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2019

## APOPO Annual Report 2019

APOPO

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# ANNUAL REPORT 2019



# ABOUT APOPO

APOPO originated from the idea of its founder Bart Weetjens to train rats for the detection of landmines. Now, over 20 years later, APOPO deploys rats to find landmines and tuberculosis in many affected countries, and continues innovating to use its African Giant Pouched Rats in the battle against other scourges.

APOPO trains these 'HeroRATs' using positive reinforcement – they receive tasty treats when they identify a target scent. HeroRATs are at the core of the organization and it's reflected in the way they are protected and responsibly raised.

Our Training and Research center is based at the foothills of the beautiful Uluguru Mountains in Tanzania. This is where all the rats are trained before being sent to global operations. APOPO has mine action programs in Angola, Mozambique and Cambodia and a presence in Zimbabwe. APOPO also detects tuberculosis in Tanzania, Mozambique and Ethiopia.

APOPO always seeks innovative approaches to tackling global humanitarian problems. In 2019, APOPO expanded research into developing various unique applications for the detection rats, and has now also expanded to train specialized survey dogs to help search larger suspected minefields.



# CORE VALUES

## QUALITY

Demonstrating and promoting high standards in research, design, training, and implementation of detection rat technology

## INNOVATION

Pioneering creative research and innovative solutions within a participatory learning culture

## SOCIAL TRANSFORMATION

Developing skills, creating jobs, improving socio-economic and environmental conditions, releasing land for development, and combating public health issues

## DIVERSITY


Embracing diversity in all facets of the organization with respect to age, gender, religion, sexual orientation, physical abilities, nationality and ethnicity






# INTRODUCTION

 **Thoeun Theap**  
Cambodia Operations Manager

 I first met the amazing animals we call HeroRATs in 2015, when I spent three months at APOPO's Training & Research Center in Tanzania. I was a Cambodian deminer about to begin my new career as an APOPO Mine Detection Rat Supervisor. I had never seen a rat so BIG before and was amazed at how quickly and accurately they found landmines. The Tanzania training team taught me how to care for the rats, basic first aid, the theory and rat training procedures. In return, I told them about the suffering in Cambodia and what it was like growing up during the war. Our rat teams have cleared many minefields in my country and while vast tracts of land still remain contaminated with landmines I am confident that my work with APOPO is making a difference.

 I had never seen a rat so BIG before and was amazed at how quickly and accurately they found landmines.

Every day more than 60 million people around the world live in fear of being injured or killed by landmines and unexploded bombs. Landmines prevent people from travelling freely and safely to school, farms, health clinics, and water sources. Furthermore, it prevents communities from being able to use their land to grow crops and earn a living, denying people previously displaced by war the chance to return home safely.

But as the world struggles with economic upheaval and the focus changes, funding for Mine Action is declining. Yet, landmines are not being cleared fast enough, people still live in constant terror of landmines. That's why, more than ever, it's important to explore innovative unconventional ways to help. By integrating both our detection rats and dogs into our demining toolbox, we are speeding up operations more than ever before! With new strategic partnerships with other landmine clearance organizations, determination from national authorities, donor governments and private supporters, a landmine free 2025 can be a reality.

Tuberculosis has stalked humanity for a much longer time. To turn the tables, we must look to less conventional measures. My colleagues and the TB Detection Rats in Tanzania, Mozambique and Ethiopia are fighting hard to get test results back to patients faster than ever. As long as millions of people live with the disease without treatment and continue to pass it on to others, the world will not end TB as an epidemic.

APOPO is an inspiring international organization that successfully addresses social issues around the world. If you are a partner or donor of APOPO, then I offer my sincere gratitude for your vital support. It is through you that we are enabled to carry out our life-saving work. If you are a potential supporter, I ask you to join us now in the fight against landmines and tuberculosis. Read on and find out how APOPO, in 2019, changed the lives of people around the world."

# ENABLED IMPACT SINCE APOPO BEGAN TO END 2019

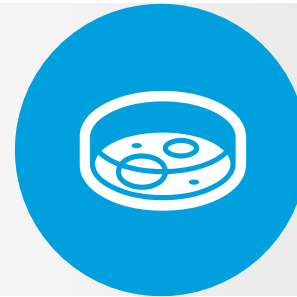
APOPO ANNUAL REPORT 2019

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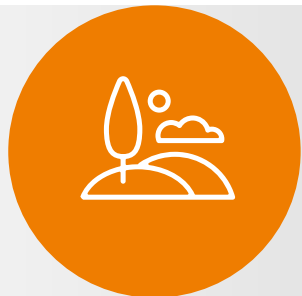
**108,236**

Landmines and other  
explosives destroyed



**643,233**

TB samples screened



**25,345,984 m2**

Land given back to  
communities



**17,185**

Additional TB patients  
detected



**1,000,043**

People freed from  
the terror of landmines



**126,375**

Potential infections halted



# LANDMINE DETECTION



## The Landmine Problem

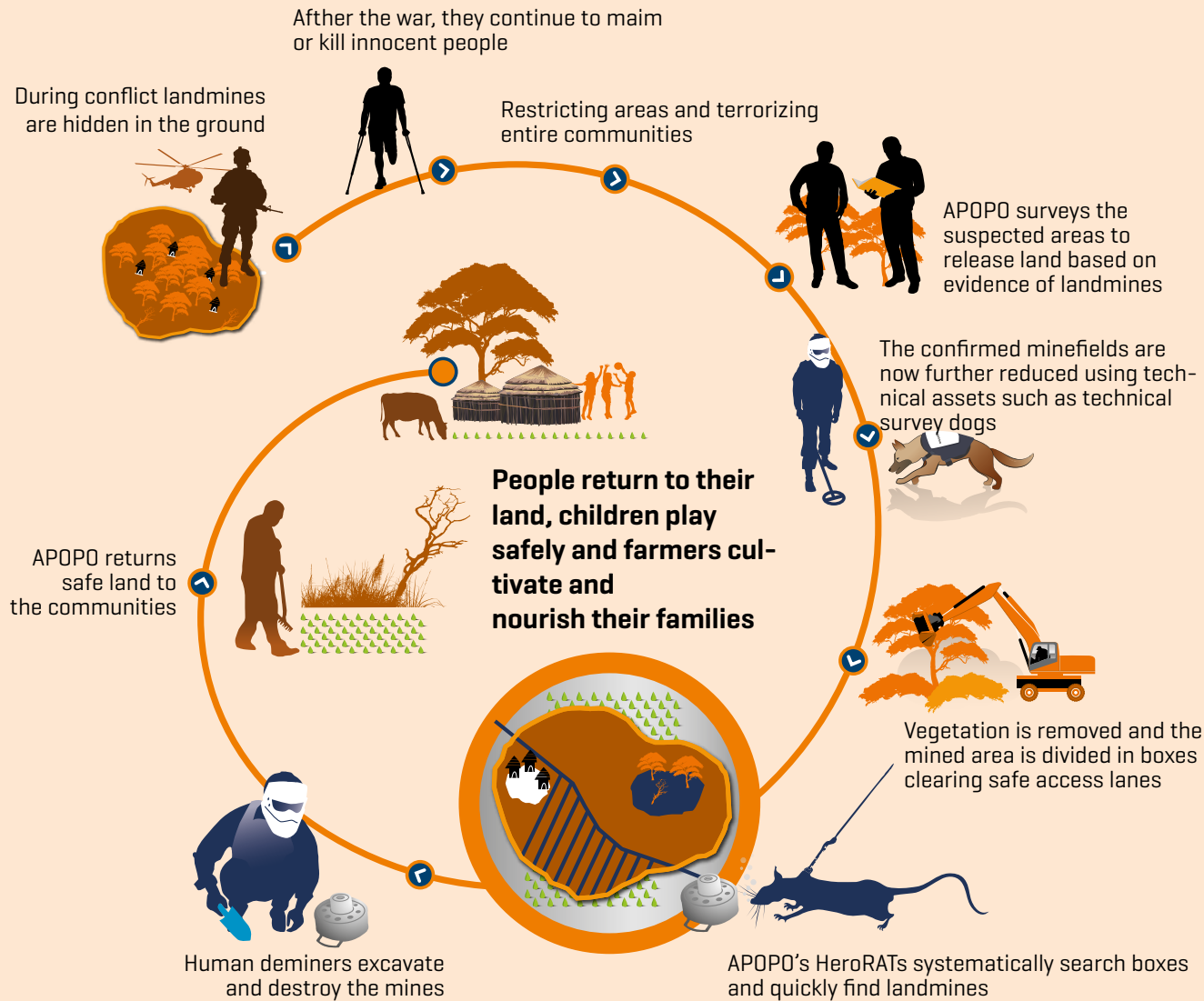
Over 60 million people living in 59 countries from Angola to Cambodia, do so in daily fear from landmines and other remnants of conflicts that are long since over. Landmines remain as painful and dangerous reminders of the past, continuing to undermine personal safety, economic development and food security. Agricultural land is unsafe to farm and grazing livestock is dangerous. Trade routes remain closed, cutting off communities and denying families displaced by war the chance to return home safely.

Yet detecting these weapons is very tedious and therefore expensive while global funding is declining. In 2018, landmines and explosive remnants of war caused 6,897 casualties, of which 71% were innocent civilians and 54% of those children.





# OUR APPROACH



## APOPO's Impact

Saving lives and enabling vulnerable communities to get back on their feet is the focus of our work. Thanks to our work, a million people can safely work the land, raise livestock, and feed their families. However there still remains much to do. APOPO's Mine Detection Rats (HeroRATs), ignore scrap metal and only detect the scent of explosives, making them much faster at finding landmines than metal detectors. They are also too light to set off landmines, making them ideal tools to speed up detection when integrated into conventional mine clearance methods. Adding Technical Survey Dogs (TSD) to confirm the presence of landmines achieves a higher level of efficiency and effectiveness.



Integrating detection animals hugely speeds up the land clearance process. One rat can search an area the size of a tennis court in 30 minutes, this could take a manual deminer with a metal detector up to four days.



# MINE ACTION SUMMARY



**Håvard Bach**  
Head of Mine Action

Mine Action clears paths and creates safe ground on which homes can be built and land can be cultivated. It gives new horizons and hope to the 60 million people worldwide living at risk in vulnerable communities. Everyone has the right to basic security in their lives, and not fear their next step. By removing landmines and other explosive remnants of war (ERW), APOPO lays the foundation for recovery and sustainable development: reopened roads, crossable bridges, attendable schools, and restored livelihoods.

However, the industry is rapidly evolving from confined landmine related activities, to actions associated with the Convention on Cluster Munitions (CCM). Disarmament and the unique situation in the Middle East where there is a high demand for building clearance, removal of Improvised Explosive Devices (IED) and clearing booby trapped devices. The global focus has grown and our main emphasis on landmines needs to evolve. There is a large demand for efficient survey and clearance methods that can address challenges in the extended sector. APOPO is a small international charity organization and it is reasonable to ask what we can offer in this new arena.

We can offer innovative and efficient solutions that surpass traditional mine action and will speed up the wider survey and clearance process. Our focus remains on landmines, but we are also willing to expand it. With the right support and effort, we can better address new disarmament challenges in a wider partnership with other organizations. APOPO can offer innovation and new and efficient methodology. Our most important contribution is to offer integration of efficient and complementary technology to that provided by others.

The logo for the 'Landmine Free 2025' coalition. It features the words 'LANDMINE' and 'FREE 2025' in a bold, sans-serif font. The letter 'I' in 'LANDMINE' is replaced by a red circle, which is part of a larger graphic element.

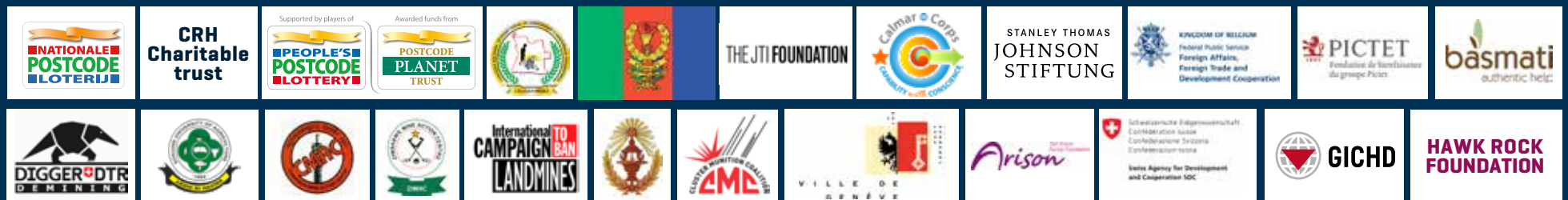
APOPO has joined the global “Landmine Free 2025” coalition. This makes APOPO part of the global response to rally support for landmine clearance and ensure people affected by landmines are not forgotten.

# MINE ACTION SUMMARY

**Håvard Bach**  
Head of Mine Action

In 2019, we continued to clear landmines and ERW in **Angola** and **Cambodia**. Both countries are among the top five mine-affected countries in the world. We deploy a mix of scent detection animals to get the job done: **rats for clearance, dogs for technical survey** and manual deminers and machines to support the animals. Using this further expanded toolbox, APOPO Cambodia teams have increased efficiency five-fold over the last 3 years. We have also deployed a group of 9 long leash dogs under a UN managed contract in South Sudan. These dogs are doing well, and with additional partners, we could further expand into more mine-affected countries and territories.

Much work remains to realize a world free of landmines, and as we set a course for 2020 with a clear focus only with the continued support of our partners and donors, will we be able to accomplish this goal. APOPO is looking to implement a pilot project next year to prove the concept of using technical survey dogs as part of a cluster munition survey and clearance in Southeast Asia. We will further maintain our commitment to support communities that are affected by mines, ERW and other explosive items. In addition, we aim to integrate more detection animals into existing partner projects in the years to come. Our commitment towards higher operational efficiency could generate sector-wide efficiency achievements beyond what we can achieve alone. There is a new development of more interest within the wider industry in partnering with APOPO's integration of animals.







**Michael Heiman**  
Program Manager

APOPO and partner Cambodian Mine Action Center (CMAC) continued operations throughout 2019 in the north-western provinces of Preah Vihear, Siem Reap and Oddar Meanchey. The teams are targeting the most mine-affected villages in order to return safe, productive land back to communities where it can make the most significant impact. Together the teams cleared 2,441,805 m<sup>2</sup> of land, destroying 690 mines and other deadly devices. Safe land was returned to the village communities for agricultural use and infrastructure development, directly benefiting 50,492 people.



Cambodia remains one of the most heavily mined countries in the world following decades of conflict. Despite considerable efforts, the Landmine Monitor estimates at a minimum 941 km<sup>2</sup> of land contaminated by landmines and 1,003 km<sup>2</sup> of land contaminated by cluster munitions and other remnants of war.

Operations in Siem Reap Province continued in the northern commune of Sre Nui, an area that was controlled by the Khmer Rouge until the late 90's and where landmines still affect the lives of nearby villagers. In 2019 this working effort was expanded further to the north, into the Province of Oddar Meanchey lying alongside the Cambodia-Thailand border.

 MINE ACTION

# CAMBODIA

# CAMBODIA

The teams continued clearing landmines in Choam Khsant District, the province of **Preah Vihear**, near its famous Hindu Temple – a UNESCO World Heritage site that has been isolated with limited access mainly via neighboring Thailand. This creates safe access, allowing for further survey and restoration. APOPO is happy to announce that as part of efforts to incorporate crosscutting gender and diversity dimensions into all of its activities – half of the HeroRAT handlers in Preah Vihear are women and all of them were recruited from the mine affected communities in the area.



The Preah Vihear temple area has a long history of minefields due to border disputes between Cambodia and Thailand. Choam Khsant is one of the most mine-affected districts in Cambodia, with 16 accidents in 2017-2018. The program effectively doubled its capacity in 2019. In February, newly trained Technical Survey Dogs (TSD) were also integrated into the project to further accelerate the land release process. Never before have there been Technical Survey dogs used in this way and this marks a first milestone in the industry. APOPO is proud of the fact that in the last three years the Cambodia program managed to increase cost-efficiency by five-fold!



Today the program has **9 teams** working in parallel with Mine Detection Rats, Technical Survey Dogs, Machines and Manual Deminers. Planning is made according to the 2030 UN Sustainable Development Goals, the Strategy of the Cambodian Mine Action and Victim Assistance Authority and after a comprehensive survey made by CMAC on the Village, Commune and District level.





APOPO trains specially equipped **Technical Survey dogs (TSD)** that search freely with no need for overlap between lanes in heavily overgrown areas and there is no need for vegetation cutting beforehand. The SMART backpack they use was developed by GICHD and Digger DTR with initial funding from Swiss foundation World Without Mines and continued support from the City of Geneva. Many minefields are in thick bush and SMART TSD are able to work in heavily overgrown areas without the need for time consuming and expensive ground preparation methods with no loss of detection rates.

Toward the end of the year APOPO and CMAC signed several new agreements that will keep the partnership going until the end of 2020. Both sides are extremely pleased with the growing capacity and the advantage of integrating animals that accelerates mine clearance in Cambodia.

## IMPACT 2019

Landmines and UXO destroyed	690
Safe land given back to communities	2,441,805 m <sup>2</sup>
People directly affected	50,492

### New Beginnings

“ I am very proud with our achievements this year! I was one of the first women to join the program am happy to see the numbers balancing out. I feel blessed as I also met my husband while working here. We still work on the same team and I am grateful for our closeness. I hope that in 2020 the program will continue to grow so we can continue to protect people and give them a new beginning.”

**Malen So, Mine Detection Rat Handler**







# ANGOLA

■ Angola mine action project is run almost entirely by Angolan staff.



**Manuel João Agostinho**

Program Manager

In January 2019, APOPO Angola welcomed Program Manager Manuel João Agostinho, charged with leading the team and the transition to independent operations. APOPO concluded its partnership with the Norwegian People’s Aid on March 31st, having finalized registration and accreditation in Angola, and started operating independently for the first time.

APOPO’s Angola mine action project is run almost entirely by Angolan staff with only a small core of international staff supporting technical assistance and operational advising. The program expanded its core assets to 24 national staff, two senior operations staff from Mozambique, 15 mine detection rats, one vegetation cutting machine and four vehicles. Targeted inclusion saw four locally recruited women integrated into the team and clearing minefields in Uíge province in northwest Angola.



APOPO places high value on capacity building for women. In rural communities in Angola, work opportunities for women are often scarce. Employing women in mine action not only provides new life chances for women, it also makes them a direct part of the peacebuilding and rebuilding process.



Our work in Angola is focused in rural areas, clearing landmines that have plagued communities for over 30 years. APOPO completed two main demining tasks in 2019, in Uíge province, Quitexe 4 and Kitomaluta I, resulting in the release of 250,090 m<sup>2</sup> of valuable productive land. APOPO safely located and destroyed 352 landmines and other explosives, benefiting over 32,000 people living in the impacted communities.



Angola still suffers from one of the most extensive landmine problems in the world with a massive 93 million m<sup>2</sup> of contaminated land according to the National Mine Action Plan 2020-2025.

Among the five organizations still operating in Angola, APOPO is the only one using mine detection animals. The mine action authorities are confident in the quality and effectiveness of our integrated approach and have assigned APOPO two additional provinces Kwanza Norte and Kwanza Sul (the third most mine contaminated province in the country) for land clearance. Looking ahead at 2020, APOPO hopes to build effective collaborations with Instituto Nacional De Desminagem (INAD, the national Demining Authority) and APACOMINAS (the only national demining NGO) to maximize the funding and resources available. The program is also considering further integration of Technical Survey dogs to meet Angola's mine-free deadline of 2025.

## IMPACT 2019

<b>Landmines and UXO destroyed</b>	<b>352</b>
<b>Safe land given back to communities</b>	<b>250,090 m<sup>2</sup></b>
<b>People directly affected</b>	<b>32,000</b>

### Restoring Confidence

“ Sadly, I know many people affected by landmines. My colleague had an accident while we were serving together in the army. I’ve also lost two cousins to landmines. You cannot underestimate the impact the fear of landmines has on vulnerable communities, it is a heavy psychological burden. I am proud to be working with APOPO and the mine detection rats, giving back land and restoring confidence so life can begin again for people living near these minefields.”

**Austragildo Freitas (‘Gildo’),  
Operations Officer, MA Angola**





 MINE ACTION

## MOZAMBIQUE

■ Mozambique was one of the most severely mine-affected countries in the world.



**Ashley Fitzpatrick**

Mine Action Advisor

In 2015 Mozambique it was declared free of all known landmines with the completion of humanitarian demining. APOPO spent the next two years carrying out residual tasks and recognizing the natural progression to fundraise so that the equipment could be moved to Zimbabwe.

2019 saw the final resolution with the Government of Mozambique regarding approval for the transfer of demining equipment to neighboring Zimbabwe. With the help of the current Director of the National Institute of Demining [IND], who assumed the vacant post in late 2018, a solution was reached for APOPO to **move equipment to Zimbabwe** as soon as APOPO secured funding. The IND Director, Artur Veríssimo, had a stake in establishing IND years ago, and has committed to helping neighboring Zimbabwe.



# MOZAMBIQUE

IND and APOPO have discussed a possible joint visit to APOPO's tasked area along with Zimbabwe Mine Action Centre (ZIMAC), to bring the interested parties together and to witness the problem and the minefield's devastating impact first-hand. APOPO is hopeful the visit can occur in early 2020, when it is also hoped our demining operations will kick-off, thus presenting an opportunity for positive media attention for all stakeholders and for raising Zimbabwe's profile as a mine-affected country in need of support.

Additionally, APOPO was **honored** by being selected to support the ongoing peace process in Mozambique which aims to Disarm, Demobilize and Reintegrate [DDR] Mozambican National Resistance [RENAMO] combatants. In July, the Peace Process Secretariat, with the support of the Swiss Embassy, contracted APOPO for the collection, storage, safe transport and disposal of Small Arms and Light Weapons [SALW], munitions and explosives. At the end of July, a historic moment for Mozambique's Peace Process occurred when the first RENAMO weapon was symbolically surrendered to the Joint Technical Group for DDR [JTGDDR]. Thereafter, the Government and RENAMO signed final Ceasefire and Peace Agreements.

The process continues, and at the time of writing, it is anticipated that the destruction of SALW will continue in 2020 due to be completed by mid-year.







# ZIMBABWE

■ For APOPO's start-up program in Zimbabwe, 2019 remained intensely focused on fundraising to begin demining operations in our area of responsibility.



For APOPO's start-up program in Zimbabwe, 2019 remained intensely focused on fundraising to begin demining operations in our area of responsibility. Specifically a 37 kilometer stretch of dense minefield in the Sengwe Wildlife Corridor located in southeastern Zimbabwe along the border with Mozambique. APOPO has dynamically and systematically continued resource mobilization outreach efforts toward major mine action donors such as the United States Department of State and the European Union, among several others. Numerous detailed dialogues are ongoing with proposals under review, and APOPO anticipates a funding breakthrough in the first part of 2020.





Representatives from the **United States Department of Defense Humanitarian Demining Research & Development Program** (US DoD HD R&D) visited APOPO twice over the course of the year, in March and October respectively. US DoD HD R&D remains committed to supporting APOPO's clearance efforts in **the Sengwe Wildlife Corridor** by testing equipment, namely detectors, in APOPO's operations. Everyone is in agreement that APOPO's task is an important and impactful minefield to clear. Currently, two detectors were shipped to the region with the support of the US Embassy in Maputo, and remain in storage awaiting funding for operations to begin.

Apart from fundraising efforts, in mid-2019 APOPO obtained its **desk accreditation** from the national demining authority from the Zimbabwe Mine Action Center. Before operations begin, a final certificate will be issued once physical inspection of APOPO's operational base and equipment occurs.

■ **Everyone is in agreement that APOPO's task is an important and impactful minefield to clear.**



Concealed landmines also kill and injure endangered wildlife, impact wildlife migration patterns and pose a huge barrier to the development of ecotourism.



# APOPO'S GLOBAL IMPACT

## MINE ACTION 2019 IN NUMBERS



**1,042**

LANDMINES AND OTHER EXPLOSIVES DESTROYED



**2,691,895 M<sup>2</sup>**

LAND GIVEN BACK TO COMMUNITIES



**78,492**

PEOPLE FREED FROM THE TERROR OF LANDMINES





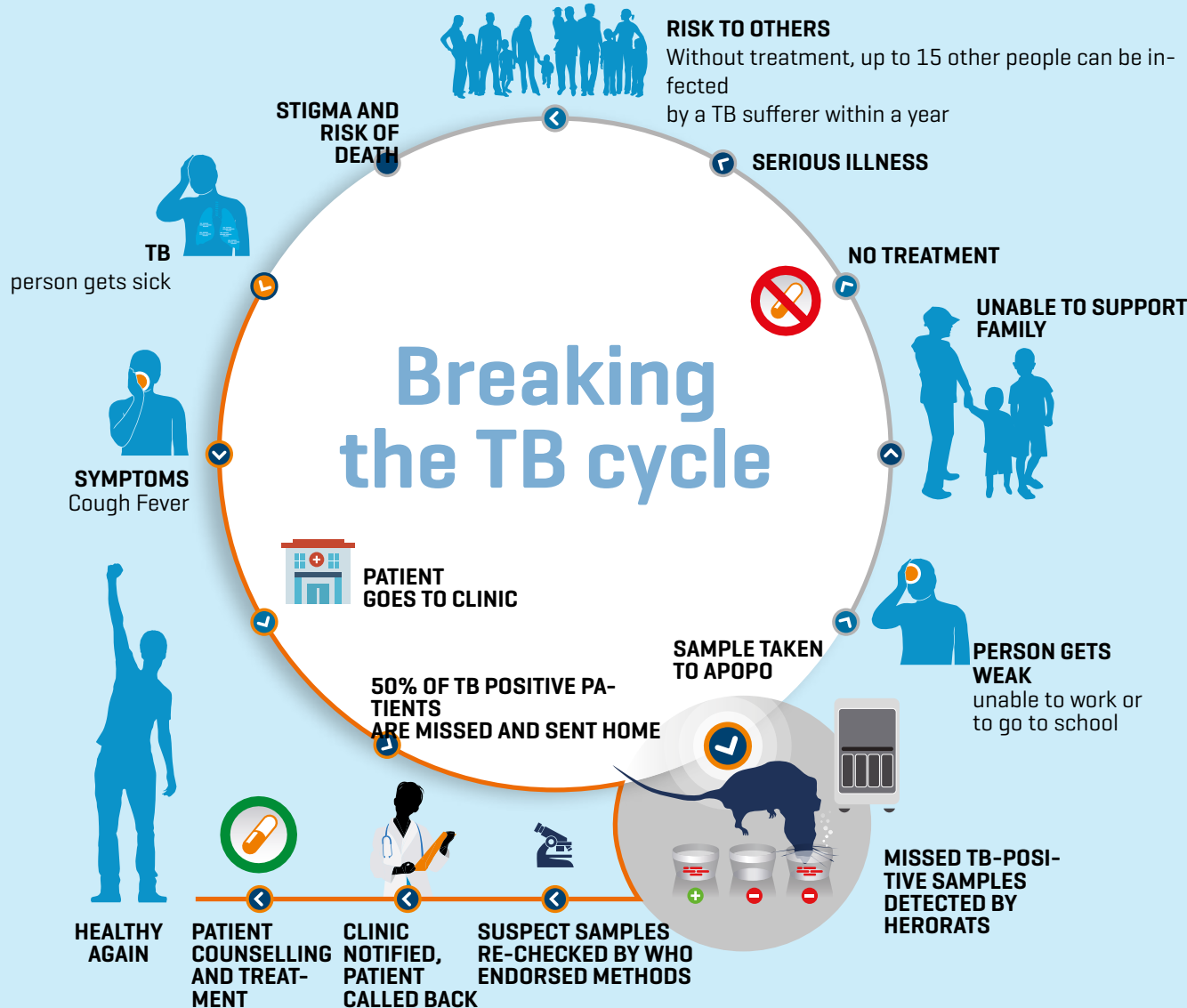
# TUBERCULOSIS DETECTION



## Global Burden

Tuberculosis (TB) is the world's leading killer among infectious diseases and makes it one of the top 10 causes of death worldwide. TB is spread from person to person through the air. The disease killed 1.5 million people in 2018 (4000 people each day). It is also the leading killer of people living with HIV/AIDS. In 2018, an estimated 10 million people develop TB and nearly half a million people develop drug-resistant TB [DR-TB]. Yet, 3 million cases were globally "missed" by health systems where patients are left undiagnosed, untreated or unreported. One person with infectious TB can spread the disease to as many as 15 other people in a year. This makes the hunt for "missing cases" all the more important.





## How APOPO helps

APOPO's programs work within government health systems to support partner clinics in Tanzania, Mozambique and Ethiopia in their fight against TB. According to estimates of the World Health Organization (WHO), the case detection gap is particularly high in Africa.

APOPO conducts research into using rats as a TB diagnostic tool and service delivery. APOPO rechecks samples collected from partner clinics rapidly using HeroRATs and confirms the presence of TB in the rat-positives using globally endorsed confirmation methods. Confirmed results are sent back within 24 hours to the clinics who oversee patient counselling and treatment. This approach has proven to increase detection rates in partner clinics by 40%. This means more patients who have TB get a positive test result and receive access to the free life-saving treatment at their local clinic, stopping a vicious cycle.

One TB detection rat can screen 100 sputum samples for tuberculosis in just 20 minutes – a job that would take a lab technician using conventional microscopy about four days. The speed of the HeroRATs is a crucial factor in reducing costs and getting people treatment as soon as possible.

# TB DETECTION SUMMARY



**Dr. Lena Fiebig**  
Head of Tuberculosis

From a research idea in 2002, to tuberculosis (TB) detection activities in Morogoro, Tanzania in 2007 with just four partner clinics, APOPO scaled up to include three countries and three additional laboratory facilities in Maputo, Mozambique (2012), in Dar es Salaam, Tanzania (2016), and Addis Ababa, Ethiopia (2018). Our integrated diagnostic services now reach 161 partner clinics and demonstrate rising confidence in our programs by government health officials. This year, APOPO hit the milestones of having tested a quarter of a million people for TB and more than 17,500 additional TB patients found.

2019 was a bold year. With our four laboratories in three countries working in full swing, we evaluated samples from over **63,000 patients** with signs and symptoms of TB and found 2,516 new TB cases which resulted in an average increase in case detection by 46%.

On top of these ongoing collaborations with our partner clinics, 2019 saw our screening project in prisons take off in **Ethiopia**, where TB and HIV testing is offered to both inmates and staff, and capacity is being built amongst health personnel.

In **Tanzania**, our digital health project eCompliance assured a very high adherence to TB-therapy delivered at patients' homes in Temeke district of Dar es Salaam.

And in **Mozambique**, we were highly active in building our patient cohort to study whether rats can detect TB earlier – results for this exciting study will be ready in 2020.





# TB DETECTION SUMMARY

**Dr. Lena Fiebig**  
Head of Tuberculosis

Linking newly diagnosed patients to care remained an important pillar across all our TB projects. Prompted by the global initiative to find and treat all TB patients (Find.Treat.All. #EndTB), we analyzed past program data from Mozambique and Tanzania showed a marked increase in linkage to care over time from about 55% to around 80%. This was achieved through a number of measures which have gradually been introduced and enhanced from 2014 onwards, including faster sample collection thanks to motorbike couriers, evening work shifts to give APOPO results to the clinic by morning and patient tracking with the help of community health workers.

APOPO TB detection has big public and scientific outreach, expressed by invitations to numerous international meetings such as the Union World Conference on Lung Health, a TEDx Talk in Boston delivered by our Tanzania Program Manager, submitted publications to international peer-reviewed journals and a heightened media presence. We look forward to innovative solutions and exciting years to come.



Alice Rafael with her daughter taking her treatment pills at the clinic in Mozambique

The APOPO TB research programs are made possible by our partners and donors.





**Dr. Georgies Mgone**

Program Manager, TB Tanzania

The tuberculosis [TB] program in Tanzania run in partnership with Sokoine University of Agriculture [SUA] performed well and exceeded targets in 2019. The Dar es Salaam and Morogoro laboratories successfully screened 55,279 sputum samples (110% of the target) and 40,175 presumptive TB-patients (154.5% of the target). The number of additional patients found was 1,541. Among these, 1,062 started treatment right away, preventing the possible spread of the disease to 15,930 people within a year.

APOPO achieved wider geographic reach by increasing the number of collaborating partner clinics in Tanzania from 57 to 74. APOPO's partnerships now cover a high proportion of TB centers in Dar es Salaam region and the city of Dodoma, as well as clinics in the Coast and Morogoro regions. Our diagnostic services complement hospitals like Muhimbili National Hospital in Dar es Salaam and Benjamin Mkapa Hospital in Dodoma. APOPO also reaches people in peripheral areas that may have difficulty accessing good quality TB diagnostic services.

 **TB DETECTION**

# TANZANIA



Health facilities can be hours away from people's homes, a common barrier to accessing care. By fully tapping the potential of community health workers, MKUTA can identify and locate people who are vulnerable to TB, connect them to care, and, ultimately, reduce and prevent further TB infections.



Our partner MKUTA is made up of volunteer community healthcare workers that personally recovered from the disease. Using digital treatment adherence technology on tablets, namely eCompliance supplied by partner OpASHA., MKUTA continued the HDIF-funded tracking and monitoring of patients in 2019. This saw TB-patient treatment adherence remain stable over the course of the year at an impressive **94% to 98%**.

In Tanzania, our rat detection work is traditionally paired with research to identify TB-specific volatile organic compounds (VOCs), which make up the scent that rats are able to detect in a sample. The continued high interest in this original research was reflected in the invitation to deliver a TedX talk on the TB detection rat research in Boston, USA and another talk on the European Molecular Biology Organization (EMBO) scientific workshop in Berlin, Germany.

## TANZANIA IMPACT 2019

<b>Samples evaluated</b>	<b>55,279</b>
<b>Patients evaluated</b>	<b>40,175</b>
<b>Additional patients diagnosed</b>	<b>1,541</b>
<b>% increase in detection rate</b>	<b>42%</b>

### Increasing TB Awareness

“ I am a volunteer for MUKIKUTE part of MKUTA. We work with APOPO and help communities understand tuberculosis [TB]. I survived TB twice and I share my story any chance I get. That’s the thing with TB, even if you get it once and get better, you can still get it again. I’m grateful my sample was sent to APOPO and they confirmed my suspicions, so I could get on treatment immediately. The world has to wake up to TB and start addressing it properly.”

**Savera Komba**  
MUKIKUTE Volunteer



### Partnership

“ I was very skeptical about using rats at first. It sounded silly to me. But APOPO, using HeroRATs and standard tests now account for a good percentage of our monthly TB results. I must stress again; these are people who were sent home with a wrong diagnosis and therefore could not access treatment. What we must remember is that if people get correctly diagnosed on time, TB is entirely curable. I am grateful that APOPO is supporting us.”

**Dr. Joyce Mgothamwende**  
Clinical Officer and District TB and Leprosy Coordinator Mbagala-Rangi Tatu District, Dar es Salaam





**Robert Burny**  
Program Manager

2019 was an important year of transition for the Mozambique TB detection program. APOPO maintains its support to Maputo city health authorities and continues to implement its TB detection and linkage to care operations. APOPO now provides direct molecular testing in its portfolio as a service in response to the Mozambican health authority's national rollout of molecular testing with Xpert MTB/RIF, which can detect drug resistant strains. This also allows APOPO to compare rat and molecular test results directly.

Our operational research run in partnership with Eduardo Mondlane University (UEM) continued in 2019 with an effective and recognized system of daily collection and transport of samples from 19 partner clinics. These are first checked by the rats then confirmed with endorsed diagnostics in our laboratory allowing APOPO to deliver results back to clinics within 24 hours. This gets patients on treatment early and with the help of our **community-based partner Kenguelekezé**, helps them stay the course, hugely improving linkage to care.

 TB DETECTION

# MOZAMBIQUE



The Kenguelekezé Team





# MOZAMBIQUE

Kenguelekezé contributes with better support and treatment monitoring.

In 2019, we processed **12,321 samples** from 9,973 patients with signs and symptoms of TB, and diagnosed **580 new TB-patients**. From those, 516 (89%) were put in treatment and monitored at home. This is where **Kenguelekezé** contributes with better support and treatment monitoring, following a TB facility upgrade training in April which allowed for improved performance, coordination and reporting over the course of the year. 2019 also saw the organization of the first project steering committee to discuss arising issues and solutions with key project stakeholders.

APOPO senior team members [Head of TB, Head of IT, Communications and Finance] visited the program and an external consultant conducted a mid-term project evaluation. This review confirmed progress achieved, but also highlighted areas to capitalize on such as the speedy diagnostic service. APOPO Mozambique's role as a service provider was highlighted as very promising considering existing laboratory expertise and could be further developed for technical assistance and new areas.

## MOZAMBIQUE IMPACT 2019

<b>Samples evaluated</b>	<b>12,321</b>
<b>Patients evaluated</b>	<b>9,973</b>
<b>% increase in detection rate</b>	<b>37%</b>
<b>Additional patients diagnosed</b>	<b>580</b>
<b>% of patients linked to care</b>	<b>89%</b>



Consequently, APOPO established a new collaboration with **Population Services International (PSI)** in December 2019 to test samples for human papillomavirus (HPV), a common cause of cervical cancer in women. This new partnership is expected to be integrated easily into the current program, making good use of staff knowledge, and available laboratory equipment while serving the same communities in need.

### Stronger Together



I learned that, despite this strange idea of using rats to detect tuberculosis, APOPO is doing a very focused and efficient job. I had the pleasure of visiting the lab and saw in person the speed of the HeroRATs and how the lab confirms findings using WHO-approved tests.”

**Dr. Elsa Kanduma, MD and NTP Supervisor at Maputo City Municipal Council**



### Multi-drug Resistant TB



When APOPO found my drug-resistant TB I was afraid I would die. I know it kills many people like me. Many things had to change. I had to distance myself from my family, I had to eat better as nutrition plays an important role during treatment. I take my medicine every day and the side effects are awful. But I am thankful to be alive and for APOPO and the HeroRATs for finding my TB.”

**Ana Michele Mabote, Recovering TB Patient**







**Dr. Negussie Beyene**  
Program Manager,

APOPO's Tuberculosis (TB) Research Program in Ethiopia runs in partnership with the Armauer Hansen Research Institute (AHRI) and consists of two main projects: enhanced tuberculosis case finding in the city of Addis Ababa and improved TB/HIV screening in Ethiopian prisons.

The enhanced TB case finding project is being conducted in collaboration with the Addis Ababa City Administration Health Bureau and the National TB Control Program (NTP) with funding from Skoll Foundation. This initiative has partnered with 63 public health centers. In 2019, a total of 26,099 samples were collected from 13,312 presumptive TB patients that were screened. The project found 395 additional cases on top of the 541 positive patients found by the clinic (increased case detection 73%) averting over 5,900 potential additional infections. APOPO's HeroRATs continue to confirm their potential as an important screening tool. The AHRI-APOPO results show our impact and the relatively young project continues to gain credibility.

 TB DETECTION

# ETHIOPIA



In 2019, a total of 26,099 samples were collected from 13,312 presumptive TB patients that were screened.

 apopo



After completion of pilots in Mozambique and Tanzania to mass screen prison populations using our HeroRATs, in March 2019 a **TB & HIV screening project** was started in Ethiopian prisons. The Elton John AIDS Foundation funded project is being implemented in partnership with the German Leprosy and Tuberculosis Relief Association (GLRA), the Federal Prison Administration and the NTP.

By the end of 2019, 18,996 inmates and prison staff in 11 prisons were screened successfully. Out of these, 17,168 [90%] were screened for TB and 14,684 [78%] were screened for HIV. The project found 75 bacteriologically confirmed TB-cases and 62 HIV positive cases. These patients were immediately linked to care and this will avert the potential spread of TB to over 1000 people in the prison system. This prison screening project will continue into 2020.

### Working Together



We are very grateful to the AHRI-APOPO Program for picking up smear negative but symptomatic presumptive TB-cases allowing clinics to get patients on treatment and helping us in the fight against tuberculosis.”

**Temesgen Afework**  
Lab Quality Officer,  
Addis Raey Health Center



### ETHIOPIA IMPACT 2019

<b>Samples evaluated</b>	<b>26,099</b>
<b>Samples evaluated</b>	<b>13,312</b>
<b>Additional patients diagnosed</b>	<b>541</b>
<b>% increase in detection rate</b>	<b>72%</b>





# APOPO'S GLOBAL IMPACT

## TUBERCULOSIS 2019 IN NUMBERS



**93,699** SUSPECT TB SAMPLES SCREENED



**2,662** ADDITIONAL TB CASES DETECTED



**39,930** POTENTIAL INFECTIONS HALTED



# TRAINING & ANIMAL WELFARE

## TRAINING, RESEARCH AND DEVELOPMENT CENTER

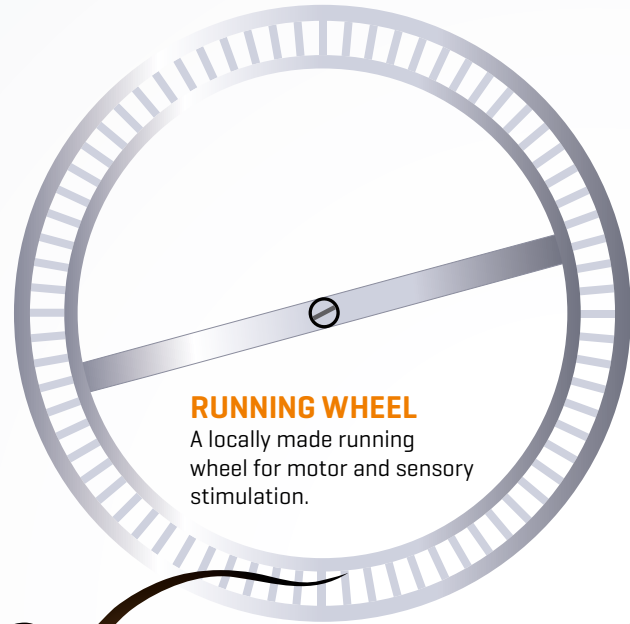
All of APOPO's life-saving HeroRATs begin their careers at our Training Headquarters located on the campus of the Sokoine University of Agriculture in Morogoro, Tanzania. This is where rats are carefully selected for breeding and newly born rat pups begin their journey to becoming a hero by learning to trust humans and the world around them. This is a process we call socialization and habituation and it is critical for minimizing stress for our animals throughout the training and operational deployment activities.

After passing through the various stages of rigorous training (requiring upwards of 9 months), each rat must meet APOPO's stringent internal accreditation standards before they are allowed to join our team of other HeroRATs. But the role of the training team does not end there, our dedicated team provides ongoing support to our operations, including constant monitoring and evaluation of rat performance and expert oversight of the care and well-being of all of APOPO's rats.





**APOPO OFFERS THE HERORATS SPACIOUS, REGULARLY CLEANED CAGES WITH EXTRAS SUCH AS:**



### **RUNNING WHEEL**

A locally made running wheel for motor and sensory stimulation.



### **CLAY POT**

A pot specifically designed to match the dimensions of the nesting chamber dug by this species in their natural habitat, providing a dark and cool environment.

### **WOOD SHAVINGS**

Bedding composed of a variety of dust-free and non-aromatic hardwoods to keep the cage clean (absorbing urine) and provide nest-building possibilities.

### **ENRICHMENT TOYS**

Small balls made out of thin unprocessed cardboard and filled with peanuts to stimulate their foraging behavior and keep them busy.

### **WOODEN TRIPOD**

A 15 cm high structure made of unprocessed wood to support the rats' chewing habits.

## **Healthy Heroes**

Keeping our HeroRATs happy and healthy is one of our top priorities. Although our rats are well adapted to the tropical climates in which we work, we further ensure their health and welfare by providing well-balanced diets consisting of expertly developed, high-quality chow pellets; fresh, locally sourced fruits and vegetables, including tomato, mango, watermelon, maize, avocado, and sun-dried sardines. Fresh drinking water is routinely infused with a multivitamin and electrolyte supplement to further supplement their diet.

APOPO's HeroRATs training to detect landmines and TB are rewarded for a job well-done with bananas and peanuts - foods which our recent research shows they actually prefer! Our rats stay comfortable in climate-controlled kennels outfitted with soft, wood-shaving bedding; untreated wooden structures for climbing and gnawing; and locally made clay sleeping pots to simulate their natural underground burrows.





## Animal Care

Daily health and welfare checks from our expert staff and weekly exercise sessions in shaded and stimulating environments allow the rats to express their natural climbing, digging, and running behaviors, ensuring they stay fit for their life-saving duties. All of APOPO's rats receive routine preventative veterinary care, including regular check-ups and vaccinations and sunscreen is applied daily to ears and tails of all mine detection rats in training and operations.

Our rats typically reach retirement age between 7 and 8. We allow them to work as long as they are performing well, still feel like working and pass weekly health

checks. When a rat doesn't feel like getting out of their cage to work anymore, their performance declines or they are not healthy enough to continue working, the rat is retired to its home cage. They continue to receive a healthy diet, regular play, exercise and health checks.

While we do all of these things with the health and welfare of our rats in mind, perhaps what makes them the happiest is the opportunity to stuff their cheeks with tasty treats every Friday during "Full Cheek Friday" sessions!



# INNOVATION



**Dr. Cindy Fast**  
Head of Training and Innovation

At APOPO we do not take our mission of training rats to save lives lightly! Based upon strong empirical evidence, all of our innovative training procedures and creative ways developed for our rats has put their keen sense of smell to good use. This foundational research continues at our Research & Development Center, nestled on the campus of Sokoine University of Agriculture in Morogoro, Tanzania. Our innovative work is inspired by a broad range of scientific expertise within our team of global researchers and advisors.

The unique insight afforded by our scientific diversity ensures revolutionary approaches that brings countless opportunities for exploring various facets of our work, ranging from the animal behavior itself to the chemistry behind the odors our rats are smelling. Our research is carefully designed to immediately inform the training and operational deployment of our scent detection rats, while also building capacity of our team members and the scientific community.



Based upon strong empirical evidence, all of our innovative training procedures and creative ways developed for our rats has put their keen sense of smell to good use.

## Research & Development

APOPO has an active research department dedicated to innovation. In 2019, the Innovation team secured promising results both supporting APOPO's operations and developing new initiatives. Furthermore, the Innovation team revised its strategy within the organization, resulting in clearer project priorities and objectives moving forward.

The team of rats on the **illegal wildlife trafficking project** found all the wildlife targets during testing and even detected them when 'hidden' within substances commonly used by smugglers to mask their presence. These results lay a strong foundation for continued development, with funds now secured to expand the wildlife targets and develop a feasible deployment system for the rats.

The team also continued work with the University of Antwerp **investigating if our rats have 'personalities'** and if these traits predict future training success. Another project initiated in 2018, continued to explore new ways to keep our rats working in operational settings where the chances for reward are little to none. Although this project was inspired by landmine detection operations, if successful, the training principles developed by this project could apply to all of APOPO's scent detection applications.

Our team of innovators also completed a new proof-of-concept project in partnership with Sokoine University of Agriculture [SUA], training our rats to **detect the disease-causing bacteria, brucella**. Brucellosis commonly affects cattle and goats, but can be contracted by humans, making it particularly troublesome for livestock farmers. Plans to continue this project with additional sample types will take it one step closer to becoming a novel detection method for focusing disease control. In conjunction with this project, we implemented **the fully automated line cage**, which enabled training to be completed in just 3 months!

APOPO began a project to **create 'super sniffers'** by exposing rat pups to the odors they will later be trained to find. Research with laboratory rats shows this early odor experience makes it easier for the rats to find these odors as adults. If successful, the procedures developed can be easily adapted for any rat scent detection target.



Continued collaboration with the Endangered Wildlife Trust of South Africa proved that our rats can be trained to detect illegally smuggled wildlife products, including pangolin scales and African hardwood."

In addition, the Innovation Team led or participated in a number of workshops and capacity building exercises, revised the team Standard Operating Procedures, hosted 5 visiting scholars, published one peer-reviewed paper, delivered the keynote address at the Animal Behavior Management Alliance and shared results of the wildlife detection project at the CITES meeting in Geneva.



## RescueRATs

In collaboration with the Turkish NGO GEA, APOPO started investigating if and how rats can be used to search for survivors following natural disasters. Their small size and agility allows them to penetrate the debris deeper than any other technology, and their good sense of smell makes it possible to locate victims. Sander Verdiesen, a student of the Eindhoven University of Technology (TU/e), developed a first **technology-enabled backpack** prototype. The tests on the rats turned out very promising with the system returning clear images and the rat retaining good mobility. The innovation team is now working on the training protocols and further optimization and miniaturization of the technology.



“Their small size and agility allows the rats to penetrate the debris deeper than any other technology, and their good sense of smell makes it possible to locate victims.”



# MEET OUR HERORATS



## ADOPT-A-RAT

APOPO's HeroRAT adoption gives you the chance to join one of three HeroRATs on a life-saving adventure. Every virtual adoption comes complete with a 10-page welcome pack, adoption certificate, and regular impact updates with the latest news, pictures, and statistics from the field. For as little as US\$9 a month, you can adopt or gift a HeroRAT and help save lives. And now you can make your adoption extra special by including a printed welcome pack or soft toy as part of the package as well. Visit [www.apopo.org/en/adopt](http://www.apopo.org/en/adopt) to find out more!



### Shuri

Shuri is a staff favorite with a cheeky personality who brings a smile to the face of everyone she meets. She graduated from APOPO mine detection training with flying colors. With a flash of her whiskers, Shuri will help sniff out landmines in Angola, one of the most mine-affected places in the world.



### Carolina

Carolina is a boisterous, young HeroRAT based in Dar es Salaam, a mega-city in Tanzania. Carolina can search for tuberculosis in sputum samples 96 times faster than a lab technician. She enjoys play time in the mornings where she can expend all her excess energy climbing her favorite platforms.



### Magawa

Magawa is one of the friendliest HeroRATs ever, but once he gets to work, he's as determined as they come. Based in Siem Reap, Cambodia, Magawa sniffs out deadly explosives 96 times faster than conventional solutions can find them.



# MARKETING AND VISIBILITY

2019 was a great year for APOPO’s Marketing team with public fundraising revenue increasing by around 30% compared to 2018. APOPO raised € 913,383 from an amazing pool of supporters around the world. Our work would not be possible without the generous support of thousands of APOPO donors. Thank you!

APOPO enjoyed a steady online presence, as the organization appeared **over 350 times** in online and traditional media channels including the UK Telegraph, PBS Newshour and 60 Second Docs. While the HeroRATs made headlines around the globe, the Marketing Team also focused on grassroots campaigns. APOPO has a sustainable online community that has continued to grow through 2019, now with more than 150,000 supporters and many of our social media key performance indicators surpassing those of many similar but significantly larger organizations.

2020 promises to be another exciting year for the marketing team with a number of planned initiatives set to raise the bar again, Chinese Year of the Rat, launch of exciting new HeroDOG adoptions and initiatives to improve content from the field are just the tip of the iceberg.

## ONLINE COMMUNITY

	Facebook followers: 83,481
	Twitter followers: 7,995
	Instagram followers: 26,200
	Website sessions: 180,000/year
	Newsletter subscribers: 32,736

## APOPO WOULD LIKE TO GRATEFULLY ACKNOWLEDGE PARTNERS AND DONORS:

- Facebook
- Google
- Global Development Group
- GlobalGiving
- Mæcenata
- King Baudouin Foundation
- Triodos Foundation
- Bloomberg
- Altus International SA
- Communities Foundation of Texas
- Deupree Family Foundation
- Fondation de France
- Foundation Beyond Belief
- Frank B Siegel Giving Fund
- GDF Small Foundation
- Jewish Communal Fund
- Jewish Federation of Greater Pitt
- Maria Calib
- NZH Management
- Sauvage Family Foundation
- The Golden Bottle Trust
- Woods and Gil Family Foundation
- Joan R. Challinor
- Brown Family Foundation

## WITH SUPPORT FROM PLAYERS



**FLEXIBLE FUNDING**  
for long-term stability and impact.

**NETWORKING**  
to encourage new partnerships and growth opportunities.

**PUBLICITY**  
to educate the general public about global issues.

### ACROSS OUR PROGRAMS WE...

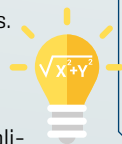
[direct organizational capacity]

**Promote expertise**  
by building staff capacity, developing technology and new skills.

**Support programs**  
by improving efficiency and scale impact into new programs.

**Combine efforts**  
strengthen synergies and growth with our global partners.

**Conduct Research**  
to optimize training and operational methods.



**Drive Innovation**  
by initiating new applications in collaboration with various partners.

**Grow audiences**  
through our online presence showcasing our work and impact.



### CREATING OPPORTUNITY FOR...

[direct operational capacity]

**Excelling**  
as performance increases recognition and creates new opportunities for scaling up.

**Faster detection**  
saves more lives and allows us to reach new communities.



**Leveraging impact**  
through partnerships and innovation within the sector.

**Attracting co-funding**  
from other partners through the unrestricted support of players.

**Addressing other global issues**  
such as wildlife and hardwood trafficking, search and rescue, pollution and other diseases.

**Increasing public support**  
through increasing engagement and growth of our global community.

### SUPPORTING VULNERABLE COMMUNITIES WITH...

[enabled impact]

**Productive land**  
is returned to impacted communities allowing them to improve their livelihoods.



**Safety**  
removes fear and accidents allowing freedom of movement and the return of displaced people.

**Health**  
as patients freed from tuberculosis halt the spread of the disease.

**Stimulated economies**  
as healthy, safe populations regain confidence and can rebuild their lives.

**Solutions**  
to curb global trafficking, find survivors of natural disasters and to identify harmful toxins and pathogens.

**Further reach**  
as we expand programs to include more vulnerable communities.

### WHICH IN THE LONG TERM IS...

[enabled impact]

#### Better for People



More countries become landmine-free resulting in long term peace and stability.

The TB cycle is broken, more patients are found and treated.



Family prospects improve.

The overall economy strengthens and develops as lives are transformed in countries where we work.

#### Better for Nature

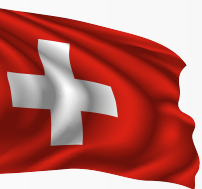
Livestock, wildlife and fauna recover.



Tree planting project offsets carbon emissions and restores degraded landscapes whilst decreasing deforestation.







# SWISS FOUNDATION



**Anna Bouchier**  
Swiss Director

**The Swiss Foundation pursued its mission of securing additional support in 2019 for APOPO’s programs around the globe. The office was especially active in acquiring new funding sources, with more than 80% of funds raised coming from new contracts, while ensuring the longevity of existing partnerships.**

Over the course of the year the Swiss Foundation supported APOPO’s activities in Angola, as well as in Cambodia where it took the lead in the design and inception of a new joint project, conducted in partnership with the GICHD, DIGGER and the City of Geneva. Working towards strengthening the organization’s overall fundraising effort, the Foundation also increased its support of all departments in their approach to new partners. Efforts were made to increase the visibility of APOPO in Switzerland and wider Europe, especially through various prestigious speaking engagements. The Foundation was proud to receive invitations to represent APOPO at the United Nations, the Skoll World Forum and the London Business School among others.

The Foundation played an important part in coordinating the creation of APOPO’s newly formed UK APOPO Foundation, to be finalized in 2020.

## SUPPORT



2019 was an instrumental year in seeking new supporters for all our programs. The Foundation was proud to be representing APOPO in Europe, and to be working towards strengthening our fundraising effort through new initiatives and even more collaboration throughout the organization.”

**Yves Hervieu-Causse,**  
Chairman, Swiss Foundation



## UK FOUNDATION



In 2019 APOPO launched a new foundation in the UK which is currently awaiting approval of charitable status. With this Foundation, APOPO aims to strengthen its ties with UK partners and increase engagement with the UK public, who have always been very supportive to APOPO.”

**Zoe Raw**  
Chairwoman, UK Foundation



# U.S. OFFICE



**Charlie Richter**  
U.S. Director

Over the course of the year, the U.S. Office engaged with donors and explored exciting US based partnerships. Principally the office played an active role engaging donors for Mine Action, and the organization is now well set up to bid on major grants for its programs in 2020 and beyond.

The US office has also begun exploring the possibility of establishing separate capital structures to attract social impact investment capital that may be critical for these applications to reach their full potential.

In addition, the US Office worked with the Tanzanian training Center and the **Point Defiance Zoo and Aquarium** in Tacoma, Washington to import three HeroRATs that since June 2019, have been giving mock landmine detection demonstrations to enthusiastic zoo goers. APOPO US has also been finalizing partnerships with other zoos. In 2019 over **13,000 visitors** saw HeroRAT demonstrations in the 6 months they were displayed to the public, a number which should grow rapidly in the coming years.



## Celine, Chiku and Mona Lisa

“The HeroRATs have been a great addition to the animal ambassador team here and have helped raise awareness of the amazing ways that animals and people can work together to live in harmony.”

**Jessie Sutherland,**  
**Point Defiance Zoo and Aquarium**  
**Biologist and Keeper**





# VISITOR CENTER CAMBODIA



**Sambat Maes**  
Visitor Center Manager

The Siem Reap APOPO Visitor Center opened on the tourist trail in 2018, designed to give our visitors a better understanding of Mine Action, the problem of landmines and demonstrate the HeroRATs. The centre is a big hit, and as more tourists post solid 5-star reviews on advisor sites, our work in Cambodia reaches a wider audience. It received over 13,000 visitors in 2019. Our team is careful to make sure the center is environmentally friendly by supporting the community through employing locally and working with ethical local suppliers as much as possible.

This year we joined hands with Animal Mama Veterinary Hospital & Pet Wellness Center in Phnom Penh for biweekly holistic health care and veterinary services for each of our little heroes.





APOPO Visitor Center works closely with more than 600 partners: Hotels, Tour Operators, In Flight Magazines, tour guides and restaurants. The Visitor Center has been mentioned in over 80 travelblogs, hotel brochures and travel magazines as one of the top things to do after the Angkor Archaeological Park and comes highly recommended for families.

2020 will see the Visitor Center team strengthen its visibility with the local community, undergo an ambient refresh to the look, adding new content to the tour such as the sniffing game, and improving the quality and variety of the merchandise on sale in the shop.

#### A Must See!



A must see when visiting Siem Reap, this organization does incredible work. I loved the talk and demonstration, all very informative. I was shocked at how many countries in the world are still at risk with land mines. Just seeing some of the amazing work done by the HerorATs and their handlers was very moving.”

**Allison S., 5 Star Review,  
APOPO Visitor Center Facebook Page**



## Sister Srey Café

Sister Srey Cafe is **a little cafe with a big heart** nestled amongst the trees on the edge of the Siem Reap river in Cambodia. It's normally a place to find good coffee and friendship, and for local Khmer students to find support, empowerment and education. The café helps to reroute tourists to APOPO VC and is actively contributing to the program with profits. Customers continue to respond very positively to the charity link and the staff are doing an excellent job of promoting APOPO. Together Sister Srey and the VC have been able to give a boost of support to the fundraising efforts of APOPO to ensure continuation of mine action operations.



## Sokoine University of Agriculture

# 'I feel privileged'

Over two decades ago, a small group of researchers at the University of Antwerp (UAntwerp) in Belgium and Sokoine University of Agriculture (SUA) in Tanzania joined forces and set off on an incredible journey of collaboration and innovation, driven by a sense of care and compassion for people around the world suffering from the threat of landmines. Following successful research at UAntwerp, APOPO was founded, and the operational headquarters was established in partnership with SUA. This collaboration continues till today. A new kind of collaboration that is intentional and based on shared values and goals.

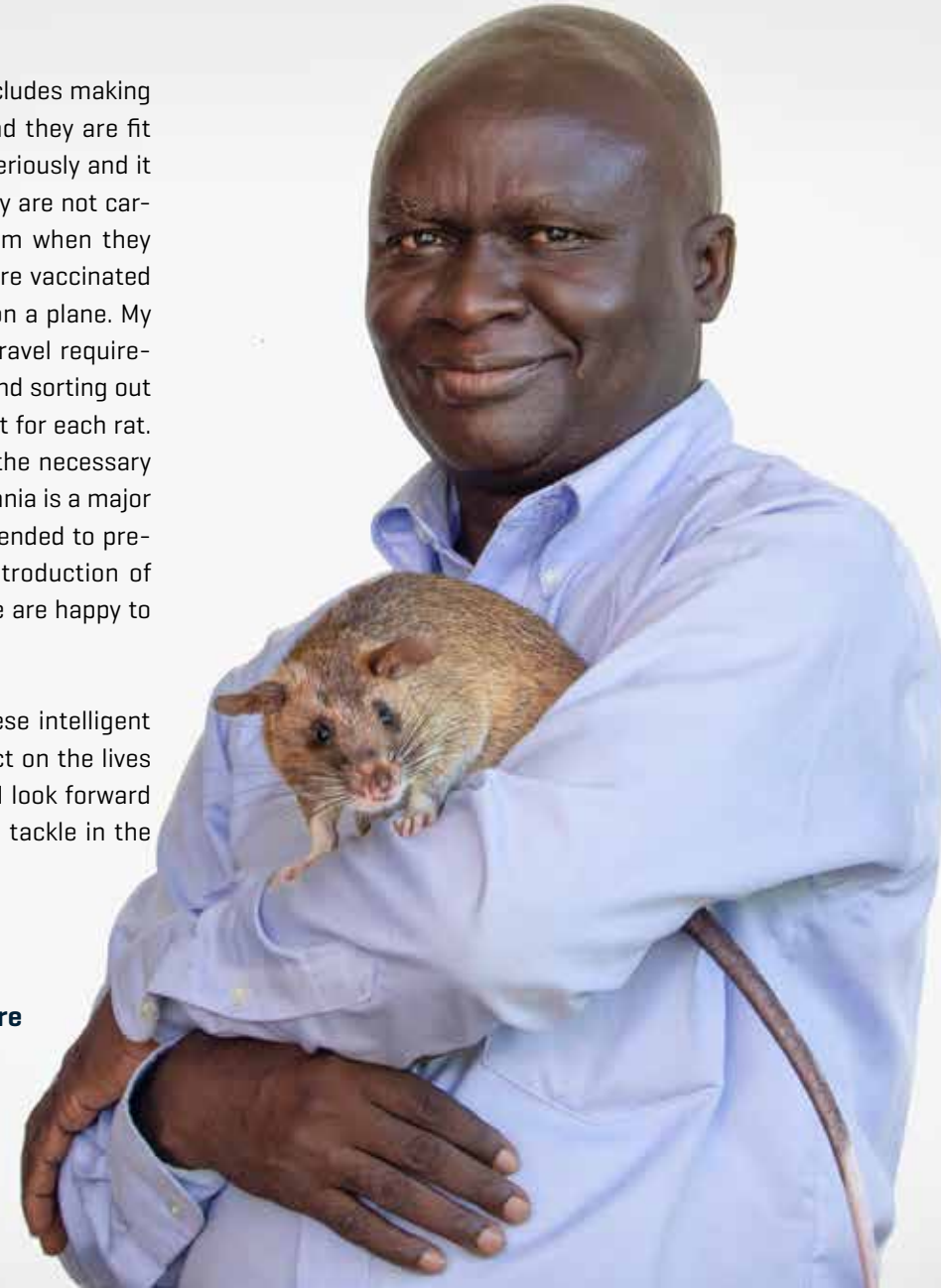
I got involved with APOPO through this long-standing relationship between APOPO and SUA's Pest Management Center. I am currently a Senior Research Fellow and with my background in veterinary medicine it was not long before I crossed APOPO's path. This happened in 2003, when I came on board to assist the training teams with various aspects of animal health and wellbeing. From weekly routine health checkups, breeding and preventive care to more elaborate procedures such as surgery or neutering. I was very impressed learning about the innovative way APOPO trains these rodents to detect landmines and tuberculosis with their keen sense of smell.

Once the rats are fully trained and ready to go, is when I come into play. I work closely with APOPO to make sure the rats are carefully prepared for the long journey from

Tanzania to their final destination. This includes making sure they get all necessary paperwork and they are fit to travel. We take each rat's health very seriously and it is our responsibility to make sure that they are not carrying any diseases or parasites with them when they are sent out to other countries, so they are vaccinated and checked thoroughly before they get on a plane. My team also helps with gathering specific travel requirements for the HeroRATs, micro-chipping and sorting out an approved and stamped animal passport for each rat. Although the effort involved in acquiring the necessary permits to deploy the rats outside of Tanzania is a major undertaking, most of the paperwork is intended to prevent illegal wildlife trafficking and the introduction of invasive species to other countries and we are happy to support this protective procedure.

I feel privileged to be able to care for these intelligent creatures. They generate a positive impact on the lives of so many people around the globe and I look forward to seeing what new applications they will tackle in the years to come.

 **Dr. Abdul Katakweba**  
PEST Management  
Sokoine University of Agriculture



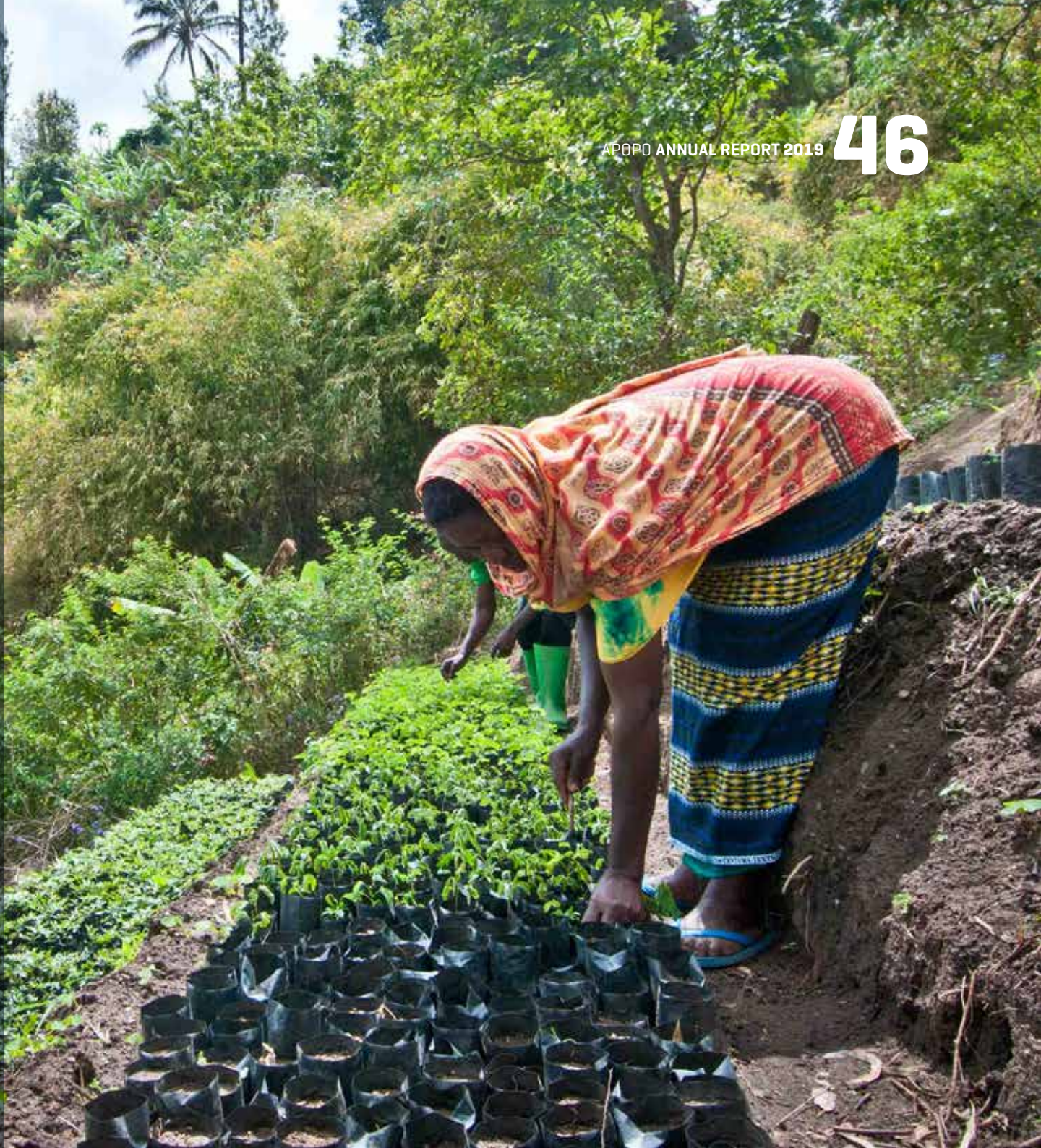


# RESPONDING TO CLIMATE CHANGE

The forests of the **Uluguru Mountains** are of critical importance to local village communities, large neighboring cities of Morogoro and Dar es Salaam, and the survival of endemic plants, birds and animals found nowhere else in the world.

APOPO partnered with **Sustainable Agriculture Tanzania** (SAT) to begin a tree planting project four years ago that will offset APOPO's CO2 emissions caused mainly by transport. Planting 50,000 trees over a ten-year period means that once each tree has reached maturity, together they can sequester around 1,000 tons of carbon dioxide per year.

Carbon offsets are a practical and effective way to address climate change and encourage the growth of renewable energy. Something that APOPO is passionate about.





In 2019, 1,000 trees were planted successfully in the Uluguru mountains by 100 farmers selected and trained by SAT since 2017. Of the 20 species planted in 2019, over 60% were indigenous species. A proud group of 90 farmers were rewarded for successfully looking after the trees they had planted over the last 2 years. The project is also focusing on agroforestry activities that promote more sustainable farming practices, particularly for village communities that are farming in or around the Uluguru mountain forests. Aside from improving the farming of usual crops, SAT is also leading these farmers to plant high-value crops, and hopes that with this livelihood approach, these communities will practice sustainable and environmentally conscious agriculture that puts less strain on forests and other natural resources.



**IMPACT 2019**

<b>Types of trees planted</b>	<b>20</b>
<b>Farmers trained by SAT</b>	<b>100</b>
<b>Trees successfully planted</b>	<b>1,000</b>
<b>Total trees planted to date</b>	<b>11,483</b>

**Tree Planting Hero**

“ I am a farmer in the Uluguru mountains. Before joining this project, we used to cut trees to expand our farms. But it was never enough. We have now been taught the importance of trees for the environment. I know how to prepare tree seedlings and use sustainable farming techniques to help my soil. I now have no reason to expand the old slash-and-burn further into forests just to make a profit. If I look after the trees, they will help me provide for my family.”

**Chagua Kibwana, Farmer, Tanzania**



# FINANCIAL STATEMENT

BALANCE SHEET IN EURO\*

APOPO ANNUAL REPORT 2019

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ASSETS	2019	2018
<b>Current assets</b>	<b>1.963.288</b>	<b>2.986.980</b>
Current receivables	220.477	297.659
Other assets	596.810	609.017
Cash and equivalents	1.146.001	2.080.305
<b>TOTAL ASSETS</b>	<b>1.963.288</b>	<b>2.986.980</b>
<b>Liabilities</b>		
<b>Net capital</b>	<b>1.016.654</b>	<b>1.004.191</b>
Funds of the organization	328.046	328.046
Retained Earnings	688.608	676.145
<b>Long term liabilities</b>	<b>965.873</b>	<b>1.924.842</b>
Deferred Income (Grants)	965.873	1.924.842
<b>Current liabilities</b>	<b>[19.239]</b>	<b>8.565</b>
Current payables	[19.239]	8.565
Accrued expenses		49.381
<b>TOTAL LIABILITIES</b>	<b>1.963.288</b>	<b>2.937.598</b>

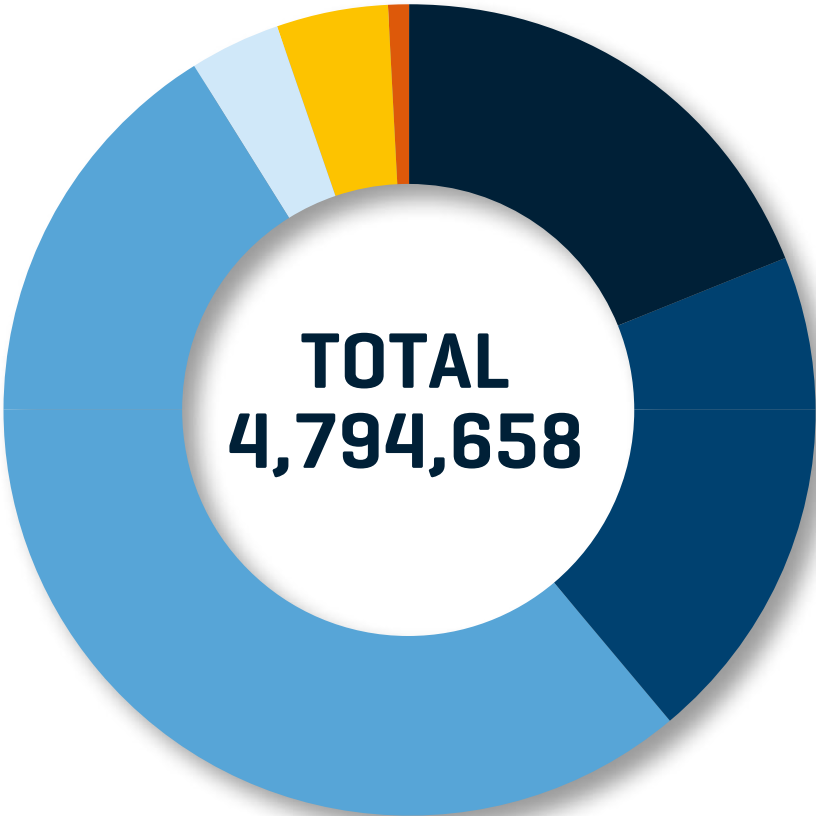
## PROFIT&LOSS STATEMENT (EURO)

	2019	2018
Total Income	4,763,321	4,482,425
Total Operational Expenses	3,140,785	3,421,021
Total Personnel Expenses	1,629,204	1,317,219
Depreciation	12,207	12,207
Other costs	-	4,054
<b>Operating Result</b>	<b>18,785</b>	<b>[272,075]</b>
Financial Result	2,646	[86,257]
Extraordinary Result	28,692	24,596
<b>Net Income</b>	<b>12,463</b>	<b>[333,736]</b>

\* Annual accounts audited by BDO



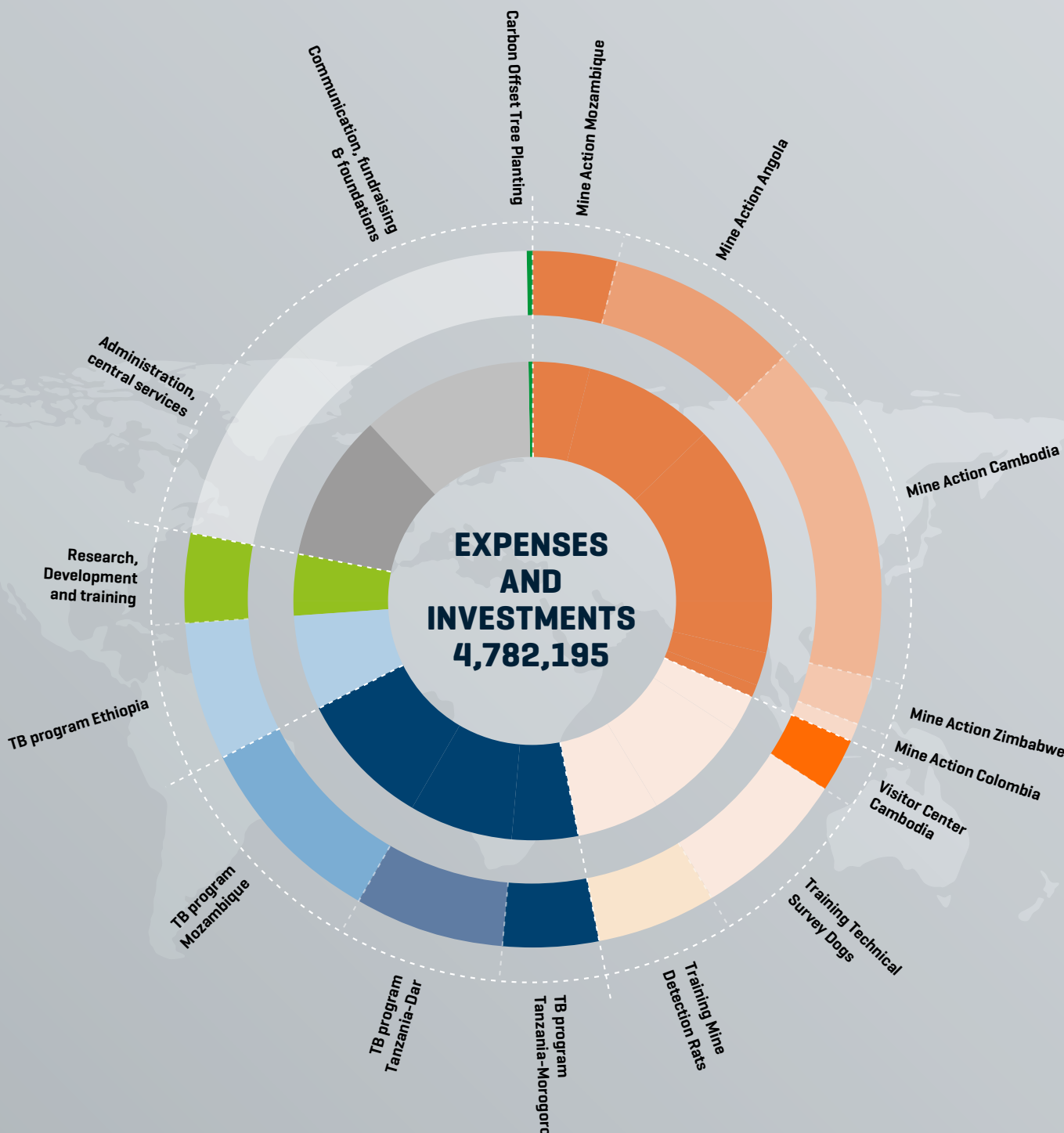
# DONATIONS & SUBSIDIES 2019



IN EURO

● Public fundraising	913,383
● Government grants	954,845
● Foundations grants	2,510,813
● Corporate grants	171,623
● Research grants	212,657
● Miscellaneous operating income	31,338

# EXPENSES AND INVESTMENTS 2019 PER ACTIVITY IN EURO



Mine Action Mozambique.....	191.319
Mine Action Angola.....	432.957
Mine Action Cambodia.....	750.639
Mine Action Zimbabwe.....	111.724
Mine Action Colombia.....	30.858
visitor Centre Cambodia.....	128.066
Training Mine Detection Dogs.....	344.931
Training Mine Detection Rats.....	266.338
TB program Tanzania, Morogoro.....	202.475
TB program Tanzania, Dar es Salaam.....	337.886
TB program Mozambique.....	441.964
TB program Ethiopia.....	303.161
Research and Development.....	198.684
Administration & central services.....	478.748
Communication, fundraising & foundations..	553.345
Carbon Offset Tree Planting.....	9.100
<b>Total.....</b>	<b>4.782.195</b>





## A MESSAGE FROM THE CEO

# PREPARING FOR THE FUTURE

APOPO ANNUAL REPORT 2019

# 51

 **Christophe Cox**  
CEO

The last years were marked by tremendous activity, a strong impact and various innovations by APOPO. On behalf of the global APOPO team and our beneficiaries, I sincerely thank all of our donors and partners for staying with us on this journey. Your passionate support enables the continued fast and effective results we were able to achieve and creates far reaching impact: clearing landmines and curbing tuberculosis is transforming lives every day.

We thank everyone who helped us strengthen foundations that improve the ability of our HeroRATs to detect landmines and tuberculosis and grow our capacity for field deployment. With your continued support in 2019 we were able to improve the livelihoods of literally tens of thousands of people in Angola, Ethiopia, Mozambique, Tanzania and Cambodia. We also continued investigating exciting new areas that tackle wildlife conservation, search-and-rescue operations, soil pollution and offsetting our carbon footprint. Your support boosted our organizational capability by supporting key staff, building local capacity and acquiring operational equipment that has been instrumental in developing efficiency.

The marketing team continues to raise awareness about landmines and tuberculosis and spreading love for our pouched HeroRATs. I hope you feel as proud as we do of the tangible impact your support has achieved thus far. The lives

of literally tens of thousands of people around the world have been saved or positively changed thanks to your support.

As COVID-19 continues to spread, the future has never felt so unpredictable. These are challenging times for us all, and we're doing everything possible to sustain daily operations and provide services to our community. While there is a lot of uncertainty, we know that now, more than ever, our community needs us. It is my sincere hope that, when this crisis is over, global citizens will not continue business as usual, but unite to build a world with more respect for the vulnerable in our communities, for the animals and our ecosystems as a whole.



The Dutch Postcode Lottery has supported APOPO with two unrestricted grants over the period 2016-2020 totaling 2.5 million euros and makes our life-saving work possible in various countries and projects around the world.



Supported by players of



Awarded funds from

Since 2014, players of People's Postcode Lottery (UK) have raised £3,575,000 in unrestricted funds for APOPO. This support directly helps communities impacted by landmines and tuberculosis across the globe, allowing them to heal and get their lives back on track.

## APOPO VZW

Prinsstraat 13  
2000 Antwerpen  
+32 3 265 41 94

### Contact

**APOPO Executive Secretary**  
**Esther Haalboom**  
esther.haalboom@apopo.org  
+32 495 44 26 63

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Maria Anna Caneva Saccardo/APOPO  
James Pursey/APOPO

Apart from:  
Zoe Osborne (4)  
Jonas Gratzer (7)  
Maarten Boersema (29,30)  
GEA (37)  
Simon Guillemin (40)  
PDZA/Katie Cotterill (42)  
Allan Staley (43,44)

## SUPPORT OUR WORK

### HeroRAT Adoption Program

For 9€ per month or more you can contribute to APOPO's life saving mission and receive updates of your own HeroRAT

[www.apopo.org/en/adopt](http://www.apopo.org/en/adopt)

You can also make a donation at:  
[www.apopo.org/en/support-us](http://www.apopo.org/en/support-us)

### Bank Details

A/C No 001-3870650-38  
BNP Paribas Fortis Bank  
Rucaplein 572, 2610 wilrijk, Belgium  
Swift code: GEBABEBB  
IBAN: BE24 0013 8706 5038

## APOPO

### OPERATIONAL HEADQUARTERS & TRAINING CENTER SUA-APOPO

Sokoine University of Agriculture  
PO Box 3078 Morogoro,  
Tanzania  
apopo@apopo.org  
+255 778 779 779

### APOPO Head Of Mine Action

**Håvard Bach**  
havard.bach@apopo.org  
+33 6 13203939

### APOPO Mine Action Mozambique/Zimbabwe Mine Action advisor

**Ashley Fitzpatrick**  
ashley.fitzpatrick@apopo.org  
+258 82 478 7088

## APOPO FOUNDATIONS

### APOPO US Office

**Charlie Richter**  
**Chairwoman: Kristen Davis**  
1133 15th street NW, Washington DC 20004  
+1-202-286-2804, [usfoundation@apopo.org](mailto:usfoundation@apopo.org)

### APOPO Mine Action Cambodia

**Michael Heiman**  
michael.heiman@apopo.org  
+855 95 264 772

### APOPO Mine Action Angola

**Manuel João Agostinho**  
manuel.agostinho@apopo.org  
+244 923 235 332

### APOPO Head of TB

**Dr. Lena Fiebig**  
lena.fiebig@apopo.org  
+255 682 687 162

### APOPO TB Tanzania

**Dr. Georgies Mgode**  
georgies.mgode@apopo.org  
+255 759 927 191

### APOPO Swiss Foundation

**Anna Bouchier**  
**Chairman: Yves Hervieu-Causse**  
6 Cours de Rive, 1204 Geneva  
Tel +41 0 78 659 53 44  
Mobile +33 0 613204003  
[swissfoundation@apopo.org](mailto:swissfoundation@apopo.org)

### APOPO TB Mozambique

**Robert Burny**  
robert.burny@apopo.org  
Cell: +258 822 750 095

### APOPO TB Ethiopia

**Dr. Negussie Beyene**  
negussie.beyene@apopo.org  
+251 911 391 166

### Media and Communications

**Lily Shallom**  
lily.shallom@apopo.org  
+255 784 490 979

### Public Fundraising

**Chris Frantz**  
chris.frantz@apopo.org  
+1 202 355 5845

### APOPO UK

Chairwoman: Zoe Raw  
Suite 3, Peel House Cheshire, 30  
The Downs, Altrincham,  
WA14 2PX, UNITED KINGDOM  
Mobile: +44 7939 050 380  
[zoe.raw@apopo.org](mailto:zoe.raw@apopo.org)

## APOPO BOARD

### Prof. Herwig Leirs,

Chairman of APOPO vzw and chairman of the Board of the University of Antwerp

**Joris Schoofs**, Vice Chairman  
and Business Expert

**Prof. Mic Billet**, Pro-Chairman and Co-Founder  
of the Department of Product Development at  
University of Antwerp

**Piet Van Hove**, Head of International Relations,  
University of Antwerp

**Gerrit Ruitinga**, Chairman of the Academy for  
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**Dr. Adeë Schoon**, Scent Detection Consultant

**Thierry De Meulder**, President Consultancy  
Company ACT management

**Christophe Cox**, CEO

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