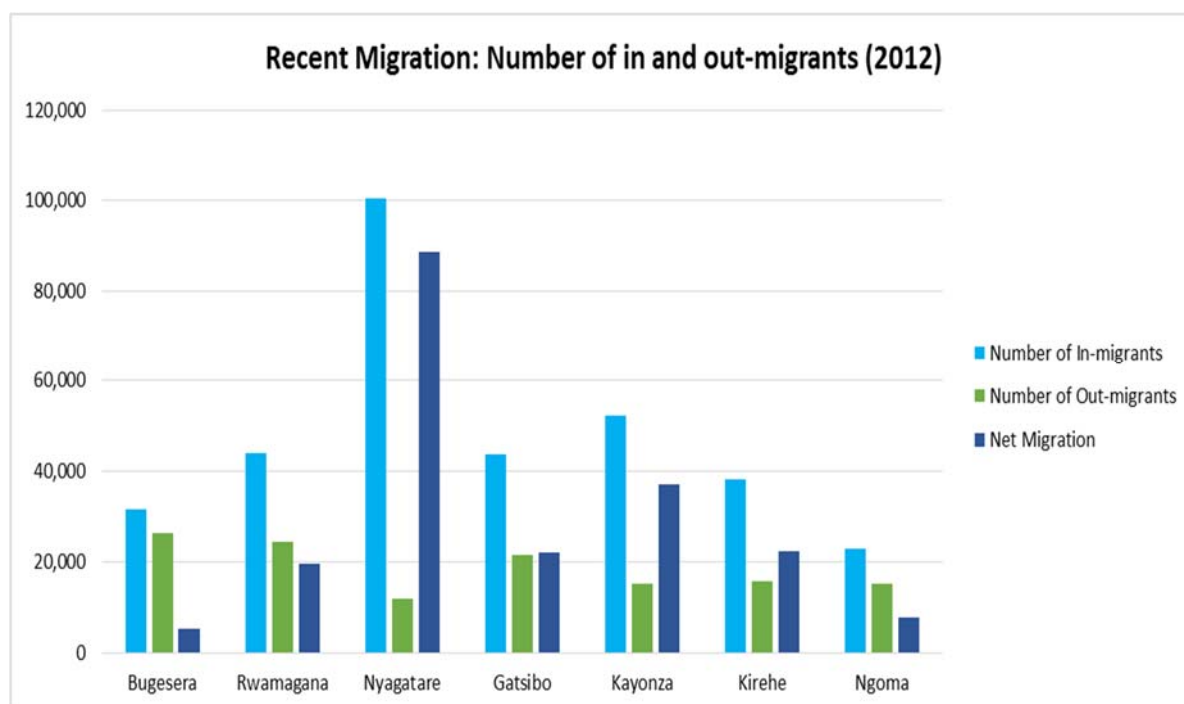
<sup>25</sup> National Institute of Statistics of Rwanda, 2013/2014. Rwanda Poverty Profile Report. <http://www.statistics.gov.rw>.

<sup>26</sup> National Institute of Statistics of Rwanda, Statistical Yearbook 2016.

<sup>27</sup> National Institute of Statistics of Rwanda, 2012. Population and Housing Census: Main Indicators Report. <http://www.statistics.gov.rw>.

<sup>28</sup> Fourth population and Housing Census, Rwanda, 2012: Main Indicators Report. Accessed from <http://www.statistics.gov.rw>.

**Figure 18-1: Number of Lifetime In and Out-Migrants by Districts (2012)**



**Figure 18-2: Number of Recent In and Out-Migrants by Districts (2012)**

#### 18.4.3.2 Economic Activity and Livelihoods

The national and local labour markets are dominated by agriculture. Agricultural production is largely based on subsistence farming, with a production breakdown at national level as follows: food crops: 85%, forestry: 7%, livestock: 5%, export crops: 2%, and fisheries: 1%. Other key sectors include industry and services.

Bugesera District ranks 17<sup>th</sup> in Rwanda regarding number of households involved in agriculture and livestock activities. Crop farming and livestock primarily contribute to the district's economy relating to 77.8% of the population depending on agriculture against a national average of 72%. Results from the 2010 ESIA survey indicate that, *"Female headed households in the project area control less than 15% of the total income from wage employment and own businesses. They however control more than 70% of the total income from farming activities. This suggests*

*that their main income is totally land based. Access to agricultural land is therefore very important to their economic well-being."*

There are limited data available on employment rates for Bugesera District. Unemployment is mainly an urban phenomenon; the unemployment rate is three times higher in urban areas (7.7%) than in rural areas (2.6%); probably due to the high levels of subsistence farming in rural areas 'absorbing' labour. Comparisons of unemployment rates in all districts show that the Bugesera District has the highest unemployment rate (5%) when compared to the other districts (the equivalent figure for Rwanda is 3.4%)<sup>29</sup>.

Child labour occurs in Rwanda (based on numbers of under 17s which were employed during seven days preceding the census). In the 5 to 9 years and in the 10 to 14 year age bands the figures (both sexes) for Rwanda are 0.9% and 2.8% respectively (of all children in these age bands). The figures for Bugesera (0.7% and 2.8% respectively) closely resemble the national figures. Slightly more boys and girls are employed at both Rwanda and Bugesera District levels. There are no statistics on forced labour.

#### 18.4.3.3 Poverty

In Bugesera District, 48.4% of people are considered to fall below the poverty line: 28.3% are poor and 20.1% are extremely poor<sup>30</sup>. These figures are higher than the equivalent figures for Eastern Province which itself exhibits higher poverty rates than Rwanda. As presented in the National Institute of Statistics of Rwanda (2015) *2013/2014. Rwanda Poverty Profile Report*<sup>31</sup>, rural areas have both a higher number of poor people and higher relative incidence of poverty, at 42% compared to 15% in urban areas.

#### 18.4.3.4 Land Use and Land Tenure

##### Land Use

Most Rwandan households cultivate at least one parcel of land; most households are dependent on agriculture as their main or only source of income, especially in rural areas (96%). The 2010 ESIA survey recorded a figure of 90.9%. The average area cultivated per rural household is 0.6 ha and only 16% of rural households cultivate 0.9 ha or more. In Eastern Province, households cultivate land as follows:

- 41% of households cultivate land between 0.3 ha and 0.9 ha;
- 32% of households cultivate land less than 0.3 ha;
- 24% of households cultivate land between 0.9 ha and 3 ha; and
- 2.5% of households cultivate more than 3 ha.

Results from the 2010 ESIA survey show that all the land owners in the project area had registered their land and possessed the appropriate documentation. Based on estimates given by the survey respondents, the average land parcel size owned by a household is about 14,963m<sup>2</sup> (approximately 1.5 ha). This may indicate that average size land holdings in certain areas of Bugesera District may be above both the national and Eastern Province averages.

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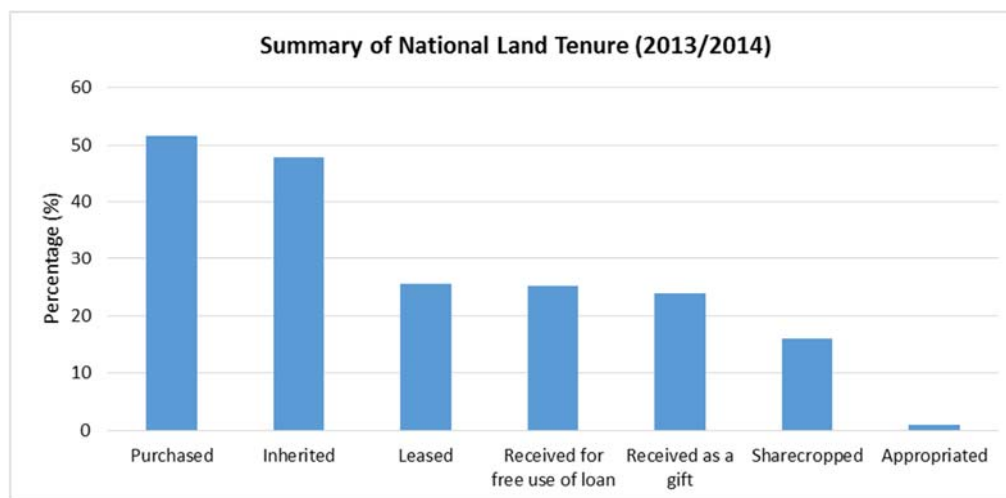
<sup>29</sup> National Institute of Statistics of Rwanda, 2012. Population and Housing Census: Main Indicators Report. <http://www.statistics.gov.rw>.

<sup>30</sup> Bugesera District Development Plan, 2013-2018. [http://www.bugesera.gov.rw/fileadmin/user\\_upload/Bugesera\\_District\\_DDP\\_2012-17\\_Final.pdf](http://www.bugesera.gov.rw/fileadmin/user_upload/Bugesera_District_DDP_2012-17_Final.pdf)

<sup>31</sup> National Institute of Statistics of Rwanda, 2013/2014. Rwanda Poverty Profile Report. <http://www.statistics.gov.rw>.

### Land Tenure

Results of a household survey, undertaken for the National Institute of Statistics of Rwanda, show that 68% of all households own at least one land parcel that was inherited, while 46% of households own a parcel that was purchased. Richer households are more likely to have purchased land, compared to poorer households which are more likely to have inherited land (71%).<sup>32</sup> A summary of the land tenure in the Eastern Province is presented in Figure 18-3. As indicated in the figure, most land in the Eastern Province has been purchased (51%) or inherited (48%). Nationally, 85% of cultivating households have the right to sell their land or use it as a guarantee for a loan.



**Figure 18-3: Summary of National Land Tenure (2013/2014)**

#### 18.4.3.5 Infrastructure and Utility Services

##### Electricity

In Bugesera District, only 4.3% of households use electricity as their main source for lighting, ranking the District 11th out of all districts. However, in urban areas within the District, 48.7% of households use electricity as their main source for lighting.

For main sources of energy for cooking at the national level, 95% of households depend either on firewood (82%) or charcoal (13%). Firewood is more likely to be used in rural areas (93%) than in urban areas (31%), while charcoal is more likely to be used in urban areas (63%) than in rural areas (3%). The 2010 ESIA survey states that the majority (98.1 %) of the households reported that they use firewood as their main source of fuel.

##### Water

Nationally, approximately 73% of the housing units collect their water from improved water sources (internal pipe-borne water and protected spring/wells), with protected springs/wells (37%) and public taps outside the compound (28%) being the most common sources. The percentage of houses using improved water sources is higher in urban areas (92%) than in rural areas (69%).

In urban and rural areas within Bugesera District, the main sources of water supply are from improved sources, with 85.7% and 64% of urban and rural households obtaining their water supply from these two sources respectively. The highest number of private households using

<sup>32</sup> National Institute of Statistics of Rwanda, 2013/2014. Rwanda Integrated Household Living Conditions Survey. <http://www.statistics.gov.rw>.

water from unimproved sources are found in Mwogo (98.4%), Rweru (84.6%) and Juru (73.8%) sectors. The highest number of private households that use water from improved sources are found in Ruhuha (95.9%), Mayange (92.6%) and Nyarugenge (89.7%) sectors.

#### Sewage Treatment/Disposal

The main types of toilet facilities nationally used by households are private pit latrines (82%), with the rest using communal/shared pit latrines (12%); only 0.8% of the households are equipped with flush toilet/WC system. Private pit latrines are the most used in urban (58%) and rural areas (89%), followed by shared pit latrines, 37% and 8%, in urban and rural areas respectively.

In the Bugesera District, 58.4% of households dispose sewage in the bush, while 21.8% of sewage is disposed using other/unspecified modes. In the provinces, sewage disposal in the bush is the highest in the Eastern (53%) and Western provinces (46%). Nationally, approximately 42% of households use the bush for sewage disposal while 14% use sumps, 11% use courtyards and 9% use cesspits, while 16% use unspecified modes of sewage disposal. Relative to Rwanda and Eastern Province, Bugesera District has less access to safe sewage treatment/disposal.

#### *18.4.3.6 Community Health and Safety*

Bugesera has 15 health centres (one per sector) and a hospital at Nyamata. Despite the number of health centres the mean walking distance to a health centre in Bugesera District is 74.5 minutes<sup>33</sup>. All district residents are mobilised to subscribe to health insurance services (*mutuelle de santé*) available in each health centre. Almost 90% of the population is now covered. This enables affordable access to diagnosis and treatment to be provided.

The 2010 ESIA Report states that the leading causes of death in the project area are Malaria, Acute Respiratory Infections Diarrhoea, HIV/AIDS and Pulmonary Tuberculosis. These remain key threats despite improvements in prevention and treatment. The epidemiological profile of Rwanda is still dominated by communicable diseases, which constitute 90% of health complaints in health facilities. Apart from malaria and other communicable diseases, Rwanda has been experiencing an increasing threat from HIV/AIDs with a national prevalence estimated at 3% in the general population aged 15-49 years (2010 data). In 2014, the prevalence was 2.8% in the general population aged 15-45 years.<sup>34</sup> In Bugesera District, the HIV prevalence rate is not very high (1%); however, maintaining the rate or lowering it “...is a big struggle”<sup>35</sup>. The overall prevalence of sexually transmitted infections (STIs) among women was 10.9% and 9.9% among men. Self-reported STI prevalence increased with age. The highest prevalence was reported was 15.1% and 12.2% among women and men aged 40 - 49 respectively.

Bugesera is also experiencing an emergence of non-communicable diseases such as cancer and diabetes associated with the development of high-risk behaviours and/or urbanization/increasing affluence. Also, protein-energy malnutrition is a widespread problem. It primarily affects pre-school children who still represent the most vulnerable group. The malnutrition rate in this group is approximately 35%. In Rwanda, the rate of acute malnutrition (wasting) measured by weight to height is relatively low at 3.6% and is within acceptable limits. Despite the success in reducing poverty, levels of chronic malnutrition among children aged 6-

<sup>33</sup> National Institute of Statistics of Rwanda EICV3 DISTRICT PROFILE East – Bugesera (undated)  
file:///E:/Projects/Rwanda\_Bugesera\_Airport\_ESIA/Scoping\_Report\_ToR/Social\_Baseline/EAST\_BUGESERA\_NOT%20READ.pdf

<sup>34</sup> RWANDA: Factsheets of Health Statistic, 2016. WHO Regional Office for Africa.

<sup>35</sup> Bugesera District Development Plan, 2013-2018, Available at:

[http://www.bugesera.gov.rw/fileadmin/user\\_upload/Bugesera\\_District\\_DDP\\_2012-17\\_Final.pdf](http://www.bugesera.gov.rw/fileadmin/user_upload/Bugesera_District_DDP_2012-17_Final.pdf)

59 months remained very high over the last 20 years: 49% in 1992; 51% in 2005, 44% in 2010 and 43% in 2012 (NISR, MINAGRI, 2012)<sup>36</sup>.

Finally, in 2013, Rwanda has a road fatality rate of 32.1 per 100,000 inhabitants per year<sup>37</sup> against an African average of 26.6 and against a European average of 9.3.

#### 18.4.4 Community-Level

Key Informant Interviews were held, with the village leaders, in 40 villages (all the villages consulted as listed in Chapter 7 Stakeholder Identification and Engagement) and the results are summarized below under a series of headings similar to those used in the section above on Bugesera District.

##### 18.4.4.1 Demographics

None of the villages surveyed relocated from the Airport Area. However, 17 of the 40 villages have experienced households arriving because of relocation from the Airport Area. The population is increasing in all villages not just due to natural population increase (excess of births over deaths per unit of time), but also because of positive net migration (more people arriving than leaving). Two important reasons for in-migration are relocation (as mentioned above) and a desire to be near to the construction site/s for the airport: the following five villages have experienced influx (project-related and unplanned in-migration) related to the airport: Biraro; Gaseke; Kamabuye; Karambi; and Nyamure. Other reasons for recent in-migration are:

- Seeking to improve their livelihoods/looking for a better life;
- Searching for jobs and new opportunities; and
- Searching for land for settlement and agriculture.

There will be some overlap in these reasons, for example, many relocated people, would be looking for land for settlement and agriculture. Only eight villages have not seen a substantial increase in the number of households; whereas in Gyacamo and Kabeza villages (Kabeza Cell) in and out-migration is stable and in one village, Nyabagendwa, currently there is negative net migration (more leaving than arriving).

The size of villages varies from approximately 36 households in Kivumu Village to 512 households in Kabeza Village (Kazenze Cell). However, most villages have approximately between 150 households and 300 households.

Kinyarwanda is the most commonly spoken language in all the villages. No Twa were found in the villages consulted. Also, based on all local-level consultations (Affected Communities, local government entities and locally-based NGOs), no BaTwa communities were found to be located within the original 10 km 'distance criterion' (Chapter 7 Stakeholder Identification and Engagement) around the Proposed Project. However, mention was made, during certain consultations, that Twa households are resident in Nyarugati Village in Kanazi Cell, Nyamata Sector, which is outside the 10 km 'distance criterion' from the Proposed Project.

##### 18.4.4.2 Employment

In all villages, the labour market is heavily dominated by agriculture, with more people generally engaged in self-employed agriculture than as waged workers. Generally, more women are involved in agriculture (self-employed and waged workers combined) than men, except for 10

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<sup>36</sup> [http://www.rdb.rw/uploads/tx\\_sbdownloader/EDPRS\\_2\\_Main\\_Document.pdf](http://www.rdb.rw/uploads/tx_sbdownloader/EDPRS_2_Main_Document.pdf)

<sup>37</sup> WHO Global Health Observatory data repository, <http://apps.who.int/gho/data/node.main.A997>

villages. Most villages have approximately 10 or less people employed in the government and private sectors. Kurugenge and Byimana villages had the highest number of such employees with 80 people and 98 people employed in government and private sectors respectively.

#### *18.4.4.3 Agriculture and Fisheries*

Subsistence crop cultivation is the main type of agriculture in all villages with people being dependent on it for food, supplemented by buying food from markets. In the case of 17 villages (almost 50% of the total number in the survey), food production from subsistence agriculture is insufficient to meet the needs for farming households. The main crops farmed in all villages are beans, maize, cassava and banana with other crops, farmed in certain villages, being sweet potatoes, soya beans and sorghum. Several village leaders stated that prolonged drought is a key issue facing farmers with presence of crop pests and diseases and lack of agricultural land also mentioned as key issues in some villages. In addition, one of the three factors most mentioned as affecting village quality of life was lack of agricultural land.

Six villages are involved in capture fisheries and/or aquaculture using Lake Kidogo; one village (Kurugenge) undertakes capture fishing on the Akagera River and one village (Mwesa) uses the Mwesa wetland (eight villages in total). The numbers of village residents employed/engaged, primarily, in fishing varies from approximately 60 men in Uwimpunga Village to 10 men or fewer in the other seven villages. Women are not involved in catching fish or management of aquaculture, but they play a role on processing (drying/smoking) and selling of fish. Although in most villages the numbers are small; for these eight villages, fisheries add diversity to the local economy and provides a source of valuable protein - an important factor in a country with a persistent problem with protein-energy malnutrition.

Unemployment varies significantly amongst the villages as follows:

- Seven villages have 10 or less men aged over 16 not in waged employment or not full-time self-employed farmers;
- Fifteen villages have between 11 and 50 men aged over 16 not in waged employment or not full-time self-employed farmers;
- Four villages have between 51 and 100 men aged over 16 not in waged employment or not full-time self-employed farmers;
- Ten villages have between 101 and 200 men aged over 16 not in waged employment or not full-time self-employed farmers; and
- Four villages have between 201 and 300 men aged over 16 not in waged employment or not full-time self-employed farmers.

#### *18.4.4.4 Infrastructure and Utility Services*

Access to potable and non-potable water supply, electricity, wastewater treatment facilities, and internet and mobile telephone services varies, greatly, between villages. Those that are larger and located closer to Kigali City tend to have more households accessing infrastructure and utility services.

##### Water

Only six villages have households with indoor access to potable water (coverage given as percentage of all households):

- Karambo Village – 5%;
- Nyabigugu Village – 40%;
- Gaseke Village – 44%;

- Gacyamo Village – 80%; and
- Bishweshwe and Biraro Villages – 100%.

For approximately half the villages (21), potable water is located between 0.5 and 2 km from the village. For the rest, it is located within 0.5 km. Five villages do not have access to potable water within 2 km: Amizero, Byimana, Kivumu, Mwesa, and Rurimpisi. However, non-potable water is accessible between 0.5 km and 2 km.

Considerable time and effort, particularly for males, is spent obtaining and transporting water for those households with no water supply in/near their houses. This is mostly related to topography and settlement pattern. Most water sources are in valleys or low-lying areas. Many settlements are in higher areas, often just below ridge lines or on plateau areas so water has to be transported up slopes often by bicycle (Figure 18-4).



**Figure 18-4: Transport of Water near Rilima Village**

#### Electricity

Only four villages have no households with access to electricity in the household and three villages have all households with access to electricity. In most of the remaining villages access varies significantly; for example, in 15 villages more than 80% of the households have electricity, whereas in 12 other villages coverage is less than 20%.

#### Mobile Phone and Internet Access

There is mobile telephone coverage for every village. In all but two villages, most households have access mobile telephones. Rurenge and Rurimpisi villages have the lowest number of households with mobile telephones (8% and 40% respectively). The remaining villages have 50% or more households with mobile phones.

Internet access is limited throughout all the villages. Karumuna Village has the highest amount of households with in-house access to internet (40%). In the rest of the villages, 20% or less



of the households have in-house access to internet and 24 villages have no in-house access to the internet.

#### Wastewater Treatment

Most households in the villages do not have direct access to wastewater treatment. Only six villages have households with direct access to wastewater treatment (coverage given as percentage of all households):

- Gasabo Village – 8%;
- Kabukuba, Kimaranzara and Mwesa villages - 20%;
- Bishweshwe Village - 70%; and
- Kamabuye Village – 100%.

#### *18.4.4.5 Incomes*

Trends in annual average incomes varies between the villages. It has increased in 27 villages, decreased in nine villages and remained stable in four villages. Just over half of the villages (24) do not exhibit a wide range of incomes.

#### *18.4.4.6 Health Status*

Malaria is the main illness affecting all villages. Parasitic worm infections, HIV/AIDS and diarrhoea were also noted as main illnesses respectively in 16, four and three villages respectively. Both the health of villagers and their access to health services is deemed to have improved or stayed the same in most villages in the past 10 years, with the following exceptions:

- In Gacyamo, Gataraga and Kabeza (Kazenze Cell) villages, the health of villagers is deemed to have declined whilst access to health services has improved;
- In Mugendo Village the health of villagers is deemed to have declined whilst access to health services has stayed the same; and
- In Karambi and Karirisi villages, the health of villagers is deemed to have improved whilst access to health services has declined.

#### *18.4.4.7 Transport*

Car ownership is very limited throughout the villages varying from zero to nine people with cars. Bicycles and/or motorcycles are the main mode of transport in all villages. The condition of the road network was reported as satisfactory in 25 villages and unsatisfactory in 15 villages.

#### *18.4.4.8 Social Conditions/Quality of Life*

The three factors most mentioned across the villages, as affecting quality of life, are:

- Lack of clean water;
- The number and type of job opportunities; and
- Lack of adequate agricultural land.

Other key issues mentioned in several villages, as affecting quality of life, are:

- Lack of electricity;
- Access to and quality of health care;
- In/out migration;
- Access to and quality of educational provision; and
- Access to shops and social facilities/services.

#### 18.4.5 Summary

Despite several successes in dealing with its challenges and sharing in the overall distribution of benefits from Rwanda's steady national-level socio-economic improvements, Bugesera District has some key sensitivities, which are relevant for an assessment of the likely impacts of the Proposed Project, as follows:

- The District is relatively poor compared to other Districts and the nation with about half of the population being poor, including 20% that is extremely poor;
- Approximately 30% of households still use an unimproved drinking water source;
- Fewer than 10% use electricity for lighting;
- Almost 70% of the households walk more than an hour to reach a health centre;
- Agriculture is the main economic activity and source of income, but most households (approximately 70%) cultivate under 0.9 ha of land (which is the Food and Agriculture Organization's suggested land amount for Rwandan households to conduct sustainable agriculture), including 30% with under 0.3 ha of land;
- There is a relatively high out-migration rate indicating a lack of acceptable economic opportunities; and
- Employment status by sex indicates that females are more occupied in small-scale farm activities than males and less involved in other types of employment that provide high income such as independent non-farm or wage non-farm work.

#### 18.4.6 Social Receptors

Social receptors in the identified socio-economic AoI (with sensitive receptors in ***bold italics***) are:

- Communities near the Expressway, the Airport Area and under the flight paths;
- ***Those individuals, households and communities which have experienced physical and economic displacement;***
- Those households/individuals which are expected to experience one or both types of displacement;
- ***Vulnerable individuals, households and groups (such as the very poor, elderly, disabled/chronic sick, orphan- and female-headed households);***
- ***Those groups, households and individuals who depend to some extent, for maintaining their livelihood status, on utilising the network of tracks and paths that will be blocked permanently or temporarily by the Proposed Project;***
- Local businesses and service providers;
- Road users; and
- ***Individuals, households and communities dependent on unimproved water sources (approximately 30% of all households).***

### 18.5 Potential Impacts

Arising from the Scoping Report findings and the results of post-scoping stakeholder engagement a range of broad impact 'issues' and then specific impacts that fall within the scope of each broad impact 'issue' were identified (Tables 18-5 to Table 18-7). There is a table for each of the pre-construction, construction and operation phases; inevitably, there is some overlap in impacts, especially between the construction and operation phases. In addition, there is a discussion of the impacts associated with land acquisition and involuntary resettlement

actions, undertaken from 2010 to 2015, in the context of work to assess and manage the impacts associated with the previously proposed project.

#### 18.5.1 Previously Proposed Development

##### *18.5.1.1 Introduction*

In 2010, a Draft ESIA Report and a Draft RAP<sup>38</sup> were prepared, by TPS and GIBB Africa, in relation to a previously proposed project for the development of a new international airport on the same site. A RAP was needed to manage the land acquisition and resettlement process with respect to the land, required by the Ministry of Infrastructure (MININFRA), for a new airport (an area of approximately 25.5 km<sup>2</sup>). The Draft ESIA Report (2010) and Draft RAP (2010) were prepared in line with Rwandan regulatory requirements, with consideration of the applicable World Bank safeguarding policies (Draft ESIA Report (2010)) and IFC 2006 Performance Standards (draft RAP (2010)). The Draft RAP (2010) was submitted to the relevant Rwandan statutory authorities. Although this project did not proceed as originally envisaged, land acquisition occurred (and subsequent displacement of all inhabitants in the 25.5 km<sup>2</sup> area) under the direction of the RCAA, later joined by MININFRA in 2014, in anticipation that the land would still be required for a new international airport.

##### *18.5.1.2 Land Acquisition and Livelihood Impacts*

The acquired land (approximately, 25.5 km<sup>2</sup>) is entirely located in Bugesera District and almost entirely within Rilima Sector with a small portion in Juru Sector. Similarly, most of the Airport Area is in Karera Cell with smaller areas within Ntarama and Kimaranzara cells.

According to the Draft RAP (2010), land acquisition would affect:

- 25 villages wholly or partly located in the leased area;
- 2,079 households amounting to 7,444 people (all were physically displaced probably and most were economically displaced);
- 402 households located outside the area, but with land within the area (economically displaced only) – giving a total number of 2,481 affected households. The number of people, affected by economic displacement is not provided, but it may be estimated as being approximately 1,500 (based on the average household size). People/households affected by land take are referred to as Project-Affected Persons (PAPs);
- Several business enterprises (to be removed); and
- Communal social infrastructure such as schools, churches, health posts/clinics (to be removed).<sup>39</sup>

Just over 90% of all the affected households were considered to practise subsistence agriculture with the remainder being employed in the public sector (such as teachers and civil servants) and private sector (small shops and other business enterprises including transport provision).

During preparation of the Draft RAP (2010) stakeholder engagement was undertaken with a range of stakeholders at village and local government levels. The village – level consultation results are presented in a dedicated chapter in the Draft ESIA Report (2010) and these give an indication of the impacts of the expropriation process, underway at that time, as perceived by local-level stakeholders. In a summary of the ‘public’ consultation results it is stated that,

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<sup>38</sup> Draft Environmental and Social Impact Assessment, 2010 and the Draft Resettlement Action Plan (Volumes 1 and 2), 2010.

<sup>39</sup> It is not clear from the RAP as to the extent to which these business and communal and/or community assets would be relocated to new locations.

*“Owing to NBIA being a government project, the people within the project area did not have any other choice but to consent to the project. However, the major concern is the issue of relocation and compensation that needs to be addressed carefully so that the livelihood of the people is not adversely impacted upon.”*

The detailed presentation of the results of the ‘public’ consultations, especially those involving villages and focus groups of local people, gives many examples of concern about relocation and compensation including complaints that the ‘ban’ on any kind of economic development in the proposed airport site area was harmful to the interests of the villagers as they were in a kind of limbo as they were not able to invest/expand their economic activities whilst the same time not being sure as to when they might be relocated and receive compensation. For example,

- *“Young men are no longer marrying since they are not allowed to build new houses in the project proposed area.*
- *Deteriorating economic conditions due to the fact that people are not allowed to undertake any long-term investment.”*

More recent data on the actual expropriation process was obtained from MININFRA which has produced several Progress Reports regarding the expropriation process. The most recent Progress Report, viewed by Ramboll Environ, is dated 15 June 2017<sup>40</sup>. In this Progress Report, it is stated that the total number of households affected is 2078 (virtually identical to the number mentioned in the Draft RAP (2010)). There is no mention; however, of households located outside the area, but with land within the leased area. The Progress Report states that the number of property owners compensated was 5,972. Finally, businesses and communal and/or community assets are not mentioned.

The Draft RAP (2010) and the MININFRA Progress Reports indicate that most PAPs accepted cash as the preferred form of compensation for assets and that this cash compensation was used to relocate themselves, *“....to nearby places”* and to replicate previous livelihood activities or begin new livelihood activities. It appears, though this is not stated explicitly, that both the PAPs and government considered that their compensation amounts were sufficient for them to buy replacement land they needed or start a new livelihood activity and, also, to build/purchase a house. The alternative to cash compensation was relocation to a new location with house and land provided by the State.

However, 62 households were relocated to Kingaju Village of Musovu Cell in Juru Sector.<sup>41</sup> A brief account of the relocated 62 households is provided in one of the MININFRA Progress Reports:

- Most of these families were vulnerable, with insufficient compensation amounts to afford them another plot for farming plus a house and garden;
- Households were allocated ¼ ha plots of farming land, by Bugesera District Administration, in the Rurambi marshland and cultivation has begun. Crops have been harvested from both the plots and kitchen gardens. Also, each household was given a cow (from 62 cows provided, one per household, 19 of them have produced calves, two have died and 14 calves have been aborted); and
- Household ‘living conditions’ are described in the Progress Report as being ‘average’.

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<sup>40</sup> A final Progress Report was due to be issued soon after the end of June 2017. As of 08 September 2017, this final report had not been received.

<sup>41</sup> In some documentation/interviews the number is given as 64 Households.

Houses and certain utility services were provided (water, but not electricity). Houses are provided in blocks of two (two houses per dwelling structure) (Figure 18-5). There is no mention of security of tenure for the 62 relocated households.



**Figure 18-5: Houses in Kingaju Village (also kitchen gardens adjacent to houses)**

No follow-up monitoring of PAPs has been undertaken and the current location of the many PAPs who accepted compensation is not known. Thus, the long-term impact of the expropriation process on the PAPs is not known with certainty. However, the evidence to date points to this impact being permanent and potentially of **Major Adverse** significance (high receptor sensitivity and high impact magnitude).

#### Impact Mitigation

BAC is aware that the actions to clear land for a new international airport would undergo Lender scrutiny as part of its efforts to acquire project financing. To this end, BAC undertook a Post-Resettlement Audit, based on document review and interviews with key RCAA and MININFRA staff, to compare both expropriation implementation and outcomes for those affected, in terms of livelihood status, with PS5 requirements and expected livelihood outcomes. The audit found that implementation was not compliant with IFC PS5 (both the 2006 and revised version of 2012); however, due to lack of data it was not possible to reach a conclusion on the change in livelihood status, if any, of those people/households expropriated. BAC intends to implement field research to complete the outcomes part of the audit. Should this work determine that the livelihood status of the affected people/households is lower than it was prior to expropriation and there is a credible link between the expropriation and this negative change in livelihood status, then BAC is committed to preparing a Supplemental Resettlement Plan. This Supplemental Resettlement Plan will contain measures to be implemented to ensure that the combined application of the RCAA/MININFRA expropriation process plus the BAC Supplemental Resettlement Plan will satisfy IFC PS5 required outcomes.

The implementation of these remedial actions is occurring in a separate, but linked, workstream to the ESIA process.

### 18.5.2 Pre-Construction Phase Impacts Prior to Mitigation

Potential pre-construction phase impacts prior to mitigation are summarised in Table 18-5.

Table 18-5: Potential Impacts during Pre-Construction Enabling Works Phase	
Socio-Economic Issues	Pre-Construction Phase: Potential Impacts
Economic	<ul style="list-style-type: none"> <li>Unplanned influx of people who hope to exploit the opportunities likely to be created by the Proposed Project and attendant: <ul style="list-style-type: none"> <li>Pressure on physical and social infrastructure</li> <li>Potential social tensions</li> </ul> </li> <li>Land speculation</li> <li>Localised inflation of asset prices and attendant effects on locals with low/fixed incomes</li> </ul>
Loss of land and natural resources	<ul style="list-style-type: none"> <li>Reduction in livelihood status of local inhabitants through loss of land for crops and grazing, agricultural produce and access to natural resources</li> <li>Physical relocation of people/households with accompanying impacts arising from adjustment to new location (such as psychological and physical health status especially amongst the elderly)</li> </ul>

#### 18.5.2.1 Design Controls

There are no design controls to prevent or minimise the pre-construction impacts of land speculation and influx (unplanned in-migration) related to the Proposed Project. However, in terms of the Expressway action can be taken to help reduce land speculation.

#### 18.5.2.2 Impact Assessment Prior to Mitigation

##### Land Speculation

The Expressway and the potential need to improve the access to Kigali from the bridge over the Akagera River means that land will be required with attendant compensation. Some people are likely to be attracted to build structures on locations where it is considered that the land will be acquired; thus, accessing compensation payments. People may or may not move to live in the structures. An empty house will retain its value in the same way as an occupied house. Thus, land speculation may occur that will increase land prices in favour of those who have the means to take advantage of the opportunities created. These people are likely to be predominantly from Kigali because of its relative 'wealth' compared to the small towns and villages near the Airport Area and the Expressway. Local people may be less able to take advantage of the opportunity due to land price inflation caused by increased demand for land. Inflation is expected to be limited to land prices and to have minimal effect on local people with low/fixed incomes as such people are not likely to be in the market for acquiring land. Local people intending to buy land will see higher prices than expected, but most are likely to be able to cope with the additional expenditure required. Many (though not all) of those involved in land speculation will benefit and those who can sell land at higher than expected prices, also, will benefit. Finally, an increase in building of structures may provide some local jobs for a short period and is a positive, if temporary, impact.

The localised appearance of Expressway land speculation is a temporary, and in overall terms, an impact of **Minor Adverse** significance. The receptors (local community members) are of low sensitivity as most can adapt to the land occupancy changes, arising from speculation, and the

magnitude of the impact is medium (it will affect the areas close to the northern part of the Airport Area and close to the Expressway route).

#### Influx

Influx is unplanned in-migration of people. As stated in Section 18.4.4.1 Social Baseline, five villages near the Airport Area have experienced in-migration of people who have moved because they wish to be located near the airport. This is 12.5% of the 40 villages included in the 'Affected Community-level' survey. As early construction works started before the survey, it appears that pre-construction influx has been limited in scale (number of people and villages affected) to date. Also, it should be noted that none of village leaders of the five villages indicated that influx was an issue of concern in terms of the main three factors affecting quality of life in the villages. However, several village leaders named lack of adequate agricultural land and issues relating to water availability as concerns. Influx of people, moving to take advantage of the economic opportunities presented by the Proposed Project, plus those relocating from areas previously farmed such as the Airport Area (see 'land acquisition and livelihoods' above), is a factor in intensifying land occupancy and use. This 'pressure', when coupled with natural population increase, means that access to land becomes more difficult and leads to agricultural intensification and, potentially, out-migration as land becomes scarce or unavailable. Bugesera District, in the recent past, experienced net negative migration which if it continues at the same rate as previously would act to alleviate agricultural land 'shortage'. However, recent in-migration associated with the 'pull' of the Proposed Project may be offsetting any alleviation by out-migration.

A similar chain of events can apply to water accessibility, which can be further exacerbated by natural events such as droughts which, according to the results of the 'Affected Community-level' survey, is a current problem for certain villages.

Influx, during the pre-construction period is a permanent, irreversible impact of **Moderate Adverse** significance overall (high receptor sensitivity and low magnitude).

#### 18.5.3 Construction Phase Impacts Prior to Mitigation

Table 18-6: Potential Impacts during Construction Phase	
Socio-Economic Issues	Construction Phase: Potential Impacts
Economic	<ul style="list-style-type: none"> <li>• Creation of new temporary and permanent direct jobs;</li> <li>• Creation of new temporary and permanent indirect and induced jobs via the income and economic multiplier mechanism</li> <li>• Increased economic activity leading to enhanced local small medium enterprises (SME) viability/activity and creation of new SMEs</li> <li>• Local skills development through job-related training;</li> <li>• Revenue increases for national and local government entities</li> <li>• Overall contribution to the Rwandan national economy</li> <li>• Creation of a growth pole, focused on the airport, due to location of facilities (hotels, depots, warehouses) and companies servicing the needs of the airport, passengers and freight and consequent impacts</li> </ul>

<b>Table 18-6: Potential Impacts during Construction Phase</b>	
	<ul style="list-style-type: none"> <li>Potential effect on local economies of any restrictions on land use in safeguarding zones established around the airport</li> </ul>
Loss of land and natural resources	<ul style="list-style-type: none"> <li>Loss of resources or access to resources from potential effects on ecosystem services such as hydrological changes to rivers and lakes</li> </ul>
Loss or impaired access to social assets	<ul style="list-style-type: none"> <li>Severance: resulting in loss of access or increase in time/difficulty to gain access to family/friends and social and physical infrastructure/facilities (such as health centres)</li> </ul>
Labour and working conditions	<ul style="list-style-type: none"> <li>Increase in use of child labour and threat to educational attainment</li> <li>Management of labour retrenchment resulting in conflict between BAC and workers (blockages, stoppages etc.)</li> <li>Potential discrimination against migrant labour</li> <li>Occupational health and safety</li> </ul>
Sense of place	<ul style="list-style-type: none"> <li>Change in landscape impacting on people's well-being</li> </ul>
Social and cultural	<ul style="list-style-type: none"> <li>Real or perceived lack, or unequal distribution, of the Proposed Project benefits (allocation of jobs to locals) leading to social tensions</li> <li>Potential increase in crime rate if 'non-local' workers are employed</li> <li>Influx of people wishing to share in the economic benefits competing with locals for jobs and access to social and social and physical infrastructure/facilities (such a health centres) resulting in social tensions)</li> <li>Enhanced incomes leading to improved quality of life</li> </ul>
Community Health and Safety	<ul style="list-style-type: none"> <li>Increased pollution (noise, air, water, soil) affecting human health and wellbeing</li> <li>Increase in risks/exposure to communicable diseases (via influx and presence of non-local workforce)</li> <li>Increase in road traffic accidents (deaths and injuries) as a result of increased number of vehicle movements and changes in vehicle composition</li> <li>Increase in hazards at the airport construction site/s site and other sites where roads may be widened and pipelines laid</li> <li>Lost or reduced access to health care provision (see also 'Severance' above</li> <li>Risk of conflict between community members and security personnel leading to injury</li> </ul>
Infrastructure/Community Facilities	<ul style="list-style-type: none"> <li>Damage to infrastructure such as roads, irrigation structures etc.</li> <li>Damage to structures (especially housing) from vibration</li> <li>Effects on community facilities (schools, churches etc.) from traffic and other activities associated with construction of the airport and other linked/associated infrastructure</li> </ul>
Equity	<ul style="list-style-type: none"> <li>Differential distribution of impacts by receptor (which receptors experience mostly beneficial or adverse impacts)</li> </ul>



### 18.5.3.1 Design Controls

#### Land Acquisition and Livelihoods

##### *Upgraded Quarry Road*

A quarry, located near the village of Nyamigende, in Juru Cell, to the northeast of the Airport Area will provide rock and other raw materials, such as sand and gravel for construction activities. Originally, an unsurfaced road of approximately 18 km in length led to the construction site within the Airport Area. This road passes through the centre of the large village of Kabukuba, which has a range of economic activities in its central area. An alternative route was identified which will be upgraded (widened in places and graded) and include a by-pass for the centre of Kabukuba. Also, this upgraded quarry access road will reduce travel times from the quarry to the Airport Area, as its length will be reduced to 10 km. The entire route will remain unsurfaced and BAC will be responsible for maintenance.

##### *Expressway*

IFC PS5 states that one of its key objectives is to, “... avoid, and when avoidance is not possible, minimise displacement by exploring alternative project designs.”

Design and planning of the Expressway route, and required access roads, has been undertaken with the aim of avoiding physical displacement. Also, to the extent feasible, economic displacement has been minimised; however, the topography plus the rural population density and dependency on subsistence agriculture of Bugesera District makes avoidance of economic displacement, from a major road, a challenging task.

The Expressway corridor avoids passing through villages/towns and mostly affects agricultural land. Near the northern end of the Expressway just before it meets the existing KK-15 Road at the bridge over the Akagera River, the corridor passes the north-eastern edge of Karumuna Village. Examination of the corridor route at this location shows that there are approximately 10 structures within or partially within the corridor. The number of current structures may be larger or smaller as changes may have occurred since the creation of the Google image used. However, it is unlikely that the number will have increased or decreased significantly.

#### Infrastructure and Utility Services

BAC/EPC Contractor is using generators to supply power for airport construction works thus avoiding any use of the national electricity grid and thus not risking unplanned outages to the supply of electricity to customers.

#### Labour and Working Conditions

##### *Occupational Health and Safety*

BAC already implements an Occupational Health & Safety Policy and an Environment Policy (Chapter 21: Environmental and Social Management) along with an overarching Health and Safety Plan and a series of topic specific ‘daughter’ plans, procedures and supporting documents including, but not limited to:

- List of Works with Special Risks;
- Safety Procedures;
- Workers Control Plan;
- Training and Information Plan;
- Risk Assessments;
- Personal Protection Plan;

- Emergency Plan;
- Inspections and Audits; and
- Monthly Reports (H&S data).

All these plans and procedures:

- Identify potential hazards to workers, particularly those that may be life threatening;
- Provide preventive and protective measures (including modification, substitution, or elimination of hazardous conditions or substances);
- Provide training of workers;
- Provide documentation and reporting of occupational accidents, diseases and incidents; and
- Provide emergency prevention, preparedness and response arrangements.

The Project Health, Safety and Environment Officers will be responsible for ensuring adherence to the Health and Safety plans and procedures above.

#### Community Health, Safety and Security

Proposed Project-related traffic will occur on the existing road network, including the upgraded quarry road and temporary access roads relating to the Expressway. Local non-Project traffic and pedestrians will not be allowed to use the temporary access roads. This prohibition will reduce the risks of road-traffic accidents on these roads.

#### *18.5.3.2 Impact Assessment Prior to Mitigation*

##### Land Acquisition and Livelihoods

##### *Expressway*

The construction and operation of the Expressway, and associated access roads needed for construction purposes, will require permanent land acquisition. The Expressway will be approximately 14.5 km in length with a reservation 44 m wide. The reservation is required for two reasons: first, to provide sufficient space for an eventual upgrade from a two-lane to a four-lane road; and secondly, to prevent encroachment by people and businesses, attempting to seek financial benefit from the passing traffic or speculating by buying land/erecting structures in the hope of obtaining future benefits from compensation payments for their land and structures.

Currently, the alignment of the 44 m corridor is known; though it may still be subject to relatively minor alterations as more information on ground and other conditions is obtained. The corridor has been superimposed on a Google Earth image. The corridor avoids passing through villages/towns and mostly affects agricultural land. Near the northern end of the Expressway just before it meets the existing KK-15 road at the bridge over the Akagera River, the corridor passes the north-eastern edge of Karumuna Village.

Examination of the corridor shows that the main land take impact of the Expressway will be economic displacement of land owners/occupiers/users; mostly, it may be assumed, subsistence farmers cultivating relatively small land plots. There may be physical displacement, but this is not certain; should it occur then the number of PAPs to be physically relocated is expected to be small.

The significance of this impact prior to mitigation is **Major Adverse** as the impact magnitude is high (number of PAPs and land take being permanent) and the sensitivity of the receptors is high. Those to be displaced by the Expressway are similar in terms of receptor sensitivity to those displaced for the Airport Area.

### *Upgraded Quarry Road and Water Abstraction Facility and Water Pipeline*

On 7 July 2017, Mota-Engil received a letter from Juru Sector informing them that permission was granted to enable the quarry road upgrade to occur. The letter states that there will be no expropriation as consultations undertaken with land owners (with land adjoining the road), Juru Sector, and Mota-Engil, resulted in an agreement, among “many people”, that the road is community infrastructure. To date, it is not clear if this agreement was unanimous or whether there are any land owners who have not agreed to loss of their land assets.

The water abstraction facility and above-ground Water Pipeline will require land acquisition as the facility and pipeline are required for the construction phase only. The water abstraction facility will be located outside the nearest community and the pipeline route (5 km in length) and does not cross any areas of human habitation nor is it close to any structures. Physical displacement will not occur; however, limited economic displacement is expected to occur as people were seen working in a small plot very near the proposed site of the abstraction facility (Figure 18-6).

The situation regarding land take and expropriation for the water abstraction facility and the Water Pipeline, also, is not entirely clear. Mota-Engil is in receipt of two letters from Rilima Sector: dated 21 July 2017 and 5 September 2017 respectively. The 21 July 2017 letter grants permission for work to begin to install the pipeline to take the water, “... from the lake to the airport zone.” The letter also states that, “... all the owners of the land where the Water Pipeline will pass have been consulted and all have agreed for it to be constructed.” The 5 September 2017 letter refers to permission to construct a 4m access way, starting from a privately-owned land plot [name withheld], and continuing toward the Lake Kidogo through a 50-m land area, owned by the state, to the site of the water abstraction facility. There is no comment in the 5 September 2017 letter with respect to expropriation or consultation with the land owner(s) with respect to reaching an agreement for the access road to be constructed. Neither letter deals with the water abstraction facility although the 5 September 2017 letter indicates that the facility may be located on state-owned land and hence negotiations on the granting of permission and/or payment of compensation would not involve private land owners.

The significance of this impact prior to mitigation is **Moderate Adverse** as the impact magnitude is low (a small number of PAPs and there is very limited land take and, in the case of the water abstraction facility and Water Pipeline, it is temporary; whereas for the upgraded quarry road it is permanent) and the sensitivity of the receptors is high. Those economically displaced by the upgraded quarry road and the water abstraction facility and Water Pipeline are similar in terms of receptor sensitivity to those displaced for the Airport Area as they are primarily subsistence farmers with a similar livelihood status and income levels (see Section 18.3).



**Figure 18-6: Photo of Water Abstraction Facility Site and Water Pipeline Route**

### Labour and Working Conditions

Construction of the Proposed Project will create approximately 1,800 jobs (at peak) over the 2.25-year construction period for the first phase of airport development. After the first construction phase, additional construction phases will occur until the final airport development phase is completed by 2045. At the same time, there will be a workforce recruited to operate the airport. Workforce related risks will require management from the first day of construction phase employee recruitment to 2045 and beyond.

These jobs will exist with BAC, EPC Contractor and a range of sub-contractors. Management of risks to the interests of workers is an obligation imposed on the Proposed Project by IFC PS2. Management of the risks requires appropriate policies, procedures and related support documentation being in place and key items conveyed to employees so they are aware of their rights and obligations.

BAC is the Project Sponsor and is a joint venture between Mota-Engil and the GOR. The EPC contractor is Mota-Engil and, therefore, BAC and Mota-Engil policies and procedures in place to manage labour and working conditions will be the same for the Project.

To assess the significance of the current risk posed to employees, key IFC PS 2 requirements are listed below under a series of topic headings (also taken from IFC PS2) accompanied by an assessment of extent to which **current** labour and working conditions policies, procedures and related support documentation address the requirements. This approach, which is similar to a gap analysis, differs from the structure and format of the other 'impact' chapters. However, it still enables a final judgement to be made on the overall significance of the risk to employees prior to mitigation measures being taken.

Essentially, such measures involve preparation of a suite of policies, procedures and related support documentation focused on ensuring that the risks to the workforce are managed in a manner that is consistent with IFC PS2 requirements. BAC is already in the process of preparing the required policies, procedures and related support documentation. Specific measures, in support of those already being taken, are provided in Section 18.5.3. BAC is working to a timetable that will ensure that the suite of required policies, procedures and related support documentation will be in place and ready for implementation very soon after the disclosure of this ESIA Report.

### *Working Conditions and Management of Worker Relationships*

Key IFC PS2 requirements that need to be addressed in terms of working conditions and management of worker relationships are listed below. BAC and the EPC Contractor have provided documentation that relate to some of these requirements and comments are provided in italics under each of the requirements to which the documents refer. Subsequently, those requirements that have not been addressed by any of the documents received to date are also listed.

The IFC PS2 requirements, for which documentation has been provided, are:

- Working conditions and terms of employment (including issue of individual contracts):  
*A 'model' contract was provided (dated 2017). The contract is written in Kinyarwanda and English and presents all the expected, standard list of terms and conditions. However, it is limited in terms of 'settlement of differences' and makes no mention of a Workers' Grievance Mechanism (see item on the Workers' Grievance Mechanism below);*

- Non-discrimination and equal opportunity in all aspects of employment (such as day-to-day worker interactions, hiring procedure and decisions on promotions and other types of merit/incentive awards):

*This requirement is clearly addressed with respect to day-to-day workers' interactions in a document (undated) entitled 'Rules of Work in The Work, Jobsite and Social Facilities' (very similar to a 'Code of Conduct'), but not in any other document received to date from BAC/Contractor. The 'Rules' contain the following statement, "Discrimination or harassment in any way including race, colour, sexual orientation, sex, age, nationality, family, disability or marital status is strictly prohibited. No one shall make racist, sexist, or other, written or oral gestures or statements that may offend others. Staff should always show good behaviour, be considerate and respectful as well as be understanding for different cultural sensitivities";*

- Workers' Grievance Mechanism:

*Apart from a condition referring to settlement of disputes, in the 'model contract', there is no mention of a procedure to manage workers' complaints with respect to their employment. No mention of a Grievance Mechanism in any document received to date from BAC/Contractor;*

- Anti-harassment measures/commitments:

*The rules include a prohibition on all forms of harassment with respect to day-to-day workers' interactions; and*

- Procedures for disclosure of information to workers on induction and languages to be used:  
*Signed training register sheets for induction sessions on environment, and 'health and safety indicate that inductions are provided in Kinyarwanda for locally-sourced employees. The description of the topics covered in the inductions are presented in both languages. Also, as mentioned above, contracts for local workers are provided in both languages.*

#### *Protecting the Workforce*

There are two key IFC PS2 requirements that need to be addressed in policy and procedures to be developed:

- Specific prescriptions must be followed with respect to child labour (those aged under 18). This is important as child labour occurs in Rwanda (see Section 18.3.3.2); and
- No use of forced labour including trafficked persons.

#### *Occupational Health and Safety*

IFC PS2 requires developers to provide a safe and healthy work environment. Dust, noise, vibration, changes in water and soil quality and use and handling of hazardous material can have an impact on health, safety and well-being of workers during earthworks and construction activities. Occupational health and safety risks are being managed by means of the design controls presented above in Section 18.4.3.1.

#### *Workers Engaged by Third Parties*

The scope of IFC PS2 requirements on workers engaged by third parties applies to workers directly engaged by the BAC/EPC Contractor (direct workers), workers engaged through third parties to perform work related to core business processes related to the Proposed Project (defined as production and/or service processes essential for a specific business activity without which the business activity could not continue) for a substantial duration (contracted workers).

Documentation on management of workers engaged by third parties is yet to be developed.

### *Supply Chain*

IFC PS2 requirements on supply chain workers apply only to primary suppliers which are defined as those suppliers who, on a continual basis, provide goods/materials essential for the core business processes of the Proposed Project.

Documentation on management of supply chain workers is yet to be developed.

For potential employees (direct, contracted and in the supply chain), there is a risk that their rights and interests will be adversely impacted if the necessary labour and working conditions documentation is not in place at the time of recruitment. The likelihood of this occurring is low and, if it did occur, it would be temporary as it would be remedied by the implementation of the full suite of labour and working conditions documentation soon after recruitment. Thus, this is a temporary impact of **Minor to Moderate Adverse** significance (high receptor sensitivity and low to very low impact magnitude - in terms of number of workers potentially affected and the duration of the impact) prior to mitigation.

### Land Speculation

Construction of the Proposed Project may be accompanied by some degree of land speculation, but this is not considered to be an impact of the airport. It is the likelihood of further development around the airport that may be the cause of land speculation in the wider area around the Proposed Project.

### Influx

Influx occurs when individuals, families/households move from one location to another to try to obtain a job or to exploit economic opportunities created by a project. As it is unplanned and depending on its scale, it can create problems for host communities, particularly small, rural settlements, in terms of, inter alia, housing availability/affordability, creation of temporary dwellings, imposing strains on infrastructure capacity and service delivery and, also, social disruption and tensions caused by presence/behaviour of 'strangers'.

Two types of influx may be expected: from relatively local businesses changing location from the existing Kigali International Airport to the new airport and, also, more opportunistic in-migrants seeking to exploit economic opportunities created by NBIA and the Expressway. These in-migrants may be seeking a job or looking for a location to set up a small business to service either the project or the workforce. Such in-migrants are more likely to be single men and women; although some of them may be entire households.

The proposal to build a new airport in Bugesera District has been known for the past seven years if not longer. Local people will have been aware that road access to the new airport, from Kigali, needs improvement and it will have been equally clear that there are limited options for improving access to Kigali because of the presence of only one bridge over the Akagera River and the nearby swamps. These realities combine to create a 'pull' factor for those seeking new business opportunities to service the increased traffic and the passengers requiring accommodation near the airport. The 'closure' of the existing Kigali International Airport's commercial flights means that the hotels and other businesses around the existing airport may lose a proportion of their income. Changing location may make financial sense to several business owners/operators. Some business owners/operators may decide to be open for business by 2020, the date for the opening of the Proposed Project and thus would be thinking of acquiring land soon. It is expected that only a few business owners/operators will decide to move residence to the airport and Expressway area; while others are equally likely to remain in Kigali as the increase in the travel-to-work distance to the new airport or a site beside the

Expressway is unlikely to be sufficient to encourage many to change their residence location. Some staff members may make the same decision; however, others may decide that the cost of the extra commuting time requires a move to be closer to their 'new' working site. Overall, the scale of influx resulting from the transfer of businesses is likely to be very low to low.

In addition, the construction activity in relation to the Airport Area and the Expressway may be expected to attract in-migrants searching for better economic opportunities. The following types of in-migrants may occur:

- Households moving to seek a job or other kinds of economic opportunities;
- Individuals, particularly young males in rural villages distant from the Proposed Project may be tempted to move to communities closer to the Airport Area and Expressway with the aim of obtaining unskilled jobs. In-migrants are also likely to include young single women who will either be looking for a job to work in the sex industry; however, the low number of non-local workers and the lack of a construction workforce camp is likely to act as deterrent to those women who may be considering the scale of the sex industry opportunities provided by the Proposed Project. Some women who may fail to find a job may turn to sex work to earn a living; and
- Individuals who will move to join the service sector by establishing small 'businesses' to sell goods and services or to carry out petty trading activities.

The main factors that will determine the type and scale of influx are:

- The extent to which it is widely understood and believed, locally and throughout Rwanda, that:
  - a) Local people will be given priority in terms of job vacancies in their vicinity; and
  - b) This is perceived to be the actual case in the first phases of recruitment;
- Jobs will only be allocated to applicants who apply via the formal BAC recruitment procedure and at designated locations;
- Job vacancies are actually being allocated to local people; and
- The numbers of available jobs and their duration in the construction and operation phases. Some people may consider that the number of operation phase jobs will equal those created in the construction phase or that obtaining a construction job will increase the likelihood of obtaining a more stable and secure operation phase job.

Previous experience of influx shows that many in-migrants leave once the economic 'stimulus' no longer exists. In the case of the Proposed Project, the economic stimulus is expected to expand once the airport begins to operate so it is likely that in-migrants will stay, even if the first few years are challenging, become permanent residents and integrate into the 'host' communities.

As discussed in Section 18.5.1 on potential pre-construction impacts, airport-related influx has occurred, already, but on a limited scale. However, it is likely that the scale of influx will increase during the construction phase despite the nearby presence of Kigali with its population and diverse workforce acting as a deterrent, as there will be competition for work for many unskilled or semi-skilled rural people who may be thinking of the opportunities created by the Proposed Project.

Influx will increase existing socio-economic pressures on infrastructure, agricultural land and water accessibility and availability and, also, on physical (water supply) and social infrastructure (schools and clinics). It will be a permanent and irreversible impact on the host communities,



favoured by in-migrants for reasons of location, of **Major Adverse** significance (high receptor sensitivity and medium impact magnitude) prior to mitigation.

#### Economy, Employment and Livelihoods

Impacts are assessed under the following topics:

- Local-level employment opportunities;
- Job creation and equity;
- Quality of life;
- Local-level procurement of goods and services;
- Local-level inflation;
- Local-level loss of existing employees;
- Local-level loss of jobs; and
- Food security and livelihoods.

In the construction phase, there is the potential for the following benefits to occur:

- Increase in available jobs, and incomes, leading to enhanced circulation of money in the local economy resulting in overall economic growth;
- Improved standard of living for households with members who have increased incomes due to BAC/EPC Contractor-related employment;
- Enhanced skills among local workforce; and
- Increase in sales for local businesses.

There is the potential for the following adverse impacts to occur:

- Un-met employment expectations;
- Resentment between local people who are employed and those whose applications are unsuccessful;
- Frustration and resentment if local workers perceive that non-local (or foreign) workers are receiving better pay or conditions for the same job;
- Tensions between and within communities if one or more community considers that it is not receiving its perceived 'fair share' of local jobs;
- Resentment from business owners whose offer of goods and services is refused;
- Increased inflation, particularly of food and housing costs;
- Accidents to livestock (including poultry) resulting in loss of income/adverse livelihood impact;
- Planned loss of jobs resulting in reduction in economic activity;
- Local small and medium sized enterprises and public sector organisations 'losing' key workers to BAC/EPC Contractor;
- Loss of access as existing routes are closed to enable construction works to take place; and
- Subsistence farmers and those engaged in aquaculture taking up BAC/EPC Contractor jobs and land being neglected for periods of perhaps up to three years making it difficult to re-start farming and aquaculture when jobs cease following retrenchment. Food security implications.

### *Local-Level Employment Opportunities*

BAC has prepared a spreadsheet detailing manpower requirements for the Proposed Project for the period August 2017 (Expressway work will not begin until March 2018 at the earliest) to November 2019. Key features are provided below:

- From initiation of construction, the number of workers will rise steadily until it reaches approximately 1,800 in November 2018;
- The peak workforce numbers will occur over the period November 2018 to June 2019 (approximately 1,800);
- Between June 2019 to July 2019 the workforce will reduce by 350; and from July 2019 to September it will reduce by a further 650 to reach 800;
- At the end of September 2019, the contracts of all workers will be terminated and the construction workforce will no longer be required;
- The workforce is divided into two categories: unskilled (55%) and skilled (45%);
- Men will constitute 92% of the workforce and women 8%; and
- BAC has a target of 80% of jobs for local people (includes 40% for Kigali).

There will be several construction phases matching the phased development of the airport up to 2045. No numbers on the scale of the workforces needed are available. However, there will be opportunities for almost continual construction-related employment for local people over the next 27 years.

There are two main types of employment that will result from airport and Expressway construction are direct and indirect/induced employment.

#### Direct Employment

Direct employment constitutes those employed directly by BAC or its contractors. At its highest level (March-April 2019) there will be approximately 1,660 Rwandan nationals employed of which approximately 140 will be women. Assuming that BAC is able to maintain its percentage targets Rwanda nationals (men and women) will be employed in significant numbers over a period of two years.

#### Indirect/Induced Employment

The increase in the amount of money circulating in the local economy from direct (in the Proposed Project Area) and indirect (at a local supplier level) job creation, will contribute to induced job creation (for example, a restaurant hiring an additional worker because of increased demand) via the multiplier effect. The extent of such job creation, directly linked to the construction workforce and its spending pattern, is not known; however, there will be some additional, but temporary jobs created.

The extent of indirect/induced job creation depends, also on the degree to which the estimated total capital expenditure (CAPEX) will be spent locally and how much will be sent outside Rwanda. The higher the proportion spent in Rwanda then the more indirect and induced jobs that will be created; again, these jobs will be temporary unless some of the suppliers continue to provide goods and services to the airport once it is operational.

Overall, indirect/induced job creation will be limited in scale. At present, due to lack of information on the scale of the local multiplier it is not possible to estimate the numbers of such jobs or to provide a breakdown by sex. In only a few cases will such jobs be measurable in job-years; it is more likely that they can only be measured in job-months due to the temporary

nature of the increased income injected into the local economies by the BAC/EPC Contractor-related spending. Most jobs are likely to be taken by men, but there will be opportunities for women in the retail/service sectors of the economy.

The increase in available job opportunities for local people will be a **Beneficial** impact. There will be phased construction phase job opportunities as the airport proceeds through its planned development phases up to 2045 with a potential for some of the workers hired for the initial construction phase to obtain work for the period 2017 to the end of the final construction work at some point in the early 2040s. These workers will have skills that will be in demand so there is likely to be a desire for the contractors to hire such workers. As the timings of these construction phases is not yet known there may/may not be gaps in construction work. Therefore, it is not possible to state that the construction job creation is permanent, but it may not be temporary either, in reality, if many workers are rehired for each phase. Those who obtain employment will also gain training to enhance their skill set, which will be of use when construction employment ceases; this is also a **Beneficial** impact, but temporary except for some workers when there may be a chance to develop additional skills if they are rehired. The increase in local job opportunities and gaining of skills is a beneficial impact despite the temporary nature of some of the jobs (not all may be rehired) and the expected 'bias' towards employment of males.

#### *Job Creation and Equity*

Local people may have unrealistic expectations about the number of jobs that will be created during construction and be available to them. They may have limited knowledge of the educational qualifications and basic literacy skills required by BAC/EPC Contractor for jobs/activities. Thus, it is likely that applications for employment may exceed the number of vacancies, which could lead to disappointment and resentment. Also, the actual allocation of jobs, for example, between communities, may result in disappointment and resentment leading to social tensions (an equity issue).

This impact is temporary, likely to occur periodically and be of **Minor Adverse** significance (receptor sensitivity is low, but the potential for tensions to give rise to social disturbances/unrest, albeit contained in one or two localities, means that the potential impact magnitude is medium).

#### *Quality of Life*

Employment will increase incomes and improve quality of life, albeit temporarily, for certain individuals and households. This is a temporary, **Beneficial** impact.

#### *Local-Level Procurement of Goods and Services*

The types of local contracts that are anticipated during construction include (but are not limited to):

- Catering services for the workers at the construction site;
- Security services in the construction, offices and equipment laydown sites;
- Provision of food supplies (indirectly through catering services); and
- Supply of construction equipment and materials.

Through providing goods and services to the Proposed Project, businesses and their owners/investors will enjoy an increased income for a short period, which will be a temporary, **Beneficial** impact. Extra jobs created are considered under the heading 'indirect and induced employment' above.

### *Local-Level Inflation*

Inflation is caused when demand exceeds supply or when the money supply increases significantly faster than the ability to supply desired goods and services. Inflation provides benefits as well as causing adverse impacts. It is very difficult to predict the scale and nature of inflation. Not all goods and services available increase in price at the same rate and there are fluctuations over time. In general, most adverse impacts occur when food, transport, housing and fuel costs rise steeply and continually.

The impacts of inflation vary according to the economic/social status of individuals, households. Inflation presents opportunities to entrepreneurs, but also imposes adverse impacts on vulnerable members of the community, especially the poor, unemployed and those on fixed incomes.

### Entrepreneurs

Without inflation, economic growth cannot occur. Increased prices mean that entrepreneurs/producers have an incentive to produce more of the goods and services in demand. For example, if food prices rise then farmers will grow and sell more to meet the demand and benefit from the higher prices if their inputs rise in cost less than the inflation rate. Higher production can reduce prices. However, this 'virtuous circle' can only occur if farmers can obtain and use the additional inputs. Many rural residents do not have this ability so this may mean that food must be 'imported', thus helping to maintain a higher price than would otherwise be the case. However, some farmers may be able to benefit from the higher prices and boost their incomes to the benefit of their households.

This outcome is a permanent, **Beneficial** impact.

### Vulnerable People

BAC/EPC Contractor and supplier-related expenditures will contribute to wider district and, perhaps, province level inflationary pressures. Currently, the inflation rate (consumer price index) for year-on-year July 2017 in Rwanda is 9.4%<sup>42</sup>, but this is expected to decline in the future. The inflation rate in rural areas is higher than the urban rate thus affecting the rural population, which tends to be poorer disproportionately, as the main increases have been in food, non-alcoholic beverages, housing and utility services (water, electricity, gas) and fuels. This figure may disguise local-level differences. Any continuing rise in prices is likely to affect not only food, but also utility prices, healthcare and, perhaps, housing costs. Such across the board inflation may differentially affect vulnerable groups, such as the very poor or those on fixed incomes or incomes that fall increasingly behind the rate of inflation increases. At best, it will mean that such people may not see the benefit of the expected decline in national inflation rate and the local rate, caused in part by the Proposed Project demand for goods and services, may increase enough to offset the gain that would have resulted from a fall in the national-level fall in the rate. At worst, such people may experience a small rise in the inflation rate.

Likely local inflationary pressure up to and, perhaps, beyond 2020, may be a long-lasting, but temporary impact of **Minor Adverse** significance for most people (medium receptor sensitivity and low impact magnitude for most people) and an impact of **Major Adverse** significance for vulnerable individuals and groups (high receptor sensitivity and medium impact magnitude; the medium impact magnitude is due to the relative importance of price increases to income

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<sup>42</sup> <https://tradingeconomics.com/rwanda/inflation-cpi>

increases for people on low or fixed incomes compared to those whose incomes are likely to increase to keep up with inflation).

#### *Local-Level Loss of Existing Employees*

Some small enterprises and the public sector may lose some key skilled workers to BAC/EPC Contractor. It may be difficult for employers to replace them easily and output/services may decline until replacements can be recruited and, if required, trained. This may threaten the viability of some enterprises, but as the number of enterprises is relatively small in terms of the local economies, particularly in rural settlements, this impact is likely to be very limited in scale.

This outcome is temporary and a temporary, reversible, impact of **Minor Adverse** significance (low impact magnitude and medium receptor sensitivity).

#### *Local-Level Loss of Jobs*

The cumulative effect of loss of many jobs (approximately 800) at the end of the first construction phase will have an adverse effect on many households in terms of livelihoods and incomes. Their standard of living is likely to fall as they return to previous livelihood patterns. Some may have been able to save some money to invest in their land or to set up small businesses, but by no means will all have had the foresight or excess to allow for this eventuality. However, for most individuals they will not experience a livelihood status that is worse than before gaining employment. The loss of the income injection from the workers' wages will have an adverse effect on the local-level village economies.

The extent of this impact is difficult to determine as the contractor for the second phase, and indeed subsequent phases of the planned airport development, may wish to re-hire some, if not all, of the workers employed during the first phase as they will have developed relevant skills and experience.

However, as this outcome cannot be assumed, the consequences of loss of jobs represent a temporary impact of **Moderate Adverse** significance (medium receptor sensitivity and low impact magnitude) prior to mitigation.

#### *Loss of Access*

A number of unpaved routes (including unpaved roads, tracks and paths) cross the airport site. For example, the unpaved road from Nyamata to Rilima (traverses the site from the northwest to the southeast). These routes are used by local people for a variety of purposes, such as visiting relatives and friends, trading and obtaining water/fodder/fuelwood, and by people, resident in villages with no access to local government and other services, visiting larger settlements to be able to access such services.

Routes that cross any construction site, associated with the airport, will be closed to non-Project traffic and personnel. This will result in a severance impact as existing access between certain villages is lost and replacing access requires alternative routes to be found/used and extra time and effort is needed to then maintain access. Extra time and effort has both a social (fewer visits or more time taken to visit relatives/friends and government services) and livelihood cost (essentially productivity per person falls as extra effort is needed to maintain existing livelihood status and this can be accompanied by potential adverse social and health impacts especially for vulnerable groups such as the elderly, disabled and the very poor).

For most routes, this will be a permanent, irreversible impact of **Moderate Adverse** significance (medium sensitivity as local people have a low-income status and medium impact magnitude:

numbers of people using the routes and the purpose behind their use is not known; therefore, a worst-case approach is adopted and the impact magnitude is medium) prior to mitigation.

The Expressway may give rise, also, to severance impacts; although the scale is expected to be less due to the route alignment and local settlement pattern. The mitigation measures proposed in Section 18.6 apply to both the airport and Expressway areas.

#### *Food Security and Livelihoods*

##### *Agriculture*

As stated in Section 18.3 Baseline Conditions, agricultural land availability is an important factor affecting quality of life in several villages. Availability of land is subject to two pressures: natural population increase and influx. In combination, access to land will become restricted and may lead to local food shortages at the household level resulting in the need to purchase replacement supplies on the 'open' market. For some households, this may be a short term option, but not be sustainable in the long-term, and lack of food security may lead to out-migration.

Agricultural production may decline in some rural settlements if self-employed unwaged subsistence farmers gain waged BAC/EPC Contractor-related employment. Their land may be left untended or under-utilised and decline in quality. Any decline in land quality/productivity over a two or three-year period may require considerable effort and some financial investment on the part of the owner to recover its previous potential. This potential situation will compound the problems of adjustment faced by those who lose their paid jobs. Should land be left unused then some of it may be used by those who need more land, but any such arrangement, while providing food in the short term, does not provide a sustainable solution.

An increasing lack of agricultural land plus a potential, but limited reduction, in production in some villages, due to reduced manpower inputs, will result in both a temporary/reversible and permanent/irreversible (depending on location) impact of agricultural-related food security which, overall, is of **Minor Adverse** significance (medium receptor sensitivity and low impact magnitude).

##### *Local-Level Water Resources and Fisheries*

Water resources are important for water supply, for agriculture and for capture fisheries and aquaculture. As shown in Section 18.3, problems with access to water and availability of water (including prolonged drought) are common in rural villages.

Fisheries are important in eight villages as they provide a valuable source of protein. Six out of the eight villages have households dependent on Lake Kidogo for capture fisheries and aquaculture with one village, Uwimpunga, having approximately 60 men employed/engaged in fish catching/farming based on Lake Kidogo.

Lake Kidogo will be the source of water for the Proposed Project during construction phase. Water will be abstracted at the nearest point to the construction site and transported by a pipeline to the site. Calculations undertaken by BAC show that the abstraction of water for the construction period will amount to approximately one-third of the replenishment input to the lake over the same period. Chapter 12: Water Resources concludes that, ".....based on the significant daily water demand of the Proposed Project during construction....., it is assessed that a temporary effect of medium magnitude would occur to the lake from water abstraction during construction, during the dry season." As Lake Kidogo is a receptor of high sensitivity, there is the potential prior to mitigation for there to be a temporary, reversible impact of **Major Adverse** significance in relation to those households and communities dependent on capture fishing and aquaculture.

Chapter 12: Water Resources concludes that the threat posed to surface waters by pollutants and increased surfaced water runoff prior to mitigation is of **Minor Adverse** significance. Thus, the consequences for all users of surface water bodies is a temporary and reversible impact of **Minor Adverse** significance.

#### Accidents to Livestock

An increase in the number of traffic movements in rural areas (Chapter 8: Traffic and Transport) has the potential to cause livestock casualties. Loss of livestock can adversely affect household livelihoods. Livestock includes poultry, as well as cows, sheep/goats, which are often allowed to roam freely during the day and therefore may be vulnerable to increased traffic flows and to accidents at poorly fenced construction sites.

The effect on livelihoods resulting from increased livestock casualties is a permanent impact of **Minor Adverse** significance (medium receptor sensitivity and low impact magnitude).

#### Beekeeping/Honey Production

Beekeeping is not a major commercial activity in the villages. However, apiculture is practised to provide honey for personal use and occasional sale. Honey production/sale is an important source of income in the households that keep bees.

Bees are sensitive to intensive dust deposition on themselves and the surrounding flora and to noise of machinery and vibration at very short distances. Expressway construction activities may physically disturb bees where hives are located within about 300 m of the Expressway or access routes and, also, dust generated by construction activities may have a harmful effect on their foraging activities and result in reduced honey production. Dust from construction of the airport should not have an impact on bees as no hives are in the Airport Area and bees will avoid the dust.

Once the honey production season begins bees will attempt to return to their original home even if the hive has been moved, unless the move is several kilometres or more. A 5-km distance is generally recognised as being the minimum when moving hives to ensure that bees will not return to their old hive site (Matheson, 1997<sup>43</sup>).

This impact is adverse, temporary and reversible in terms of the bees, but not in terms of lost honey production, and is of **Moderate Adverse** significance (medium receptor sensitivity and medium impact magnitude) prior to mitigation.

#### Summary

Overall, the Proposed Project will bring economic benefits to Bugesera and Kicukiro districts (with most benefits accruing to Bugesera District). It is expected, also, to have a relatively small beneficial impact on local settlement employment levels, and some household incomes/standard of living. All the beneficial impacts will accrue to the households who are able to access the jobs created. Thus, these impacts will not be spread widely within these two districts. Through providing goods and services to the Proposed Project, some people will enjoy an increased income for a short period, which will be a positive impact.

Many construction jobs will be lost (800) at the end of the construction period for the first airport phase (at the end of Q3 2019) where many will lose their jobs in a very short-time scale. This will have adverse impact on individuals, households and some small rural settlements. Although this outcome can be mitigated, to some extent, there is considerable uncertainty as to the

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<sup>43</sup> Matheson, A (1997) Practical Beekeeping in New Zealand: The Definitive Guide

degree of success. Also, some workers may be rehired and this will alleviate, to some extent, the adverse local economic impact.

Some small-scale economic disruption is likely to occur as small and medium enterprises and public sector organisations lose employees to BAC/EPC Contractor and agriculture is neglected by farmers who obtain a BAC/EPC Contractor-related job.

It is inevitable that some people will be disappointed not to secure employment. Also, there remains a reasonable probability that there will be some community dissatisfaction with elements of job allocation and remuneration. Those on low or fixed incomes are likely to experience adverse effects of an increase in local-level inflation.

There are also threats posed to households/communities dependent on agriculture, capture fishing and aquaculture based on Lake Kidogo, livestock and beekeeping/honey production.

### Community Health, Safety and Security

In this section, specific impacts are assessed for the following topics:

- Sexually transmitted infections;
- Other communicable infections and non-communicable diseases;
- Pollution and health status;
- Road traffic accidents;
- Construction sites accidents;
- Economic change and health status; and
- Security provision.

#### *Sexually Transmitted Infections*

In Rwanda, the overall prevalence of sexually transmitted infections (STIs) among women was 10.9% and 9.9% among men. The highest prevalence was reported as 15.1% and 12.2% among women and men aged 40 - 49 respectively in 2013<sup>44</sup>. No comparable figures for Bugesera District are available. In Bugesera District, HIV/AIDS<sup>45</sup> prevalence is not particularly high; approximately 1% compared to the national figure of 3% which has remained constant since 2010.

Influx, with the expected increase in the proportion of young single men and women (some of whom may be sex workers), is the main likely causal factor for any increase in STIs. However, influx is expected to be low and, therefore, to have a minimal impact on STI prevalence. Nevertheless, the risk of a localised increase in STI incidence (per head of population) will increase, albeit by a small factor. An increase in HIV/AIDS is often accompanied by HIV-positive incident tuberculosis (TB). The onset of TB in an HIV-positive individual can occur at any time, not just at the later AIDS stage. TB is an infectious disease and an increase in its prevalence in a population poses a threat to wider community health. However, as Rwanda has successfully maintained a constant HIV/AIDS prevalence over the past few years and, this factor, plus the expected minor increased risk of HIV/AIDS prevalence, is not expected to result in any increase in TB cases that would lead to public health concerns.

The risk of an increase in STIs and, in particular HIV/AIDs, is low (receptor sensitivity is low as they will be able to adapt for non-HIV/AIDS STIs and the impact magnitude is also low (numbers

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<sup>44</sup> Rwanda AIDS Indicator and HIV Incidence Survey 2013 Key Findings. Rwanda Biomedical Centre  
[http://www.moh.gov.rw/fileadmin/templates/Narattive\\_Report/RAIHIS\\_Key\\_Findings\\_July\\_2015.pdf](http://www.moh.gov.rw/fileadmin/templates/Narattive_Report/RAIHIS_Key_Findings_July_2015.pdf)

<sup>45</sup> HIV is not only transmitted via sexual relations, but this is one of the main infection pathways.



to be infected is limited, the impact is temporary, and for non-HIV/AIDS STIs reversible). Therefore, this impact is of **Minor Adverse** significance except for those who are infected with HIV/AIDS where the impact is of **Moderate Adverse** significance prior to mitigation.

#### *Other Communicable Infections and Non-Communicable Diseases*

There is an increased risk that certain infectious diseases, present in the certain members of the construction workforce, may be introduced not only into the workforce as whole, but also the local population, which in some cases may have limited or minimal resistance. Errors in early diagnoses may occur before health professionals recognise symptoms easily and these errors may prove serious to some patients.

The prevalence of food-borne and gastrointestinal diseases is high in Rwanda. An outbreak could be triggered, at any site where workers are provided with food or share food, if locally hired employees bring in such infections, especially if they are a food handler. Similarly, such diseases can be carried from the site to the local community/communities via infected workers returning home and contaminating food eaten by other household members.

As indicated in Section 18.3: Baseline Conditions; malaria is one the main causes of morbidity. The prevalence of certain water-borne diseases (especially malaria) may increase if new areas of standing water are created during construction (for example, at borrow pits). It is not only large areas of standing water that increase the risk of people being infected, the mosquito vector of malaria can breed in very small amounts of water and therefore small areas of standing water also pose an increase in risk of infection.

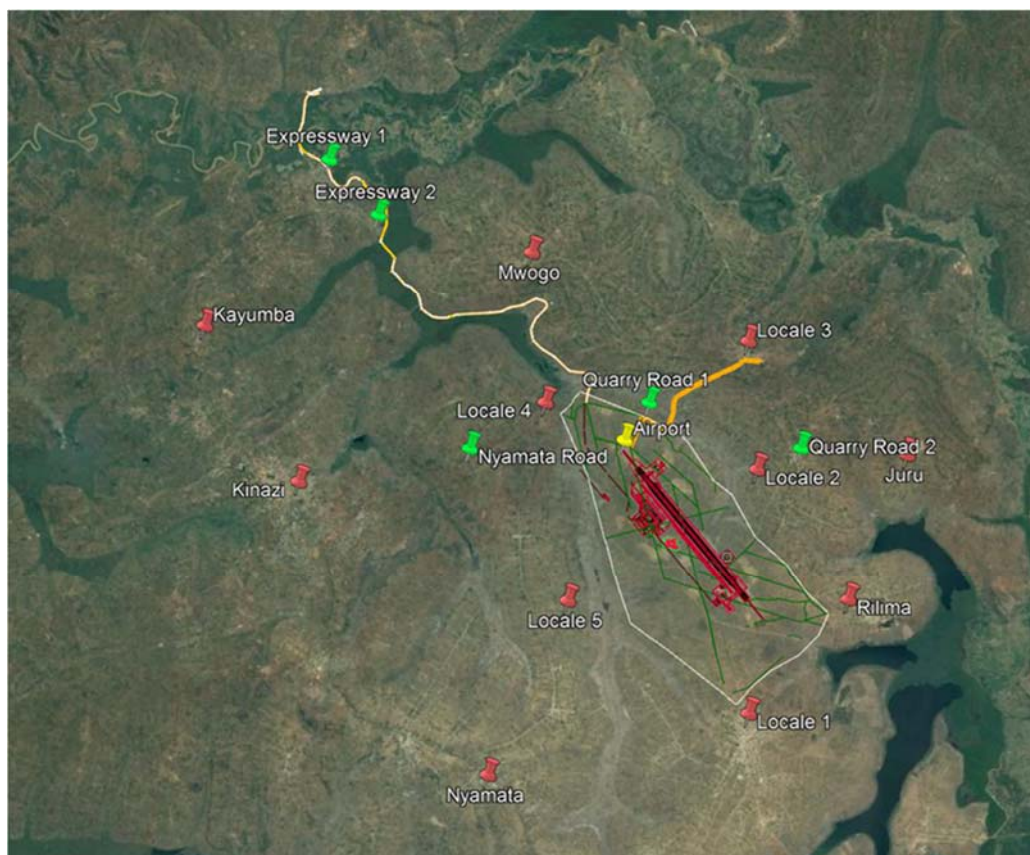
An increase in non-STI communicable diseases and non-communicable diseases is likely to occur. This is temporary and reversible impact of **Moderate Adverse** significance (medium receptor sensitivity and medium impact magnitude) prior to mitigation.

#### *Pollution and Health Status*

Health status can change because of changes to existing air, water and soil quality and, also, to alterations in noise and vibration levels. The main causes of such potential changes are expected to be construction activities at/near the Airport Area, as well as construction traffic. Changes to air quality and ambient noise levels arising from these sources of environmental change, and assessments of resulting likely impacts, are provided in Chapter 9: Air Quality and Chapter 10: Noise and Vibration .

#### *Air Quality*

The results of air quality modelling are presented in detail in Chapter 9: Air Quality. For the construction phase, only particulates arising from use of unpaved roads in the vicinity of the Airport Area and from site construction activities were modelled; no modelling of gaseous emissions from Project-related traffic on paved roads leading to/from the Proposed Project Area was undertaken, given that these emissions would be limited. Here, only key summary information is provided regarding the social receptors. PM<sub>10</sub> modelling results show that social receptors near the upgraded quarry road (Locale 3 and Quarry Road 1), to the immediate northwest of the Airport Area (Locale 4), downwind of the airport construction works (Locale 2) and, in relation to the Expressway, certain social receptors in Mwogo Sector will experience short term exceedances of WHO standards. The Quarry Road 1 receptor will be subject to a longer-term adverse impact (due to its position in relation to both the upgraded quarry road and the Airport Area). Figure 18-7 shows the location of the receptors identified above.



**Figure 18-7: Locations of Air Quality Sensitive Receptors**

There is the potential for an increase in air quality-related health impacts to occur. In the absence of mitigation, this would be a temporary, reversible (for some very vulnerable individuals it may be irreversible) impact of **Moderate to Major Adverse** significance (some of the impacts may be of negligible or minor significance whereas others may be of moderate or major significance, but in aggregate, the worst case – moderate significance - is used to characterise all the pollution-related health impacts). This potential adverse impact is rated as being of Moderate Adverse significance because health effects may occur for certain people, especially those living close to potential pollution sources, which could lead to a small increase in morbidity (receptor sensitivity is medium and impact magnitude is medium).

#### Noise and Vibration

The results from noise modelling are presented in Chapter 10: Noise and Vibration. It is concluded that noise levels resulting from airport construction and traffic movements along the quarry road will be of **Negligible** significance and that noise levels arising from construction of the Expressway will be of **Minor Adverse** significance for dwellings located near to the construction works (based on the assumption that approximately 10 structures in Karumuna Village are dwellings). Vibration impacts will be of **Negligible** significance for all construction works. Thus, the predicted changes in noise and vibration levels are not expected to cause any adverse health impacts.

### Water and Soil

Other pollution-related pathways by which community health might be affected are described below. A road traffic accident may result in a spillage of materials that are harmful to the environment and/or people. The materials may vaporise, changing localised air quality and potentially affecting the health of people who are near the spill. Alternatively, materials may contaminate soil and watercourses and, indirectly, potentially cause human health impacts.

Construction will generate liquid and solid wastes. Watercourses may be contaminated with potential adverse community health impacts if waste streams are not appropriately managed. Also, unmanaged solid waste disposal can attract insect and animal disease vectors for both feeding and breeding purposes. Small containers can fill with water and be used by mosquitoes for egg laying, thus potentially increasing the mosquito population and the prevalence of malaria, already a key cause of local morbidity and mortality. Also, the prevalence of certain zoonotic infections<sup>46</sup> (such as rabies) may increase if dogs and rodents increase in numbers due to the presence of uncontrolled solid wastes.

Chapter 12: Water Resources concludes that the threat posed to surface waters by pollutants and increased surfaced water runoff prior to mitigation is of **Minor Adverse** significance. Thus, the community health consequences for all users of surface water bodies is a temporary and reversible impact of **Minor Adverse** significance prior to mitigation.

### *Road Traffic and Construction Site Accidents*

#### Road Traffic

Chapter 8: Traffic and Transport presents details on traffic and transport-related impacts. In this section, only the community health implications are assessed. During construction, there will be an increase in vehicle movements on certain roads that will reduce significantly once operations begin. All Proposed Project-related traffic will occur on the existing road network including the upgraded quarry road and, in terms of the Expressway construction, the temporary access roads. However, local traffic and pedestrians will not be allowed to use these access roads so there will be no traffic-caused impacts on the access roads. Local driving culture does not tend to favour defensive driving, especially for those able to purchase/drive modern imported vehicles (in 2013, Rwanda had a high road accident fatality rate 32.1 per 100,000 people per year, considerably higher than the African average, which itself is much higher than the European average [Section 18.3.3.6]).

The increase in traffic flows on public roads will result in more accidents occurring, not only those involving only vehicles, but also those involving pedestrians and animals. In every country (or defined locality or by transport fleet) there is a direct relationship between the number of accidents and the number of kilometres driven, for example, for one transport fleet it may be known that there is one road traffic incident for every 10 million kilometres driven. If the number of kilometres driven increases, then the number of accidents will increase proportionately unless additional mitigation measures are applied. The direct impact of an increase in road traffic accidents will result in two key indirect impacts. First, an increase in deaths and injuries (probably disproportionately affecting the young (children) and the elderly) and, secondly, additional workloads for health care facilities, especially those specialising in trauma cases and, also, for the emergency services; police, ambulances and fire brigades.

#### Construction Sites

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<sup>46</sup> Zoonotic infections (also called zoonoses or anthroponozoonotic infections) are human diseases acquired from a vertebrate animal either directly or indirectly.

The Airport Area is criss-crossed by unsealed roads some of which traverse the Airport Area construction site, such as the route from Nyamata to Rilima. The presence of local traffic and pedestrians on these routes will pose a risk of accidents.

There will be several specific construction sites both in the Airport Area (such as borrow pits) and near/on the Expressway route. There will also be dedicated laydown areas for construction machinery fuelling and maintenance. These sites/areas pose increased risks to local people, particularly children, for example, accidents causing injury or death resulting from existence of more hazardous situations (such as open excavations, for example trenches, and ground settlement after construction completed) unless fenced.

An increase in road traffic and construction site accidents has the potential to occur and, result in an increase in fatalities and injuries. These increases may cause a temporary, reversible (for some individuals it will not be irreversible), impact of **Major Adverse** significance (receptor sensitivity is high as many receptors will not be able to adapt easily to the increased traffic and/or to the consequences of an accident and the magnitude of the impact is medium) prior to mitigation.

#### *Economic Change and Health Status*

Increased employment opportunities and higher and more stable cash incomes for locally-sourced workers (whose previous livelihoods were predominantly subsistence based) will mean more disposable incomes for some households. This is likely to result in better standard of nutrition and possible reduction in malnutrition and stunting in some families. It will also lead to improved ability for families to access medical care and medicines. Over time for the duration of the construction jobs there should be a health benefit for the families of workers.

This expected change for some households is a **Beneficial** impact.

#### *Security Provision*

Security providers interact with local people and communities; often in situations where they need to prevent an action or actions on the part of local people. Local people may see their intended action as acceptable and so may not understand why they are being prevented from the action by someone who may not be known to them. Such situations of disagreement can escalate to tensions and to conflict and, also, from an individual to a group and then to the community level. If conflict occurs the incidents causing injury or even death to local people and/or a security guard can occur. The likelihood of such an eventuality is very low, but consequence can be severe. The risk needs to be managed to keep it as low as possible.

This is a permanent (security will always be in place) potential impact of **Moderate Adverse** significance (high receptor sensitivity and low impact magnitude, as the probability of occurrence is very low) prior to mitigation.

#### *Summary*

It may be expected that poor (perhaps, single) women might be more at risk than men, particularly with respect to STIs.

Men, as drivers, will be proportionately more vulnerable to road traffic accidents. The exposure to increased concentrations of air pollutants is expected to adversely affect those with pre-existing respiratory illness (mostly the elderly and the very young). The expected increase in traffic will result in more accidents and more injuries (some serious) and deaths – again the elderly and the young (under 10 years of age) are probably the most vulnerable, as pedestrians, to road traffic accidents.

Although most of the health impacts may be temporary and reach a peak in line with, or soon after, the time when the peak construction phase workforce numbers are attained, some are unlikely to decline rapidly. There is likely to be a considerable time lag and the pre-construction baseline situation/underlying trend for some diseases/individuals with certain medical conditions, such as traumas, may not be attained and the impacts may be irreversible.

#### Infrastructure and Utility Services

This section discusses potential impacts on infrastructure and utility services (including roads) during construction of the new airport, Expressway and Water Pipeline.

Construction works will:

- Provide economic opportunities that may attract in-migrants who will use existing infrastructure and services;
- Undertake earth-moving/excavation works that may inadvertently damage existing infrastructure; and
- Use existing roads for access to Project sites.

The main potential impacts are:

- Periodic loss or reduction in infrastructure/utility services to consumers;
- Reduced availability, or damage to, groundwater and surface water sources, such as springs for local users;
- Wear/degradation of road surface; and
- Traffic congestion and delays, particularly during movement of long or heavy loads.

As mentioned in Section 18.3, most villages have households (the numbers vary significantly by village) that are connected to one or more of the main utility services (electricity, water and wastewater treatment). Therefore, there is the potential for an accidental disruption to a range of utility services in/near almost all villages.

The expected changes to infrastructure status, capacity and delivery of acceptable services, and changes to the surface conditions of roads are temporary, reversible, medium, negative impacts.

This is a temporary, impact of **Moderate Adverse** significance (medium receptor sensitivity and medium impact magnitude), prior to mitigation.

#### 18.5.4 Operation Phase Impacts Prior to Mitigation

Table 18-4: Potential Impacts during Operation Phase	
Socio-Economic Issues	Operation Phase: Potential Impacts
Economic	<ul style="list-style-type: none"> <li>• Creation of new temporary and permanent direct jobs</li> <li>• Creation of new temporary and permanent indirect and induced jobs via the income and economic multiplier mechanism</li> <li>• Increased economic activity leading to enhanced local SME viability/activity and creation of new SMEs</li> <li>• Local skills development through job-related training</li> <li>• Revenue increases for national and local government entities</li> <li>• Overall contribution to the Rwandan national economy</li> </ul>

Table 18-4: Potential Impacts during Operation Phase	
	<ul style="list-style-type: none"> <li>• Creation of a growth pole, focused on the airport, due to location of facilities (hotels, depots, warehouses) and companies servicing the needs of the airport, passengers and freight and consequent impacts</li> <li>• Potential effect on local economies of any restrictions on land use in safeguarding zones established around the airport</li> </ul>
Loss of land and natural resources	<ul style="list-style-type: none"> <li>• Loss of resources or access to resources from potential effects on ecosystem services such as hydrological changes to rivers and lakes</li> </ul>
Labour and working conditions	<ul style="list-style-type: none"> <li>• Increase in use of child labour and threat to educational attainment</li> <li>• Potential discrimination against migrant labour</li> <li>• Occupational health and safety</li> </ul>
Sense of place	<ul style="list-style-type: none"> <li>• Change in landscape impacting on people's psychological health status and wellbeing</li> </ul>
Social and cultural	<ul style="list-style-type: none"> <li>• Real or perceived lack, or unequal distribution, of Project benefits (allocation of jobs to locals) leading to social tensions</li> <li>• Influx of people wishing to share in the economic benefits competing with locals for jobs and access to social and social and physical infrastructure/facilities (such a health centres) resulting in social tensions)</li> <li>• Enhanced incomes leading to improved quality of life</li> </ul>
Community Health and Safety	<ul style="list-style-type: none"> <li>• Increased pollution (noise, air, water, soil) affecting human health and well-being</li> <li>• Increase in non-communicable diseases through increased ability to make risk-increasing life-style choices (such as smoking)</li> <li>• Increase in road traffic accidents (deaths and injuries) as a result of increased number of vehicle movements and changes in vehicle composition</li> <li>• Risk of conflict between community members and security personnel leading to injury</li> </ul>
Infrastructure/Community Facilities	<ul style="list-style-type: none"> <li>• Damage to infrastructure such as roads, irrigation structures etc.</li> <li>• Effects on community facilities (schools, churches etc.) from traffic and other activities associated with operation of the airport</li> </ul>
Equity	<ul style="list-style-type: none"> <li>• Differential distribution of impacts by receptor (which receptors experience mostly beneficial or adverse impacts)</li> </ul>

#### 18.5.4.1 Design Controls

Following the construction phase, BAC will have a suite of employment policies, environmental and social management plans, procedures and working instructions that ensure that the management of labour and working conditions is compliant with IFC PS2 requirements. Due to these design control measures, it is not expected that there will be risks to labour and working conditions and this issue is not considered further in this section.

For those construction phase adverse impacts that continue into the operation phase, it is expected that the construction phase mitigation measures will remain in place.

#### 18.5.4.2 Impact Assessment Prior to Mitigation

The operation phase is expected to result in fewer impacts compared to the construction phase and those that will occur are, in general, beneficial and most of the adverse impacts are lower

in terms of significance level compared to those present for the construction phase. Essentially, this is due to the following factors:

- Fewer workers employed;
- Operation of the Expressway (taking traffic off existing roads);
- No ground preparation works with closure of roads/paths; and
- Limited need for land acquisition.

However, influx and land speculation remain as adverse impacts that have not changed significance level.

#### Land Acquisition and Livelihoods

No land acquisition related directly to airport operations is expected to be required in the near or medium-term future as the Airport Area is large enough to accommodate land required near the Airport Footprint; therefore, no physical or economic displacement is expected.

#### *Land Speculation*

Operation of the Proposed Project may be accompanied by some degree of land speculation if the region around the airport is developed, but this is not considered to be an impact of the airport.

#### *Influx*

Influx is expected to increase in pace and numbers for the same reasons as land speculation, except that some influx may be linked to the airport. However, most influx is expected to be linked to the wider development in the airport vicinity.

#### Economy, Employment and Livelihoods

##### *National-Level*

The importance of the new airport for Rwanda is confirmed by its inclusion as a key proposed development in the *Economic Development and Poverty Reduction Strategy II (EDPRS II), 2013-2018*. The importance is three-fold, at the national-level, as it will:

- Improve logistics for export/import of goods and, to a lesser extent, services;
- Facilitate business travel and forging of business linkages leading to attraction of benefits such as foreign direct investment; and
- Promote tourism.

These benefits acting together promote economic activities and, hence, economic growth. Such growth provides an enabling platform for increased productivity leading, in the longer term to enhanced incomes and, with a supportive policy environment, poverty reduction.

Airports provide a source of continual revenue stream for national and local governments through the taxes that they remit. Part of this revenue, depending on government policies, can be used to provide needed physical and social infrastructure or fund non-structural social benefits such as free or subsidised health care.

Rwanda already has a national airport on the eastern edge of Kigali, which continues to play an important role in the resurgence of the Rwandan economy. Moving all commercial operations to the Proposed Project will result in two changes. First, the benefits already provided will be enhanced by a larger more efficient airport with the ability to expand. However, the benefits will be net benefits as the Kigali International Airport commercial operations are transferred to

the NBIA. The Proposed Project will bring 'additionality' in its early operation phases and this additionality will increase as it moves into later phases. Kigali International Airport is not able to expand, thus is not able to deliver the scale of long-term benefits that will accrue from the Proposed Project.

#### *Regional and Local-Level*

At the regional-level, international airports act as effective growth poles. They attract service companies such as those involved in logistics, manufacturing companies because of easy access to transport and hotels. Generally, a dense cluster of airport-dependent and airport-related companies develop near an airport.

Regional gross value added (GVA) is a measure of the value of goods and services produced in a specific area of a wider economy. This can be affected positively by infrastructure development. A study of several European airports<sup>47</sup> indicates that the direct GVA (operating expenditure of the airport per year) can result in a multiplier of approximately 1.6 meaning, for example, that a direct GVA of US\$ 50 million would be expected to result in an indirect GVA of US\$ 80 million for each year of operational expenditure (OPEX).

Bugesera District will benefit also from revenue streams received from the various entities that locate and operate near the airport. The national and regional/local-level economic impacts are **Beneficial**.

#### *Job Creation and Equity*

BAC expects that the number of permanent job opportunities will start at 400 Phase 1 of operations from 2020 reaching 800 by 2045. It is estimated that 60% of the jobs will be for men and 40% for women. This is an improvement on the sex breakdown for the construction workforce where the equivalent percentages are 92% and 8%. Construction work will occur within this period, but the duration of the construction phases and the numbers to be employed for the construction work are currently unavailable

However, although the Proposed Project is creating these jobs, the transfer of workers from Kigali International Airport to NBIA means that the net job creation is expected to be significantly less, at least for the first two phases of the Proposed Project's likely expansion timetable. It is not known how many workers will transfer to the new airport. As a working basis for assessing job creation, the assumption is that 300 workers will transfer leaving a net gain of 100. By 2030 the number of new jobs will start rising until it reaches 500 during the period 2030 to 2045.

Applying an employment multiplier with a range of between 1.4 and 2 (based on figures for major European and US airports)<sup>48</sup>, to these jobs mean that total new permanent jobs created (direct, indirect and induced) will range from 140-200 up to approximately 2030 and from 700 to 1,000 between 2030 and 2045.

Operational expenditure for the airport is not currently known, but a significant proportion will be spent in Rwanda providing additional indirect and induced jobs based on the airport's purchase of goods and services

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<sup>47</sup> Desel Consulting *et al.*, 2013. The Economic Impacts of Regional Airports: GSA Case Study

[http://archive.northsearegion.eu/files/repository/20141216170754\\_ROM&N13040306-EconomicImpactsRegionalAirports-compleet\(LR\).pdf](http://archive.northsearegion.eu/files/repository/20141216170754_ROM&N13040306-EconomicImpactsRegionalAirports-compleet(LR).pdf)

<sup>48</sup> UK Airports Commission, 2014. Local Economy Impacts: Assessment

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/373487/AC09-local-economy-assessment.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/373487/AC09-local-economy-assessment.pdf)



Both the job creation and the sex breakdown, in terms of job allocation, is a **Beneficial** impact.

#### *Labour and Working Conditions*

No substantive risks to workforce enjoyment of their rights in terms of working conditions is expected due to the design controls.

#### Community Health, Safety and Security

As all workers will be local, living at home and with 40% of the employees being women then these factors will mitigate against an increase in the risk of increase in the following types of diseases:

- Sexually transmitted infections; and
- Other communicable infections.

Again, the displacement effect resulting from the closure of commercial operations at Kigali International Airport means that the additional exposure risks, to these diseases, posed by the Proposed Project are negligible.

This impact is of **Negligible** significance.

#### *Economic Change and Health Status*

The expected **Beneficial** impact on health status by an increase in waged employment will occur, also, in the operation phase.

#### *Pollution and Health Status*

Modelling results for air quality and noise/vibration impacts are presented in Chapter 9: Air Quality and Chapter 10: Noise and Vibration. A summary of the results is provided here to assist determining significance of potential health impacts. In terms of air quality, the impact varies (mostly by increasing) as the airport expands. The most significant impact will occur in relation to NO<sub>2</sub> levels, in 2045, where it is expected that the impact will be of **Moderate Adverse** significance during short-term period (hourly peaks). All other impacts are of **Negligible or Minor Adverse** significance. The social receptors most exposed to elevated levels include some of those most exposed to elevated PM<sub>10</sub> levels during construction: namely these are social receptors in Mwogo Sector (near the Expressway), Quarry Road 1, Locale 2, Locale 4; however, with the addition of Rilima Village.

For noise impacts, the same impact progression by airport development phase will occur. Chapter 10: Noise and Vibration concludes that the impact, primarily, from annoyance, from air traffic noise along flight paths, into and out of the new airport, is of **Major Adverse** significance and that the noise impact from the Expressway on the inhabitants of dwellings located near to the Expressway is of **Moderate Adverse** significance.

The scale of annoyance will vary by time and by place; it is likely to be higher if night time flights start to increase and, also, at specific times such as during religious services and other communal events.

Considering both air quality and noise impacts and comparing the areas/receptors likely to be affected; receptors located near the Expressway, those located to the north and north-east of the airport and Rilima village will be more exposed than other receptors (see Chapter 9: Air Quality and Chapter 10: Noise and Vibration).

In terms of water resources, the health impacts, arising from pollution of waterbodies and increased surface water run-off from impermeable areas, is of **Minor Adverse** significance (see

Chapter 12: Water Resources). There will be a reduction in the scale of pollution-related health impacts, from air quality and noise level changes, for receptors in the vicinity of Kigali International Airport.

#### *Road Traffic Accidents*

It is expected that most traffic will use the Expressway to/from NBIA to Kigali. The Expressway will be a new purpose-built road and should be safer than existing roads.

Key traffic changes that will result in an alteration to the number and locations of accidents are:

- Displacement of traffic between Kigali and Kigali International Airport to the KK-15 and the Expressway and then to the airport leading to reduced traffic flows between Kigali and Kigali International Airport;
- Increase in traffic flows in local roads, especially those leading to/from Nyamata as some people try to access local hotels, restaurants and bars near to the airport; and
- Reduction of flow from Nyamata area to Kigali as those traveling from the south to Kigali International Airport now access the new airport from the KK-15 at Nyamata.

Overall, these changes should result in a small, but noticeable reduction in accidents apart, perhaps, for the roads in the Nyamata area. Here the increase in traffic may cause a slight increase in accidents, but not enough to affect the overall expected reduction.

Chapter 8: Traffic and Transport provides and assessment of the overall impact of the operation phase for a series of issues, including severance, delay, safety and amenity. The overall assessment states that, *“Operation of the airport and the introduction of the Expressway will result in an increase in traffic and therefore an impact in peak hours relating, in varying degrees, to severance, delay, safety and amenity. These impacts are considered to be **Moderate to Minor Adverse**.”* This conclusion is not taken further, in this chapter, as appropriate mitigation measures are presented in the Chapter 8: Traffic and Transport.

#### *Security*

The nature of the risks posed by security provision is similar to the construction phase. However, the magnitude will decline as security providers will be guarding a key item of national infrastructure and not a construction site where previous access is being restricted. Also, it is likely that receptor sensitivity will be reduced, partly through familiarity with security measures, and, also, the social context that gave rise to receptor sensitivity will be changed (other access routes will have been found or people will have ‘accepted’ the closure of previously-used access routes).

The potential for adverse interaction between people and security providers remains, but at a lower level of significance, **Minor Adverse** instead of Moderate Adverse, due to the continuation of the construction phase mitigation measures into the operations phase.

#### Infrastructure and Utility Services

No impacts in the operation phase are expected as the airport will be self-contained in terms of water supply, energy needs and wastewater and solid waste disposal.

## **18.6 Mitigation Measures**

Mitigation measures are focused upon impacts with a significance between Minor to Major Adverse. However, measures to enhance beneficial impacts are also included when appropriate. Most of the mitigation measures will be operational controls or financial measures. This section also lists the key management plans and policy/procedure-type documents that will be

developed in order to mitigate the identified impacts. Mitigation measures are applicable to all phases.

#### 18.6.1 Previously Proposed Development

A Post-Resettlement Audit Report was commissioned, by BAC, with a focus on expropriation implementation and outcomes. This work was based on secondary data and interviews with key government personnel involved in the expropriation process. The audit report concluded that the implementation was not compliant with PS5; however, due to lack of adequate data it was not possible to reach a conclusion on the extent to which the outcome of the expropriation was aligned with PS5 expectations (no decline in livelihood status post expropriation).

Therefore, BAC has commissioned a follow-on 'outcomes' audit, to supplement the Post-Resettlement Audit already completed. It will be based on secondary and primary data; the latter to be obtained from interviews with a representative sample of PAPs, and then a comparison of pre- and post- expropriation socio-economic baselines. Should this audit demonstrate that the expropriation outcome is not compliant with PS5 then BAC will prepare a Supplemental Resettlement Plan with remedial actions which, when implemented, will help restore livelihoods.

Table 18-5: Summary of Mitigation Measures	
Management Plan	Key Elements
Supplemental Resettlement Plan – need to be confirmed	Remedial actions to help restore livelihoods of PAPs whose land/assets were expropriated to enable the Airport Area to be ready for construction

#### 18.6.2 Pre-Construction Phase

##### 18.6.2.1 Land Speculation

Mitigation of land speculation is outside the direct control of BAC/EPC Contractor. The Expressway expropriation will be managed by RTDA/MININFRA and BAC will provide support. BAC will use its best endeavours to ensure that a cut-off date for compensation purposes is set as soon as possible and disseminated widely, along with a map of the Expressway route showing the 44 m wide reservation to be expropriated, in Kigali as well as in communities located close to the Expressway route. Also, BAC will work with local government authorities to encourage the authorities to implement and strictly enforce development controls on any applications to build structures in the reservation area for the Expressway. Setting a cut-off date early and enforcement of development controls will assist in curbing land speculation.

##### 18.6.2.2 Influx

Several measures related to employment and recruitment detailed below will assist in managing Expressway-related influx.

#### 18.6.3 Construction Phase

##### 18.6.3.1 Land Acquisition and Involuntary Resettlement

###### Expressway

The entity responsible for land acquisition and involuntary resettlement (referred to here as 'expropriation') is RTDA, which is part of MININFRA. RTDA/MININFRA wishes to have completed

all expropriation activities by the end of February 2018. In accordance with the following PS5 requirement:

*“Where land acquisition and resettlement are the responsibility of the government, the client<sup>49</sup> will collaborate with the responsible government agency, to the extent permitted by the agency, to achieve outcomes that are consistent with this Performance Standard. In addition, where government capacity is limited, the client will play an active role during resettlement planning, implementation, and monitoring, as described below.”*

BAC has entered into discussions with RTDA/MININFRA to determine the best way forward in terms of collaboration to ensure that PS5 requirements and resettlement outcomes are met. The discussions have not reached an agreed conclusion on the way forward and how the two entities will collaborate. However, it is likely that an IFC-compliant Resettlement Action Plan will be prepared if any of the Karumuna structures are houses or businesses with inhabitants/owners who will need to physically relocate. Should no relocation be required then an IFC-compliant Livelihood Restoration Plan will be prepared.

RTDA/MININFRA is familiar with undertaking expropriation according to both Rwandan laws and international requirements. For RTDA/MININFRA, the international requirements that usually apply are those set out in the World Bank’s Operational Policy 4.12 on Involuntary Resettlement. RTDA/MININFRA has prepared several Resettlement Action Plans, which meet both Rwandan laws and World Bank requirements and, as the World Bank requirements are similar to those of IFC, it will not be difficult for RTDA/MININFRA to adapt to applying IFC requirements.

Detailed mitigation measures in respect of land acquisition and associated compensation will be made in the Resettlement Action Plan or a Livelihood Restoration Plan.

BAC will use its best endeavours to ensure that a cut-off date for compensation purposes is set as soon as possible, by RTDA, and disseminated widely, along with a map of the Expressway route showing the 44-m wide reservation to be expropriated, in Kigali as well as in communities located close to the Expressway route.

#### Upgraded Quarry Road and Water Abstraction Facility and Water Pipeline

BAC will investigate the land take situation for the upgraded quarry road the water abstraction facility and Water Pipeline. Should it be found that land was acquired, and compensation paid, in a manner that is not compliant with PS 5 requirements then any remedial measures will be incorporated into the Airport Area Supplemental Resettlement Plan; if such a Plan is required (will depend on the results to the airport site resettlement outcomes audit – see section 18.5.1.2). Alternatively, a bespoke Supplemental Resettlement Plan may be prepared for the upgraded quarry road and the water abstraction facility and Water Pipeline.

<b>Table 18-6: Summary of Mitigation Measures</b>	
<b>Management Plan</b>	<b>Key Elements</b>
Supplemental Resettlement Plan	Measures for livelihood restoration

#### 18.6.3.2 Labour and Working Conditions

Key measures to mitigate the impacts will be as follows:

- Development of a Human Resources Policy covering all IFC PS2 requirements deemed applicable to the Proposed Project (including use of forced and child labour; provisions in

<sup>49</sup> In this context, ‘client’ refers to the potential borrower; in this case, it is BAC.

terms of migrant/ third parties/ supply chain workers, discrimination, approach to potential retrenchment, etc.);

- Development and provision of a Workers' Grievance Mechanism;
- Development of an Employee Handbook (or equivalent) addressing all IFC PS2 requirements on working conditions and management of worker relationships not already incorporated into the existing suite of human resources documentation;
- Revisions, as necessary, to key documents provided to employees, to give information on BAC/EPC Contractor obligations and employee rights regarding the role of Workers' Organisations (and collective bargaining if in place) and the principle of BAC/EPC Contractor non-interference with workers' rights to form or join workers' organisations;
- Adding, as necessary, to the existing Occupational Health and Safety design controls in place compliant to ensure existing and then continuing IFC PS2 compliance; and
- For catering facilities, ensure that those are managed and maintained in compliance with the local legislation and the international standards (i.e. regular controls of food/facilities hygiene; training of the catering staff; establishment of rodent and vector management/controls; prohibition on feeding of wildlife, etc.).

<b>Table 18-7: Summary of Mitigation Measures</b>	
<b>Management Plan/Policy</b>	<b>Key Elements</b>
Human Resources Policy	<p>High-level 'mission' statements on the following:</p> <ul style="list-style-type: none"> <li>• No harassment and discrimination</li> <li>• Collective bargaining</li> <li>• Workers' organisations</li> <li>• Retrenchment provisions</li> <li>• Migrant, third parties' and supply chain workers' rights</li> <li>• Intention to hire locally</li> <li>• No child/forced labour</li> </ul>
<p>Labour, Working Conditions and Employment Management Plan</p> <p><i>Annexes:</i></p> <p><i>Workers Grievance Mechanism</i></p> <p><i>Recruitment Procedure</i></p>	<p>Practical, specific and time-bound actions to ensure compliance with the PS2 in the same key areas (see the first line)</p> <p>Population influx measures:</p> <ul style="list-style-type: none"> <li>• Managing expectations, outside the local area, by reducing/removing any perception that a prospective in-migrant may hold that he/she will benefit from BAC activities;</li> <li>• Dissemination of information, via media announcements at regional and national-level, of BAC/EPC Contractor's policy on local recruitment; and</li> </ul> <p>Job creation and equity measures.</p>

### *18.6.3.3 Influx*

BAC/EPC Contractor will advise local residents – particularly those living within a realistic ‘travel to work’ zone that they will have priority in terms of employment, if they have the appropriate skills, and that applications for employment will only be considered if submitted via the official application procedure.

Specific mitigation measures relating to managing expectations, regarding workforce recruitment, will also play a part in minimising influx (Section 18.6.3.4). Thus, the key mitigation measures are, as follows:

- Managing expectations, outside the local area, by reducing/removing any perception that a prospective in-migrant may hold that he/she will benefit from BAC activities; and
- Dissemination of information, via media announcements at regional and national-level, of BAC/EPC Contractor’s policy on local recruitment.

### *18.6.3.4 Economy, Employment and Livelihoods*

Key measures of avoiding or minimising adverse impacts regarding job creation and equity are the following:

- Declared priority of local hiring, meeting targets for local recruitment by both BAC and the EPC contractor;
- BAC/EPC Contractor will manage employment expectations by explaining the number and type of opportunities to local communities in advance;
- Advertising job vacancies in rural communities;
- Recruitment points established in key locations;
- Clear job descriptions provided in advance of recruitment which will explain the skills required for each post;
- Transparent and non-discriminatory recruitment procedure, with respect to ethnicity, sex, sexuality, or disability; and
- All workers will have contracts describing their job description, conditions of work and will have the contents explained to them.

#### Local-Level Procurement of Goods and Services

The following measures will be implemented:

- BAC/EPC Contractor will work with local communities to explain opportunities for the provision of goods and services;
- Environmental considerations will be included in the Proposed Project procurement process; and
- The purchase of goods and services from within Bugesera and Kicukiro districts; Kigali; Eastern Province and Rwanda will be maximised.

#### Local-Level Inflation

There are no realistic mitigation measures within the control of BAC and/or the EPC Contractor that can manage local-level inflation.

#### Local-Level Loss of Existing Employees

There are no realistic mitigation measures within the control of BAC/EPC Contractor that can avoid/prevent or reduce the impact of loss of existing employees on existing public or private sector organisations/enterprises.

#### Local-Level Loss of Jobs

The following measure will be implemented:

BAC/EPC Contractor to ensure during induction that all workers are aware that:

- Their contract is temporary with a specified end date; and
- They will need to plan how to manage their earnings and expenditures so that they can adopt to changed situation after their employment is terminated.

#### Loss of Access

The following measures will be implemented:

- Identify routes that will require permanent or temporary closure;
- Undertake a survey of users (covering such factors as age, sex, starting location, intended destination and trip purpose for each user);
- Discuss options to 'replace' lost access with local governments and RTDA (depending on route classification); and, to extent feasible,
- Replace lost access.

#### Food Security and Livelihoods

##### *Local-Level Agricultural Production*

The following measure will be implemented:

- BAC/EPC Contractors will advise workers, during recruitment process, about the risks of neglecting their agricultural land and the importance of planning ways by which agricultural production can be maintained during their absences.

##### *Local-Level Water Resources and Fisheries*

Application of the mitigation measures presented in Chapter 12: Water Resources is required.

##### *Local-Level Accidents to Livestock*

The mitigation measures presented below under community health, safety and security and traffic and transportation are applicable to this impact.

Also, BAC/EPC Contractors will continue to implement a community-level Grievance Mechanism to resolve grievances, to the mutual satisfaction of the complainant and BAC.

##### *Bee-Keeping/Honey Production*

The measures to control dust (see Chapter 9: Air Quality) will help to prevent impacts on bees and honey production; however, two specific additional measures will be implemented to further mitigate the potential impacts:

- BAC/EPC Contractor will identify any beekeepers whose hives are within 300 m of the Expressway or an access route to the Expressway before the start of the honey production season. These beekeepers will be asked to move their hives (both mobile hives and stationary hives) a suitable distance (at least 300 m) from the Expressway and/or access routes for the season. If necessary, BAC/EPC Contractor will aid the relocation; and
- BAC will inform the beekeepers about using the community-level Grievance Mechanism to submit any complaints regarding BAC/EPC Contractor actions considered by the complainant to have adversely affected bee-keeping/honey production.

#### 18.6.3.5 Community Health, Safety and Security

This section provides a list of key measures to be implemented to mitigate CHSS risks related to the following<sup>50</sup>:

- Potential increase in STIs and other communicable as well as non-communicable diseases;
- Health impacts resulting from changes in air/water and soil quality, noise and vibration;
- Increase in road traffic accidents;
- Site security provisions (including potential for conflicts between security providers and the local communities);
- Potential mechanical impacts on community infrastructure and utility services (including roads);
- Local-level agricultural production; and
- Local-level accidents to livestock.

##### Potential Increase in STIs and Other Communicable as Well as Non-Communicable Diseases

- Establishing a clinic to manage minor ailments of construction workers and operate a personnel health programme, which will aim to prevent illness and disease occurring, and will include immunisations as required. The programme will involve pre-recruitment screening followed by annual screening 'check-ups';
- A worker education and awareness programme regarding the risks and prevention measures associated with STIs, including HIV/AIDS;
- Medical screening of all employees prior to hiring and then on a regular basis; and
- Prepare, approve and implement an HIV/AIDS Policy.

##### Pollution and Health Status

Measures to mitigate health impacts resulting from changes in air, water and soil quality, and noise and vibration are covered in more detail in the corresponding Chapters 9: Air Quality, 10: Noise and Vibration, 12: Water Resources and 13: Soils and Geology of the ESIA, among them are the following:

- Use of low emission vehicles for all BAC-related transport purposes, including buses for workers travelling to/from the Construction Camp;
- Regular vehicle maintenance with monitoring and enforcement of emission standards.
- In case of vehicle-related spills a rapid response team will be formed, trained and be on standby to be mobilised in the event of spillage of hazardous materials; and
- Spill response equipment (absorbents etc.) will be available in all vehicles carrying hazardous cargo.

##### Road Traffic and Construction Site Accidents

A series of mitigation measures aimed at managing traffic and transportation impacts are presented in Chapter 8: Traffic and Transport, and will be included in a Traffic Management Plan.

##### Construction Sites Security Provisions

The following mitigation measures will be applied by BAC/EPC Contractor:

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<sup>50</sup> Please see detailed description of the CHSS impacts in the relevant section of the report above.



- Implementation of the '*Voluntary Principles on Security and Human Rights*<sup>51</sup>;
- During construction (and operations), due diligence will be applied to selection of security providers, rules of engagement will be devised, and training provided to all personnel. Performance will be monitored and audited periodically;
- Use of force will not be sanctioned except when used for preventive and defensive purposes in proportion to the nature and extent of the threat;
- Safety signage will be provided in both Kinyarwanda and English;
- Ensuring fencing of active and inactive construction sites until rehabilitated or the threat posed by the sites is removed by some other means; and
- Sensitisation of school children under 12 years of age in nearby schools.

#### Local-Level Agricultural Production

BAC/EPC Contractor will advise workers, during recruitment process, about the risks of neglecting their agricultural land and the importance of planning ways by which agricultural production can be maintained during their absences.

#### Local-Level Accidents to Livestock

The mitigation measures presented above under community health, safety and security and traffic and transportation are applicable to this impact. Also, BAC/EPC Contractor will implement a grievance mechanism that will have the potential to move certain grievances towards the compensation mechanism (in case any harm is done to the interests of complainants and a grievance were to be accepted).

#### *18.6.3.6 Potential Impacts on Community Infrastructure and Utility Services*

Application of the mitigation measures proposed under 'Unplanned In-migration' will help to mitigate impacts on infrastructure and utility services. It is expected that the EPC Contractor will have Working Method Statements, to be approved by BAC, relating to infrastructure/utilities that include measures to protect the integrity of the third-party services and which are acceptable to the service operator/s. Damage to third-party services should be repaired promptly in consultation with the service operator. Any planned diversion of services (for example, electricity or water) will be communicated to local government authorities and villages in advance.

<b>Table 18-8: Summary of Mitigation Measures</b>	
<b>Management Plan/Policies</b>	<b>Key Elements</b>
Community Health, Safety and Security Management Plan	<ul style="list-style-type: none"> <li>- Potential increase in STIs and other (non)communicable diseases</li> <li>- Site security provisions (including potential for conflicts between security providers and the local communities)</li> <li>- Local-Level Agricultural Production</li> <li>- Local-Level Accidents to Livestock</li> </ul>
Traffic Management Plan	Increase in road traffic accidents

<sup>51</sup> <http://www.voluntaryprinciples.org/>

Table 18-8: Summary of Mitigation Measures	
	(Chapter 8: Traffic and Transport)
Dust Control Plan Pollution Prevention Plan	Health impacts resulting from changes in air/water and soil quality, noise and vibration (Chapters 9: Air Quality, 10: Noise and Vibration, 12: Water Resources and 13: Soils and Geology)
Working Method Statements	Impacts on integrity of infrastructure and interruption to utility service provision and measures to manage them

#### 18.6.4 Operation Phase

##### *Community Health, Safety and Security*

##### Pollution and Health Status

Measures to be applied to mitigate air quality, noise and water resource impacts are covered in Chapter 9: Air Quality and Chapter 10: Noise and Vibration and Chapter 12: Water Resources).

##### Road Traffic Accidents

Measures to be applied to mitigate traffic impacts are covered in Chapter 8: Traffic and Transport.

##### Security Provision

The measures applied in the construction phase will be continued (Section 18.3.5.6).

### 18.7 Residual Impact Assessment Conclusions

Almost all the proposed mitigation measures will reduce impact magnitude resulting in a reduction in impact significance. In a few cases impact sensitivity, has not changed or has not fallen by one level, but is considered to fall in between two levels, for example, from 'Moderate' to 'Minor to Moderate'. This reflects the fact that some impacts, such as local-level inflation or influx are difficult to mitigate effectively due to inherent uncertainties or the level of control that can be reasonably be expected to be applied by BAC/EPC Contractor.

Overall, the mitigation measures will reduce the significance of most of the impacts from all phases. Post-mitigation there are:

- One impact of **Major Adverse** significance;
- One impact of **Moderate to Major Adverse** significance;
- Three impacts of **Moderate Adverse** significance;
- Five impacts of **Minor to Moderate Adverse** significance;
- Eleven impacts of **Minor Adverse** significance;
- One impact of **Negligible to Minor Adverse** significance; and
- Eight impacts of **Negligible** significance.

#### 18.7.1 Previously Proposed Project Residual Impacts

The residual impact is of **Minor to Moderate Adverse** significance if livelihoods are, at a minimum, maintained at pre-expropriation levels or equivalent to average current local livelihood status in host communities. As it is not certain that all PAPs can be contacted, there

is uncertainty as to the scale of successful remediation actions – hence the retention of the Moderate significance level.

#### 18.7.2 Pre-Construction Phase Residual Impacts

##### 18.7.2.1 Land Speculation

The residual impact will be of **Negligible** significance (low receptor sensitivity and low impact magnitude).

##### 18.7.2.2 Influx

The residual impact is of **Minor to Moderate Adverse** significance (measures are unlikely to have a measurable effect on the impact).

#### 18.7.3 Construction Phase Residual Impacts

##### 18.7.3.1 Land Acquisition and Involuntary Resettlement

###### Expressway

The residual impact is of **Minor Adverse** significance if livelihoods are, at a minimum, maintained at pre-expropriation levels. This Minor significance level is justified based on the disruption and uncertainty that people experience, especially elderly people, when displacement occurs.

###### Upgraded Quarry Road and Water Abstraction Facility/Pipeline

The residual impact is of **Negligible** significance (medium receptor sensitivity and very low impact magnitude).

##### 18.7.3.2 Labour and Working Conditions

The residual impact is of **Minor Adverse** significance (high receptor sensitivity and very low impact magnitude – significantly reduced number of risks to workers).

##### 18.7.3.3 Influx

This impact will be of **Moderate to Major Adverse** significance (high receptor sensitivity with considerable uncertainty whether the mitigation measures will have a noticeable effect on impact magnitude).

##### 18.7.3.4 Economy, Employment and Livelihoods

###### Job Creation and Equity

The adverse 'social tensions' impact is expected to be reduced to **Negligible** significance.

###### Local-Level Inflation

The impact of local-level inflation remains as **Minor Adverse** significant for most people and of **Major Adverse** significance for vulnerable individuals and groups (as there are no realistic mitigation measures within the control of BAC/EPC Contractor that can avoid/prevent or reduce the impact of local-level inflation).

###### Local-Level Loss of Existing Employees

This impact remains as being of **Minor Adverse** significance (as there are no realistic mitigation measures within the control of BAC/EPC Contractor that can avoid/prevent or reduce the loss of existing employees from local businesses).

#### Local-Level Construction Job Loss

The residual impact is a temporary impact of **Minor to Moderate Adverse** significance.

#### Loss of Access

The residual impact is of **Minor to Moderate Adverse** significance (there is considerable uncertainty about the ability to provide viable alternative routes that effectively reduce the severance impact – for all existing routes).

#### Agriculture

The residual impact is a temporary impact of **Negligible** significance (low receptor sensitivity and low impact magnitude).

#### Local-Level Water Resources and Fisheries

The residual impact is a temporary impact of **Moderate Adverse** significance (high low receptor sensitivity and low to medium impact magnitude).

#### Local-Level Accidents to Livestock

The residual impact is of **Negligible** significance (medium receptor sensitivity and very low impact magnitude).

#### Bee-Keeping/Honey Production

The residual impact is of **Minor Adverse** significance.

### *18.7.3.5 Community, Health, Safety and Security*

#### Sexually Transmitted Infections

The residual effect is a temporary, reversible adverse impact of **Negligible** significance except for those infected with HIV/AIDS when the impact remains at **Moderate Adverse** significance.

#### Other Communicable Infections and Non-Communicable Diseases

This residual impact is of **Minor Adverse** significance (medium receptor sensitivity and low impact magnitude).

#### Pollution and Health Status

The residual air quality-related health impact is of **Minor to Moderate Adverse** significance (medium to high receptor sensitivity and low to very low impact magnitude).

As Chapter 10: Noise and Vibration already presents before and after mitigation allocations of significance of impacts regarding annoyance from noise the significance level of the residual impacts are not presented here nor in Table 18-9 to avoid double-counting of impacts.

In terms of water resources, the residual health impacts, arising from pollution of waterbodies and increased surface water run-off from impermeable areas, is of **Negligible** significance (see Chapter 12: Water Resources).

#### Road Traffic and Construction Site Accidents

The residual impact is of **Moderate Adverse** significance (receptor sensitivity remains high as many receptors will not be able to adapt easily to the increased traffic and/or the consequences of an accident and the magnitude of the impact is low).

#### Security Provision

The residual impact is permanent (security will always be in place) and of **Minor Adverse** significance (high receptor sensitivity and very low impact magnitude).

#### *18.7.3.6 Infrastructure and Utility Services*

The residual impact is temporary, reversible and of **Minor Adverse** significance (medium receptor sensitivity and low impact magnitude).

#### 18.7.4 Operation Phase Residual Impacts

##### *Community, Health, Safety and Security*

#### Pollution and Health Status

The residual air quality-related health impact is of **Minor Adverse** significance in relation to NO<sub>2</sub> levels (low to medium receptor sensitivity and high impact magnitude) and **Negligible to Minor Adverse** for all other air-quality-related health impacts for the airport.

As Chapter 10: Noise and Vibration already presents before and after mitigation allocations of significance of impacts regarding annoyance from noise the significance level of the residual impacts are not presented here nor in Table 18-9 to avoid double-counting of impacts.

In terms of water resources, the residual health impacts, arising from pollution of waterbodies and increased surface water run-off from impermeable areas, is of **Negligible** significance (see Chapter 12: Water Resources).

#### Road Traffic and Construction Site Accidents

The residual impact is of **Minor Adverse** significance (receptor sensitivity remains high, but magnitude will be very low)

#### Security Provision

The residual impact is permanent (security will always be in place) and of **Minor Adverse** significance (high receptor sensitivity and very low impact magnitude).

## **18.8 Summary of Mitigation and Residual Impacts**

### 18.8.1 Summary of Findings

The summary of findings is presented in Table 18-9 and Table 18.10. Adverse impacts are included first and then beneficial impacts.

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
Land acquisition and involuntary resettlement impacts (Airport Area)	Property owners and land occupiers/ users with assets or access to assets	Previously proposed project	<b>Impact Magnitude:</b> High <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> One-off <b>Reversibility:</b> Irreversible	High	<b>Major Adverse</b> (based on evidence to date)	Follow-on 'outcomes audit' to supplement the Post Resettlement Audit already completed.	Supplemental Resettlement Plan (if required)	<b>Minor to Moderate Adverse</b>
Land Speculation (Expressway)	Existing landowners /occupiers Government of Rwanda (RTDA)	Pre-construction	<b>Impact Magnitude:</b> Medium <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Temporary <b>Frequency:</b> - <b>Reversibility:</b> -	Low	<b>Minor Adverse</b>	BAC will use its best endeavours to ensure that a cut-off date for compensation purposes is set as soon as possible, by RTDA, and disseminated widely, along with a map of the Expressway route showing the 44-m wide reservation to be expropriated, in Kigali as well as in communities located close to the Expressway route.	Resettlement Action Plan or a Livelihood Restoration Plan	<b>Negligible</b>

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
Influx (unplanned in-migration)	Local residents and communities	Pre-construction	<b>Impact Magnitude:</b> Low <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> - <b>Reversibility:</b> Irreversible	High	<b>Moderate Adverse</b>	<ul style="list-style-type: none"> <li>Managing expectations, outside the local area, by reducing/removing any perception that a prospective in-migrant may hold that he/she will benefit from BAC activities by a speculative move to the vicinity of the Proposed Project.</li> <li>Dissemination of information, via media announcements at regional and national-level, of BAC/EPC Contractor's policy on local recruitment.</li> </ul>	Labour, Working Conditions and Employment Management Plan	<b>Minor to Moderate Adverse</b> (considerable uncertainty exists about efficacy of the mitigation measures)
Land acquisition and involuntary resettlement impacts (the Expressway)	Property owners and land occupiers/users with assets or	Construction	<b>Impact Magnitude:</b> High <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local	High	<b>Major Adverse</b>	<ul style="list-style-type: none"> <li>Support to RTDA in preparing and implementing a PS5-compliant Resettlement Action Plan or a Livelihood</li> </ul>	Resettlement Action Plan or a Livelihood Restoration Plan	<b>Minor Adverse</b>

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
	access to assets in the Expressway reservation area		<b>Duration:</b> Permanent <b>Frequency:</b> One off <b>Reversibility:</b> Irreversible			Restoration Plan (as necessary)		
Land acquisition and involuntary resettlement impacts (Upgraded quarry road and the water abstraction facility and Water Pipeline)	Property owners and land occupiers/ users with assets or access to assets in located in the land to be acquired	Construction	<b>Impact Magnitude:</b> Low <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent for quarry road and temporary for water abstraction and Water Pipeline <b>Frequency:</b> One off <b>Reversibility:</b> Irreversible	High	<b>Moderate Adverse</b>	<ul style="list-style-type: none"> <li>BAC will investigate the land take situation for the upgraded quarry road the water abstraction facility and Water Pipeline. Should it be found that land was acquired, and compensation paid, in a manner that is not compliant with PS 5 requirements then any remedial measures, required for PAPs, will be incorporated into the Airport Area Supplemental Resettlement Plan; if such a Plan is required.</li> </ul>	Supplemental Resettlement Plan	<b>Negligible</b>



Table 18-9: Summary of Findings – Adverse Impacts								
Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						<p>Alternatively, a bespoke Supplemental Resettlement Plan may be prepared for the upgraded quarry road and the water abstraction facility and Water Pipeline.</p> <ul style="list-style-type: none"> <li></li> </ul>		
Employees being exposed to risks that labour and working conditions fall short of IFC PS2 requirements	Project workforce	Construction and operations	<p><b>Impact Magnitude:</b> Low to very low</p> <p><b>Nature:</b> Adverse</p> <p><b>Type:</b> Direct</p> <p><b>Scale:</b> Local</p> <p><b>Duration:</b> Permanent</p> <p><b>Frequency:</b> -</p> <p><b>Reversibility:</b> Reversible</p>	High (worker welfare and feelings of self -worth)	Minor to Moderate Adverse	<ul style="list-style-type: none"> <li>Development of a Human Resources Policy addressing all IFC PS2 requirements deemed applicable to the Proposed Project (including, no use of forced and child labour; provisions in terms of workers employed by third parties and supply chain);</li> <li>Provision of a workers'</li> </ul>	<ul style="list-style-type: none"> <li>Labour, Working Conditions and Employment Management Plan</li> <li>Human Resources Policy</li> <li>Occupational Health and Safety Management Plan</li> </ul>	<b>Minor Adverse</b>

Table 18-9: Summary of Findings – Adverse Impacts								
Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						<p>Grievance Mechanism;</p> <ul style="list-style-type: none"> <li>• Development of an Employee Handbook (or equivalent) addressing all IFC PS2 requirements on working conditions and management of worker relationships not already incorporated into the existing suite of human resources documentation;</li> <li>• Revisions, as necessary, to key documents provided to employees, to provide information on BAC/EPC Contractor obligations and employee rights</li> </ul>		

Table 18-9: Summary of Findings – Adverse Impacts								
Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						<p>regarding the role of Workers' Organisations (and collective bargaining if in place) and the principle of BAC/Contractor non-interference with workers' rights to form or join workers' organisations.</p> <ul style="list-style-type: none"> <li>• Ensure that OHS arrangements are compliant with IFC PS2 are in place.</li> <li>• For catering facilities provided onsite, ensure that those are managed and maintained in compliance with the local legislation, and good international practice (i.e. regular controls of food/facilities</li> </ul>		

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						hygiene; Training of the catering staff; Establishment of rodent and vector management/controls, Prohibition on feeding of wildlife, etc.)		
Influx	Local residents and communities	Construction	<b>Impact Magnitude:</b> Medium <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> - <b>Reversibility:</b> Irreversible	High	<b>Major Adverse</b>	<ul style="list-style-type: none"> <li>Managing expectations, outside the local area, by reducing/removing any perception that a prospective in-migrant may hold that he/she will benefit from BAC activities; and</li> <li>Dissemination of information, via media announcements at regional and national-level, of BAC/EPC Contractor's policy</li> </ul>	<ul style="list-style-type: none"> <li>Labour, Working Conditions and Employment Management Plan</li> <li>Human Resources Policy</li> </ul>	<b>Moderate to Major Adverse</b>  <i>(high receptor sensitivity with considerable uncertainty whether the mitigation measures will have a noticeable effect on impact magnitude).</i>

Table 18-9: Summary of Findings – Adverse Impacts								
Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						on local recruitment.		
Economy, Employment and Livelihood Impacts:								
Job creation and equity	Local residents and communities	Construction	<b>Impact Magnitude:</b> Medium <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> - <b>Reversibility:</b> -	Low	Minor Adverse	<ul style="list-style-type: none"> <li>Declared priority of local hiring, meeting targets for local recruitment by both BAC and the EPC contractor;</li> <li>BAC/EPC Contractor will manage employment expectations by explaining the number and type of opportunities to local communities in advance;</li> <li>Advertising job vacancies in rural communities;</li> <li>Recruitment points established in key locations;</li> <li>Clear job descriptions</li> </ul>	<ul style="list-style-type: none"> <li>Labour, Working Conditions and Employment Management Plan</li> <li>Human Resources Policy</li> </ul>	Negligible

Table 18-9: Summary of Findings – Adverse Impacts								
Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						<p>provided in advance of recruitment which will explain the skills required for each post;</p> <ul style="list-style-type: none"> <li>• Transparent and non-discriminatory recruitment procedure, with respect to ethnicity, sex, sexuality, or disability; and</li> <li>• All workers will have contracts describing their job description, conditions of work and will have the contents explained to them.</li> </ul>		
Local-level inflation	Local residents and communities	Construction	<b>Impact Magnitude:</b> Medium  <b>Nature:</b> Adverse	Medium for most people	<b>Minor Adverse</b> significant for most people and of <b>Major</b>	There are no realistic mitigation measures within the control of BAC and/or the EPC Contractor that can	N/A	<b>Minor Adverse</b> significant for most people and of <b>Major</b>

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
			<b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> - <b>Frequency:</b> - <b>Reversibility:</b> Irreversible	High for vulnerable people	<b>Adverse</b> significance for vulnerable individuals and groups	manage local-level inflation.		<b>Adverse</b> significance for vulnerable individuals and groups
Local level loss of existing employees	Local residents and communities	Construction	<b>Impact Magnitude:</b> Low <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> - <b>Reversibility:</b> -	Medium	<b>Minor Adverse</b>	<ul style="list-style-type: none"> <li>There are no realistic mitigation measures within the control of BAC and/or the EPC Contractor that can manage avoid/prevent or reduce the impact of loss of existing employees on existing public or private sector organisations/enterprises.</li> </ul>	N/A	<b>Minor Adverse</b>
Loss of construction jobs	Local residents and communities	Construction	<b>Impact Magnitude:</b> Low <b>Nature:</b> Adverse <b>Type:</b> Direct	Medium	<b>Moderate Adverse</b>	Workers are aware that: <ul style="list-style-type: none"> <li>Their contract is temporary with a specified end date; and</li> </ul>	<ul style="list-style-type: none"> <li>Labour, Working Conditions and Employment Management Plan</li> </ul>	<b>Minor to Moderate Adverse</b>

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
			<b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> - <b>Reversibility:</b> Irreversible			<ul style="list-style-type: none"> <li>They will need to plan how to manage their earnings and expenditures so that they can adopt to changed situation after their employment is terminated.</li> </ul>	<ul style="list-style-type: none"> <li>Human Resources Policy</li> </ul>	
Loss of access	Local residents and communities	Construction	<b>Impact Magnitude:</b> Medium <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> - <b>Reversibility:</b> Irreversible	Medium	<b>Moderate Adverse</b>	<ul style="list-style-type: none"> <li>Identify routes that will require closure;</li> <li>Undertake a survey of users (covering such factors as age, sex, starting location, intended destination and trip purpose for each user);</li> <li>Discuss options to 'replace' lost access with local governments; and, to extent feasible,</li> </ul>	Traffic Management Plan	<b>Minor to Moderate Adverse</b>



Table 18-9: Summary of Findings – Adverse Impacts								
Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						<ul style="list-style-type: none"> <li>Replace lost access.</li> </ul>		
Food Security and Livelihoods Impacts:								
An increasing lack of agricultural land	Local residents and communities	Construction	<b>Impact Magnitude:</b> Low <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Temporary/permanent <b>Frequency:</b> - <b>Reversibility:</b> Reversible/Irreversible	Medium	Minor Adverse	Advising workers about the risks of neglecting their agricultural land and the importance of planning ways by which agricultural production can be maintained during their absences.	<ul style="list-style-type: none"> <li>Labour, Working Conditions and Employment Management Plan</li> </ul>	Negligible
Threats to water/fisheries-based livelihoods	Communities and households dependent on water/fisheries-based livelihoods	Construction	<b>Impact Magnitude:</b> Medium <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Temporary	High	Major Adverse	Application of the mitigation measures presented in Chapter 12: Water Resources is required.	Pollution Prevention Plan	Moderate Adverse

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
			<b>Frequency:</b> - <b>Reversibility:</b> Reversible					
Bee-keeping/honey production	Households in certain villages dependent on bee-keeping/honey production	Construction	<b>Impact Magnitude:</b> Medium <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Temporary <b>Frequency:</b> - <b>Reversibility:</b> Reversible	Medium	<b>Moderate Adverse</b>	<ul style="list-style-type: none"> <li>Measures to control dust</li> <li>BAC/EPC Contractor will identify any beekeepers whose hives are within 300 m of the Expressway or an access route to the Expressway before the start of the honey production season. These beekeepers will be asked to move their hives (both mobile hives and stationary hives) a suitable distance (at least 300 metres) from the Expressway and/or access routes for the</li> </ul>	<ul style="list-style-type: none"> <li>Dust Control Plan</li> <li>Resettlement Action Plan</li> <li>Grievance Mechanism</li> </ul>	<b>Minor Adverse</b>

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						<p>season. If necessary, BAC/EPC Contractor will aid the relocation; and</p> <ul style="list-style-type: none"> <li>• BAC will inform the beekeepers about using the community-level Grievance Mechanism to submit any complaints regarding BAC/EPC Contractor actions considered by the complainant to have adversely affected bee-keeping/honey production.</li> </ul>		
Increased livestock casualties	Communities and households dependent on livestock-	Construction	<b>Impact Magnitude:</b> Low <b>Nature:</b> Adverse <b>Type:</b> Direct	Medium	<b>Minor Adverse</b>	Series of mitigation measures as presented in Chapter 8: Transport and Traffic	Traffic Management Plan	<b>Negligible</b>

Table 18-9: Summary of Findings – Adverse Impacts								
Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
	based livelihoods		<b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> - <b>Reversibility:</b> Irreversible					
Community Health Safety and Security Impacts:								
Risk of an increase in STIs and other non-communicable diseases	Host local communities  Workforce	Construction	<b>Impact Magnitude:</b> Low to Medium <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> <b>Reversibility:</b> Reversible/Irreversible	Low to Medium	Minor to Moderate Adverse	<ul style="list-style-type: none"> <li>Establishing a clinic to manage minor ailments of construction workers and operate a personnel health programme;</li> <li>A worker education and awareness programme regarding the risks and prevention measures associated with STIs, including HIV/AIDS;</li> <li>Medical screening of all employees</li> </ul>	Community Health, Safety and Security Management Plan	Negligible to Moderate Adverse

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						<p>prior to hiring and then on a regular basis; and</p> <ul style="list-style-type: none"> <li>• Prepare, approve and implement an HIV/AIDS Policy.</li> </ul>		
Health impacts resulting from changes in air quality (1) and changes to Water Resources (2)	Local communities	Construction	<p><b>Impact Magnitude:</b> Varies</p> <p><b>Nature:</b> Adverse</p> <p><b>Type:</b> Direct</p> <p><b>Scale:</b> Local</p> <p><b>Duration:</b> Temporary and Permanent</p> <p><b>Frequency:</b> -</p> <p><b>Reversibility:</b> Reversible/Irreversible</p>	Medium to High	<p><b>(1) Moderate to Major Adverse</b></p> <p><b>(2) Minor Adverse</b></p>	<ul style="list-style-type: none"> <li>• Use of low emission vehicles for all BAC-related transport purposes, including buses for workers travelling to/from the Construction Camp;</li> <li>• Regular vehicle maintenance with monitoring and enforcement of emission standards;</li> <li>• In case of vehicle-related spills a rapid response team will be formed, trained and be on standby to be mobilised in</li> </ul>	<ul style="list-style-type: none"> <li>• Dust Control Plan</li> <li>• Pollution Prevention Plan</li> <li>• Emergency Spills and Abatement Plan</li> </ul>	<p><b>(1) Minor to Moderate Adverse</b></p> <p><b>(2) Negligible Adverse</b></p>

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						<p>the event of spillage of hazardous materials; and</p> <ul style="list-style-type: none"> <li>Spill response equipment (absorbents etc.) will be available in all vehicles carrying hazardous cargo.</li> <li>Application of all mitigation measures as per Chapter 12: Water Resources</li> </ul>		
Increase in road traffic accidents	Local communities	Construction	<p><b>Impact Magnitude:</b> Medium</p> <p><b>Nature:</b> Adverse</p> <p><b>Type:</b> Direct</p> <p><b>Scale:</b> Local</p> <p><b>Duration:</b> Permanent</p> <p><b>Frequency:</b> Frequent</p>	High	<b>Major Adverse</b>	Series of mitigation measures as presented in Chapter 8: Transport and Traffic	Traffic Management Plan	<b>Moderate Adverse</b>

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
			<b>Reversibility:</b> Reversible/Irreversible					
Potential for conflicts between security providers and the locals	Local communities	Construction	<b>Impact Magnitude:</b> Low <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> - <b>Reversibility:</b> Irreversible	High	<b>Moderate Adverse</b>	<ul style="list-style-type: none"> <li>Implementation of the 'Voluntary Principles on Security and Human Rights';</li> <li>During construction (and operations), due diligence will be applied to selection of security providers, rules of engagement will be devised, and training provided to all personnel. Performance will be monitored and audited periodically;</li> <li>Use of force will not be sanctioned except when used for preventive and defensive</li> </ul>	Community Health, Safety and Security Management Plan	<b>Minor Adverse</b>

Table 18-9: Summary of Findings – Adverse Impacts								
Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						<p>purposes in proportion to the nature and extent of the threat;</p> <ul style="list-style-type: none"> <li>• Safety signage will be provided in both Kinyarwanda and English;</li> <li>• Ensuring fencing of active and inactive construction sites until rehabilitated or the threat posed by the sites is removed by some other means; and</li> <li>• Sensitisation of school children under 12 years of age in nearby schools.</li> </ul>		
Infrastructure and Utility Services:								
Potential damage to community infrastructure	Local residents and	Construction	<b>Impact Magnitude:</b> Medium  <b>Nature:</b>	Medium	Moderate Adverse	<ul style="list-style-type: none"> <li>• Application of the mitigation measures proposed under 'Influx' will help to</li> </ul>	-	<b>Minor Adverse</b>



Table 18-9: Summary of Findings – Adverse Impacts								
Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
and utility services	communities  Local infrastructure		Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Temporary <b>Frequency:</b> - <b>Reversibility:</b> Reversible			mitigate impacts on infrastructure and utility services; <ul style="list-style-type: none"> <li>Working Method Statements, relating to infrastructure/utilities that include measures to protect the integrity of the third-party services and which are acceptable to the service operator/s;</li> <li>Any damage to third-party services should be repaired promptly in consultation with the service operator;</li> <li>Any planned diversion of services (for example, electricity or</li> </ul>		

Table 18-9: Summary of Findings – Adverse Impacts								
Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
						water) will be communicated to local government authorities and villages in advance.		
Health impacts resulting from changes in air quality (1 and 2) and Water Resources (3)	Local residents and communities	Operation	<b>Impact Magnitude:</b> Varies <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> <b>Reversibility:</b> Irreversible	Medium to High	<b>(1) Moderate Adverse</b> (NO <sub>2</sub> )  <b>(2) Negligible to Minor Adverse</b> (other air pollutants)  <b>(3) Minor Adverse</b> (water quality)	<ul style="list-style-type: none"> <li>As per Chapter 9: Air Quality</li> <li>As per Chapter 12: Water Resources</li> </ul>	<ul style="list-style-type: none"> <li>Dust Control Plan</li> <li>Pollution Prevention Plan</li> </ul>	<b>(1) Minor Adverse</b> (NO <sub>2</sub> )  <b>(2) Negligible to Minor</b> (other air pollutants)  <b>(3) Negligible Adverse</b> (water quality)

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
Road Traffic accidents	Local residents	Operation	<b>Impact:</b> Low <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> Frequent <b>Reversibility:</b> Irreversible	High	Minor to Moderate	As per Chapter 8: Traffic and Transport.	Traffic Management Plan	<b>Minor Adverse</b>
Security and interactions with local residents /communities	Local residents and communities	Operation	<b>Impact Magnitude:</b> Low <b>Nature:</b> Adverse <b>Type:</b> Direct <b>Scale:</b> Local <b>Duration:</b> Permanent <b>Frequency:</b> Frequent	High	<b>Minor Adverse</b>	As per construction phase.	Community Health, Safety and Security Management Plan	<b>Minor Adverse</b>

**Table 18-9: Summary of Findings – Adverse Impacts**

Impact	Receptor	Phase	Impact Magnitude	Receptor Sensitivity	Pre-Mitigation Impact Significance	Design, Enhancement or Mitigation Measures	Management Plan	Residual Significance
			<b>Reversibility:</b> Irreversible					

**Table 18-10: Summary of Findings – Beneficial Impacts**

Impact	Receptor	Phase
Local job creation	Certain local and Kigali individuals and households	Construction (initial phase up to 2020 and then subsequent phases in parallel with the airport development phases operations)
Training and skills enhancement	Certain local and Kigali individuals and households	Construction (mostly in the initial phase)
Quality of life improved	Certain local and Kigali individuals and households	Construction (initial phase up to 2020 and then subsequent phases in parallel with the airport development phases operations)
Increased local-level procurement of goods and services with enhanced incomes	Local and Kigali business owners and entrepreneurs	Construction (initial phase up to 2020 and then subsequent phases in parallel with the airport development phases operations)
Economic change and improved health status	Certain local and Kigali individuals and households	Construction (initial phase up to 2020 and then subsequent phases in parallel with the airport development phases operations)

Increase in national and regional Gross Value Added and revenue streams (taxes, etc.)	Rwandan and Bugesera District economy and citizens	Construction and Operation
Job creation and sex equality	Certain local and Kigali individuals and households	Operation
Economic change and improved health status	Certain local and Kigali individuals and households	Operation