2014 ANNUAL REPORT

APOPO

DETECTION RATS TECHNOLOGY
apopo

APOPO CORE VALUES

OUR CORE VALUES ARE QUALITY, INNOVATION, SOCIAL TRANSFORMATION AND DIVERSITY.

OUR STRATEGIC GOAL
IS TO SAVE LIVES THROUGH THE DEPLOYMENT OF DETECTION RATS TECHNOLOGY

OUR SPECIFIC GOALS ARE

- DEPLOY COST-EFFICIENT MINE ACTION SOLUTIONS IN AFFECTED COUNTRIES
- ACCELERATE TB DIAGNOSIS IN HIGH BURDEN COUNTRIES
- RESEARCH AND DEVELOP INNOVATIVE DETECTION RATS TECHNOLOGY APPLICATIONS

APOPO IS A BELGIAN NGO THAT HAS DEVELOPED AN INNOVATIVE METHOD USING AFRICAN GIANT POUCHED RATS, NICKNAMED 'HERORATS', TO DETECT LANDMINES AND TUBERCULOSIS USING THEIR EXTRAORDINARY SENSE OF SMELL. APOPO'S TRAINING AND RESEARCH CENTER IS BASED IN TANZANIA AND IN 2014 APOPO EMPLOYED 822 PEOPLE ACROSS 8 PROJECTS.

APOPO'S MINE-DETECTION RATS CAN SEARCH AROUND 200 SQUARE METERS IN 20 MINUTES	A MANUAL DEMINER USING A METAL DETECTOR SEARCHES ON AVERAGE 50 M^2 PER DAY
Rats: 200m² in 20'	**Manual deminer: 4 days**
A TUBERCULOSIS DETECTION RAT SCREENS A HUNDRED SAMPLES IN 20 MINUTES	LAB TECHNICIAN USING MICROSCOPY EVALUATES 25 SAMPLES PER DAY
Rats: 100 samples in 20'	**Lab technician: 4 days**

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APOPO INTRODUCTION

DIANE VERSTRAETEN
CHAIRWOMAN
APOPO

APOPO is an organization geared for positive social impact through the energy and dedication of our people. In 2014, with over 800 staff we nurtured and supported new, diverse and passionate talent from all over the world. As Chairwoman of APOPO I am pleased to introduce you to them, as well as share with you the news of our successes and challenges.

Sustainability is integral to our work and we aim to improve people's lives by breaking down the barriers to development. Testament to this is almost two and half million square meters of mine-free land we handed back in 2014 to communities in Mozambique, which itself moves ever closer to a landmine-free status. Meanwhile in our TB program we have further expanded the overall number of partner clinics in which we work. And our commitment to innovation now leads us down the path of scientific research and the development of our unique detection rats technology. To assist in this we invited a panel of respected scientific experts to contribute to our studies.

APOPO is a progressive organization, transparent and always open to critique. As always you will find all our financial data laid out in simple terms at the end of the report. I also invite you to read through and let us know your views, and how you can help us in our commitment to a mine-free, tuberculosis-free world.

DETECTION RATS TECHNOLOGY apopo

LANDMINES

3,308*

GLOBAL CASUALTIES IN 2013

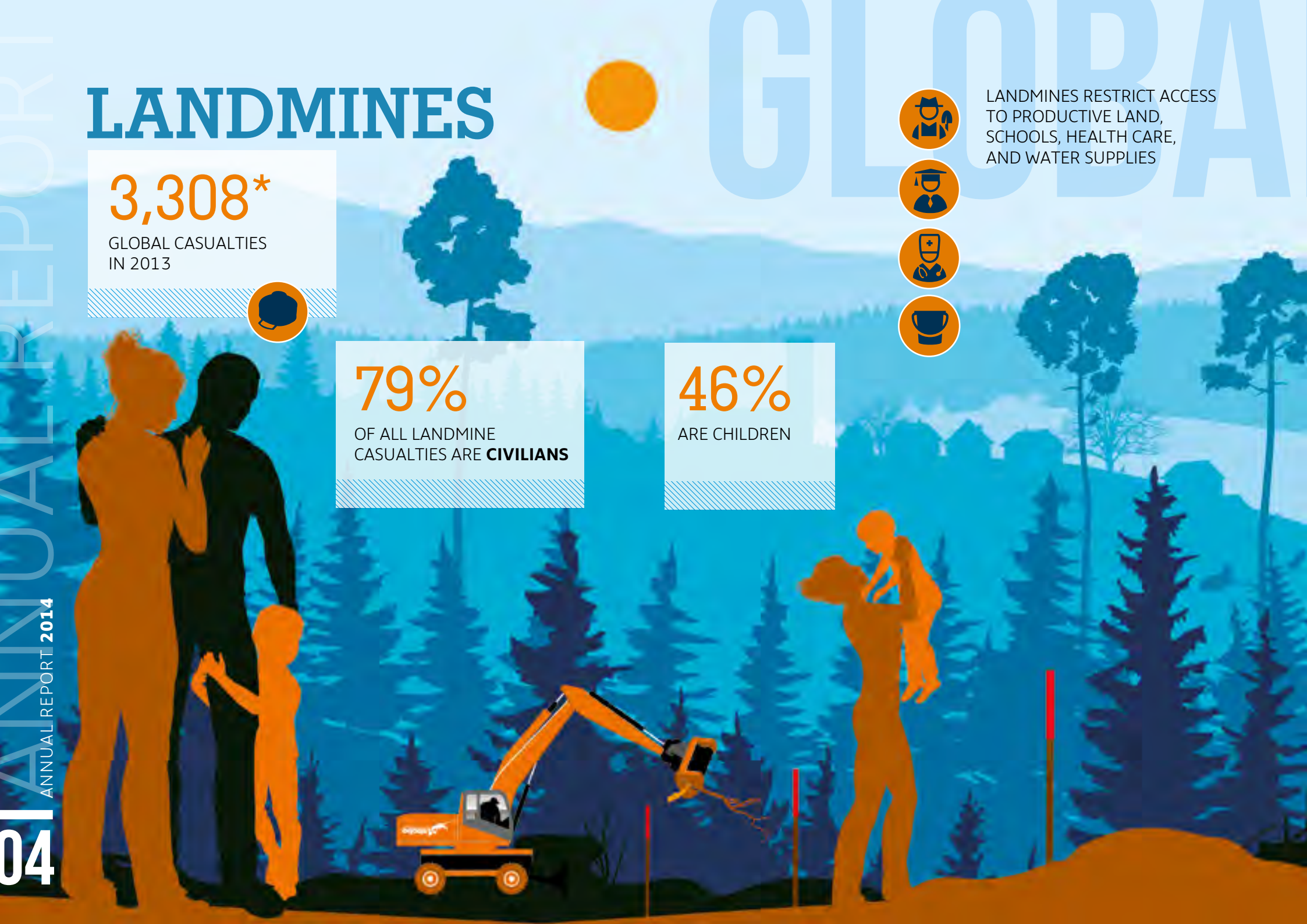
79%

OF ALL LANDMINE CASUALTIES ARE **CIVILIANS**

46%

ARE CHILDREN

LANDMINES RESTRICT ACCESS TO PRODUCTIVE LAND, SCHOOLS, HEALTH CARE, AND WATER SUPPLIES



KEY FACTS

FIFTEEN AFRICAN STATES ARE MINE-AFFECTED
SIX ALSO AFFECTED BY CLUSTER BOMBS

50% OF CASUALTIES DIE
BEFORE BEING FOUND OR TREATED

MORE THAN 47 MILLION STOCKPILED MINES HAVE BEEN DESTROYED SINCE 1999 BY STATES PARTY TO THE MINE BAN TREATY

28 STATES AND ONE OTHER AREA HAVE BEEN DECLARED FREE OF KNOWN LANDMINES
SINCE THE OTTAWA TREATY ENTERED INTO FORCE IN 1999

* All figures from The Landmine Monitor 2014.

COST

$3 - $30 TO PRODUCE AND LAY

$300 - $1000 TO NEUTRALIZE

60%

DECREASE IN CASUALTIES
SINCE 1999 DUE TO GLOBAL MINE ACTION EFFORTS

9 LANDMINE CASUALTIES PER DAY

MINE ACTION SUMMARY

TEKIMITI GILBERT
HEAD OF MINE ACTION

2014 has seen APOPO Mine Action expand into South East Asia with new programs starting in Cambodia, Lao People`s Democratic Republic (Lao PDR) and Vietnam. As well as this our programs in Mozambique and Angola remain on-going. In Cambodia, APOPO has partnered with the Cambodian Mine Action Centre (CMAC), Demining Unit 6 based in Siem Reap conducting survey and clearance of landmines remaining from the Khmer Rouge era.

In Lao PDR and Vietnam the problem is not landmines, but rather cluster munitions remaining from the 2nd Indo-China war of the 1970`s (The Vietnam War). The insidious legacy of cluster munitions has taken on far greater significance in recent years with the introduction of the Convention on Cluster Munitions that came into force in 2008 in Oslo with over 100 country signatories.

In Mozambique APOPO is proud to have played a significant role in supporting the country to comply with its Ottawa Anti-Personnel Mine Ban Convention obligations. After many years of effort, it is expected that Mozambique will declare itself "Impact Free" from landmines in 2015.

APOPO is thankful for the vital support of all our partners and especially our donors, without which we would not be able to save lives and improve livelihoods of those communities living in mine and cluster munitions affected countries.

MORE THAN MINES

The type of explosive items we find during our work depends to a large extent on where we are tasked, and what kind of conflict occurred there. In Angola we are currently working on a task site near a community and school that during the war was an old military encampment. As well as landmines laid there for defense, we also find discarded rounds of ammunition, unused mortars, and grenades.

In Mozambique we have cleared thousands of landmines, some laid as defensive barriers to important strategic infrastructure such as those over 150km of power cables and pylons that power the entire southern region and the central province of Sofala. In 2015 we hope to be clearing an old ammunition depot in Maputo that exploded in 2007, killing many innocent civilians and scattering bullets, grenades, bombs and many other ERW over a wide area.

EACH OF THESE EXPLOSIVE ITEMS REQUIRES ITS OWN DETECTION AND DISPOSAL TECHNIQUE.

In South East Asia, the backdrop is different again. During the 2nd Indo-China war (known as the Vietnam War in the West), extensive aerial bombing and ground battles led to more than 2 million tons of ordnance being dropped on Lao and Cambodia with up to 30 percent not detonating on impact. In partnership with the Cambodian Mine Action Centre (CMAC) we regularly find unexploded ordnance hidden in fields, forests, schoolyards, roads and footpaths.

Each of these items requires its own detection disposal technique and the damage they cause differs. Anti-personal landmines typically cause injuries to people and livestock. In recent years, as farm tractors become more affordable, and as communities use more heavy machinery to expand and develop their villages, we have witnessed more accidents involving anti-vehicle mines. Highly unstable old bullets and grenades meanwhile are often physically moved by farmers themselves or carried around as souvenirs and these can cause appalling injuries if set-off en route or in peoples homes. **In 2015 the theme for the UN International Landmines awareness day will be 'more than mines'.**

MINE ACTION
OPERATIONAL ASSETS 2014

MINE ACTION

SURVEY TEAMS.....10
MANUAL DEMINING TEAMS.....16
BAC TEAMS[1].....4
EOD TEAMS[2].....7
MDR TEAMS[3].....11
MECHANICAL TEAMS.....9

DEMINING MACHINES

CATERPILLAR BRUSH CUTTERS.....3
HITACHI BRUSH CUTTERS.....3
KOMATSU FRONT END LOADER[4].....1
CASSPIR[5].....1
DIGGER D3[6].....1
MINI MINEWOLF[7].....1

VEHICLES

TRUCKS.....6
AMBULANCES.....9
SUPPORT CARS.....51
SUPPORT MOTORBIKES.....18

MINE ACTION

1. Battle Area Clearance teams
2. Explosive Ordnance Disposal Team
3. Mine Detection Rat Team
4. Heavy diggers (opposite page top)
5. Armored people carrier (opposite page middle)
6. Remote-controlled de-mining machine (p34)
7. Remote-controlled mini de-mining machine.

MINE ACTION MOZAMBIQUE

TESFAZGHI TEWELDE
COUNTRY DIRECTOR
APOPO MOZAMBIQUE

Humanitarian mine action is not just about removing landmines and explosive remnants of war (ERW), it is also about enabling positive change in people's lives and livelihoods and by extension contributing to poverty alleviation and sustainable human development. The fear and the presence of landmines and ERW have plagued the people of Mozambique for decades, claiming innocent victims indiscriminately and terrorizing local populations and their precious livestock. Landmines and ERW perpetuate poverty and halt socioeconomic development by restricting access to land needed for subsistence farming, agriculture, habitation and schools, and cutting off access to natural resources such as safe drinking water.

APOPO's evidence-based approach to land release and our signature integrated system of manual deminers, mechanical assets and mine detection rats (MDR), afford us significant savings in time, effort and resources and likewise ensure as much land as possible is released rapidly, safely, and at low-cost. The statistics, such as square meters of land cleared and number of landmines destroyed, do help tell the story of the impact of APOPO's work. But it is the visible improvements in material, economic, social and personal well-being of the people of Mozambique as observed in the villages and districts in which APOPO has actively worked, which shed the most light on the positive social change taking place.

MR. ALBERTO MAVERENGUE AUGUSTO
DIRECTOR OF THE NATIONAL DEMINING INSTITUTE

"WITH APOPO'S CONTINUOUS SUPPORT WE HAVE ACHIEVED OUR GOAL OF A MOZAMBIQUE FREE OF ALL KNOWN LANDMINES IN 2015."

CLOSER TO A MINE FREE WORLD

As one of The Instituto Nacional de Desminagem's (IND)[1] primary demining partners, the end of 2014 and early 2015 mark a critical moment in time for APOPO's legacy in Mozambique, as well as the global effort to combat anti-personnel landmines and explosive remnants of war (ERW). At the time of writing we anticipate that in mid-2015, the results of our work in Mozambique will culminate in a presidential mine-free declaration as the country announces it has met Article 5 obligations under the International Mine Ban Treaty. APOPO looks forward to celebrating a mine-free Mozambique together with IND, donors, partners, staff and friends of APOPO, and most importantly, the people of Mozambique.

APOPO began its mine action program in Mozambique over eight years ago and is thrilled with the tireless dedication, vigilant professionalism and inspiring positive morale of our staff. The results delivered by the APOPO Mozambique team have undoubtedly accelerated multi-lateral efforts to resolve Mozambique's landmine problem. We are now preparing to dedicate our expertise and capacity to potential residual landmine clearance tasks as requested by IND for as long as necessary to safeguard the credibility of Mozambique's mine-free declaration.

To that end, plans are now underway in coordination with IND and the Ministry of Environment for APOPO to clear ammunitions from an area known as the Malhazine Ecological Park, a former military ammunition depot located in Maputo City. As well as this, we are pursuing transfer of existing assets and capacity to other mine-affect countries where APOPO hopes to continue to expand its life-saving work.

1. The national demining authority of Mozambique

RESULTS 2008-2014

Period	Location	Total Released	Mines	UXO	Pylons	Affected Families
2008-2012	Gaza	4,970,832	2,425	995	0	28,258
2012-2014	Manica	2,395,232	44	31	82	133,073
2013-2014	Maputo	313,506	627	42	46	40,003
2013-2014	Sofala	2,668,531	28	45	24	6,259
2013-2014	Tete	649,669	10,138	19	2	82,785
Total		**10,997,770**	**13,262**	**1,132**	**154**	**290,378**

TOTAL LAND RELEASED	
2,346,521	2014
10,997,770	TOTAL

RESULTS

M² LAND FREED FROM LANDMINES	LANDMINES DESTROYED	OPERATIONAL MINE DETECTION RATS	PROVINCES CLEARED OF ALL KNOWN LANDMINES
2,346,521	**10,278**	**43**	**2** TETE MAPUTO

FULL CLEARANCE	TECHNICAL SURVEY	NON TECHNICAL SURVEY	BATTLE AREA CLEARANCE	
572,066	**93,626**	**1,331,376**	**349,453**	2014
2,435,108	**634,981**	**5,665,890**	**479,038**	TOTAL

LANDMINES	UXO	SAA	
10,278	**61**	**13,621**	2014
13,262	**1,107**	**26,940**	TOTAL

"MY DAD GOT VERY ANGRY IF WE PLAYED WHERE THERE MIGHT BE LANDMINES."

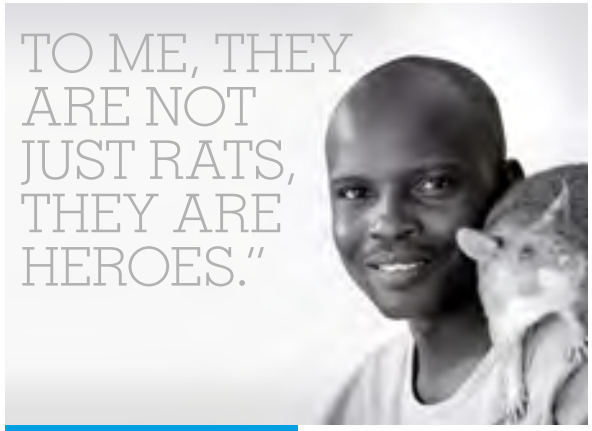
MARMELA
DAUGHTER OF ABU, APOPO DEMINER, MOZAMBIQUE

"Ever since I can remember, me and my brothers and sisters were scared of the landmines. We never felt safe near our home and my Dad got very angry if we played in places that were forbidden. He works for APOPO as a deminer, digging down for landmines that the rats have found, or preparing the mine-fields. I didn't believe him at first about the HeroRATs. But thanks to them and my Dad's co-workers I am now safe when I'm out playing, because APOPO already worked here and got rid of all the landmines. Some people say my Dad risks his life to clear the landmines, but I know that APOPO teaches him to be safe. I used to worry when he left for work, but now I am just proud. He has helped our community and now he is out helping other people."

DIVERSITY

Since APOPO began, job creation and capacity building for local communities in the countries of operations has been a priority, resulting in a very committed, highly skilled and increasingly diverse staff across 8 projects and 9 countries. We believe that people from different backgrounds, with diverse experiences and point of views can work together harmoniously. This nurtures an atmosphere where new ideas can develop, problems can be overcome as a team, and innovation springs to life. APOPO therefore embraces diversity in all facets of the organization with respect to background, age, gender, religion, sexual orientation, physical abilities, nationality and ethnicity.

Along the way APOPO has also cultivated the support of renowned scientific & academic institutions, experts from appropriate sectors and teams with local knowledge, from all over the world and wherever we work. This facilitates productive discourse and exchange of ideas and has enabled us to stay ahead of the latest trends and parameters with regards to research, design, training, methodology and implementation of our detection rats technology.



ABDULLAH RAMADHANI
HEAD TRAINER, APOPO TANZANIA

"I began with APOPO 15 years ago as a rat trainer at the Training & Research Centre in Tanzania. Through hard work and skill building, I have become training manager overseeing about 21 rat trainers. All the rats go through a rigorous training program and together with my colleagues I closely monitor their progress and performance. A good mine detection rat is a fast learner and is accurate in landmine detection. APOPO is carrying out a vital service and we don't allow rats with poor detection rates to go on to minefields. I also helped to set up the rats in the mine detection program in Mozambique in 2007 and there I saw what the rats are capable of. Our rats are helping to clear the world of these insidious weapons, so people can get on with their lives without fear. To me, they are not just rats, they are heroes."

SOKHENG HUL
MDR HANDLER
CAMBODIA

I HAVE BEEN WORKING IN MINE CLEARANCE FOR 20 YEARS. APOPO HAS ALWAYS WELCOMED MY INPUT AND VALUED MY EXPERTISE.

OMAR AMIDO
APOPO DIGGER OPERATOR

MY JOB AS A MINEFIELD MACHINE OPERATOR IS VERY DIFFERENT TO ANY OTHER MECHANICS JOB I HAVE EXPERIENCED. I'M THANKFUL FOR THE CHANCE APOPO GAVE ME TO FURTHER DEVELOP SKILLS.

PILLY MASOUD
TB LAB TECHNICIAN
TANZANIA

APOPO EMPLOYS WOMEN AT ALL LEVELS AND POSITIONS ACROSS THE WHOLE ORGANIZATION. WE'RE REALLY AMBASSADORS OF AFRICAN WOMEN.

PENDO MSEGO
MDR TRAINER
TANZANIA

APOPO SENT ME FROM TANZANIA TO MOZAMBIQUE TO SUPPORT OUR RAT TEAMS. I LEARNED ALOT THERE MYSELF TOO.

ALAN POLING
SR BEHAVIORAL RESEARCHER
WESTERN MICHIGAN UNIVERSITY

THE WORK

MY STUDENTS AND I CARRIED OUT WITH APOPO HAS ENRICHED OUR LIVES IN MANY WAYS. IT HAS GIVEN US THE OPPORTUNITY TO WORK WITH WONDERFUL PEOPLE PERFORMING HARD AND SOMETIMES DANGEROUS TASKS. WE WERE ABLE TO EMPLOY OUR SKILLS TO HELP THOSE PEOPLE AND THEIR POUCHED RATS MAKE THE WORLD A BETTER PLACE.

MARGARIDA LUIS SITOE
MANUAL DEMINER,
MOZAMBIQUE

MY JOB EMPOWERS

ME AS AN AFRICAN WOMAN IN A MALE-ORIENTED PROFESSION.

RITA JOSE VILANCULOS
GILDA MATTE
CAMP COOKS
MOZAMBIQUE

APOPO SUPPORTS

LOCAL DEVELOPMENT BY EMPLOYING PEOPLE LIKE US FROM LOCAL COMMUNITIES.

JAN DEBISSCHOP
BOARD MEMBER
APOPO

I AM

A SPECIALIST IN ADVOCACY FOR AGENCIES SUCH AS THE UNITED NATIONS, UNESCO AND THE EU. I HOPE TO FURTHER EXPAND APOPO'S INTERNATIONAL NETWORK AND I FEEL MY CONTRIBUTION HERE IS APPRECIATED.

RAUL ELIDIO
MDR HANDLER
ANGOLA

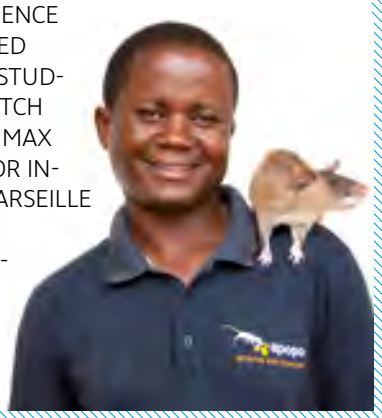
I'M HAPPY

TO WORK IN AN ORGANIZATION WITH SUCH AN OPEN ATMOSPHERE, SUPPORTIVE OF ALL TYPES OF PEOPLE AND CULTURES.

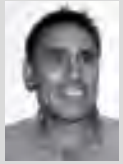
GEORGIES MGODE
PROGRAM MANAGER TB TANZANIA

APOPO HAS WELCOMED

MY RESEARCH EXPERIENCE AND EXPERTISE GAINED FROM MY ACADEMIC STUDIES AT THE ROYAL DUTCH TROPICAL INSTITUTE, MAX PLANCK INSTITUTE FOR INFECTION BIOLOGY, MARSEILLE UNIVERSITY AND THE ROYAL BELGIAN INSTITUTE FOR NATURAL SCIENCES.



TEKIMITI GILBERT
HEAD OF MINE ACTION



THE PROBLEMS WE SOLVE

The landmine and cluster munition problem in South East Asia is significant and widespread. The legacy of Cambodia`s landmines started from 1979 when the Vietnamese military ousted the Khmer Rouge, and continued until their eventual demise in 1998. Landmines were laid by both sides including the Cambodian military, to impede movement and deny access. It is estimated that over 1,900km^2 of contaminated land still remains. APOPO in partnership with the Cambodian Mine Action Centre (CMAC) is on the frontline of Mine Action operation combating this threat and we aim to reinforce this effort with our mine detection rats that are planned to arrive in Cambodia in early 2015.

Lao People`s Democratic Republic (Lao PDR) and Vietnam suffer from an unexploded cluster munition problem stemming from the 2nd Indo-China war of the 1970`s (known as the Vietnam War in the West). It is generally accepted that over 2 million tons of bombs were dropped on Lao PDR between 1964 and 1973 with over 580,000 bombing missions—equal to a planeload of bombs every 8 minutes, 24-hours a day, for 9 years – making Lao PDR the most heavily bombed country per capita in history.

In Vietnam it is estimated over 66,000km^2 of contaminated area remains throughout the country as a result of the Indo-China wars. There have been over 105,000 reported casualties resulting from accidents with unexploded ordnance. APOPO is now seeking to develop the search capability of our mine detection rats to also include cluster munitions. This will provide much needed support to the cluster munition clearance efforts.

LAO PDR

In January 2014, APOPO took over management of a project in Lao People`s Democratic Republic (Lao PDR) that had been German Federal Foreign Office (GFFO) funded since 2009. After an initial 10 week period of handing over of vehicles and equipment, negotiating an interim memorandum of understanding (MoU), as well as arranging an operating license with the Lao PDR authorities, APOPO was able to commence operations on 15 March in Bolikhamxy Province close to the border with Vietnam.

Almost immediately the teams were able to make an impact by locating and destroying numerous unexploded cluster munitions (UXO) on a daily basis. On average the APOPO teams located an UXO for very 60m^2 searched. Given the dispersed nature of cluster munitions, and in comparison to other NGO`s operating in Lao PDR, this is seen as a significant achievement.

The APOPO Lao PDR project ended on 31 August 2014. During the life of the project the APOPO teams searched and cleared 66,196 m^2 of contaminated land and as a result, located and destroyed 1,117 unexploded cluster munitions that aided almost 11,000 beneficiaries.

Vietnam

As with LAO PDR, APOPO took over a GFFO funded project in Vietnam in January 2014. The APOPO operations were centered around Quang Tri and Hue Provinces of central Vietnam. These areas are populated by mainly ethnic minorities who have suffered significantly since the end of the Vietnam War some 40 years ago. These communities are predominately subsistence farmers who are completely reliant on agriculture for their livelihoods and the high cluster munitions contamination presents significant risk and a barrier to their livelihoods and development.

The APOPO Vietnam project came to an end in September 2014. During the life of the project the APOPO teams searched and cleared 88,967m2 of contaminated land and as a result located and destroyed 880 unexploded cluster munitions. The APOPO teams also responded to 360 Explosive Ordnance Disposal requests where the small 3 man teams destroyed 3,068 items of unexploded ordnance including 6 deep buried large aircraft bombs. ■

- 66,000KM² OF CONTAMINATED AREAS REMAINING IN VIETNAM
- 105,023 MINE/ERW CASUALTIES IN VIETNAM
- LAO PDR EXPERIENCED THE HEAVIEST AERIAL BOMBARDMENTS IN HISTORY DURING THE INDOCHINA WAR
- STILL AN ESTIMATED 10-100 KM² CONTAMINATED WITH LANDMINES AND UXO IN LAO PDR
- OVER 100 KM² STILL ESTIMATED TO BE CONTAMINATED WITH LANDMINES AND UXO IN CAMBODIA
- CAMBODIA 2ND MOST MINE AFFECTED COUNTRY IN THE WORLD AFTER AFGHANISTAN
- K5 MINE BELT IN CAMBODIA RANKS AMONG THE DENSEST CONTAMINATION IN THE WORLD WITH UP TO 2,400 MINES PER LINEAR KILOMETER

	FULL CLEARANCE	TECHNICAL SURVEY	NON TECHNICAL SURVEY	BATTLE AREA CLEARANCE
CAMBODIA	4,709,116	1,662,909	-	44,555
LAO	-	50,179	22,354,239	66,196
VIETNAM	-	236,125	1,123,137	83,030

	TOTAL LAND RELEASED	MINES	UXO AND CLUSTER MUNITIONS
CAMBODIA	6,416,580	3,254	22,450
LAO	22,354,239	-	1,165
VIETNAM	1,448,229	-	3,969

MINE ACTION CAMBODIA

KIM WARREN
COUNTRY PROGRAM DIRECTOR,
APOPO MA CAMBODIA

Cambodia is still one of the most landmine-affected countries in the world, the result of 3 decades of conflict which persisted until the late 1990's. Over 64,000 landmine/ERW casualties have been recorded since 1979 and with over 25,000 amputees, Cambodia has the highest ratio of mine amputees per capita in the world.

The impact of these weapons is long lasting and devastating. Landmines keep people poor and their presence stands in the way of socio-economic growth for communities living in contaminated environments. Mines prevent access to land for agriculture, resettlement and other infrastructure developments such as roads, schools and community ponds (water catchment). Removing mines is therefore essential for the lives and livelihoods of the Cambodian population.

APOPO works in partnership with the Cambodian Mine Action Centre (CMAC) to eradicate the mine/ERW threat by releasing priority land for communities to put back into productive use. This GFFO funded project is targeting six Northwestern districts close to the infamous "K5 belt". Land is released (through demining and survey) for agriculture, resettlement, other infrastructure development projects and casualty reduction. The release of land allows poor, rural people access to land to safely grow their rice and other crops, to feed their families and provides a safe environment to live, work and play. In addition, Mine Risk Education is delivered by the teams aimed at reducing the risk of injury and death from mines and other ERW.

MINE ACTION ANGOLA

FRANCISCO GREGORIO
PROGRAM MANAGER
APOPO
MA ANGOLA

2014 was a successful year for the APOPO mine action program in Angola that has now completed its second year of operations. Upon obtaining its operational accreditation of 15 rats on 27 February 2014, APOPO joined forces with our partner operator Norwegian People´s Aid (NPA) by providing mine detection rat capacity to assist NPA´s work in Malanje. Although facing serious issues such as heavy rains and a broken brush-cutter machine, by mid-year the program was up to full speed and made its first contribution to the goals of NPA by releasing land back to communities. Our first task in Camatende is completed and our second task in Malanje, NgolaLuige is now well underway.

Camatende 2, agricultural area

[completed]

Located 1 km from a local village. During the war soldiers settled in the area laying defensive mines around their encampment. Since the conflict ended in the 1990s two civilians have been killed by a mine accident and a number of valuable livestock have set off detonations. Nevertheless, some of the area has been cultivated, at high risk, by a community desperate for productive land.

Ngola Luije 1, Residential area

[ongoing]

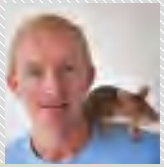
Located 37 kilometers North of Malanje city, another strategic military encampment with defensive landmines laid. One fatality in 2003 involved a female civilian, and numerous livestock have been killed or maimed. Parts of the mined area border the local primary school. The community needs land to further develop as a residential zone and a few new houses inhabited by families with young children have already been built close to the minefield.

Challenges in 2014 were mainly related to natural elements such as heavy and stormy rains, and thickness of vegetation. There was also high metal contamination in the ground, and this slows down the deminers with metal detectors who arrive to verify positions that the rats have indicated as suspect.

> “APOPO HAS PROVED TO BE A SUPPORTIVE AND RELIABLE PARTNER WHOM WE HAVE HAD GREAT PLEASURE IN WORKING ALONGSIDE.”
>
> **FREDRIK HOLMEGAARD,**
> NPA - OPERATION MANAGER, HUMANITARIAN DISARMAMENT, ANGOLA

TRAINING CENTER TANZANIA

DR. TIMOTHY EDWARDS
HEAD OF TRAINING AND BEHAVIORAL RESEARCH



APOPO’s training center has had a busy year with 103 rats in training of which 36 successfully completed the mine detection training and five juvenile rats transferred to APOPO’s TB facility in Tanzania for early training.

Twenty HeroRATs were sent to Angola after passing APOPO’s internal accreditation test and are now continuing in-country training while awaiting their accreditation from the Angolan National Mine Action Authority (CNIDAH) before deployment to the minefield. An additional 16 rats were trained to support the humanitarian demining activities in Cambodia. While APOPO is concluding all necessary paperwork, these 16 rats stay part of the training schedule in order to keep their detection skills up to standard.

In preparation of the arrival of the mine detection rats in Cambodia, two Cambodian trainers were welcomed at the center and completed their animal trainer certification course during an extensive 3 month training focusing on animal behavior, training techniques, standard operation procedures and data collection. Both staff members worked together with APOPO’s experienced trainers and supervisors, developing the necessary skills to help set up the mine detection rat program and support their Cambodian colleagues in handling and training the HeroRATs ready for minefield deployment.

ANGOLA STATS

TOTAL LAND RELEASED	LANDMINES FOUND	SAA FOUND	UXO FOUND
185,788	2	32	1

> "I REALLY LIKED THE IDEA OF ANIMALS AND HUMANS WORKING TOGETHER TO HELP COMMUNITIES IN NEED."

NEEMA KIFEA
MDR TRAINER
TANZANIA

LITTLE TRAINEES

"When I heard about a project that was using rats to detect landmines I was impressed. I really liked the idea of animals and humans working together to help communities in need. I applied for a job in 2012 and here I am! I am now one of 22 APOPO trainers. I work with the rats every day from when they are a very young age, until they are fully trained mine detection rats and ready to go and save lives and limbs. This takes about nine months, so every trainer gets familiar with their personalities and behavior. I know I shouldn't, but I always get attached to my rats and sometimes I feel sad when one of my favorites is leaving. But when I hear about the magnificent job my little trainees are doing in Mozambique and Angola, I'm very proud."

MA STATS

TOTAL M² OF LAND RELEASED OR CANCELLED FOR LOCAL POPULATIONS	M² OF LAND COVERED BY SURVEY ACTIVITIES
32,756,247	26,851,591

TOTAL LANDMINES AND UXO DESTROYED	PEOPLE IN MINE-AFFECTED COMMUNITIES EDUCATED ABOUT LANDMINE RISKS
41,121	19,214

TB STATS

SAMPLES SCREENED BY RATS IN 2014	SAMPLES SCREENED BY RATS BY END OF 2014	TB PATIENTS IDENTIFIED BY RATS IN 2014	TB PATIENTS IDENTIFIED BY RATS BY END OF 2014
58,158	**287,349**	**2,057**	**7,644**

RATS OPERATIONAL IN TB DETECTION IN 2014	POTENTIAL INFECTIONS HALTED IN TANZANIA AND MOZAMBIQUE BY END OF 2014	ADDITIONAL PATIENTS DETECTED BY RATS
40	**27,420**	**+45%**

GLOBAL TUBERCULOSIS

9,000,000*

9 MILLION NEW CASES PER YEAR

3,000,000

3 MILLION MISSED

EACH DAY

24,000
NEW TB CASES

8,000
TB CASES MISSED

4,000
PEOPLE WHO DIE OF TB

1,315
NEW DRUG RESISTANT TB CASES

219
CHILDREN WHO DIE OF TB

+95%

OF GLOBAL TB DEATHS ARE IN LOW-TO-MIDDLE-INCOME COUNTRIES

TB

IS CURABLE AND PREVENTABLE

KEY FACTS

TB IS A LEADING CAUSE OF DEATH AMONG PEOPLE WITH HIV

IN AFRICA 5 OUT OF 10 TB CASES ARE MISSED, TOTALLING 1.3 MILLION PEOPLE

TUBERCULOSIS AFFECTS YOUNG ADULTS AT THEIR MOST PRODUCTIVE

IT CAN TAKE FROM 500 TO 14,000 PILLS TO TREAT ONE TB PATIENT

500,000 PEOPLE PER YEAR DEVELOP MULTI DRUG RESISTANT TB, ONLY 1 IN 10 CASES IS SUCCESSFULLY TREATED

* All figures from the WHO Global Tuberculosis Report 2014 and Stop TB partnership.

550,000

NEW CASES OF CHILDREN WITH TB

80%

MORE THAN 80% OF GLOBAL TB CASES ARE FOUND IN ONLY 22 COUNTRIES

TB

SECOND BIGGEST GLOBAL CAUSE OF DEATH DUE TO AN INFECTIOUS DISEASE AFTER HIV/AIDS

TUBERCULOSIS MOZAMBIQUE

DR. EMILIO VALVERDE
PROGRAM MANAGER
TUBERCULOSIS
MOZAMBIQUE

Maputo is Mozambique's capital and largest city. It is also home to a TB case report rate much higher than the national average at 590 over 214. Large cities like Maputo attract people from provinces to work but there is rarely the infrastructure to cope with this influx so slums and squats spring up. Combined with crowded working and travelling conditions, infectious diseases such as TB become highly prevalent. Maputo alone contributes to 13% of the national TB burden.

Fighting TB in Mozambique since 2013, APOPO is now in the second phase of its project, funded by the Flemish International Cooperation Agency until 2017 and in partnership with the Eduardo Mondlane University and the Mozambique Ministry of Health (MOH). The most important goal in this second phase will be to increase the number of patients tracked down for treatment after APOPO has identified them as TB positive. For this purpose, the APOPO team now works with community-based organizations, TB activists and local volunteers, whose collaboration is proving highly effective. Project coverage was also extended in 2014 from the eight health centers initially supported, to 13 health centers in the city that are performing diagnosis of TB. Thus, current citywide coverage by the project is nearly 100% of suspect TB patients who travel to the clinics.

This second year of operations has confirmed the success and social impact of the first year. This means that in 2014, APOPO increased the detection rates of the clinics by approximately 53%. As placing a TB positive patient on treatment typically halts up to 10 other infections within a year, along with the 2,478 TB patients found by the clinics themselves, APOPO and the MOH are now making significant inroads into the TB burden in Maputo. Next year we hope to consolidate this impact and maintain the current percentages of increase in the case detection rates at the collaborating clinics.

EZEQUIEL MACONHA-OTENESSE
EX-STUDENT AT THE VETERINARY DEPARTMENT OF EDUARDO MONDLANE UNIVERSITY

RAT DETECTION SAVED MY LIFE

As part of my final year assignment I conducted a small research project at the APOPO TB lab in Maputo. However I wasn't feeling very well when I began the study; I was coughing and felt a pain in my chest. I also had night sweats and I was losing weight. I had been to different local hospitals where they had tested me for TB but all the results were negative.

The APOPO staff I was working with suggested that I get my sputum samples tested by the TB detection rats as well. We did this and the rats indicated the samples as TB positive! I went straight to the nearest clinic with a report from the APOPO lab and they put me on treatment immediately. I am now back to full health. It was very lucky that I chose APOPO for my assignment and ended up meeting the HeroRATs. I believe they saved my life.

- MOZAMBIQUE IS THE 4TH MOST TB BURDENED COUNTRY IN THE WORLD
- MAPUTO COUNTS FOR MORE THAN 13% OF THE NATIONAL TB BURDEN IN MOZAMBIQUE
- ALL CLINICS BUT ONE IN MAPUTO ARE PARTNERING WITH APOPO
- YEARLY 140,000 NEW TB CASES COUNTRYWIDE, OF WHICH ONLY 37% GET DETECTED
- 53% INCREASED DETECTION RATES BY RATS IN MAPUTO IN 2014
- 18,096 SPUTUM SAMPLES EVALUATED BY HERORATS IN MAPUTO IN 2014
- 645 PATIENTS DIAGNOSED WHO WERE MISSED BY CONVENTIONAL METHODS IN 2014

RAFAEL ESCRIVÃO
DIRECTOR, UNIVERSITY EDUARDO MONDLANE, MAPUTO

"RATS ARE A NEW AND IMPORTANT TECHNOLOGY WHICH CAN GENUINELY CONTRIBUTE TO THE FIGHT AGAINST TB IN MOZAMBIQUE."

A REWARDING PARTNERSHIP

I originally heard of APOPO's ground-breaking detection rats technology while I was a lecturer here at the university. I was very excited when APOPO Tanzania asked us to be involved in a Maputo project in 2012. After a year of close collaboration, the TB laboratory opened in Maputo in early 2013. In partnership, we are now carrying out projects on TB/HIV co-infection, rat breeding and rat health systems. The performance of the rats in these settings is extremely interesting to us at the Veterinary University. They really are a new and important technology, helping to curb the TB spread in Maputo, and they have so much potential for other scent detection applications. It's very exciting to be involved." ■

TUBERCULOSIS TANZANIA

DR. NEGUSSIE BEYENE
PROGRAM MANAGER
APOPO
TB TANZANIA

2014 was a year in which APOPO TB Tanzania significantly strengthened its operations, initiating important clinical and operational research and expanding its operations to even more clinics.

Patient tracking and TB sensitization services

In 2014 APOPO further improved its patient tracking and TB sensitization services through its local partners MKUTA and PASADA. Suspect TB patients now learn more about the disease at the clinic or in community outreach sessions, and are circulating this information among workmates and family, as well as leaving better contact details at clinics. Because of this, APOPO has now reached a follow-up tracking rate of over 80% in some clinics.

Accuracy study

2014 also saw APOPO begin the implementation of an accuracy study aimed at determining the accuracy of detection rats. This will go towards APOPO's long-term mission to validate the TB detection rat technology for use in several other high-TB burden countries as a low cost and high impact technology.

APOPO TB Tanzania began its program in 2008 and partnered with just 4 of the 62 TB clinics in Dar es Salaam. With 2014 seeing an addition of 2 clinics, this number now stands at 23. Dar es Salaam contributes more than 20% of the Tanzanian national TB burden but if the whole of Dar es Salaam could be covered by our enhanced case detection operation, as is Maputo, many more patients could be found by APOPO per year, significantly reducing further infections.

DR. LIBERATE MLEOH
DEPUTY PROGRAM MANAGER OF THE NATIONAL TUBERCULOSIS AND LEPROSY PROGRAM (NTLP), TANZANIA

"I HAVE BEEN VERY IMPRESSED WITH THE SIGNIFICANT NUMBER OF ADDITIONAL TB CASES DETECTED BY APOPO RATS IN 2014."

LULU
TB SURVIVOR AND
MKUTA VOLUNTEER

DISPELLING THE MYTHS

"TB is truly devastating. I know because I was once sick with it and I came very close to dying. I was terrified for my three children. Fortunately I was diagnosed and able to start treatment. When I got well I joined MKUTA, an organization made up of former TB patients who help to raise awareness of TB issues as well as track down TB positive patients that APOPO found after the clinics missed them.

As well as working in the clinics, MKUTA also visits local communities to raise TB awareness. Many people have a poor understanding of the disease and don't know that someone with TB can infect up to 10 people per year. Especially in places like factories, or slums, or the market nearby, where many people visit and work closely together. This enables the disease to spread easily. People also think that if you have TB, you are hiding HIV too (not true!). They misunderstand HIV/AIDS just as much and think it is a death sentence (it's not!). So we also spend time dispelling myths and reducing stigma. As a TB survivor, I speak out of experience and people listen."

"MANY PEOPLE DON'T KNOW THAT LEFT UNTREATED, TB CAN BE PASSED TO UP TO 10 OTHER PEOPLE WITHIN A YEAR."

- DAR ES SALAAM COUNTS FOR OVER 20% OF THE NATIONAL TB BURDEN IN TANZANIA
- TANZANIA HAS AN ESTIMATED TB PREVALENCE OF 295 PER 100,000 POPULATION
- 40,062 SPUTUM SAMPLES EVALUATED BY TB DETECTION RATS IN TANZANIA IN 2014
- 1,412 EXTRA CASES OF TB FOUND BY THE HERORATS IN TANZANIA IN 2014
- 39 % ADDITIONAL PATIENTS DETECTED BY RATS IN TANZANIA IN 2014
- 23 PARTNER CLINICS

LULU TB SURVIVOR AND MKUTA VOLUNTEER

"SINCE THE PROGRAM BEGAN, APOPO HAS RAISED TB DETECTION RATES IN CLINICS BY OVER 40%"

DR. SALAPION EMMANUAL MUTAGWABA
CLINICAL OFFICER, KIWALANI AND VINGUNGUTI CLINICS, DAR ES SALAAM

A HUGE DIFFERENCE

"I work at two clinics in Dar Es Salaam. One is partnered with APOPO, the other is not. The difference is striking. APOPO raises the TB detection rate of their partner clinics by over 40% and that on its own is very impressive. But the APOPO partnered clinic also receives a much higher volume of patients arriving with suspect TB. This is because APOPO supports organizations called MKUTA and PASADA that are made up of volunteers who are TB survivors. They are sensitizing communities about TB and explaining that if you fall sick, you should find out your TB status as soon as possible. Their work is making a huge difference in getting people to a clinic.

I hope I can set up a similar collaboration between APOPO and the other clinic in which I work. The improved TB detection-rate of APOPO combined with MKUTA's and PASADA's community work means that we would reach more people and miss less patients with active TB, getting them all on to treatment."

DR. CHRISTIAAN MULDER
EPIDEMIOLOGIST AND
HEAD OF APOPO TB

DETECTION RATS TECHNOLOGY
STRENGTHENING THE EVIDENCE

Our Commitment

Tuberculosis (TB) is a global leading cause of death from an infectious disease, second only to HIV/AIDS. The social impact of TB is significant because it affects mainly young adults in their most productive years. Yet despite improvement in TB case finding, there is still no established diagnostic able to screen large numbers of individuals accurately, rapidly, inexpensively and sustainably over the long-term. New diagnostics are a key component to tackling the TB epidemic, yet in resource-limited settings such as Tanzania and Mozambique, the latest Western technologies are often susceptible to limitations. These range from spare parts availability and unreliable power sources, to high operational costs which limit their sustainability beyond donor supported pilot programs.

APOPO's long-term mission is to overcome these challenges by validating its African owned, innovative, rapid, simple and low cost TB detection rats technology for use in High-TB-Burden countries. Accreditation from the World Health Organization (WHO) would accelerate this process. APOPO has therefore developed a strategic approach which is focused on completing a number of key clinical studies aimed at convincing the WHO's Strategic and Technical Advisory Group for Tuberculosis of the merits of its technology. Key for APOPO is to prove that detection rat technology has added value compared to existing diagnostics, with regards to accuracy, cost-effectiveness, ease of use, and better clinical outcomes for patients.

Investing in R&D

One of the major clinical studies underway in 2014 will determine the accuracy of detection rats in a population of presumptive TB patients living in Dar es Salaam when compared with liquid and solid culture as the reference standard. The accuracy of the rats will be assessed in individuals with a pretested positive or negative microscopy result, as well as in individuals who are and are not living with HIV/AIDS. This is an important factor associated with the accuracy of a diagnostic tool. For this study we are partnering with the Tanzanian Central Tuberculosis Reference Laboratory, the National Institute of Medical Research and with technical advice from the Center for Infectious Disease Research in Zambia.

Another planned clinical study will assess the accuracy of the detection rats when they are used as a TB screening tool in prison populations. Prisons have long been known as reservoirs for TB transmission to the outside world via prison staff, visitors and released prisoners. TB prevalence in prisons in Tanzania and Mozambique is estimated to be 5 to 50 times higher than in that of the general population. Screening thousands of prisoners by existing diagnostics is unfeasible due to the limitations in accuracy, time and cost. In contrast, the nature of APOPO's TB detection technology yields great promise for being a fast and cost-efficient screening tool.

Finally, the cost-effectiveness of the detection rats is being investigated by means of a modeling study. This will provide evidence for APOPO and policy makers on how detection rats technology can be best embedded in a diagnostic pathway (e.g. as an add-on test or a triage test). For this study we are collaborating with the Amsterdam Institute for Global Health and Development.

Overcoming challenges

In parallel to the clinical and cost-effectiveness research we are conducting behavioral and basic research in order to improve on the clinical studies, general operational methodology and to explore different opportunities for the detection rats technology. For example, behavioral research focuses on preparing the rats for being used as a screening tool in active TB case finding – i.e. using untested samples. There are two major challenges when using the rats for this purpose. One is that using unknown status (blind) samples means that a method has to be established to reward and calibrate the rats for correct indications. This is currently carried out when they detect known status (control) samples. The other challenge is in the requirement for a certain number of reward samples needed by the rats in order to stay accurate; TB prevalence is much lower in an active case finding setting within target populations as opposed to the high TB prevalence in clinics where TB suspects converge for diagnosis.

Another basic research goal aims to get better insight into which volatile organic compounds (VOCs) the rats are detecting, to potentially improve the performance of the rats. Based on this research we would improve training procedures for young rats that would teach them to better discriminate between sputum samples containing Mycobacterium tuberculosis and sputum samples containing non-tuberculous Mycobacteria. APOPO would then leverage its know-how to advance the state of other VOC detection technology for TB and other diseases. APOPO will also contribute to the international body of research dedicated to revealing biomarkers associated with TB, which can lead to improvements in existing diagnostic technologies and the development of other new and innovative biosensors.

A pragmatic approach

In 2014 APOPO installed a TB Scientific Advisory Committee consisting of a multidisciplinary team of international TB experts from Sub-Saharan Africa, Europe, and the USA working at various renowned academic and research organizations. The role of this committee is to provide scientific and medical credibility to the program and research output, to advise on the long term strategic research planning, and to identify new opportunities for research, funding and partnerships. APOPO believes that the committee will raise the bar across our research and our operations, and make sure that we are in the forefront of the global combat against this devastating disease.

APOPO'S TB ADVISORY TEAM EXPERTS

- **Dr. Stewart Reid** (Senior Public Health Researcher, Center of Infectious Disease Research in Zambia)
- **Dr. Annika Kruuner** (Microbiologist, Center of Infectious Disease Research in Zambia)
- **Dr. David Dowdy** (Infectious disease modeler, Johns Hopkins Bloomberg School of Public Health, USA)
- **Ms. Lucy Chesire** (Director, Tuberculosis Advocacy Consortium, Kenya)
- **Dr. Grant Theron** (Senior Scientist, University of Cape Town, South Africa)
- **Dr. Eveline Klinkenberg** (Senior Epidemiologist, KNCV Tuberculosis Foundation, The Netherlands)
- **Prof. Dr. Francoise Portaels** (Head Mycobacteriology Unit,Institute of Tropical Medicine, Belgium)
- **Prof. Dr. Andrew Kitua** (former director National Institute of Medical Research, Tanzania)

MARKETING & INNOVATION

PAUL DELBAR
PUBLIC FUNDRAISING MANAGER

SPREADING THE WORD

Telling stories about the work of our HeroRATs is very important. Donors and partners need to be told about the impact their contribution makes possible, and the wide and varied audience we reach through various channels wants to understand how we address specific humanitarian issues with our creative and innovative approach.

More than ever before, APOPO's unique approach generated significant media interest. In 2014 alone APOPO made 90 media appearances including in the BBC, National Geographic, Germany's ZDF, CNN and many more. Our team regularly accommodates media and research visits to our global programs offering an opportunity to report back to the public and scientific institutions on our unique and life-saving work.

Adding new channels such as Instagram and Pinterest enabled us to include more features, stories and opportunities that better engaged our rapidly growing audiences to support and share our work. Engaging with our followers and donors is very important to us, and interacting on social media or by an email to herorats@apopo.org allows us to provide a personal response on anything related to APOPO.

Last but not least, your donations are what helps us train and deploy our HeroRATs. New online offerings and the streamlining of our HeroRAT adoption program were only a few of the initiatives that have helped increase our public fundraising revenue by 30%.
We wish to thank all of you for your support. We count ourselves lucky with such an engaging, enthusiastic and passionate audience, and we're looking forward to introducing new ways to work together in 2015!

	MEDIA APPEARANCES + 137%	HERORAT ADOPTIONS + 13%	UNIQUE WEB VISITORS + 48%
2013	38	2,247	58,070
2014	90	2,547	86,391

	PAGEVIEWS + 99%	FACEBOOK FANS + 80%	TWITTER FOLLOWERS + 25%
2013	219,376	10,472	2,731
2014	435,981	18,843	3,428

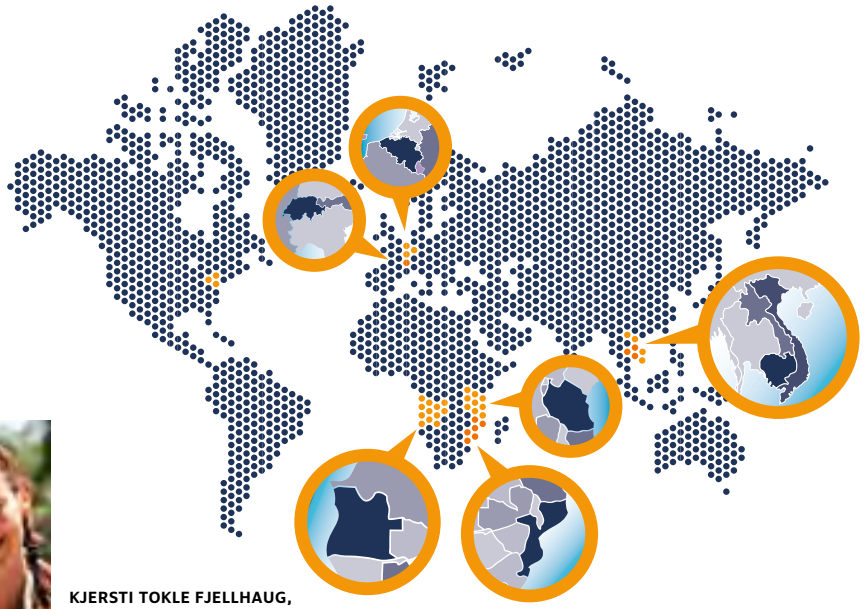
REQUESTS TO HERORATS@APOPO.ORG	1,421

BBC NEWS · BBC · CNN · DW Deutsche Welle · The Economist · Forbes · National Geographic · theguardian · TIME · VICE · ZDF

ADOPT A HERORAT

LIVE THE HERORAT EXPERIENCE

To date, more than 2500 donors have adopted a virtual HeroRAT and receive regular updates on how training progresses, how we work in our programs and the humanitarian impact made possible by their contributions. The introduction of gamification elements in the HeroRAT adoption has made the experience more compelling for our donors, and we are planning to extend this in 2015, with new stories, new badges and a redesigned **myapopo.org** portal.



KJERSTI TOKLE FJELLHAUG,
SWISS EXECUTIVE DIRECTOR

A GLOBAL PRESENCE

YVES HERVIEU-CAUSSE,
CHAIRMAN OF THE BOARD, APOPO FOUNDATION

Representing APOPO in the forums where global mine action and international health policies related to tuberculosis are defined, is a key success factor in achieving humanitarian impact. Two independent organizations have been created to support APOPO's mission and strategic goals: the APOPO Foundation headquartered in Geneva, and APOPO US based in Washington, DC.

Both **Kjersti Tokle Fjellhaug,** our Swiss Executive Director, and **Charlie Richter,** our US Director, are being supported by exceptional Board Members, who bring decades of experience in philanthropy and key competences in APOPO's work areas to the table, and will help us build APOPO's success story in the years to come.

"APOPO IS A BEAUTIFUL HUMANITARIAN PROJECT. HAVING THE CHANCE TO CONTRIBUTE TO ITS DEVELOPMENT FROM GENEVA IS A THRILLING ENTERPRISE."

APOPO RANKED #22

IN THE GLOBAL GENEVA TOP 500 NGOS RANKINGS

We are extremely proud to have come in at number 22 out of 2000 other non-profits. It's great to have our work recognized and our profile raised. Hopefully more people will now see how many lives we save and make the effort to support us and help us save even more.

SOCIAL IMPACT

It is generally agreed in Humanitarian Mine Action that landmines are a barrier to development both in the sense of the physical presence of mined areas as well as the perceived fear that exists within mine affected communities. If local populations fear mines - even if much of the land is not actually mined - then by default they will not use that land until that fear has been removed. The dilemma is then, how much effort is required to remove that fear and is that effort reasonable. Too much effort is time consuming and is very costly, while on the other-hand too little effort will result in landmines left behind.

This is the task APOPO`s teams are faced with on an almost daily basis. The first step is to analyse the threat and then devise an appropriate response to ensure all reasonable effort is applied. APOPO achieves this through the application of our Land Release methodology as well as through close interaction with mine affected communities. The aim of this close interaction is to build a relationship between the APOPO teams and the local population. This not only informs and educates communities but more importantly builds confidence in the work of the APOPO teams.

PAST & FUTURE

CHRISTOPHE COX
CEO APOPO

"WE THANK ALL OUR PARTNERS AND STAKE-HOLDERS FOR THEIR TIRELESS SUPPORT AND MOTIVATION."

FINISHING THE JOB

APOPO is committed to helping 'Finish the Job'. This initiative of the International Campaign to ban Landmines targets a Universal Mine Free World, where affected communities can live without fear of these indiscriminate killers and build better lives.

In collaboration with our local partners, APOPO has now almost finished the job in Mozambique completing all its assigned tasks as scheduled. Global efforts are now paying off as many other countries make great strides towards reducing civil casualties and returning safe land back to its people.

Some 60 countries are still contaminated with these hidden killers, which cause about 10 casualties every day mostly to innocent men, women and children. However APOPO believes the job can be finished in the next 10 years provided the international support for the cause is not hampered by donor fatigue and other merging crises.

More than landmines, tuberculosis kills 1.5 million people annually and APOPO is fully supporting the WHO's ambitious strategy to reduce the casualties by 95% in 2035.

With 3 out of the 9 million TB patients left undiagnosed, we do have a long way to go. But we believe that innovative and effective implementation of rapid case finding in high burden countries and mega-cities is the key to a positive social impact on affected and high-risk populations. That is why the proven high speed of TB diagnosis by trained rats can contribute to a faster reduction of this vast number of undiagnosed and missed patients, who desperately need help.

We thank all our partners and stakeholders for their tireless support and motivation, and call on everyone who is inspired to come and help us finish the job.

WE WOULDN'T EXIST WITHOUT YOU

OUR PARTNERS AND DONORS

PROFESSOR RHODES MAKUNDI
DIRECTOR, SUA PEST MANAGEMENT CENTER, 2006-2014
SOKOINE UNIVERSITY OF AGRICULTURE

APOPO - SOKOINE UNIVERSITY OF AGRICULTURE

A LONG AND DISTINGUISHED PARTNERSHIP

The establishment of the Sokoine University of Agriculture (SUA)-APOPO biosensor development project originates from a long tradition of research and training collaboration between SUA and the University of Antwerp (UA) in Belgium. In 1985 the late Professor Walter Verheyen established initial contacts between UA and SUA. This lead to the implementation of the first joint research project on rodents carried out between 1986 and 1990 as a multidisciplinary study conducting research on ecology, taxonomy and zoonotic disease potential of the Tanzanian rodent fauna.

Through this SUA-UA project, issues of capacity building, infrastructure modernization and equipping laboratories of the then Rodent Research Project were addressed. Major research undertakings elevated the visibility of the project both locally and internationally and we hosted the first international conference on "Rodent Biology and Integrated Pest Management in Africa" at SUA in October 1996. With expansion of activities and a new vision and mission to conduct demand driven research on vertebrate pests, invertebrate pests and zoonosis, SUA elevated the unit to the SUA Pest Management Centre (SPMC) in 2000.

The idea to train Africa pouched giant rats for landmine detection was put forward by one of our main collaborators, Professor Ronald Verhagen, back in 1997. Although initially skeptical, we were intrigued and deciding it could not be shelved outright we attempted an experimental trial. A batch of wild-trapped rats was shipped to UA for the initial breeding and training program in 1998. We were all surprised when the initial results indicated that the rats were indeed capable of detecting the explosive powder (TNT) in landmines after a couple of months of 'conditioned' training. This interesting new research venture culminated in the establishment of the SUA-APOPO Project under the SPMC in 2001 and has become a major, world-renowned research project at SUA. One of its first PhD students is Professor Herwig Leirs, who conducted studies on ecology of rodents while based at our unit graduated at UA in 1992 and is now a board member of APOPO.

As we look forward into the future, we continue to strengthen our collaboration through research on the ecology and behavior of African giant-pouched rats in order to be able to improve on their training for humanitarian application as biosensors.

> "THE PARTNERSHIP BETWEEN THE UNIVERSITY AND APOPO HAS BEEN HIGHLY REWARDING AND WE ARE PROUD TO SEE THE RESULTING GLOBAL SOCIAL IMPACT"

King Baudouin Foundation
GOVERNMENT PRINCIPALITY OF LIECHTENSTEIN
Flanders State of the Art
MAIC ENATA STIFTUNG
Mitsubishi Corporation
NORWEGIAN MINISTRY OF FOREIGN AFFAIRS
klaprozen voor vrede
PEOPLE'S POSTCODE LOTTERY
Provincie Antwerpen

"WE HOPE TO INSPIRE OTHER INNOVATORS TO CHALLENGE THEIR PERCEPTION ABOUT SOCIETAL CHALLENGES."

WE WOULDN'T EXIST WITHOUT YOU

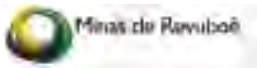
OUR PARTNERS AND DONORS

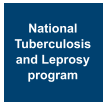
BART WEETJENS
FOUNDER APOPO

APOPO, A SOCIAL ENTERPRISE

APOPO is a social enterprise. It has dedicated the last 15 years to researching, developing, and deploying an innovative technology that tackles pressing social needs – landmine and TB detecting rats. With Mozambique close to being declared free of known landmines, and thousands of people across Africa now on treatment for TB, our efforts are paying off. This is sustainable impact, breaking down barriers to development. We aim to extend this humanitarian innovation and drive positive social change globally. There will be expansion of our landmine detection rats into S. E. Asia, and we are in the process of developing our TB program through meticulous empirical and published research.

In 2007 APOPO was proud to be recognized by **ASHOKA**. In the following years the **Schwab fellowship** to the World Economic Forum and the **Skoll Awards** for Social Enterprise further celebrated APOPO's detection rats technology. These networks represent a powerful global alliance to help transform the world for the better. This is what social entrepreneurship aims to achieve: transforming disenfranchisement into inclusion. We hope to inspire other innovators to challenge their perception about societal challenges, and to believe in their own ideas and follow their vision.





CLOSING WORD

BY HER ROYAL HIGHNESS, PRINCESS ASTRID, SPECIAL ENVOY OF THE OTTAWA CONVENTION AND HONORARY PRESIDENT OF APOPO

In June of 2014 I was honored to address the global mine action community gathered at the Maputo Review Conference. This marked 20 years of the Mine Ban Treaty, which itself is an unprecedented example of cooperation among NGOs, civil society and governments. It was an optimistic and productive session and I was heartened to see the good work of non-profit organizations such as APOPO.

It was there that I advocated that people affected by landmine accidents should be integrated into global and national policy related to disability, health, education, employment, development, and poverty reduction.

When I consider APOPO's overall social impact, including their important work with tuberculosis reduction, I am glad to be involved with such noble goals.

I therefore look forward to seeing what can be achieved in 2015 and particularly towards a mine-free Mozambique.

Triodos Foundation

Universiteit Antwerpen

UBS

UNDP

FONDATION LOMBARD ODIER

HAWK ROCK FOUNDATION

© Lieve Blancquaert

FINANCIAL UPDATE
BALANCE SHEET (EURO)

ASSETS	2014	2013
Fixed Assets	**1,114,223**	**2,466,880**
Land and buildings under partnerships	-	274,077
Furniture, vehicles and equipment APOPO	911,821	1,777,292
Furniture, vehicles and equipment under partnerships	202,402	415,510
Current assets	**1,795,479**	**967,685**
Current receivables	234,185	129,945
Other assets	-	1,670
Cash and equivalents	1,561,294	836,071
TOTAL ASSETS	**2,909,703**	**3,434,565**
LIABILITIES		
Net capital	**1,187,589**	**931,909**
Funds of the organization	328,046	328,046
Other reserves	-	140,644
Retained Earnings	859,542	463,218
Long term liabilities	**1,645,658**	**2,502,272**
Deferred Income (Grants)	1,645,658	2,502,272
Current liabilities	**76,456**	**383**
Current payables	76,456	383
TOTAL LIABILITIES	**2,909,703**	**3,434,565**

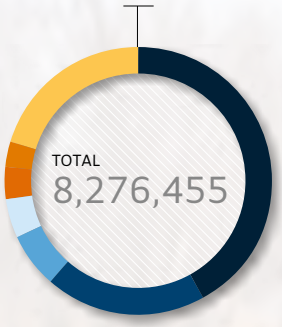
Audited accounts submitted to the general assembly for approval

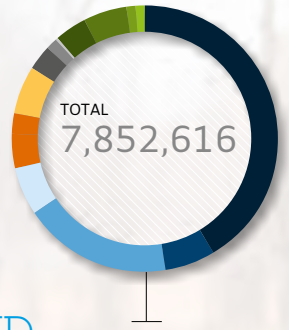
PROFIT & LOSS STATEMENT (EURO)

	2014	2013
Total Income	9,259,264	5,842,895
Total Operational Expenses	3,244,759	2,198,994
Total Personnel Expenses	4,278,138	2,847,634
Depreciation	1,649,480	906,793
Other costs	3,670	13,000
Operating Result	**83,217**	**-123,527**
Financial Result	171,011	-28,602
Extraordinary Result	142,096	64,195
Net Income	**396,324**	**-87,933**

DONATIONS & SUBSIDIES 2014 IN EURO*

- Government grants 3,706,184
- UNDP 1,197,218
- Foundations 587,293
- Research grants 399,185
- HeroRAT public campaign 338,956
- Other unrestricted income 287,317
- Corporate support 1,760,302





EXPENSES AND INVESTMENTS 2014 PER ACTIVITY IN EURO*

- Mine Action Mozambique 3,256,937
- Mine Action Angola 491,874
- Mine Action Cambodia 1,417,010
- Mine Action Vietnam 455,848
- Mine Action Laos 315,935
- Training Mine Detection Rats 203,786
- TB program Tanzania 458,933
- TB program Mozambique 231,650
- Research and Development 122,083
- CameRats 18,101
- Management costs Tanzanian office 297,423
- Management costs Belgian office 411,932
- US office 93,862
- Other costs 77,241

*** Cash based**

APOPO VZW

Gratiekapelstraat 12
2000 Antwerpen, Belgium
Tel: +32 (0)3 265 40 56

Contact: Liesbet Van Wijk
Liesbet.vanwijk@apopo.org

Photos APOPO except for:
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Jay Caboz (15)

APOPO GLOBAL OFFICES

OPERATIONAL HEADQUARTERS & TRAINING CENTER SUA-APOPO
Sokoine University of Agriculture
PO Box 3078 Morogoro,
Tanzania +255 23 2600 635
apopo@apopo.org

APOPO Head of Mine Action
Tekimiti Gilbert
+856 20588 35636
tekimiti.gilbert@apopo.org

APOPO Mine Action Mozambique
Tess Tewelde
+258 827 273 378
tess.tewelde@apopo.org

APOPO TB Mozambique
Emilio Valverde
+258 823 232 220
emilio.valverde@apopo.org

APOPO Mine Action Angola
Frank Gregório
+244 928 574 973
frank.gregorio@apopo.org

APOPO Mine Action Cambodia
Kim Warren
+855(0)78920788
kim.warren@apopo.org

Media and Communications
James Pursey
+255 (0) 777 326 625
james.pursey@apopo.org

APOPO FOUNDATION
Kjersti Tokle Fjellhaug
6 Cours de Rive
1204 Geneva
Switzerland
Tel +41 22 707 41 86
Mobile +33 (0) 613204003
kjersti.tokle.fjellhaug@apopo.org

APOPO US Office
Charlie Richter
1133 15th street NW
Washington DC 20004
+1-202-286-2804
Charlie.richter@apopo.org

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HeroRAT Adoption Program
For 5€ per month or more you can contribute to APOPO's life saving mission and receive updates of your own HeroRAT
www.myapopo.org
herorats@apopo.org

You can also make a donation at:
www.apopo.org/donate

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

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DETECTION RATS TECHNOLOGY apopo

Key Performance Indicators **Milestone/ Workplan Correlation** **"Diagnostic Accuracy of Transformative Tuberculosis Scent Detection Technology"**

Quantifiable Goals			June 2015	July 2015	August 2015	September 2015	October 2015	November 2015	December 2015	January 2016	February 2016	March 2016	April 2016	May 2016	June 2016	July 2016
KPI 1. The number of eligible inmates, new entrants, and staff and their families in Morogoro and Maputo prisons offered screening for TB in the pilot	Milstone 2 - Finish Pilot Study and Write Report	targeted			100											
		reached														
KPI 2. The proportion of invited individuals that participate in the study (acceptance rate) in the pilot	Milstone 2 - Finish Pilot Study and Write Report	targeted			65%											
		reached														
KPI 3. The number of eligible inmates, new entrants, and staff and their families in Morogoro and Maputo prisons offered screening for TB in the study	Milestone 3 - Study Participant Enrollment and 1st Screening	targeted				500	1500	2500								
		reached														
KPI 4. The proportion of invited individuals that participate in the study (acceptance rate)	Milestone 3 - Study Participant Enrollment and 1st Screening	targeted				65%	65%	65%								
		reached														
KPI 5. Average Diagnostic Speed per 100 participants screened (1 sample per person) by TB detection rats	Milestone 4 - Finish Sample Examination and Evaluation	targeted				20 min	20 min	20 min								
		reached														
KPI 6. Average Diagnostic Speed per 100 participants examined (1 sample per person) confirmed with Xpert (given a 4-module machine)	Milestone 4 - Finish Sample Examination and Evaluation	targeted				2 days	2 days	2 days								
		reached														
KPI 7. Average Diagnostic Speed per 100 participants examined (2 samples per person) confirmed with Concentrated Smear microscopy (each positive smear will be reconfirmed by another smear to reduce the	Milestone 4 - Finish Sample Examination and Evaluation	targeted				1 day	1 day	1 day								
		reached														
KPI 8. Yield of TB among screened individuals	Milestone 4 - Finish Sample Examination and Evaluation	targeted				4%	4%	4%								
		reached														
KPI 9. HIV prevalence among screened individuals	Milestone 4 - Finish Sample Examination and Evaluation	targeted				25%	25%	25%								
		reached														
KPI 10. Percentage of HIV-coinfection among TB-patients	Milestone 4 - Finish Sample Examination and Evaluation	targeted				50%	50%	50%								
		reached														
KPI 11. The proportion of diagnosed TB patients starting TB treatment	Milestone 4 - Finish Sample Examination and Evaluation	targeted				95%	95%	95%								
		reached														
KPI 12. Sensitivity and Specificity of Rats as triage Tool compared with Xpert	Milestone 5 - Data Analysis Accuracy and Yield	targeted											80% sens, 80% spec			
		reached														
KPI 13. Top Down Cost Effectiveness of Rats & Xpert	Milestone 5 - Data Analysis Accuracy and Yield	targeted											46 $/ Participant Screened 1,589 $/ TB Positive Patient Found			
		reached														
KPI 14. Top Down Cost Effectivness of Rats & Smear Microscopy	Milestone 5 - Data Analysis Accuracy and Yield	targeted											42 $/ Participant Screened 1,657 $/ TB Positive Patient Found			
		reached														
KPI 15 . Yield of TB when confirmed with Xpert	Milestone 5 - Data Analysis Accuracy and Yield	targeted											4%			
		reached														
KPI 16. Yield of TB when confirmed with microscopy	Milestone 5 - Data Analysis Accuracy and Yield	targeted											3%			
		reached														

Outcomes
Determined the sensitivity and specificity of detection rats for active TB case finding
Determined the yield of active TB case finding using detection rats and Xpert MTB/RIF in a prison population in Morogoro and Maputo
Generated paramount input for determining the cost-effectiveness of detection rats when deployed as a triage tool for active TB case finding