REPUBLIC OF RWANDA

MINISTRY OF HEALTH

SPIU/RBC

RWANDA BIOMEDICAL CENTER

A Healthy People. A Wealthy Nation

East Africa Public Health Laboratory Networking Project

RWANDA - ENVIRONMENTAL AUDIT REPORT

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PART 1: CONTEXT

1.1 Introduction

1. The Government of Rwanda received US$15 million from the World Bank for the East Africa Public Health Laboratory Network Project (EAPHLN), a regional project which aims to establish a network of laboratories in the five East African Community (EAC) member states (Burundi, Kenya, Rwanda, Tanzania, and Uganda). The project was approved by the Board on April 29, 2010. The project in Rwanda became effective on October 25th, 2010.

2. The original project triggered OP 4.01 due to the planned construction/rehabilitation of laboratories as well as the generation of medical waste at laboratories and was assigned the environmental category B. To ensure proper assessment and mitigation of potential adverse environmental and social impacts, an Environmental and Social Management Framework (ESMF) was prepared for the project in 2010. The ESMF outlined the steps in the environmental and social screening process, and included Environmental Guidelines for Contractors, a summary of the Bank's safeguard policies, an Environmental and Social Checklist, generic Environmental Assessment (EA) terms of reference to be applied in the event that the screening results indicate the need for a separate EA report, and an Environmental and Social Management Plan (ESMP).

3. The April 2014 Mid-Term Evaluation of the Rwanda project found sound progress towards the project development objectives with the following main achievements were: (i) improved range and quality of laboratory services and sustained progress by the satellite laboratories towards accreditation; (ii) strengthened training and capacity building of the staff; (iii) roll out of performance based incentives linked to progress on the SLIPTA composite scores; (iv) finalization of three satellite laboratories (Gisenyi, Gihundwe, Byumba), while Kibungo laboratory is underway (v) strengthened the ICT infrastructures; and (vi) improved disease sur-

veillance. The construction of four new laboratories funded under the project was done on land owned by the government and within the premises of existing hospitals, and did not involve involuntary displacement of any individuals.

1.2 Project description

4. The original project aimed to establish a network of efficient, high quality, accessible public health laboratories for the diagnosis and surveillance of TB and other communicable diseases. As described below, the project included three mutually reinforcing components which aimed to assist Kenya, Rwanda, Tanzania, Uganda, and Burundi (added in 2012) to diagnose communicable diseases of public health importance and to share information about those diseases to mount an effective regional response.

5. **Component #1**-*Regional Diagnostic and Surveillance Capacity* provided support to create and render functional a regional laboratory network which aims to enhance access to diagnostic services for vulnerable groups; improved capacity to provide specialized diagnostic services and conduct drug resistance monitoring; and strengthened laboratory based disease surveillance to provide early warning of public health events.

6. **Component #2**-*Joint Training and Capacity Building* aimed to support training and capacity building for laboratory personnel, in order to increase the pool of experts in the sub-region and to improve the effectiveness of public health laboratories.

7. **Component #3**-*Joint Operational Research and Knowledge Sharing/Regional Coordination and Program Management* will finance operational research and knowledge sharing activities, which aim to evaluate the impact of the new TB diagnostic technologies, assess drug resistance patterns for endemic diseases, and ascertain feasibility of using mobile phone technologies for surveillance reporting; and support regional coordination and program management functions.

8. The **key environmental and social challenges** identified in regard to the project activities can be summarized as follows:

   a) Generally, activities undertaken at the constructional phase of laboratory facilities may impact on the biophysical and social environments. These could be offsite and onsite impacts. Offsite impacts could be attributed to excavations (quarry sites, borrow pits) for harvesting construction material which if not properly managed could lead to health and safety risks (noise and dust from excavation and material transport, malaria breeding as pits become filled with water, etc.), but also aesthetic effects. Onsite impacts may be generated during excavation and actual construction which may include poor management and disposal of construction waste (solid and liquid) and poor erosion control leading to soil and water pollution/contamination, noise and dust leading to air pollution during. Since these labs were constructed within existing hospital premises there were no issues related to destruction of ecosystems or habitats or biodiversity. Health and safety issues might be related to non-compliance of occupational health and safety measures by the contractors and workers. In the case of these labs, the construction activities did not result in any land take, no displacement of people or loss of assets, incomes or livelihoods, and no risks to vulnerable or marginalized groups since sites were within existing hospitals.

   b) During the operation and maintenance phase the main challenge continues to be related to compliance with occupational health and safety considerations, including healthcare and laboratory waste management comprising bio-medical waste, solid and liquid hazardous waste and non-hazardous waste.

   c) The impacts associated with the decommissioning phase may be related to the management of borrow pits and quarry sites as these could pose health and safety risks to humans and animals.

BASELINE OF THE PROJECT

Gisenyi district hospital

Location and topography

9. The Gisenyi District Hospital is located within the town of Gisenyi, in the Rubavu district, Western province. The city is contiguous to the city of Goma in DR Congo (north Kivu Province) and lies at the foothills of high mountains and volcanoes some being still active such as the Nyiragongo (DR Congo). The district is highly prone to flooding due to heavy rain which overlaps various streams in the area. The district is composed by 12 administrative sectors. The city of Gisenyi has an equatorial climate with an average temperature of 20^{o} C and rainfall varying from 1200 mm to 1500 mm per year.

Biological environment

10. The district is located at the shore of Lake Kivu shared with DR Congo which is part of the Congo basin, several volcanoes and the Gishwati Forest which was heavily deforested and is currently under restoration.

Socioeconomic environment

11. From the NISR/Census provision results of 2012, the district is estimated to have a total population of 422,348 inhabitants with a population density of 1,041 inhabitants per km^2, which is one of the highest in the country and in Africa. The household size is 5.2 people against 4.8 at the national level. The district has a high rate of poverty (35.8 of households living below poverty line), , lack of access to clean water for 74% which leads to high prevalence of diarrhea diseases (17%) and ophthalmic infections (13%). The prevalence and incidence of HIV/AIDS is of 3.3%.

Gihundwe district hospital

Location and topography

12. The Gihundwe District Hospital is located in the city of Kamembe located in the Rusizi District, one of the 7 districts of the Western Province. The town of Kamembe is contiguous to the city of Bukavu in DR Congo (South Kivu). The district lies at the southern end of Lake Kivu, where this Lake empties into the Rusizi River. The district is made of high slope mountains and large valleys fully or partially developed.

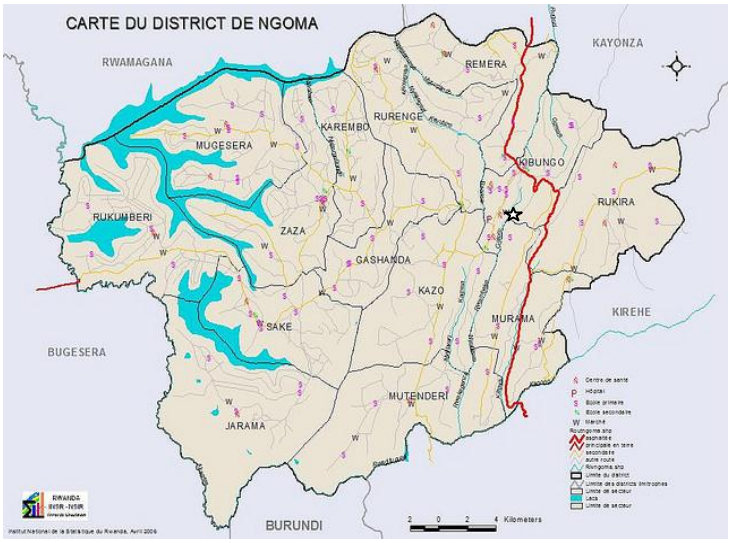
Biological environment

13. The district is endowed with a dense hydrology dominated by the Lake Kivu and the Rusizi River which is the only outlet of the Kivu Lake to the Tanganyika Lake. A large part of the district (Bweyeye sector) is part of the Nyungwe Natural Forest which is one of the most critical biodiversity hotspot and water tower of the country.

Socioeconomic environment

14. The population of the district is estimated at 404,712 people, with a density of 422 inhab. /km^2. 55% of the population of the district is estimated living above poverty line which is higher than the other districts in the western province. Statistics shows that 22% of the populations grow coffee for export and other cash crops like rice and sugar cane. They also grow fruit and vegetables represent an important source of income.

Kibungo district hospital



Location and topography

15. The Kibungo District Hospital is located in Ngoma district, one of the 7 districts in the Eastern P bordered by the Kirehe district in the southeast bordering Tanzania, Rwamagana district to the north-west, Kayonza district to the northeast, Bugesera district to the west and the border with Burundi in the south. The district is divided into 14 sectors.

Biological environment

16. The district host several small lakes with are rich in aquatic biodiversity as well as birdlife. The district is bordered by the Kagera River flowing to the Lake Victoria.

Socioeconomic environment

17. In 2012, the population of Ngoma district was 310,955 inhabitants of which 52% are women and with a population density of 421 people per square kilometer. The major causes of mortality in the district are HIV/AIDS and opportunistic infections (16.1%), severe malaria (11.3%) and cardiomyopathy causes (9.7%), with pneumonia and dehydration diarrhea as major causes of morbidity for children under five years old. The economy of the district is mainly based on agriculture and livestock.

Byumba district hospital

Location and topography

18. The Byumba District Hospital is located in Gicumbi district, in the Northern Province and is bordered in the northeast by Nyagatare district, in the north by Uganda, in the south by the Districts of Rwamagana and Gasabo and in the west by the Rulindo and Burera Districts. The province is located in the highlands area of Buberuka with a succession of steep hills separated by deep valleys and plateaus surrounded by steep ravines with small valleys segmented by multiple swamps. The altitude varies from 1800 to 2500 m with average annual temperature of 15 to 16^0C. The Gicumbi town where the Byumba Hospital is located is on a rocky mountain at around 1,600 masl.

Biological environment

19. The district is covered by woodlands which cover the steep hills unsuitable for agriculture and are made mostly of eucalyptus sp. Wildlife population is limited and have virtually disappeared with the uncontrolled destruction of their natural habitat.

Socioeconomic environment

20. The Gicumbi town is made of a population of 79,824 people in 2012 and has a density of 620 inhab. /Km2 and a population growth of 5% which is higher than the most of the districts in the country. The economy of Gicumbi is based on agriculture including tea and wheat as cash crops, banana and beans.

1.3 Policy, Legal and Administrative Framework

1.3.1 Policy framework

21. **Health Sector Policy** (2005)

This policy brought a deep reform of health services as the policy was based on three major strategies (i) decentralization of the health system using the district health center as the basic operational unit; (ii) development of primary care health system; and (iii) reinforcement of community participation in the management and financing of services (including the *Mutuelle de Sante*). The 2012-2018 Health Sector Strategic Plan III aims to strengthen Rwanda's focus towards sustainable development and decentralization of health services.

22. **Environmental Health Policy** (2008)

This policy provides guidance for appropriate Environmental Health legal and institutional framework stressing the need for adequate financial, human and material resources for effective EHS. The implementation of this policy is guided by the Health Strategic plan and the Districts are responsible for budgetary allocations for environmental health services delivery to the community.

23. **National Policy on Injection Safety, Prevention of Transmission of Nosocomial Infections and Healthcare Waste Management** (2009)

This policy provides guidance to health professionals on setting in place mechanisms, systems and practices to prevent transmission of infections through injections and other medical procedures and ensures that medical waste is safely managed and disposed.

24. **National Environmental Policy (2003)**

This policy has among its objectives to improve the health and the quality of life for every citizen and promote sustainable socio-economic development through rational management and utilization of resources and environment. The article 5.3.6 recommends a national strategy for specific management of chemical products, biomedical and industrial waste. Moreover, according to

this policy, Environmental Impact Assessments (EIAs) must be carried out prior to development of infrastructure projects.

25. **National Policy and Strategy for Water Supply and Sanitation Services (2004)**

This policy aims at ensuring sustainable and affordable access to safe water supply, sanitation and waste management services policy and outlines that waste disposal shall be planned and managed in the view to minimize environmental impact and ensure the protection of water resources.

1.3.2 Legal framework

26. Organic Law on Environmental Protection and Management (2005)

This law defines hazardous waste used for the purpose of transboundary movements as any substance whether solid, liquid or gaseous that causes serious harm to human health, security and other biodiversity together with the quality of environment.

27. Rwanda Labour Code (revised in 2009)

This law covers occupational health and safety legislation. The ministerial order determining conditions on Occupational Health and Safety (2012) provides general and specific rules and regulations related to health and safety at workplace including for control of air pollution, noise and vibration (art.29), protective clothing and appliances (art.46) and fire-fighting measures (art.39).

The Ministry of Health has developed two set of guidelines in 2014: (i) guidelines for the prevention and management of Viral Hemorrhagic Fever in health care settings which includes injection safety and waste management recommendations; and (ii) guidelines on sorting, transportation, treatment and final disposal of medical waste from site of generation to sites of disposal. These guidelines aim at improving injection safety and healthcare waste management in the country and categorize wastes into infectious sharp waste, infectious non sharp waste and non-infectious waste. The Ministry of Health is currently preparing National guidelines on health waste management and Standard Operations Procedures in order to harmonize the existing

guidelines with WHO recommendations.32. Rwanda Utilities Regulatory Agency (RURA) has developed several regulations providing for solid and liquid waste management, including the requirement for decentralized wastewater treatment systems for institutional facilities such as health centers/hospitals and provides guidance for management of particular hazards. The Guidelines for the management of waste disposal sites were issued in 2009 and provide for landfill design, construction, operation and maintenance requirements for solid or semi-solid waste including ashes.

33. The Rwanda Housing Authority has issued in 2013 directives for banning and disposal of asbestos materials (mainly as cement roofs) in public institutions and residential houses.

34. General Guidelines and Procedures for Environmental Impact Assessment (2006) define three categories of projects based on their Impacts Levels (IL), the projects being in the categories IL 1[1] and IL 2[2] are required to conduct EIA studies. The guidelines also outline how the EIA process shall be conducted and defined the roles and responsibilities of each stakeholder involved.

1.3.3 Institutional framework

35. The Ministry of Health leads the health sector in Rwanda and is the executing agency of the current project. The Single Project Implementation Unit (SPIU) within the Ministry of Health is responsible for day to day coordination of project activities.

36. The Rwanda health system consists of five national referral hospitals- the King Faycal Hospital (KFH), Teaching Hospital of Kigali (CHUK), Teaching Hospital of Butare (CHUB), Rwanda Military Hospital (RMH) and the Ndera Neuropsychiatric Hospital (HNP)-. The system also includes thirty District Hospitals. Since 2011, the government has established District Hospitals at the core of health service facilities through the District Health System (DHS) which comprises the district hospital and a network of health centers either public, government assisted, not for profit or private. The District Health Unit plays the operational management role and the

[1] Projects which might have significant, or irreversible impacts to the environment
[2] Projects with less significant adverse impacts that can easily be prevented or mitigated

DHS is in charge of planning and management, coordination, financing and resource allocation as well as regulation of health services.

37. The EAPHLN project aims at supporting the laboratories in four district hospitals namely Gisenyi, Byumba, Kibungo and Gihundwe.

38. The health system also includes 450 health centers located at the sector level (administrative entity below the District) which is the point of service delivery, with healthcare committees providing oversight of the work of various units and strengthening the Community-based Health Insurance Scheme (Mutuelle de Sante) to improve access to basic health services.

1.3.4 Regional and international commitments

39. Rwanda has signed the Basel Convention in 2004 and is in a preparatory process of implementing the amendment to the Convention. The Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes was also signed in 1991. Rwanda's obligation to other conventions and agreements are provided in table 1.

Table 1: Rwanda engagement to International Environmental Conventions

Convention	Status
Basel Convention on Hazardous Wastes	Accessed
Convention on Biological Diversity (CBD)	Ratified
Convention on International Trade in Endangered Species (CITES)	In force
Convention on Wetlands of International Importance especially as Waterfowl Habitat	Ratified

(RAMSAR)	
Kyoto Protocol to the United Nations Framework Convention on Climate Change	Accessed
United Nations Convention to Combat Desertification (UNCDD)	In force
Vienna Convention for the Protection of the Ozone Layer and Subsequent Protocols and Amendment	Signed +accepted subsequent amendments and protocols
Bamako Convention on Good Management of Hazardous waste	Signed

1.3.5 Relevant World Bank Safeguards and Disclosure Policies

40. The World Bank Environmental and Social Safeguards Policies include key Operational policies (OP) designed to ensure that potentially adverse environmental and social consequences are identified, minimized, and mitigated. These policies are summarized below. As stated earlier in this report, OP 4.01 is triggered for this project:

41. **OP/BP 4.10 Environmental Assessment:** This policy is considered to be the umbrella policy for the Bank's environmental 'safeguard policies'. This policy requires Environmental Assessment of projects proposed for Bank financing to ensure that such projects are environmentally sound and sustainable. All projects proposed must be screened by the Bank and put into one of four categories for Environmental Assessment purpose. If a project falls into categories A or B, a Comprehensive Environmental Assessment (also known as EIA or SEIA for Social and Environmental Impact Assessment) must be conducted to respond to Bank requirements. An EIA must include a comprehensive environmental management plan.

42. **OP/BP 4.36 Forests**: This policy seeks to harness the potential of forests to reduce poverty in a sustainable manner, integrate forest effectively into sustainable economic development and protect the vital local and global environmental services and values of forests. The policy prohibits Bank support for projects which would lead to significant conversion or degradation of critical forest areas or other natural habitats.

43. **OP 4.04 Natural Habitats:** This policy seeks to ensure that development projects take into account the conservation of biodiversity, as well as the numerous environmental services and products which natural habitats provide to human society. The policy prohibits Bank support for projects which would lead to the significant loss or degradation of any Critical Natural Habitats which are natural habitats either legally protected, officially proposed for protection, or unprotected but of known high conservation value.

44. **OP 4.09 Pest Management**: This policy provides that rural development projects and health sector projects have to avoid using harmful pesticides. The preferred approach is the Integrated Pest Management (IPM) techniques that must be encourage in the whole of the sectors concerned. If pesticides have to be used in the protection of crop or in the fight against vector-borne diseases, the borrower must prepare a Pest Management Plan (PMP).

45. **OP/BP/GP 4.12 Involuntary Resettlement:** This policy aims to avoid involuntary resettlement when feasible, or to minimize and mitigate its adverse social and economic impacts. This policy promotes participation of displaced people in resettlement planning and implementation. The policy's main economic objective is to assist displaced persons in their efforts to improve or at least restore their incomes and standards of living. This policy also prescribes compensation and other resettlement measures and requires that project submitted includes adequate resettlement planning instruments.

46. **OP/BP 4.10 Indigenous Peoples**: This policy underscores the need for project proponent and Bank staff to identify indigenous peoples and to engage in a process of free, prior, and informed consultation. The policy also aims to ensure that adverse impacts on Indigenous People

are avoided, or where not feasible, minimized or mitigated and that they participate in project and benefit from it in a culturally appropriate way.

47. **OP. 4.11 Physical Cultural Resources**: This policy aims to avoid, or mitigate, adverse impacts on cultural resources from development projects that the World Bank finances. Project falling under category A or B must addresses impacts on physical cultural resources as an integral part of the environmental assessment (EA) process.

48. **OP 4.37 Safety on Dams**: This policy requires that the design and supervision of construction of dam project must be carried out by experienced and competent professionals and that dam safety measures be adopted and implemented through the project cycle. The policy also applies to existing dams where they influence the performance of a project. In such case, a dam safety assessment should be carried out and necessary additional dam safety measures should be implemented.

49. **OP/BP 7.50 Projects on International Waterways**: This policy underscores the importance of riparian states making appropriate agreements or arrangements for the entire waterway, or parts of it. If there are no such agreements or arrangements, the Bank requires, as a general rule, that the borrower notify the other riparian of the project. The Policy lays down detailed procedures for the notification requirement, including procedures in case there is an objection by one of the riparian to the project.

50. **OP 7.60 Projects in disputed areas:** this policy requires that a project located in a disputed areas make appropriate arrangements to ensure that all the claimants to the disputed areas have no objection to the project development and financing by the Bank.

51. **BP 17.50 Consultation and Disclosure Requirements**: this policy requires that a project categorized as A or B consults project-affected groups and local nongovernmental organizations (NGOs) about the project's environmental aspects and takes their views into account. It also requires the project to disclose the draft Environmental Assessment (EA) report (for category A

projects) or any separate EA report (for category B projects) at a public place accessible to project-affected groups and in the local language as well as to the World Bank Infoshop prior to project appraisal.

1.4 Implementation Arrangements

52. The overall implementation responsibility for the project rests with the MoH. The Permanent Secretary has overall oversight. The project activities are coordinated by the ministry's SPIU. This unit handles day to day management of the project. The project team, comprising of the project officer, accountant, epidemiologist, and microbiologist, ensures effective coordination of project activities. The team works under the overall guidance of the PS, as well as the head of the TRAC + (Center for Treatment and Research on AIDS, Malaria, TB, and Other Epidemics, MoH) and the National Reference Laboratory (NRL) in their technical position as the main sub recipients of the grant. The NRL takes leadership in laboratory networking and systems development while the TRAC+ focuses on improving laboratory linkages with integrated disease surveillance. Both the NRL and TRAC Plus will report directly to the PS and share the technical updates with the PMU which will be responsible for preparation of consolidated quarterly and annual technical and financial reports. The Directors General of the NRL and TRAC Plus and Directors of the central teaching hospitals (CHUK & CHUB) provide technical oversight for the project and are responsible for reviewing and approving the consolidated annual work plan of participating laboratories.

53. At the peripheral level, coordination in the districts where the satellite labs are located is handled by the heads of the subunits of TRAC Plus working in conjunction with the directors of district hospitals and heads of the district laboratories. Members of the district coordination teams include the hospital director, clinical officer/nurse-in-charge of health centers, environmental health officer and biotechnologist-in-charge of district laboratory.

PART 2: ENVIRONMENTAL AND SOCIAL AUDIT

2.1 Audit process

2.1.1 Objective

54. The project did not comply with procedural requirements of preparing safeguards instruments, have them consulted on by a broader stakeholder, cleared and disclosed prior to commencement of all infrastructure related activities. The four labs in Rwanda were completed and made operational without the client complying with the requirements, in accordance with the WB Safeguards Policies and the country's own environmental policies and laws.

55. Thus, the purpose of this environmental and social audit is to ascertain compliance of the activities implemented under the project, the existing facilities and operations with national environmental laws and regulations as well as World Bank requirements and standards, and to plan for the management of potential risks and impacts likely to result from implementation of subsequent activities related to operation of these laboratory facilities.

2.1.2 Scope of the ESA

56. The scope of the audit is therefore limited to the four laboratories which benefited from complete construction, extension and renovation under the project. The audit covers three main phases of the project, with specific areas of focus:

- ***Planning and design phase***: compliance in the design and planning of environmental management, law enforcement and institutional framework.
- ***Project construction phase***: management of construction materials and waste, air, noise and wastewater, prevention of soil degradation and forests/critical ecosystems encroachment as well as occupational health and safety measures set in place by the constructor.

- ***Project operation and maintenance phase***: waste generation, management and disposal from laboratory operations as well as health and safety of the staff and overall environmental performance.

2.1.3 Methodology for the ESA

57. The audit was conducted using various methods and sources, including project documentation, supervision reports, site inspections, interviews and public consultations with key stakeholders (public health officials, medical and laboratory personnel, community representatives) using a structured audit questionnaire.

The implementation of the EAPHLN Project in Rwanda includes several activities which were or are likely to have potential adverse environmental risks or social impacts in its area of influence. As a result, the World Bank Operation Policy OP 4.01 on Environmental Assessment was triggered.

2.1.4 Public consultations

58. No consultations were conducted in Rwanda since 2010 by the project, although in reference to national regulations and by the WB safeguards policies, projects listed in the category A and B are requested to consult project-affected groups and community members about the project's environmental aspects and to take their views into account.

59. Taking into consideration the advance stage of the project implementation and the limited expected environmental and social impacts from the project, consultations were conducted during this audit through small group meetings and the stakeholders consulted were limited to the following categories in each project site:

Hospital personnel

Laboratory manager and staff

Waste handlers

Patients' caretakers

Neighboring households

A questionnaire was used to guide the consultations and is attached as annex 1 and the list of participants for each project site is attached as annex 2.

Table 2: Summary of consultations

Category	Kibungo Hospital	Gihundwe Hospital	Gisenyi Hospital	Byumba Hospital
Usefulness of the hospital	The laboratory testing capacity has greatly increased and patients can be treated according to the accurate results from the lab. The access to the lab by patients is much more easy and they can be treated rapidly as the results are rapidly delivered	The laboratory testing capacity has greatly increased and patients from all over the region can be rapidly and better treated based on results generated by the lab.	The laboratory testing capacity has greatly increased and patients from all over the region can be rapidly and better treated based on results generated by the lab.	The laboratory testing capacity has greatly increased and patients from all over the region can be rapidly and better treated based on results generated by the lab.
Any benefit to neighboring countries	The hospital receive also some patients from Burundi, Tanzania and Uganda	Patients from Burundi and DR Congo regularly come to benefit from affordable and reliable services provided by the lab.	Patients from DR Congo regularly come to benefit from affordable and reliable services provided by the lab.	

Noticeable safety measures during construction phase	Construction workers were wearing protective clothes, hard caps, boots and masks The site was fenced and a specific access road for trucks was set up.	Construction workers were wearing protective clothes, hard caps and boots The site was fenced and a specific access road for trucks was set up.	Construction workers were wearing protective clothes, hard caps and boots	Construction workers were wearing protective clothes, hard caps and boots
Noticeable public hazards from the construction of the facility	No hazards identified from construction of laboratory facilities. However, the public kitchen was demolished and caretakers have since then had to cook patients' meals in rooms that are not outfitted as kitchens, thus creating an unsafe environment.	No hazards identified from construction of laboratory facilities.	No hazards identified from construction of laboratory facilities.	No hazards identified from construction of laboratory facilities.
Noticeable	No hazards identified	Limited access to wa-	Limited access to	Limited access to wa-

public hazards since the project is operating		ter from the lab. and inadequate use of safety equipments	water from the lab. and inadequate use of safety equipments	ter from the lab. and inadequate use of safety equipments
Noticeable improvement of livelihood (jobs…)	Men and women managed to get jobs from the construction and the lab staff has increased. House owners, shopkeepers and other small business owners benefited from the presence of construction workers	Men and women managed to get jobs from the construction and the lab staff have increased. House owners, shopkeepers and other small business owners benefited from the presence of construction workers	Men and women managed to get jobs from the construction and the lab staff has increased. House owners, shopkeepers and other small business owners benefited from the presence of construction workers	Men and women managed to get jobs from the construction and the lab staff have increased. House owners, shopkeepers and other small business owners benefited from the presence of construction workers
Overall perception of the project	Clients using the service of the lab have substantially increased	The Hospital and the region benefited from the improved lab ser-	Hospital services benefited from the improved	Hospital services benefited from the improved quality of re-

	and the Hospital services benefited from the improved quality of results	vices and the hospital is very proud of the accreditation process	quality of results	sults

Conclusion from consultations:

43. The staff at the four hospitals and the public in these towns where the labs are located do not remember any nuisance or hazard from the construction of the laboratory except the caretakers from the Kibungo hospital that have shown the need of a new and improved kitchen. In order to solve this issue, the project management team has already completed the design of a new kitchen and are currently mobilizing fund for its construction.

2.2 Legal and regulatory review

2.2.1 Findings

60. From a rapid screening conducted during the project preparation by the World Bank the project was assigned the category B as it was expected to have limited potential adverse environmental impacts on human populations or environmentally important areas, including wetlands, forests, grasslands and other natural habitats.

Since at the time of project design and preparation the specific sites and scope of the activities were not known, the borrower was requested to prepare an Environmental and Social Management Framework (ESMF) to include a generic Environmental and Social Management Plan (ESMP). The National Health Care (Medical) Waste Management Plan was adopted for use under the project. An ESMF was prepared, outlining the steps in the environmental and social screening process, and includes Environmental Guidelines for contractors, a summary of the Bank's safeguard policies, an Environmental and Social Checklist, generic Environmental Assessment terms of reference and generic Environmental and Social Management Plan. In addition, two documents guided the implementation phase—the *Environmental Health Policy* (July 2008) and the *National Policy on Injection Safety, Prevention and Transmission of Nosocomial Infections and Healthcare Waste Management* (May 2009).

61. The Financing Agreement covering the project had also indicated that during the implementation phase of the project supplementary safeguards instruments such as Environmental Impacts Assessments would be prepared for each of the sites where laboratories would be located. These documents were expected to be consulted upon broadly, cleared by the World Bank and disclosed in-country and at the World Bank's InfoShop.

2.2.2 Gaps identified

62. The ESMF produced by the project at regional level did not reach all relevant stakeholders. This resulted in very low awareness and practice in terms of safeguards process implementation and effective preparation of the required additional safeguards instruments. However, in the

middle of the construction phase (late 2013) the project management received terms of reference to prepare an Environmental Management Plan (EMP) for each site.

2.2.3 Actions required

63. The project management has recruited a consultant who is assisting to complete the EMPs requested by REMA, in order to comply with local regulations. It is advised that the resulting documents be handed over to each of the project sites, to further improve compliance with environmental standards.

2.3 Construction phase review

2.3.1 Findings

64. The construction phase of the project was conducted from 2011 to 2013 in sites hosted by District Hospitals of Gisenyi, Byumba, Gihundwe and Kibungo. In reference to the project ESMF, an Environmental and Social Screening Form should have been filled by Environmental Health Officers of the District Hospitals before any construction/rehabilitation commenced. However, no such screenings were carried out or documented to the effect the project undertook any deliberate exercise to identify potential adverse environmental and social impacts before any of the laboratories was constructed, rehabilitated or extended. Contractors were however instructed about the environmental and social requirements related to construction activities including prevention of air and noise pollution, waste management measures including for hazardous waste, and staff health and safety[3].

65. This review is based on assessment missions conducted in Byumba, Gisenyi and Gihundwe Hospitals in 2013 and 2014[4] and from the field visits and consultations conducted in Kibungo and Gihundwe Hospitals from May 6 to 9, 2015.

[3] EAPHLN Project environmental supervision mission report, June 2013
[4] EAPHLN Project Rapid safeguard performance review of the Rwanda component, Oct 2014

2.3.2 Gaps identified

66. A matrix of key challenges and mitigations measures applied is reported in the annex 3 for each of the site. A table summarizing the findings and gaps identified of all the four sites audited as an overview of the safeguards policies compliance during the construction phase is hereby presented.

Table 3: Summary of the construction phase review

Key challenges	Effectiveness of mitigation/prevention measures set in place			
	Gisenyi	Gihundwe	Kibungo	Byumba
Environmental impacts				
Soil and water degradation	+++	+++	++	+++
Air pollution	+++	+++	+++	+++
Noise pollution	+++	+++	+++	+++
Traffic accident	+++	+++	+++	+++
forests and critical ecosystems degradation	n/a	n/a	n/a	n/a
Social impacts				
Occupational health and safety	+++	+++	+++	+++
Land acquisition/ relocation[5]	+++	+++	++	+++
Hazardous toxic materials	+++	+++	n/a	n/a

+++: satisfactory ++: need improvement +: not satisfactory

[5] No land is being acquired for the labs as they are being built in existing facilities or componds, but space needs to be set aside for a kitchen in the Kibungo lab.

67. From assessment missions' reports and public consultations conducted at the four laboratory sites it was noted that no significant nuisances could be reported and some safety measures such as fencing, PPE for construction staff and public notices were set up. Most of the environmental and social nuisances from the construction phase were site-specific, limited in time and of low intensity.

2.3.4 Conclusion and Actions required

68. The procedures required by the ESMF for the construction phase of the Gisenyi, Gihundwe, Byumba and Kibungo laboratories were not fully applied, including the preparation of an Environmental Impact Assessment (EIA) and/or Management Plan (EMP) prior to the commencement of construction activities. However due to the low significance of the project impacts and the existing regulations in place, no fatal flows could be observed.

2.3 Operation and maintenance review

2.3.1 Findings

69. The review is based on assessment missions conducted in Byumba, Gisenyi and Gihundwe Hospitals in 2013 and 2014, project reports, and from field visits and consultations conducted at Kibungo and Gihundwe hospitals from May 6 to 9, 2015.

70. The World Health Organization Africa has set up the Stepwise Laboratory Quality Improvement Process towards Accreditation (SLIPTA), a framework for improving quality of public health laboratories in developing countries to achieve ISO 15189 standards. From the peer review audits conducted at the five laboratories during 2011-2015, which had among other objectives to determine scores of laboratories towards accreditation using the SLIPTA checklist it was reported that all the five laboratories have improved their performance substantially, reaching at least three stars, and surpassing the project target of two stars, on a scale of five.

71. The annual SLIPTA audits also assessed, tracked and monitored performance on biomedical waste management at all project supported sites in the five countries. In Rwanda, the share of

national and satellite laboratories that comply with Biomedical Waste Management requirements has improved substantially, as depicted in the trend in the composite scores below. Progress has been assessed and monitored annually on three key areas of waste management through regular audits of all facilities in the five countries. The first section (12.9) measures the extent to which safety manuals are readily available in work areas and updated annually and whether the manuals specifically include guidelines on key topics (e.g. blood and body fluid precautions, hazardous waste disposal, personal protection equipment; post-exposure prophylaxis, fire safety, electrical safety).

72. The next section (12.10) assesses the extent to which waste is separated according to biohazard risk, with infectious and non-infectious waste disposed of in separate containers and whether sharp instruments and needles are discarded in puncture resistant containers. Likewise, audits determine whether infectious waste and sharps containers are autoclaved before being discarded to decontaminate potentially infectious material and whether infectious waste is properly incinerated, burnt in a pit, or buried.

73. The third section (12.11) reviews compliance with chemical management and disposal in the laboratory. The annual audits determine the extent to which all hazardous chemicals are correctly labeled with the chemical's name with hazard markings; whether flammable chemicals are stored out of sunlight and below their flashpoint, in a cabinet or in a well-ventilated area; and if flammable and corrosive agents are separated from one another and hazardous chemicals are properly handled and discarded.

74. Finally, the last section (12.12) audits compliance with handling and disposal of sharps and assesses if syringes, needles, lancets, and other bloodletting devices capable of transmitting infection are used only once and are properly discarded in puncture resistant containers that are not overfilled. The scores from the latest round of SLIPTA audits conducted in late 2014 are presented below.

Table 4: Produced Biomedical Waste per Hospital in the Project

		Max Score	Byumba	Gi-hundwe	Gisenyi	Kibungo	NRL
	Checklist items		Score	Score	Score	Score	Score
12.9	Is a laboratory safety manual available, accessible, and up-to-date?	3	2	3	3	3	3
12.10	Is sufficient waste disposal available and is waste separated into infectious and non-infectious waste, with infectious waste autoclaved, incinerated, or buried?	2	1	2	2	2	2
12.11	Are hazardous chemicals / materials properly handled?	2	2	2	2	2	2
12.12	Are 'sharps' handled and disposed of properly in 'sharps' containers that are appropriately utilized?	2	2	2	2	2	2
	TOTAL SCORE FOR THE PART	**9**	**7/9**	**9/9**	**9/9**	**9/9**	**9/9**

SOURCE (MoH, 2014)

75. From a more comprehensive environmental and social perspective a review matrix of the compliance of the project's operation and maintenance phase is available in annex 2 for each site. A table summarizing the key findings and gaps identified is presented below.

Table 5: Summary of the review of the operation and maintenance phase

Key challenges	**Effectiveness of mitigation/prevention measures set in place**				**Details of existing gaps**
	Gisenyi	**Gi-**	**Kibun-**	**Byumba**	

		hundwe	**go**		
Laboratory health and safety					
Staff safety	++	++	++	++	Stronger enforcement of existing regulations
Sanitation	++	++	+++	++	Proper maintenance of water supply and sanitation infrastructure
Healthcare waste management					
Waste segregation	++	++	++	++	Color code and stronger enforcement of existing regulations
Solid waste recycling	++	++	+++	++	More attention on recycling of plastics and Recycling of waste from the kitchen
Solid waste burning	++	+++	+++	+++	Enforcement of existing regulations (frequency)
Solid waste disposal	+++	+++	+++	+++	

Chemical waste disposal	++	++	++	++	Additional guidance on chemical waste management
Anatomic waste dumping	+++	+++	+++	+++	

+++: satisfactory ++: need improvement +: not satisfactory

2.3.2 Laboratory safety and sanitation

76. All the laboratories have in place a health and safety committee and safety management guidelines such as the Policy and Procedures Manual (Gihundwe laboratory) and Guidelines for chemical safety handling, incident, injuries and accidents (Kibungo Laboratory). Safety measures in place were found satisfactory in all the laboratories visited. However, although equipment and board notices are in place, the use of protection equipment is not systematic for laboratory staff as well as for visitors.

77. Sanitation measures and facilities were found sufficient and fully operational at Kibungo laboratory, however Gisenyi, Gihundwe and Byumba laboratories are facing issues of safe water availability resulting in malfunction of sanitation installations. It was noted however that the issue of water availability was common to other users in the country during the time when this audit was conducted. Sanitation, especially reliable water supply being critical for the overall efficiency of the laboratory services, it is recommended that involved hospitals put in place water storage installations to complement the existing water supply system.

78. Moreover, Gisenyi, Kibungo and Byumba laboratories are facing challenges of in house flooding when heavy rains occur due to construction inaccuracies. This could be easily addressed by constructors before final handover.

2.3.4 Healthcare waste management

79. Waste segregation procedures is well known in all laboratories, the color code is not yet in place but waste containers are clearly labelled and waste handlers are aware of the importance of precaution measures required for the different category of waste.

80. However, the frequency of waste incineration at Gisenyi District Hospital is four times lower than for other hospitals as it happens twice a month while other incinerate 8 times a month. This makes the waste storage area overloaded and can be a source of health hazards.

81. All the laboratories have septic tanks for wastewater management through and water wells and from the interviewees no problems were noticed so far.

82. While in the Kibungo laboratory chemical waste is disposed in the concrete ash pit, in the other laboratories (Gihundwe, Gisenyi and Byumba), this waste is disposed in an open pit. There are not clear indications on how chemical waste shall be managed in the national guidelines and there is need for more guidance to avoid any surface or ground water pollution.

2.3.5 Conclusion and Actions required

83. The operation and maintenance phase of the laboratory meets the safeguards requirements in terms of staff health and safety and biomedical waste management. This finding is consistent with the improved scores of all project-supported laboratories, as measured through the SLIPTA composite scores on biomedical waste management. The laboratory management shall however enforce the existing regulations to ensure that safety measures are fully applied.

84. There are several deficiencies in the maintenance of sanitation equipment in the Gisenyi, Byumba and Gihundwe laboratories which shall be addressed rapidly by respective contractors responsible since all the buildings are still under guarantee and therefore any deficiencies are subject to reparation prior final hander over.

85. Finally, healthcare waste segregation can be improved in the four laboratories visited and Gisenyi district hospital managers shall set up sustainable measures for waste management (frequency of waste burning) and enforcement of the existing regulations.

2.4 Institutional capacity review

86. Although public institutions have qualified personnel in charge of environment, health and safety matters personnel, there still gaps in following rules and regulations in place. The Ministry of Health, like many institutions, does not adequately integrate environmental and social management process into their projects which delays their implementation in most cases.

87. At the local level, the project coordination team is aware of environmental health and safety policies and regulations. The project has conducted a training on hospital waste management in September 2012 and the laboratories of Kibungo and Gihundwe have trained their staff and the waste handlers on this thematic.

88. The lab biosafety officer and the environmental health officer of each hospital involved are aware of Standards Operations Procedures and have the required capacities to effective manage environmental and social concerns in the vicinity of the hospital. There is however need for capacity building for monitoring environmental standards such as air quality and other health risks.

2.5 Follow-up:

89. The compliance of the project activities with existing facilities and operating procedures were found satisfactory in general with three major recommendations:

1. The lack of compliance with national environmental laws and regulations can be addressed through finalization of the requested EMP document and the completion of the

present environmental audit. These documents will be in compliance with national environmental regulations and also compliant with the World Bank OP 4.01 Environmental Assessment (category B project).

2. The major impact identified from the construction phase is related to the relocation of the public kitchen for the construction of the Kibungo laboratory. The project coordination unit should fast track the construction of a new kitchen. In fact, some steps have been undertaken including funds mobilizing and architectural design.

3. The laboratory facilities in the four hospitals shall be fully operational and maintained. The project shall ensure that contractors address remaining construction issues while the Hospital management of Gisenyi, Gihundwe and Byumba laboratories install alternative measures to address the issue of insufficient water supply and enforce the health and safety regulations continuously.

List of references

- Operational Policies, The World Bank Operational Manual, Jan 1999
- Regional Health Systems Strengthening and TB support project Environmental and Social Management Framework for Burundi, Kenya, Tanzania, Rwanda and Uganda, February 2012.
- East Africa Public Health Laboratory Networking Project Laboratory waste management plan, Rwanda Ministry of Health, May 2009
- National Policy on Injection safety, prevention of transmission of nosocomial infections and Healthcare Waste Management, Rwanda Ministry of Health, May 2009
- East Africa Public Health Laboratory Networking Project rapid safeguard performance review of the Rwanda component, E. Dwumfour, Oct. 2014
- Report of the environmental supervision mission of the East Africa Public Health Laboratory Networking Project in Rwanda, O. Fye, June, 2013
- Organic law determining the modalities of protection, conservation and promotion of environment in Rwanda, official gazette of the Republic of Rwanda, 04/2005 of 08/04/2005
- General Guidelines and Procedures for environmental impact assessment, Rwanda Environmental Management Authority, Nov 2006
- Third Health Sector Strategic Plan July 2012-july 2018, Ministry of Health
- Ministerial guidelines on sorting, transportation, treatment and final disposal of medical waste from site of generation to site of final disposal,
- Environmental Health Policy, Ministry of Health, July 2008
- Performance audit report of the Auditor General on healthcare waste management at referral hospitals in Rwanda, Office of the Auditor General of States Finances, may 2014
- Guidelines on the management of waste disposal site (landfill), Rwanda Utilities Regulatory Agency, Nov 2009
- National Policy and Strategy for water supply and sanitation services, Ministry of Infrastructure, Feb.2010
- District Development Plan (2013-2018), Rubavu District Western Province, March 2013
- Hospital Strategic Plan July 2012-July 2018, Kibungo District Hospital, June 2013

- Gicumbi local development plan, 2013

Annex

Annex 1: Guiding questionnaire for stakeholder consultations

Name of the respondent:

Contacts: Cell Sector District

Telephone contact

The government of Rwanda with the support of the World Bank has constructed a laboratory in the District designed to expand access to high quality, reliable and timely laboratory services.

Do you think this new facility shall be useful to you? Yes □ No □

Explain your answer……

Do you know any foreigner who benefited from the laboratory services? Yes □ No □

Explain you answer……

To minimize public hazards posed by the project implementation and operation, there are some measures including communication materials, fencing of the facilities that were set up.

Are you aware of such safety measures set in place during the construction phase? Yes □ No □

Explain you answer……

How did you feel about it……..

Are you aware of any environmental hazards that might have occurred? Yes □ No □

Explain you answer……

Is there additional measures you would recommend in the future? Yes □ No □

Explain you answer……

Can you name any public hazards (air pollution, water leakage…) that may happened since the project is operating? Yes □ No □

Explain you answer……

Do you have any relative or do you know anyone who get a job from the project during the construction or operation of the project? Yes □ No □

Explain you answer……

What shall be you general perception of the project: positive □ negative □

Explain you answer……

Annex 2: List of stakeholders from consultations meetings[6]

[6] The list stakeholders for each of the four consultations are attached herewith.

Annex 3: Checklist of the environmental and social audit

a. Gisenyi

INSTITUTIONAL & ADMINISTRATIVE		
County / Sub-County	Rwanda	
Sub-Project title	East Africa Public Health Laboratory Networking	
Scope of project and activity	The East Africa Public Health Laboratory Network Project (EAPHLNP) is a regional World Bank funded Project that was designed to strengthen laboratories in Rwanda, Kenya, Uganda, Burundi and United Republic of Tanzania. The overall project objective is to establish an efficient and effective system for the diagnosis and surveillance of Tuberculosis and other communicable diseases in Rwanda, and contribute to a harmonized regional response. The specific Objectives of the project are: • Strengthen the capacity to rapidly diagnose communicable diseases of public health importance and share information to mount an effective regional response, • Support joint training and capacity building to expand the pool of qualified laboratory technicians, • Fund joint operational research and promote knowledge sharing to enhance the evidence base for these investments and support regional coordination and programmatic management. Activities done include provision of ICT and laboratory equipment, reagents and consumables, ICT e-learning modules, construction of a new laboratory building	
Institutional arrangements (Name and contacts) **Miriam Schneidman** mschneidman@worldbank.org Task Team Leader		Project Management (Name and contacts) Dr. Daniel NGAMIJE dngamije@gmail.com Project Coordinator
Safeguards contacts Edward Felix Dwumfour		Contractor / Supervisor BETRA CONSTRUCTION LTD/GLISCO LMT
SITE DESCRIPTION		
Name of site	Gisenyi satellite Laboratory	
Describe site location	The Gisenyi District Hospital is located within the town of Gisenyi, in the Rubavu district, Western province. The city is contiguous to the city of Goma in DR Congo (north Kivu Province) and lies at the foothills of high mountains and volcanoes some being still active such as the Nyiragongo (DR Congo). The district is highly prone to flooding due to heavy rain which overlaps various streams in the area. The district is composed by 12 administrative sectors.	Attachment: Site Map [**Y**] [ ] N The Map is attached under item Location and topography
Who owns the land?	Government of Rwanda	

Geographic description	The city of Gisenyi has an equatorial climate with an average temperature of 20o C and rainfall varying from 1200 mm to 1500 mm per year. The district is located at the shore of Lake Kivu shared with DR Congo which is part of the Congo basin, several volcanoes and the Gishwati Forest which was heavily deforested and is currently under restoration.
PUBLIC CONSULTATION	
Identify when / where the public consultation process took place	Consultations were conducted within Hospital compounds, with health workers and local communities. Minutes of consultations and signed list of attendance are attached (annex 2)
INSTITUTIONAL CAPACITY BUILDING	
Will there be any capacity building?	[ ] N or [Y] Yes , Attachment 7 includes the capacity building program. A detailed Training program highlighting the area of training and staff trained is attached (Annex 7)

b. Byumba

INSTITUTIONAL & ADMINISTRATIVE		
County / Sub-County	Rwanda	
Sub-Project title	East Africa Public Health Laboratory Networking	
Scope of project and activity	The East Africa Public Health Laboratory Network Project (EAPHLNP) is a regional World Bank funded Project that was designed to strengthen laboratories in Rwanda, Kenya, Uganda, Burundi and United Republic of Tanzania. The overall project objective is to establish an efficient and effective system for the diagnosis and surveillance of Tuberculosis and other communicable diseases in Rwanda, and contribute to a harmonized regional response. The specific Objectives of the project are: • Strengthen the capacity to rapidly diagnose communicable diseases of public health importance and share information to mount an effective regional response, • Support joint training and capacity building to expand the pool of qualified laboratory technicians, • Fund joint operational research and promote knowledge sharing to enhance the evidence base for these investments and support regional coordination and programmatic management. Activities done include provision of ICT and laboratory equipment, reagents and consumables, ICT e-learning modules, construction of a new laboratory building	
Institutional arrangements (Name and contacts) **Miriam Schneidman** mschneidman@worldbank.org Task Team Leader		Project Management (Name and contacts) Dr. Daniel NGAMIJE dngamije@gmail.com Project Coordinator
Safeguards contacts Edward Felix Dwumfour		Contractor / Supervisor BETRA CONSTRUCTION LTD/GLISCO LMT
SITE DESCRIPTION		
Name of site	Byumba satellite Laboratory	

Describe site location	The Byumba District Hospital is located in Gicumbi district, in the Northern Province and is bordered in the northeast by Nyagatare district, in the north by Uganda, in the south by the Districts of Rwamagana and Gasabo and in the west by the Rulindo and Burera Districts.	Attachment: Site Map [**Y**] [ ] N The Map is attached under item Location and topography
Who owns the land?	Government of Rwanda	
Geographic description	Byumba is located in the highlands area of Buberuka with a succession of steep hills separated by deep valleys and plateaus surrounded by steep ravines with small valleys segmented by multiple swamps. The altitude varies from 1800 to 2500 m with average annual temperature of 15 to 160C. The Gicumbi town where the Byumba Hospital is located is on a rocky mountain at around 1,600 masl.	
PUBLIC CONSULTATION		
Identify when / where the public consultation process took place	Consultations were conducted within Hospital compounds, with health workers and local communities. Minutes of consultations and the signed list of attendance are attached (annex 2)	
INSTITUTIONAL CAPACITY BUILDING		
Will there be any capacity building?	[ ] N or [Y] Yes , Attachment 7 includes the capacity building program a detailed Training program highlighting the area of training and staff trained is attached (Annex 7)	

c. Kibungo

INSTITUTIONAL & ADMINISTRATIVE	
County / Sub-County	Rwanda
Sub-Project title	East Africa Public Health Laboratory Networking
Scope of project and activity	The East Africa Public Health Laboratory Network Project (EAPHLNP) is a regional World Bank funded Project that was designed to strengthen laboratories in Rwanda, Kenya, Uganda, Burundi and United Republic of Tanzania. The overall project objective is to establish an efficient and effective system for the diagnosis and surveillance of Tuberculosis and other communicable diseases in Rwanda, and contribute to a harmonized regional response. The specific Objectives of the project are: • Strengthen the capacity to rapidly diagnose communicable diseases of public health importance and share information to mount an effective regional response, • Support joint training and capacity building to expand the pool of qualified laboratory technicians, • Fund joint operational research and promote knowledge sharing to enhance the evidence base for these investments and support regional coordination and programmatic management. Activities done include provision of ICT and laboratory equipment, reagents and consumables, ICT e-learning modules, con-

	struction of a new laboratory building	
Institutional arrangements (Name and contacts) **Miriam Schneidman** mschneidman@worldbank.org Task Team Leader		Project Management (Name and contacts) Dr. Daniel NGAMIJE dngamije@gmail.com Project Coordinator
Safeguards contacts Edward Felix Dwumfour		Contractor / Supervisor BETRA CONSTRUCTION LTD/GLISCO LMT
SITE DESCRIPTION		
Name of site	Kibungo satellite Laboratory	
Describe site location	The Kibungo District Hospital is located in Ngoma district, one of the 7 districts in the Eastern P bordered by the Kirehe district in the southeast bordering Tanzania, Rwamagana district to the northwest, Kayonza district to the northeast, Bugesera district to the west and the border with Burundi in the south. The district is divided into 14 sectors.	Attachment: Site Map [**Y**] [ ] N The Map is attached under item Location and topography
Who owns the land?	Government of Rwanda	
Geographic description	The district host several small lakes with are rich in aquatic biodiversity as well as birdlife. The district is bordered by the Kagera River flowing to the Lake Victoria.	
PUBLIC CONSULTATION		
Identify when / where the public consultation process took place	Consultations were conducted within Hospital compounds, with health workers and local communities. Minutes of consultations and the signed list of attendance are attached (annex 2)	
INSTITUTIONAL CAPACITY BUILDING		
Will there be any capacity building?	[ ] N or [Y] Yes , Attachment 7 includes the capacity building program. A detailed Training program highlighting the area of training and staff trained is attached (Annex 7)	

d. Gihundwe

INSTITUTIONAL & ADMINISTRATIVE		
County / Sub-County	Rwanda	
Sub-Project title	East Africa Public Health Laboratory Networking	
Scope of project and activity	The East Africa Public Health Laboratory Network Project (EAPHLNP) is a regional World Bank funded Project that was designed to strengthen laboratories in Rwanda, Kenya, Uganda, Burundi and United Republic of Tanzania. The overall project objective is to establish an efficient and effective system for the diagnosis and surveillance of Tuberculosis and other communicable diseases in Rwanda, and contribute to a harmonized regional response. The specific Objectives of the project are: • Strengthen the capacity to rapidly diagnose communicable diseases of public health importance and share information to mount an effective regional response, • Support joint training and capacity building to expand the pool of qualified laboratory technicians, • Fund joint operational research and promote knowledge sharing to enhance the evidence base for these investments and support regional coordination and programmatic management. Activities done include provision of ICT and laboratory equipment, reagents and consumables, ICT e-learning modules, construction of a new laboratory building	
Institutional arrangements (Name and contacts) **Miriam Schneidman** mschneidman@worldbank.org Task Team Leader	Project Management (Name and contacts) Dr. Daniel NGAMIJE dngamije@gmail.com Project Coordinator	
Safeguards contacts Edward Felix Dwumfour	Contractor / Supervisor BETRA CONSTRUCTION LTD/GLISCO LMT	
SITE DESCRIPTION		
Name of site	Gihundwe satellite Laboratory	
Describe site location ☆	The Gihundwe District Hospital is located in the city of Kamembe located in the Rusizi District, one of the 7 districts of the Western Province. The town of Kamembe is contiguous to the city of Bukavu in DR Congo (South Kivu). The district lies at the southern end of Lake Kivu, where this Lake empties into the Rusizi River.	Attachment: Site Map [**Y**] [ ] N The Map is attached under item Location and topography
Who owns the land?	Government of Rwanda	

Geographic description	The district is endowed with a dense hydrology dominated by the Lake Kivu and the Rusizi River which is the only outlet of the Kivu Lake to the Tanganyika Lake. A large part of the district (Bweyeye sector) is part of the Nyungwe Natural Forest which is one of the most critical biodiversity hotspot and water tower of the country.The district also made of high slope mountains and large valleys fully or partially developed.
PUBLIC CONSULTATION	
Identify when / where the public consultation process took place	Consultations were conducted within Hospital compounds, with health workers and local communities. Minutes of consultations and the signed list of attendance are attached (annex 2)
INSTITUTIONAL CAPACITY BUILDING	
Will there be any capacity building?	[ ] N or [Y] Yes , Attachment 7 includes the capacity building program. A detailed Training program highlighting the area of training and staff trained is attached (Annex 7)

ENVIRONMENTAL /SOCIAL AUDIT			
Will the site activity include/involve any of the following potential issues and/or impacts:	**Activity and potential issues and/or impacts**	**Status**	**Additional references**
	1. Building rehabilitation • Site specific vehicular traffic • Increase in dust and noise from demolition and/or construction • Construction waste	[ ] Yes [ ] No	See Section **B** below
	2. New construction • Excavation impacts and soil erosion • Increase sediment loads in receiving waters • Site specific vehicular traffic • Increase in dust and noise from demolition and/or construction • Construction waste	[ ] Yes [ ] No	See Section **B** below
	3. Acquisition of land[7] • Encroachment on private property • Relocation of project affected persons • Involuntary resettlement • Impacts on livelihood incomes	[ ] Yes [ ] No	See Section **C** below

[7] Land acquisitions includes displacement of people, change of livelihood encroachment on private property this is to land that is purchased/transferred and affects people who are living and/or squatters and/or operate a business (kiosks) on land that is being acquired.

	4. Hazardous or toxic materials[8] • Removal and disposal of toxic and/or hazardous demolition and / or construction waste • Storage of machine oils and lubricants	[ ] Yes [ ] No	See Section **D** below
	5. Impacts on forests and/or protected areas • Encroachment on designated forests, buffer and /or protected areas • Disturbance of locally protected animal habitat	[ ] Yes [ ] No	See Section **E** below

GENERAL RECOMMENDATIONS

ACTIVITY	PARAMETER	GOOD PRACTICES
A. General Conditions	Notification and Worker Safety	(a) The local construction and environment inspectorates and communities have been notified of upcoming activities (b) The public has been notified of the works through appropriate notification in the media and/or at publicly accessible sites (including the site of the works) (c) All legally required permits (to include not limited to land use, resource use, dumping, sanitary inspection permit) have been acquired for construction and/or rehabili-

[8] Toxic / hazardous material includes and is not limited to asbestos, toxic paints, removal of lead paint, etc.

		tation (d) All work will be carried out in a safe and disciplined manner designed to minimize impacts on neighboring residents and environment. (e) Workers' PPE will comply with international good practice (always hardhats, as needed masks and safety glasses, harnesses and safety boots) (f) Appropriate signposting of the sites will inform workers of key rules and regulations to follow.
B. General Rehabilitation and /or Construction Activities	Air Quality	(a) During interior demolition use debris-chutes above the first floor (b) Keep demolition debris in controlled area and spray with water mist to reduce debris dust (c) Suppress dust during pneumatic drilling/wall destruction by ongoing water spraying and/or installing dust screen enclosures at site (d) Keep surrounding environment (side walks, roads) free of debris to minimize dust (e) There will be no open burning of construction / waste material at the site (f) There will be no excessive idling of construction vehicles at sites
	Noise	(a) Construction noise will be limited to restricted times agreed to in the permit (b) During operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible
	Water Quality	(a) The site will establish appropriate erosion and sediment control measures such as e.g. hay bales and / or silt fences to prevent sediment from moving off site and caus-

		ing excessive turbidity in nearby streams and rivers.
	Waste management	(a) Waste collection and disposal pathways and sites will be identified for all major waste types expected from demolition and construction activities. (b) Mineral construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and stored in appropriate containers. (c) Construction waste will be collected and disposed properly by licensed collectors (d) The records of waste disposal will be maintained as proof for proper management as designed. (e) Whenever feasible the contractor will reuse and recycle appropriate and viable materials (except asbestos)
C. Acquisition of land	Land Acquisition Plan/Framework	(a) If expropriation of land was not expected and is required, or if loss of access to income of legal or illegal users of land was not expected but may occur, that the bank task Team Leader is consulted. (b) The approved Land Acquisition Plan/Framework (if required by the project) will be implemented
D. Toxic Materials	Asbestos management	(a) If asbestos is located on the project site, mark clearly as hazardous material (b) When possible the asbestos will be appropriately contained and sealed to minimize exposure (c) The asbestos prior to removal (if removal is necessary) will be treated with a wet-

		ting agent to minimize asbestos dust (d) Asbestos will be handled and disposed by skilled & experienced professionals (e) If asbestos material is be stored temporarily, the wastes should be securely enclosed inside closed containments and marked appropriately (f) The removed asbestos will not be reused
	Toxic / hazardous waste management	(a) Temporarily storage on site of all hazardous or toxic substances will be in safe containers labeled with details of composition, properties and handling information (b) The containers of hazardous substances should be placed in an leak-proof container to prevent spillage and leaching (c) The wastes are transported by specially licensed carriers and disposed in a licensed facility. (d) Paints with toxic ingredients or solvents or lead-based paints will not be used
E. Affects forests and/or protected areas	Protection	(a) All recognized natural habitats and protected areas in the immediate vicinity of the activity will not be damaged or exploited, all staff will be strictly prohibited from hunting, foraging, logging or other damaging activities. (b) For large trees in the vicinity of the activity, mark and cordon off with a fence large tress and protect root system and avoid any damage to the trees (c) Adjacent wetlands and streams will be protected, from construction site run-off, with appropriate erosion and sediment control feature to include by not limited to hay bales, silt fences (d) There will be no unlicensed borrow pits, quarries or waste dumps in adjacent areas,

		especially not in protected areas.
F. Traffic and Pedestrian Safety	Direct or indirect hazards to public traffic and pedestrians by construction activities	(a) In compliance with national regulations the contractor will insure that the construction site is properly secured and construction related traffic regulated. This includes but is not limited to ▪ Signposting, warning signs, barriers and traffic diversions: site will be clearly visible and the public warned of all potential hazards ▪ Traffic management system and staff training, especially for site access and near-site heavy traffic. Provision of safe passages and crossings for pedestrians where construction traffic interferes. ▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement ▪ Active traffic management by trained and visible staff at the site, if required for safe and convenient passage for the public. ▪ Ensuring safe and continuous access to office facilities, shops and residences during renovation activities, if the buildings stay open for the public.

Annex 4 Audit report of the construction phase

Gisenyi Laboratory

Activities and potential environmental and social issues	Relevance	Impact significance	Mitigation measures taken or recommended	Means of verification
1.**Building rehabilitation/new construction**				
Construction rubbish	Yes	Low (site specific, limited in time and low intensity)	Waste removed by the constructor and disposed following municipality's regulations	Assessment mission Oct 2014 Public consultations 2015
Air pollution: dust pollution of hospital wards.	Yes	Low (site specific, limited in time and low intensity)	(a) surrounding environment (sidewalks, roads) were free of debris (b) There were no open burning of construction / waste material at the site	Assessment mission Oct 2014 Public consultations 2015
Noise pollution: use of drilling machines.	Yes	Low (site specific, limited in time and low intensity)	Construction noise was limited to official working hours	Assessment mission Oct 2014 Public consultations 2015

Excavation: impacts and soil erosion	No			
Increase sediment loads in receiving waters	No			
Site specific vehicular traffic	Yes	Low (site specific, limited in time and low intensity)	Construction vehicles were assigned specific access road to the site	Assessment mission Oct 2014 Public consultations 2015
2. **Occupational health and safety**				
Notification and worker safety	Yes	Medium (site specific, limited in time and medium intensity)	(a) The public has been notified of the works through appropriate notification all over the Hospital (b)All legally required permits (construction permit land use, resource use, dumping, sanitary inspection permit) have been acquired for construction and/or rehabilitation (c) Work was carried out in a safe and disciplined manner (d) Construction workers were	Assessment mission June 2013 Public consultations 2015

			wearing PPE compliant with international good practice (hardhats, as needed masks and safety boots)	
3.Acquisition of land	No			
4. **Hazardous or toxic materials**				
Removal and disposal of asbestos roof cement	yes	High (site specific, long term impact and high intensity)	Asbestos was handled and disposed by skilled & experienced professionals	Rwanda Housing Authority letter Jan, 2013
5.Impacts on forest and protected areas, physical cultural resources	No			

Byumba Laboratory

Activities and potential environmental and social issues	Relevance	Impact significance	Mitigation measures taken or recommended	Means of verification
1.**Building rehabilitation/new construction**				
Construction rubbish	Yes	Low (site specific, limited in time and low intensity)	Waste removed by the constructor and disposed following municipality's regulations	Assessment mission Oct 2014 Public consultations 2015
Air pollution: dust pollution of hospital wards.	Yes	Low (site specific, limited in time and medium intensity)	(c) surrounding environment (sidewalks, roads) were free of debris (d) There were no open burning of construction / waste material at the site	Assessment missions June 2013& Oct 2014 Public consultations 2015
Noise pollution: use of drilling machines.	Yes	Low (site specific, limited in time and low intensity)	Construction noise was limited to official working hours	Assessment mission Oct 2014 Public consultations 2015
Excavation: impacts and soil erosion	No			

Increase sediment loads in receiving waters	No			
Site specific vehicular traffic	Yes	Low (site specific, limited in time and low intensity)	Construction vehicles were assigned specific access road to the site	Assessment mission Oct 2014 Public consultations 2015
2. **Occupational health and safety**				
Contractor staff health and safety: improper soil, rock heaps and building poles set up and disposal.	Yes	Low (site specific, limited in time and medium intensity)	(a) The public has been notified of the works through appropriate notification all over the Hospital (b)All legally required permits (construction permit land use, resource use, dumping, sanitary inspection permit) have been acquired for construction and/or rehabilitation (c) Work was carried out in a safe and disciplined manner (d) Construction workers were wearing PPE compliant with	Assessment mission June 2013 Public consultations 2015

			international good practice (hardhats, as needed masks and safety boots)	
3.Acquisition of land	No			
4. **Hazardous or toxic materials**				
Removal and disposal of asbestos roof cement	No			
5.Impacts on forest and protected areas, physical cultural resources	No			

Kibungo laboratory

Activities and potential environmental and social issues	Relevance	Impact significance	Mitigation measures taken or recommended	Means of verification
1.**Building rehabilitation/new construction**				
Construction rubbish	Yes	Low (site specific, limited in time and low intensity)	Waste removed by the constructor and disposed following municipality's regulations	Assessment mission Oct 2014 Public consultations 2015
Air pollution: dust pollution of hospital wards.	Yes	Low (site specific, limited in time and medium intensity)	(e) surrounding environment (sidewalks, roads) were free of debris (f) There were no open burning of construction / waste material at the site	Assessment mission Oct 2014 Public consultations 2015
Noise pollution: use of drilling machines.	Yes	Low (site specific, limited in time and low intensity)	Construction noise was limited to official working hours	Assessment mission Oct 2014 Public consultations 2015
Excavation: impacts and soil erosion	Yes	Low (site specific, limited in	Kibungo Hospital shall make sure that the identified space and anti-	Assessment mission June 2013

		time and medium intensity)	erosive grass is planted	
Increase sediment loads in receiving waters	No			
Site specific vehicular traffic	Yes	Low (site specific, limited in time and low intensity)	Construction vehicles were assigned specific access road to the site	Assessment mission Oct 2014
2. **Occupational health and safety**				
Contractor staff health and safety: improper soil, rock heaps and building poles set up and disposal.	Yes	Low (site specific, limited in time and low intensity)	(a) The public has been notified of the works through appropriate notification all over the Hospital (b)All legally required permits (construction permit land use, resource use, dumping, sanitary inspection permit) have been acquired for construction and/or rehabilitation (c) Work was carried out in a safe and disciplined manner (d) Construction workers were wearing PPE compliant with in-	Public consultations 2015

			ternational good practice (hardhats, as needed masks and safety boots)	
3.Acquisition of land/ Relocation of facilities (public kitchen)	yes	Medium (site specific, medium duration and high intensity)	Kibungo Hospital shall do all the necessary to complete and avail a kitchen to the public.	Public consultations 2015
4. **Hazardous or toxic materials**				
Removal and disposal of asbestos roof cement	No			
5.Impacts on forest and protected areas, physical cultural resources	No			

Gihundwe laboratory

Activities and potential environmental and social issues	Relevance	Impact significance	Mitigation measures taken or recommended	Means of verification
1.**Building rehabilitation/new construction**				
Solid waste management: construction waste removal	Yes	Low (site specific, limited in time and low intensity)	Waste removed by the constructor and disposed following municipality's regulations	Assessment mission Oct 2014 Public consultations 2015
Air pollution: dust pollution of hospital wards.	Yes	Low (site specific, limited in time and low intensity)	(g) surrounding environment (sidewalks, roads) were free of debris (h) There were no open burning of construction / waste material at the site	Assessment mission Oct 2014 Public consultations 2015
Noise pollution: use of drilling machines.	Yes	Low (site specific, limited in time and low intensity)	Construction noise was limited to official working hours	Assessment mission Oct 2014 Public consultations 2015
Excavation: impacts and soil erosion	No			

Increase sediment loads in receiving waters	No			
Site specific vehicular traffic	Yes	Low (site specific, limited in time and low intensity)	Construction vehicles were assigned specific access road to the site	Assessment mission Oct 2014 Public consultations 2015
2. **Occupational health and safety**				
Contractor staff health and safety: improper soil, rock heaps and building poles set up and disposal.	Yes	Low (site specific, limited in time and medium intensity)	(a) The public has been notified of the works through appropriate notification all over the Hospital (b)All legally required permits (construction permit land use, resource use, dumping, sanitary inspection permit) have been acquired for construction and/or rehabilitation (c) Work was carried out in a safe and disciplined manner (d) Construction workers were wearing PPE compliant with	Assessment mission June 2013 Public consultations 2015

			international good practice (hardhats, as needed masks and safety boots)	
3.Acquisition of land	No			
4. **Hazardous or toxic materials**				
Removal and disposal of asbestos roof cement	Yes	High (site specific, long term impact and high intensity)	Asbestos was handled and disposed by skilled & experienced professionals	Rwanda Housing Authority letter Jan, 2013
5.Impacts on forest and protected areas, physical cultural resources	No			

Annex 4: Audit reports for the operation and maintenance phase

Gisenyi Laboratory

Environ & social concerns	relevance	Impact significance	Mitigation measures taken	Recommended additional measures	Means of verification
1. Laboratory staff health and safety					
Staff safety	yes	High site specific, continuous and high intensity (public health threat: infectious diseases)	- Personal Protective equipment - room ventilation - public awareness posters - Room cleanness - Staff training on safety -staff vaccinations - Safety cabinet	Enforcement of safety regulations	Assessment mission Oct 2014 Staff training report, Sept 2012
		High site specific, incidental and high intensity (burn injuries and death)	-Fire extinguishers, -fire drills -assembly points	Enforcement of fire risks management regulations	Assessment mission Oct 2014
Sanitation	yes	High site specific, continuous and high intensity	-clean and well maintained sanitation facilities -clean water supply	Enforcement for the maintenance of sanitation facilities	ESMP report 2015

		(public health threat: infectious diseases)		Sustainable access to clean water Gender segregated sanitation facilities	
2. healthcare waste management					
Waste segregation, recycling, burning and disposal	yes	High site specific, incidental and high intensity due to - Public health threat - Soil pollution, - domestic animals, wildlife contamination - water contamination - air pollution	-segregation of healthcare waste (sharps, infectious and non-infectious waste) -Personnel protective equipment for waste handlers	Enforcement of the waste segregation measures (color code, leak-proof and on wheels containers)	Assessment mission Oct 2014 ESMP report 2015
			Sterilization of reusable tools and equipment through chemical products or autoclave.	Recycling of plastic waste and biodegradable waste	Assessment mission Oct 2014
			Safe and spacious waste disposal room		
			Specific disposal of chemical waste Expired chemicals man-	Enforcement of the waste management regulations	ESMP report 2015

			agement		
			Waste burning with incinerator dumping of residual ash into ash pit.	Enforcement of the waste management regulations (frequency of burning) Monitoring of potential dioxins production	Assessment mission Oct 2014 ESMP report 2015
			In-site waste dumping		
			Anatomic waste in-site dumping		

Byumba Laboratory

Environ & social concerns	relevance	Impact significance	Mitigation measures taken	Recommended additional measures	Means of verification
1. Laboratory staff health and safety					
Staff safety	yes	High site specific, continuous and high intensity (public health threat: infectious diseases)	- Personal Protective equipment - room ventilation - public awareness posters - Room cleanness - Staff training on safety -staff vaccinations - Safety cabinet	Enforcement of safety regulations	Assessment mission Oct 2014 Staff training report, Sept 2012
		High site specific, incidental and high intensity (burn injuries and death)	-Fire extinguishers, -fire drills -assembly points	Enforcement of fire risks management regulations	Assessment mission Oct 2014
Sanitation	yes	High site specific, continuous and high intensity (public health threat:	-clean and well maintained sanitation facilities -clean water supply	Enforcement for the maintenance of sanitation facilities Sustainable access to clean	ESMP report 2015

		infectious diseases)		water Gender segregated sanitation facilities	
2. healthcare waste management					
Waste segregation, recycling, burning and disposal	yes	High site specific, incidental and high intensity due to - Public health threat - Soil pollution, - domestic animals, wildlife contamination - water contamination - air pollution	-segregation of healthcare waste (sharps, infectious and non-infectious waste) -Personnel protective equipment for waste handlers	Enforcement of the waste segregation measures (color code, leak-proof and on wheels containers)	Assessment mission Oct 2014 ESMP report 2015 Health and safety committee reports
			Sterilization of reusable tools and equipment through chemical products or autoclave.	Recycling of plastic waste and other biodegradable waste	Assessment mission Oct 2014
			Safe and spacious waste disposal room		ESMP report 2015
			Specific disposal of chemical waste Expired chemicals management	Enforcement of the waste management regulations	ESMP report 2015

			Waste burning with incinerator dumping of residual ash into ash pit.	Monitoring of potential dioxins production	Assessment mission Oct 2014 ESMP report 2015
			In-site or off-site waste dumping		ESMP report 2015
			Anatomic waste in-site dumping		ESMP report 2015

Kibungo laboratory

Activities and potential environmental and social issues	Relevance	Impact significance	Mitigation measures taken or recommended	Means of verification	Activities and potential environmental and social issues
1. Laboratory staff health and safety					
Staff safety	yes	High site specific, continuous and high intensity (public health threat: infectious diseases)	- Personal Protective equipment - room ventilation - public awareness posters - Room cleanness - Staff training on safety -staff vaccinations - Safety cabinet	Enforcement of safety regulations	Assessment mission Oct 2014 Staff training report, Sept 2012
		High site specific, incidental and high intensity (burn injuries and death)	-Fire extinguishers, -fire drills -assembly points	Enforcement of fire risks management regulations	Assessment mission Oct 2014
Sanitation	yes	High site specific, continu-	-clean and well maintained sanitation facilities	Gender segregated sanitation facilities	ESMP report 2015

		ous and high intensity (public health threat: infectious diseases)	-clean water supply		
2. healthcare waste management					
Waste segregation, recycling, burning and disposal	yes	High site specific, incidental and high intensity due to - Public health threat - Soil pollution, - domestic animals, wildlife contamination - water contamination - air pollution	-segregation of healthcare waste (sharps, infectious and non-infectious waste) -Personnel protective equipment for waste handlers	Enforcement of the waste segregation measures (color code, leak-proof and on wheels containers)	Assessment mission Oct 2014 ESMP report 2015 Health and safety committee reports
			Sterilization of reusable tools and equipment through chemical products or autoclave. Recycling of plastic waste and other biodegradable waste		Assessment mission Oct 2014
			Waste disposed in the incinerator room	Provide a standalone and safe waste disposal room	ESMP report 2015
			Specific disposal of	Enforcement of the waste	ESMP report 2015

			chemical waste Expired chemicals management	management regulations	
			Waste burning with incinerator dumping of residual ash into ash pit.	Monitoring of potential dioxins production	Assessment mission Oct 2014 ESMP report 2015
			In-site waste dumping		ESMP report 2015
			Anatomic waste in-site dumping		ESMP report 2015

Gihundwe Laboratory

Activities and potential environmental and social issues	Relevance	Impact significance	Mitigation measures taken or recommended	Means of verification	Activities and potential environmental and social issues
1. Laboratory staff health and safety					
Staff safety	yes	High site specific, continuous and high intensity (public health threat: infectious diseases)	- Personal Protective equipment - room ventilation - public awareness posters - Room cleanness - Staff training on safety -staff vaccinations - Safety cabinet	Enforcement of safety regulations	Assessment mission Oct 2014 Staff training report, Sept 2012
		High site specific, incidental and high intensity (burn injuries and death)	-Fire extinguishers, -fire drills -assembly points	Enforcement of fire risks management regulations	Assessment mission Oct 2014
Sanitation	yes	High site specific, continu-	-clean and well maintained sanitation facilities	Enforcement for the maintenance of sanitation	ESMP report 2015

		ous and high intensity (public health threat: infectious diseases)	-clean water supply	facilities Sustainable access to clean water Gender segregated sanitation facilities	
2. healthcare waste management					
Waste segregation, recycling, burning and disposal	yes	High site specific, incidental and high intensity due to - Public health threat - Soil pollution, - domestic animals, wildlife contamination - water contamination - air pollution	-segregation of healthcare waste (sharps, infectious and non-infectious waste) -Personnel protective equipment for waste handlers	Enforcement of the waste segregation measures (color code, leak-proof and on wheels containers)	Assessment mission Oct 2014 ESMP report 2015 Health and safety committee reports
			Sterilization of reusable tools and equipment through chemical products or autoclave.	Recycling of plastic waste and other biodegradable waste	Assessment mission Oct 2014
			Safe and spacious waste disposal room		ESMP report 2015
			Specific disposal of chemical waste	Enforcement of the waste management regulations	ESMP report 2015

			Expired chemicals management		
			Waste burning with incinerator dumping of residual ash into ash pit.	Monitoring of potential dioxins production	Assessment mission Oct 2014 ESMP report 2015
			In-site waste dumping		ESMP report 2015
			Anatomic waste in-site dumping		ESMP report 2015

Annex 5: Photographs

Temporary kitchen and caretakers Kibungo Hospital

Gihundwe health and safety committee members

Plastics waste storing Kibungo

Waste storing and incinerator Kibungo District Hospital