



Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 01-Mar-2018 | Report No: PIDISDSC23954



BASIC INFORMATION

A. Basic Project Data

Country Africa	Project ID P165119	Parent Project ID (if any)	Project Name Lake Tanganyika Transport Program - SOP2 - Burundi (P165119)
Region AFRICA	Estimated Appraisal Date Apr 01, 2019	Estimated Board Date Jun 13, 2019	Practice Area (Lead) Transport & Digital Development
Financing Instrument Investment Project Financing	Borrower(s) REPUBLIC OF BURUNDI	Implementing Agency Autorité Maritime Portuaire et Ferroviaire, Office des Routes, Lake Tanganyika Authority	

Proposed Development Objective(s)

The project development objective has been identified as the following: to facilitate the sustainable movement of goods and people to and across Lake Tanganyika, whilst strengthening the institutional framework for navigation and maritime safety.

Financing (in USD Million)

SUMMARY

Total Project Cost	52.00
Total Financing	52.00
Financing Gap	0.00

DETAILS

Total World Bank Group Financing	52.00
World Bank Lending	52.00

Environmental Assessment Category A-Full Assessment	Concept Review Decision Track II-The review did authorize the preparation to continue
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Other Decision (as needed)

B. Introduction and Context

Country Context

Regional Context

1. The economic performance of the East African Community (EAC) member countries—Burundi, Kenya, Rwanda, Tanzania and Uganda—has been impressive over the last decade. The service sector in the region has been performing well, and growth in non-manufacturing industries, such as mining and construction, has also been strong. The EAC region has an abundance of natural and human resources. The region has a total population of approximately 150 million, a sizable internal market, and has an estimated agricultural potential of US\$950 billion under the current high commodity prices. The region is also endowed with about US\$200 billion of mineral resources in terms of confirmed deposits.
2. However, the countries of the region face a number of common problems: the region is geographically remote from both the more mature markets of Europe, America and Japan, and the emerging markets of China, India, Indonesia and Brazil; a number of countries are landlocked, and have high rates of unemployment and poverty, increasingly predominately in rural areas, particularly among the low-skilled, a large informal sector, and an overreliance on primary commodities. From a global perspective, the region represents a number of disparate and relatively small markets, whose aggregation is complicated by physical and institutional barriers, such as distance, the poor quality of the infrastructure, and continued intra-regional policy and regulatory discrepancies.
3. In the region, poor infrastructure and trade facilitation costs are often identified as a critical constraint by firms. For the landlocked countries, high transport costs are particularly crucial. About 60 percent of the firms in Rwanda relied on imports for inputs and/or supplies. And manufacturing firms in Burundi waited, on average, for 32 days for their imports to be cleared at customs, and 79 percent of firms relied on imports for their business (BEEPS 2014). Firms may miss business opportunities because of unanticipated shipment delays. Firms may also have to bear extra inventory costs. In Burundi, the firms held on average 29 days of inventory of main inputs, which are unfavorably compared with non-landlocked neighboring countries (i.e., 17 and 18 days for Kenya and Tanzania, respectively).
4. Improving the regional transport network is a necessary condition for competitiveness and improved integration into the regional and global market. High transport prices/costs, including time, are a major obstacle to increasing trade and economic growth: One study reports¹ an inverse correlation between inland travel time and export performance, with a one day decline in the former leading to a seven percent increase in the latter. Transport costs to the maritime ports are high at US\$150-US\$210 per ton for inland areas and land-locked countries. Recent research points to predictability as being, at times, even more important. In addition, over 110 million people or about 75 percent of the total population in the region do not have access to the road network within 2 km of their place of residence.
5. An integrated approach, involving both investment in the primary infrastructure on the key regional corridors, but also in the secondary and tertiary infrastructure along the corridors to realize the full wider economic and poverty impacts, has the potential to dramatically change the economic structure of the region. Hence in 2014, the East African Community in collaboration with the World Bank commissioned a series of studies to inform an Integrated Corridor Development

¹ Freund, C., & N. Rocha (2011).



Strategy in the EAC Countries.² The Pillar 1 report was endorsed for implementation during the Heads of State Retreat on Infrastructure Development and Financing held in Nairobi on 29th November 2014. The Strategy identified a mix of physical and institutional interventions to facilitate the implementation of an efficient and cost effective inter-modal transport system along the East African corridors. The interventions have been packaged into a series of programs comprising: (i) the Lake Victoria Transport Program (where SoP1 in Rwanda was approved in June 2017, and SoP2 Uganda and SoP3 in Tanzania are under preparation), partnering the ongoing Lake Victoria Environmental Management Program; (ii) the Lake Tanganyika Transport Program, in partnership with a pipeline Lake Tanganyika Environmental Management Program; and (iii) Improving the maritime gateways, and key access infrastructure (such as the ongoing Dar es Salaam Maritime Gateway Program, Tanzania Intermodal and Rail Development Project³ (TIRP); and the pipeline Tanzania Development Corridors Project). Implementation of the LVTP under this program has already commenced and the 2nd phase of the integrated corridor initiative will involve implementation of projects under the Lake Tanganyika Transport Program. This Concept Note relates to the Lake Tanganyika Transport Program – SOP2 Burundi Phase (P165119), with a parallel note for the first phase (SoP1) in Tanzania (P165113).

Burundi Context

6. Burundi is a landlocked mostly hilly country with an area of 27,834 square kilometers and a population size of 9.8 million, making it the second most densely populated country in sub-Saharan Africa (SSA). Burundi has enjoyed a GDP growth of about 4 percent per annum over the past decade, mainly due to improved agricultural performance. However, it's economy remains among the most fragile in the region. Economic diversification is limited as small-scale subsistence farming is the primary source of income and employment. Extreme poverty is pervasive – around 67 percent of Burundians live below the poverty line. Burundi is highly vulnerable to floods and landslides, and the situation is compounded by a lack of proper land use planning and watershed management, creating a complex hydrological situation.

7. Road transport carries about 90 percent of goods in Burundi due to the unreliable Inland Water Transport (IWT) on Lake Tanganyika, despite the potential cost advantages of the latter. The main challenges associated with road transportation include the long leads (over 1,000 km) from its primary international gateway ports such as Dar-es-Salaam and Mombasa. Furthermore, road transportation is directly impacted by transit countries' Non-Tariff Barriers (NTBs), poor logistics and efficiencies, as well as burdensome cross-border, customs and other administrative procedures. The high costs of infrastructure development, coupled with equally high transport costs, are major constraints to growth, especially for the predominantly agricultural economy.

8. Bujumbura is a port city located on the northeastern shores of Lake Tanganyika. It is the transport and logistics hub of Burundi and is connected to neighboring countries through the Central, and Northern Corridors. More than 75 percent of Burundi's urban population lives in Greater Bujumbura, which has an estimated population of about 800,000. The area covered by the city, has expanded rapidly over the last three decades, from about 37 km² in 1983 to over 100 km² today. This rapid expansion has however, not been accompanied by proper land use planning and watershed management, creating a complex hydrological situation.

9. Burundi is highly vulnerable to the effects of climate change. Floods are expected to increase in frequency and magnitude as a direct consequence of climate change and deforestation. Changes in annual and seasonal rainfall patterns, increasingly affect infrastructure, agricultural production, health, water availability, energy generation, biodiversity and ecosystem services (including forestry and tourism). The poor condition of the road network (estimated 50 percent in poor

² Including *inter alia* EAC/World Bank (2015) Building a Reform Consensus for Integrated Corridor Development in the East African Community: Pillar 1 - A Strategy and Action Plan for Intermodal Development, Arusha/Washington D.C.; and EAC/World Bank (2015) Building a Reform Consensus for Integrated Corridor Development in the East African Community: Pillar 2 – The Assessment of Wider Economic Benefits.

³ IDA Credit 54140.



condition) makes it very vulnerable and easily degraded and/or not fully operational in the event of floods⁴. Impacts disproportionately affect the poor and vulnerable groups since they have fewer resources to adapt to climate change and face greater risks of being cut off from basic infrastructure, food supply and drinking water in disaster situations. Thus, there is a need to define more options to increase the resilience of the road network.

Sectoral and Institutional Context

10. Lake Tanganyika lies at an elevation of about 772 m above mean sea level in the Western part of the Great Rift Valley. With a length of 673km, it represents the longest lake in the world. It averages 50km in width (at its widest it is 72km), has a surface area of 32,900 square kilometers (km²), and a shoreline length of 1,828km. It is, after Lake Victoria, Africa's second largest lake and the world's second deepest (1,471m). The lake is divided between four countries – Burundi, Democratic Republic of the Congo (DRC), Tanzania and Zambia, with the DRC (45 percent) and Tanzania (41 percent) with the largest shoreline. Excepting a part of the eastern and northern coast, the lake is confined by the steep sides of the rift valley, most prominent on its western edge which reaches 2,000 meters above the shoreline. This limits the lake's catchment area to approximately 231,000 km².

11. Transport on the lake is currently challenging, with no up-to-date navigational charts, no functioning aids to navigation, or landing lights, no search and rescue services, limited information on current and forecast weather conditions, and no modern efficient vessels. In addition, the ports on Lake Tanganyika have dilapidated superstructure and sub-structure, and face access issues both on the land side and the lake side. The latter due to draught limitations from accumulated sedimentation in all the ports. There are also localized pollution hotspots, e.g. around the dense populated north of the Lake (which receives run-off from Bujumbura and the Rusizi Plain) and in Kigoma bay. A map of the lake and the main ports is provided in Annex 2.

12. However, there is considerable potential: (i) the immediate catchment area of the lake contains a growing population of 12 million people; (ii) a number of towns and villages around the lake, particularly on the western shore, have little or road access; (iii) for many locations, the lake offers either the most direct route, or the only route, to markets, assuming a safe, efficient and reliable passenger and light cargo ferry service; and (iv) the rehabilitation of the railway infrastructure and railway services on the central railway line offers the landlocked countries the potential of a secure, cheaper, intermodal service to and from the maritime gateway. The cost of moving a container from Dar es Salaam to Bujumbura, using the rail-lake intermodal route, is estimated at approximately half the cost of road alone.⁵ In addition to the cost advantage, the diversion of traffic to rail will reduce the externalities of road transport, in the former of congestion, air quality, safety, and realize maintenance cost savings on the parallel road network.

The Lake Ports

13. The port of Bujumbura is situated at the north-eastern tip of the lake. The port lies between the industrial zone and the central business district of the Burundian capital. The port is operated by a private company (Global Port Services Burundi), in which the Government of Burundi has a 9 percent share, under a concession agreement with the Burundi Maritime, Port and Railway Authority (AMPF)⁶. Initial port development consisted of the construction of a piled pier of some 200 meters in length, which together with a rubble mounded breakwater (the southern breakwater), which now forms the entrance to a dredged basin within which the port facilities are located. The inner port basin has an area of approximately 32,000 m², with a quay of 375 meters in length on the southern edge. The average width is approximately

⁴ The heavy rains of February 2014 caused extensive flooding and landslides that damaged property, claimed 80 lives, and resulted in the closure of key transport links such as Route Nationale 1. A large market was washed away, about 1,000 houses collapsed, and over 20,000 people were left homeless.

⁵ Despite the difficulties, in 2016, approximately 10,000 TEUs moved to and from Burundi, 40,000 TEUs to and from DRC, 35,000 to and from Rwanda, and 40,000 TEUs to and from Zambia, of which 129 TEUs went by rail in total.

⁶ Autorité Maritime, Portuaire and Ferroviare, Burundi.



95 meters (max width is 120 meters), though a mass concrete jetty on its northern shore reduces this to about 55 meters close within the entrance. The main cargo berth, which is of a mass concrete construction, is 360 meters in length. The berth is provided with four antiquated rail-mounted gantry cranes⁷ of 5 tons capacity (at 18 meters) on a concrete apron some 36 meters in width, running the total length of the berth. The concession has bought a reach stacker, allowing the port to handle containers. The River Ntahangwa enters the lake immediately north of the port and carries considerable sediment, which has led to the accretion of about 40 hectares of land (between 1960 and 2008) adjacent to the northern breakwater. Sediment has reduced available water depth to approximately 3 meters within the entrance channel and the inner port basin. This situation is compounded by the presence of a storm-water outfall at the head of the basin (the Buyenzi canal), the sedimentation from which has rendered part of the main berth unusable. There is currently no shipyard in the port so vessels must go all the way to Kigoma for repairs.

14. The Japanese International Co-operation Agency (JICA) has committed the sum of US\$28 million to support the following developments in the port of Bujumbura: (i) the construction of a new ship repair yard; (ii) the development of a new container terminal; (iii) the procurement of mobile cranes; (iv) the diversion of the Ruvumera storm water channel; and (v) the dredging of the port area. A JICA mission visited Bujumbura in November 2017, to move the preparation forward.

15. The Port of Rumonge is an important trade hub for trade on Lake Tanganyika, catering primarily to informal trade across the lake. Upgrading of the port is an important part of Burundi's Port Development Master Plan. Rumonge Port is not a port in the strict definition but just a handling beach site. The cargo ships calling Rumonge are wooden made and they are coming from the opposite shore of the lake in DRC and from villages situated on the lake shore in Tanzania but farther than Kigoma. At present, there is no quay or jetty, so boats are required to pull up directly on the beach to be loaded/unloaded. Though border agents and port officials are present to process the traders and cargo, the agencies do not have proper on-site office facilities. Secure warehousing is required. The Great Lakes Trade Facilitation Program – SoP2, which is under preparation and supported by the World Bank, is proposing to finance the construction of a jetty, office facilities and other related infrastructure within the port area. The land for the port is already designated, fenced off, and in use.

16. In Tanzania, the main Ports are Kigoma and Karema. The port of Kigoma is located on the eastern shore in the southern part of a shallow bay, protected by a range of hills, affording the port some protection. A single transit shed 85 meters long by 25 meters wide (constructed on two levels) fronts the general cargo berth, while a shed of 55 meters by 35 meters is provided in the back-port area. Rail access to the main quay is made through the eastern end of the port, adjacent to which are Kigoma's rail sidings. The passenger pier backs onto the slipway and dockyard area, which was constructed in 1912. At the head of the bay, 1.5 km north of the cargo/passenger port is a bulk oil jetty, constructed in 1960. Karema is located on the south-western shore of the lake, south of Kigoma, opposite Moba port in the DRC. The ships calling at Karema are wooden made and they are coming from the opposite shore of the lake in DRC and from villages situated on the lake shore in Tanzania. At present, there is no quay or jetty, so any boats are required to pull up directly on the beach to be loaded/unloaded, or unload in deeper water, with cargo carried by hand to the beach. TPA believe the site has potential as it provides a short-cut from the copper district near Lubnumbashi, to Dar es Salaam port, saving a considerable diversion north via Kalemie and Kigoma ports. TPA has plans to construct a short quay for general cargo at the location. Karema is connected to the trunk road network at Kagwila, via the R563 regional road, which is currently an unpaved road of 110km.

17. In DRC, the main ports are Kalemie and Kalundu. Kalemie port is situated on the western shore of Lake Tanganyika, 3 km south of the Lukula River. Artificial breakwaters have been constructed to protect the harbour basin from the open waters of the lake. The eastern breakwater is a rubble mound design approximately 400 meters length and 85 meters

⁷ These cranes are from 1950 and obtaining spare parts is increasingly difficult.



width. Berthing facilities are provided on the inner part of this breakwater, and the main quay, which is provided with four rail mounted portal cranes, is some 280 meters in length. The berth is constructed on a suspended concrete deck approximately 6 meters in width, behind which there is a raised apron (of about 8 meters width) and a general cargo shed with a dimension of 80 by 15 meters. A second quay of approximately 75 meters in length supports a fixed lattice crane manufactured in 1959 with a 30 ton capacity (at 16.8 meters), and used for the discharge of containers and other cargo. A dry dock, with an overall length of about 120 meters (effective length is 95 meters) and a width of about 16 meters (at the entrance), is located at the head of the harbor, adjacent to land developed for rail-way workshops. Generally all the equipment and superstructure is in poor condition, with insufficient storage space and handling equipment. The dry dock does not function due to the lack of sufficient draught in the approaches. The entrance to the port is also heavily silted from the small river which discharges into the lake immediately south of the port.

18. Kalundu Port is located in the north-western part of the lake about 4.5km south of Uvira. By ship it is 25km from Bujumbura (by road 35km). The port, constructed in the late 1950's, links Lake Tanganyika with Bakavu (94km) on Lake Kivu by an unpaved road, being partially upgraded now with support from TMEA, running almost parallel to the Ruzizi River along the base of the Mitumba Mountains. The port has been developed on a narrow stretch of land approximately 60 meters wide and 300 meters long. It is protected on its eastern side by a rubble mounded breakwater of 200 meters in length. The main quay is approximately 156 meters in length, with an apron width of 10 meters through-out, backed by two sheds. The inner part of the breakwater is also used for berthing purposes and is provided with a fixed lattice dock crane similar to those in Kalemie and Bujumbura – again in poor condition. The breakwater quay is 155 meters in length and 17 meters wide.

The transport services on Lake Tanganyika

19. In terms of cargo volume lifted on the lake, two limited liability private companies dominate, Arnolac and Batraluc. These two shipping companies operate out of Bujumbura dominate and use a combination of container and general cargo carriers. Other operators on the lake include Marine Service Company Limited (MSCL) in Tanzania and Société Nationale des Chemins de Fer du Congo (SNCC), both parastatals. In terms of tonnage and fleet size, SNCC is the largest of all the shipping companies with 16 vessels and 29 hatch type barges. Of these however, only three vessels and five barges are reportedly operational. These are mainly engaged between Kigoma and Kalemie/Uvira carrying World Food Program (WFP) and/or other aid shipments. AMPF in Burundi have commissioned a design for a new ro-ro ferry to provide capacity between Bujumbura and Kigoma, but lacks the capital to procure the vessels.

20. MSCL used to operate three vessels, one cargo and two passenger vessels, M.V. Liemba, which was constructed in 1913 and needs major refurbishment, and MV Mwongozo, constructed in 1979 and currently laid up. MSCL ships are mainly engaged in the combined passenger/general cargo trade, operating in the Tanzania/Zambia portion of the lake between Kigoma and Kasanga/Mpulungu. They sail on a weekly schedule, stopping at small villages en-route including from north to south: Kirando; Siguna; Halembie; Logosa; Mugambo; Ikola; Karema; Kabwe and Kala. None of these villages are provided with port facilities of any kind, and the MSCL ships used to anchor close to the shoreline from which passengers join or embark using wooden boats and/or canoes. Of the 16 vessels currently operating on the lake, 11 are over 30 years old, 9 are over 50 years old, and 1 over 100 years old. There are private operators of vessels on the lake, but there appears to be insufficient capacity. One of the main impediments to capacity enhancement for investors/operators is obtaining finance at terms that make such investments viable.

Safety on Lake Tanganyika

21. There are many hazards to safe operation of vessels on Lake Tanganyika. Navigational charts are unavailable⁸, there are no functional aids to navigation (such as landfall lights, beacons, buoys, jetty-end lights, leading marks, etc.) and no

⁸ A chart was prepared in 1941, carrying limited data, but no copies are in circulation.



record of the location of the defunct navigational aids. Navigation is primarily by local knowledge, and restricted to daylight. There is little or no effective dissemination of information in respect of safe navigation and environmental protection, and no effective ship-to-shore communication system. There is currently no reliable safety statistics. While the registered ships on Lake Tanganyika have radio communication systems, none of the lake ports is provided with formally structured maritime assistance services of any kind. This means that there is no general weather synopsis, storm or other navigational warnings given to ships departing from any of the lake ports. Though the ports of Bujumbura and Kigoma are provided with jetty-end lights and beacons, these are currently not working or are very weak, and cannot therefore be relied upon. Similarly, there are no landfall lights, beacons, buoys, leading lines or other facilities to mark headlands, ship routes, known dangers (including wrecks), or the fairways and approaches to ports. There is currently no Lake Tanganyika Transport Act, or inland waterway protocol, similar to the ones developed for Lake Victoria. The provision of the IDA Grant, in parallel with SoP2, to the LTA will support the regional co-operation to develop these key pieces of the institutional framework.

The access infrastructure

22. All the ports on Lake Tanganyika also face a problem of access on the land side. Kigoma is connected to the Central Railway line, which is meter gauge. Due to the poor performance of the railway operator, now the Tanzanian Railway Corporation (TRC), insufficient investment in the infrastructure, and increased competition from road transport, cargo volumes have decreased to a little over 130,000 tons in 2016, down from 2.5 million tons in 2003. Furthermore, the rail infrastructure within the port area itself has also deteriorated, and the short loops (maximum 298 meters in the yard and 231 meters in the port) cannot accommodate longer trains. The GoT is now prioritizing the revitalization of the Central Corridor railway, and has invested in new locomotives and rolling stock for TRC. The GoT have also started the development of a new Standard Gauge Railway (SGR) in parallel with the longer term aim to connect the SGR to the Lake ports.

23. Over the short to medium term, the rehabilitation of the Central Line between Dar es Salaam and Isaka (970 km) is ongoing under the TiRP, with additional potential support in the pipeline from JICA and the European Investment Bank (EIB). The JICA and EIB/EU teams are considering support to the improvement of Kilosa – Gulwe flood prone section and the Tabora – Isaka section, respectively. The rehabilitation of the rail infrastructure between Tabora and Kigoma (414km, which is currently in poor condition) is essential to provide a reliable and frequent rail connection between Kigoma and Dar es Salaam to promote diversion of freight and passenger traffic from road to rail but also revitalize marine traffic on Lake Tanganyika between Kigoma and the lake ports in Burundi and DRC. The GoT have recently requested the World Bank consider the provision of additional support for this section.

24. The road network of Burundi comprises about 12,300 km of roads. About 4,800 km are part of the “classified” road network managed by the *Office des Routes* (ODR) under the Ministry of Transport, Public Works and Equipment (MTPWE), while the remaining 7,500 km are part of the “non-classified” road network managed by the local communities. The greater part of the network was developed between 1960 and 1990, and is mostly in poor condition. Key parts of the road infrastructure network were further damaged by the February 2014 floods. A Second-Generation National Road Fund (FRN) was established in 2004 for the financing of road maintenance through a fuel levy which is currently at US\$0.08 per liter. While the resources of the FRN have significantly increased from US\$ 2.5 million in 2005, to US\$10 million currently, they are barely sufficient to cover the annual routine maintenance needs of the classified network. Therefore, emergency works and periodic maintenance are funded by development partners.

25. Rural Accessibility in Burundi, defined as the share of rural population located within 2 km of an all-season road, is low at 40 percent⁹. Given the fact that many people around the lake depend on agriculture and fishery, feeder roads connecting key fishery and agricultural growth poles to Route Nationale 3 (RN3), the only trunk road in the catchment

⁹ Estimate from ICR of Burundi Road Sector Development Project (Report No: ICR00003367)



area¹⁰, are critical to providing access and connecting farmers to markets. RN3 is 128 km long from Nyanza-lac to Bujumbura and its overall condition is poor with significant pavement distress at several locations and serious slope stability issues in some sections. Additionally, RN3 is extremely vulnerable to natural disasters such as landslides and floods¹¹. Thus, improving accessibility in the lakeside provinces of Lake Tanganyika will require the rehabilitation of key sections of RN3, the improvement of rural feeder networks to improve connectivity to landing sites and agricultural areas, and the construction/rehabilitation of key community jetties to facilitate fishing operations and the safe loading and unloading of fishing products.

26. The East African Community (EAC) is supporting the Government of the Republic of Burundi (GOB) in a view to implement the feasibility studies and detailed design for the Rumonge – Rutunga – Bujumbura section of RN3 (78 km). The 50-km section from Nyanza-Lac to Rumonge is expected to be financed by Arab Funds¹². The African Development Bank (AfDB) is expected to provide the sum of US\$65 million to support accessibility improvements within the Lake Tanganyika basin, including the rehabilitation of the Rumonge to Rutunga section of RN3 (47 km).

Environmental Issues on Lake Tanganyika

27. Lake Tanganyika represents a unique and extremely valuable natural resource for riparian countries. In addition to containing almost 17 per cent of available surface freshwater supplies globally and some of the largest freshwater fisheries on the African continent, Lake Tanganyika is endowed with exceptionally large and highly diverse flora and fauna. The lake is among the richest freshwater ecosystems in the world and is described as a 'biodiversity hotspot', because of its critical contribution to global biodiversity. It represents a major source of drinking and domestic water, and serves to supply water to over half a million people in Bujumbura and Kigoma alone, and reportedly serves as a major source of protein in the diets of the inhabitants of the hinterland of the lake.

28. But overfishing, pollution and rising water temperatures have led to a drastic decline in the fish stocks of the commercial fisheries in the pelagic zones of the lake. And subsistence fishing is exerting increasing pressure in the littoral fishing grounds adjacent to the main population zones in the north of the lake. The lake is also the main receptacle for effluents and industrial, municipal, and residential wastewaters from around the coast. These effluents are typically not treated before being discharged into the lake. As the region's population continues to grow, this industrial, municipal and domestic pollution is expected to grow accordingly. Run-off into the lake containing agricultural pesticides and fertilizers also represent a significant source of pollution, as is pollution from the lake's vessels and ports. Wastewater discharge and solid waste disposal from vessels are a common form of pollution, worsened by the lack of waste management facilities at ports, while pollution from fuel leaks and oil residues are worsened by old and poorly maintained vessels characterizing much of the lake's fleet. Bujumbura port is reportedly contaminated with heavy metals in some specific locations, which will need careful handling and confined disposal on shore.

29. Lake pollution impacts human health directly because of the damaging effects on drinking water quality but also indirectly through eutrophication of the aquatic ecosystem, which can reduce water oxygenation and fish quantity, quality and safety. Signs of eutrophication are already reportedly evident in Kigoma bay where water circulation is very restricted, vessel traffic is high, and there are discharges from municipal institutions and from the town's power station. The authorities in Burundi are cognizant of the need to improve waste water treatment from Bujumbura. Sedimentation due to soil erosion is an escalating problem across the lake. This is most evident in the far northern area where 100 per cent of adjacent lands have been cleared of native vegetation and urbanization and farming are most intensive. Limited flat lands in the catchment, compound the problem by dictating that farming occurs on steep slopes or narrow strips between the rift escarpment and the lake.

¹⁰ RN3 traverses three rural provinces with a total estimated population of 1.2 million.

¹¹ The heavy rains of February 2014 flooded sections of the road and caused damage to culverts.

¹² Kuwaiti Fund, Saudi Fund, and Organization of the Petroleum Exporting Countries (OPEC) Fund for International Development.



30. The Lake Tanganyika Authority (LTA) was established by the Governments of Burundi, Democratic Republic of Congo, Tanzania, and Zambia by the signing of the convention on Lake Tanganyika in 2003, and launched in December 2008. The LTA, based in Bujumbura, is intended to promote regional cooperation required for socio-economic development and sustainable management of the natural resources in the Lake Tanganyika basin, but capacity enhancement is required to allow it to fulfil its mandate.

Relationship to CPF

31. The WBG's Regional Integration program for FY18 – FY23¹³ (also the IDA18 and IDA19 periods) explicitly notes that infrastructure deficits continue to cripple long-term competitiveness of African economies. About one-third of African countries are either land-locked or sea-locked, making them more distant from global and regional markets. Additionally, resource endowments vary widely across countries. The small size of domestic economies (one-half of countries have a GDP of less than \$10bn) entails higher costs in accessing regional and global markets. Although Intra-African trade continues to be small, but with significant economic potential. About 16 percent of total trade in 2013, and only 12 percent of Africa's imported intermediates is sourced from the region.

32. Despite progress in provision of regional infrastructure, critical gaps remain and progress has been uneven across sub-regions. Even when there have been improvements in regional road infrastructure, the impact on greater regional trade has not been realized due to a variety of non-tariff barriers and other market failure which exist in those corridors. This points to the need for paying greater attention to 'soft' policy reform issues alongside filling gaps in 'hard' infrastructure. The WBG's Regional Integration program proposes four strategic priorities for FY18 – FY23 (also the IDA18 and IDA19 periods): i. Generate economic dynamism along regional economic corridors; ii. Develop functioning regional markets in four priority sectors; iii. Scale-up access to quality public services and entrepreneurship through complementary regional solutions; iv. Promote collective action. The LTTP is consistent with priorities i. and iv. and places regional policy harmonization at the apex of the program.

33. The LTTP-SoP2 supports the Bank's twin goals of reducing extreme poverty and enhancing shared prosperity, as it facilitates economic growth, trade facilitation and access to jobs, in the hinterland of Lake Tanganyika. The revitalization of inland water transport on Lake Tanganyika in a sustainable manner will help to reduce transport costs and improve access, both for the communities living around the Lake, and for the Landlocked Developing Countries (LLDC) of the region and the key maritime gateways. The provision of the second access to the sea for many of these countries will not only lead to lower costs, but also improve the resilience of the transport system. In addition, inland water transport is a safer and more environmentally benign mode, depending on the volume carried, and the nature and length of trip.

34. The proposed LTTP-SoP2 is aligned with the Bank's Country Assistance Strategy (CAS) for Burundi (FY13-16)¹⁴ and the objectives set out in the Systematic Country Diagnostic (SCD) currently under preparation. The CAS identifies the strategic objective of improving competitiveness by establishing an enabling environment for inclusive growth and poverty reduction. The SCD adopts the long-term goal of fostering economic diversification and strengthening institutions.

35. The proposed LTTP -SoP2 in Burundi is consistent with the Africa Infrastructure Country Diagnostic (AICD) and the World Bank's Africa Strategy. The AICD highlights that Africa's infrastructure networks increasingly lag behind those of other developing countries and are characterized by missing regional links and limited access. It notes that regional integration can contribute significantly to reducing infrastructure costs, by allowing countries to capture scale economies and manage regional public goods effectively. The Africa Strategy advocates regional integration and regional solutions. It notes that many of Africa's challenges can best be addressed through cooperation and integration at the regional level.

¹³ The World Bank Group (2017) Supporting Africa's Transformation: Regional Integration and Cooperation Assistance Strategy for the period FY18-FY23, Washington D.C.

¹⁴ Burundi joint Bank-IFC Country Assistance Strategy (CAS) for Fiscal Year 2013-16 (IDA/R2012-0236[IFC/R2012-0311]).



Such an approach offers the prospect of larger scale and lower unit costs in the provision of key infrastructure; more efficient risk-sharing mechanisms; bigger and more competitive markets; and enhanced regulatory coherence, effectiveness, and credibility.

36. A Series of Projects is deemed appropriate for the Lake Tanganyika Transport Program, as the attainment of the program PDO, as defined below, will not be possible without consistent physical interventions in at least two of the countries, and harmonization of the institutional framework for safe and efficient navigation across the riparian countries, reflecting the nature of Lake Tanganyika as a regional public good. A priori, it is anticipated that the LTTP will have three phases – Tanzania SoP1, Burundi SoP2, and DRC SoP3.

C. Proposed Development Objective(s)

37. The proposed program development objective has been identified as the following: to contribute to the efficient and safe movement of goods and people to and on Lake Tanganyika, whilst strengthening the institutional framework for navigation and maritime safety.

38. The proposed project development objective for LTTP-SoP2 in Burundi has been identified as the following: to facilitate the sustainable movement of goods and people across Lake Tanganyika in Burundi, whilst strengthening the institutional framework for navigation and maritime safety.

Key Results (From PCN)

39. The progress towards the attainment of the Project Development Objective will be assessed through the following outcome and intermediate output indicators (which are provisional at this Project Concept Note stage):

Outcome Indicators

- Reduction of unit cost of transport (cost per ton-km);
- Effective search and rescue service established in Burundi (y/n);
- Number of individuals benefitting from the use of a new/improved port, ferry or road (number), of which proportion that are female (percentage); and
- Number of rural inhabitants located within 2 km (number), of which proportion that are female (percentage) of an all-season road/new ferry service.

Intermediate Output Indicators

- Length of road rehabilitated/upgraded under the project (km);
- Construction of vessel discharge facilities at Bujumbura port (y/n); and
- Provision of aids to navigation in port and port entrances (number).

D. Concept Description

40. The project development objective in Burundi is to be realized through the following components: (i) Improving the physical infrastructure; and (ii) Improving the institutional framework, and implementation assistance. Component 3 is the regional component, to be funded by the IDA Grant. A provisional outline of proposed components and the constituent activities and provisional costs for the Burundi phase of the program is outlined below:

41. **Component 1: Improving the physical infrastructure (Estimated cost US\$43.5 million).** The first component comprises the following three subcomponents:

- (i) The improvement of the port infrastructure
 - a. The establishment of discharge facilities from vessels (US\$1 million);



- b. Aids to navigation (US\$1 million); and
- c. Search and Rescue facilities and vessels (US\$2 million).

(ii) A vessel renewal scheme (tbc)

- a. Subsidy to support the acquisition of three new vessels (tbc) (US\$2 million)

(iii) The improvement of key access infrastructure

- a. Rehabilitation of the Rutunga to Bujumbura section (31 km) of the RN3 (Primary road) between Nyanza-Lac, Rumonge and Bujumbura (US\$30 million);
- b. Community jetties and feeder roads (US\$4.5 million);
- c. The rehabilitation of the access road to the Port of Bujumbura (US\$3 million).

42. Component 2: Improving the institutional infrastructure and implementation assistance (Estimated cost US\$6.5 million). The final component comprises the following three sub-components:

- a. Support to ODR in addressing Gender-based Violence (GBV) and Sexual Exploitation and Abuse (SEA) in road projects (US\$0.5 million).
- b. Technical Assistance, as required, to Project Implementation Team to implement the project (US\$2 million);
- c. Supervision of civil works (US\$4 million).

43. Component 3: Strengthening the Regional Policy Framework (Estimated cost US\$2 million IDA Grant). The final component will be funded from the US\$2.0 million IDA grant to be provided in parallel to the Lake Tanganyika Authority (LTA) to support the provision of:

- a) Technical assistance to support the development of a harmonized oil spill contingency plan in the partner states; and
- b) Funding for project preparation for the Lake Tanganyika Environmental Management Program.

SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

Burundi is a hilly and mountainous country, it is the second most densely populated country in sub-Saharan Africa. As such, it may prove very difficult to avoid impacts on dwellings, roadside businesses or agricultural fields. The land is prone to natural hazards from flooding and landslides. Lake Tanganyika is the lowest point of the landscape and the receptacle of all storm and drainage waters. Over most of its length the lake is bounded by mountains, mainly on the western side where general elevations are > 2,000 m with peaks > 3,000 m at the northern end.

Lake Tanganyika, Africa's second largest lake, is shared by four countries, namely Burundi (8 percent), the Democratic Republic of Congo (DRC 45 percent), United Republic of Tanzania (41 percent) and Zambia (6 percent). It receives its inflow from a number of rivers and streams, the major ones being the Rusizi, the Rugufu, Lufubu and the Malagarasi, and is estimated to hold 17 percent of the world's surface fresh water. The Lukuga River is the only outlet of the lake and drains into the Lualaba River below the town of Kabalo and subsequently into the River Congo. Lake Tanganyika is a global hotspot of biodiversity and home to more than 250 fish species found nowhere else. Over 90 percent of Tanzania's endangered chimpanzees are found in forested mountains on the lake's eastern shore.



The port of Bujumbura lies between the industrial zone and the central business district of the Burundian capital. Initial port development consisted of the construction of a piled pier of some 200 meters in length, which together with a rubble mounded breakwater (the southern breakwater), which now forms the entrance to a dredged basin within which the port facilities are located. The River Ntahangwa enters the lake immediately north of the port and carries considerable sediment, which has led to the accretion of about 40 hectares of land (between 1960 and 2008) adjacent to the northern breakwater. Sediment has reduced available water depth to approximately 3 meters within the entrance channel and the inner port basin. This situation is compounded by the presence of a storm-water outfall at the head of the basin (the Buyenzi canal), the sedimentation from which has rendered part of the main berth unusable. There is currently no shipyard in the port so vessels must go all the way to Kigoma for repairs.

B. Borrower’s Institutional Capacity for Safeguard Policies

The responsibility for preparation the necessary safeguard instruments, and managing and mitigating the environmental and social impacts of the project in Burundi will be the responsibility of the two implementing agencies (AMPF and ODR), with oversight from the national steering committee reporting to a regional coordinating body, the Infrastructure Department of the Secretariat of the East Africa Community, together with representation from the Lake Tanganyika Authority, the EAC Secretariat, and the CCTTF.

The national implementing agencies ODR and AMPF are familiar with the Bank safeguard policies given their prior experience developed during the preparation and implementation of other Bank-financed projects. During the preparation of the project, the Bank team will review the environmental and social capacity of both institutions, and identify additional capacity needs, or additional training, necessary prior to project implementation.

C. Environmental and Social Safeguards Specialists on the Team

Peter F. B. A. Lafere, Social Safeguards Specialist
Raymond Sinsi Lumbuenamo, Environmental Safeguards Specialist

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	<p>The project will support the rehabilitation and upgrading of feeder and port access roads within their existing alignments and RoWs and the construction of rural/community jetties in locations tbd. This policy is triggered since the upgrading and maintenance of primary and feeder roads and community jetties may result in both transient and non-transient environmental impacts.</p> <p>A Strategic ESIA for the whole program (all SOPs), including cumulative impacts of past, present and foreseeable future projects and programs in the lake,</p>



its riparian environment and catchments will be undertaken for the project to examine the trans-boundary and cumulative impacts, consulted upon, approved and disclosed. Site specific ESIA and ESMP will be prepared for the physical works interventions, consulted upon, approved and disclosed ahead of appraisal. All the civil works contracts for road rehabilitation, construction/rehabilitation of jetties, and specific port rehabilitation investments will include provisions on how to address environmental and social mitigation and monitoring aspects during works. For those components, where the location may not be known at the time of Board Approval an ESMF and RPF will be prepared and disclosed prior to appraisal.

The influx of labor, especially in the rural setting where RN3 and rural roads are to be improved, may engender with social conflict, increased crime inter-community migration (“followers”), impacts on community dynamics, increased competition for public service provision, Gender Based violence (GBV), Sexual Exploitation and Abuse (SEA), Child labor and school dropout, local inflation, increased pressure on accommodations and rents and other services, increase in traffic and its related accidents, and increased risk of communicable diseases and burden on both the communities and local health services. Risk/impact assessment of social impacts (e.g. GBV, community health and safety, population influx) are part of the SESIA and any ESIA, and will cover both construction and operational phases of the project. These risk assessments will be the basis to recommend mitigation measures to be included in the ESMPs/CESMPs but should also recommend measures to feed into the design of the project, and institutional arrangements for implementing agencies or other parties. The ESMP should identify additional plans that are required (e.g. OHS plan; community health and safety; waste disposal plan, labor management and influx plan, and emergency response plans).

Natural Habitats OP/BP 4.04

Yes

The dredging work could impact fish habitat both for pelagic and benthic species, whereas some of the roads may cross natural forests and grasslands and hence cause disturbance for wildlife.



Forests OP/BP 4.36	Yes	Sub-projects that may be identified during the implementation phase may cross forest reserves in which case the ESMF must include screening for impacts and measures to mitigate them.
Pest Management OP 4.09	No	The activities are not expected to involve pest management, so this policy is not triggered.
Physical Cultural Resources OP/BP 4.11	Yes	This policy is triggered because dredging activities, and road works, may result in the possibility of “chance finds” of cultural properties. All ESMPs will include appropriate "chance finds" procedures and mitigation measures.
Indigenous Peoples OP/BP 4.10	TBD	During project preparation, all project components will be screened for presence of Indigenous Peoples in the area.
Involuntary Resettlement OP/BP 4.12	Yes	This policy is triggered as road rehabilitation and upgrading work will require the reclamation of the RoW, and the removal of any encroachment, such as crops, residences, and road side businesses. A RAP will be prepared for primary road (RN3) and a RPF to guide the development of future RAPs for the other roads, if required.
Safety of Dams OP/BP 4.37	No	This policy is not applicable.
Projects on International Waterways OP/BP 7.50	Yes	This policy is triggered as Lake Tanganyika is an international waterway: Zambia and DRC, which are not party to the program at this stage, will need to be officially informed.
Projects in Disputed Areas OP/BP 7.60	No	The policy is not triggered as no project interventions are planned for any known disputed areas.

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Sep 14, 2018

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

A strategic ESIA will be prepared to look at the cumulative/strategic impacts of the program on the fragile ecosystem of Lake Tanganyika. Site Specific ESIAs, EMPs and RAPs, as required, will be prepared, consulted and disclosed for the specific interventions under Component 1 in SOP2. An RPF will also be prepared, consulted and disclosed. A program ESMF will also be prepared to guide the preparation of site specific ESIA and RAP in future SOPs. The former are scheduled to be available by the end of July 2018.



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