UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH AND SOCIAL WELFARE

NATIONAL TUBERCULOSIS AND LEPROSY PROGRAMME

NTLP ANNUAL REPORT 2013

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TABLE OF CONTENTS

List of tables ---- 3
List of figures ---- 4
List of annexes ---- 4
List of abbreviation ---- 6
ACKNOWLEDGEMENT ---- 8

1 GENERAL BACKGROUND ---- 10
1.1 Demographic and socio-economic profile ---- 10
1.2 Summary of Health Services ---- 10
1.3 Summary of NTLP activities ---- 10
1.4 Financial Support ---- 11
2 HUMAN RESOURCE DEVELOPMENT ---- 13
2.1 Staff establishment ---- 13
2.1.1 Tuberculosis and Leprosy Central Unit (TLCU) ---- 13
2.1.2 Regional Tuberculosis and Leprosy Coordinators (RTLCs) ---- 14
2.1.3 District Tuberculosis and Leprosy Coordinators and TB/HIV Officers ---- 15
2.2 Training activities, meetings and conferences ---- 15
2.2.1 Trainings ---- 15
2.2.2 Meetings ---- 16
3 TUBERCULOSIS CONTROL SERVICES ---- 17
3.1 Tuberculosis case notification 2013 ---- 17
3.1.1 Tuberculosis notification by regions ---- 17
3.1.2 Tuberculosis case notifications disaggregated by sex and age ---- 18
3.1.3 Tuberculosis notification rate ---- 19
3.1.4 Tuberculosis re-treatment cases ---- 20
3.2 Tuberculosis treatment outcome for cohort notified in 2012 ---- 20
3.2.1 New and relapse cases ---- 20
3.2.2 Treatment outcome of re-treatment cases notified in 2012 ---- 22
3.3 Collaborative TB/HIV activities ---- 22
3.3.1 TB/HIV case finding 2013 ---- 23
3.3.2 Regional performance on HIV testing and counseling and ART uptake ---- 23
3.4 Management of Pediatric TB ---- 24
3.4.1 Childhood TB notifications 2013 ---- 24
3.5 Management of MDR-TB ---- 25

3.5.1 MDR TB enrollment ---- *25*
3.5.2 Enrolled MDR TB patients by region in 2013 ---- *26*
3.5.3 Treatment outcomes of MDR TB cases enrolled in 2010 ---- *27*
4 LEPROSY CONTROL SERVICES---- 28
4.1 Leprosy Case Notification ---- 28
4.2 Registered prevalence ---- 31
4.3 Leprosy treatment outcome---- 33
4.3.1 Treatment outcome of PB leprosy ---- *33*
4.3.2 Treatment outcome of MB leprosy ---- *34*
4.4 Activities related to prevention of disabilities (POD) ---- 36
4.4.1 People with leprosy related disabilities---- *36*
4.4.2 Leprosy reactions ---- *36*
4.4.3 Specialized care of people with disabilities ---- *37*
4.4.4 Footwear Programme ---- *38*
5 LABORATORY SERVICES ---- 41
5.1 Collaboration with Partners ---- 41
5.2 Laboratory Workload---- 41
5.2.1 Culture analysis ---- *42*
5.2.2 DRUG SUSCEPTIBILITY TESTING (DST) – PROPORTIONAL METHOD ---- *44*
5.3 Genexpert MTB/Rif Implementation in Tanzania – Rapid DST ---- 45
5.3.1 The main aims of the Xpert assessment were as follows:---- *46*
5.3.2 Observation on GXP Implementation in the Country---- *46*
5.4 External Quality Assurance of Drug Resistance ---- 49
5.5 Overall TB Laboratory Network Evaluation ---- 50
5.5.1 Strengths---- *50*
5.5.2 Challenges ---- *50*
5.5.3 Recommendation ---- *51*
6 OPERATIONAL RESEARCH ACTIVITIES ---- 52
6.1 First National Tuberculosis Prevalence Survey ---- 52
7 PROGRAMME SUPPORT ACTIVITIES---- 54
7.1 Procurement and Supply Management of Anti-TB and Anti-Leprosy Medicines - 54
7.2 Community empowerment activities ---- 56
7.2.1 Engagement of Non- Governmental Organization (NGOs) and other Civil Society Organizations (CSOs) in community TB control activities------ 57
7.2.2 Patient Centred Treatment (PCT) ---- *57*
7.2.3 Involvement of community TB health workers---- *57*

7.3 Advocacy, Communication and Social Mobilization (ACSM) activities ---------- 59
7.3.1 Commemorations ---------- *59*
7.3.2 Community sensitization ---------- *59*
7.3.3 Leprosy control activities ---------- *59*
7.4 Logistic Support ---------- 60
7.4.1 Transport ---------- *60*
7.5 Public and Private Partnership (PPP) ---------- 61
7.6 TB in Mining sector ---------- 61
7.7 Supervision ---------- 62
7.7.1 Achievement ---------- *62*
7.7.2 Gaps identified ---------- *62*
7.8 Data Quality Assessment (DQA) ---------- 63
7.9 Evaluation of TB surveillance system ---------- 63
7.9.1 Background ---------- *63*
7.9.2 Objectives ---------- *64*
7.9.3 Methods ---------- *64*
7.9.4 Main findings ---------- *64*

List of tables

Table 1: Cash received through NTLP

Table 2: Approximate value of goods and services provided in kind

Table 3: Health workers trained on different courses in 2013

Table 4: Tuberculosis cases notified in Tanzania 2012 – 2013

Table 5: Tuberculosis treatment of all forms of TB new and relapses notified in 2012

Table 6: Treatment outcomes of re-treatment notified in 2012

Table 7: New leprosy cases detected by indicators in 2013 by regions

Table 8: Districts with prevalence or detection rate greater or equal to 1.0/10,000 population in 2013

Table 9: Treatment outcome of PB leprosy reported in 2012

Table 10: Treatment outcome of MB leprosy notified in 2011

Table 11: Leprosy cases started treatment with corticosteroid in 2013

Table 12: Number of surgeries, prosthesis fitted and repair in regions 2013

Table 13: Protective Footwear distributed/ produced to PALs in regions by type in 2013

Table 14: Materials and tools distributed for fabrication of special and local shoes production per region in 2013

Table 15: Culture and DST Results

Table 16: Culture indicators

Table 17: DST Profile

Table 18: Sites included in FIND-CTRL assessment visits conducted in September 2013

Table 19: Summary analysis of the Xpert MTB RIF in 2013

Table 20: Summary EQA (drug resistance)

Table 21: Stock status of TB and Leprosy medicines at the end of December 2013

Table 22: Stocks of anti-TB and leprosy medicines distributed in the country in 2013

Table 23: Community contribution to TB control and Patient care for 2012 and 2013

List of figures

Figure 1: Distribution of TB cases notified by regions in 2013

Figure 2: Percentage of change of notification by region between years 2012 – 2013

Figure 3: Age and Sex distribution of new smear positive TB cases notified in 2013

Figure 4: Trends of TB notification rates for all-forms and new smear positives: 2005 - 2013

Figure 5: Trends of Re-treatment TB cases notified form 2003 to 2013

Figure 6: Treatment success rate by region of TB cases (new and relapse) notified in 2012

Figure 7: Trend of TB (new smear +) treatment outcomes for cohorts notified: 2001 – 2012

Figure 8: Trend of TB patients counseling and testing for HIV, initiated CPT and ART: 2007 – 2013

Figure 9: HIV testing among TB patients in 2013

Figure 10: Trend of pediatric TB case notified among new cases: 2009- 2013

Figure 11: Trends of MDR TB Patients enrolment by Year

Figure 12: Age and Sex distribution of MDR TB cases enrolled on treatment in 2013

Figure 13: Distribution of MDR TB cases enrolled on treatment by regions in 2013

Figure 14: MDR TB outcomes in 2009, 2010 & 2011

Figure 15: The contribution of regions of new cases detected in 2013

Figure 16: Trends of new leprosy cases reported: 1990 – 2013

Figure 17: Trends of MB cases, children and females among new leprosy cases: 2003 -2013

Figure 18: Trend of disability grade 2, percentage among new cases and rates per 1,000,000 populations

Figure 19: Trends of new leprosy cases detected and registered in Tanzania 1983 – 2013

Figure 20: Trends of leprosy cases completed treatment: 2003 – 2012

Figure 21: Quarterly monitoring of culture performance by the CTRL in 2013

Figure 22: Summary of the liquid culture implementation

Figure 23: Summary of the re-treatment specimen received from 2012-2013

Figure 24: Summary of the specimens received in 2013

Figure 25: Genexpert testing sites per year – Tanzania

Figure 26: Installation timeline for GeneXpert Site in Tanzanian

Figure 27: Distribution of TB prevalent cases in relation to HIV status by age groups

List of annexes

Annex 1: Tuberculosis patients (all forms) notified in Tanzania by region in 2013

Annex 2: Age and sex distribution of new smear positive pulmonary tuberculosis patients notified in 2013

Annex 3: Treatment results of new TB patients (AFBN, AFBP, Extra-Pulmonary) notified in 2012

Annex 4: Treatment results of all re-treatment (Relapses, Return and other) TB patients notified in 2012

Annex 5: Tuberculosis and HIV positive patients notified 2013

Annex 6: Leprosy Patients reported by districts in 2013

Annex 7: Age and sex distribution for newly detected leprosy patients in reported by region in 2013

Annex 8: Disability grading of newly detected leprosy patients reported by region in 2013

Annex 9: Leprosy Patients Registered by region at the end of 2013

List of abbreviation

ACSM	Advocacy Communication and Social Mobilization
AFB	Acid-Fast Bacilli
AIDS	Acquired Immuno-Deficiency Syndrome
CDC	Centres for Disease Control (America)
CTRL	Central Tuberculosis Reference Laboratory
DDH	District Designated Hospital
DHMT	District Health Management Team
DMO	District Medical officer
DOTS	Directly Observed Treatment Short Course
DTLC	District Tuberculosis and Leprosy Coordinator
E	Ethambutol
EH	Ethambutol and Isoniazid
EP (TB)	Extra-pulmonary (Tuberculosis)
ETR	Electronic Tuberculosis Register
FDC	Fixed – Dose Combination
GFATM	Global Fund to fight AIDS/HIV Tuberculosis and Malaria
GLRA	German Leprosy and TB Relief Association
H	Isoniazid
HAART	Highly Active Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
ICAP	International Centre for AIDS Care and Treatment Program
IDA	International Development Agency
IEC	Information Education and Communication
IUATLD	International Union Against TB and Lung Disease
KNCV	Royal Netherlands Tuberculosis Foundation
LEC	Leprosy Elimination Campaign
MB	Multi bacillary (leprosy)
MDR-TB	Multi-Drug Resistant Tuberculosis

MNH	Muhimbili National Hospital
MOHSW	Ministry of Health and Social Welfare
MSD	Medical Store Department
MSH	Management Science for Health
NACP	National AIDS Control Programme
NHA	National Health Audit
NGO	Non- Governmental Organization
NIMR	National Institute of Medical Research
SNL	Supranational Laboratories
NTLP	National Tuberculosis and Leprosy Program
PALs	People affected by leprosy
PATH	Programme for Appropriate Technology in Health
PB	Pauci bacillary (leprosy)
PCT	Patient Centred Treatment
PEPFAR	President's Emergency Plan Funds or AIDS Relief
PLHIV	People Living with HIV
PoD	Prevention of Disabilities
PRS	Preventive and Reconstruction Surgery
R	Rifampicin
RTLC	Regional tuberculosis and leprosy Co-ordinator
RLT	Regional Laboratory Coordinator
S	Streptomycin
TB	Tuberculosis
TLCU	Tuberculosis and Leprosy Central Unit
TSRU	TB Surveillance and Research Unit
WHO	World Health Organization
Z	Pyrazinamide

ACKNOWLEDGEMENT

This report is a summary description of activities implemented by the National Tuberculosis and Leprosy Programme (NTLP) for the year 2013. The purpose of this document is to share with other stakeholders what transpired during the year and the progress made in the control of Tuberculosis, TB/HIV and Leprosy country wide.

Firstly, on behalf of the National Tuberculosis and Leprosy Programme, I would like to express our sincere gratitude to the management of the Ministry of Health and Social Welfare at large, for the support and encouragement extended to us during this period. We would like particularly to thank the Permanent Secretary, the Chief Medical Officer and all the directors at different departments, without whom our efforts alone could not have accomplished what we have achieved so far.

We are also grateful to our partners and stakeholders for their collaboration and guidance on various issues during the execution of NTLP activities.

We are indebted to many NTLP staff for their tireless routine work to attain the programme objectives. Regional TB and Leprosy Coordinators, District TB and Leprosy Coordinators, TB/HIV officers, DOT nurses and all health workers at periphery to name few, who also compiled and generated data used in in this report.

Special thanks to all the TLCU-staff for their insightful and detailed reviews which made the writing of this report possible. Their teamwork, experience and input were invaluable and greatly sharpened the content of this report.

Finally, I wish to recognize and appreciate the financial and technical support extended to the NTLP by the different development partners. These include:-

- Germany TB and Leprosy Relief Association (GLRA)
- The Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria (GFATM)
- Centres for Disease Control and Prevention (CDC)
- International Union Against TB and Lung Disease (IUATLD)
- United States Agency for International Development (USAID)
- Foundation for Innovative New Diagnostics (UNITAID/FIND)
- World health Organization (WHO)
- Novartis Foundation for Sustainable Development (NFSSD)
- Programme for Appropriate Technology in Health (PATH)
- Management Science for Health (MSH)
- Global Drug Facility (GDF)
- The Netherlands Tuberculosis Foundation (KNCV)

Your contributions were immensely important and we are very proud to be working with you against TB, TB/HIV and Leprosy.

Dr. Beatrice K. Mutayoba
PROGRAMME MANAGER
National Tuberculosis and Leprosy Programme
Ministry of Health and Social Welfare
October 2014

1 GENERAL BACKGROUND

1.1 Demographic and socio-economic profile

Tanzania population was projected to be 46,162,814 based on 2012 census with 51% of the population being female while male were 49%. The sex ratio was 95 in Tanzania and Tanzania Mainland while was 94 in Zanzibar. The population of urban inhabitants was 29.6 % of total population. About 52% of the population are the working age (15 – 64); 44% are young (0 – 14 years) while 4% are elderly (65+ years). The annual growth rate is estimated at 2.7% from 2002 to 2012 census. The population of Zanzibar is at 1,341,713 with a projected annual growth rate of 2.8%. Agriculture is still the major source of livelihood for majority of the population in Tanzania.

According to World Bank report, 2013 per capita income (GDP per capita) is US $ 694.77 categorizing Tanzania as a low income country. However, in the past five years the country has enjoyed good progress in economic growth averaging above 6%.

1.2 Summary of Health Services

Health care delivery system in the country is well established with more than 6,214 health facilities. The major provider of health services is the government, which own or run 69% of all the health facilities including the DDH. Tanzania is classified as one of the least developed countries, with total expenditure on health per capita of US$ 109 (WHO).

Data from Health Information Management System (HMIS) of the Ministry of Health and Social Welfare shows that communicable diseases are still the major cause of morbidity and mortality in the country driven by HIV epidemic with national prevalence of 5.1% in the population aged 15-49 years. TB has continued to be among the top ten cause of death and is ranked 6th among admissions for those aged five years and above in the country.

1.3 Summary of NTLP activities

In 2013 NTLP implemented its annual plan in line with NSP IV (2009- 2015). All activities conducted focused on addressing six NSP strategic objectives i.e. (i) Achieve universal access to quality DOTS and MDT services in both public and private sectors. (ii) Reduce the burden of TB/HIV and drug resistant TB with special emphasis on vulnerable populations. (iii) contribute to health system strengthening based on primary health care (iv) scaling up involvement of more private health care providers (v) empowering patients and community members to take active participation in TB prevention and care (vi) collaborating with internal and external partners in conducting relevant operational research.

On leprosy, the programme concentrated on leprosy elimination by actively conducting targeted leprosy elimination campaigns in districts with high prevalence of the diseases and strengthening among people affected by leprosy (PALs).

During this period, a number of NTLP staff attended international and national workshops, training courses, meetings and conferences including the 44th IUATLD and TSRU meetings. At these events, the country had an opportunity to share their best practices with other countries.

1.4 Financial Support

NTLP Financing and Partner Contributions

The Ministry of Health and Social Welfare through National Tuberculosis and leprosy programme (NTLP) received US$ 10,229,949 through government consolidated funds, external grants and loans. The programme also received in-kind US$ 3,387,981 for various TB, TB/HIV and Leprosy activities. Government resources channeled through the programme for programme management and at lower levels to support the health system and infrastructure maintenance as well as staff remuneration for staff working (nurses, clinicians and lab staff a lower levels we made a full time equivalent approximation) for TB amounted about US$ 2,083,440 (Data collected for 2012 NHA) excluding contribution from health insurance schemes.

Direct cash was received from Centers for Disease Control and Prevention (CDC) grant, The Global Fund (GFR6-TFM) grant, The world Bank (IDA) loan, European and Developing Countries Clinical Trials Partnership (EDCTP) grant, German TB and Leprosy Relief Association (GLRA) grant and World Health Organization (WHO) grant as detailed in Table 1 below.

Table 2 shows known monetary value of in-kind support from PATH/USAID grant who supported NTLP through field operations by directly administering TB and TH/HIV interventions on behalf of the programme within 29 districts in Mwanza, Arusha, Kilimanjaro and Pwani, Dar es Salaam and Zanzibar. Others in the list are resources that came from Global Drug Facility (GDF/WHO) in form of Pediatric First line anti-TB drugs; UNITAID/FIND who provided Laboratory equipment, supplies and Technical Assistance to Central TB Reference Laboratory (CTRL).

The programme also worked in close collaboration with several other international and local institutions and agencies whose contribution was very significant. Even though the programme could not establish exact monetary value of the support from these organizations but were potential partners in TB and TB/HIV control such as ICAP on Pediatric TB, CRS and TB-REACH supporting Laboratory and community TB, MSH on Programme Management and strategic planning and JSI supporting Logistics and Supply chain management to mention but a few.

Many other local research institutions, academia, private sector organizations and community based Civil Society Organizations (CSSOs) not herein mentioned were also active partners/ collaborators in various interventions.

Table 1: Cash received through NTLP

Sn	*Source of Funds*	*Amount in US$*
1	*Government of Tanzania GOT form consolidated fund*	*2,083,440*
2	*German TB and Leprosy Relief Association GLRA*	*453,004*
3	*Centre for Disease Control and Prevention CDC*	*1,762,430*
4	*European & Developing Countries Clinical Trials Partnership DCTP*	*100,145*
5	*World Health Organization Country Office - WR*	*30,785*
6	*World Bank WB – loan under PHLNP*	*89,155*
7	*Global Fund Round Six TB Grant*	*5,710,990*
		10,229,949

Table 2: Approximate value of goods and services provided in kind

1	*GDF/WHO : Anti-TB Drugs (Pediatric - First Line)*	*127,690*
2	*Program for Appropriate Technology in Health (PATH)*	*2,990,751*
3	*UNITAID/FIND : Lab Equipment & TA*	*269,540*
		3,387,981

2 HUMAN RESOURCE DEVELOPMENT

The National Tuberculosis and Leprosy Programme is composed of both government and contract employees at central unit (TLCU) and councils with focus on strengthening TB, TB/HIV and Leprosy services in the country. Contract employees have been recruited through various grant support including GFATM, CDC/PEPFAR and GLRA.

During this reporting year, the programme has embarked on building capacity of staff on TB, TB/HIV, Paediatric TB, ACSM, community TB and Laboratory through various trainings with funding sources from diverse partners namely PATH, MSH and CDC PEPFAR in accordance to the national guidelines.

2.1 Staff establishment

In this reporting year there were 31 staffs at central level and 26 staffs at regional level identified as Regional Tuberculosis and Leprosy Programme Coordinators (RTLC) as well as 166 District Tuberculosis and Leprosy Coordinators (DTLC). New RTLCs were recruited for Njombe and Simiyu regions. The process for deploying RTLCs for Geita and Katavi were underway during this reporting period. The same applied for the DTLCs in the respective district councils. For those regions and councils which were not fully established, RTLCS and DTLCS from the mother regions and councils had the responsibility to oversee and coordinate TB and leprosy control activities in the newly established regions and councils respectively until when they were fully fledged to own their coordinators.

During this period, the Programme Manager Dr S. Egwaga, Dr F. Lwilla and Dr B. Njako retired from public service. In this reporting period two staff left the Programme to other institutions namely Dr S. Matiku and Dr M. Rugola. Dr D. Kamara was appointed an Acting Programme Manager.

2.1.1 Tuberculosis and Leprosy Central Unit (TLCU)

The list of TLCU by December 2013 was as follows:

1. Dr D. Kamara - Programme Officer
2. Dr M. Nyamkara – TB/HIV Coordinator
3. Mr B. Msuya – Head Accountant
4. Mr L. Ross – Accounts Assistant
5. Mr J. Ngowi – Programme Pharmacist
6. Dr J. Lyimo - MDR Coordinator
7. Mr D. Kayumba – Administrator
8. Ms D. Semu – Prevention of Disabilities Coordinator
9. Mr P. Shunda - Orthopaedic Technologist
10. Ms D. Kasembe – Training Coordinator
11. Ms B. Doula – Head , National TB Reference Laboratory
12. Ms L. Ghasia – Health Secretary

13. Mr S. Bossy – Senior Laboratory Technician
14. Ms D. Mtunga – Laboratory Technician
15. Dr A. Tarimo – Public Private Partnership Coordinator
16. Ms L. Ishengoma – Community TB care Coordinator
17. Ms A. Mshanga – Advocacy Communication and Social Mobilization Coordinator
18. Mr E. Nkiligi – Data Manager
19. Mr N. Mwangaba – Data analyst
20. Ms K. Kadege – Assistant Accountant
21. Ms E. Mapunda - Assistant Accountant
22. Ms C. Chipaga - Data entry clerk
23. Ms J. Goodluck - Data entry clerk
24. Ms G. Tairo - Data entry clerk
25. Ms K. Kassim - Data entry clerk
26. Mr M. Penza - Data entry clerk
27. Ms A. Ponera - Secretary
28. Mr P. Kalombora – Office Attendant
29. Mr E. Mdika - Driver
30. Mr A. Shabani – Driver
31. Mr D. Kanyandeko - Driver

2.1.2 Regional Tuberculosis and Leprosy Coordinators (RTLCs)

At the reporting period, there were 24 RTLCs who coordinated TB and Leprosy control services at regional level in Tanzania mainland and 2 RTLCs from Zanzibar. Their names and respective regions are listed below:

1. Dr E. Ntulwe – Arusha
2. Dr J. Msangi - Kinondoni
3. Dr N. Kapalata – Temeke
4. Dr S. Mbarouk – Ilala I
5. Dr I. Mteza – Ilala II (Muhimbili & Private Hospital Dar es Salaam)
6. Dr M. Masimba – Dodoma
7. Dr F. Mhomisoli /Dr. T. Urio– Iringa
8. Dr M. Ndyeshobora - Kagera
9. Dr D. Leornard – Kigoma
10. Dr M. Chelangwa – Kilimanjaro
11. Dr A. Pegwa – Lindi

12. Dr M. Khan – Mara
13. Dr Q. Qawoga – Manyara
14. Dr Y. Mwasubila – Mbeya
15. Dr E. Tenga – Morogoro
16. Dr W. Byemelwa – Mwanza
17. Dr R. Mnandowa /Dr. M. Kodi - Mtwara
18. Dr A. Mpangile – Pwani
19. Dr P. Yamsebo - Rukwa
20. Dr W. Mtumbuka – Ruvuma
21. Dr J. Majigwa – Shinyanga
22. Dr M. Kimala – Singida
23. Dr R. Hussein Tabora
24. Dr S. Kiluwa – Tanga
25. Dr J. Mshana – Unguja
26. Dr H. Said – Pemba

2.1.3 District Tuberculosis and Leprosy Coordinators and TB/HIV Officers

By December 2013, there were 166 DTLCs and 136 TB/HIV Officers at district level. The list of DTLCs and TB/HIV Officers with their respective districts is not attached following inappropriate information from the districts councils on their deployment during this reporting period as a result of transfers, retirement, turnover and phasing out of PATH which was the main source of fund for salaries and other incentives to most of them respectively.

2.2 Training activities, meetings and conferences

2.2.1 Trainings

During this year, various but few trainings were conducted among health care workers as a result of insufficient funds. The trainings covered mostly TB/HIV collaborative activities, Paediatric TB management including TOT training, MDR TB, Data Management (ETR.Net) and DTLC course to empower district coordinators with skills and knowledge on management of TB and Leprosy control activities. The purpose of these trainings was to build capacity of health care workers towards improving quality of care in those areas. These trainings were supported by CDC/PEPFAR, WHO, USAID/PATH and GLRA. In total over 913 healthcare workers were trained during this year on the stipulated areas at regional, district and health facility level as summarised in the table below

Table 3: Health workers trained on different courses in 2013

Region	Type of training					DTLC course (WHO, GLRA support)	Total No. trained
	ToTs training for management of TB in children (CDC support)	Management of TB in Children (CDC support)	Collaborative TB/HIV activities (CDC support)	MDR (PATH support)	ETR. Net (CDC support)		
Mtwara		70		4			74
Mbeya		70		2			72
Iringa		73		9			82
Singida		64					64
Tabora		68		4			72
Lindi		66					66
Dar Temeke		35		11			46
Dar Ilala				15			15
Kinondoni				22			22
Morogoro		35		11			46
Tanga		70		11			81
Mwanza				22			22
Kagera				2			2
Njombe				3			3
Pwani				9			9
Mara				11			11
Manyara				3			3
Kilimanjaro				11			11
Shinyanga		35					35
Ruvuma		68					68
Others	24		48		17	20	109
Total	**24**	**654**	**48**	**150**	**17**	**20**	**913**

2.2.2 Meetings

Neither programme meetings such as annual meetings or coordinating meetings nor conferences were attended due to limited funds. Regional quarterly meetings for RTLCs and DTLCs were conducted locally at regional level.

3 TUBERCULOSIS CONTROL SERVICES

3.1 Tuberculosis case notification 2013

A total of 65,732 cases of all forms were notified in 2013, which shows an increase of 1,840 cases or 2.9% compared to the year 2012. Very interestingly the proportional increase looks the same for both Mainland and Zanzibar. Among the cases notified, new cases were 62,952 (95.8%) and the retreatment cases were 2,780 (4.2%) which is almost same proportions for the past three years. Among the new TB cases, 24,565 (39%) were smear-positives, 21,393 (37%) were smear negatives and 14, 595 (23%) were extra-pulmonary TB with 10.6% being children under 15 years old. Both the number and proportions of new smear positive cases detected shows a 2% decrease compared to the previous year 2012. Table 3 below shows the comparison of TB notification in 2012 and 2013 by TB category groups.

Table 4: Tuberculosis cases notified in Tanzania 2012 – 2013

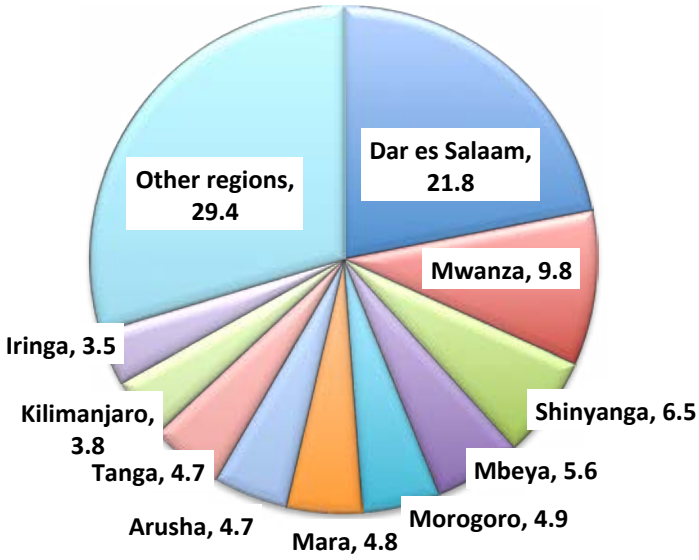
Indicators	**2012**		**2013**		**Change**	
	Cases	**%**	**Cases**	**%**	**num.**	**%**
All forms	63,892		65,732		1,840	2.9
New forms						
- Pulmonary smear positive	25,138	39.3	24,565	37.4	(573)	-2.3
- Pulmonary smear negative	21,393	33.5	23,371	35.6	1,978	9.2
- Extra-pulmonary	14,595	22.8	15,016	22.8	421	2.9
Total	**61,126**	**95.7**	**62,952**	**95.8**	**1,826**	**3.0**
Re-treatment						
- Relapse	1,052	1.6	1,101	1.7	49	4.7
- Failure	154	0.2	133	0.2	(21)	-13.6
- Return to control	201	0.3	251	0.4	50	24.9
- others	1,359	2.1	1,295	2.0	(64)	-4.7
Total	**2,766**	**4.3**	**2,780**	**4.2**	**14**	**0.5**
Notification rates (all forms) 100,000popn /yr)	142		142		0	0.1
Notification rates (new sm+/ 100,000popn/yr)	56		53		(3)	-4.9
Children (<=14 yrs)	5,283	8.6	6,658	10.6	1,375	26.0

3.1.1 Tuberculosis notification by regions

Although the proportion of cases notified in Dar es Salaam city is progressively declining, it is still the major contributor with 21.8%, followed by Mwanza region with 9.8% and Shinyanga region with 6.5%. A list of regions which contributed more than 4% remained the same as for the past three year with some other major cities increasing their contribution. Figure 1 below shows individual regions contribution by percentage and it indicates that over 70% of cases notified during the reporting year came from only 10 regions in the united republic of Tanzania. The remaining 20 regions contributed only a third of all TB cases notified in

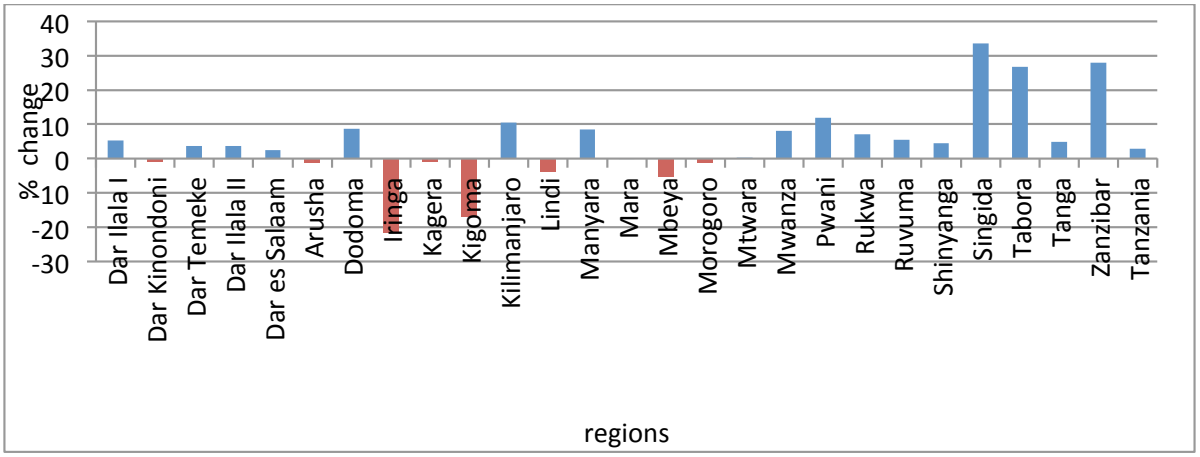
2013. The reasons for such huge variations in among the regions need to be explored and investigated.

Figure 1: Distribution of TB cases notified by regions in 2013



From the 2013 data, TB case notification changes of most regions improved positively compared to those of 2012 except in Iringa, Kigoma, Mbeya and Lindi as shown in figure 2 below.

Figure 2: Percentage of change of notification by region between years 2012 – 2013.



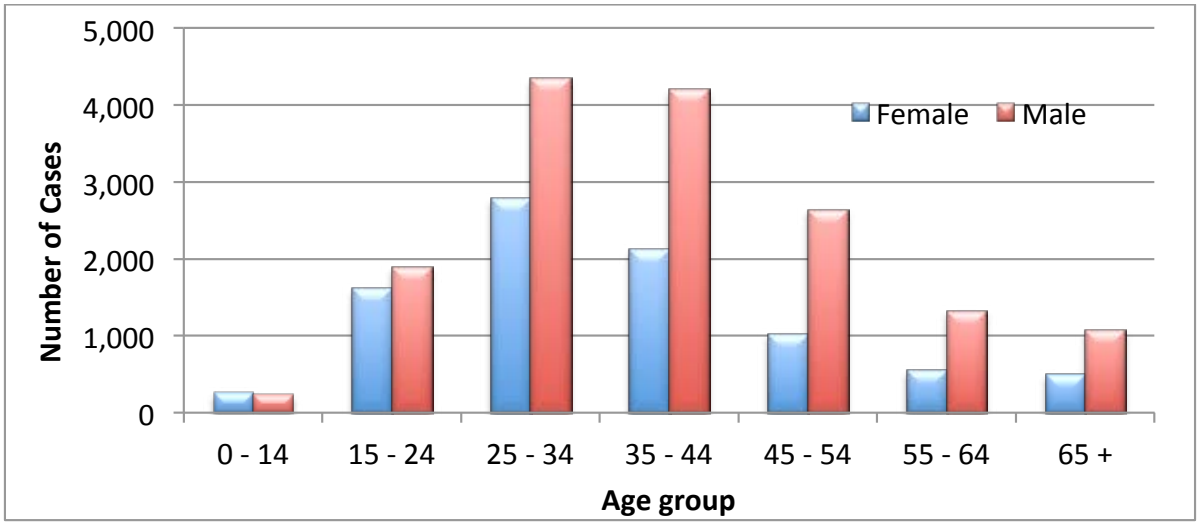
3.1.2 Tuberculosis case notifications disaggregated by sex and age

The age-sex distribution of the new TB cases notified in 2013 shows that 36,946 (58.7%) cases were males and 26,006 (41.3%) females with a sex ratio of over 1.4. The number of children aged 0–14 years old notified among new cases were 6,658 (10.6%) which is a 2% increase compared to 2012 notification.

Age-sex distribution of the new smear positive cases as in previous years shows that, the

highest number of TB cases notified was in the age groups of 25-34 years and 35-44 years for both males and females as summarized in Figure 3 below. Similar patterns were also observed among the new smear negatives and extra-pulmonary TB cases notified.

Figure 3: Age and Sex distribution of new smear positive TB cases notified in 2013

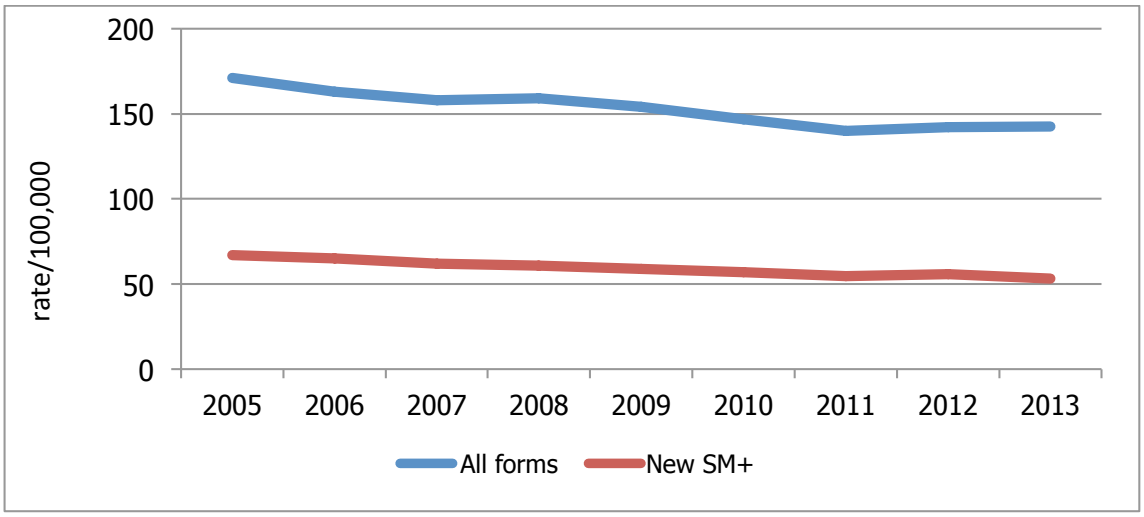


3.1.3 Tuberculosis notification rate

The notification rate of tuberculosis (all forms) in 2013 remained at 142 cases per 100,000 populations as for the year 2012. Notification rate of new smear positive tuberculosis cases decreased from 56 to 53 cases per 100,000. Dar es Salaam region had the highest TB notification rates in the country for both all forms and new smear positive cases at 311 and 152/100,000 people respectively. Kigoma and Rukwa regions and Pemba have the lowest notification rate (all forms) of below 45/100,000 population.

The trend of the notification rates for both new smear positive cases and all forms has progressively been declining since 2005 as shown in figure 4 below.

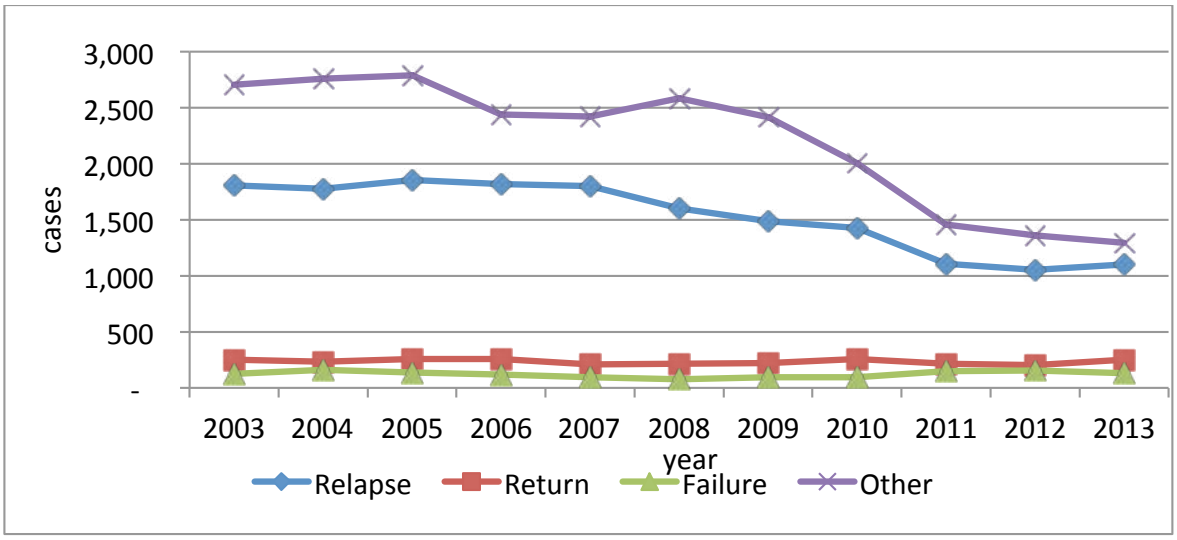
Figure 4: Trends of TB notification rates for all-forms and new smear positives: 2005 - 2013



3.1.4 Tuberculosis re-treatment cases

TB treatment cases notified in 2013 were 2,780 cases which is 4.2% of all cases notified. This represented a gradual decline of previously treated patients notified for the past five years. Most of the re-treatment cases were in the categories of others – 1,295 and relapse – 1,100. The categories of loss to follow up and failure were 251 and 133 cases respectively. Relapses and other cases shows downward trends while return after lost to follow up and failure show a slender upward increase from years 2009. The figure 5 below shows the trend of re-treatment cases for the past ten years.

Figure 5: Trends of Re-treatment TB cases notified form 2003 to 2013



3.2 Tuberculosis treatment outcome for cohort notified in 2012

3.2.1 New and relapse cases

Analysis of the TB cohort notified in 2012 shows that the overall treatment success for new and relapse cases was 90%. 117 (0.2%) failed treatment, 3,539 (5%) died while still on treatment and 1,015 (2%) lost to follow up. A total of 2,062 (3%) of the cases were not evaluated for treatment outcomes, some due to being transferred out of their regions.

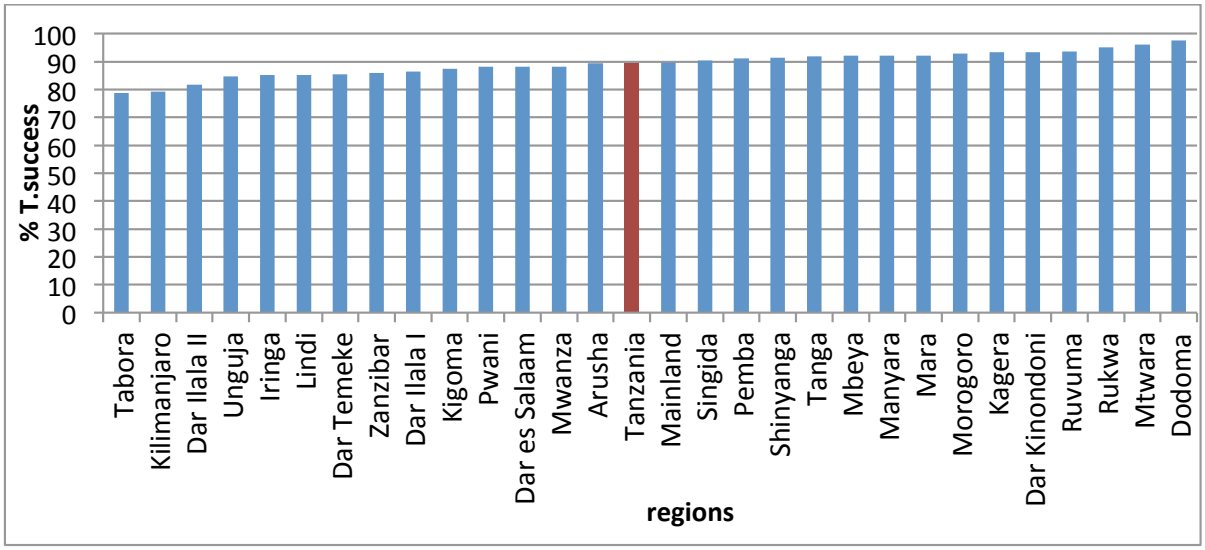
The treatment outcomes for individual groups of TB vary from 90% treatment success rate for new smear positive TB to 86% of TB relapses. The table below summarizes treatment outcomes for different groups.

Table 5: Tuberculosis treatment of all forms of TB new and relapses notified in 2012

Treatment Outcomes	new smear		new smear		extrapulmonary		Relapse		All forms	
	number	%	number	%	number	%	number	%	number	%
Cured	20,753	82					859	80	21,612	35
Treatment Completed	1,875	7	19,408	90	13,030	89	57	5	34,370	55
Treatment Success	22,628	90	19,408	90	13,030	89	916	86	55,982	90
Failure	82	0	0		0	0	14	1	96	0
Died	1,048	4	1,352	6	903	6	75	7	3,378	5
Out of Control	483	2	267	1	180	1	29	3	959	2
Transferred out	733	3	466	2	365	2	26	2	1,590	3
Total Evaluated	24,241	96	21,027	98	14,113	96	1,034	97	60,415	97
Reported/notified	25,232	100	21,520	100	14,657	100	1,068	100	62,477	100

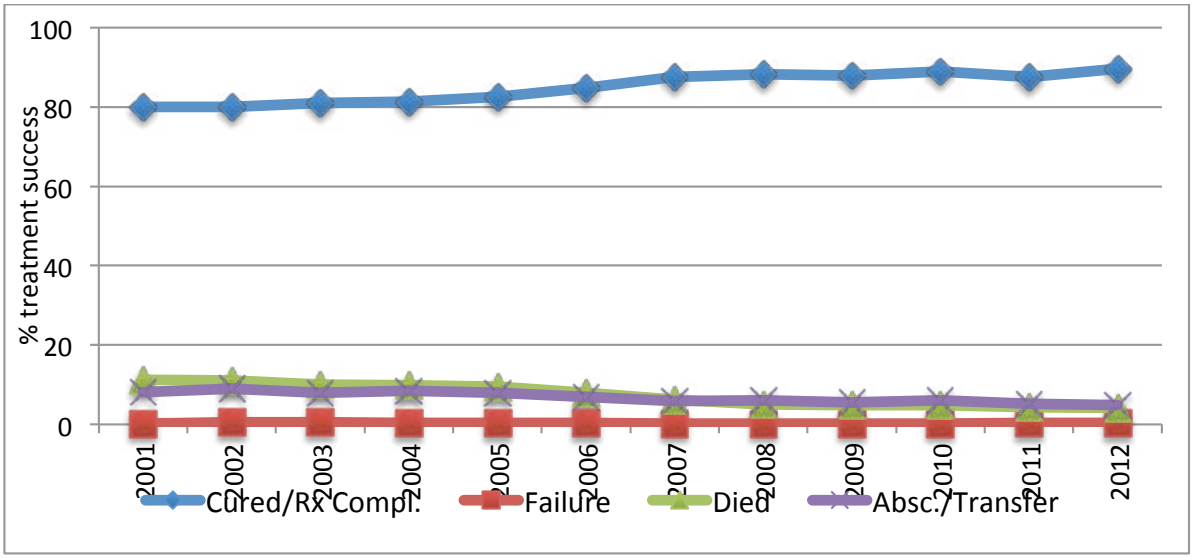
Further analysis of the cohort revealed that only three regions of Ilala II in Dar es Salaam, Kilimanjaro and Tabora had treatment success rates of below 85% and half of the rest performing above 90% figure 6 below.

Figure 6: Treatment success rate of TB cases (new and relapse) notified in 2012 by region



The trend of treatment outcome results for the new smear-positive patients in the past ten consecutive years show that the treatment success rate has improved from about 80% in 2001 to 90% in 2012 and consistently maintained above 85% since 2005. Similarly the mortality rate has been declining since 2006 from 8% to 5.4% in 2012.

Figure 7: Trend of TB (new smear +) treatment outcomes for cohorts notified: 2001 – 2012



3.2.2 Treatment outcome of re-treatment cases notified in 2012

TB re-treatment cases amounting 2,805 were notified in 2012 and among them 2,669 cases or 95% their treatment outcomes were available for cohort analysis. Overall a total 2,313 (86.7%) of those evaluated were either cured or completed treatment resulting in treatment success rate of 82.4%, death rate was 8.4% and both lost to follow up and transferred out accounting to 5.5%. Table 5 below summarizes the treatment outcomes for each category of the re-treatment cases.

Table 6: Treatment outcomes of re-treatment notified in 2012

Treatment Outcomes	Relapse		Failure		Return		Others		all previously treated	
	number	%	number	%	number	%	number	%	number	%
Cured	859	80	100	64	118	58	28	2	1,310	41
Treatment Completed	57	5	14	9	25	12	1,112	81	1,315	41
Treatment Success	916	86	114	73	143	71	1,140	83	2,625	82
Failure	14	1	13	8	3	1	5	0	46	1.4
Died	75	7	12	8	16	8	133	10	268	8
Out of Control	29	3	7	4	27	13	22	2	107	3
Transferred out	26	2	7	4	7	3	27	2	79	2
Total Evaluated	1,034	97	146	93	189	94	1,300	94	3,047	95
Reported/notified	1,068	100	157	100	202	100	1,378	100	3,205	100
Case holding		**97**		**93**		**94**		**94**		**0**

3.3 Collaborative TB/HIV activities

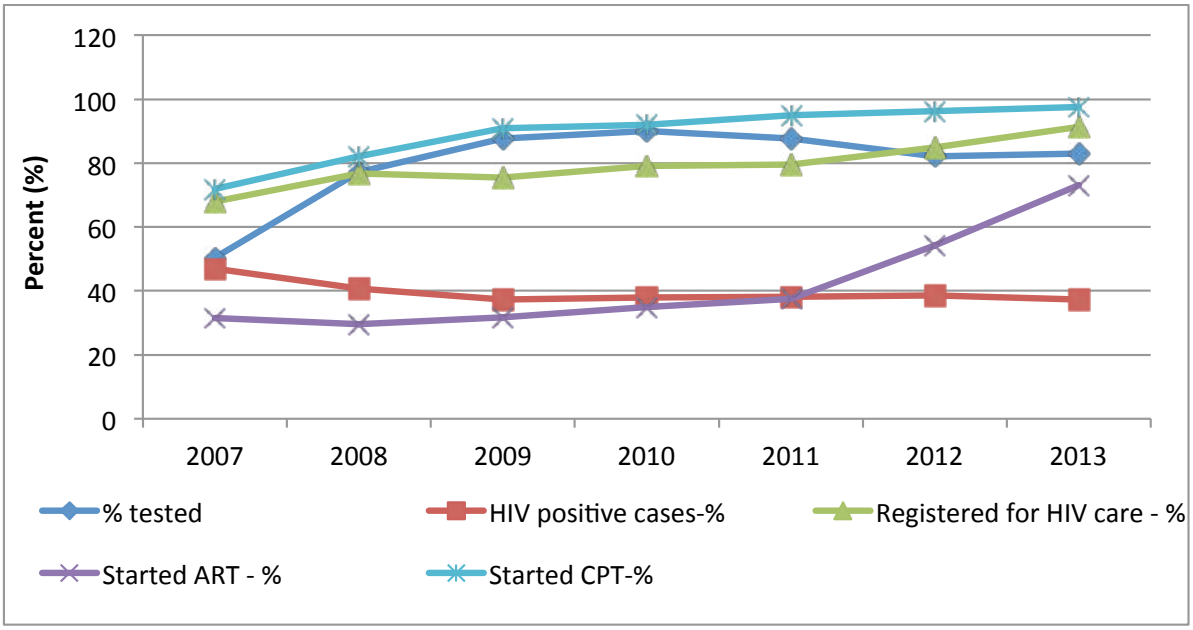
The Programme in collaboration with NACP revised the guidelines for initiation of ART among TB/HIV co-effected patients. The revision was based on the revised WHO recommendations. Furthermore, emphasis on early initiations among TB /HIV co-effected patients was discussed during TB/HIV implementing partners' meetings and during supportive supervision. 'One

stop shop' model for TB and HIV services are being scaled up to reach 500 health facilities. The effort has contributed to increased uptake of ART from 54% in 2012 to 73% in 2013. Collaborative efforts with NACP are under way to scale up Intensified TB case finding among PLHIV, Isoniazid Preventive Therapy among eligible PLHIV and Infection Control (3Is) to 300 more health facilities in 2014.

3.3.1 TB/HIV case finding 2013

The 2013 data shows that of 65,732 TB cases notified, 54,504 (83%) were counseled and tested for HIV status. Among those tested, 20,072 (37%) were found to be co-infected with HIV which is less by 1% compared to the co-infection rate in 2013. Furthermore, analysis shows that of the co-infected cases 18,354 (91%) cases were registered at HIV Care and Treatment Centres (CTCs) for HIV care and treatment services. Among them 19,596 (98%) were put on Co-trimoxazole Preventive Therapy (CPT) while 14,679 (73%) were initiated ART in both TB clinic and CTCs within the three months reporting period after a two weeks TB drugs tolerability period. Major improvement compared to 2012 cohort is the increase of patients initiated with ART from 10,993 (54%) to 14,679 (73%). Figure 8 below summarizes the TB/HIV indicators in the country from 2007 to 2013

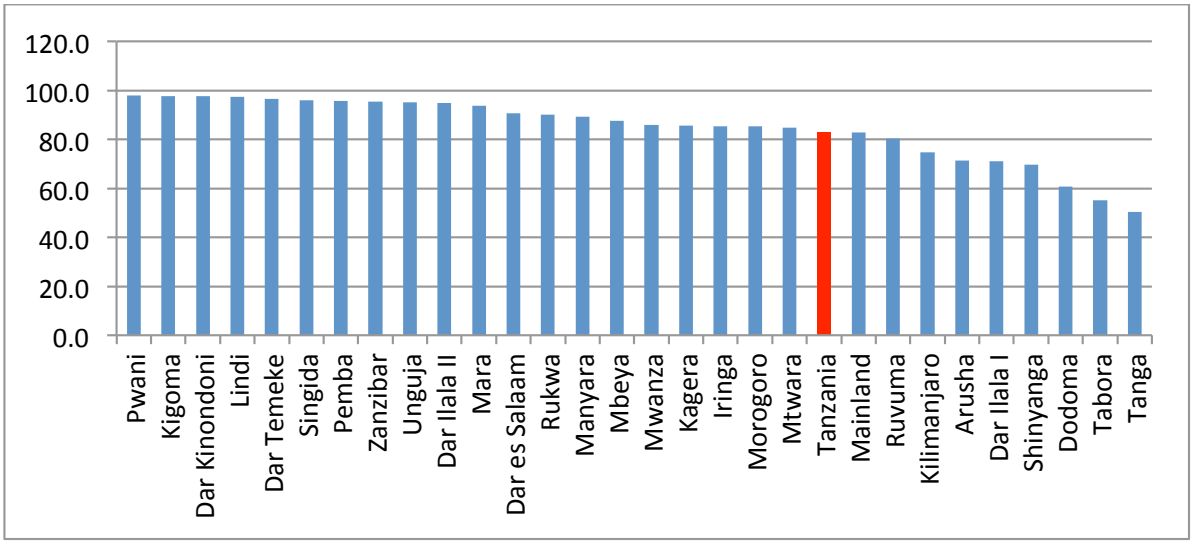
Figure 8: Trend of TB patients counseling and testing for HIV, initiated CPT and ART: 2007 – 2013



3.3.2 Regional performance on HIV testing and counselling and ART uptake

HIV counseling is an entry point for accessing HIV care, treatment and preventive services. In 2013 the national average was 83% which is below WHO target of 100%. The majority of the regions are above the national average and few regions are below these included: Ruvuma, Kilimanjaro, Arusha, Dar Ilala I, Shinyanga, Dodoma, Tabora and Tanga.

Figure 9: HIV testing among TB patients in 2013



3.4 Management of Pediatric TB

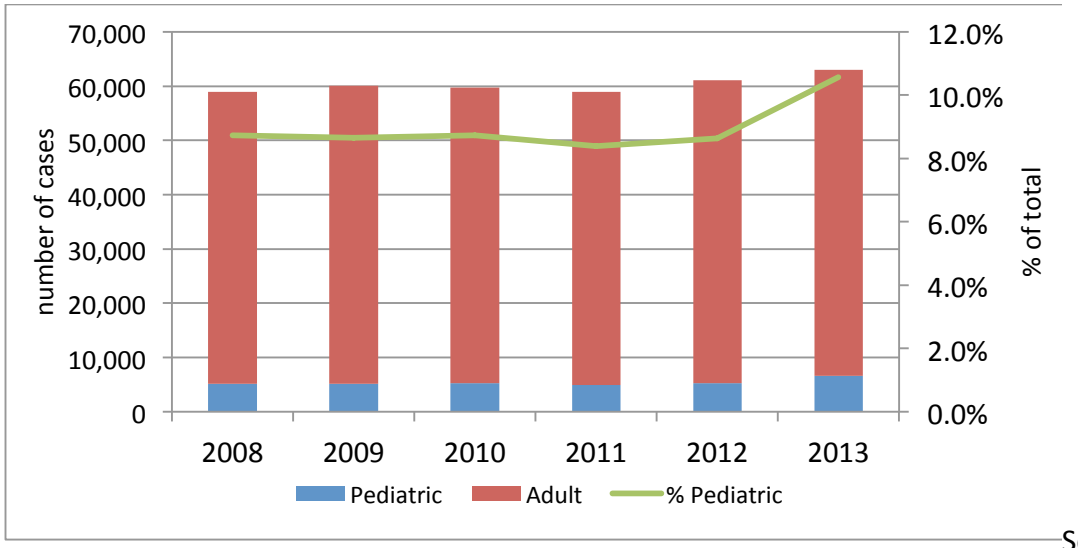
The programme completed revision of the second edition of peadiatric TB guidelines together with training package and job aids. Training on the management of childhood TB to health care providers was conducted across the country in high burden districts. These efforts have contributed in increasing paediatric TB notifications as well as strengthening the management of childhood TB.

3.4.1 Childhood TB notifications 2013

The 2013 data shows that of 62,952 TB cases notified 6,658 (10.6%) were children. This notification has increased compared to 2012 NTLP annual report which was 8.6%. Among regions reported to have higher contribution of childhood TB above the national average were Pemba 22.6%, Unguja 18.2%, Arusha 15.8% and Mwanza 15.1%.

Among childhood TB notified in 2013, smear positive were 496 (7.4 %), smear negative were 3,340 (50.2 %) and extra-pulmonary TB were 2,822 (42.4 %). Figure 10 below show contribution of pediatric TB among total notification in the country 2013.

Figure 10: Trend of pediatric TB case notified among new cases: 2009- 2013



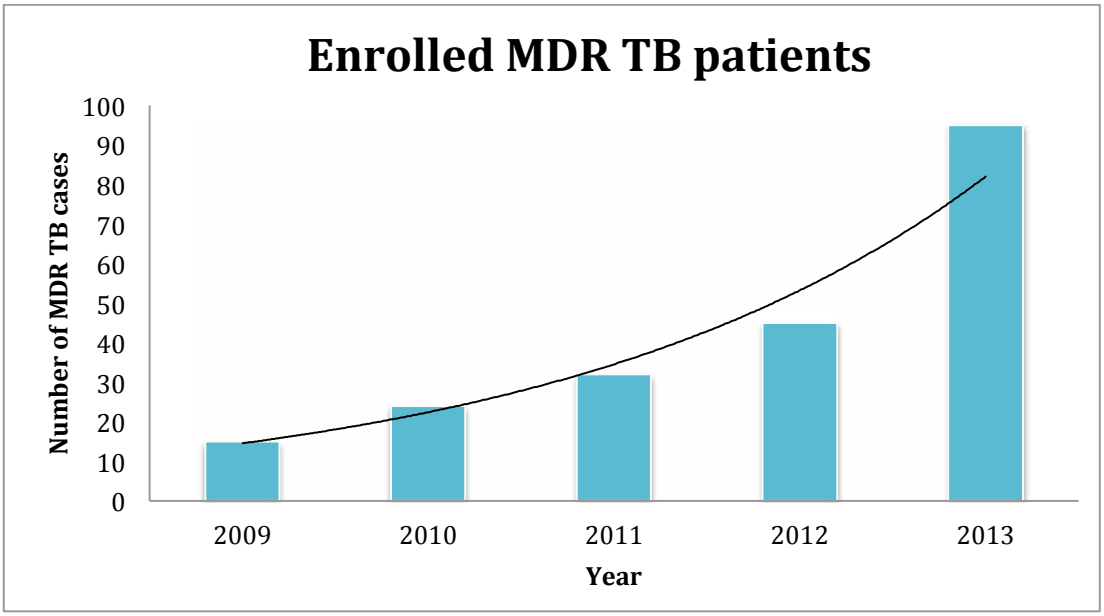
Sex distribution among children shows that a total of 261 (53%) female were found with smear positive compared to male 235(47%), smear negative male were 1,769 (53%) and female were 1,571(47%) and extra-pulmonary male were 1,585 (56%) and female were 1,237(44%).

3.5 Management of MDR-TB

3.5.1 MDR TB enrolment

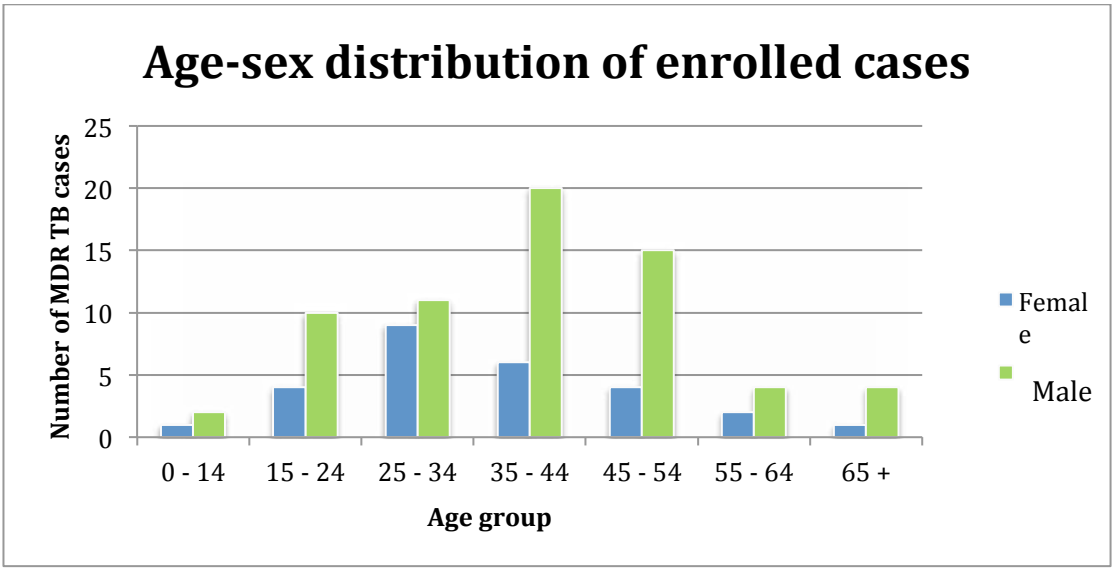
A total of 95 MDR TB patients were enrolled to start second line treatment at Kibong'oto TB hospital in 2013, showing a 111% increase from the previous year and contributing to the upward trend in enrolment since 2009 as depicted in figure 11 below. Among enrolled patients, 28 (29%) were women and 37 (38%) were HIV positive. Two patients were not enrolled because they were confirmed to be not MDR TB.

Figure 11: Trends of MDR TB Patients enrolment by Year



The age-sex distribution of MDR TB cases enrolled on treatment showed a male predominance across all age groups with the burden of MDR TB being heaviest in those aged between 35 – 44 years (28%), 25-34 years (21.5%) and 45 – 54 years (20.4%). Children contributed 3.2% of all enrolled MDR TB cases as outlined in figure 12below.

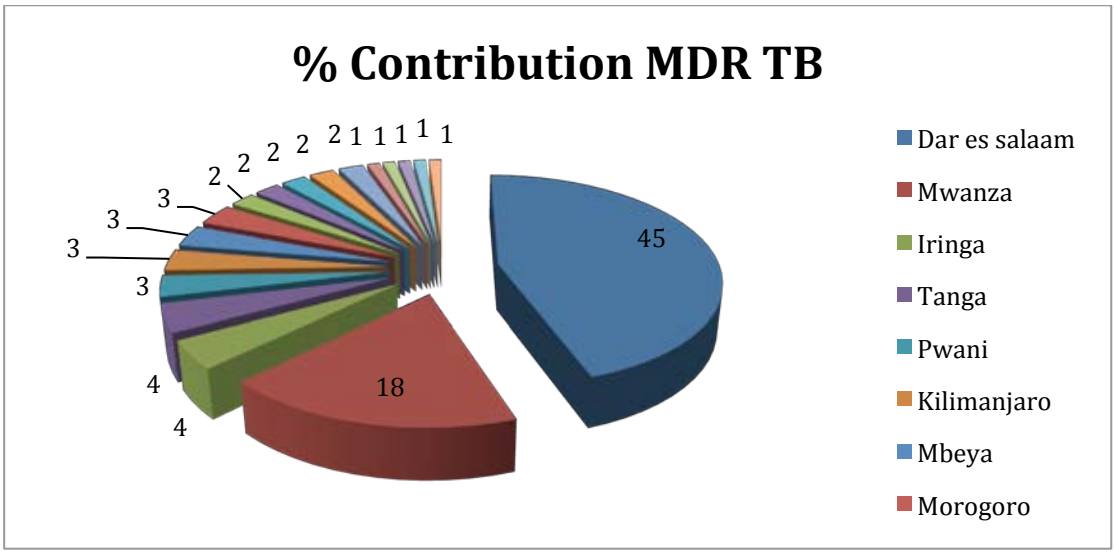
Figure 12: Age and Sex distribution of MDR TB cases enrolled on treatment in 2013



3.5.2 Enrolled MDR TB patients by region in 2013

The regions notifying enrolled MDR TB patients increased from 11 in 2012 to 18 in 2013. Dar es Salaam continued to notify most of the MDR TB cases enrolled on treatment at 45% down from 62% in the previous year. Other regions that contributed significantly to enrolled cases include; Mwanza (18%) up from 9% in 2012, Iringa (4%) and Tanga (4%), as illustrated in figure 13 below

Figure 13: Distribution of MDR TB cases enrolled on treatment by regions in 2013

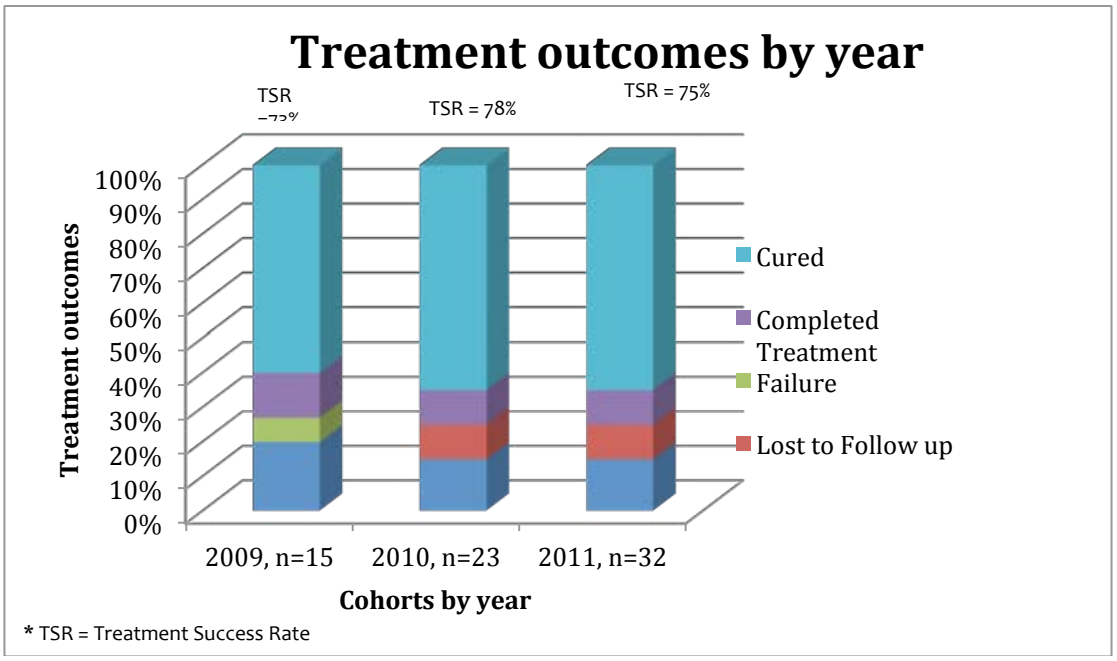


3.5.3 Treatment outcomes of MDR TB cases enrolled in 2010

In 2013, the programme conducted quarterly cohort and expert review meetings aiming at reviewing interim and final results of enrolled MDR TB patients in 2013. Furthermore, discussions on clinical management were provided to difficult and ambiguous MDR TB patients during expert review panels.

Final outcome analysis of 32 patients enrolled in 2011 showed that; 22 patients (69%) were cured, two patients (6%) completed treatment, four patients (13%) died during the course of treatment, and four patients (13%) were lost to follow up. The treatment success rate (cured + treatment completed) was therefore reported at 75%. Comparison of MDR TB treatment outcomes for 2009 - 2011 show that the cure rate is increasing from 60% (2009) to 65% (2010) and 69% (2011) respectively whereas, the death rate is decreasing from 20% (2009) to 13% in both 2010 and 2011 cohorts as summarized below;

Figure 14: MDR TB outcomes in 2009, 2010 & 2011



The programme also developed the MDR TB decentralization framework that will reduce the duration of hospitalization in the intensive phase from 8 months to 2 weeks – 2 months. Training materials on decentralized MDR TB care were also developed. These efforts will guide the programme in the scale up of MDR TB services in the country.

4 LEPROSY CONTROL SERVICES

4.1 Leprosy Case Notification

A total of 2,144 leprosy cases (all forms) were notified in 2013, of which 2,028 (94.6%) were new cases and 69 (3.2%) were relapses and 47 (2.2%) were return after default. The number of cases notified was 520 (20%) less than those in 2012.

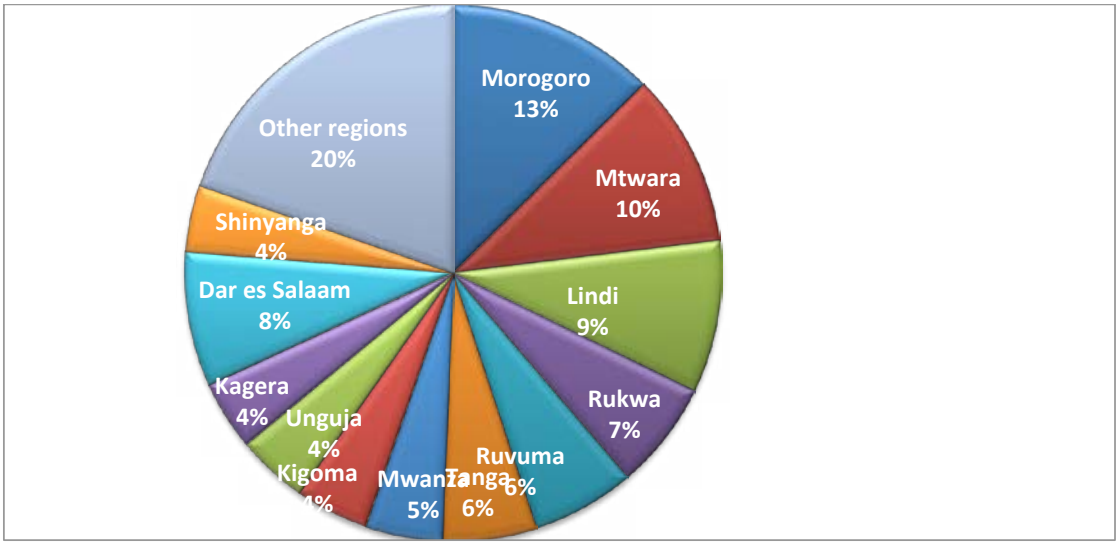
Both the annual national notification rate (case detection rate) and registered prevalence were calculated at 0.4/10,000 population which is lower than that of 2012 at 0.6/10,000. Among new cases notified, 1,654 (81.6%) were MB and 374 (18.4%) PB. Females were 757 (37.3%) giving a female to male ratio of 1:1.7 suggesting that being male continues to be suggestive of a risk factor. The number of children among the new cases was 93 or (4.6%) which was less than those reported in 2012 by 65 cases. New leprosy cases notified with disability grade II were 262 or 12.9% which was slightly higher than those reported 2012 at 11.9% indicating that cases are detected late into the course of illness by health system. Table 1 below summarizes indicator data on new leprosy cases notified in 2013 by regions and those having disability grade II according to WHO classification. However, the trend of new leprosy cases detected for the past 20 years shows tremendous decline country wide as is displayed in table 7 below.

Table 7: New leprosy cases detected by indicators in 2013 by regions

Region	All cases	new cases		new MB cases		new Female cases		new Children cases		new Disability grade II	
		No.	%	No.	%	No.	%	No.	%	No.	%
Dar Ilala I	39	37	94.9	34	91.9	16	43.2	1	2.7	4	10.8
Dar Kinondoni	84	81	96.4	69	85.2	21	25.9	6	7.4	14	17.3
Dar Temeke	86	81	94.2	61	75.3	22	27.2	1	1.2	9	11.1
Dar Ilala II	14	12	85.7	12	100.0	6	50.0	0	0.0	3	25.0
Dar es Salaam	**223**	**211**	**94.6**	**176**	**83.4**	**65**	**30.8**	**8**	**3.8**	**30**	**14.2**
Arusha	9	9	100.0	9	100.0	0	0.0	0	0.0	1	11.1
Dodoma	54	54	100.0	51	94.4	18	33.3	2	3.7	4	7.4
Iringa	14	14	100.0	12	85.7	1	7.1	1	7.1	4	28.6
Kagera	98	84	85.7	74	88.1	25	29.8	3	3.6	6	7.1
Kigoma	96	89	92.7	76	85.4	28	31.5	7	7.9	13	14.6
Kilimanjaro	7	6	85.7	4	66.7	2	33.3	0	0.0	1	16.7
Lindi	201	184	91.5	143	77.7	87	47.3	3	1.6	13	7.1
Manyara	10	10	100.0	8	80.0	2	20.0	1	10.0	1	10.0
Mara	36	32	88.9	21	65.6	11	34.4	2	6.3	6	18.8
Mbeya	37	35	94.6	33	94.3	10	28.6	0	0.0	15	42.9
Morogoro	259	253	97.7	199	78.7	71	28.1	10	4.0	24	9.5
Mtwara	225	211	93.8	143	67.8	108	51.2	10	4.7	14	6.6
Mwanza	93	93	100.0	90	96.8	27	29.0	2	2.2	16	17.2
Pwani	76	71	93.4	64	90.1	22	31.0	2	2.8	10	14.1
Rukwa	142	131	92.3	120	91.6	61	46.6	7	5.3	10	7.6
Ruvuma	129	125	96.9	82	65.6	59	47.2	4	3.2	10	8.0
Shinyanga	84	81	96.4	73	90.1	27	33.3	1	1.2	21	25.9
Singida	29	29	100.0	25	86.2	7	24.1	3	10.3	9	31.0
Tabora	93	92	98.9	74	80.4	32	34.8	6	6.5	24	26.1
Tanga	126	114	90.5	101	88.6	44	38.6	3	2.6	17	14.9
Mainland	**2,041**	**1,928**	**94.5**	**1,578**	**81.8**	**707**	**36.7**	**75**	**3.9**	**249**	**12.9**
Pemba	15	14	93.3	12	85.7	7	50.0	3	21.4	5	35.7
Unguja	88	86	97.7	64	74.4	43	50.0	15	17.4	8	9.3
Zanzibar	**103**	**100**	**97.1**	**76**	**76.0**	**50**	**50.0**	**18**	**18.0**	**13**	**13.0**
Tanzania	**2,144**	**2,028**	**94.6**	**1,654**	**81.6**	**757**	**37.3**	**93**	**4.6**	**262**	**12.9**

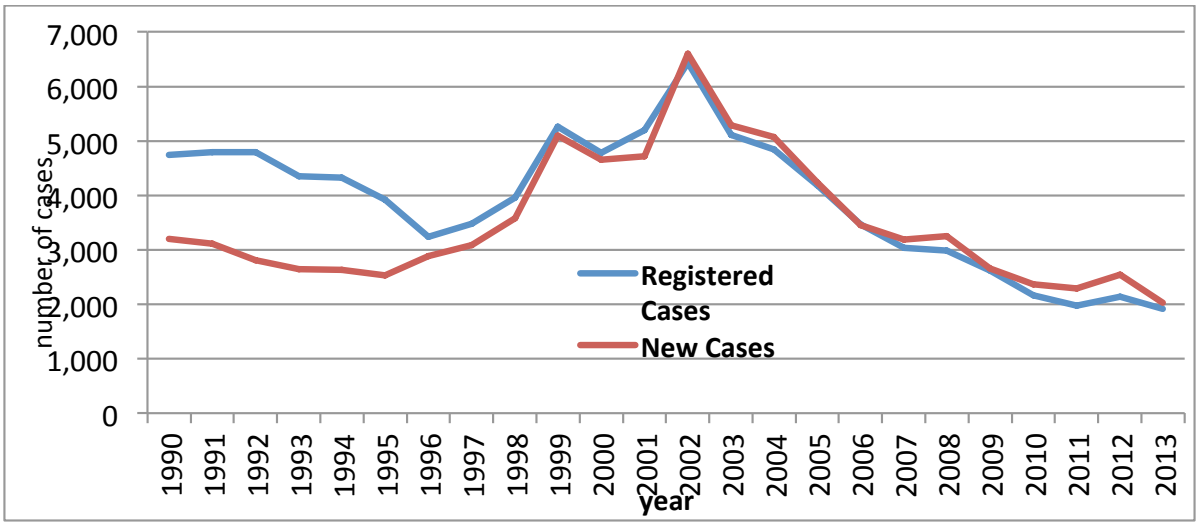
A figure 15 below summarizes the contribution of new leprosy cases by different regions. It shows that 80% of cases which were detected in 2013 were from only 12 regions.

Figure 15: The contribution of regions of new cases detected in 2013



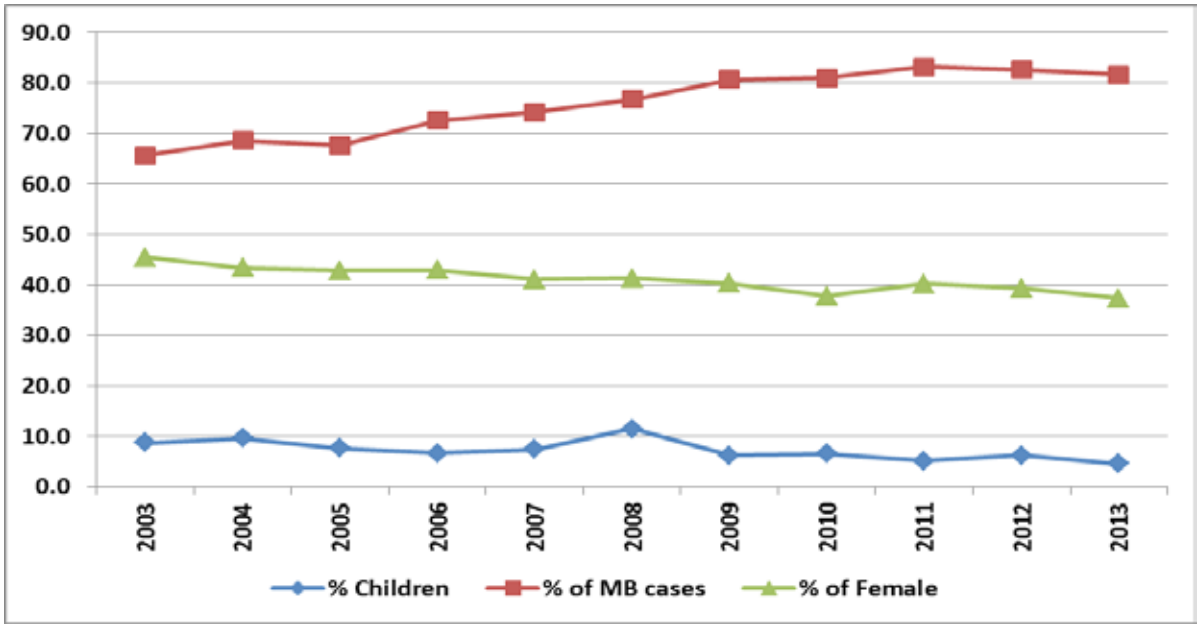
Since 2004, the proportion of new MB cases detected annually has been slowly increasing from 68% to over 80% while the proportion of females and children detected has been declining slowly from 44% down to 37% and 10% to 4.6% respectively. The changes in proportion of MB cases and children notified annually suggest reduction in the prevalence of the disease in the country. Morover, the data also suggest that females could be utilising less the available leprosy services compared to their male partners. This is summarised in the figures 16 and1 7.

Figure 16: Trends of new leprosy cases reported: 1990 – 2013



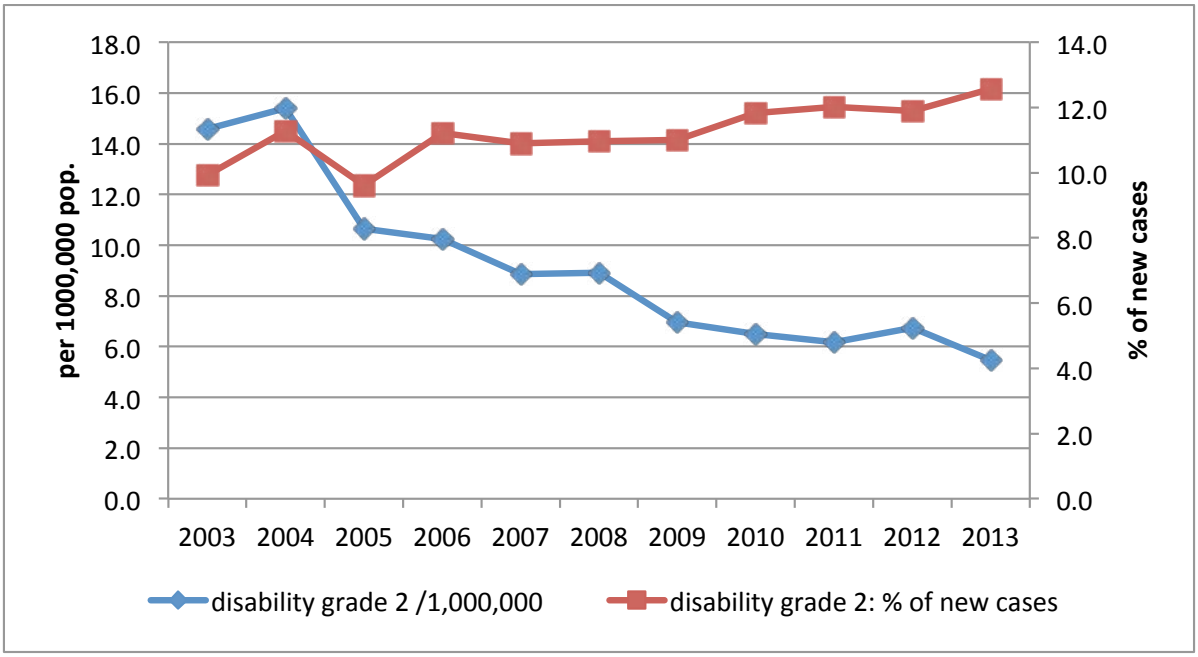
The trend of leprosy case notification over years shows a progressive decrease for both PB and MB from over 5,000 cases in 2003 down to just above 2000 in 2013. However, the proportions of MB cases remain high and have been on the increase while the number and proportions of PB cases were gradually declining as shown below in figure 3.

Figure 17: Trends of MB cases, children and females among new leprosy cases: 2003 -2013



For over a decade now, the proportion of disability grade 2 among new detected cases has remained higher above 12%, however, there has been a gradual decrease in rates due to change and growth of population as shown in figure 18 below.

Figure 18: Trend of disability grade 2, percentage among new cases and rates per 1,000,000 populations



4.2 Registered prevalence

The leprosy prevalence rate in 2013 was 0.4/10,000 population which remains below the WHO leprosy elimination target of 1 case per 10,000 populations since when was attained in 2006. But there are still 22 districts from different regions with prevalence rates higher than

1/ 10,000, as shown in table 8 below. These data show that the regions of Lindi and Morogoro had most of their districts still endemic and remain at high risk of increased disease burden. Overall, the prevalence of leprosy has showed a steady decline since 2002. The prevalence detection ratio has remained around 1 between 2004 and 2013 suggesting that patients are timely removed from the registers after completing their MDT treatment.

Figure 19: Trends of new leprosy cases detected and registered in Tanzania 1983 – 2013

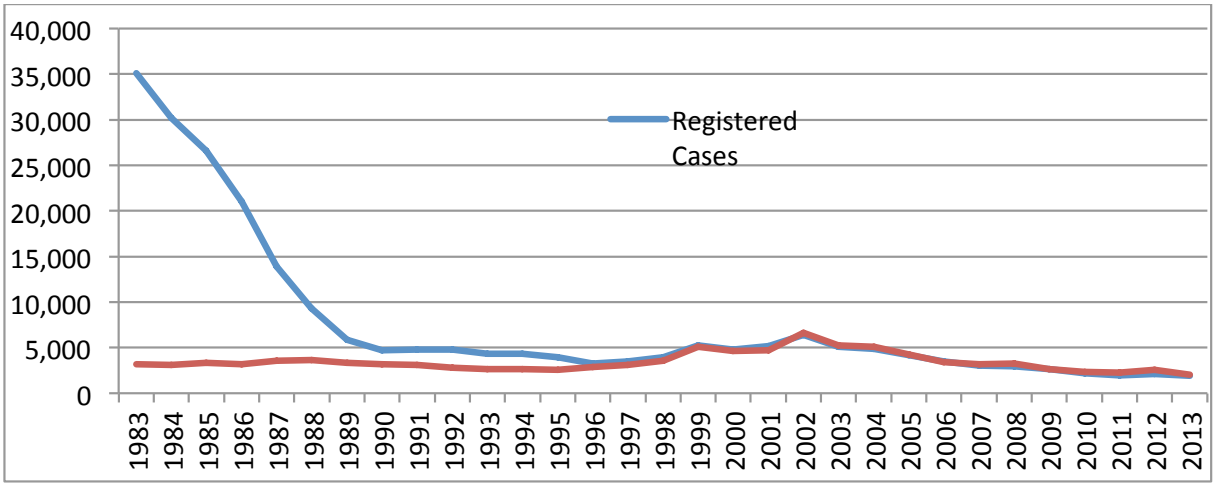


Table 8: Districts with prevalence or detection rate greater or equal to 1.0/10,000 population in 2013

No.	Districts	New case detection rate	Prevalence rate
1	Nanyumbu	*6.6*	*6.9*
2	South & Central	*4.0*	*4.2*
3	Nkansi DC	*2.5*	*4.0*
4	Liwale	*5.3*	*4.0*
5	Lindi Urban (E)	*3.4*	*3.8*
6	Mkinga	*2.3*	*3.2*
7	Muheza	*0.7*	*2.6*
8	Lindi Rural (West)	*3.3*	*2.5*
9	Chato	*1.4*	*2.2*
10	Tunduru	*2.7*	*2.2*
11	Masasi DC	*1.2*	*1.4*
12	Morogoro RN -	*1.6*	*1.4*
13	Kibaha DC	*1.1*	*1.4*
14	Korogwe	*0.9*	*1.3*
15	Kilwa	*0.2*	*1.1*
16	Ulanga	*0.5*	*1.1*
17	Kilombero	*2.4*	*1.1*

18	Newala	*1.5*	*1.1*
19	Nachingwea	*0.8*	*1.0*
20	Rufiji	*0.7*	*1.0*
21	Shinyanga MC	*1.2*	*1.0*
22	Morogoro Urban	*1.1*	*0.3*
23	Bahi	*1.4*	*0.7*
22	Mvomeno	*1.4*	*1.8*

4.3 Leprosy treatment outcome

4.3.1 Treatment outcome of PB leprosy

The treatment outcome of PB leprosy cases who started treatment in 2012 shows that, 469 (96%) completed treatment while 7 (4%) defaulted from treatment and there was no death reported. No patient was transferred out of region during the course of treatment. Table 9 below summarizes treatment outcome of PB leprosy cases notified in 2012 by region. The data in the table below suggests that Kilimanjaro and Singida regions should strengthen follow up of cases and ensure that all cases notified are evaluated at the end of treatment.

Table 9: Treatment outcome of PB leprosy reported in 2012

District	Treatment completed	Died	Transferred Out	Out of Control	Total	Reported in 2012	% completed
Dar Ilala I	10	0	0	2	12	12	83
Dar Kinondoni	8	0	0	0	8	8	100
Dar Temeke	23	0	0	3	26	29	79
Dar Ilala II	0	0	0	0	0	0	
Dar es Salaam	**41**	**0**	**0**	**5**	**46**	**49**	**84**
Arusha	0	0	0	0	0	0	
Dodoma	5	0	0	0	5	5	100
Iringa	2	0	0	0	2	2	100
Kagera	20	0	0	0	20	20	100
Kigoma	17	0	0	0	17	20	85
Kilimanjaro	2	0	0	1	3	3	67
Lindi	89	0	0	0	89	89	100
Manyara	1	0	0	0	1	1	100
Mara	18	0	0	0	18	18	100
Mbeya	1	0	0	0	1	1	100

Morogoro	35	0	0	0	35	35	100
Mtwara	45	0	0	0	45	45	100
Mwanza	2	0	0	0	2	2	100
Pwani	14	0	0	1	15	15	93
Rukwa	40	0	0	0	40	40	100
Ruvuma	33	0	0	0	33	35	94
Shinyanga	3	0	0	0	3	3	100
Singida	3	0	0	0	3	5	60
Tabora	20	0	0	0	20	20	100
Tanga	25	0	0	0	25	27	93
Mainland	**416**	**0**	**0**	**7**	**423**	**435**	**96**
Pemba	6	0	0	0	6	5	120
Unguja	47	0	0	0	47	47	100
Zanzibar	**53**	**0**	**0**	**0**	**53**	**52**	**220**
Tanzania	**469**	**0**	**0**	**7**	**476**	**487**	**96**

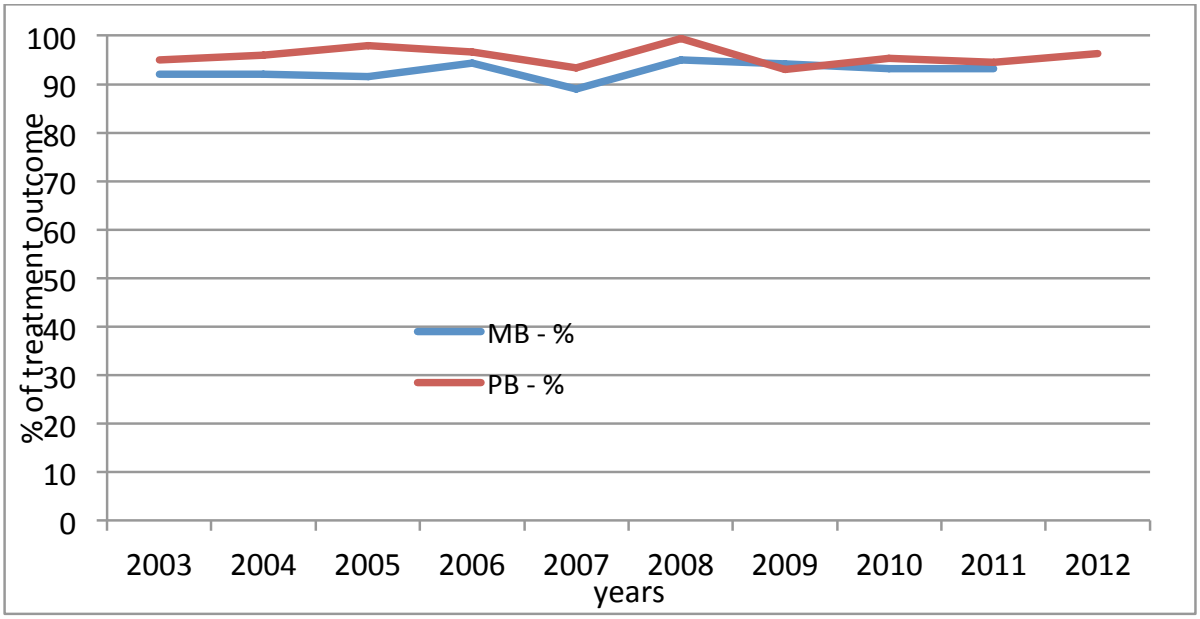
4.3.2 Treatment outcome of MB leprosy

Treatment outcome of MB leprosy cases notified in 2011 shows that, 1,870 (93%) completed treatment while 7 (0.3%) patients died during treatment period. However, the data also shows that 67 patients did not complete their treatment due to various reasons: 34 (1.7%) defaulted from treatment and 33 (1.6%) cases were transferred out during treatment. Table 10 below summarizes treatment results of MB cases notified in 2011. The three regions of Ilala II, Singida and Tanga had the lowest case holding levels of below 90%. However, most of those whom seem to have been lost to follow up would have self-transferred to other MDT centres after closure of Muhimbili clinic.

Table 10: Treatment outcome of MB leprosy notified in 2011

District	Treatment completed	Died	Transferred Out	Out of Control	Total	Reported in 2011	% completed
Dar Ilala I	61	0	3	4	68	68	90
Dar Kinondoni	91	0	1	0	92	92	99
Dar Temeke	77	1	2	10	90	90	86
Dar Ilala II	13	0	4	0	17	36	36
Dar es Salaam	242	1	10	14	267	286	85
Arusha	3	0	0	0	3	3	100
Dodoma	59	0	1	0	60	60	98
Iringa	20	0	0	0	20	20	100
Kagera	106	0	0	0	106	108	98
Kigoma	94	1	2	0	97	97	97
Kilimanjaro	8	0	0	2	10	11	73
Lindi	127	0	1	2	130	144	88
Manyara	5	0	0	0	5	5	100
Mara	15	0	1	0	16	16	94
Mbeya	43	0	0	0	43	45	96
Morogoro	226	0	8	0	234	234	97
Mtwara	148	0	1	0	149	149	99
Mwanza	109	2	5	4	120	124	88
Pwani	49	1	0	1	51	51	96
Rukwa	213	0	0	0	213	208	102
Ruvuma	72	0	0	0	72	74	97
Shinyanga	83	0	1	0	84	87	95
Singida	23	0	0	0	23	26	88
Tabora	65	2	1	7	75	77	84
Tanga	112	0	1	1	114	130	86
Mainland	1,822	7	32	31	1,892	1,955	93
Pemba	13	0	0	3	16	16	81
Unguja	35	0	1	0	36	36	97
Zanzibar	48	0	1	3	52	52	178
Tanzania	1,870	7	33	34	1,944	2,007	93

Figure 20: Trends of leprosy cases completed treatment: 2003 – 2012



4.4 Activities related to prevention of disabilities (POD)

4.4.1 People with leprosy related disabilities

In 2013, a total of 2,438 people affected by leprosy (PALs) with disabilities were registered. Among them, 449(18.4%) were staying in care centres. A total of 1,693(69. 4 %) were reviewed to assess their physical impairments. Results show that 1,181 (69.8%) showed improvements, 444 (26.2%) showed no change while 68 (4%) deteriorated.

4.4.2 Leprosy reactions

A total of 750 leprosy patients were reported with reactions and started on treatment. Out of them, adults MB cases were 85.9% (644) and for PB 96 (12.8%). cases. Children from both types were 1.3% (10). Of all the reported cases, 97 were admitted because of severe reactions. The table below shows patients reported with reactions by region per category.

Table 11: Leprosy cases started treatment with corticosteroid in 2013

Region	MB(A)	MB(C)	PB(A)	PB(C)	TOTAL
Dar Ilala I	8	0	0	0	8
Dar Kinondoni	33	1	3	0	37
Dar Temeke	15	0	4	0	19
Ilala II	14	0	0	0	14
Arusha	0	0	0	0	0
Dodoma	5	0	0	0	5
Iringa	11	1	0	0	12
Kagera	12	1	0	0	13
Kigoma	17	0	4	0	21
Kilimanjaro	2	0	0	1	3
Lindi	15	0	1	0	16
Manyara	4	1	0	0	5
Mara	22	0	17	0	39
Mbeya	1	0	0	0	1
Morogoro	63	0	14	0	77
Mtwara	38	0	11	0	49
Mwanza	38	0	0	0	38
Pwani	40	0	4	0	44
Rukwa	67	0	4	0	71
Ruvuma	17	0	4	0	21
Shinyanga	64	0	4	0	68
Singida	25	0	7	2	34
Tabora	17	1	11	0	29
Tanga	34	0	2	0	36
Zanzibar	82	2	6	0	90
Tanzania	**644**	**7**	**96**	**3**	**750**

4.4.3 Specialized care of people with disabilities

During the year 2013, a total of 387 persons affected by leprosy (PALs) were admitted to different hospitals in the country. These admissions made up of 569 of reasons for admissions. Ulcers and wounds ranked high as the main reasons for admission by 272 (47.8%) followed by reactions 97(17%). Surgery (SPRS) ranked third and accounted for 78(13.7%), and the least was eye pathology which was 9 (1.6 %). In addition, twenty eight (28) PALs were fitted with prostheses. The table below summarises the number of surgeries done, prostheses fitted and repairs for people affected by leprosy in 2013 by regions.

Table 12: Number of surgeries, prosthesis fitted and repair in regions 2013

Region	R/surgery	Prosthesis	Prosthesis repairs
Temeke	2	-	-
Dodoma	2	-	-
Kigoma	6	-	-
Mara	2	6	2
Morogoro	24	12	8
Mwanza	1	1	1
Pwani	3	-	-
Shinyanga	38	3	1
Tabora	-	-	14
Tanga	-	6	-
Total	**78**	**28**	**26**

4.4.4 Footwear Programme

In 2013, a total of 4404 were produced centrally and distributed to regions country wide. By the end of the year 2,444 pairs of protective sandals were distributed to people affected by leprosy. This is only 55% of the protective sandals reaching PALs in need. Another 259 pairs of shoes were made locally in several regions by the local shoemakers. In the case of special boots, 281 pairs were fabricated and 204 footwear repairs were done for PALs with foot deformities. The table shows the amount of special footwear distributed to people affected by leprosy by region in 2013. This includes factory made sandals, locally produced shoes, special boots and repairs done. The amount of materials and tools distributed to local workshops is shown in Table 14.

Table 13: Protective Footwear distributed/ produced to PALs in regions by type in 2013

Region	Ready made sandals	Locally produced shoes	Special boots	Footwear repairs
Ilala I	4	5	2	0
Ilala II	0	0	7	0
Temeke	38	0	2	0
Kinondoni	55	0	0	0
Dodoma	51	0	8	0
Iringa	9	0	0	0
Kagera	27	0	0	0
Kigoma	114	0	0	7
Kilimanjaro	6	0	0	0
Lindi	72	0	0	0
Mara	13	0	0	2
Mbeya	57	0	0	0
Morogoro	239	48	104	12
Mwanza	274	63	0	56
Pwani	175	38	0	0
Rukwa	70	0	11	0
Ruvuma	95	0	42	26
Shinyanga	340	65	86	38
Singida	118	0	10	0
Tabora	480	40	9	63
Tanga	185	0	0	0
Zanzibar	22	0	0	0
Tanzania	**2,444**	**259**	**281**	**204**

Table 14: Materials and tools distributed for fabrication of special and local shoes production per region in 2013

REGIONS	LEATHER	MCR	H.RUBBER	GLUE	L.LEATHER	THREAD	S.RIVERTS
Zanzibar	15	2	1	2	0		200
Morogoro ChazIl	15	2	3	3	0	1	100
Morogoro Nazareth	50	3	3	4	10	3	300
Tanga Misufini	30	2	2	2	0	2	100
Shinyanga Shirati	30	2	2	8	8	2	300
Shinyanga Busanda	30	2	2	2	0	2	100
Kagera Biharamuro	30	2	2	2	0	2	100
Pwani Kindwitwi	30	2	2	2	0	2	100
Tabora Sikonge	50	2	2	3	8	2	200
Mwanza Bukumbi	30	2	2	2	0	2	200
Ruvuma	30	2	2	2	0	2	200

5 LABORATORY SERVICES

The role of the CTRL is to oversee AFB smear microscopy services throughout the country. The CTRL has other core functions that help in appropriate diagnosis and effective patient management. The operation of the routine surveillance system (RSS) on use of drug susceptibility (DST) tests for guiding and monitoring patient's treatment. In addition, it has overall responsibility of setting up national standards and overseeing the Implementation of policies. Decentralization of certain activities like training, supervision and implementing external quality assessment of smear microscopy has been done. The regional laboratory technologists (RLT) in collaboration with Regional TB and Leprosy Coordinators (RTLC) perform these activities. Through this decentralization, implementation of the mentioned tasks taken over by the regions is supposed improve the efficiency of the diagnostic services at peripheral levels. For a long time, countries have demonstrated effective TB control using microscopy-based diagnosis and monitoring combined with well-managed treatment programmes. Effective control involves access to laboratory services at every level, which requires managing and supporting laboratory network that provide accurate reliable and consistent services.

5.1 Collaboration with Partners

The CTRL has been collaborating with the International Union Against Tuberculosis and Lung Diseases (IUATLD), which supported the (NTLP) from 1977 to 1997. Thereafter, collaboration has been established with other partners such as the Royal Netherlands TB Association (KNCV), Swiss Development for International Cooperation (SDC), Royal Netherland Association (NRA) and German Leprosy and TB Relief Association (GLRA). In addition, the CTRL received technical support and TB laboratory supplies and commodities from other partners such as; FIND through expand TB project, FIND/CDC and PATH through USAID support.

5.2 Laboratory Workload

In 2013, 7,840 specimens were received at the CTRL, out of these 1398 (18%) were for studies/ projects and 6,442(82%) were from different parts of the country for AFB smear microscopy, culture and DST examinations.

Of these 6442specimens 1,766 (18%) were from Muhimbili National Hospital (MNH) for routine AFB smear microscopy examination only and 4,676 (73%) were set for culture and DST as part of MDR-TB routine surveillance system. However, culture was done on 4,529 sputum specimens using solid Lowenstein-Jensen (LJ) media of which 2182 (48.1%) were culture negative while 2,217 (49%) were positive isolates and some of these positive isolates (Retreatment cases) were set for DST. DST results were available for 771isolates.

Of these, 246(69%) of all isolates with DST results were sensitive to all four first line anti-TB drugs, 22 (9%) of the positive isolates had resistance to one or more anti-TB drugs and 55 isolates (22%) were multi-drug resistant

Table 15: Culture and DST Results

Source	Speci-mens Received	Culture Done	Positive Isolates	DST Results	Sensitive to 4 Drugs	Any Resistance	MDR
MNH	1,766	N/A	N/A	N/A	N/A	N/A	N/A
Upcountry	4,676	4,529*	2,217	771	246	22	55
Projects (INH,LPA & REMSTAT)	1,398	N/A	N/A	N/A	N/A	N/A	N/A
Total	**7,840**	**4,529**	**2,217**	**771**	**246**	**22**	**55**

Table 16: Culture indicators

	Culture Results			
Smear Result	**Positive**	**Negative**	**Contaminated**	**Not done**
Positive	1,831	966	86	2
Negative	372	1200	24	10
Unknown	14	16	0	8
Total	**2217**	**2182**	**110**	**20**

5.2.1 Culture analysis

The culture analysis shows an increase on smear negative/culture positives, a decrease on smear positive/culture positive. There was decrease of false negative during quarter 1 to three and an increase in quarter four of almost equal magnitude which came close to 50% towards the end of the year as can be seen in the graph below.

Figure 21: Quarterly monitoring of culture performance by the CTRL in 2013

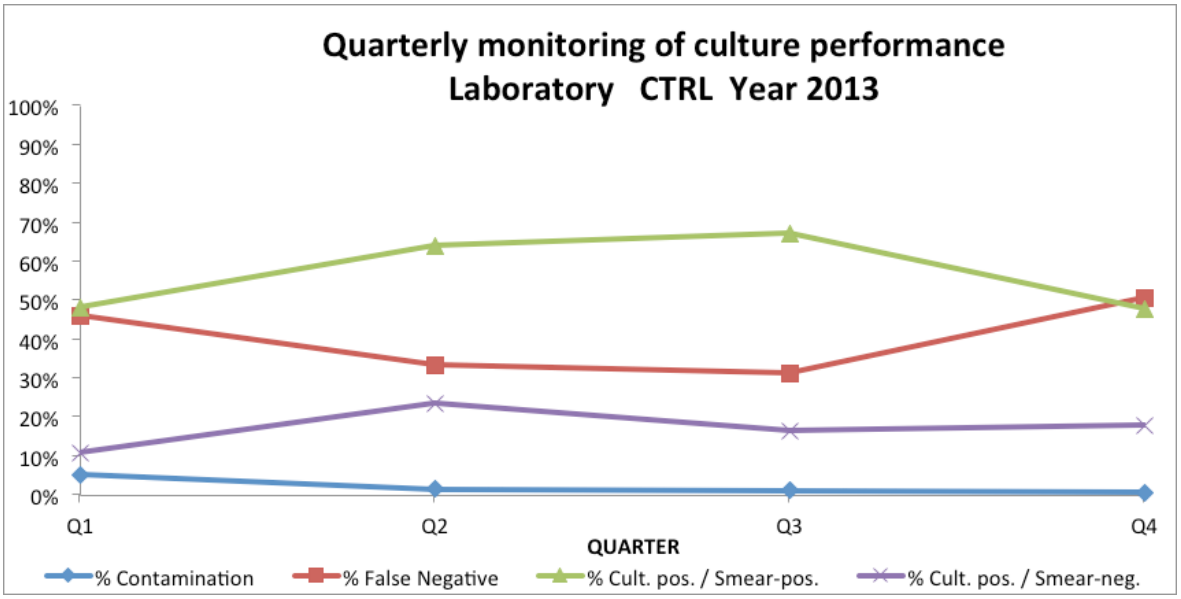
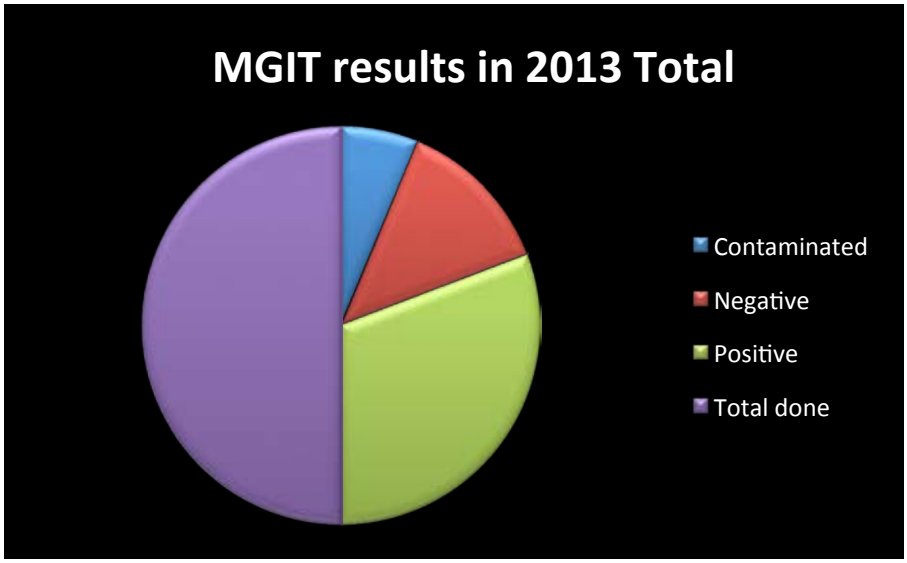


Figure 22: Summary of the liquid culture implementation



5.5.2 DRUG SUSCEPTIBILITY TESTING (DST) – PROPORTIONAL METHOD

Table 17: DST Profile

	New case		Previously treated		Total	
	N	%	N	%	N	%
Total samples with DST results	23	9	223	91	246	100
Sensitive to all four drugs	21	12	148	88	169	100
Any resistance						
INH	2	0.8	60	24.4	62	25.2
RIF	1	0.4	64	26.0	65	26.4
ETH	0	0.0	26	10.6	26	10.6
STR	1	0.4	47	19.1	48	19.5
Mono resistance						
Isoniazid	1	0.4	2	0.8	3	1.2
Rifampicin	0	0.0	9	3.7	9	3.7
Ethambutol	0	0.0	0	0.0	0	0.0
Streptomycin	0	0.0	3	1.2	3	1.2
Total	1	0.4	14	5.7	15	6.1
Multidrug resistance						
H+R	0	0.0	15	6.1	15	6.1
H+R+E	0	0.0	2	0.8	2	0.8
H+R+S	1	0.4	15	6.1	16	6.5
H+R+E+S	0	0.0	22	8.9	22	8.9
Total	1	0.4	54	22.0	55	22.4
Poly resistance other than MDR						
H+E	0	0.0	0	0.0	0	0.0
H+S	0	0.0	4	1.6	4	1.6
H+E+S	0	0.0	0	0.0	0	0.0
R+E	0	0.0	0	0.0	0	0.0
R+S	0	0.0	1	0.4	1	0.4
R+E+S	0	0.0	0	0.0	0	0.0
E+S	0	0.0	2	0.8	2	0.8
Total	**0**	**0.0**	**7**	**2.8**	**7**	**2.8**

Figure 23: Summary of the re-treatment specimen received from 2012-2013

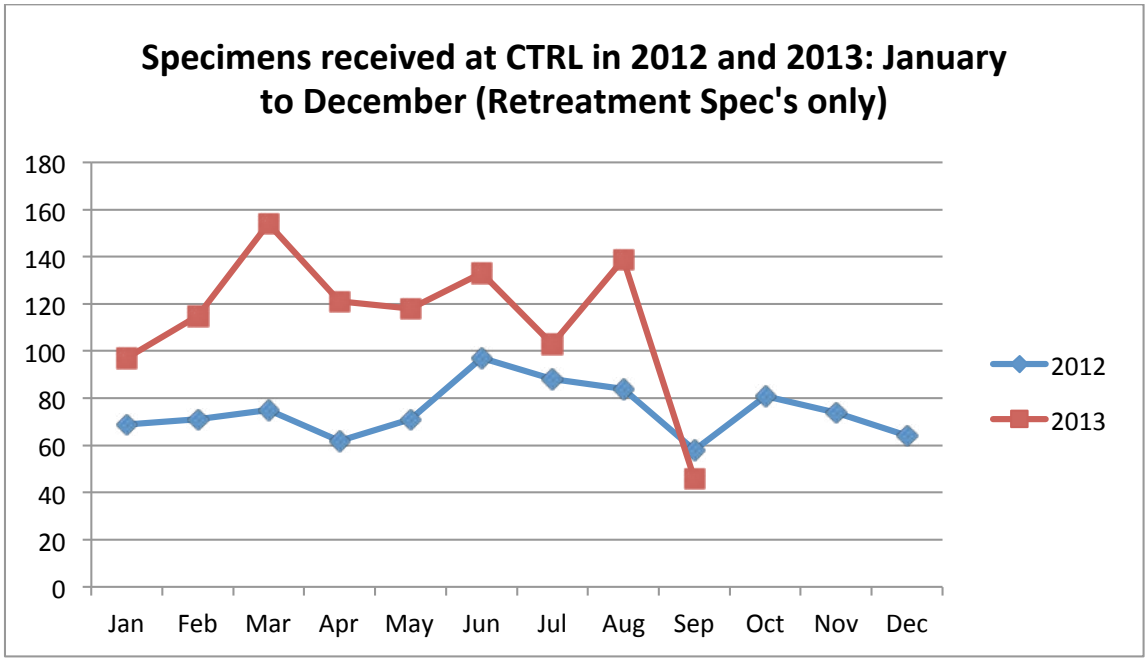
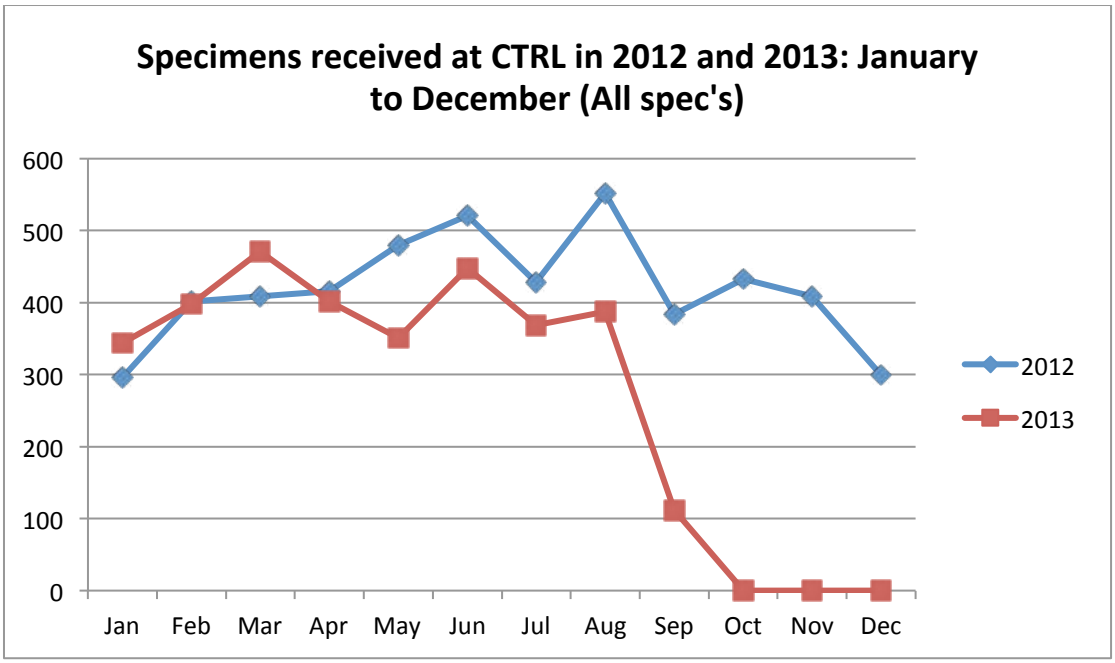


Figure 24: Summary of the specimens received in 2013



5.3 Genexpert MTB/Rif Implementation in Tanzania – Rapid DST

The Xpert MTB/RIF assay, which operates on the GeneXpert (GX) system (Cepheid, CA, USA) is a relatively new technology which was endorsed by the World Health Organization (WHO) in 2010 for use in low and middle income countries for the diagnosis of TB and detection of rifampicin resistance ***(WHO news release; December 2010).*** This test is being adopted in Tanzania as a diagnostic tool for the identification of Tuberculosis using the MTB-RIF

cartridges. Xpert MTB/RIF has shown to be more sensitive than smear microscopy ***(Boehme et al., 2010)*** and therefore it increases the detection of TB. It is especially useful in historically difficult to diagnose groups such as people living with HIV and in children and it can determine resistance to rifampicin, which is used as a proxy for MDR diagnosis without culture and DST testing.

In Tanzania, these requirements can generally be met at regional and district laboratories. Tanzania was an early adopter of the technology, with GXP testing commencing in 2009. However, the majority of sites became operational in 2011 and 2012. The CTRL, with support from one of the implementing partners (PATH) held an Xpert stakeholders meeting in Dar es Salaam early 2013, where the lack of information available from Xpert sites was a concern. A few sites were collecting routine data or conducting recommended servicing and maintenance of equipment. Therefore, to fill this gap, FIND (with funding by CDC Tanzania under its CDC Cooperative Agreement) planned together with CTRL to visit all sites and gather information pertaining to implementation using a standardized checklist, as well as to gather data from the Xpert instruments to determine the challenges and gaps, in order to develop a clear way forward with regard to FIND technical assistance and CTRL priorities for support of the Xpert laboratory network.

In total, 15 sites were assessed in 7 regions. Four sites are exclusively research sites and do not test routine patients, representing three different research centers. A further 2 sites with the GXP testing are funded by research organizations in accordance with their own protocols but test routine patients. One site is partially funded for research but also provides patient testing. Five sites are supported by partners such as FIND and PATH and the NTLP is responsible for the rest of the sites.

There may be other sites in Tanzania but they were unknown to the program at the time of visit.

5.3.1 The main aims of the Xpert assessment were as follows:

1. Gather data from Xpert instruments to determine test performance characteristics
2. Pilot a prototype checklist to determine its use as a tool for future supervisions
3. Gather data regarding laboratory and programmatic aspects of Xpert implementation to inform CTRL/NTLP planning
4. Confirm the presence of instruments in some sites, collect relevant documentation and meet with partner organizations responsible for supporting these sites
5. Undertake calibration of instruments using remote calibration kits supplied by FIND with CDC Tanzania support

5.3.2 Observation on GXP Implementation in the Country

- Majority of sites not utilized to their maximum capacity.
- Instruments currently used at between 7 and 71% capacity giving the opportunity to expand TB diagnosis in existing locations.
- Different algorithm were used hence it was not possible to measure performance in specific risk groups
- High error rates were observed due power cuts
- Uneven distribution of instruments in the country with majority of the machines in Mbeya region due to partners support.

Table 18: Sites included in FIND-CTRL assessment visits conducted in September 2013

Site Name	Region	District	Site status	Site Type	Date
Amana	Dar es Salaam	Ilala	Active	Public	Jul-12
Apopo-SUA	Morogoro	Morogoro urban	Active	Research	Nov-10
Bagamoyo	Pwani (coast)	Bagamoyo	Active	Research	Jun-12
Bugando Medical Centre	Mwanza	Nyamagana	Active	Public	Oct-13
Butimba Prison Health Facility	Mwanza	Nyamagana	Active	Prisoners	Dec-13
CTRL	Dar es Salaam	Ilala	Active	Public	Feb-12
Geita District Hospital	Geita	Geita urban	Active	Public	Nov-13
Haydom Lutheran hospital	Manyara	Haydom	Active	Research	Dec-13
Iringa	Iringa	Iringa urban	Active	Public	Jul-12
KCRI	Kilimanjaro	Moshi Urban	Active	Research	Mar-12
Keko Prison Health Facility	Dar es Salaam	Temeke	Active	Prisoners	Dec-13
Kyela	Mbeya	Kyela	Active	Public	Feb-10
Mbeya Regional Hospital	Mbeya	Mbeya Urban	Active	Public	Dec-10
Mererani Health Center	Manyara	Hai	Active	Public	Nov-13
MMRC	Mbeya	Mbeya Urban	Active	Research	Nov-12
Mobile Diagnostic and Training Centre	Mbeya	Mbeya rural	Active	Public	Nov-09
Mwananyamala	Dar es Salaam	Kinondoni	Active	Public	Mar-13
Ruanda Prison	Mbeya	Mbeya Urban	Active	Prisoners	Dec-09
Sekotoure	Mwanza	Nyamagana	Active	Public	Nov-12
Tanga Bombo Hospital	Tanga	Tanga Urban	Active	Public	Nov-13
Temeke	Dar es Salaam	Temeke	Active	Public	Apr-12
Ukonga Prison Health Facility	Dar es Salaam	Ilala	Active	Prisoners	Dec-13
Mrara district hospital	Manyara	Babati	Active	Public	Nov-13
Mwananyamala Ifakara	Dar es Salaam	Kinondoni	Not active	Research	May-12
Tunduma	Mbeya		Not active	Public	Nov-12

Sites indicated in red did not have GXP. Where modules are indicated in brackets this means the facility had extra equipment available but was not currently utilized so no data were collected for these.

Table 19: Summary analysis of the Xpert MTB RIF in 2013

	Column Labels												
Values	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Grand Total
Total # Xpert tests	1,109	1,186	1,514	1,544	1,697	1,665	1,963	1,158	789	761	1,008	1,392	**15,786**
Total # successful Xpert tests	976	1,114	1,421	1,468	1,611	1,448	1,705	1,037	716	678	907	1,274	**14,355**
Total # Xpert tests MTB+	235	282	334	397	374	416	465	190	108	94	126	281	**3,302**
Total # Xpert tests RR+	8	26	21	27	13	21	40	11	15	6	8	28	**224**
Total # error results	112	46	69	66	73	138	136	76	32	46	69	82	**945**
Average Error rate	11%	6%	5%	7%	8%	7%	8%	6%	4%	8%	16%	12%	**9%**
Average Rate of Unsuccessful tests	13%	9%	7%	8%	9%	10%	15%	10%	9%	14%	21%	15%	**12%**
Average Rate of Invalids	0%	0%	1%	0%	0%	2%	6%	3%	2%	2%	4%	3%	**2%**
Average Rate of No results	1%	3%	1%	1%	0%	1%	1%	1%	3%	4%	2%	1%	**1%**
Average Rate of Xpert MDR positivity	30%	26%	22%	29%	21%	32%	29%	21%	23%	16%	21%	25%	**24%**
Average Rate of Xpert Rif resistance	3%	11%	6%	3%	2%	9%	12%	4%	11%	7%	6%	8%	**7%**
Average Instrument capacity being utilised	34%	42%	48%	40%	42%	40%	45%	26%	19%	19%	18%	20%	**31%**

**The higher rate on RR (rifampicin resistance) seen in the month of July was due to EQA being carried out.*

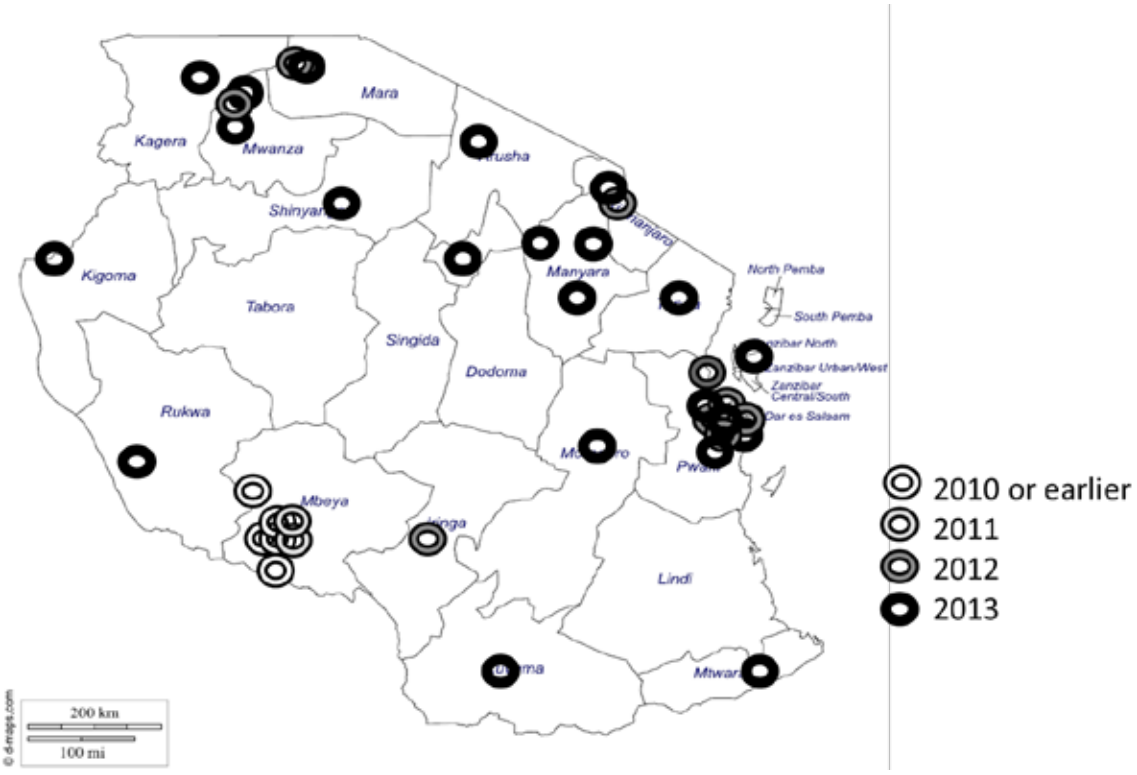
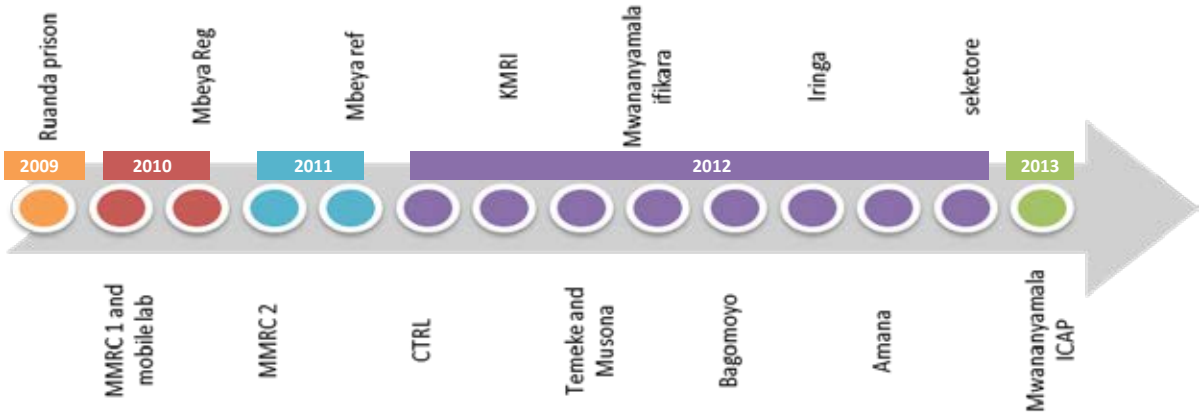


Figure 26: Installation timeline for GeneXpert Site in Tanzanian



** The coloured dots correspond to the years and different months installed*

5.4 External Quality Assurance of Drug Resistance

In December 2013, CTRL participated in an External Quality Assurance of drug resistance organized by WHO/IUATLD Supranational laboratory (SLN) Antwerp, Belgium. A total of 20 strains were retested at CTRL against Isoniazid, Rifampicin, Streptomycin and Ethambutol. Preliminary feedback results on the panel of strains tested are as shown below:

Table 23: Summary EQA (drug resistance)

	Drugs tested			
Result	**Streptomycin**	**Isoniazid**	**Rifampicin**	**Ethambutol**
Total correct results	16	20	19	13
True resistant	10	14	14	5
False resistant	0	0	1	0
True susceptible	6	6	5	8
False susceptible	0	0	0	1
Sensitivity (Ability to detect true resistance	100%	100%	100%	83%
Specificity (Ability to detect true susceptibility	100%	100%	83%	100%
Predictive value for resistance (The rate of true resistance to total resistance)	100%	100%	93%	100%
Predictive value for susceptibility (The rate of true susceptibility to total susceptibility)	100%	100%	100%	89%
Efficiency (Ratio between the number of correct results and the total number of results)	100%	100%	95%	93%
Reproducibility or Reliability (Intra-laboratory agreement between duplicate cultures expressed as a percentage)	90%	100%	90%	80%

5.5 Overall TB Laboratory Network Evaluation

5.5.1 Strengths

a) Wide coverage of the TB microscopy laboratory network with a microscopy manual

b) Presence of 3 TB public culture laboratories in the country with capacity for culture technique

c) Introduction of TB new diagnostic techniques in the country (LED, Xpert, HAIN)

d) Presence of the draft National TB Laboratory strategic Plan

5.5.2 Challenges

a) Inadequate laboratory human resources at the CTRL e.g Logistic officer

b) Inadequate room at the CTRL and some smear microscopy centers

   a. Poor information management system

c) Inadequate biosafety measures and practices in the laboratories

   a. No guidelines for sputum specimen referral

d) Weak coordination between public and research organizations

e) No guidelines and sustainability plan for Xpert MTB RIF rollout plan

f) Inadequate coverage of Lot EQA system in the country and where present not all implemented

5.5.3 Recommendation

a) Finalize and implement the National TB Laboratory Strategic Plan

b) Improve space at the CTRL, new laboratory is recommended

c) Strengthen laboratory human resource at CTRL for managing logistics on TB lab commodities

d) Strengthen information management system for TB laboratory network to facilitate planning, provision and implementation of lab services

e) Develop and implement guidelines for sputum specimen referral system in the country.

   i. Integrate the TB sample referral with the EID in Mbeya and throughout the country

   ii. Upgrade Public Health Lab in Zanzibar to perform DST

f) Strengthen and expand coverage of EQA system in the country

g) The zones and regions should take on more roles in managing their TB laboratory network – Mbeya can serve as a model and fast track Zanzibar

h) NTLP to conduct audit of all Rif Resistance previously detected by Xpert and manage them.

i) Strengthen the referral system to ensure all Rif resistant patients have 1st and 2nd line DST performed

j) Orient laboratory personnel at culture laboratory on MDR TB management.

6 OPERATIONAL RESEARCH ACTIVITIES

During this reporting period, the programme prepared and implemented various operational research activities in collaboration with various internal and external partners. Some of the research activities were a continuation of multi-country research projects involving Tanzania. The status of the implementation of these projects is explained hereinafter.

6.1 First National Tuberculosis Prevalence Survey

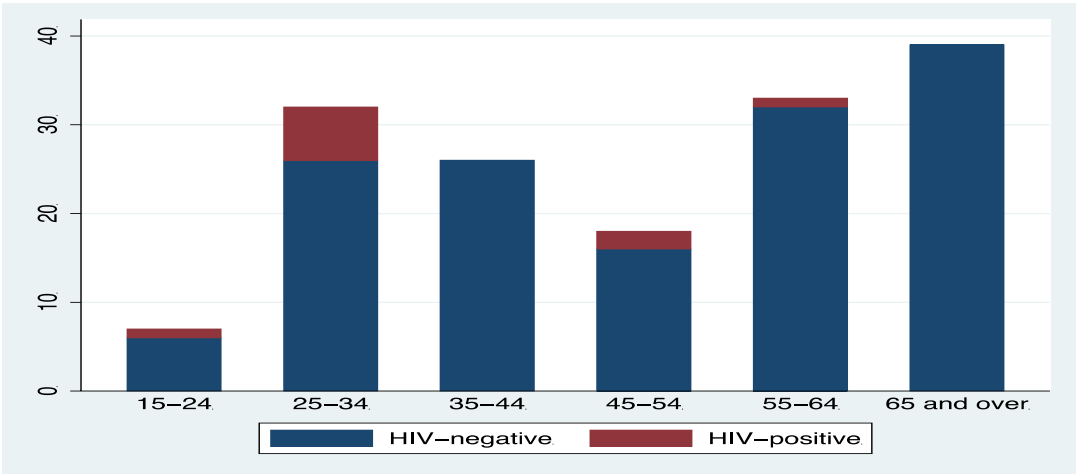
The implementation and completion of the First National TB Prevalence Survey, and the information collected will contribute to the improvement of TB control and prevention interventions in Tanzania through the provision of current and reliable data on the disease burden.

Towards the end of this reporting year, NTLP in collaboration with the national institute of medical research (NIMR) have successfully completed preliminary analysis with provisional results. The survey was designed as a nation-wide population-based survey in the adult population, in which districts were randomly selected, followed by a random selection of a single ward (denoted as cluster) within each district. A set number of participants in each ward were invited to participate in the survey. Participants were screened for being suspect of having TB by a simple symptom questionnaire and a chest X-ray (CXR). Identified TB-suspects were requested to submit three sputum specimens, of which two were assessed by microscopy in a field laboratory and the third was transported to the CTRL for culture.

During the year of field operations, there were four external monitoring visits conducted by the full time consultant, Dr Frank van Leth from KNCV and TME-TF experts of the World Health Organization. The conduct of the survey has been recommended as good and adhering to both the protocol and WHO standards.

The initial analysis has been completed and the provisional results show that, prevalence of bacteriological confirmed TB was 295 per 100,000 adult populations which is higher than expected. Prevalence was higher in mainland Tanzania compared to Zanzibar, rural compared to urban populations, men compared to women, older compared to younger participants and in participants with lower compared to higher socio-economic position.

Figure 27: Distribution of TB prevalent cases in relation to HIV status by age groups



The prevalence of HIV-infection in identified TB cases was 6.8%. Case Detection of new smear-positive adult TB patients was estimated to be between 42 and 54%. The majority of identified TB cases were 54 years or older, indicating a shifting epidemic from young HIV-infected patients as shown in the figure above.

The survey was conducted in the adult population only, which makes it impossible to assess the burden of childhood TB. Data analysis was hampered by missing data due to recording errors and misplacement of survey records, especially for the central laboratory. However, formal imputation analyses to account for this situation did not change the conclusions of the survey

The next steps during the coming year will include validation of laboratory smear and culture results in collaboration with WHO and SNL at Antwerp, finalizing analysis and production of final report.

7 PROGRAMME SUPPORT ACTIVITIES

7.1 Procurement and Supply Management of Anti-TB and Anti-Leprosy Medicines

Procurement of TB commodities is done through the support from the Government and other development partners such as; the World Health Organization (WHO), the Global Drug Facility, (GDF), the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM). Adults and children's first line anti-TB medications are procured through GDF support grant and leprosy medications are procured through the World Health Organization (WHO). On the other hand, the Global Fund procures second line anti TB drugs, ancillary medications for side effects management in patients taking second line drugs, single therapy Isoniazid tables for INH prophylaxis among PLHIV and laboratory commodities related to MDR TB diagnosis and monitoring of patients on MDR-TB treatment.

The Program is responsible for estimating requirements of first and second line anti TB drugs, leprosy drugs and isoniazid preventive therapy (IPT). Also the program monitors commodity availability at point of service delivery. The coordination of procurement and supply of these products is through the MSD, which is an autonomous institution of the Ministry of Health and Social Welfare responsible for the procurement, clearing, storage and distribution of pharmaceuticals and medical supplies.

First line anti TB and anti-leprosy medications are transported to all regions by MSD headquarters through their zone offices in line with the distribution list prepared by the program. MDR TB drugs are transported directly to Kibong'oto National TB Hospital where patients are admitted for the intensive phase of treatment and thereafter distributed to districts with discharged MDR TB patients who will be receiving second line drugs in the continuation phase. NTLP is responsible for monitoring and supervision of anti- TB and leprosy drugs at all levels.

Table 21: Stock status of TB and Leprosy medicines at the end of December 2013

Item Description	UOM	STOCK STATUS
Rifampicin 150mg + Isoniazid 75mg Tablets	672TB	7,463
Rifampicin 150mg + Isoniazid 75mg + Pyrazinamide 400mg+ Ethambutol Hydrochloride 275mg Tablets	672TB	199
Mb Blister Adult	BLS	6,514
Pb Blister Adult	BLS	13
Mb Blister Child	BLS	399
Isoniazide Bp 100mg Tablets	100TB	2,883
Rifampicin 60mg + Isoniazid 30mg	84TB	9,286
Ethambutol Tablets 100mg	100TB	174
Pb Blister Child	BLS	662
Clofazimine Caps 50 Mgs	1000CP	18
Clofazimine Caps 100 Mg	500CP	41
Rifampicin 60mg+Isoniazid(Inh) 30mg + Pyrazinamide 150mg Tablets	84TB	5,124
Isoniazid 300mg	1000 TB	1,961
Ethambutol 100mg Tablets	500 TB	207
Syringe Auto Disable 5ml	EACH	350,100
Streptomycin 1 Gram Injection	1AMP	208,600
Water For Injection 5 Ml	1AMP	280,400
Rifampicin 60mg + Isoniazid 30mg + Pyrazinamide Tablets	90 TB	20
Ethambutol Tablets 400mg	1000TB	19

One of the challenges facing drug management in most facilities is inadequate record keeping and reporting resulting in poor estimations of drug use and may at times create unnecessary shortages. To counteract this problem, internal redistribution of drugs and supplies from facility to facility, district to district and region to region is sometimes done.

During this period, the programme received through the MSD, consignments of Fixed Dose Combinations (FDCs) of anti TB drugs from the Global Drug Facility (GDF) and anti-leprosy blisters; MB Adult, MB child, PB adult and PB child from the WHO.

Table 22: stocks of anti-TB and leprosy medicines distributed in the country in 2013.

ITEM NAME	UNIT	TOTAL
Rifampicin Isoniazid Pyrazinamide Ethambutol	B/672	19,450
Rifampicin Isoniazid (RH)	B/672	35,363
Rifampicin Isoniazid Ethambutol (RHE)	B/672	2,107
Rifampicin Isoniazid Pyrazinamide (RHZ) – Ch	B/90	4,039
Rifampicin Isoniazid RH -Children	B/90	7,678
Streptomycin inj	Vials	146,528
Ethambutol 100mg tabs	B/500	106
Isoniazide 100mg tabs	B/100	4,390
Isoniazide 300mg tabs	B/100	0
MB (A)	Blisters	18,690
PB (A)	Blisters	2,842
MB (C)	Blisters	512
PB (C)	Blisters	222
Clofazimine 100mg	T/500	20
Clofazimine 50mg	T/1000	12

The program had been piloting a newly designed system for managing Tuberculosis and Leprosy Medicines as its first objective, one the 2015 target is to ensure uninterrupted supply of quality TB and leprosy medicines at all levels.

The pilot commenced on September 2013 in Tanga region and is expected to end on June 2014, thereafter if the pilot will be proved to be useful in improving TB & Leprosy medicines management in the country, the program will set to roll out the system countrywide.

7.2 Community empowerment activities

Community TB care has been implemented in the country since 2003 to complement DOT coverage which is now national wide with high treatment success rates. Despite of the national DOTs coverage, a number of challenges still exist in the control and prevention of TB in Tanzania. They include delays by patients in seeking care when TB symptoms set in, passive participation of the community in TB care and control, stigma associated with TB and HIV and poor adherence to anti-TB regimens, leading to an increased threat of drug-resistant TB. To address these challenges, the MoHSW in collaboration with development partners put more emphasis in community and Civil Society Organizations (CSOs) involvement and empowerment for TB control at community level.

Communities and CSOs empowerment is one of the areas of intervention under the second component of the post 2015 TB Strategy. Community-based organizations (CBOs) and members of key affected communities are in a unique position to assess and address the needs of their own people. This is especially true for marginalized people who are criminalized and/or stigmatized and who therefore often avoid the services. The strengths of CSOs including CBOs include their reach and ability to engage marginalized or remote people. This direct

empowerment of organizations and other actors in their own community response brings greater credibility and relevance to community service delivery systems.

NTLP has been using three approaches to engage and empower communities including NGOs and other CSOs for building and strengthening community systems to increase TB case detection, deliver services and to support communities to use those services for increased treatment success. The following are the community engagement approaches and status of implementation:

7.2.1 Engagement of Non-Governmental Organization (NGOs) and other Civil Society Organizations (CSOs) in community TB control activities

This approach involves sensitizing NGOs and other CSOs to integrating community-based tuberculosis activities into their works. This has been implemented under phased ENGAGE TB project. Tanzania is one of five countries implementing the ENGAGE TB project. Other countries include South Africa, Democratic Republic of Congo, Ethiopia and Kenya. In Tanzania, the project started in 2012 under WHO support. A national operational guideline for ENGAGE TB and Community TB care handbook for community health workers are in place. A number of CSOs have been sensitized and most of them have shown an interest. However, lack of funds for the engagement remained to be the challenge. Only one NGO (Pathfinder International) among sensitized CSOs has integrated community TB care into HIV/AIDS home based care in Kinondoni Municipal Council, in Dar es Salaam. According to data from Kinondoni, the project has contributed 8% of TB cases notified in Kinondoni in 2013. More regional sensitization to national CSOs and support are planned for the coming year.

7.2.2 Patient Centred Treatment (PCT)

This is another approach for community involvement in TB control in the country. TB patients have been managed through Patient Centred Treatment (PCT) approach countrywide. Patients have an option to choose where they would like to be supervised during their daily TB treatment, whether at a health facility (facility based DOT) or at home (home based DOT). Besides, patients have the liberty to choose a treatment supporter of their own choice. Data for this year shows that, 82% of all notified TB patients were supervised at home by community treatment supporters who were mostly family members and community health workers including former TB patients. In 2012, 83% of TB patients who treated under home based DOT were successfully treated. The challenge is improper implementation of PCT procedures to some of newly allocated health workers to TB clinics and low capacity to conduct supervision beyond health facility. To overcome these challenges, the Programme in collaboration with Novartis Foundation produced and distributed 1,000 PCT DVD educational materials (English and Swahili version) to health facilities in all 26 regions including Zanzibar. The material was meant to create awareness of 8 steps of PCT to health workers. The programme is planning to strengthen supervision and mentorship to health workers who supervise treatment supporters at health facility.

7.2.3 Involvement of community TB health workers

Community health workers are people with some formal education who are given training to contribute to community based health activities and services. These include ex TB patients, sputum fixers, home based care providers etc.

Under PATH support, 75 sputum fixers were identified and supported to fix sputum at remote dispensaries and transport smears to diagnostic centres for examination. The documentation conducted in Geita district in 2013 has shown that from 2009 - 2012; two sputum fixers contributed an average 14.5% of smear positive TB case notifications in the district. Furthermore, 85.8% of all smears examined at two diagnostic centres were from sputum fixers contributing 66% of all smears positive TB diagnosed. The programme is planning to scale up the intervention to all districts in order to increase access of TB diagnosis to communities living more than 10 kilometers from TB diagnostic centres.

Since 2009, the Programme also started to reinforce community TB care by establishing the involvement of community social groups including ex TB patients. Till 2013, 395 groups have been formed with 5,238 members all over the country. Since then the programme in collaboration with other implementing partners has been training and supporting the groups to undertake TB control activities at community level. The groups are involved in community sensitization activities, supporting TB patients during treatment course, defaulter tracing and intensified case finding in their respective areas. In 2012 and 2013, community groups were contributed to TB control as stipulated in the table below:

Table 23: Community contribution to TB control and Patient care for 2012 and 2013

Indicator	Average Percent (year)
Number of referrals of presumptive TB patients (TB suspects) attributable to communities (e.g. community volunteers, community health workers) expressed as a percentage of all TB suspects in country	10 (2013)
Number of notified TB cases resulting from referral by communities (e.g. community volunteers, community health workers) expressed as a percentage of all newly notified TB cases in the country	15 (2013)
Number of newly notified TB patients who received community-based DOT and/or adherence support expressed as a percentage of all patients receiving treatment in country	82 (2012)

The un-reporting districts for community contribution in TB control remain a challenge where by only 47 districts reported. Another challenge is parallel system of reporting community contribution. To address this, the programme has developed and distributed TB presumptive/ contact tracing forms, community referral forms, community TB register and quarterly reporting form to capture community contribution. The yield information will be captured in NTLP M&E system. This will help programme to receive community contribution data along with other data.

7.3 Advocacy, Communication and Social Mobilization (ACSM) activities

7.3.1 Commemorations

World Leprosy Day was commemorated at regional level on 27th January 2013. The government statement was given by the Minister for Health and Social Welfare Hon. Dr. Suleiman Rashid with an emphasis on community involvement and timely reporting to health facilities for early case detection and treatment. The theme for World Leprosy Day was *"Dumisha huduma bora kwa watu walioathiriwa na ukoma"*.

World Tuberculosis Day was marked on the 24th March 2013.Among activities implemented were: active case finding by screening of people for TB; road shows; health education; distribution of IEC and promotional materials. At National level there was a press conference on 22nd March 2013 during which the Minister for Health and Social Welfare Dr. Suleiman Rashid gave an official statement on World TB Day in front of media. This was followed with official launching of ENGAGETB project which was founded under the auspices of World Health Organization (WHO).The event was covered by both print and electronic media. Among them were: ITV, Channel Ten, Star TV, Radio Free Africa, TBC Taifa, Clouds FM, Radio One Stereo and BBC radio. On print media the event was covered by the Daily News, The Citizen, The Guardian, Tanzania Daima and Nipashe.

The theme of the "World TB Day was Stop TB in my life time" which was translated into Kiswahili as *"Jukumu la Kudhibiti Kifua kikuu ni la kila mmoja wetu".*

A number of IEC and audio visual materials were designed, produced for World TB day commemoration. These included wheel covers, umbrellas, printed posters, leaflets, fact sheets, T-shirts, pens with TB message, street banners, khangas and caps. The Programme also produced educational video documentaries on TB, TB/HIV and community involvement which were distributed to all health facilities with TV and DVD sets in the patients' waiting area (lobby). Relevant messages in a form of spots and talk shows were disseminated through Radio and TV stations with wide coverage.

7.3.2 Community sensitization

In the year under review community sensitization activities were implemented in six Global Fund supported regions (Kagera, Kigoma, Mara, Dodoma, Manyara and Rukwa). The aim of the campaign was to increase community awareness on signs and symptoms of TB, diagnosis and treatment. Sensitization was done through road shows, health education sessions and distribution of educational materials and screening of suspects for TB.

7.3.3 Leprosy control activities

As part of leprosy elimination strategy, the programme conducted one Leprosy Elimination Campaign (LEC) in Nanyumbu district in Mtwara region with support from GLRA. The main objective of the campaign was to early detect and treat leprosy cases and achieve the global leprosy elimination target of less than one case per 10,000 people in Nanyumbu district. Specific objectives were:

- To raise community awareness hence improve health seeking behaviours
- To equip health care workers with knowledge and skills that will enable them to detect, diagnose and treat effectively leprosy patients
- To provide informal knowledge about leprosy to community leaders to enable them to motivate the communities and invite leprosy suspects to come forward for screening and treatment
- Orient RHMT/CHMT members on leprosy control in the country as well as leprosy elimination campaign process with emphasis on leprosy situation in Mtwara region particularly Nanyumbu district

A total of 140 people including health care workers, primary and secondary school teachers, village health works, VEOs and village chairmen were oriented on guidelines and leprosy control in the country.

Leprosy screening exercise was conduct in 15 selected sites. A total of 668 people were screened, 74 (92.5%) were new cases, 6 (7.5%) return after default, 8 (10%) PB children and 2 (2.5%) MB and 5(6.2%) had disability grade two.

Apart from successful implementation of these activities low community awareness on signs and symptoms of both TB and leprosy diseases, diagnosis and treatment is still a problem. Many patients present themselves to health facilities in advance stages of the diseases.

In order to address this challenge the Programme intends to involve more partners/ stakeholders

7.4 Logistic Support

7.4.1 Transport

The NTLP receives logistic support for transport from various sources such as; GLRA (German TB and Leprosy Relief Association), CDC/PEPFAR and GFATM. This support varies from motorcycles, motor vehicles, as well as motorboats.

Currently, the NTLP has 38 motor vehicle, 236 motorcycles and 4 boats. These boats are for regions bordering lakes, with hard area to reach by neither motor vehicle nor motorcycle. These includes Kigoma and Rukwa region both bordering Lake Tanganyika. For many years, the GLRA has been the main financier of transport logistics to the programme, with 28 motor vehicles, 154 motor cycles and 4 boats. The remaining 82 motorcycles and 10 motor vehicles are from CDC and GFATM.

Essentially, each region has one motor vehicle for regional TB and Leprosy coordinator, and each district has two motorcycles; one for DTLC and one for TB/HIV Officer. The motor vehicle caters for the whole region while motorcycle caters for the whole district. Maintenance is mainly supported by GLRA and other financier respectively.

7.5 Public and Private Partnership (PPP)

In 2013 coverage of TB services in the private sector were given emphases by the programme; it is estimated that more than 10% of Private Health Facilities (PHF) are providing provision of TB services. Of importance the private and faith based health facilities contributed to 22% of total TB cases notified in the country.

The programme in collaboration with Management Sciences for Health (MSH) conducted evaluation of TB case detection interventions through involvement of drug sellers from private pharmacies and Accredited Drug Dispensing Outlets (ADDOs) in Morogoro and Dar es Salaam regions in which a total of 122 pharmacies and 574 ADDOs were involved. The findings shows that there is potential for improving TB case detection through engaging pharmaceutical sector as out 697 and 105 TB presumptive cases referred to diagnostic centers, 20% and 8% were confirmed smear positive TB cases in Morogoro and Dar es Salaam respectively.

Despite these successes, private health facilities in the country still face a number of challenges which include

- Low involvement of the private sector in TB control services; majority are urban concentrated

- inadequate infrastructure to support TB control services, particular diagnostic services

- Inadequate skilled personnel to delivery TB services in the sector

7.6 TB in Mining sector

The country is among signatories of Southern African Development Community (SADC) declaration for TB in mining sector. The Declaration on TB in the Mining Sector affirms the SADC member states' commitment to the elimination of TB and pledges to improve practices and standards related to the environment, health and safety in the mining sector. In collaboration with International Organisation for Migration (IOM) the NTLP has introduced TB control services in mining sector. In 2013 the programme conducted baseline assessment in three large mining sites in the country i.e Mwadui in Shinyanga (Diamond), Geita (Gold) and Merelani in Manyara region (Tanzanite) to assess the current practices in mining areas and surrounding communities.

Key findings from this assessment were:

- commonly mentioned health vulnerability was the lack of health promotion information and education

- Poor working environment including excessive exposure to dust and lack of protective equipment

- Barriers to health services included loss of hours, overcrowding, long wait times and

unaffordability of services and transport to services

- There is significant HIV vulnerability at the extractive industry sites.

Further survey conducted by Kibong'oto Infectious Disease Hospital (KIDH) at Merelani, Simanjiro revealed that out of 602 randomly screened small scale miners (SSM), 25(4%) were confirmed Smear positive TB cases indicating the burden of TB in mining areas is very high

7.7 Supervision

The NTLP routinely conducted supportive supervision and mentoring activities at central, regional and district levels. The joint supervision at the central level was conducted in 17 regions across the country with support from PATH and CDC/PEPFAR. These regions include Mbeya, Iringa, Tanga, Singida, Ruvuma, Tabora, Shinyanga, Morogoro, Temeke, Lindi, Mtwara, Kilimanjaro, Arusha, Pwani, Mwanza, Ilala and Kinondoni. However 6 regions which are supported by GFR 6 were not supervised due to delay in disbursement of funds. At the regional and district levels the supervision were conducted at least twice in year in collaboration with regional and council health management teams.

In general the key findings from these supportive supervisions include:

7.7.1 Achievement

- The regions performed well in terms of TB case detection and management in line with NSP IV

- Collaborative TB/HIV activities are being implemented both at CTC and TB clinics, The TB/HIV integrated services have been scaled up to 50% of all district hospitals

- Regions have sufficient drugs, laboratory reagents and supplies with few facilities reported some episodes of out of stock.

- TB and Leprosy control activities were incorporated into CCHP, with varied budget from the basket fund ranging from 2% to 6%

- Robust recording and reporting system for TB and leprosy cases at all levels of program implementation

- TB and leprosy commodities at regional and district levels are kept in pharmacies and managed according to drug management practices.

7.7.2 Gaps identified

- Majority of the regions and districts are not produce supervision reports and their schedules are not realistic posing a doubt on numbers and quality of supervisions conducted

- Weak EQA system; most of diagnostic centre visited few performing TB diagnosis properly: EQA slides are not collected/kept; SOP's were not displayed and internal control was not including in their routine procedure

- Community TB care activities were minimal implemented : Most Ex-TB patients clubs are not active, No evidence of most community TB activities (sensitization, training on CBDOT to health workers and treatment support, quarterly meetings of CBTC and supportive supervision visits to the community)

- Electronic based TB registers were not fully functional in majority of the regions and district due to computer illiteracy of the HCWs and huge workload at facilities

- Funds are received and captured in EPICOR and committed but still they were not utilized due to lack of pre-planned activities recorded in the district financial management system and delay in funds disbursement.

- Leprosy activities are not well known by most of coordinators and HWCs: POD registers are not properly filled in most areas visited and referral of leprosy patients for specialized care including surgery is not done due to lack of funds at councils.

7.8 Data Quality Assessment (DQA)

For the first time the NTLP through GF support conducted data quality assessment in six regions: Kagera, Dodoma, Rukwa, Mara, Manyara and Kigoma. The DQA evaluate the performance of two indicators; (i) case notification and (ii) treatment outcome. This exercise was conducted by central unit staff using adapted WHO structured checklist; among the key findings include;

- The quality of NTLP data in terms of accuracy, reliability and completeness is good.

- Quarterly TB reports, TB registers, and others source document were well matched on part notification indicator

- Timeliness for reports submission from region to the central unit were not met in majority of the regions

- There were evidence of initial defaulters from laboratory and unit registers, however there is no tracing mechanism/strategies in place

- Huge discrepancy on TB treatment outcomes reports, majority of the district registers did not matched with TB quarterly cohort reports

7.9 Evaluation of TB surveillance system

7.9.1 Background

The Ministry of Health and Social Welfare (MoHSW) of the United Republic of Tanzania in support of the Centers of Disease Control and Prevention (CDC) and World Health Organization (WHO) conducted a review of the national TB surveillance data, which included an assessment

of the surveillance and vital registration systems using a WHO checklist of TB surveillance standards and benchmarks. The results of the assessment are intended to help inform the development of a monitoring and evaluation (M&E) investment plan based on gaps in current M&E systems in Tanzania. Below are objectives, methods used and main findings, a separate detailed report is available.

7.9.2 Objectives

The objectives were to:

- Implement a checklist of TB surveillance standards and benchmarks to assess the Tanzania national surveillance and vital registration system's ability to accurately measure TB incidence and mortality;

- Develop a proposed M&E investment plan to address issues identified during the surveillance assessment.

7.9.3 Methods

During November 5-8, 2013 discussions were held with staff from the National Tuberculosis and Leprosy Programme (NTLP), Temeke Hospital, and the Registration, Insolvency and Trusteeship Agency (RITA). The assessment team also joined a meeting between the NTLP, the Global Fund (including the Portfolio Manager for Tanzania), and other partners during which the development of Tanzania's funding proposals for the coming three years was discussed.

Tanzania's TB surveillance and vital registration systems were assessed using the checklist of standards and benchmarks developed by the Global Task Force on TB Impact Measurement, in accordance with the standard user guide. This involved a desk review of program documents, datasets, and the electronic surveillance system. Data were collated and analyzed. Results were disseminated at an exit meeting, during which strategies to improve the measurement of TB morbidity and mortality and assess the impact of TB control in Tanzania were discussed.

7.9.4 Main findings

The TB surveillance system in Tanzania has much strength but also gaps that need prompt action. Of all the standards for TB surveillance, 5 were met, 3 were partially met, and 7 were not met.1 Increased investment is required to address the gaps identified by the assessment. Based on the assessment, the greatest strengths of TB surveillance in Tanzania include the consistency of its data and its adherence and timely adjustments to best-practices in recording and reporting as described by WHO guidelines. The primary challenges of the system include utilizing the current electronic surveillance system (ETR.Net); knowing that all diagnosed TB cases are reported and that reported cases are accurate; and achieving up-to-date coverage for MDR TB, pediatric TB, and TB mortality surveillance. Increased investment is required to address these gaps and build a system that can accurately measure TB incidence and mortality.

Annex 1:

Tuberculosis patients (all forms) notified in Tanzania by region: 2013

Region	new smear +	new smear -	extra-Pulmo-nary	Relapse	Failure	Return after loss to follow up	Other	Total
Dar Ilala I	1,751	1,122	449	34	16	9	30	3,411
Dar Kinondoni	2,627	1,303	727	88	28	38	78	4,889
Dar Temeke	2,219	1,608	617	84	18	8	69	4,623
Dar Ilala II	389	499	452	20	0	5	29	1,394
Dar es Salaam	6,986	4,532	2,245	226	62	60	206	14,317
Arusha	954	1,171	843	50	2	13	56	3,089
Dodoma	700	938	519	25	0	6	44	2,232
Iringa	829	750	606	42	4	4	35	2,270
Kagera	1,025	995	212	68	8	17	95	2,420
Kigoma	324	261	181	17	2	8	31	824
Kilimanjaro	922	958	490	79	4	12	63	2,528
Lindi	484	440	393	22	4	9	18	1,370
Manyara	863	872	713	41	2	10	42	2,543
Mara	987	914	1,063	56	7	12	94	3,133
Mbeya	1,233	1,124	1,164	69	7	4	51	3,652
Morogoro	1,110	1,431	616	35	3	13	23	3,231
Mtwara	843	431	438	79	2	7	99	1,899
Mwanza	2,134	2,633	1,527	63	15	24	30	6,426
Pwani	1,050	520	583	45	2	12	29	2,241
Rukwa	348	152	190	12	0	3	14	719
Ruvuma	342	494	696	15	1	2	77	1,627
Shinyanga	1,440	1,655	1,005	48	4	14	89	4,255
Singida	458	557	305	27	0	2	34	1,383
Tabora	496	801	485	19	1	6	19	1,827
Tanga	720	1,593	547	46	1	7	146	3,060
Mainland	24,248	23,222	14,821	1,084	131	245	1,295	65,046
Pemba	69	50	58	5	0	0	0	182
Unguja	248	99	137	12	2	6	0	504
Zanzibar	317	149	195	17	2	6	0	686
Tanzania	24,565	23,371	15,016	1,101	133	251	1,295	65,732

Annex 2:

Age and sex distribution of new smear positive pulmonary tuberculosis patients notified in 2013

Region	Sex/ Age	0 - 14	15 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 +	Total
Dar Ilala I	M	12	207	378	306	161	59	34	1,157
	F	19	117	215	144	57	19	23	594
	Total	31	324	593	450	218	78	57	1,751
Dar Kinondoni	M	31	263	555	397	230	135	45	1,656
	F	42	202	333	209	105	49	31	971
	Total	73	465	888	606	335	184	76	2,627
Dar Temeke	M	30	232	456	336	175	70	54	1,353
	F	32	194	284	199	93	33	31	866
	Total	62	426	740	535	268	103	85	2,219
Dar Ilala II	M	4	42	67	58	49	15	8	243
	F	4	26	44	39	20	7	6	146
	Total	8	68	111	97	69	22	14	389
Arusha	M	11	88	194	164	91	57	36	641
	F	8	60	97	70	35	23	20	313
	Total	19	148	291	234	126	80	56	954
Dodoma	M	10	36	117	131	108	27	61	490
	F	5	27	72	49	24	14	19	210
	Total	15	63	189	180	132	41	80	700
Iringa	M	3	48	158	134	68	42	20	473
	F	8	63	107	105	37	23	13	356
	Total	11	111	265	239	105	65	33	829
Kagera	M	7	47	151	194	138	83	57	677
	F	9	51	96	101	42	21	28	348
	Total	16	98	247	295	180	104	85	1,025
Kigoma	M	1	22	43	47	37	29	17	196
	F	5	24	35	30	15	10	9	128
	Total	6	46	78	77	52	39	26	324
Kilimanjaro	M	9	54	179	222	114	51	45	674
	F	3	58	68	57	30	16	16	248
	Total	12	112	247	279	144	67	61	922

Lindi	M	5	25	93	90	67	25	28	333
	F	4	24	42	31	30	10	10	151
	Total	9	49	135	121	97	35	38	484
Manyara	M	14	67	136	140	97	52	55	561
	F	9	57	76	58	40	28	34	302
	Total	23	124	212	198	137	80	89	863
Mara	M	16	69	118	130	93	39	55	520
	F	12	72	114	119	69	37	44	467
	Total	28	141	232	249	162	76	99	987
Mbeya	M	7	65	250	220	112	42	37	733
	F	17	80	199	123	38	31	12	500
	Total	24	145	449	343	150	73	49	1,233
Morogoro	M	7	112	203	191	119	56	38	726
	F	12	77	124	88	48	24	11	384
	Total	19	189	327	279	167	80	49	1,110
Mtwara	M	3	43	120	152	112	62	34	526
	F	4	37	80	81	51	32	32	317
	Total	7	80	200	233	163	94	66	843
Mwanza	M	20	118	331	378	233	129	134	1,343
	F	19	138	283	193	82	38	38	791
	Total	39	256	614	571	315	167	172	2,134
Pwani	M	16	86	171	170	104	63	51	661
	F	9	64	120	93	41	33	29	389
	Total	25	150	291	263	145	96	80	1,050
Rukwa	M	3	14	57	62	33	14	19	202
	F	4	27	41	36	18	8	12	146
	Total	7	41	98	98	51	22	31	348
Ruvuma	M	1	30	36	59	48	23	20	217
	F	3	17	37	29	19	11	9	125
	Total	4	47	73	88	67	34	29	342
Shinyanga	M	10	71	214	280	188	112	107	982
	F	15	88	137	110	56	23	29	458
	Total	25	159	351	390	244	135	136	1,440
Singida	M	1	25	74	89	66	44	44	343
	F	0	22	34	30	8	14	7	115
	Total	1	47	108	119	74	58	51	458
Tabora	M	2	24	58	81	74	44	18	301
	F	3	28	56	42	29	18	19	195
	Total	5	52	114	123	103	62	37	496

Tanga	M	6	60	129	129	88	33	36	481
	F	10	41	64	67	27	20	10	239
	Total	16	101	193	196	115	53	46	720
Mainland	M	229	1,848	4,288	4,160	2,605	1,306	1,053	15,489
	F	256	1,594	2,758	2,103	1,014	542	492	8,759
	Total	485	3,442	7,046	6,263	3,619	1,848	1,545	24,248
Pemba	M	0	3	9	8	10	4	6	40
	F	2	4	9	5	3	4	2	29
	Total	2	7	18	13	13	8	8	69
Unguja	M	6	38	49	34	25	10	8	170
	F	3	22	20	15	12	1	5	78
	Total	9	60	69	49	37	11	13	248
Zanzibar	M	6	41	58	42	35	14	14	210
	F	5	26	29	20	15	5	7	107
	Total	11	67	87	62	50	19	21	317
Tanzania	M	235	1,889	4,346	4,202	2,640	1,320	1,067	15,699
	F	261	1,620	2,787	2,123	1,029	547	499	8,866
	Total	**496**	**3,509**	**7,133**	**6,325**	**3,669**	**1,867**	**1,566**	**24,565**

Annex 3:

Treatment results of new TB patients (AFBN, AFBP,Extra Pulm) notified in 2012

region	Cured			Treatment Completed			Failure			Died			Out of Control			Transfer out			Total		
	F	M	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M	T
Dar Ilala I																					
New AFBP	433	1,007	1,440	9	22	31	2	7	9	26	21	47	9	36	45	27	63	90	506	1,156	1,662
New AFBN				336	485	821				14	17	31	3	4	7	20	19	39	373	525	898
New ExtP				179	229	408				6	7	13	0	3	3	8	12	20	193	251	444
Total	433	1,007	1,440	524	736	1,260	2	7	9	46	45	91	12	43	55	55	94	149	1,072	1,932	3,004
Dar Kinondoni																					
New AFBP	807	1,432	2,239	45	14	59	5	9	14	23	35	58	9	25	34	12	34	46	901	1,549	2,450
New AFBN				555	840	1,395				28	30	58	5	9	14	13	19	32	601	898	1,499
New ExtP				306	423	729				12	18	30	3	4	7	6	7	13	327	452	779
Total	807	1,432	2,239	906	1,277	2,183	5	9	14	63	83	146	17	38	55	31	60	91	1,829	2,899	4,728
Dar Temeke																					
New AFBP	623	1,126	1,749	8	11	19	1	8	9	46	60	106	17	29	46	16	26	42	711	1,260	1,971
New AFBN				524	675	1,199				66	76	142	9	20	29	9	18	27	608	789	1,397
New ExtP				294	372	666				48	48	96	5	16	21	14	7	21	361	443	804
Total	623	1,126	1,749	826	1,058	1,884	1	8	9	160	184	344	31	65	96	39	51	90	1,680	2,492	4,172
Dar Ilala II																					
New AFBP	104	141	245	0	0	0	0	0	0	21	13	34	2	4	6	11	11	22	138	169	307
New AFBN				164	249	413				29	27	56	0	0	0	9	13	22	202	289	491
New ExtP				176	211	387				30	31	61	0	1	1	17	13	30	223	256	479
Total	104	141	245	340	460	800	0	0	0	80	71	151	2	5	7	37	37	74	563	714	1,277
Dar es Salaam																					
New AFBP	1,967	3,706	5,673	62	47	109	8	24	32	116	129	245	37	94	131	66	134	200	2,256	4,134	6,390
New AFBN				1,579	2,249	3,828				137	150	287	17	33	50	51	69	120	1,784	2,501	4,285
New ExtP				955	1,235	2,190				96	104	200	8	24	32	45	39	84	1,104	1,402	2,506
Total	1,967	3,706	5,673	2,596	3,531	6,127	8	24	32	349	383	732	62	151	213	162	242	404	5,144	8,037	13,181
Arusha																					
New AFBP	278	542	820	44	88	132	1	3	4	16	25	41	9	12	21	28	33	61	376	703	1,079
New AFBN				498	503	1,001				28	35	63	3	13	16	10	15	25	539	566	1,105
New ExtP				344	385	729				26	30	56	7	3	10	9	15	24	386	433	819
Total	278	542	820	886	976	1,862	1	3	4	70	90	160	19	28	47	47	63	110	1,301	1,702	3,003

Dodoma																					
New AFBP	191	374	565	34	60	94	0	0	0	6	8	14	0	1	1	3	5	8	234	448	682
New AFBN				369	531	900				11	12	23	1	1	2	6	8	14	387	552	939
New ExtP				161	213	374				0	6	6	0	0	0	5	3	8	166	222	388
Total	191	374	565	564	804	1,368	0	0	0	17	26	43	1	2	3	14	16	30	787	1,222	2,009
Iringa																					
New AFBP	321	459	780	20	27	47	0	0	0	25	37	62	0	3	3	7	13	20	373	539	912
New AFBN				398	496	894				38	55	93	7	4	11	2	6	8	445	561	1,006
New ExtP				293	320	613				14	35	49	1	0	1	1	3	4	309	358	667
Total	321	459	780	711	843	1,554	0	0	0	77	127	204	8	7	15	10	22	32	1,127	1,458	2,585
Kagera																					
New AFBP	318	649	967	1	0	1	1	2	3	15	23	38	3	13	16	2	5	7	340	692	1,032
New AFBN				364	583	947				29	40	69	2	3	5	1	3	4	396	629	1,025
New ExtP				105	129	234				4	4	8	1	2	3	0	0	0	110	135	245
Total	318	649	967	470	712	1,182	1	2	3	48	67	115	6	18	24	3	8	11	846	1,456	2,302
Kigoma																					
New AFBP	87	138	225	29	52	81	0	1	1	6	10	16	5	13	18	6	5	11	133	219	352
New AFBN				147	177	324				10	21	31	2	2	4	1	7	8	160	207	367
New ExtP				108	90	198				10	7	17	6	2	8	2	5	7	126	104	230
Total	87	138	225	284	319	603	0	1	1	26	38	64	13	17	30	9	17	26	419	530	949
Kilimanjaro																					
New AFBP	175	426	601	42	89	131	0	5	5	13	29	42	8	32	40	21	65	86	259	646	905
New AFBN				268	443	711				39	52	91	15	22	37	13	35	48	335	552	887
New ExtP				107	163	270				19	25	44	8	17	25	21	25	46	155	230	385
Total	175	426	601	417	695	1,112	0	5	5	71	106	177	31	71	102	55	125	180	749	1,428	2,177
Lindi																					
New AFBP	182	284	466	5	15	20	1	1	2	8	16	24	1	4	5	7	11	18	204	331	535
New AFBN				117	146	263				11	16	27	1	3	4	6	7	13	135	172	307
New ExtP				191	209	400				17	25	42	2	3	5	17	14	31	227	251	478
Total	182	284	466	313	370	683	1	1	2	36	57	93	4	10	14	30	32	62	566	754	1,320
Manyara																					
New AFBP	152	336	488	47	150	197	0	1	1	12	33	45	1	9	10	4	6	10	216	535	751
New AFBN				313	437	750				25	35	60	1	3	4	2	1	3	341	476	817
New ExtP				317	301	618				11	16	27	1	1	2	0	5	5	329	323	652
Total	152	336	488	677	888	1,565	0	1	1	48	84	132	3	13	16	6	12	18	886	1,334	2,220
Mara																					

New AFBP	567	587	1,154	5	4	9	1	5	6	13	18	31	21	22	43	19	13	32	626	649	1,275
New AFBN				379	317	696				18	21	39	9	13	22	9	9	18	415	360	775
New ExtP				551	356	907				10	15	25	2	3	5	4	4	8	567	378	945
Total	567	587	1,154	935	677	1,612	1	5	6	41	54	95	32	38	70	32	26	58	1,608	1,387	2,995
Mbeya																					
New AFBP	436	623	1,059	108	127	235	0	2	2	28	59	87	8	23	31	6	11	17	586	845	1,431
New AFBN				480	586	1,066				22	37	59	2	3	5	1	5	6	505	631	1,136
New ExtP				473	582	1,055				34	35	69	2	5	7	4	1	5	513	623	1,136
Total	436	623	1,059	1,061	1,295	2,356	0	2	2	84	131	215	12	31	43	11	17	28	1,604	2,099	3,703
Morogoro																					
New AFBP	343	698	1,041	34	43	77	0	0	0	11	20	31	3	5	8	15	17	32	406	783	1,189
New AFBN				459	652	1,111				25	39	64	5	6	11	12	13	25	501	710	1,211
New ExtP				285	440	725				13	34	47	1	4	5	6	8	14	305	486	791
Total	343	698	1,041	778	1,135	1,913	0	0	0	49	93	142	9	15	24	33	38	71	1,212	1,979	3,191
Mtwara																					
New AFBP	222	440	662	31	60	91	0	0	0	5	11	16	1	9	10	4	7	11	263	527	790
New AFBN				177	296	473				4	11	15	0	0	0	0	2	2	181	309	490
New ExtP				134	297	431				5	5	10	0	0	0	1	1	2	140	303	443
Total	222	440	662	342	653	995	0	0	0	14	27	41	1	9	10	5	10	15	584	1,139	1,723
Mwanza																					
New AFBP	463	919	1,382	147	262	409	1	9	10	37	78	115	8	45	53	26	56	82	682	1,369	2,051
New AFBN				921	1,176	2,097				62	85	147	19	36	55	26	41	67	1,028	1,338	2,366
New ExtP				563	664	1,227				37	40	77	15	9	24	21	29	50	636	742	1,378
Total	463	919	1,382	1,631	2,102	3,733	1	9	10	136	203	339	42	90	132	73	126	199	2,346	3,449	5,795
Pwani																					
New AFBP	369	603	972	8	13	21	0	6	6	27	29	56	5	17	22	7	1	8	416	669	1,085
New AFBN				128	190	318				14	20	34	1	1	2	0	1	1	143	212	355
New ExtP				155	237	392				13	16	29	2	4	6	2	2	4	172	259	431
Total	369	603	972	291	440	731	0	6	6	54	65	119	8	22	30	9	4	13	731	1,140	1,871
Rukwa																					
New AFBP	101	197	298	0	0	0	0	0	0	7	3	10	0	1	1	0	1	1	108	202	310
New AFBN				61	72	133				1	5	6	0	1	1	0	1	1	62	79	141
New ExtP				72	99	171				4	6	10	0	0	0	0	0	0	76	105	181
Total	101	197	298	133	171	304	0	0	0	12	14	26	0	2	2	0	2	2	246	386	632

Ruvuma																					
New AFBP	150	215	365	0	3	3	0	0	0	3	13	16	0	0	0	0	1	1	153	232	385
New AFBN				158	206	364				7	14	21	0	0	0	0	0	0	165	220	385
New ExtP				313	344	657				29	24	53	0	0	0	1	0	1	343	368	711
Total	150	215	365	471	553	1,024	0	0	0	39	51	90	0	0	0	1	1	2	661	820	1,481
Shinyanga																					
New AFBP	502	1,006	1,508	14	27	41	1	1	2	22	43	65	8	19	27	12	25	37	559	1,121	1,680
New AFBN				531	691	1,222				40	32	72	8	5	13	9	12	21	588	740	1,328
New ExtP				398	396	794				29	39	68	3	8	11	8	8	16	438	451	889
Total	502	1,006	1,508	943	1,114	2,057	1	1	2	91	114	205	19	32	51	29	45	74	1,585	2,312	3,897
Singida																					
New AFBP	103	313	416	1	1	2	1	1	2	8	14	22	2	4	6	4	12	16	119	345	464
New AFBN				205	274	479				19	16	35	0	0	0	6	11	17	230	301	531
New ExtP				135	127	262				10	5	15	0	0	0	6	3	9	151	135	286
Total	103	313	416	341	402	743	1	1	2	37	35	72	2	4	6	16	26	42	500	781	1,281
Tabora																					
New AFBP	125	214	339	22	46	68	0	2	2	11	16	27	6	18	24	7	17	24	171	313	484
New AFBN				193	237	430				22	27	49	10	8	18	7	13	20	232	285	517
New ExtP				119	140	259				12	9	21	13	16	29	5	18	23	149	183	332
Total	125	214	339	334	423	757	0	2	2	45	52	97	29	42	71	19	48	67	552	781	1,333
Tanga																					
New AFBP	264	444	708	35	72	107	0	0	0	16	19	35	3	6	9	9	22	31	327	563	890
New AFBN				590	703	1,293				14	40	54	2	5	7	21	19	40	627	767	1,394
New ExtP				194	264	458				9	10	19	1	6	7	10	10	20	214	290	504
Total	264	444	708	819	1,039	1,858	0	0	0	39	69	108	6	17	23	40	51	91	1,168	1,620	2,788
Mainland																					
New AFBP	5,349	9,467	14,816	627	1,139	1,766	7	39	46	289	504	793	92	256	348	187	326	513	6,551	11,731	18,282
New AFBN				6,756	8,716	15,472				439	613	1,052	88	129	217	132	209	341	7,415	9,667	17,082
New ExtP				5,018	5,756	10,774				306	386	692	65	83	148	123	154	277	5,512	6,379	11,891
Total	5,349	9,467	14,816	12,401	15,611	28,012	7	39	46	1,034	1,503	2,537	245	468	713	442	689	1,131	19,478	27,777	47,255
Pemba																					
New AFBP	17	23	40	0	0	0	0	1	1	1	1	2	1	0	1	0	1	1	19	26	45
New AFBN				14	22	36				0	0	0	0	0	0	0	2	2	14	24	38
New ExtP				5	10	15				1	1	2	0	0	0	0	0	0	6	11	17
Total	17	23	40	19	32	51	0	1	1	2	2	4	1	0	1	0	3	3	39	61	100

Unguja																					
New AFBP	67	157	224	0	0	0	2	1	3	4	4	8	0	3	3	5	14	19	78	179	257
New AFBN				34	38	72				4	9	13	0	0	0	2	1	3	40	48	88
New ExtP				22	29	51				1	8	9	0	0	0	2	2	4	25	39	64
Total	67	157	224	56	67	123	2	1	3	9	21	30	0	3	3	9	17	26	143	266	409
Zanzibar																					
New AFBP	84	180	264	0	0	0	2	2	4	5	5	10	1	3	4	5	15	20	97	205	302
New AFBN	48	60	108	4	9	13				0	0	0	2	3	5	54	72	126			
New ExtP	27	39	66	2	9	11				0	0	0	2	2	4	31	50	81			
Total	84	180	264	75	99	174	2	2	4	11	23	34	1	3	4	9	20	29	182	327	509
Tanzania																					
New AFBP	7,400	13,353	20,753	689	1,186	1,875	17	65	82	410	638	1,048	130	353	483	258	475	733	8,904	16,070	24,974
New AFBN				8,383	11,025	19,408				580	772	1,352	105	162	267	185	281	466	9,253	12,240	21,493
New ExtP				6,000	7,030	13,030				404	499	903	73	107	180	170	195	365	6,647	7,831	14,478
Total	**7,400**	**13,353**	**20,753**	**15,072**	**19,241**	**34,313**	**17**	**65**	**82**	**1,394**	**1,909**	**3,303**	**308**	**622**	**930**	**613**	**951**	**1,564**	**24,804**	**36,141**	**60,945**

Annex 4:

Treatment results of all re-treatment (Relapses, Return and other) TB patients notified in 2012

region	category	Cured			Treatment Completed			Failure			Died			Out of Control			Transfer out			Total		
		F	M	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M	T	F	M	T
Dar Ilala I	Relapse	5	23	28	2	0	2	0	3	3	0	1	1	0	2	2	0	3	3	7	32	39
	Failure	0	8	8	0	1	1	1	1	2	1	0	1	1	0	1	0	1	1	3	11	14
	Return	1	3	4	0	0	0	0	0	0	0	1	1	1	1	2	0	0	0	2	5	7
	Others	0	0	0	16	29	45	0	0	0	1	5	6	0	1	1	0	0	0	17	35	52
	Total	6	34	40	18	30	48	1	4	5	2	7	9	2	4	6	0	4	4	29	83	112
Dar Kinondoni	Relapse	19	52	71	0	0	0	0	0	0	2	5	7	1	4	5	1	0	1	23	61	84
	Failure	5	11	16	0	3	3	1	2	3	0	3	3	1	1	2	1	1	2	8	21	29
	Return	3	6	9	0	1	1	0	0	0	0	2	2	1	3	4	0	2	2	4	14	18
	Others	3	5	8	19	40	59	0	0	0	1	2	3	1	1	2	0	1	1	24	49	73
	Total	30	74	104	19	44	63	1	2	3	3	12	15	4	9	13	2	4	6	59	145	204
Dar Temeke	Relapse	20	43	63	0	2	2	1	0	1	1	3	4	1	1	2	0	0	0	23	49	72
	Failure	1	5	6	2	1	3	0	1	1	0	0	0	0	2	2	0	0	0	3	9	12
	Return	0	4	4	0	0	0	0	2	2	0	0	0	0	4	4	0	1	1	0	11	11
	Others	2	4	6	34	46	80	0	0	0	3	12	15	1	3	4	0	2	2	40	67	107
	Total	23	56	79	36	49	85	1	3	4	4	15	19	2	10	12	0	3	3	66	136	202
Dar Ilala II	Relapse	8	7	15	0	0	0	0	0	0	0	2	2	0	2	2	0	0	0	8	11	19
	Failure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Return	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	4	4
	Others	0	0	0	18	17	35	0	0	0	0	4	4	0	1	1	3	2	5	21	24	45
	Total	8	10	18	18	17	35	0	0	0	0	6	6	0	3	3	3	3	6	29	39	68
Dar es Salaam	Relapse	52	125	177	2	2	4	1	3	4	3	11	14	2	9	11	1	3	4	61	153	214
	Failure	6	24	30	2	5	7	2	4	6	1	3	4	2	3	5	1	2	3	14	41	55
	Return	4	16	20	0	1	1	0	2	2	0	3	3	2	8	10	0	4	4	6	34	40

	Others	5	9	14	87	132	219	0	0	0	5	23	28	2	6	8	3	5	8	102	175	277
	Total	67	174	241	91	140	231	3	9	12	9	40	49	8	26	34	5	14	19	183	403	586
Arusha	Relapse	11	21	32	1	3	4	0	0	0	0	2	2	0	1	1	2	0	2	14	27	41
	Failure	1	5	6	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	5	7
	Return	0	6	6	1	0	1	0	0	0	0	0	0	0	1	1	1	0	1	2	7	9
	Others	0	0	0	24	37	61	0	0	0	0	7	7	0	1	1	3	2	5	27	47	74
	Total	12	32	44	27	40	67	0	0	0	0	9	9	0	3	3	6	2	8	45	86	131
Dodoma	Relapse	9	19	28	1	4	5	0	0	0	0	2	2	0	1	1	0	0	0	10	26	36
	Failure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	Return	1	5	6	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	6	7
	Others	0	0	0	11	16	27	0	0	0	0	1	1	1	0	1	0	1	1	12	18	30
	Total	10	24	34	12	21	33	0	0	0	0	3	3	1	1	2	0	1	1	23	50	73
Iringa	Relapse	20	22	42	1	0	1	1	0	1	0	4	4	0	0	0	0	0	0	22	26	48
	Failure	2	2	4	1	0	1	0	0	0	2	0	2	0	0	0	1	0	1	6	2	8
	Return	0	2	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
	Others	2	0	2	34	43	77	0	0	0	4	8	12	0	1	1	0	1	1	40	53	93
	Total	24	26	50	37	43	80	1	0	1	6	12	18	0	1	1	1	1	2	69	83	152
Kagera	Relapse	17	21	38	1	2	3	0	0	0	0	0	0	1	0	1	0	0	0	19	23	42
	Failure	1	6	7	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	7	8
	Return	4	7	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7	11
	Others	0	0	0	16	58	74	0	0	0	0	7	7	0	0	0	0	1	1	16	66	82
	Total	22	34	56	17	60	77	0	1	1	0	7	7	1	0	1	0	1	1	40	103	143
Kigoma	Relapse	4	13	17	1	2	3	0	0	0	0	0	0	0	1	1	0	0	0	5	16	21
	Failure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	1
	Return	0	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	2	2
	Others	0	0	0	10	10	20	0	0	0	0	0	0	0	0	0	0	0	0	10	10	20
	Total	4	14	18	11	12	23	0	0	0	0	0	0	0	2	2	1	0	1	16	28	44

Kilimanjaro	Relapse	6	44	50	2	2	4	0	0	0	1	5	6	0	2	2	0	6	6	9	59	68
	Failure	0	2	2	0	0	0	0	2	2	0	1	1	0	0	0	0	0	0	0	5	5
	Return	0	6	6	1	1	2	0	0	0	0	1	1	0	2	2	0	1	1	1	11	12
	Others	0	2	2	13	21	34	0	0	0	3	3	6	1	1	2	0	2	2	17	29	46
	Total	6	54	60	16	24	40	0	2	2	4	10	14	1	5	6	0	9	9	27	104	131
Lindi	Relapse	6	16	22	0	1	1	0	1	1	1	1	2	0	0	0	0	0	0	7	19	26
	Failure	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
	Return	1	3	4	0	1	1	0	0	0	1	1	2	0	0	0	0	0	0	2	5	7
	Others	0	0	0	4	6	10	2	0	2	0	0	0	0	0	0	0	0	0	6	6	12
	Total	9	20	29	4	8	12	2	1	3	2	2	4	0	0	0	0	0	0	17	31	48
Manyara	Relapse	10	27	37	4	2	6	1	0	1	0	4	4	0	1	1	0	0	0	15	34	49
	Failure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Return	0	6	6	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7
	Others	0	1	1	25	29	54	0	0	0	1	5	6	0	1	1	0	0	0	26	36	62
	Total	10	34	44	29	32	61	1	0	1	1	9	10	0	2	2	0	0	0	41	77	118
Mara	Relapse	17	32	49	1	0	1	0	0	0	2	3	5	1	0	1	0	1	1	21	36	57
	Failure	2	5	7	0	1	1	0	0	0	1	0	1	0	0	0	0	0	0	3	6	9
	Return	4	4	8	0	1	1	0	0	0	0	0	0	0	3	3	0	0	0	4	8	12
	Others	0	0	0	21	29	50	1	0	1	2	2	4	0	1	1	1	1	2	25	33	58
	Total	23	41	64	22	31	53	1	0	1	5	5	10	1	4	5	1	2	3	53	83	136
Mbeya	Relapse	16	30	46	0	3	3	0	1	1	5	3	8	0	2	2	2	0	2	23	39	62
	Failure	2	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	5
	Return	4	6	10	0	0	0	0	0	0	0	2	2	0	1	1	0	0	0	4	9	13
	Others	0	0	0	25	41	66	0	0	0	3	4	7	1	1	2	0	0	0	29	46	75
	Total	22	39	61	25	44	69	0	1	1	8	9	17	1	4	5	2	0	2	58	97	155
Morogoro	Relapse	9	14	23	0	1	1	0	0	0	1	1	2	0	0	0	1	0	1	11	16	27
	Failure	0	4	4	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	4	5
	Return	1	2	3	1	2	3	0	0	0	0	2	2	0	1	1	0	0	0	2	7	9

	Others	0	0	0	13	23	36	0	0	0	1	7	8	0	0	0	0	0	0	14	30	44
	Total	10	20	30	14	26	40	0	0	0	3	10	13	0	1	1	1	0	1	28	57	85
Mtwara	Relapse	24	46	70	0	0	0	1	0	1	0	1	1	0	1	1	1	1	2	26	49	75
	Failure	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
	Return	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
	Others	0	0	0	24	61	85	0	0	0	1	6	7	0	0	0	0	0	0	25	67	92
	Total	24	51	75	24	61	85	1	0	1	1	7	8	0	1	1	1	1	2	51	121	172
Mwanza	Relapse	9	42	51	3	6	9	3	0	3	0	7	7	0	1	1	0	2	2	15	58	73
	Failure	4	8	12	1	1	2	0	1	1	1	0	1	0	0	0	0	2	2	6	12	18
	Return	3	4	7	2	3	5	0	0	0	0	1	1	0	3	3	0	1	1	5	12	17
	Others	0	1	1	13	20	33	0	0	0	2	4	6	0	0	0	0	2	2	15	27	42
	Total	16	55	71	19	30	49	3	1	4	3	12	15	0	4	4	0	7	7	41	109	150
Pwani	Relapse	8	20	28	3	0	3	0	1	1	0	3	3	0	0	0	0	0	0	11	24	35
	Failure	1	3	4	0	1	1	0	2	2	0	0	0	0	1	1	0	0	0	1	7	8
	Return	0	6	6	0	1	1	0	0	0	1	0	1	0	1	1	0	0	0	1	8	9
	Others	0	0	0	6	6	12	1	0	1	1	3	4	0	0	0	0	0	0	8	9	17
	Total	9	29	38	9	8	17	1	3	4	2	6	8	0	2	2	0	0	0	21	48	69
Rukwa	Relapse	7	5	12	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	8	5	13
	Failure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
	Return	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3
	Others	0	0	0	4	14	18	0	0	0	1	1	2	0	1	1	0	0	0	5	16	21
	Total	8	7	15	5	14	19	0	0	0	1	1	2	0	1	1	0	0	0	14	23	37
Ruvuma	Relapse	3	7	10	0	1	1	0	0	0	2	2	4	0	0	0	0	0	0	5	10	15
	Failure	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
	Return	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Others	0	0	0	17	24	41	0	0	0	1	0	1	0	0	0	0	0	0	18	24	42
	Total	3	9	12	17	26	43	0	0	0	3	2	5	0	0	0	0	0	0	23	37	60
Shinyanga	Relapse	15	35	50	1	1	2	0	0	0	0	3	3	0	0	0	0	1	1	16	40	56
	Failure	1	4	5	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	1	7	8

	Return	3	1	4	2	1	3	0	0	0	0	3	3	0	1	1	0	0	0	5	6	11
	Others	2	0	2	28	49	77	1	0	1	5	11	16	1	0	1	1	1	2	38	61	99
	Total	21	40	61	31	51	82	1	0	1	5	18	23	1	2	3	1	3	4	60	114	174
Singida	Relapse	4	20	24	0	0	0	0	0	0	0	1	1	0	0	0	1	3	4	5	24	29
	Failure	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Return	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
	Others	1	1	2	7	15	22	0	0	0	0	2	2	0	0	0	0	1	1	8	19	27
	Total	5	25	30	7	15	22	0	0	0	0	3	3	0	0	0	1	4	5	13	47	60
Tabora	Relapse	5	15	20	1	1	2	0	1	1	2	2	4	0	5	5	0	0	0	8	24	32
	Failure	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
	Return	0	2	2	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	3	4
	Others	0	0	0	6	10	16	0	0	0	0	0	0	1	0	1	0	0	0	7	10	17
	Total	5	19	24	8	12	20	0	1	1	2	2	4	1	5	6	0	0	0	16	39	55
Tanga	Relapse	4	19	23	0	3	3	0	0	0	1	1	2	0	0	0	0	1	1	5	24	29
	Failure	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Return	0	4	4	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	6	6
	Others	1	3	4	20	58	78	0	0	0	2	6	8	0	2	2	0	2	2	23	71	94
	Total	5	27	32	20	61	81	0	1	1	3	8	11	0	2	2	0	3	3	28	102	130
Mainland	Relapse	204	468	672	21	32	53	6	4	10	15	45	60	2	15	17	7	15	22	255	579	834
	Failure	16	50	66	3	4	7	0	6	6	5	2	7	0	2	2	2	3	5	26	67	93
	Return	22	74	96	9	13	22	0	1	1	2	11	13	0	14	14	1	2	3	34	115	149
	Others	6	8	14	321	570	891	5	0	5	27	77	104	5	9	14	5	14	19	369	678	1,047
	Total	248	600	848	354	619	973	11	11	22	49	135	184	7	40	47	15	34	49	684	1,439	2,123
Pemba	Relapse	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Failure	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	Return	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Others	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

Unguja	Relapse	4	5	9	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	4	7	11
	Failure	2	1	3	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	3	1	4
	Return	0	3	3	0	0	0	0	0	0	0	1	1	0	3	3	0	0	0	0	7	7
	Others	0	0	0	1	1	2	0	0	0	0	1	1	0	0	0	0	0	0	1	2	3
	Total	6	9	15	1	1	2	0	0	0	1	3	4	0	4	4	0	0	0	8	17	25
Zanzibar	Relapse	4	6	10	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	4	8	12
	Failure	2	2	4	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	3	2	5
	Return	0	3	3	0	0	0	0	0	0	0	1	1	0	3	3	0	0	0	0	7	7
	Others	0	0	0	1	1	2	0	0	0	0	1	1	0	0	0	0	0	0	1	2	3
	Total	6	11	17	1	1	2	0	0	0	1	3	4	0	4	4	0	0	0	8	19	27
Tanzania	Relapse	260	599	859	23	34	57	7	7	14	18	57	75	4	25	29	8	18	26	320	740	1,060
	Failure	24	76	100	5	9	14	2	10	12	7	5	12	2	5	7	3	5	8	43	110	153
	Return	26	93	119	9	14	23	0	3	3	2	15	17	2	25	27	1	6	7	40	156	196
	Others	11	17	28	409	703	1,112	5	0	5	32	101	133	7	15	22	8	19	27	472	855	1,327
	Total	**321**	**785**	**1,106**	**446**	**760**	**1,206**	**14**	**20**	**34**	**59**	**178**	**237**	**15**	**70**	**85**	**20**	**48**	**68**	**875**	**1,861**	**2,736**

Annex 5:

Tuberculosis and HIV positive patients notified 2013

Region / category	Patient notified			Tested for HIV			HIV positive			Referred to CTC			Registered for HIV care			Started ART			Started CPT		
	Fem.	Male	Total	Fem.	Male	Total	Fem.	Male	Total	Fem.	Male	Total	Fem.	Male	Total	Fem.	Male	Total	Fem.	Male	Total
Dar Ilala I																					
New SM+	594	1,157	1,751	395	790	1,185	177	173	350	172	172	344	167	163	330	145	144	289	173	167	340
Other	660	1,000	1,660	485	755	1,240	231	279	510	230	271	501	213	259	472	195	243	438	227	268	495
Total	1,254	2,157	3,411	880	1,545	2,425	408	452	860	402	443	845	380	422	802	340	387	727	400	435	835
Dar Kinondoni																					
New SM+	971	1,656	2,627	1,010	1,685	2,695	425	398	823	403	380	783	401	373	774	373	352	725	417	390	807
Other	1,001	1,261	2,262	901	1,172	2,073	401	395	796	387	380	767	375	376	751	343	338	681	379	383	762
Total	**1,972**	**2,917**	**4,889**	**1,911**	**2,857**	**4,768**	**826**	**793**	**1,619**	**790**	**760**	**1,550**	**776**	**749**	**1,525**	**716**	**690**	**1,406**	**796**	**773**	**1,569**
Dar Temeke																					
New SM+	866	1,353	2,219	862	1,288	2,150	383	378	761	305	322	627	325	281	606	265	233	498	383	377	760
Other	1,041	1,363	2,404	970	1,346	2,316	533	556	1,089	407	439	846	462	463	925	387	387	774	515	537	1,052
Total	1,907	2,716	4,623	1,832	2,634	4,466	916	934	1,850	712	761	1,473	787	744	1,531	652	620	1,272	898	914	1,812
Dar Ilala II																					
New SM+	146	243	389	137	236	373	59	61	120	59	61	120	54	56	110	53	50	103	59	61	120
Other	454	551	1,005	420	529	949	194	176	370	194	176	370	175	160	335	168	151	319	193	176	369
Total	**600**	**794**	**1,394**	**557**	**765**	**1,322**	**253**	**237**	**490**	**253**	**237**	**490**	**229**	**216**	**445**	**221**	**201**	**422**	**252**	**237**	**489**
Dar es Salaam																					
New SM+	2,577	4,409	6,986	2,404	3,999	6,403	1,044	1,010	2,054	939	935	1,874	947	873	1,820	836	779	1,615	1,032	995	2,027
Other	3,156	4,175	7,331	2,776	3,802	6,578	1,359	1,406	2,765	1,218	1,266	2,484	1,225	1,258	2,483	1,093	1,119	2,212	1,314	1,364	2,678
Total	**5,733**	**8,584**	**14,317**	**5,180**	**7,801**	**12,981**	**2,403**	**2,416**	**4,819**	**2,157**	**2,201**	**4,358**	**2,172**	**2,131**	**4,303**	**1,929**	**1,898**	**3,827**	**2,346**	**2,359**	**4,705**
Arusha																					
New SM+	313	641	954	212	494	706	53	85	138	47	79	126	51	83	134	48	80	128	52	84	136
Other	971	1,164	2,135	652	845	1,497	215	217	432	183	193	376	212	211	423	198	202	400	215	217	432
Total	**1,284**	**1,805**	**3,089**	**864**	**1,339**	**2,203**	**268**	**302**	**570**	**230**	**272**	**502**	**263**	**294**	**557**	**246**	**282**	**528**	**267**	**301**	**568**
Dodoma																					
New SM+	210	490	700	123	330	453	33	40	73	33	40	73	33	39	72	30	37	67	33	40	73

Other	656	876	1,532	386	516	902	152	122	274	152	122	274	151	121	272	133	105	238	152	121	273
Total	**866**	**1,366**	**2,232**	**509**	**846**	**1,355**	**185**	**162**	**347**	**185**	**162**	**347**	**184**	**160**	**344**	**163**	**142**	**305**	**185**	**161**	**346**
Iringa																					
New SM+	356	473	829	318	400	718	172	199	371	151	178	329	148	167	315	121	134	255	160	189	349
Other	643	798	1,441	566	655	1,221	369	414	783	332	354	686	304	319	623	237	261	498	348	390	738
Total	**999**	**1,271**	**2,270**	**884**	**1,055**	**1,939**	**541**	**613**	**1,154**	**483**	**532**	**1,015**	**452**	**486**	**938**	**358**	**395**	**753**	**508**	**579**	**1,087**
Kagera																					
New SM+	348	677	1,025	274	554	828	92	123	215	85	112	197	84	110	194	43	45	88	79	107	186
Other	560	835	1,395	495	749	1,244	234	326	560	225	303	528	222	304	526	105	145	250	223	285	508
Total	**908**	**1,512**	**2,420**	**769**	**1,303**	**2,072**	**326**	**449**	**775**	**310**	**415**	**725**	**306**	**414**	**720**	**148**	**190**	**338**	**302**	**392**	**694**
Kigoma																					
New SM+	128	196	324	121	209	330	27	36	63	24	33	57	25	33	58	23	29	52	26	34	60
Other	226	274	500	220	255	475	61	46	107	61	46	107	56	43	99	52	40	92	59	48	107
Total	**354**	**470**	**824**	**341**	**464**	**805**	**88**	**82**	**170**	**85**	**79**	**164**	**81**	**76**	**157**	**75**	**69**	**144**	**85**	**82**	**167**
Kilimanjaro																					
New SM+	248	674	922	199	516	715	69	86	155	69	86	155	67	80	147	45	63	108	71	97	168
Other	647	959	1,606	465	711	1,176	224	229	453	220	226	446	216	211	427	151	137	288	229	229	458
Total	**895**	**1,633**	**2,528**	**664**	**1,227**	**1,891**	**293**	**315**	**608**	**289**	**312**	**601**	**283**	**291**	**574**	**196**	**200**	**396**	**300**	**326**	**626**
Lindi																					
New SM+	151	333	484	153	345	498	43	54	97	33	45	78	42	55	97	38	40	78	42	55	97
Other	389	497	886	363	472	835	178	147	325	155	127	282	174	145	319	131	107	238	175	145	320
Total	**540**	**830**	**1,370**	**516**	**817**	**1,333**	**221**	**201**	**422**	**188**	**172**	**360**	**216**	**200**	**416**	**169**	**147**	**316**	**217**	**200**	**417**
Manyara																					
New SM+	302	561	863	282	526	808	47	47	94	37	38	75	50	45	95	34	30	64	50	45	95
Other	782	898	1,680	653	810	1,463	152	110	262	110	89	199	146	106	252	99	71	170	146	107	253
Total	**1,084**	**1,459**	**2,543**	**935**	**1,336**	**2,271**	**199**	**157**	**356**	**147**	**127**	**274**	**196**	**151**	**347**	**133**	**101**	**234**	**196**	**152**	**348**
Mara																					
New SM+	467	520	987	450	492	942	127	99	226	104	84	188	111	87	198	83	65	148	119	90	209
Other	1,178	968	2,146	1,130	866	1,996	371	288	659	301	219	520	321	252	573	228	189	417	338	270	608
Total	**1,645**	**1,488**	**3,133**	**1,580**	**1,358**	**2,938**	**498**	**387**	**885**	**405**	**303**	**708**	**432**	**339**	**771**	**311**	**254**	**565**	**457**	**360**	**817**
Mbeya																					
New SM+	500	733	1,233	445	627	1,072	301	358	659	179	218	397	277	301	578	228	259	487	295	346	641

Other	1,021	1,398	2,419	906	1,222	2,128	547	705	1,252	320	402	722	505	645	1,150	396	488	884	534	695	1,229
Total	**1,521**	**2,131**	**3,652**	**1,351**	**1,849**	**3,200**	**848**	**1,063**	**1,911**	**499**	**620**	**1,119**	**782**	**946**	**1,728**	**624**	**747**	**1,371**	**829**	**1,041**	**1,870**
Morogoro																					
New SM+	384	726	1,110	323	637	960	115	131	246	107	123	230	101	105	206	73	73	146	115	129	244
Other	877	1,244	2,121	719	1,076	1,795	334	391	725	319	371	690	293	304	597	198	220	418	330	381	711
Total	**1,261**	**1,970**	**3,231**	**1,042**	**1,713**	**2,755**	**449**	**522**	**971**	**426**	**494**	**920**	**394**	**409**	**803**	**271**	**293**	**564**	**445**	**510**	**955**
Mtwara																					
New SM+	317	526	843	291	443	734	57	75	132	57	75	132	53	72	125	44	54	98	52	72	124
Other	426	630	1,056	375	502	877	148	135	283	146	133	279	136	127	263	110	95	205	139	126	265
Total	**743**	**1,156**	**1,899**	**666**	**945**	**1,611**	**205**	**210**	**415**	**203**	**208**	**411**	**189**	**199**	**388**	**154**	**149**	**303**	**191**	**198**	**389**
Mwanza																					
New SM+	791	1,343	2,134	688	1,197	1,885	264	337	601	251	322	573	246	315	561	167	213	380	263	339	602
Other	1,971	2,321	4,292	1,660	1,969	3,629	841	823	1,664	812	800	1,612	810	793	1,603	582	575	1,157	844	824	1,668
Total	**2,762**	**3,664**	**6,426**	**2,348**	**3,166**	**5,514**	**1,105**	**1,160**	**2,265**	**1,063**	**1,122**	**2,185**	**1,056**	**1,108**	**2,164**	**749**	**788**	**1,537**	**1,107**	**1,163**	**2,270**
Pwani																					
New SM+	389	661	1,050	390	629	1,019	172	136	308	154	121	275	168	134	302	144	116	260	170	135	305
Other	511	680	1,191	478	695	1,173	253	248	501	216	211	427	232	226	458	197	185	382	234	231	465
Total	**900**	**1,341**	**2,241**	**868**	**1,324**	**2,192**	**425**	**384**	**809**	**370**	**332**	**702**	**400**	**360**	**760**	**341**	**301**	**642**	**404**	**366**	**770**
Rukwa																					
New SM+	146	202	348	131	200	331	49	72	121	48	72	120	48	72	120	26	30	56	48	71	119
Other	159	212	371	140	177	317	65	63	128	65	61	126	60	60	120	27	34	61	60	56	116
Total	**305**	**414**	**719**	**271**	**377**	**648**	**114**	**135**	**249**	**113**	**133**	**246**	**108**	**132**	**240**	**53**	**64**	**117**	**108**	**127**	**235**
Ruvuma																					
New SM+	125	217	342	103	195	298	34	49	83	32	44	76	33	46	79	27	37	64	33	47	80
Other	618	667	1,285	462	547	1,009	207	232	439	200	213	413	206	224	430	178	203	381	207	229	436
Total	**743**	**884**	**1,627**	**565**	**742**	**1,307**	**241**	**281**	**522**	**232**	**257**	**489**	**239**	**270**	**509**	**205**	**240**	**445**	**240**	**276**	**516**
Shinyanga																					
New SM+	458	982	1,440	320	662	982	133	220	353	125	207	332	125	212	337	106	176	282	130	219	349
Other	1,258	1,557	2,815	897	1,080	1,977	586	608	1,194	536	542	1,078	560	584	1,144	462	498	960	578	599	1,177
Total	**1,716**	**2,539**	**4,255**	**1,217**	**1,742**	**2,959**	**719**	**828**	**1,547**	**661**	**749**	**1,410**	**685**	**796**	**1,481**	**568**	**674**	**1,242**	**708**	**818**	**1,526**
Singida																					
New SM+	115	343	458	107	345	452	41	49	90	37	43	80	40	42	82	57	36	93	44	47	91

Other	388	537	925	370	506	876	138	115	253	131	107	238	124	105	229	106	93	199	138	115	253
Total	**503**	**880**	**1,383**	**477**	**851**	**1,328**	**179**	**164**	**343**	**168**	**150**	**318**	**164**	**147**	**311**	**163**	**129**	**292**	**182**	**162**	**344**
Tabora																					
New SM+	195	301	496	90	214	304	49	83	132	48	80	128	47	78	125	43	68	111	47	79	126
Other	595	736	1,331	330	374	704	161	128	289	151	123	274	148	118	266	133	103	236	152	121	273
Total	**790**	**1,037**	**1,827**	**420**	**588**	**1,008**	**210**	**211**	**421**	**199**	**203**	**402**	**195**	**196**	**391**	**176**	**171**	**347**	**199**	**200**	**399**
Tanga																					
New SM+	239	481	720	162	311	473	66	86	152	54	71	125	64	70	134	59	54	113	70	92	162
Other	1,096	1,244	2,340	499	568	1,067	267	228	495	203	200	403	239	211	450	210	189	399	278	245	523
Total	**1,335**	**1,725**	**3,060**	**661**	**879**	**1,540**	**333**	**314**	**647**	**257**	**271**	**528**	**303**	**281**	**584**	**269**	**243**	**512**	**348**	**337**	**685**
Mainland																					
New SM+	8,759	15,489	24,248	7,586	13,325	20,911	2,988	3,375	6,363	2,614	3,006	5,620	2,760	3,019	5,779	2,275	2,418	4,693	2,931	3,312	6,243
Other	18,128	22,670	40,798	14,542	18,397	32,939	6,862	6,981	13,843	6,056	6,108	12,164	6,340	6,367	12,707	5,026	5,059	10,085	6,693	6,798	13,491
Total	**26,887**	**38,159**	**65,046**	**22,128**	**31,722**	**53,850**	**9,850**	**10,356**	**20,206**	**8,670**	**9,114**	**17,784**	**9,100**	**9,386**	**18,486**	**7,301**	**7,477**	**14,778**	**9,624**	**10,110**	**19,734**
Pemba																					
New SM+	29	40	69	28	43	71	2	3	5	1	1	2	2	3	5	2	3	5	2	3	5
Other	59	54	113	52	51	103	12	7	19	6	3	9	10	7	17	10	7	17	10	7	17
Total	**88**	**94**	**182**	**80**	**94**	**174**	**14**	**10**	**24**	**7**	**4**	**11**	**12**	**10**	**22**	**12**	**10**	**22**	**12**	**10**	**22**
Unguja																					
New SM+	78	170	248	77	161	238	23	16	39	8	11	19	17	15	32	20	11	31	23	16	39
Other	97	159	256	87	155	242	17	34	51	5	6	11	12	14	26	11	22	33	13	27	40
Total	**175**	**329**	**504**	**164**	**316**	**480**	**40**	**50**	**90**	**13**	**17**	**30**	**29**	**29**	**58**	**31**	**33**	**64**	**36**	**43**	**79**
Zanzibar																					
New SM+	107	210	317	105	204	309	25	19	44	9	12	21	19	18	37	22	14	36	25	19	44
Other	156	213	369	139	206	345	29	41	70	11	9	20	22	21	43	21	29	50	23	34	57
Total	**263**	**423**	**686**	**244**	**410**	**654**	**54**	**60**	**114**	**20**	**21**	**41**	**41**	**39**	**80**	**43**	**43**	**86**	**48**	**53**	**101**
Tanzania																					
New SM+	8,866	15,699	24,565	7,691	13,529	21,220	3,013	3,394	6,407	2,623	3,018	5,641	2,779	3,037	5,816	2,297	2,432	4,729	2,956	3,331	6,287
Other	18,284	22,883	41,167	14,681	18,603	33,284	6,891	7,022	13,913	6,067	6,117	12,184	6,362	6,388	12,750	5,047	5,088	10,135	6,716	6,832	13,548
Total	**27,150**	**38,582**	**65,732**	**22,372**	**32,132**	**54,504**	**9,904**	**10,416**	**20,320**	**8,690**	**9,135**	**17,825**	**9,141**	**9,425**	**18,566**	**7,344**	**7,520**	**14,864**	**9,672**	**10,163**	**19,835**

Annex 6:

Leprosy Patients reported by region in 2013

Region	Types	New Cases			Return after default			Relapse MDT			Relapse DDS			Total		
		Adult	Child	Total	Adult	Child	Total	Adult	Child	Total	Adult	Child	Total	Adult	Child	Total
Dar Ilala I	PB	3	0	3	0	0	0	0	0	0	0	0	0	3	0	3
	MB	34	0	34	0	0	0	2	0	2	0	0	0	36	0	36
	Total	**37**	**0**	**37**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**39**	**0**	**39**
Dar Kinondoni	PB	11	1	12	0	0	0	0	0	0	0	0	0	11	1	12
	MB	66	3	69	1	0	1	1	0	1	1	0	1	69	3	72
	Total	**77**	**4**	**81**	**1**	**0**	**1**	**1**	**0**	**1**	**1**	**0**	**1**	**80**	**4**	**84**
Dar Temeke	PB	20	0	20	0	0	0	1	0	1	0	0	0	21	0	21
	MB	60	1	61	2	0	2	2	0	2	0	0	0	64	1	65
	Total	**80**	**1**	**81**	**2**	**0**	**2**	**3**	**0**	**3**	**0**	**0**	**0**	**85**	**1**	**86**
Dar Ilala II	PB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MB	12	0	12	0	0	0	2	0	2	0	0	0	14	0	14
	Total	**12**	**0**	**12**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**14**	**0**	**14**
Dar es Salaam	PB	34	1	35	0	0	0	1	0	1	0	0	0	35	1	36
	MB	172	4	176	3	0	3	7	0	7	1	0	1	183	4	187
	Total	**206**	**5**	**211**	**3**	**0**	**3**	**8**	**0**	**8**	**1**	**0**	**1**	**218**	**5**	**223**
Arusha	PB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MB	9	0	9	0	0	0	0	0	0	0	0	0	9	0	9
	Total	**9**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**9**
Dodoma	PB	3	0	3	0	0	0	0	0	0	0	0	0	3	0	3
	MB	49	2	51	0	0	0	0	0	0	0	0	0	49	2	51
	Total	**52**	**2**	**54**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**52**	**2**	**54**
Iringa	PB	2	0	2	0	0	0	0	0	0	0	0	0	2	0	2
	MB	11	1	12	0	0	0	0	0	0	0	0	0	11	1	12
	Total	**13**	**1**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**1**	**14**
Kagera	PB	10	0	10	0	0	0	1	0	1	0	0	0	11	0	11
	MB	70	4	74	3	0	3	9	0	9	1	0	1	83	4	87

	Total	80	4	84	3	0	3	10	0	10	1	0	1	94	4	98
Kigoma	PB	11	2	13	0	0	0	0	0	0	0	0	0	11	2	13
	MB	74	2	76	4	0	4	2	0	2	1	0	1	81	2	83
	Total	85	4	89	4	0	4	2	0	2	1	0	1	92	4	96
Kilimanjaro	PB	1	1	2	0	0	0	0	0	0	0	0	0	1	1	2
	MB	4	0	4	1	0	1	0	0	0	0	0	0	5	0	5
	Total	5	1	6	1	0	1	0	0	0	0	0	0	6	1	7
Lindi	PB	41	0	41	1	0	1	4	0	4	0	0	0	46	0	46
	MB	140	3	143	3	0	3	5	0	5	4	0	4	152	3	155
	Total	181	3	184	4	0	4	9	0	9	4	0	4	198	3	201
Manyara	PB	2	0	2	0	0	0	0	0	0	0	0	0	2	0	2
	MB	7	1	8	0	0	0	0	0	0	0	0	0	7	1	8
	Total	9	1	10	0	0	0	0	0	0	0	0	0	9	1	10
Mara	PB	10	1	11	0	0	0	0	0	0	1	0	1	11	1	12
	MB	21	0	21	0	0	0	2	0	2	1	0	1	24	0	24
	Total	31	1	32	0	0	0	2	0	2	2	0	2	35	1	36
Mbeya	PB	2	0	2	0	0	0	0	0	0	0	0	0	2	0	2
	MB	33	0	33	1	0	1	1	0	1	0	0	0	35	0	35
	Total	35	0	35	1	0	1	1	0	1	0	0	0	37	0	37
Morogoro	PB	52	2	54	0	0	0	0	0	0	0	0	0	52	2	54
	MB	195	4	199	0	0	0	4	0	4	2	0	2	201	4	205
	Total	247	6	253	0	0	0	4	0	4	2	0	2	253	6	259
Mtwara	PB	62	6	68	0	0	0	0	0	0	0	0	0	62	6	68
	MB	141	2	143	12	0	12	1	0	1	1	0	1	155	2	157
	Total	203	8	211	12	0	12	1	0	1	1	0	1	217	8	225
Mwanza	PB	3	0	3	0	0	0	0	0	0	0	0	0	3	0	3
	MB	90	0	90	0	0	0	0	0	0	0	0	0	90	0	90
	Total	93	0	93	0	0	0	0	0	0	0	0	0	93	0	93
Pwani	PB	7	0	7	0	0	0	0	0	0	0	0	0	7	0	7
	MB	63	1	64	5	0	5	0	0	0	0	0	0	68	1	69
	Total	70	1	71	5	0	5	0	0	0	0	0	0	75	1	76
Rukwa	PB	10	1	11	1	0	1	0	0	0	0	0	0	11	1	12

	MB	115	5	120	5	0	5	3	0	3	2	0	2	125	5	130
	Total	**125**	**6**	**131**	**6**	**0**	**6**	**3**	**0**	**3**	**2**	**0**	**2**	**136**	**6**	**142**
Ruvuma	PB	40	3	43	0	1	1	0	0	0	0	0	0	40	4	44
	MB	81	1	82	2	0	2	0	0	0	1	0	1	84	1	85
	Total	**121**	**4**	**125**	**2**	**1**	**3**	**0**	**0**	**0**	**1**	**0**	**1**	**124**	**5**	**129**
Shinyanga	PB	8	0	8	0	0	0	0	0	0	0	0	0	8	0	8
	MB	73	0	73	0	0	0	3	0	3	0	0	0	76	0	76
	Total	**81**	**0**	**81**	**0**	**0**	**0**	**3**	**0**	**3**	**0**	**0**	**0**	**84**	**0**	**84**
Singida	PB	3	1	4	0	0	0	0	0	0	0	0	0	3	1	4
	MB	24	1	25	0	0	0	0	0	0	0	0	0	24	1	25
	Total	**27**	**2**	**29**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**2**	**29**
Tabora	PB	18	0	18	0	0	0	0	0	0	0	0	0	18	0	18
	MB	69	5	74	1	0	1	0	0	0	0	0	0	70	5	75
	Total	**87**	**5**	**92**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**88**	**5**	**93**
Tanga	PB	11	2	13	1	0	1	1	0	1	0	0	0	13	2	15
	MB	101	0	101	2	0	2	4	0	4	4	0	4	111	0	111
	Total	**112**	**2**	**114**	**3**	**0**	**3**	**5**	**0**	**5**	**4**	**0**	**4**	**124**	**2**	**126**
Mainland	PB	330	20	350	3	1	4	7	0	7	1	0	1	341	21	362
	MB	1,542	36	1,578	42	0	42	41	0	41	18	0	18	1,643	36	1,679
	Total	**1,872**	**56**	**1,928**	**45**	**1**	**46**	**48**	**0**	**48**	**19**	**0**	**19**	**1,984**	**57**	**2,041**
Pemba	PB	2	0	2	0	0	0	0	0	0	0	0	0	2	0	2
	MB	9	3	12	0	0	0	0	0	0	1	0	1	10	3	13
	Total	**11**	**3**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**12**	**3**	**15**
Unguja	PB	16	6	22	0	0	0	1	0	1	0	0	0	17	6	23
	MB	55	9	64	1	0	1	0	0	0	0	0	0	56	9	65
	Total	**71**	**15**	**86**	**1**	**0**	**1**	**1**	**0**	**1**	**0**	**0**	**0**	**73**	**15**	**88**
Zanzibar	PB	18	6	24	0	0	0	1	0	1	0	0	0	19	6	25
	MB	64	12	76	1	0	1	0	0	0	1	0	1	66	12	78
	Total	**82**	**18**	**100**	**1**	**0**	**1**	**1**	**0**	**1**	**1**	**0**	**1**	**85**	**18**	**103**
Tanzania	PB	348	26	374	3	1	4	8	0	8	1	0	1	360	27	387
	MB	1,606	48	1,654	43	0	43	41	0	41	19	0	19	1,709	48	1,757
	Total	**1,954**	**74**	**2,028**	**46**	**1**	**47**	**49**	**0**	**49**	**20**	**0**	**20**	**2,069**	**75**	**2,144**

Annex 7:

Age and sex distribution for newly detected leprosy patients in reported by region in 2013

Region		0 - 14		15 - 24		25 - 34		35 - 44		45 - 54		55 - 64		65 +		Total		
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	T
Dar Ilala I	PB	0	1	0	0	0	0	1	0	0	0	0	1	0	0	1	2	3
	MB	0	0	3	1	7	2	4	3	3	3	2	3	1	2	20	14	34
	Total	0	1	3	1	7	2	6	3	3	3	2	4	1	2	21	16	37
Dar Kinondoni	PB	0	1	0	1	1	1	2	2	0	2	1	0	0	1	4	8	12
	MB	2	3	9	0	23	0	9	3	6	3	3	0	4	4	56	13	69
	Total	2	4	9	1	24	1	11	5	6	5	4	0	4	5	60	21	81
Dar Temeke	PB	0	0	2	1	4	2	2	3	0	0	3	2	0	1	11	9	20
	MB	0	1	10	2	16	4	13	3	6	2	1	0	2	1	48	13	61
	Total	0	1	12	3	20	6	15	6	6	2	4	2	2	2	59	22	81
Dar Ilala II	PB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MB	0	0	0	1	1	0	1	0	2	2	1	2	2	0	7	5	12
	Total	0	0	0	1	1	0	1	0	2	2	1	2	2	0	7	5	12
Dar es Salaam	PB	0	2	2	2	5	3	5	5	0	2	4	3	0	2	16	19	35
	MB	2	4	22	4	47	6	27	9	17	10	7	5	9	7	131	45	176
	Total	2	6	24	6	52	9	32	14	17	12	11	8	9	9	147	64	211
Arusha	PB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MB	0	0	0	0	3	0	2	0	1	0	1	0	2	0	9	0	9
	Total	0	0	0	0	3	0	2	0	1	0	1	0	2	0	9	0	9
Dodoma	PB	0	0	0	0	0	0	0	1	0	0	0	0	2	0	2	1	3
	MB	0	2	0	2	3	5	5	1	8	4	7	3	9	2	32	19	51
	Total	0	2	0	2	3	5	5	2	8	4	7	3	11	2	34	20	54

Iringa	PB	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2	0	2
	MB	1	0	0	0	1	0	4	0	3	1	1	0	1	0	11	1	12
	Total	1	0	1	0	2	0	5	0	5	1	1	0	1	0	13	1	14
Kagera	PB	0	1	1	1	1	0	2	1	0	1	1	1	0	0	5	5	10
	MB	2	0	6	1	11	2	17	8	10	4	6	4	3	0	55	19	74
	Total	2	1	9	2	13	2	20	10	10	5	7	5	3	0	60	24	84
Kigoma	PB	1	1	1	1	1	2	0	1	1	0	3	0	0	1	7	6	13
	MB	2	3	7	2	11	6	19	6	6	3	7	0	2	2	54	22	76
	Total	3	4	8	3	12	8	19	7	7	3	10	0	2	3	61	28	89
Kilimanjaro	PB	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	2
	MB	0	0	1	0	0	0	0	1	1	0	0	0	1	0	3	1	4
	Total	0	0	2	0	0	0	0	1	2	0	1	1	1	0	5	1	6
Lindi	PB	1	1	3	1	4	3	3	6	1	5	4	3	5	1	21	20	41
	MB	0	2	5	4	14	13	19	7	13	14	6	15	20	11	77	66	143
	Total	1	2	8	5	17	16	21	13	15	19	9	20	24	12	98	86	184
Manyara	PB	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2	0	2
	MB	1	0	0	0	0	0	2	0	1	1	1	2	0	0	5	3	8
	Total	1	0	1	0	0	0	3	0	0	0	1	2	1	0	7	3	10
Mara	PB	2	0	1	0	0	1	1	0	0	0	1	1	3	1	8	3	11
	MB	0	0	0	0	3	1	2	2	4	2	0	0	4	3	13	8	21
	Total	2	0	1	0	4	2	3	2	4	2	1	1	7	4	21	11	32
Mbeya	PB	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	2
	MB	0	0	3	0	4	3	3	1	5	3	4	2	4	1	23	10	33
	Total	0	0	3	0	6	3	3	1	5	3	4	2	4	1	25	10	35
Morogoro	PB	1	3	7	1	9	6	8	2	3	3	3	5	2	1	33	21	54
	MB	2	2	19	0	22	10	40	7	31	11	17	9	18	11	149	50	199

	Total	5	5	27	1	32	16	49	9	34	14	20	14	20	12	182	71	253
Mtwara	PB	2	5	4	0	5	8	7	5	5	7	4	9	1	6	28	40	68
	MB	0	3	12	6	16	8	18	19	9	12	12	14	8	6	75	68	143
	Total	2	8	16	6	21	16	25	24	14	19	16	23	9	12	103	108	211
Mwanza	PB	0	0	0	1	1	0	0	0	0	0	0	1	0	0	1	2	3
	MB	1	0	12	8	10	4	19	3	10	3	7	4	4	5	63	27	90
	Total	1	0	12	9	11	4	19	3	10	3	7	5	4	5	64	29	93
Pwani	PB	0	0	0	0	0	1	0	1	3	0	0	0	1	1	4	3	7
	MB	2	0	2	2	12	1	6	2	9	2	5	6	9	6	45	19	64
	Total	2	0	2	2	12	2	6	3	12	2	5	6	10	7	49	22	71
Rukwa	PB	1	0	1	2	0	0	1	1	1	3	1	0	0	0	5	6	11
	MB	1	5	13	9	11	9	16	14	7	8	6	6	11	4	65	55	120
	Total	2	5	14	11	11	9	17	15	8	11	7	6	11	4	70	61	131
Ruvuma	PB	1	2	2	1	3	0	6	4	2	5	4	5	1	7	19	24	43
	MB	1	0	5	2	12	9	15	2	3	9	8	8	3	5	47	35	82
	Total	2	2	7	3	15	9	21	6	5	14	12	13	4	12	66	59	125
Shinyanga	PB	0	0	4	1	0	0	2	0	0	1	0	0	0	0	6	2	8
	MB	0	1	8	2	4	3	12	4	9	3	7	7	8	5	48	25	73
	Total	0	1	12	3	4	3	14	4	9	4	7	7	8	5	54	27	81
Singida	PB	1	0	1	1	0	0	1	0	0	0	0	0	0	0	3	1	4
	MB	1	1	1	1	4	1	5	0	1	2	3	0	4	1	19	6	25
	Total	2	1	2	2	4	1	6	0	1	2	3	0	4	1	22	7	29
Tabora	PB	0	1	2	1	3	2	2	1	2	1	1	1	1	0	11	7	18
	MB	1	4	4	1	5	6	12	5	7	3	8	3	11	4	48	26	74
	Total	1	5	6	2	8	8	14	6	9	4	9	4	12	4	59	33	92
Tanga	PB	2	0	1	0	0	1	2	0	1	1	1	2	0	2	7	6	13

	MB	0	1	3	2	9	7	15	5	14	6	14	7	10	8	65	36	101
	Total	2	1	4	2	9	8	17	5	15	7	15	9	10	10	72	42	114
Mainland	PB	12	16	33	13	34	27	40	28	20	29	28	31	17	22	184	166	350
	MB	17	28	123	46	202	94	258	96	169	101	127	95	141	81	1,037	541	1,578
	Total	29	44	156	59	236	121	298	124	189	130	155	126	158	103	1,221	707	1,928
Pemba	PB	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	2
	MB	2	1	1	0	0	0	0	0	1	2	1	2	2	0	7	5	12
	Total	2	1	1	0	0	0	0	0	1	3	1	3	2	0	7	7	14
Unguja	PB	2	3	4	2	2	1	0	2	0	1	1	2	1	1	10	12	22
	MB	4	4	3	3	12	10	6	2	4	3	4	0	4	5	37	27	64
	Total	6	7	7	5	14	11	6	4	4	4	5	2	5	6	47	39	86
Zanzibar	PB	2	3	4	2	2	1	0	2	0	2	1	3	1	1	10	14	24
	MB	6	5	4	3	12	10	6	2	5	5	5	2	6	5	44	32	76
	Total	8	8	8	5	14	11	6	4	5	7	6	5	7	6	54	46	100
Tanzania	PB	14	19	37	15	36	28	40	30	20	31	29	34	18	23	194	180	374
	MB	23	33	127	49	214	104	264	98	174	106	132	97	147	86	1,081	573	1,654
	Total	37	52	164	64	250	132	304	128	194	137	161	131	165	109	1,275	753	2,028

Annex 8:

Disability grading of newly detected leprosy patients reported by region in 2013

Region	Types	Grade 0			Grade 1			Grade 2			Total		
		Adult	Child	Total	Adult	Child	Total	Adult	Child	Total	Adult	Child	Total
Dar Ilala I	PB	4	0	4	0	0	0	0	0	0	4	0	4
	MB	18	0	18	12	0	12	4	0	4	34	0	34
	Total	22	0	22	12	0	12	4	0	4	38	0	38
Dar Kinondoni	PB	9	1	10	2	0	2	1	0	1	12	1	13
	MB	30	2	32	25	1	26	12	1	13	67	4	71
	Total	39	3	42	27	1	28	13	1	14	79	5	84
Dar Temeke	PB	17	0	17	0	0	0	3	0	3	20	0	20
	MB	49	1	50	9	1	10	6	0	6	64	2	66
	Total	66	1	67	9	1	10	9	0	9	84	2	86
Dar Ilala II	PB	0	0	0	0	0	0	0	0	0	0	0	0
	MB	0	0	0	11	0	11	3	0	3	14	0	14
	Total	0	0	0	11	0	11	3	0	3	14	0	14
Dar es Salaam	PB	30	1	31	2	0	2	4	0	4	36	1	37
	MB	97	3	100	57	2	59	25	1	26	179	6	185
	Total	127	4	131	59	2	61	29	1	30	215	7	222
Arusha	PB	0	0	0	0	0	0	0	0	0	0	0	0
	MB	2	0	2	0	0	0	1	0	1	3	0	3
	Total	2	0	2	0	0	0	1	0	1	3	0	3
Dodoma	PB	2	0	2	0	0	0	0	0	0	2	0	2
	MB	27	2	29	14	0	14	4	0	4	45	2	47
	Total	29	2	31	14	0	14	4	0	4	47	2	49

Iringa	PB	1	0	1	0	0	0	1	0	1	2	0	2
	MB	6	1	7	5	0	5	3	0	3	14	1	15
	Total	7	1	8	5	0	5	4	0	4	16	1	17
Kagera	PB	8	0	8	0	0	0	0	0	0	8	0	8
	MB	73	2	75	7	0	7	5	1	6	85	3	88
	Total	81	2	83	7	0	7	5	1	6	93	3	96
Kigoma	PB	9	2	11	0	0	0	2	0	2	11	2	13
	MB	52	0	52	13	0	13	10	1	11	75	1	76
	Total	61	2	63	13	0	13	12	1	13	86	3	89
Kilimanjaro	PB	1	1	2	0	0	0	0	0	0	1	1	2
	MB	3	0	3	1	0	1	1	0	1	5	0	5
	Total	4	1	5	1	0	1	1	0	1	6	1	7
Lindi	PB	36	0	36	1	0	1	1	0	1	38	0	38
	MB	119	2	121	9	0	9	12	0	12	140	2	142
	Total	155	2	157	10	0	10	13	0	13	178	2	180
Manyara	PB	1	0	1	0	0	0	0	0	0	1	0	1
	MB	6	0	6	2	0	2	0	1	1	8	1	9
	Total	7	0	7	2	0	2	0	1	1	9	1	10
Mara	PB	0	0	0	8	0	8	3	0	3	11	0	11
	MB	7	0	7	11	0	11	3	0	3	21	0	21
	Total	7	0	7	19	0	19	6	0	6	32	0	32
Mbeya	PB	1	0	1	0	0	0	1	0	1	2	0	2
	MB	2	0	2	14	0	14	14	0	14	30	0	30
	Total	3	0	3	14	0	14	15	0	15	32	0	32
Morogoro	PB	24	0	24	27	2	29	2	0	2	53	2	55
	MB	112	2	114	65	1	66	22	0	22	199	3	202
	Total	136	2	138	92	3	95	24	0	24	252	5	257
Mtwara	PB	49	7	56	8	0	8	1	0	1	58	7	65

	MB	105	3	108	23	0	23	13	0	13	141	3	144
	Total	154	10	164	31	0	31	14	0	14	199	10	209
Mwanza	PB	1	0	1	0	0	0	0	0	0	1	0	1
	MB	42	0	42	25	0	25	16	0	16	83	0	83
	Total	43	0	43	25	0	25	16	0	16	84	0	84
Pwani	PB	5	0	5	1	0	1	0	0	0	6	0	6
	MB	27	2	29	23	0	23	10	0	10	60	2	62
	Total	32	2	34	24	0	24	10	0	10	66	2	68
Rukwa	PB	10	1	11	0	0	0	1	0	1	11	1	12
	MB	101	4	105	3	0	3	9	0	9	113	4	117
	Total	111	5	116	3	0	3	10	0	10	124	5	129
Ruvuma	PB	33	4	37	1	0	1	2	0	2	36	4	40
	MB	68	0	68	3	0	3	7	1	8	78	1	79
	Total	101	4	105	4	0	4	9	1	10	114	5	119
Shinyanga	PB	4	0	4	2	0	2	0	0	0	6	0	6
	MB	29	0	29	26	0	26	21	0	21	76	0	76
	Total	33	0	33	28	0	28	21	0	21	82	0	82
Singida	PB	2	0	2	1	0	1	0	1	1	3	1	4
	MB	11	0	11	7	1	8	8	0	8	26	1	27
	Total	13	0	13	8	1	9	8	1	9	29	2	31
Tabora	PB	9	1	10	2	0	2	0	0	0	11	1	12
	MB	23	1	24	28	3	31	23	1	24	74	5	79
	Total	32	2	34	30	3	33	23	1	24	85	6	91
Tanga	PB	11	2	13	0	0	0	1	0	1	12	2	14
	MB	41	0	41	50	0	50	16	0	16	107	0	107
	Total	52	2	54	50	0	50	17	0	17	119	2	121
Mainland	PB	207	18	225	51	2	53	15	1	16	273	21	294
	MB	856	19	875	329	5	334	198	5	203	1,383	29	1,412
	Total	1,063	37	1,100	380	7	387	213	6	219	1,656	50	1,706

Pemba	PB	2	0	2	0	0	0	0	0	0	2	0	2
	MB	4	2	6	1	0	1	4	1	5	9	3	12
	Total	6	2	8	1	0	1	4	1	5	11	3	14
Unguja	PB	16	6	22	0	0	0	0	0	0	16	6	22
	MB	35	9	44	12	0	12	8	0	8	55	9	64
	Total	51	15	66	12	0	12	8	0	8	71	15	86
Zanzibar	PB	18	6	24	0	0	0	0	0	0	18	6	24
	MB	39	11	50	13	0	13	12	1	13	64	12	76
	Total	57	17	74	13	0	13	12	1	13	82	18	100
Tanzania	PB	255	25	280	53	2	55	19	1	20	327	28	355
	MB	992	33	1,025	399	7	406	235	7	242	1,626	47	1,673
	Total	1,247	58	1,305	452	9	461	254	8	262	1,953	75	2,028

Annex 9:

Leprosy Patients Registered by region at the end of 2012

Region	Type of Patients	Paucibacilliary	Multibacilliary	Total
Dar Ilala I	Adult	4	43	47
	Child	0	0	0
	Total	4	43	47
Dar Kinondoni	Adult	8	59	67
	Child	1	3	4
	Total	9	62	71
Dar Temeke	Adult	13	55	68
	Child	0	0	0
	Total	12	55	67
Dar Ilala II	Adult	0	8	8
	Child	0	0	0
	Total	0	8	8
Dar es Salaam	Adult	25	165	190
	Child	1	3	4
	Total	25	168	193
Arusha	Adult	0	6	6
	Child	0	0	0
	Total	0	6	6
Dodoma	Adult	0	24	24
	Child	0	0	0
	Total	0	24	24
Iringa	Adult	2	13	15
	Child	0	1	1
	Total	2	14	16
Kagera	Adult	16	87	103
	Child	4	10	14
	Total	20	97	117
Kigoma	Adult	8	62	70
	Child	1	2	3
	Total	9	64	73
Kilimanjaro	Adult	1	1	2
	Child	0	0	0
	Total	1	1	2
Lindi	Adult	18	139	157
	Child	0	-1	-1
	Total	18	138	156

Manyara	Adult	1	9	10
	Child	0	0	0
	Total	1	9	10
Mara	Adult	8	29	37
	Child	1	0	1
	Total	9	29	38
Mbeya	Adult	2	44	46
	Child	0	-1	-1
	Total	2	43	45
Morogoro	Adult	29	135	164
	Child	2	1	3
	Total	31	136	167
Mtwara	Adult	48	154	202
	Child	6	2	8
	Total	54	156	210
Mwanza	Adult	1	32	33
	Child	0	0	0
	Total	1	32	33
Pwani	Adult	7	55	62
	Child	0	0	0
	Total	7	55	62
Rukwa	Adult	3	181	184
	Child	2	2	4
	Total	5	183	188
Ruvuma	Adult	18	92	110
	Child	0	1	1
	Total	18	93	111
Shinyanga	Adult	2	79	81
	Child	1	0	1
	Total	3	79	82
Singida	Adult	0	20	20
	Child	0	1	1
	Total	0	21	21
Tabora	Adult	3	70	73
	Child	1	3	4
	Total	4	73	77
Tanga	Adult	23	158	181
	Child	0	4	4
	Total	23	162	185
Mainland	Adult	215	1,555	1,770
	Child	19	28	47

	Total	233	1,583	1,816
Pemba	Adult	2	10	12
	Child	0	2	2
	Total	2	12	14
Unguja	Adult	10	62	72
	Child	3	9	12
	Total	13	71	84
Zanzibar	Adult	12	72	84
	Child	3	11	14
	Total	15	83	98
Tanzania	Adult	227	1,627	1,854
	Child	22	39	61
	Total	248	1,666	1,914

Annex 10:

List of DTLCs and TB/HIV officers in 2013

S/N		Name	Designation	Address	Telephone	Email Address
1	Arusha DC	Daniel Z. Massawe	DTLC	Box 4 Arumeru	0784392552 / 0757978786	zablokisaka@yahoo.com
2	Arusha MC North	Pauline Chale	DTLC	Box 3092 Arusha	0754 / 0715842611	-
3	Arusha MC East	Michael Kingazi	DTLC	Box 3092 Arusha	0754845911	-
4	Arusha MC West	Lameck Kaaya	DTLC	Box 3092 Arusha	0754572685 / 0789353935	-
5	Meru DC	Elipokea Kaaya	DTLC	-	0787418542	kaaya_elipokea@gmail.com
		Mzee Hussein Mzee	TB/HIV Officer	-	0788681974	mhussein@path.org
6	Monduli	Godson Lekasio	DTLC	Box 12 Monduli	754884348	lekasio_godson@yahoo.com
		Wilbard Kessy	TB/HIV Officer	Box 12 Monduli	0784313846	wkessy@path.0rg
7	Ngorongoro	Muhuzari Abbas/ Dr. Emmanuel Mallange	DTLC	Box 92 Loliondo		
8	Longido	Emillian Urassa	DTLC	-	0754571830	emilianurassa@yahoo.com
9	Karatu	Thomas Mgalula	DTLC	Box 190, Karatu	0753920750	-
		Adam Mlonganile	TB/HIV Officer	Box 190, Karatu	0783558620	Amlonganile@path.org
10	Arusha DC	Catherine Makoye	TB/HIV Officer	Box 3092 Arusha	0784646155	cmakoye@path.org
11	Temeke Wailes	Mariam Mindu	DTLC	Box 45232, DSM	0784640318	maryammindu@yahoo.com
12	Mbagala	Sultan Lusambi	DTLC	Box 45232, DSM	0755863038	slusambi@yahoo.com
13	Tambukareli	Angelina Malewo	DTLC	Box 45232, DSM	0713547039	angelina-1954@yahoo.com
14	Kigamboni	Swaleh Kyonda	DTLC	Box 45232, DSM		
15	Yombo Vituka	Tulikifri Mbaga	DTLC	Box 45232, DSM	0784667724	Tulikifrimbaga@yahoo.com
16	Keko Prison	Mrisho Kamkanga	DTLC	Box 45232, DSM	06559808889	-
17	Rangitatu	Joyce Mgohamwende	DTLC	Box 45232, DSM	0755943151	Jmgoha@yahoo.com
18	Wailes II	Silverstar Ngowi	DTLC	Box 45232, DSM		-
19	Temeke	Edward Masika	TB/HIV Officer	Box 45232, DSM	0754989398	edwardmasika@yahoo.com
20	Temeke	Paschal Madulu	TB/HIV Officer	Box 45232, DSM	0784339443	pmadulu@yahoo.co.uk
21	Mnazi mmoja	Magreth Masaki	DTLC	Box 20950, DSM	0783315570	magrethmasaki@yahoo.com
22	Amana	Dr. Amir Mmasi	DTLC	Box 20950, DSM		
23	Vingunguti	Salapion Mutagwaba	DTLC	Box 20950, DSM	0715310039	s.mutta@yahoo.com
24	Chanika	Yohana Mbaga	DTLC	Box 20950, DSM	0655552166	mbaga@yahoo.com
25	Ukonga	Ramadhani Makange	DTLC	Box 20950, DSM		
26	Tabata	Christopher Mapunda	DTLC	Box 20950, DSM	0754280405	c.mapunda66@yahoo.com
27	Buguruni	John Minde	DTLC	Box 20950, DSM	0712231191	johnmindefw@yahoo.com
28		Viocena Mlaki	TB/HIV Officer	Box 20950, DSM	0788681977	viocenerr@yahoo.co.uk
29	Ilala I	Amina Ngombo	TB/HIV Officer	Box 20950, DSM	0783547040	aminangombo@yahoo.co.uk

30	Mwanany-amala I	Maliwaza Mganga	DTLC	Box 61665, DSM	0754018667	mgangamaliwaza@yahoo.com
31	Magomeni	Anita Mallya	DTLC	Box 61665, DSM	0754969898	anitamallya@yahoo.com
32	Tandale I	Theophila Luhimbo	DTLC	Box 61665, DSM	0783527777	-
33	Sinza	Pius Mndolwa	DTLC	Box 61665, DSM	0777886312	-
34	Lugalo	John Sinyaro	DTLC	Box 61665, DSM		-
35	Mbezi	Timothy Kayuni	DTLC	Box 61665, DSM	0713522141	-
36	Mwanany-amala II	Hawa Mtutu	DTLC	Box 61665, DSM	0714540177	-
37	Tandale II	Bertila Kimaro	DTLC	Box 61665, DSM	0754586348	-
38		Fathiya Amri	TB/HIV Officer	Box 61665, DSM	0787960142	fatyamy@yahoo.com
39	Mwanany-amala	Esther Mukasa	TB/HIV Officer	Box 61665, DSM	0786067748 / 0652918185	emukasa@path.org/ mukasaesther@yahoo.com
40	MMC-TB Ward	Vicky Kasanjala	DTLC	Box 65000, MNH, DSM	0754751280	vkasanjala@yahoo.com
41	Mwaisela	Magreth Mbwambo	DTLC	Box 65000, MNH, DSM	0754660363	-
42	Private Hospital	Vicky Kasanjala/M. Mbwambo			-	
43	IDC	Elizabeth Kupatikana	DTLC	Box 65000, MNH, DSM	0754574667	kupatikana2010@yahoo.com
44	Dodoma Urban	Said Shabaan	DTLC	Box 904 Dodoma	0713260991	saisheby@yahoo.com
		Dr. Christopher Manumbu	TB/HIV Officer	Box 904 Dodoma	0754472174	cmanumbu@yahoo.co.uk
45	Chamwino	Edwin Kongola	DTLC	Box 904 Dodoma	0713225932	kongolaedwin@yahoo.com
		Joyce M. Swai	TB/HIV Officer	Box 904 Dodoma	0755858772	swai.joyce@yahoo.com
46	Kondoa	John Sungi	DTLC	Box 40 Kondoa	0784768676	-
		Dr. N. Temba	TB/HIV Officer	Box 40 Kondoa	0784360872	-
47	Mpwapwa	Peres Lukango	DTLC	Box 13 Mpwapwa		-
		Yassin B. Nyoni	TB/HIV Officer	Box 13 Mpwapwa	0713249148	yabanyo2@yahoo.com
48	Kongwa	Emmanuel Wandeti	DTLC	Box Kongwa	0786357324	-
		Frybert M. Sikira	TB/HIV Officer	Box Kongwa	0756750541	F.sikira@yahoo.com
49	Bahi	James Migunga	DTLC	Box 904 Dodoma	0784115554	jmigunga@yahoo.com
		Happiness J. Komogo	TB/HIV Officer	Box 904 Dodoma	0758921203	komogo.happiness@gmail.com
50	Iringa urban	Benjamin Mhanga	DTLC	Box 260 Iringa	0753571422	MhangaBenjamin@yahoo.com
51	Iringa rural	Peter Jengela	DTLC	Box 260 Iringa	0754548789	-
	Urban/Rural	Tecla Orio	TB/HIV Officer	Box 260 Iringa	0755308172	oriotecla@yahoo.com
52	Ludewa	Amani Haule	DTLC	Box 3 Manda	0752993734	amanhaule@yahoo.com
53	Mufindi	Prosper P. Pongo	DTLC	Box 27 Mufindi	0655550288	prosperpongo@yahoo.com
		Flaviana Njala	TB/HIV Officer	Box 27 Mufindi		
54	Njombe DC	Jonathan Siha	DTLC	Box 56 Njombe	0756869553	jonathansiha@yahoo.com

47	Njombe TC	Leo. C. Chaula	DTLC	Box 56 Njombe	0755067302	leo.chaula@yahoo.com
	Njombe	Aggrey Mwakabuli	TB/HIV Officer	Box 56 Njombe	0754629146	aggreymwakabuli@yahoo.com
48	Makete	Dr. J. Kitundu	DTLC	Box 61 Makete		-
49	Kilolo	Nolasco Ngolloka	DTLC	Box 260 Iringa	0786285807	nolascongolloka@gmail.com
		Wilbert Kadaga	TB/HIV Officer	Box 260 Iringa	0755343999	kadson80@yahoo.com
50	Bukoba rural	Benjamin Kishobera	DTLC	Box 265 Bukoba	0754870701	benjaminkishobera@yahoo.com
		Adam Massesa	TB/HIV Officer	Box 265 Bukoba	0755219977	masesa2001@yahoo.co.nz
51	Biharamulo	Pius Misungwi	DTLC	Box 22 Biharamulo	-	-
		Alex Fwoma	TB/HIV Officer	Box 22 Biharamulo	0784669389	alexfwoma@yahoo.com
52	Karagwe	Johannes John	DTLC	Box 145 Karagwe	0787758895	-
		Dr. Isaya Kamonjo	TB/HIV Officer	Box 145 Karagwe	0784327538	issakamonjo@yahoo.com
53	Muleba	Dominic Katatwire	DTLC	Box 10 Muleba	0754513517	-
54	Ngara	Athony Maganga	DTLC	Box Ngara	0784626328	magangaantony@yahoo.com
		Twaha Hussein	TB/HIV Officer	Box Ngara	0782105878	chifutwaha@yahoo.com
55	Bukoba urban	Peter Horera	DTLC	Box 265 Bukoba	0754740286	horera2001@yahoo.com
		David Buhenyenge	Ag.TB/HIV Officer	Box 265 Bukoba	0787072395	dbuhenyenge@yahoo.com
56	Chato	Polinatus Panteline	DTLC	Box 22 Biharamulo	0784643523 / 0755713456	polinatus@yahoo.com
		Sitta Tungu Sitta	TB/HIV Officer	Box 22 Biharamulo	0754436773 / 0715436773	sittatungu@yahoo.com
57	Missenyi	Rutta Bachubila	DTLC	Box 265 Bukoba	0753288889 / 0788038944	rbachubila@yahoo.com
58	Kigoma urban	Felix Biggi	DTLC	Box 16, Kigoma	0762315119	-
	Kigoma Rural	Haika Kimambo	TB/HIV Officer	Box 16, Kigoma	0759507444	kimambohaika@yahoo.com
59	Kasulu	Dr. Kibango L. Kibango	DTLC	Box 54, Kasulu	0762012222	-
		Paschal F. Mushi	TB/HIV Officer	Box 54, Kasulu	0784615210	pascalmushi74@yahoo.com
60	Kibondo	Dr. Festo Baranuba	DTLC	Box 6, Kibondo	0753972775	-
		Seif Mkwinda	TB/HIV Officer	Box 6, Kibondo	0789804943	mkwinda.seif@yahoo.com
61	Kigoma rural	Dr. James M. Jumanne	DTLC	Box 16 Kigoma	-	-
62	Hai	Alphonce Shirima	DTLC	Box 14, Hai	0767015858	shirima Aphonce@yahoo.com
		Lukabukila Wenceslaus Ntabindi	TB/HIV Officer	Hai Hospita, Box 27, Hai	0754651327 / 0784998327	lwenceslaus@yahoo.com/ lntabindi@path.org
64	Rombo	Ludovick Mashele	DTLC	Box 223, Rombo	0755160881	mashellleludovick@yahoo.com
		Jonathan Yona Mremi	TB/HIV Officer	Huruma Hospital, Box 470, Mkuu Rombo	0784834226	jmremi@path.org
65	Same	Alfred Seth	DTLC	Box 10, Same	0784667230	alfred.seth@yahoo.com
		Dr. Katanga S. Katanga	TB/HIV Officer	Same Hospital, Box 10, Same	0784531929	kattangas@yahoo.com
66	Siha	Dr. Richard Mcharo/ Living Selungwi	DTLC	Box		

67	Moshi rural	Cliff Mushi	DTLC	Box 3054, Moshi	0754440205	cmushi2010@gmail.com
		Rehema I. Mohamed	TB/HIV Officer	Moshi DC, Box 3003, Moshi	0782841485	rehemaismail@rocketmail.com
		Dr. Redfan Shayo	Zonal TB/ HIV Officer	Mawenzi Hospital, Box 3054, Moshi	0783382636	rshao@path.org/drshaoredfan@yahoo.com
68	Mwanga	John Shayo	DTLC	Box 8, Usangi	0784603172	rehemaismail@rocketmail.com
		Rehema I. Mohamed	TB/HIV Officer	Usangi Hospital, box 8, Usangi.	0782841485	rehemaismail@rocketmail.com
69	Lindi Urban (E)	Alutuphina Damalu	DTLC	Box 1011, Lindi	-	-
	Lindi Urban/ Rural	Aseli. A. Pwele	TB/HIV Officer	Box 1011, Lindi	0753035245 / 0789772319	aselipwele@yahoo.com
70	Kilwa	Francis Bweigoge	DTLC	Box 40, Kilwa		-
		Mathias Mgaya	TB/HIV Officer	Box 40, Kilwa	0713755483	-
71	Liwale	Khamisi Ngolle	DTLC	Box 28, Liwale	0659160897 / 0766619798	mhamis@rocketmail.com
72	Nachingwea	Filbert Nduguru	DTLC	Box 30, Nachingwea	0755240494 / 0688322290	-
		Kashindye Charles	TB/HIV Officer	Box 30, Nachingwea	0659771999 / 0686255252	charleskashindye@yahoo.com
73	Lindi Rural	Dr. Manfred Nyagali	DTLC	Box 1011, Lindi	-	-
74	Ruangwa	DR. Elamu Malekano	DTLC	Box Ruangwa		
		Iddi Simba	TB/HIV Officer	Box Ruangwa	0713844454 / 0684844454	simbaiddi@yahoo.com
75	Babati DC	Obeid Kavasha Meaggie	DTLC	Box 85, Babati	0784395975	
		Sylivia Nyange	TB/HIV Officer	Box 85, Babati	0784290800	william_sylivia@yahoo.com/williamsylivia@gmail.com
76	Babati TC	Emmanuel Nelson	DTLC	Box ----	0784735507 / 0758436717	-
77	Kiteto	Godson Kato	DTLC	Box 10 Kiteto	0787572644 / 0767572644 / 0715572644	godsonkato@yahoo.com/godsonkato@gmail.com
78	Mbulu	Ally Fupi	DTLC	Box 3 Mbulu	0655829903 / 0784829903	fupially@yahoo.com
79	Hanang	Alex Christopher	DTLC	Box 51Kateshi	0784/0767 / 0658 / 499705	alexjc86@yahoo.com
		Emmanuel Mavura	TB/HIV Officer	Box 51Kateshi	0754/0784 / 0658 655566	E.mavura@yahoo.com
80	Simanjiro	Elias F. Shayo/Dr. Shja Mahenda	DTLC	Box 14384, Arusha	0717734229 / 0785055630	-
		Dr. Temba Fidelis	TB/HIV Officer	Box 14384, Arusha		
81	Musoma rural	Godfrey Lukonge	DTLC	Box 21, Musoma	0789797912 / 0713305011	lukongeg@gmail.com
		Dr. Joseph Sunguro	TB/HIV Officer	Box 21, Musoma	0784/0658 956753	-
82	Musoma urban	Ester Muchunguzi	DTLC	Box 21, Musoma	0754032032	nesephoryesther@yahoo.com
		Dr. Angelina Samike	TB/HIV Officer	Box 21, Musoma	0755737967/0688082890/0714767944	samikeas@yahoo.com

83	Serengeti	Dr. Peter Saria	DTLC	Box 38, Mugumu		
		Crispine Myagila	TB/HIV Officer	Box 38, Mugumu	0784930339	cmyagila@yahoo.com
84	Tarime North	John N. Musiba	DTLC	Box 9, Tarime	0784/0658 804272	musiba127@yahoo.com
		Dr. Lumbael Makala	TB/HIV Officer	Box 9, Tarime	0784644891	makalaemma@yahoo.com
85	Tarime South/Rorya	Musimu Makunja	DTLC	Box 9, Tarime	0784244261	mmusimu@yahoo.com
86	Bunda	R.M. Mugeta	DTLC	Box 246, Bunda		
		Deogratias Mkemagwa	TB/HIV Officer	Box 246, Bunda	0757426255	deomk07@yahoo.com
87	Mbeya urban	Bonny B. Fernandes	DTLC	Box 259, Mbeya		
	Mbeya Urban/Rural	Dr. Mary Mwakyembe	TB/HIV Officer	Box 259, Mbeya	0754545502	marymwakyembe@yahoo.com
88	Chunya	Vedastus Lumbalumba	DTLC	Box 5, Chunya	-	-
89	Ileje	Dr. Juliana Kibona	DTLC	Box 12, Ileje	0784877078	-
90	Kyela	Dominata Rutta	DTLC	Box 4, Kyela		-
91	Mbozi	Esther Bashasha	DTLC	Box 70, Mbozi		
		Gabriel Gavu	TB/HIV Officer	Box 70, Mbozi	0786031622	gabrielgava@yahoo.com
92	Rungwe	Dr. Emmanuel Katosani	DTLC	Box 38, Tukuyu	0755670529	katosaniemanuel@yahoo.com
93	Mbarali	Geofrey Minzi	DTLC	Box	0764586818	-
		Dr. Simbili	TB/HIV Officer	Box	0655615568	drsimbili@yahoo.com
94	Mbeya Rural	Upendo Mwakabalile	DTLC	Box 259, Mbeya		-
95	Morogoro urban	Elias Mtungilwa	DTLC	Box 110, Morogoro		
		Raymond Shitima	TB/HIV Officer	Box 110, Morogoro	0655267703	rshitima@yahoo.com
96	Kilombero	Boniface Manditi	DTLC	Box 34, Kilombero		
		Mary Temu	TB/HIV Officer	Box 34, Kilombero	0756225288	temuvene@yahoo.com
97	Kilosa	Said Muhombolage	DTLC	Box 14, Kilosa	0713752075	said-muhombolage@hotmail.com
		John Wangabo	TB/HIV Officer	Box 14, Kilosa	0754934738	-
	Gairo	Fred Mammuya	DTLC	Box 14, Kilosa		
98	Ulanga	Thabiti Kibika	DTLC	Box 4, Mahenge	0787070371	-
99	Mvomero	Simeon Sebbe	DTLC	Box 1862, Morogoro	0784674170	-
		Dr. Massenha Massi	TB/HIV Officer	Box 1862, Morogoro	0717072201	masenham@yahoo.com
100	Morogoro DC	Joseph Ng'wessa	DTLC	Box 1862, Morogoro		
		Grace Mbura	TB/HIV Officer	Box 1862, Morogoro	0715420252	mburag@yahoo.com
101	Masasi W/ Nanyumbu	Muhaji Mpili	DTLC	Box 151, Masasi		
102	Masasi East	Rashid Mapila	DTLC	Box 151, Masasi	0784190064	-
		Dr. Juma Mtipa	TB/HIV Officer	Box 151, Masasi	0713515465	mtipajumasaid@yahoo.com

103	Newala	John Nachipyangu	DTLC	Box 91, Newala	0784190064	-
104	Mtwara urban	Mwabusila Hussein	DTLC	Box 520, Mtwara		
105	Tandahimba	Ahmad Masoud	DTLC	Box Tandahimba	0714900636	-
106	Mtwara rural	Juma Gumbo	DTLC	Box 520, Mtwara	0784595115 / 0719321616	
		Dr. Joyce Njila	TB/HIV Officer	Box 520, Mtwara	0716499628	mrsnjila@yahoo.com
107	Mwanza region	Richard Mutakyawa	Zonal TB/ HIV Officer	Box 132, Mwanza,	0786487230	mutakyawa@yahoo.com
108	Mwanza MC North	Ester Michael	DTLC	Box 132, Mwanza	0754892119	emichael72@yahoo.com
109	Geita	John Karoko	DTLC	Box 40, Geita	0754/0787 067628	
110		Issa Makame Issa	TB/HIV Officer	Box 40, Geita	0787960130	issameki@yahoo.com
111	Kwimba	Wilson Hinda	DTLC	Box 64, Kwimba	0786658587	Wilson Hinda@yahoo.com
112	Magu	Costantine Innocent	DTLC	Box 30, Magu	0783231611	lugwishainnocent@yahoo.com
113		Evetha Isaack	TB/HIV Officer	Box 30, Magu	0783547044	evetmkiwa@hotmail.com
114	Sengerema	Athanas L. Kasubi	DTLC	Box 89, Sengerema		
		Tafawa Kapungu	TB/HIV Officer	Box 89, Sengerema	0784926919	tafawakp@yahoo.com; tkapungu@path.com
115	Ukerewe	Dr. A. W. Dodoma	DTLC	Box 55, Ukerewe		
		Godfrey Lunyelele	TB/HIV Officer	Box 55, Ukerewe	-	g_lunyelele@yahoo.com; glunyelele@path.org
116	Misungwi	Kapola D. Mzumya	DTLC	Box 33 Misungwi	0756029939	dmkapola@yahoo.com
		Majaliwa Tungaraza Raphael	TB/HIV Officer	Box 33 Misungwi	0784/0655388456 / 0769275027	mjtungaraza@yahoo.com; mtungaraza@path.org
117	Mwanza MC South	David Magiri	DTLC	Box 132, Mwanza	0754379790	-
		Alio Hussein	TB/HIV Officer		-	faridae_8@yahoo.com
118	Mwanza MC East	Martin Valentine	DTLC	Box 132, Mwanza	0784450430	valentinemartin38@yahoo.com
119	Bagamoyo	Mwinyikambi Salum	DTLC	Box 29, Bagamoyo	0784722810	mwinyikambisalum@yahoo.com
120	Kibaha DC	James Chagulilo/ Mbonea Mgheni	DTLC	Box 30080, Kibaha	0755641270	-
		Ferdinand Numvire	TB/HIV Officer	Box 30080, Kibaha	0787960146	ferdinandnumvire@yahoo.com
121	Kibaha TC	Kassimu Suleiman	DTLC		07170715241	kassims1980@hotmail.com
122	Kisarawe	Dr. Ben Simon	DTLC	Box 28002, Kisarawe		
		Dr. Mwanahamisi Omari	TB/HIV Officer	Box 28002, Kisarawe	0755718066	mwanahamisi@yahoo.com
123	Mafia	Dr. Abdallah Bhai	DTLC	Box 51, Mafia	-	
124	Rufiji	Rogers Peter Nnally	DTLC	Box 22, Utete		
		Sichone Godwell	TB/HIV Officer	Box 22, Utete	0787523733	sichonea@yahoo.com

125	Mkuranga	John Masanja	DTLC	Mkuranga	0784766028	johnmasanja52@yahoo.com
		Andrea Katanga	TB/HIV Officer	Mkuranga	0786525352	akatanga@path.org
126	Sumbawanga urban	Amosi H. Magogwa	DTLC	Box 413, S/wanga	0754013869	-
127	Mpanda west	Jeremia A. Mollel	DTLC	Box 72, Mpanda	0765888264	jerimoll@hotmail.com
128	Sumbawanga rural	Francis Mwasyebule P.	DTLC	Box 413, S/wanga		
		Mathew Ngao	TB/HIV Officer	Box 413, S/wanga	0762677740	ngaomathew@yahoo.com
129	Nkansi	Godfrey Macheta	DTLC	Box 20, Nkansi	0763962455	-
		Deus Msafiri	TB/HIV Officer	Box 20, Nkansi	0767434150	siingwa3@yahoo.co.uk
130	Mpanda east (urban)	Peres Ishengoma	DTLC	Box 72, Mpanda	0785325260	-
131	Nkansi Kirando	Samson B. Mwampamba	DTLC	Box 20, Nkansi		
132	Songea rural	Kangeka Ndawana	DTLC	Box 5, Songea	0762540411	ndawanakangeka@yahoo.com
133	Songea urban	Emmanuel Kiwale	DTLC	Box 145, Songea	0755687472	emanuelkiwale@yahoo.com
		James Mapunda	TB/HIV Officer	Box 145, Songea	0764565021	mapundajames5661@yahoo.com
134	Mbinga	Richard Nkinga	DTLC	Box 42, Mbinga	0782714469	rnkinga@yahoo.com
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142	Meatu	Dismas Nhandule	DTLC	Box 25, Meatu	0784685578 / 0657234050	-
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152	Igunga	Dr. Kabeya J	DTLC	Box 3, Igunga	-	-
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153	Nzega	Khamil Gibe	DTLC	Box 8, Nzega	0682045717	-
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157	Tanga urban	Sufian Mbelwa	DTLC	Box 152, Tanga		-
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