

**MBARARA UNIVERSITY OF SCIENCE AND  
TECHNOLOGY,**

**INSTITUTE OF TROPICAL FOREST  
CONSERVATION (ITFC)**



**Annual report**

**16<sup>th</sup> November 2019**

**By**

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## 1.0 Introduction

The Institute of Tropical Forest Conservation (**ITFC**) is a leading Ugandan research institution of Mbarara University of Science and Technology (MUST) based in Bwindi Impenetrable National Park (BINP) at Ruhija, Rubanda District in Southwestern Uganda. ITFC's research is primarily focused on biodiversity conservation and the sustainable management of natural resources in the protected areas of the Albertine Rift ecoregion (a global biodiversity hotspot). ITFC was [established in 1991](#) as a semi-autonomous research institution and field station of Mbarara University of Science and Technology (**MUST**) to carry out ecological and sociological research, monitoring and training. ITFC has built a highly creditable track record of conservation achievements that are of a global, national and local importance (<http://itfc.must.ac.ug/directors-welcome>, <http://itfc.must.ac.ug/news>). The growing human pressures on the natural resources in the Albertine rift ecoregion has further enhanced the value and need of ITFC's research by conservation managers in the region.

Our staffs are made up of people with many years of experience and great passion for conservation – who work with the highest integrity to deliver the highest quality of timely and evidence-based research results. This is in line with our mission “**to be a leading institution that supports ecological and sociological research, monitoring and training in the Albertine Rift ecoregion**”. Being a research institution focused on biodiversity conservation and is semi-autonomous; ITFC's research activities are heavily dependent on grants from several international, regional and national [donors and partners](#). Indeed most of the ITFC technical staff are in constant touch with the donors and partners through grant proposal writing and fundraising in order to sustain the various research activities at ITFC.

### **ITFC's activities are grouped into four main categories:**

- Initiating and implementing research and monitoring projects and programmes in collaboration with the Uganda Wildlife Authority (UWA), National Forestry Authority (NFA) and other partners according to protected area management priorities and needs;
- Training students, researchers and conservationists/practitioners through field supervision and logistical support;
- Offering scientific advice and expertise to conservation agencies and partners in the region; and
- Providing a base and research facilities for both national and international independent researchers.

## **2.0 Justification and Impacts of ITFC**

Uganda is fast losing its biodiversity especially in tropical forests at quite an alarming rate. Human population increase, habitat change and direct human exploitation of these tropical forests are among the most important reasons for this loss that could lead to a global and national crisis. This situation is compounded with the fact that these tropical forests are the least studied and understood worldwide and Uganda in particular. The Albertine Rift tropical forests and in particular the tropical forests in Southwestern Uganda (Bwindi Impenetrable, Mgahinga and Echuya) are no exception. These forests host a number of rare, endemic and endangered plant and animal species that include the endangered mountain gorillas on the verge of extinction. There is thus a dearth of information that is needed globally and nationally to understand the various species and their habitats found in these tropical forests. This is the basis of ITFC's research activities. By undertaking research, training and capacity building, it is envisaged that ITFC will bridge the gap and knowledge that exist in the tropical forests of southwestern Uganda and the plant and animal species therein.

The MUST's vision and mission emphasizes on providing relevant education (information) at national and international levels with particular emphasis on science and technology and its application to community development. Indeed this is the basis of ITFC's research, training and monitoring activities whose vision and mission emphasizes the enhancement of the conservation of Albertine Rift tropical forests and the welfare of neighbouring local communities. This is achieved through; initiating and implementing research, training, capacity building and monitoring projects that contribute to the conservation of the Albertine rift tropical forests, training students, researchers and conservationists/practitioners in tropical forests conservation practices, offering scientific advice and expertise to conservation agencies (UWA and NFA) and providing a base and research facilities for both national and international independent researchers.

The contribution tropical forests make to tourism enhancement and development cannot be overemphasized. The mountain gorillas in Bwindi and other tropical forests in Southwestern Uganda are a major tourists attraction in Uganda. Indeed because of these tropical forests, the tourism industry alone contributes to over 1.5 billion USDs to Uganda's GDP (about 9% of Uganda's GDP contribution), with the Bwindi Impenetrable National Park alone contributing about 16 million USD (50% of Uganda Wildlife Authority's annual total budget). Indeed, since its

establishment, ITFC has guided and facilitated the Uganda Wildlife Authority (UWA) in the habituation of mountain gorillas for tourism. The habituation process of mountain gorillas for tourism is a tedious and long-term process that normally takes over 2 years. As such since 1993 when the mountain gorilla tourism started, the mountain gorilla groups for tourism have grown from 2 to 18 groups as a result of ITFC's research facilitation to UWA.

Over the past two decades, the major focus of ITFC has been to support and undertake ecological and sociological research, monitoring and capacity building of Ugandans and others in order to bolster conservation understanding and practice in the Albertine Rift region. Indeed ITFC has undertaken various research and monitoring projects that have influenced National Parks and forest reserves Management policies and practise. The national Parks and forest reserves where ITFC has carried out research and has influenced management policies and practise include: Bwindi Impenetrable, Mgahinga gorilla, Rwenzori Mountains, Semuliki and Queen Elizabeth national parks and Kasyoha-Kitomi and Echuya Forest reserves.

Over 60 key ITFC alumni (students and researchers) are now working in several conservation related fields as top managers and able to influence environmental conservation issues internationally, regionally and nationally. Key ITFC alumni are now at Universities as top managers, professors and lecturers (MUST and Makerere University); are top managers at the Uganda Wildlife Authority, National Environment Authority, National Forest Authority, Uganda Wildlife Education Centre (UWEC) and other conservation related institutions of Uganda. Furthermore, ITFC has hosted, facilitated and supervised over 150 international researchers from various universities worldwide since its establishment. Many ITFC alumni (both local and foreign) have contributed and influenced conservation issues through publications and decision-making in conservation related areas where they work

The past two decades, ITFC's research staff have published over 300 publications in international journals such as *Science*, *Nature*, *Biotropica*, *Conservation Biology*, *Biological Conservation*, *Oryx* and *African Journal of Ecology* to mention but a few. Indeed, because of ITFC's publications, MUST's Webometrics rankings in Africa and the world has improved as one of the best Universities to go to. Currently MUST is ranked as the 35<sup>th</sup> best University in

Africa [http://www.webometrics.info/en/Ranking\\_africa](http://www.webometrics.info/en/Ranking_africa). Some of the selected ITFC publications can be viewed on link <http://itfc.must.ac.ug/publications-reports>.

### **3.0. Vision, Mission and objectives**

#### **3.1 Vision:**

The Conservation of Albertine Rift Protected Areas and Welfare of Neighbouring local communities enhanced

#### **3.2 Mission:**

To be a leading Institution that supports and undertakes ecological and sociological research, monitoring and training in the Albertine Rift ecoregion

#### **3.3. Aims and objectives:**

- To enhance the knowledge of fauna and flora species and their habitats
- To Train graduate students and conservation practitioners in ecological and sociological research
- To ensure a well motivated, trained and adequately equipped staff in ecological and sociological research
- To provide adequately researched information that supports decision making by UWA and NFA for proper management of the protected Areas
- To increase the research information visibility to stakeholders and other partners
- To ensure and secure sustainable funding for research in the region

### **4.0. Administration**

#### **4.1 ITFC Staff and capacity**

The director, together with a team of project and administrative staff, run ITFC research and administration activities. While most administrative staff (3 out of 4) are on the MUST payroll, most technical staffs (except two) are under annual contracts that depend on the life spans of different projects they are working on.

Like I reported last year, a number of positions at ITFC need urgent replacements as identified in the ITFC's Strategic plan and staff structure, but due to financial constraints these have remained vacant (now over 6 years). The vacant positions at ITFC that need filling up include; **Research Fellow (social sciences), Communications Officer, Fundraising/Grants Officer, Ecological**

**Research Officer and Accounts Clerk.** These positions are important for the smooth running of ITFC to its bare minimum capacity. We have the past 6 years asked MUST to help us in filling up these positions to no avail.

We have been and will continue using research volunteers (fresh graduates) from MUST, Kabale University and Makerere University to augment gaps created by lack of technical staff at ITFC as and when needed. Due to the harsh working conditions (bad weather, far to reach area and remoteness) of the location of ITFC, some staff find it difficult to stay longer at ITFC away from their families, peers and friends. We also have a team of junior staff (hired on contracts) that help in field data collection and casual workers. ITFC has operated with the following staff members during the this reporting year:

**Current ITFC Staff members**

- Associate. Professor. Robert Bitariho, B.Sc., MSc, PhD – **Director**
- *Dr Dennis Babaasa, B.Sc., MSc, PhD- **Head Scientific Programs***
- Mr Desi Tibamanya – **Finance and Administration Officer**
- Mr Akampurila Emmanuel, BSc (WHM), Msc –(*on his PhD study leave*)
- Mr Badru Mugerwa, Bsc (forestry), Msc (*on his PhD study leave*)
- Mr Mujuni Robert, BA-**Junior Research Officer (Social Scientist)**
- Mr Twinomujuni Isaac, BA - (*on MA study leave at MUST*)
- Ms Clemencia Akankwasa – **Senior administrative Assistant**
- Mr Robert Barigyira – **Senior Herbarium Technician**
- Ms Florence Tukamushaba - **Secretary/Receptionist/Librarian**
- Akampurira Prudence (**Volunteer accounts section**)
- And 24 field assistants/camp-keepers and security guards

ITFC from time to time hires specialist consultants (former ITFC staff) when need arises, and in particular when donor projects demand so. Two consultants were hired out this reporting year and as demanded by some donors. These were Dr Medard Twinamatsiko was hired to work on a Social Sciences projects funded by IIED while Emmanuel Akampurira (being a staff but no longer on payroll) was

hired to work on two reports funded by two donors (BMCT and IGCP) as explained below.

#### ***4.2 Volunteers:***

Over the years, enthusiastic volunteers and interns have contributed to ITFC's activities. This year we have recruited only 1 volunteer (Akampurira Prudence) to work with the accounts section and to augment the vacant position of an accounts clerk while assisting the Finance and Administration officer.

### **5.0 Students and researchers' support and supervision**

Due to financial constraints, ITFC has not been able to directly and financially support Ugandan students for Masters and PhD degrees. However as a result of a joint proposal written by ITFC, Virje University (VU) Amsterdam and GVTC, two ITFC staff (Emmanuel Akampurira and Isaac Twinomuhangi) continue to be supported financially with a grant from Netherlands Initiative for Capacity development in Higher Education (NICHE) for their PhD and MA degrees respectively like last year (see below details).

#### ***5.1 Support to MUST's Faculty of medicine students***

Eleven (11) **medical students from MUST** were supported by ITFC for their community placements from 14<sup>th</sup> June to 6<sup>th</sup> August 2019. ITFC offered free accommodation; guidance and supervision while the students were for their community outreach placement program at Ruhija health centre in Bwindi.

#### ***5.2 Supervision and support to postgraduate students***

- Jennifer Turyatemba Tumushabe, **Doctor of Philosophy (PhD)** dissertation from Faculty of Interdisciplinary Studies (FIS), MUST on Competitive livelihood dilemma in pine tree plantations and food security: the perspective of Kigezi highlands region of Uganda. Jennifer was internally examined supervised by **Assoc. Prof. Robert Bitariho as an Internal Examiner**. She graduated in **October 2019**.

- Stephen Bugabo Gumisiriza's **Doctor of Philosophy (PhD)** dissertation from Faculty of Interdisciplinary Studies (FIS), MUST on the effectiveness of collaborative forest management in the conservation of Echuya Central Forest Reserve, South Western Uganda **on-going. Assoc. Prof. Robert Bitariho** is supervising Stephen for his PhD dissertation and fieldwork.
- Robert Bagenda's **Doctor of Philosophy (PhD)** dissertation from Faculty of Interdisciplinary Studies (FIS), MUST, Mbarara on the effectiveness of Uganda's wetland restoration prototype in enhancing ecological and social resilience to climate change in critical watersheds of SW Uganda **on-going. Assoc. Prof. Robert Bitariho** is supervising Robert Bagenda for his PhD dissertation and fieldwork.
- Raymond Kato's **Master of Science (MSc)** dissertation from College of Agricultural and Environmental sciences, Makerere University, Kampala on an assessment of the effectiveness of stakeholders towards combating illegal activities around Bwindi Impenetrable National Park, S.W Uganda **on-going. Assoc. Prof. Robert Bitariho** is supervising Raymond Kato for his MSc dissertation and fieldwork.
- Emmanuel Akampurila's **Doctor of Philosophy (PhD)** dissertation from Ghent University, Belgium, on Human Wildlife Conflict Mitigation: The role of social capital in effective management of human-wildlife conflicts in Bwindi Impenetrable and Queen Elizabeth National Parks, Southwestern Uganda **on-going. Dr. Dennis Babaasa** is supervising Emmanuel for his MSc dissertation and fieldwork.
- Isaac Twinomuhangi's **Master of Science (MSc)** in Local Governance and Planning from Mbarara University of Science and Technology on The contribution of conservation organizations (non-state actors) in management of Human-Wildlife conflicts at around Bwindi Impenetrable National Park **on going. Dr. Dennis Babaasa** is supervising Isaac for his MSc dissertation and fieldwork.

### ***5.3 Support to other accomplished researchers***

ITFC continues to collaborate and work with International and national researchers. The collaborations include support for research, co-investigation and support letters for grants. This reporting year, ITFC supported the following international and national students/researchers;

- Mr. Emmanuel Akampurira from **Ghent University, Belgium**. Emmanuel is proposing to carry out his research fieldwork *on Gender and Minority rights: An assessment of Uganda's Wildlife Compensation Policy*. ITFC offered support to his proposal in September 2019 that he submitted to the **Research Coordination Office, Global Minds Fund, Ghent University**. He is yet to begin fieldwork.

- Ms Rebecca Junod from Max **Planck Institute of Evolutionary Anthropology's (MPI), Germany**. Rebecca is carrying out her research fieldwork on; *Long-term research of feeding ecology, social behaviour and population dynamics of Mountain Gorillas in Bwindi Impenetrable National Park, Uganda*. She started her fieldwork data collection in September 2019 and data collection is still ongoing.
- Ms Charlotte Grund from the **University of St Andrews, Scotland, UK**. Charlotte is carrying out her PhD research fieldwork on; Gestural communication in wild mountain gorillas' *in Bwindi Impenetrable National Park (BINP), S.W Uganda*. She started his fieldwork in August 2019 and her fieldwork is still ongoing.
- Dr. Nathan E Thompson from the **Department of Anatomy, New York Institute of Technology, USA**. Dr. Nathan is proposing to carry out his research fieldwork on; *Establishing biomechanical links between ape locomotion, evolution, and anatomy through novel field-based 3D data collection and skeletal modelling" in Bwindi Impenetrable National Park (BINP), S.W Uganda*. ITFC offered support to his proposal in July 2019 that he submitted to the **National Science Foundation (NSF), USA**. He is yet to begin fieldwork.
- Associate Professor Shannon McFarlin from the **George Washington University, USA**. Shannon and Assoc. Prof. Robert Bitariho are Co-PI and are developing a proposal to the **National Science Foundation-Infrastructure Capacity for Biology (ICB), USA** for infrastructure development at ITFC. The proposal looks at rehabilitations and renovations of some of the old and deliberated ITFC infrastructures such as offices, laboratories and a new Conservation Education center. Shannon was at ITFC from 14<sup>th</sup> June up to 15<sup>th</sup> July 2019.
- Ms Paige Barnes from Max **Planck Institute of Evolutionary Anthropology's (MPI), Germany**. Paige is carrying out her research fieldwork on; *Long Term Patterns of Behaviour and Population Dynamics of Mountain Gorillas in Bwindi Impenetrable National Park, Uganda*. She started her fieldwork data collection in May 2019 and data collection is still ongoing.
- Dr. Michael Wasserman from **the Indiana University, USA**. Dr. Michael is proposing to carry out his research fieldwork on ***The Chemical Landscape: Endocrine Disruption in a Tropical Forest-Agricultural Socio-***

*Ecological System*. ITFC offered support to his proposal in February 2019 that he submitted to the **NSF Dynamics of Coupled Natural and Human Systems (CNH) Program USA**. He is yet to begin fieldwork.

- Mr Xavier Pedrol from Max **Planck Institute of Evolutionary Anthropology's (MPI), Germany**. Xavier was carrying out his research fieldwork on; Physical and Social Development of Bwindi Mountain Gorillas in *Bwindi Impenetrable National Park, Uganda*. He started his fieldwork in February 2019 and finished collecting data in August 2019.
- Mr. Nicholas Chapoy's from the department of comparative linguistics at the **University of Zurich, Switzerland**. Nicholas was carrying out his research fieldwork on; *Dual articulation in the communication system of Mountain Gorillas in Bwindi Impenetrable National Park (BINP), S.W Uganda*. He started his fieldwork in January 2019 and ended it in August 2019.
- Associate Professor Joel Harter from the **University of Colorado Boulder, USA**, together with his post Doctorate student were at ITFC from 23<sup>th</sup> September to 26<sup>th</sup> September 2019. They were facilitated by ITFC to carry out research on *Population, Environment, and Climate in the Albertine Rift*. They continued to carry out fieldwork on this project.
- Dr Catherine Hobaiter from the **University of St Andrews, Scotland, UK** together with her PhD student were at ITFC from 1<sup>st</sup> August to 31<sup>st</sup> August 2019. She was facilitated by ITFC to carry out her research fieldwork on; *Gestural communication in wild mountain gorillas in Bwindi Impenetrable National Park, S.W Uganda*.

## **6.0. Finances and donors at ITFC**

Over the years, ITFC has worked with a number of donors and collaborators that have contributed to the day-to-day running of its activities. **Due to changing donor priorities, this year (like was the past five reporting years), ITFC donor funds have drastically reduced.** Nevertheless, a number of organisations have collaborated and facilitated ITFC research activities. These include; Uganda wildlife Authority (UWA), International Institute for Environment and Development (IIED), Greater Virunga Transboundary Core Secretariat (GVTC), International Gorilla Conservation Project (IGCP), Marx's Plank's Institute for Evolutionary Anthropology (MPI-EVAN) and Bwindi Mgahinga Conservation Trust (BMCT).

### ***6.1 ITFC's Financial Status***

ITFC now depends on short-term funded projects (annual projects). Another source of long term funding for ITFC's core activities is the Uganda government through the MUST. MUST funding to ITFC research activities is about 12% of its annual budget expenditures. The rest of the funding to ITFC comes from staff writing research grant proposals to local and international donors. ITFC's finances are annually audited by the MUST Internal Auditor, Auditor general's office and the individual donors' projects accredited private auditors such as PWC Rwanda Limited, PWC Kenya Limited, Ernest & Young etc. depending on donors' preference.

### ***6.2 Income generation projects***

In order to sustain ITFC research activities and in fulfilment of MUST's objective of income generation by the different academic units, ITFC proposed and is implementing four income generating projects that will potentially bring funds to ITFC/MUST, these are;

- **The Buhoma community campsite and lodge** that rents (ground rent) a piece of land purchased by ITFC in 1993 and located in Buhoma. In 2015 and early 2016, MUST top management completed negotiations with the

- campsite owners and it was agreed that they pay MUST an annual ground rent fee of 10 million UGX. A MoU was signed then between MUST and the community campground owners. Currently the Buhoma community has paid **MUST 13.5 million UGX** but still owes MUST **arrears** incurred since 2014 of more than **30 million UGX**.
- MUST through the Private sector foundation and under the AfDB HEIST project got 20.4million UGX in September 2016 to establish an **Ethnobotanical garden at Ruhija for breeding indigenous tree seedlings** for sell to local communities and other stakeholders. The tree seedling center is now up and running and has already sold off some indigenous trees. Out of the **total 45,780** indigenous tree seedlings propagated, ITFC has so far sold off **over 20,354** seedlings contributing to **about 44.5%** of the total seedlings propagated. Since its establishment, ITFC has **generated UGX 5,220,800/=** from the ethnobotanical garden and these funds are banked on the ITFC account. The funds generated from this ethnobotanical garden are ploughed back to maintain the ethnobotanical garden for its sustainability. BMCT and some few tourists' lodge owners have principally been the major buyers of these seedlings together with other private tourists lodges and local communities around Bwindi. We are proposing on increasing the prices of the tree seedlings to about 500/= (from originally 100/= to 300/=) next year to increase on the funds from the sale of the tree seedlings.
  - **The Buhoma Forest Gorilla Trekking camp.** MUST acquired a grant of **1.2 billion UGX** from the Africa Development Bank (AfDB) for establishing a tourist camp on the land purchased by ITFC in Buhoma-Bwindi. Construction and building of this Buhoma Forest Gorilla Trekking camp was completed in June 2018 and currently MUST has acquired a private investor, Kambuga Forest Cottages-KFC) to run the campsite on a PPP arrangement with MUST. The private investor will remit about 14 million UGX to MUST per year.
  - Like communicated last year, part of the 24.6ha of the land purchased by

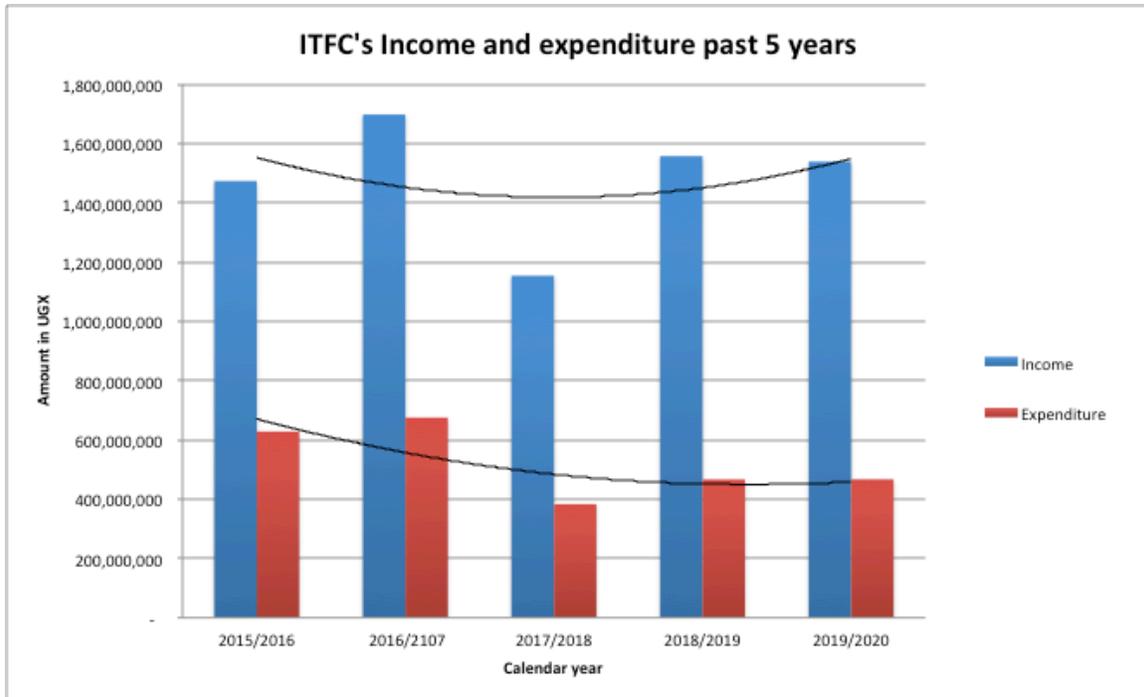
ITFC in 1993, is a 50m strip of land bordering Bwindi Forest and frequently used by gorillas. Research has recommended planting this 50m strip of land with tea plantation a non-palatable crop against gorillas to prevent them from coming outside of the forest into community lands. MUST, should take advantage of this and hire a private investor through the PPP arrangement **that is interested in planting tea on this land thereby generating income for MUST**. There is already interest from several private tea plantations/estates owners willing to do this. The net monthly income from sales of tea is estimated at Uganda shillings **166,000 per acre** giving a total of Uganda shillings **13,280,000 for 24.6 hectares of tea per month**. Therefore, the **expected income from tea project is about USD 45,000 annually**.

### **6.3 Income and expenditure FY 2019/20**

The income and expenditure at ITFC the past 5 years analysed by calendar years is shown in figure 1 below (*as of 24<sup>th</sup> October 2019*). As pointed out before, ITFC's financial income has been on the decline the past years. The figure 1 shows the income analysed based on financial incomes to ITFC and also depending on the project life spans as and when funds are received. This also impacts on the project expenditure as figure 1 shows. Donor funds disbursements do not follow MUST's accounting financial years but rather project timelines. ***This is the reason why the figure 1 shows some unspent project funds that flow into the next financial years.*** Most donor projects range from 1 to 3 year lifespans and when grants for one project end we normally get other funds (after successful project proposals) for new other projects. ***The incomes for the projects are not financial incomes accrued to ITFC but rather conditional grants by donors to run the research activities and according to workplans agreed upon with the donors.*** The funds are released to ITFC in instalments (40%, 30%, 20%, 10%) and after ITFC has fulfilled specific donor project benchmarks/deliverables.

Before a second or further instalment is made to ITFC, the donors carry out audit checks and ITFC submits to them hardcopy accountabilities receipts/vouchers to their satisfaction. Therefore, the figure 1 shown below is the funds flow at ITFC at the time of compiling this report. See attached annex for the detailed financial incomes and expenditures for the different ITFC research projects.

ITFC on the hand get funds from MUST (annually 100million UGX released in quarters) and from researchers accommodation fees and research support fees. Such funds accrued to ITFC include that of the Max Planck Institute for Evolutionary Anthropology (MPI-EVAN) of 35,000usds annually. These funds are spent on the mountain gorilla research activities and at source for 32 staff salaries, salary top-ups for MUST staff, medical insurance, uniforms and field equipment (tents, gum boots and scientific field equipment). The MUST funds are spent on buildings renovations, vehicle running costs, computers, software, cartridges and stationery etc. This reporting year ITFC used the MUST funds for rainwater harvest tanks' renovations, vehicle running costs, building maintenance, causal porters salaries (night guards and campkeepers) etc. A detailed financial report on MUST's release expenses is available with MUST's bursar/Secretary.



**Figure 1.** ITFC's annual income and expenditures over the past 5 years (*note these are based on calendar years, furthermore, the financial incomes & expenditures depend on donor project life spans and do not follow MUST accounting financial years*)

## 7.0 Research projects carried out during FY 2019/20

As is the practise at ITFC, staff wrote several research project proposals together with other partners. Some were successful while others were not. The successful research projects that were carried out by ITFC and partners are listed below:

### 7.1 Funded and facilitated research projects

- **12<sup>th</sup> July 2019**, One ITFC staff (Assoc. Prof. Robert Bitariho) participated in a Greater Virunga Trans-boundary Core Secretariat (GVTC) facilitated research project on ***the assessment of Socio-economic and ecological baseline impact study of the reclaimed part of Sarambwe Nature Reserve after border reaffirmation.*** The project sought to assess the socioeconomic impacts of the forest encroachers on the ecological functions of the Sarambwe Nature Reserve (SNR) through carrying out household surveys and forest surveys in the SNR. The Project started on the 12<sup>th</sup> July and **ended on the 28<sup>th</sup> August 2019** and a complete report is available on link; <http://itfc.must.ac.ug/sites/default/files/2019->

[09/Ecological%20and%20socio-economic%20baseline%20surveys%20in%20Sarambwe.pdf](#).

- **30<sup>th</sup> May 2019**, Two ITFC staff were asked to be part of a research project together with a Private Consultant firm NACOPART Uganda Ltd by the Greater Virunga Trans-boundary Core Secretariat (GVTC). The research project was on ***Assessing the drivers and Impacts of Climate Change on Biodiversity and Ecosystems Services in the Greater Virunga Landscape***. Assoc. Prof. Robert Bitariho was the PI on this project that also involved Dr Dennis Babaasa (another ITFC staff). The Research project commenced in June and **ended in September 2019**. The Project was spearheaded by NACOPART Uganda Ltd with ITFC staff leading in the research component of the study. Basically the project sort to assess and understand the Drivers and Impacts of Climate Change on biodiversity and ecosystems services in the Greater Virunga Landscape. A complete report on this study is available on link;  
<http://itfc.must.ac.ug/sites/default/files/2019-09/Climate%20Change%20Drivers%20in%20the%20GVL%20Final%20Report%20September%202019.pdf>.
- **30<sup>th</sup> May 2019**, Two ITFC staff were part of a research project together with a Private Consultant firm NACOPART Uganda Ltd titled: ***Vulnerability Assessments of Protected Areas of the Greater Virunga Landscape Vis a Vis Climate Change and Other Threats to Biodiversity Under Different Climate Change Scenarios***. Assoc. Prof. Robert Bitariho and Dr Dennis Babaasa were the ITFC staff involved on the research project spearheaded by NACOPART Uganda Ltd. The project sort to assess and understand the Drivers and Impacts of Climate Change on biodiversity and ecosystems services in the Greater Virunga Landscape. A complete report on this study is available on link;  
<http://itfc.must.ac.ug/sites/default/files/2019->

[09/Climate%20Change%20Drivers%20in%20the%20GVL%20Final%20Report%20September%202019.pdf](#).

- **12<sup>th</sup> June 2019** ITFC wrote a proposal and got a grant of **\$11,880USDs** from the International Gorilla Conservation Program (IGCP) for a six months research project on ***Piloting Arboreal Camera Trapping Technique for mapping arboreal mammal species diversity in the Bwindi-Virunga Landscape, South West Uganda***. Currently ITFC staff are in the field collecting data on the project with a final technical report to be completed in January 2019. The project aims at determining the abundance and distribution of arboreal mammals in Bwindi Impenetrable National Park.
- **18<sup>th</sup> March 2019**; ITFC wrote a proposal and received a grant of **21,975,000UGX** from the Bwindi Mgahinga Conservation Trust (BMCT) for a research project on the Ecological implications of harvesting food security wild climbers by the local people in Bwindi Impenetrable National Park, S.W Uganda. The project was completed in August 2019 and a full report can be viewed from link; <http://itfc.must.ac.ug/publications-reports/ecological-implications-harvesting-wild-climbers-food-security-products-around>
- **March 2019**; ITFC finalised a three year research project that started in 2016 and was funded by the International Institute for Environment & Development (IIED) to a tune of for **GBP59,856**. The research project was on; ***Local economic development through 'pro-poor' gorilla tourism in Uganda***. The project aimed at assessing how the local poor people neighbouring Bwindi National Park could benefit from the Gorilla tourism around the park. The project ended on 30<sup>th</sup> March and a complete report is available on link; <http://itfc.must.ac.ug/sites/default/files/2019-09/Propoor%20tourism%20project%20report%20%281%29.pdf>

- As part of the Joint proposal with Virje University (VU) Amsterdam, GVTC and ITFC under the project *Enhancing capacity in Natural Resource Management and conflict resolution for stability and inclusive growth in the Greater Virunga Landscape- NICHE-GLR-26* (under the Netherlands Initiative for Capacity Development in Higher Education-**NICHE**). ITFC has been earmarked with a **grant of 70,000USDS** from the **NUFFIC**. This grant is part of the capacity building project of research institutions working in the Greater Virunga Landscape. After all the procurement processes have been finalised by GVTC, ITFC will be equipped with a Toyota double cabin pickup (Hilux 2018 model), two laptops (Mac and Lenovo) and 10 GPS units.

### ***7.2 Research projects in the pipeline (proposal submitted to donors)***

- **8<sup>th</sup> July 2019**, ITFC staff (Assoc. Prof. Robert Bitariho) participated in a joint proposal writing together staff from Faculty of Interdisciplinary Studies (with Dr Viola Nyakato as PI) on a project proposal titled: ***The Indigenous People (Batwa) of Southwestern Uganda Buy-in Project***. With a proposed budget of around **208,000USDS**, the 3-year project aims at assessing and addressing the chronic Batwa people's problems of landlessness and income generating activities around Bwindi Impenetrable and Mgahinga Gorilla National Parks. The proposal is a joint partnership between Mbarara University of Science and Technology (MUST), Makerere University's Resilient Africa Network (RAN), Gulu University Constituent College (GUCC) and Purdue University (USA). We are waiting for the proposal to be funded and we commence the research.

### ***7.3 Other sources of ITFC research projects funding***

- MUST continues to offer core funding to ITFC of up to **100 million UGX** every year (received quarterly). These funds have been used to motor vehicle running costs (Fuel, spares and repairs), Solar power equipment purchases, Stationery, Printer cartridges, Salaries for camp-keepers and security guards and a few renovations of ITFC infrastructure.

- The Max Planck Institute for Evolutionary Anthropology (MPI-EVAN) pays ITFC for the service of managing the gorilla monitoring related work in Bwindi. The payments are in form of office space, field assistant hire and accommodation facilities for staff and students of MPI. MPI pays ITFC an annual fee of about **35,000usds**. Most of the MPI funds are used to pay project staff salaries and maintenance of gorilla research facilities and equipment.

## **8.0 Conferences/Workshops attended by Staff**

### **Associate. Professor. Robert Bitariho**

- Attended a conference of the 2nd African Primatological conference at Imperial Botanical Beach Hotel, Entebbe from the **2<sup>nd</sup> to 6<sup>th</sup> September 2019**. The conference consisted of about 200 African Primatologists, non-African researchers and conservationists working on African primates as well as other stakeholders. Assoc. Prof. Robert Bitariho participated in a key note roundtable discussion on ecotourism and sustainability in Uganda (case example of mountain gorilla tourism).
- Attended a workshop of the third Meeting of the Parties to the Agreement on the Conservation of Gorillas and their Habitats (Gorilla MOP3) from the **18<sup>th</sup> to 20<sup>th</sup> June 2019** at Imperial Botanical Beach Hotel, Entebbe. The workshop aimed at strategizing on the future direction for the implementation of the Gorilla Agreement and to formulate a new Programme of Work by stakeholders in Uganda, Rwanda and DRC.
- Attended a GVTC regional Landscape committee meeting at La' Palme hotel Kisoro on the **16<sup>th</sup> April 2019**. The Assoc. Prof. Robert Bitariho, belongs to this committee that advises GVTC on the research priorities needed for the Greater Virunga Landscape.
- Associate. Professor. Robert Bitariho continues to sit on **several boards and steering committees concerned with biodiversity conservation and training**. These include; the Bwindi Mgahinga Conservation Trust management board (*sat 4 times this year*), MUST senate, MUST's

university council and its subcommittee of Finance and student welfare. He is also a member the Human resource committee of the Bwindi and Mgahinga Conservation Trust that sat thrice this year.

### **Dr Dennis Babaasa**

- Will attend the MUST's 15th Annual Research Dissemination Conference scheduled for the 22nd November 2019 at Lake View Hotel, Mbarara. The conference aims at participants sharing research findings with fellow researchers and the community at large.
- Attended a workshop for Capacity Building in fundraising organised by the Uganda Biodiversity Fund on the 30<sup>th</sup> July 2019 in Hoima.
- Attended a workshop for Ebola Virus Diseases contingency plan organised by the International Gorilla Conservation Program (IGCP) on the 10<sup>th</sup> September 2019 in Kigali, Rwanda.
- Attended a workshop on Climate Change, mountain gorillas, local communities and park management organised by the Greater Virunga Transboundary Core Secretariat (GVCT) on the 12<sup>th</sup> September 2019 in Musanze, Rwanda.

### **Emmanuel Akampurira**

- Attended a workshop on critical conflict analysis in and around protected areas on the **1<sup>st</sup> to 3<sup>rd</sup> July 2019** in Musanze, Rwanda organised by IGCP. The aim of the workshop focused on increasing our understanding on why and how conflict (re-) occurs in and around protected areas in the Greater Virunga Landscape.
- Attended a training workshop on Arboreal camera trapping on **14<sup>th</sup> to 20<sup>th</sup> July 2019** in Musanze, Rwanda organised by GVTC. The training focused on participants being trained in the use of R software in analysis of arboreal animal density and distribution.
- Attended a conference of the 2nd African Primatological conference at Imperial Botanical Beach Hotel, Entebbe from the **2<sup>nd</sup> to 6<sup>th</sup> September 2019**. The conference consisted of about 200 African Primatologists, non-

African researchers and conservationists working on African primates as well as other stakeholders.

## 9.0. Publications written in a scholarly manner

The following list includes selected publications by ITFC staff (**in bold**) and year of publications (**also in bold**) together with partners for the 2018/2019 calendar year.

- Jingjing Liang, Thomas W. Crowther, Nicolas Picard, Francesco Rovero, **Robert Bitariho**, Pascal A. *et al* (**2019**): Global Tree Species Diversity in the Anthropocene (**In Press Science**)
- Bruno, C, Carbone, C, Fernandez, F..... **Akampurira, E, Bitariho, R**, Espinosa, S, Gajapersad, K, et al (**2019**): On the scaling of activity in tropical forest mammals (**In Press Oikos**)
- Hubau, W, Lewis, S.L, Phillips, O.L., ..... **Bitariho, R**, Bock, Y.E et al (**2019**); Asynchronous Saturation of the Carbon Sink in African and Amazonian tropical forests (**in Press Nature**)
- **Bitariho, R, Mugerwa, B, Akampurira, E** (**2019**); Regulated access to wild climbers has enhanced food security and minimized use of plastics at a premier African protected area (**in Press Biological Conservation**)
- **Bitariho, R and Akampurira, E** (**2019**). Harvesting of wild climbers, food security and ecological implications in Bwindi Impenetrable National Park, S.W Uganda, *BMCT publications*, Kabale.
- **Bitariho, R**, Twinamatsiko, M, **Babaasa, D** (**2019**). The influence of Bwindi Mgahinga Conservation Trust programmes on local communities around Bwindi Mgahinga Conservation Area, SW Uganda, *BMCT publications*, Kabale.
- **Bitariho, R, Akampurira, E, Twinomuhangi, I**, (**2019**). The effectiveness of Problem Animal Mitigation interventions around Karangara and Bujengwe Parishes, Kanungu District, Bwindi Impenetrable National Park, SW Uganda, *BMCT publications*, Kabale
- Galbany, J, Twahirwa, J.C, Baiges-Sotos, L, Kane, E.E, Tuyisingize, D, Kaleme, P, Rwetsiba, A, **Bitariho, R**, Cranfield, M.R, Bromage, T.G, Mudakikwa, A, Stoinski, S, Robbins, M and McFarlin, S.C (**2019**). Dental

macrowear in Catarrhine Primates: Variability across species; in *Dental wear in evolutionary and biocultural contexts*, Christopher Schmidt, C & Watson, J.T (eds). 1st 09/2019: chapter 2: pages 11-37; Elsevier/Academic Press, ISBN: 9780128155998, DOI:10.1016/B978-0-12-815599-8.00002-2

- Khwaja, H, Buchan, C, Wearn, O.R.,..... **Bitariho, R**, Bohm, T Borah, J, Brodie, J et al **(2019)**: Pangolins in global camera trap data: implications for ecological monitoring, ***Global Ecology and Conservation***, 20:e00769, DOI: 10.1016/j.gecco.2019.e00769
- Steidinger, B S, Crowther, W, Liang, J....., **Bitariho, R**, Boeckx, P, Bongers, F, Bouriaud, F et al, **(2019)**: Climatic controls of decomposition drive the global biogeography of forest-tree symbioses. ***Nature***; 569(7756), DOI: 10.1038/s41586-019-1128-0
- Bastin, J.F, Rutishauser, E, Kellner, J.R.....**Bitariho, R**, Boeckx, P, Boehning-Gaese, K, Brandã, H, Brearley, F.Q, Ndoundou Hockemba, M.B, Roel Brienens *et al* **2018**. Pan-tropical prediction of forest structure from the largest trees, ***Global Ecology and Biogeography***, Wiley Publishers; Vol 27 (11) 1366-1383,
- Tumusime, D, **Bitariho, R** & Sanbrook, C **(2018)**. Bwindi Impenetrable National Park: a celebrity site for integrated conservation and development in Uganda; in *Conservation and Development in Uganda*, Chris Sandbrook, Connor Joseph Cavanagh, David Mwesigye Tumusiime (eds), ***Routledge Publishers***, London.
- Bastin, J.F, Rutishauser, E, Kellner, J.R.....**Bitariho, R**, Boeckx, P, Boehning-Gaese, K, Brandã, H, Brearley, F.Q, Ndoundou Hockemba, M.B, Roel Brienens *et al* **2018**. Pan-tropical prediction of forest structure from the largest trees, ***Global Ecology and Biogeography***, 2018;00:1–18. <https://doi.org/10.1111/geb.12803>, **Wiley Publishers**
- Hickey JR, Granjon A, Vigilant L, Eckardt W, Gilardi K, **Babaasa D**, Ruzigandekwe F, Leendertz F and Robbins MM **2018**. *Virunga 2015-2016 Surveys: Monitoring mountain gorillas, other select mammals, and illegal activities. Unpublished technical report, IGCP Kigali,*

## **10. Constraints/challenges experienced and mitigation measures**

Like mentioned last reporting year, financial sustainability for long term research and monitoring activities is a big challenge at ITFC. Much of the funds from donors have declined and ITFC is now depending on only one project and some funds from MUST to sustain its activities. Much effort will be needed to raise funds for the institute's survival and growth. All project/field staff at ITFC have been encouraged to write project proposals and fundraise in order to sustain the ITFC research activities.

**“SUCCEED WE MUST”**