4th ANNUAL PROGRAMMATIC AND FINANCIAL REPORT

Project: Narrowing the gap: Expanding access to new diagnostics for patients at risk of multi-drug resistant tuberculosis (MDR-TB)

Period: 01 January to 31 December 2012

World Health Organization
Global Laboratory Initiative
Foundation for Innovative New Diagnostics
Global Drug Facility

Contents

Background

Lack of diagnostic capacity is a critical barrier to the scale-up of diagnosis, treatment and control needed for an effective response to the dramatic increase in multi-drug resistant tuberculosis (MDR-TB) which has been further complicated by the convergence of the TB and HIV epidemics.

In April 2008 the UNITAID Board approved a project covering 16 countries and called: "Narrowing the gap: EXPANDing access to new diagnostics for patients at risk of multi-drug resistant tuberculosis (MDR-TB)" coordinated by the World Health Organization (WHO) and the Global Laboratory Initiative (GLI) in collaboration with the Foundation for Innovative New Diagnostics (FIND) and the Stop TB Partnership's Global Drug Facility (GDF). In May 2009 this Project was expanded to 11 additional countries including India and renamed 'EXPAND-TB' (EXPANDing access to new diagnostics for TB).

The overall goal of the five-year Project is to narrow the huge diagnostic gap in MDR-TB control by expanding and accelerating access to new and rapid diagnostic technologies within appropriate laboratory services at country level, accompanied by the necessary know-how for technology transfer, and ensuring these new technologies are properly integrated within TB control programmes, thereby addressing one of the key obstacles to the scale-up of MDR-TB care.

The EXPAND-TB Project 4th Annual Report describes progress over the period 1st January until 31st December 2012.

Executive Summary

Introduction

Public health challenges due to anti-tuberculosis (TB) drug resistance have been compounded by increases in multidrug-resistant (MDR), extensively drug-resistant (XDR) TB and HIV co-infection. Early detection of TB and rapid identification of drug resistance to trigger appropriate treatment are essential for reducing the incidence of drug-resistant and MDR-TB, for improving individual patient health and for reaching epidemiological impact targets. The EXPAND-TB project aims to address the obstacles to correct diagnosis and treatment of MDR-TB in low-resource settings worldwide by improving laboratory capacity for diagnosis. The project is focused on establishing or upgrading 99 central and regional reference laboratories in 27 countries, 15 of which are high-burden TB or high MDR-TB burden countries, to diagnose drug-resistant and HIV-associated TB using diagnostic tools such as liquid culture, line probe assays and Xpert MTB/RIF (Xpert).

This report covers EXPAND-TB project activities for 2012. This period has seen unprecedented increases in performance against all indicators: 66% of targeted laboratories are fully operational and are reporting cases, and annual and cumulative targets for case reporting have been exceeded (by 10% and 5% respectively). Decentralizing the project management structure has been a significant contributing factor to this improvement and has additionally had a positive impact on the cost-effectiveness of the project.

In 2012, project partners suggested and following the agreement of the UNITAID secretariat prepared a project amendment and no-cost extension that sums up project targets update, updates list of countries and adds a new, WHO endorsed TB diagnostic technology to the project scope in selected countries.

Project progress

Twenty four countries were in Phase III (operational phase) by the end 2012. Peru and Indonesia were still in Phase II (technology transfer phase) at the end of 2012 and are expected to progress to Phase III within the first quarter of 2013. Only Kazakhstan was in Phase I (Laboratory preparedness) but it is expected that the country laboratories will enter in operation during first half of 2013. Political commitment has been secured in all 27 countries through the signing of a Memorandum of Understanding (MOU) with national health authorities; the current status is shown in Figure 1.

Project progress in 2012 was significant, a result of the project having reached maturity after 4-years of implementation and trouble-shooting efforts, a change in management style and structure, and the introduction of Xpert to 6 EXPAND-TB countries (with complementary funding provided by the Stop TB Partnership). 66% of the targeted laboratories were fully operational and reporting MDR-TB cases and for the first time annual and cumulative targets for number of MDR-TB cases reported were met and exceeded, as shown in Figure 2. In 2012, 24,870 MDR-TB cases were diagnosed through the EXPAND-TB project in 24 reporting countries, representing a >100% increase over 2011. The cumulative MDR-TB case number reached 36,965; 32% of the overall project target.

Project partners continued developing model for sustained in-country capacity-building in 2012 by increasing consultant network to 17 consultants, and strengthening links with local counterparts (27 local counterparts, or focal points). The first EXPAND-TB workshop took place in October 2012 in Annecy, France, with 36 participants including partners, UNITAID, GLI, WHO and GDF; consultants; country focal points; Supranational TB Reference Laboratories (SRLs); and project managers (FIND). Project objectives and targets were reinforced, country annual and acceleration plans were developed; in-country experiences were shared; testing algorithms discussed; and agreement was reached on the

establishment of a continuous communication network. This workshop will be replicated regionally early in 2013 for participants of 8 countries in Eastern Europe and Central Asia, and will be conducted in Russian language.

We have also made important changes by decentralizing the FIND EXPAND-TB project management structure and placing it closer to the implementation sites. Three out of the four project managers at FIND are now based in India, Kenya and Uzbekistan, and cover their portfolio of countries (20 in total) from those bases: this greatly facilitates access in the countries when needed and improves the cost effectiveness of the operational management of the project.

Noteworthy individual country achievements that are highlighted in this report include:

- the exponential increase in number of cases diagnosed in India, and uptake of new technologies (30 LPA labs; 12 Liquid culture labs; and 7 Xpert labs) across the country;
- the fast response and commitment in countries such as Rwanda and Mozambique, which were incorporated to the project in 2012, and which are both now in reporting phase within a year of initiating operations; and
- the increase in number of cases reported in high MDR-TB burden countries in Central Asia and Eastern Europe, including Belarus, which also entered into operations in 2012.

Training on LPA, liquid culture, DST, rapid speciation and Xpert has been provided to 138 laboratory staff, managers, physicians and nurses. 131 laboratory orders were shipped to the actively reporting countries for a total amount of USD 10,718,306. Procurement orders have increased rapidly, in line with the increased number of laboratories starting routine testing; more than 562 shipments had been processed by the procurement team in GDF by the end of the reporting period.

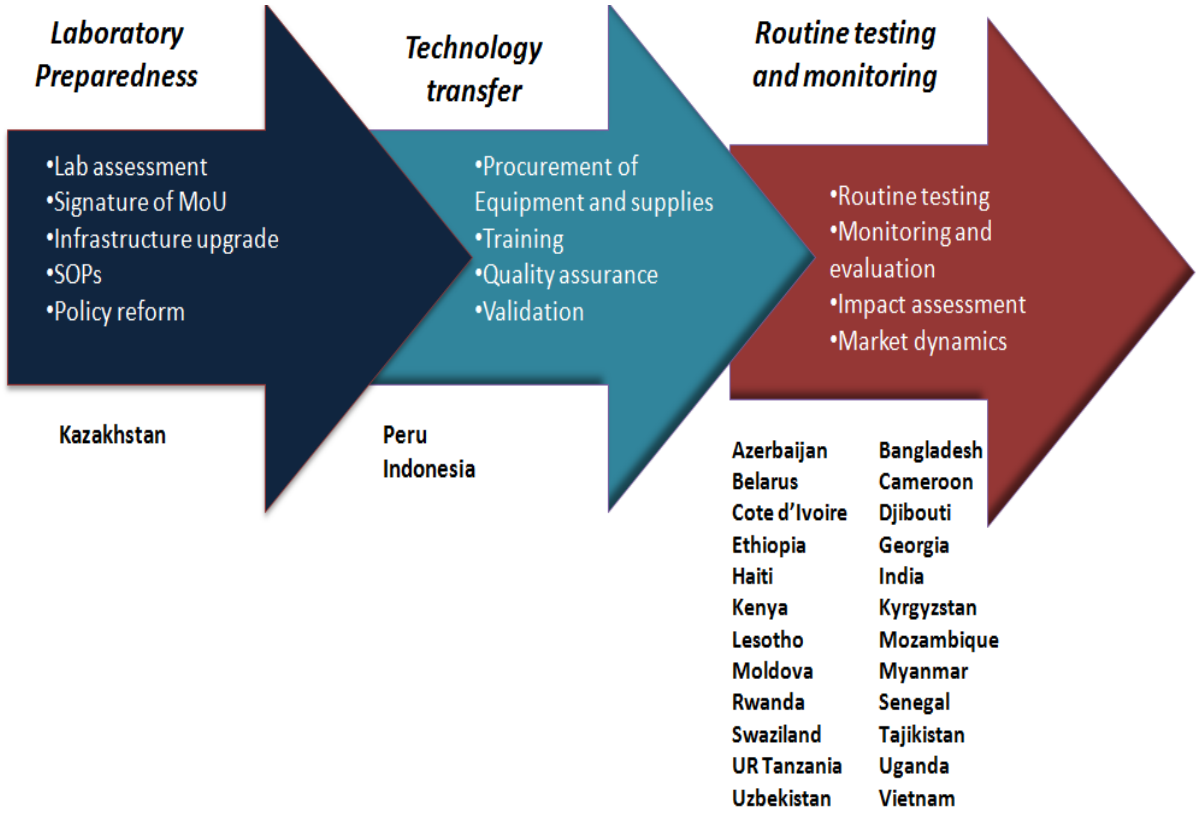

Figure 1: Current status: EXPAND-TB laboratory capacity development

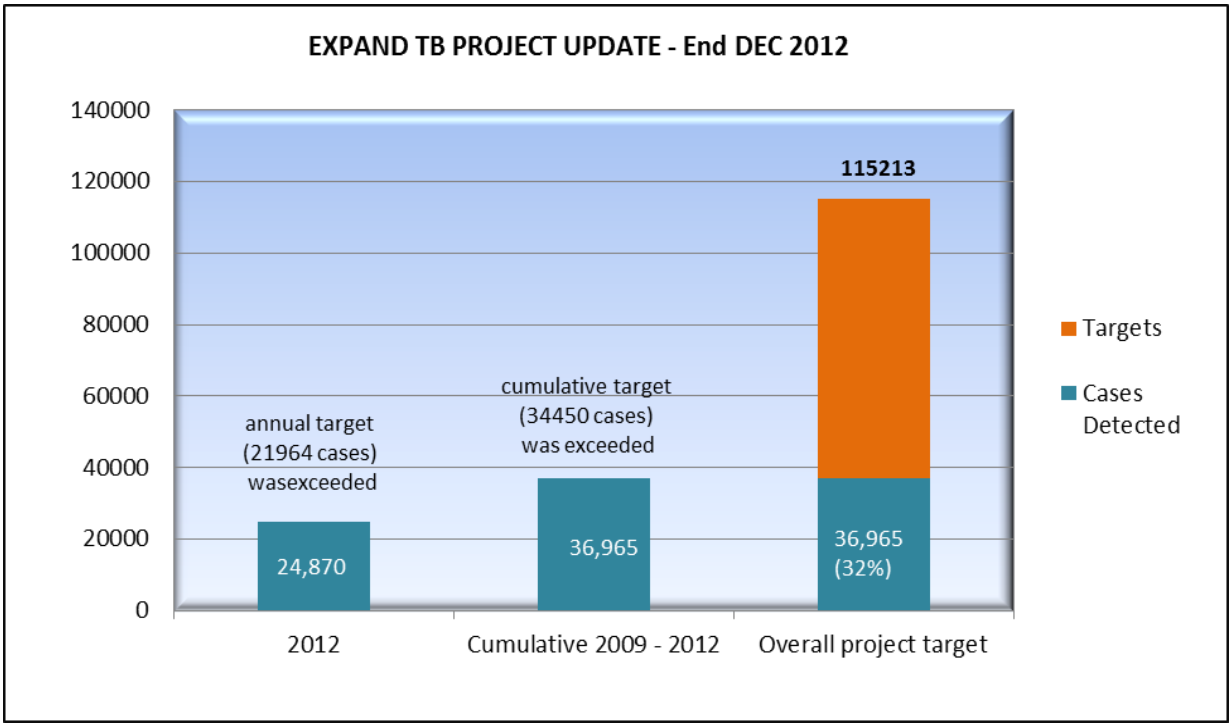

Figure 2: Summary of project progress against 2012 and cumulative MDR-TB diagnosis targets

Project updates

During 2012, UNITAID, GLI, FIND and GDF discussed the possibility of a no-cost extension for one more year, which would allow sufficient time for the project targets to be achieved. This is needed given the length of time that it has taken for most laboratories to become operational due to diverse number of challenges associated with the implementation of a project of this scale and complex nature of the technologies being transferred. These include custom restrictions; slow political response in signing MOUs; length of time needed to upgrade the sites to the required biosafety standards; validation of the new technologies; and time needed for laboratory staff to acquire skills and operate routinely without major obstacles. Most challenges have been overcome and realistic acceleration plans have been outlined for each country that are linked to annual plans to allow project managers and focal points to concentrate on those areas and anticipate needed actions.

The project MOU has consequently been amended with revisions to country budgets and MDR-TB targets. In this report we are using the new targets that will appear in the MOU Amendment (shown in Annex 1). Similarly the number of laboratories has been updated to reflect latest commitments made to NTPs and after assessing capacity of local laboratories initially proposed to be part of the project. New laboratories are also proposed by some countries and decision to include/exclude them from the project is taking by partners during PMM. It is expected that the Amendment will be approved by end of quarter 1, 2013.

In 2012 important steps were taken towards strengthening the project with the Xpert technology; introduction of Xpert in EXPAND-TB countries will be accelerated in 2013:

- Ten EXPAND-TB countries will receive Xpert instruments once the MOU Amendment is signed;
- Fifteen additional EXPAND-TB countries will also get the technology through the new UNITAID funded TBXpert project;
- This means that 25/27 EXPAND TB countries will receive Xpert, contributing to MDR-TB case detection and modifying the workload at central level laboratories.

The combined efforts of multiple partners will translate into more effective control measures. Partners are already engaged in supporting the development of strategic plans and the endorsement of clinical and laboratory algorithms to help local authorities incorporate all these new technologies.

Project partners have initiated discussions around the transitioning strategy of the project and will initially pilot the strategy at a few sites. The experience from the pilot run will be used as a model for implementation across all 27 countries during the remainder of the project duration, ensuring a smooth transition of the project back to the local Ministries of Health (and partners where applicable).

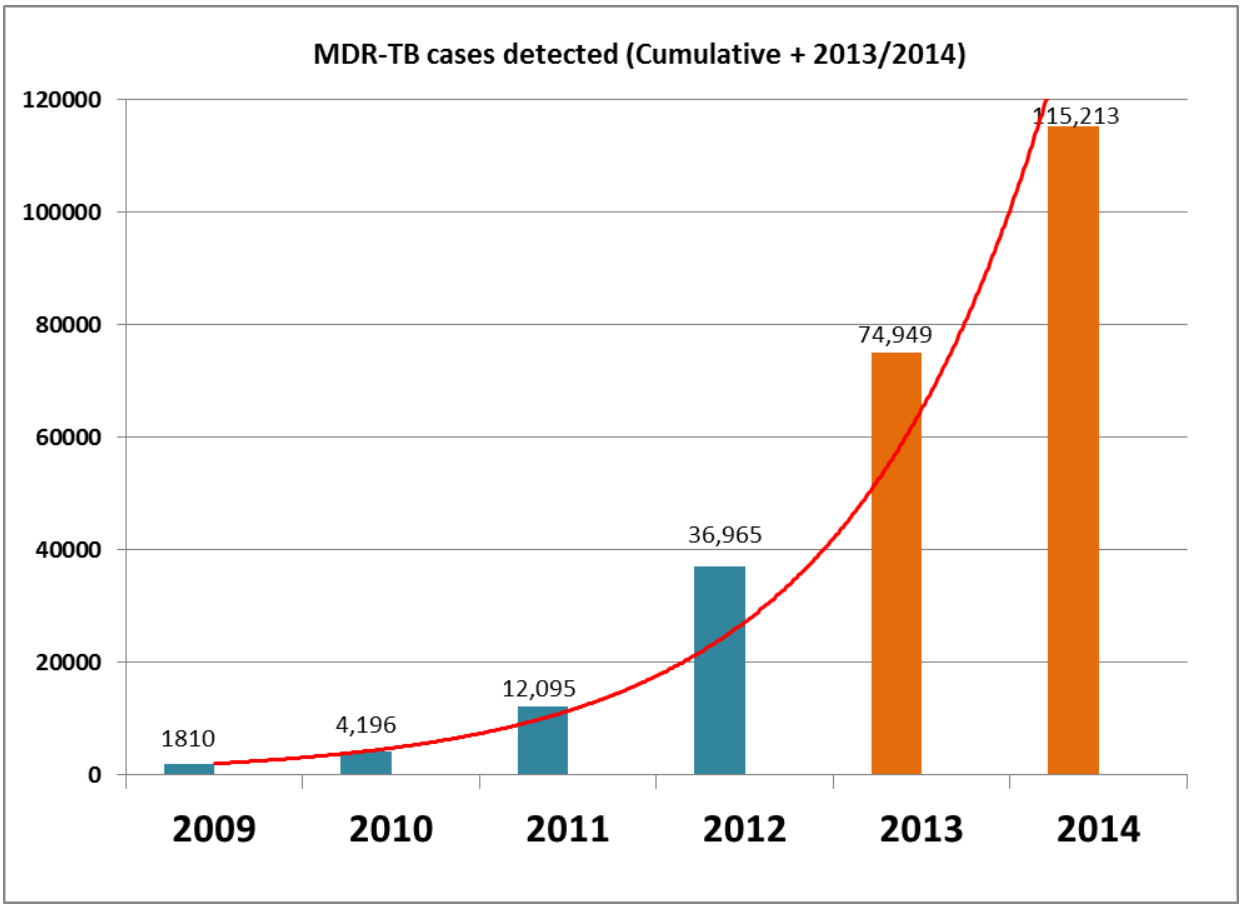

Figure 3: Summary of project progress: Cumulative cases until 2012 + targets 2013 - 2014

Summary of Achievements and Challenges in 2012

Achievements	• Annual Target (21,964 MDR-TB cases) was exceeded, and 24,870 MDR-TB cases were diagnosed. • Cumulative target (34,450 MDR-TB cases) was exceeded, and 36,965 MDR-TB cases were diagnosed. • Political commitment has been secured in all 27 countries through the signing of a Memorandum of Understanding (MOU) with national Health authorities; • 65/99 laboratories actively reporting MDR-TB cases (worth noting that this number fluctuates slightly as labs are reassessed by the project management team and some unsuitable labs removed/new proposed labs added after agreed at PMM). • Extensive technical assistance network and decentralized project management making a positive impact in project outcomes. • GeneXpert introduction in some EXPAND-TB countries is already having a positive impact on the number of cases diagnosed. This is expected to increase as more instruments are deployed throughout 25 of the 27 EXPAND-TB countries.
Challenges	• Lack of equipment maintenance as part of the project. Requires individual negotiations at country levels with counterparts and partners. • Long delays in obtaining permits for importation of goods in some key countries • Poor referral systems for samples therefore limiting the number of MDR-TB cases detected. • Lack of effective laboratory Information Management Systems (LIMS) in most labs, affecting the data management and timely/accurate collection of information and lab outcomes. • Gaps in treatment initiation in some countries. • Treatment availability. Although not a central objective of the project, we do report on number of cases put on treatment as feasible. Gap between diagnostics and treatment still remains a challenge in number of countries where either no data is available (Indonesia, Ethiopia, Tanzania, Swaziland, Haiti); or number of diagnosed patients is significantly lower than number of cases initiated on treatment (Cote D'Ivoire, Djibouti, Myanmar, Kyrgyzstan, Uganda, Kenya).
Actions addressing challenges	• Lobbying with NTP, MoH and partners in supporting the referral of samples. • Lobbying with NTP, MoH and partners in supporting the equipment maintenance. • Working jointly with authorities to obtain required permits for release of goods from customs. • Lobbying partners for supporting the implementation of LIMS at least for central labs(NRL). • Lobbying with MoH, WHO, GF, GDF and other partners providing information with regards to treatment gap. This information is shared with partners during PMMs, and through the interim and annual EXPAND-TB reports.

A. General Project Information

Niche	GLI/FIND/GDF
Project Number	TB-MDR-DIA-08
Recipient Partners	GLI/FIND/GDF
Money Holder	GDF/GLI (WHO Voluntary Fund for Health Promotion, sub-account for Stop TB partnership) FIND (under separate MOU with UNITAID)
Project Start Date	12 December 2008
Project End Date	December 31st 2013[1]

Progress Update Period

Progress Update Reporting Date	15th March 2013
Progress Update Period Covered	1st January 2012 to 31st December 2012

[1] December 31st 2014 when MOU amended is approved

On behalf of GLI, FIND and GDF, the undersigned hereby submits the progress update for the project "Narrowing the Gap: EXPANDing and accelerating access to diagnostics for patients at risk of multi-drug resistant tuberculosis (MDR-TB)" for the period 1st January to 31st December 2012 .

The undersigned confirms that: a) the information (programmatic, financial or otherwise) provided in this document is complete and accurate; b) funds that may be remitted to the Trust Fund and to FIND in accordance with the request shall be deposited in the bank account specified in section 9.2 of the MOU (for FIND) unless otherwise specified herein; and c) funds disbursed under the project shall be used in accordance with the project's MOU

Signed on behalf of GLI, FIND and GDF

Name: **Dr. Mario Raviglione**

Title: **Director, WHO Stop TB Department**

Date and Place: _____, WHO Stop TB department, Geneva

B. Key Expected Achievements

A new M&E section A as a reporting tool is being used in this report, as proposed by UNITAID within the framework of the Terms and Conditions of the 1st Amendment to this Project (Sections 5.12-5.13 and its related Exhibits). The tool was provided as an Excel template document, named "FINAL Monitoring UTD", received from UTD on February 15th 2011.

The template is a combination of the previously piloted tool merged with the new Financial Section C and new Procurement indicators into a combined approach. The M&E indicators for cost containment and price reduction market dynamics (see below B2, section 4.5.1) are provided under the "Procurement" spreadsheet.

C. Project progress at a glance

Country	Lab assessment	MOU	TA In Lab Infrastructure	Lab Norms And Standards Reviewed	Good Lab Practice Reviewed	Quality Mgt And Assurance Reviewed	Equipment And Reagents Provided	New Diagnostic Tool Training Course	Validation Of Diagnostic Algorithm	Detection Of MDR-TB Patients	Cumulative MDR-TB Cases	On-Site Mentoring
Azerbaijan	√	MOJ: 01SEP10	√	√	√	√	√	√	√	√	631	√
Azerbaijan	√	MOH: 04FEB11	√	√	√	√	√	√	√	√		√
Bangladesh	√	11-Dec-11	√	√	√	√	√	√		√	247	√
Belarus	√	18-Jul-11	√	√	√	√	√	√	√	√	192*	
Cameroon	√	08-Oct-10	√	√	√	√	√	√	√	√	217	
Cote d'Ivoire	√	08-Mar-10	√	√	√	√	√	√		√	235	
Djibouti	√	19-Oct-09	√	√	√	√	√	√	√	√	58	
Ethiopia	√	01-Oct-07	√	√	√	√	√	√	√	√	1127	√
Georgia	√	23-Jun-10	√	√	√	√	√	√	√	√	1458	√
Haiti	√	26-Oct-09	√	√	√	√	√	√	√	√	172	√
India	√	08-Mar-10	√	√	√	√	√	√	√	√	20215	√
Indonesia	√	09-Feb-12	√	√	√	√	√	√			0	
Kazakhstan	√	20-Jul-11	√								0	
Kenya	√	16-Dec-10	√	√	√	√	√	√	√	√	228	√
Kyrgyzstan	√	28-May-10	√	√	√	√	√	√	√	√	1766*	√
Lesotho	√	23-Mar-07	√	√	√	√	√	√	√	√	583	√
Mozambique	√	30-May-12	√	√	√	√	√	√	√	√	29	√
Myanmar	√	10-Feb-09	√	√	√	√	√	√	√	√	1440	√
Peru	√	28-Jun-12	√	√	√	√	√	√			0	√
Republic of Moldova	√	13-Aug-10	√	√	√	√	√	√	√	√	1304	
Rwanda	√	09-Jul-12	√	√	√	√	√	√	√	√	16	√
Senegal	√	23-Dec-10	√	√	√	√	√	√	√	√	29	√
Swaziland	√	15-Dec-09	√	√	√	√	√	√	√	√	656	√
Tajikistan	√	08-Sep-10	√	√	√	√	√	√	√	√	805*	√
Uganda	√	01-Jul-10	√	√	√	√	√	√	√	√	343	√
Tanzania UR	√	14-Mar-11	√	√	√	√	√	√	√	√	76	√
Uzbekistan	√	31-Jul-09	√	√	√	√	√	√	√	√	4894	√
Viet Nam	√	01-Mar-11	√	√	√	√	√	√	√	√	244	√
Totals											36,965	

Figure 4. Progress in project components

*Countries where number of cases diagnosed have been revised after through crosschecking of data collection process

Country	MOU signature Date	Targeted Labs	Functional Labs	MDR TB cases detected				MDR TB cases Projected				MDR TB cases detected	
				2009	2010	2011	2012	2012 Target	2013 Target	2014 Target	EXPAND TB Target	Cumulative Cases Detected	% of Target Detected
Azerbaijan	MOJ: 01SEP10 MOH: 04FEB11	3	2			115	516	500	782	1453	2850	631	22
Bangladesh	Sunday, December 11, 2011	1	1				247	300	525	675	1500	247	16
Belarus	Monday, July 18, 2011	2	2				192	150	725	1125	2000	192	10
Cameroon	Friday, October 08, 2010	3	2			10	207	250	250	300	810	217	27
Cote d'Ivoire	Monday, March 08, 2010	2	2				235	250	175	175	600	235	39
Djibouti	Monday, October 19, 2009	1	1				58	100	229		329	58	18
Ethiopia	Monday, October 01, 2007	8	5	271	172	235	449	400	848	1574	3500	1127	32
Georgia	Wednesday, June 23, 2010	2	2			804	654	800	598	798	3000	1458	49
Haiti	Monday, October 26, 2009	2	2		30	61	81	104	140	141	476	172	36
India	Monday, March 08, 2010	40	25		740	3447	16028	12926	22941	22942	62996	20215	32
Indonesia	Thursday, February 09, 2012	2	0						400	600	1000	0	0
Kazahkstan	Wednesday, July 20, 2011	3	0						1029	1911	2940	0	0
Kenya	Thursday, December 16, 2010	1	1			26	202	200	332	332	890	228	26
Kyrgyz Republic	Friday, May 28, 2010	2	2			825	941	600	737	838	3000	1766	59
Lesotho	Friday, March 23, 2007	2	1	116	158	118	191	190	218	400	1200	583	49
Mozambique	Wednesday, May 30, 2012	2	2				29	58	650	750	1458	29	2
Myanmar	Tuesday, February 10, 2009	2	2		90	482	868	600	617	618	2407	1440	60
Peru	Thursday, June 28, 2012	3	0						815	985	1800	0	0
Republic of Moldova	Friday, August 13, 2010	3	3			420	884	650	1404	1404	3878	1304	34
Rwanda	Monday, July 09, 2012	2	1				16	50	391	581	1022	16	2
Senegal	Thursday, December 23, 2010	1	1				29	80	200	70	350	29	8
Swaziland	Tuesday, December 15, 2009	1	1			369	287	400	595	595	1959	656	33
Tajikistan	Wednesday, September 08, 2010	2	1			205	600	700	690	968	2563	805	31
Uganda	Thursday, July 01, 2010	1	1		110	92	141	150	104	53	509	343	67
UR Tanzania	Monday, March 14, 2011	2	1			33	43	100	93	174	400	76	19
Uzbekistan	Friday, July 31, 2009	2	1	1423	1086	657	1728	2070	1984	2756	9976	4894	49
Viet Nam	Tuesday, March 01, 2011	4	3				244	336	512	952	1800	244	14
Total		99	65	**1,810**	**2,386**	**7,899**	**24,870**	**21,964**	**37,984**	**43,170**	**115,213**	**36,965**	32

Figure 5. Progress in project targets by year and total

ABBREVIATIONS:

ACILT	African Centre for Integrated Laboratory Training Course
AFB	Acid Fast Bacilli
AFD	Agence Française de Développement
AFMS	Air Filtration Maintenance Services
AISPO	Associazione Italiana per la Solidarieta' tra i Popoli
AMREF	African Medical and Research Foundation
ASM	American Society for Microbiology
BSCII	Biosafety Cabinet Level II
BSL3	Biosafety Level III
CDC	Centers for Disease Control and Prevention
CeDReS	Centre de Diagnostic et de Recherche sur le SIDA et les Maladies Opportunistes (Cote d'Ivoire)
CHAI	Clinton Health Access Initiative
CPC	Centre Pasteur of Cameroun
DBS	Dried Blood Spot
DOTS	Directly Observed Treatment Short course
DRS	Drug Resistance Surveillance
DST	Drug Susceptibility Testing
EHNRI	Ethiopian Health and Nutrition Research Institute
EID	Early Infant Diagnosis
EQA	External Quality Assessment
FIND	Foundation for Innovative New Diagnostics
FM	Fondation Mérieux
GAP – CDC	Global AIDS Program (CDC, Atlanta)
GDF	Global Drug Facility
GF	Global Fund
GF PIU	Global Fund Project Implementing Unit
GHESKIO	Groupe Haïtien d'Etude du Sarcome de Kaposi et des Infections Opportunistes
GLC	Green Light Committee
GLI	Global Laboratory Initiative
GIZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Agency for Technical Cooperation
ICELT	Indian Center for Excellence in Laboratory Training
ICRC	International Committee Red Cross
IDI	Infectious Diseases Institute
IMF	International Monetary Fund
IMIS	Institut des Maladies Infectieuses et de Santé Reproductive
INH	Isoniazid
IPCI	institut Pasteur Côte d'Ivoire
IQC	Internal Quality Control
JHU	Johns Hopkins University
JCRC	the Joint Clinical Research Centre
KEMRI	Kenya Medical Research Institute
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
LAT	Laboratory Assessment Tool
LJ	Lowenstein Jensen
LNSP	Laboratoire National de la Santé Publique (LNSP - Haïti)
LPA	Line Probe Assay
MDR-TB	Multi Drug Resistant Tuberculosis
MGIT	Mycobacteria Growth Indicator Tube
MOU	Memorandum of Understanding

MoH	Ministry of Health
MSF	Médecins sans Frontières
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
NHLS	National Health Laboratory Service / Johannesburg
NICD	National Institute for Communicable Diseases - Johannesburg
NRL	National Reference Laboratory
NTP	National Tuberculosis Program
NTRL	National Tuberculosis Reference Laboratory
PCR	Polymerase Chain Reaction
PEPFAR	President's Emergency Plan for AIDS Relief
PMM	Project Management Meeting
Rif	Rifampicin
QA	Quality Assurance
SLD	Second Line Drugs
SNRL-MRC	Supra National Reference Lab Medical Research Council South Africa (Pretoria)
SOP	Standard Operations Procedures
UNDP	United Nations Development Program
URC	University Research Co
UTD	UNITAID
WB	World Bank
WHO	World Health Organization
WHO-CO	WHO – Country Office
WHO-PAHO	(WHO Pan American Health Organization)
WHO-STAG TB	World Health Organization - Strategic and Technical Advisory Group for TB
ZN	Ziehl Neelsen Stain

D. Country update

1. LESOTHO

Activities covered to date:

Lesotho	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory infrastructure	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance reviewed	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	191
MDR-TB cases reported (cumulative)	583
MDR-TB cases to be detected (project target)	1200
On site mentoring	☑

Update:
In 2012 only one of the two laboratories supported under EXPAND-TB was providing routine diagnostic services and the 2012 target of 190 MDR-TB cases to be detected was exceed with 191 MDR-TB cases being diagnosed.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• Regional laboratory was assessed • 2012 target was exceeded
Milestones reached	• None
Challenges	• Lack of a clear diagnostic algorithm • Poor stock management leading to stock-out of reagents • Lack of an in-country consultant therefore limiting access to in-country information leaving a gap in promoting the EXPAND-TB agenda • Poor referral systems for samples therefore limiting the number of MDR-TB cases detected • Lack of a functioning LIS or proper use of the existing system • Poor laboratory management
Actions addressing challenges	• Lobbying with NTP and MoH on implementation of a clear algorithm • Stock management system introduced • Lobbying with NTP to support placement of an in-country consultant in 2013 • Lobbying with NTP and MoH on improved referral of samples

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	2 labs; NRL: MGIT, LPA and GeneXpert Mafeteng RRL: MGIT and GeneXpert
Number of reporting labs	1

Status of non-reporting labs	Liquid culture and GeneXpert training required
Number of labs targeted for Xpert support under EXPAND-TB	2
Number of Xpert supported labs reporting	None

c. MDR-TB Diagnosis and Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	191
2012 Target for MDR-TB cases detected	190
Provide brief justification if 2012 MDR-TB case target is not achieved	N/A
Number of patients put on treatment in 2012	156
Number of patients for whom 2nd line treatment was available in 2012	Data not available

d. Summary of Activities in 2012

Activities	
Activities in 2012	• One order placed and received • Site visits by consultant and portfolio manager • In-country consultant planned for 2013.

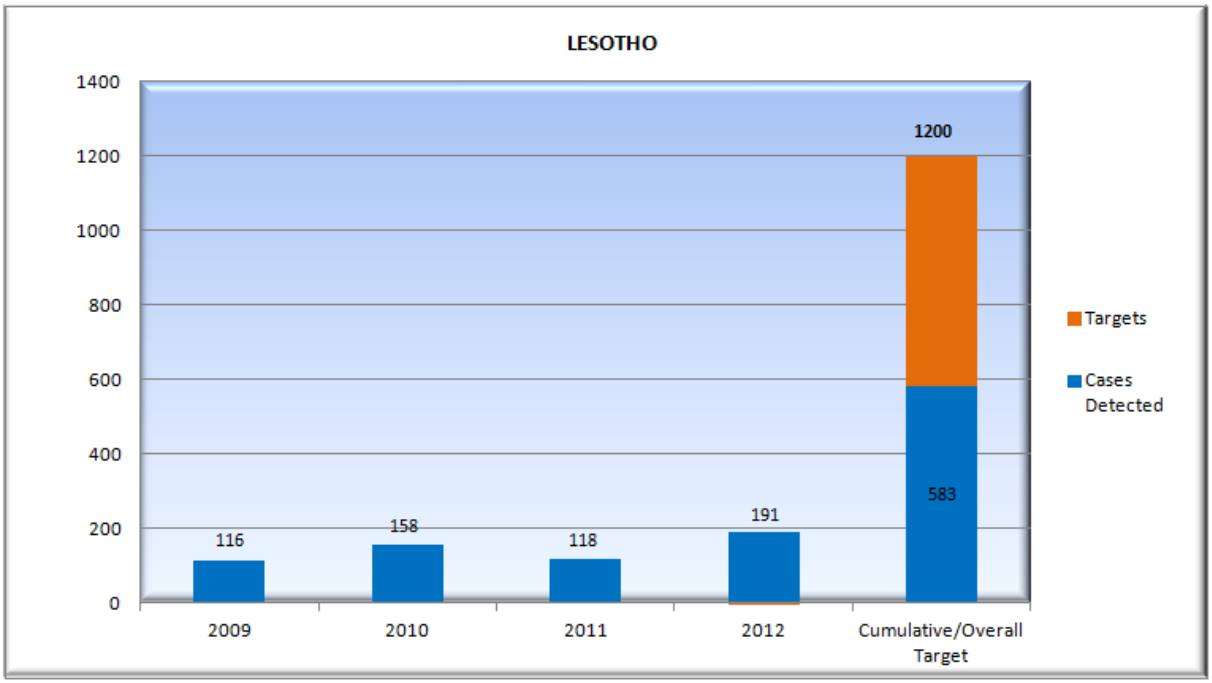

Figure C1: Summary of MDR-TB cases detected against MDR-TB cases targeted - Lesotho

2. ETHIOPIA

Activities covered to date:

Ethiopia	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory infrastructure	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance reviewed	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	449
MDR-TB cases reported (cumulative)	1127
MDR-TB cases to be detected (project target)	3500
On site mentoring	☑

Update:

In 2012, five of the eight laboratories supported under EXPAND-TB provided routine diagnostic services. The 2012 target of 400 MDR-TB cases to be detected was exceeded with 449 MDR-TB cases being diagnosed.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• The number of supported laboratories was increased from 7 to 8 with the inclusion of the Jimma University Laboratory following a request from the MoH • Two RRLs, Adama and Bahir Dar, completed validation and started routine diagnostic testing services. • Validation was started in the Mekele RRL • Two consultants were engaged to provide technical support to the laboratories • All laboratory renovations in the RRLs were completed
Milestones reached (As per annual plan)	• 5 out of 8 laboratories are in Phase 3 (Routine reporting and monitoring) of implementation • The remaining 3 laboratories progressed from Phase 1 (Laboratory Preparedness) to Phase 2 (Technology Transfer).
Challenges	• The Haraar laboratory lacks some essential equipment required to start validation. The equipment is awaiting customs clearance and is being supported by JHU. • Lack of sample transportation has resulted in very low loads of samples being received at the RRLs for diagnostics testing • Rotation of staff at St Peters Hospital laboratory has led to staff with no experience in performing liquid culture and DST and LPA testing being allocated to the TB Laboratory. As a result liquid culture services were suspended due to a high contamination rate at the laboratory
Actions to address challenges	• Assistance has been requested from WHO officers stationed at the Regional Health Bureaus to help expedite the implementation of the planned postal based sample transportation • Commitment was obtained from the St Peter's Hospital management to stop rotation of staff out of TB lab • St Peters TB laboratory was provided with liquid culture and LPA training

	and services were resumed.

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	8 Labs targeted. 3 Labs (NRL, St Peter's and Jimma University Hospital) are supported with MGIT and LPA technology 5 Labs (Adama, Bahir Dar, Hawassa, Haraar and Mekele) are supported with LPA technology
Number of reporting labs	5 reporting labs. NRL, St Peter, Jimma, Adama and Bahir Dar.
Status of non reporting labs	• Mekele RRL started validation process in December 2012 • Renovations at Hawassa RRL were completed in November 2012. The lab will be assessed in Q1 for its readiness to start validation. • Haraar RRL is waiting for custom clearance of some essential equipment that is supported by CDC to start validation
Number of labs targeted for Xpert support under EXPAND-TB	6 Laboratories supported with GeneXpert analyzers and cartridges by the TBP
Number of Xpert supported labs reporting	4

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	449
2012 Target for MDR-TB cases detected	400
Provide brief justification if 2012 MDR-TB case target is not achieved	N/A
Number of patients put on treatment in 2012	Data not available
Number of patients for whom 2nd line treatment was available in 2012	Data not available

d. Summary of Activities in 2012

Activities	
Activities in 2012	• The ventilation systems in all the EXPAND-TB supported laboratories were recertified allowing for validation to start in some of the RRLs • Technical assistance was provided to the NRL to start implementation of a stepwise process towards accreditation following a modified checklist that combines the GLI process with SLIPTA • Technical support was provided to St Peters laboratory to resume providing routine diagnostic services and reporting • Technical assistance was provided to the Adama and Bahir Dar RRL to validate their processes and provide diagnostic services • Mekele RRL and Jimma University Hospital Laboratory were assessed to ensure they met all required standards to provide MDR-TB diagnostic services • Mekele RRL was provided with TA to start validation • The NRL was supported to manage and order supplies for all the EXPAND-

	TB laboratories • The laboratory received 2 orders of supplies and was assisted to prepare a 3rd one for delivery in Q1 2013. • 1 monitoring visit was conducted in June 2012. • LPA V2.0 training for 6 laboratory personnel was conducted in collaboration with HAIN Kenya.

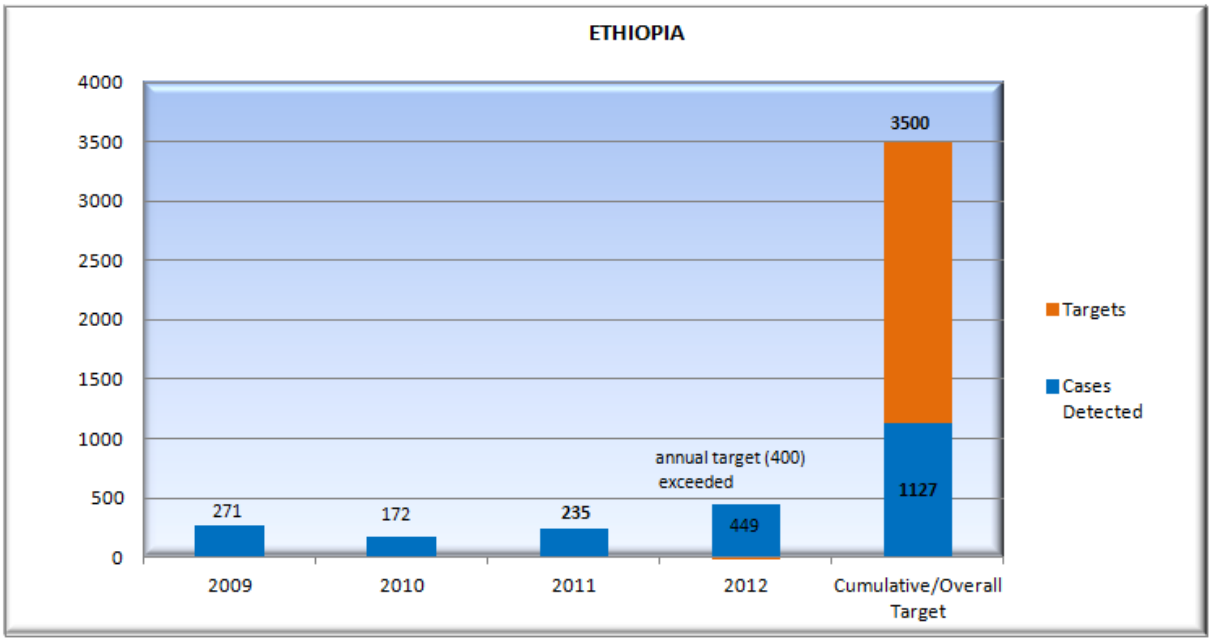

Figure C2: Summary of MDR-TB cases detected against MDR-TB cases targeted - Ethiopia

3. COTE D'IVOIRE

Activities covered to date:

Cote d'Ivoire	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance reviewed	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	235
MDR-TB cases reported (cumulative)	235
MDR-TB cases to be detected (project target)	600
On site mentoring	☑

Update:

In 2012 both laboratories supported under EXPAND-TB provided routine diagnostic services. 94% of the 2012 target of MDR-TB cases to be detected was achieved with 235 MDR-TB cases being diagnosed against a target of 250.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• Both supported laboratories resumed routine diagnostic activities after a suspension of activities in 2011 due to civil war
Milestones reached (As per annual plan)	• The NRL and CeDReS laboratory moved into Phase 3 of the project • The MOU with the country was extended to December 2013
Challenges	• The renovations at the 3rd laboratory to be supported by EXPAND-TB identified as CAT Adjame in Abidjan had still not been finalised • The quality of smear microscopy at the CAT Adjame laboratory was found to be of such a poor standard that EXPAND-TB supported technologies may not be introduced. • Lack of a sample transportation system limits the coverage of MDR-TB diagnostic testing to just Abidjan where both supported laboratories are located.
Actions addressing challenges	• An agreement was reached with the NTP to exclude CAT Adjame from the list of laboratories to be supported under EXPAND-TB. This reduced number of supported laboratories from 3 to 2. • The NTP has submitted a cost plan to CDC for the introduction of national sample transportation system and is awaiting its approval.

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	3 Labs to be supported all supplied with MGIT and LPA NRL, CeDReS Laboratory and CAT Adjame Laboratory
Number of reporting labs	2 reporting labs. NRL and CeDReS laboratory

Status of non reporting labs	An agreement was reached with the NTP for CAT Adjame laboratory to be excluded from the project.
Number of labs targeted for Xpert support under EXPAND-TB	3 Laboratories
Number of Xpert supported labs reporting	Nil

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	235
2012 Target for MDR-TB cases detected	250
Provide brief justification if 2012 MDR-TB case target is not achieved	• 94% of the target was achieved. • Lack of sample transportation led to low numbers of referrals to the MDR-TB diagnostic labs
Number of patients put on treatment in 2012	14 patients were reported as being put on treatment
Number of patients for whom 2nd line treatment was available in 2012	2nd line treatment was available for a maximum of 30 MDR-TB patients in 2012

d. Summary of Activities in 2012

Activities	
Activities in 2012	• A monitoring visit was conducted in March 2012 in collaboration with SRL Milan. • The laboratories are receiving frequent technical support from SRL Milan to strengthen the quality of the testing through the provision of bi-annual quality assurance and the retesting of some samples • The NRL and NTP received support on the development of an algorithm that made rational use of all the available technology to rapidly diagnose MDR-TB suspects. • The MOU with the country was extended to the end of 2013 as it had expired in March 2012. • Support was provided to the NRL to repair a MGIT that was broken down as a result of a power surge. The UPS provided by BD did not protect the analyzer against the power surge and this was brought to the attention of the BD technical team. • One shipment of supplies was delivered with CDC Côte d'Ivoire acting as consignee. • An agreement was arranged between the Cameroon NTP and Côte d'Ivoire NTP for Cameroon to provide Côte d'Ivoire with second line drugs to be used prior to their expiration date, with support from WHO. This arrangement could not be implemented due to complications arising from the Cameroonian financial guidelines and regulations not being friendly to this type of arrangement.

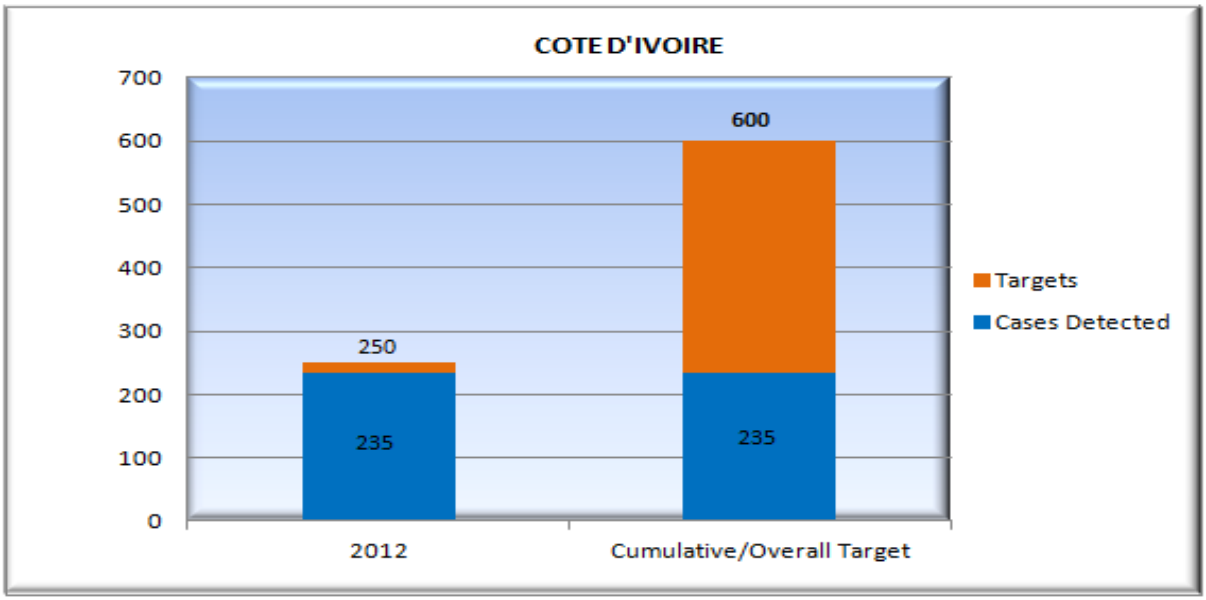

Figure C3: Summary of MDR-TB cases detected against MDR-TB cases targeted – Code d'Ivoire

4. MYANMAR

Activities covered to date:

Myanmar	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory infrastructure	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance reviewed	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	868
MDR-TB cases reported (cumulative)	1440
MDR-TB cases to be detected (project target)	2407
On site mentoring	☑

Update:

In 2012 both of the laboratories supported under EXPAND-TB were providing routine diagnostic services. The 2012 target for MDR-TB cases to be detected was exceeded with 865 cases being diagnosed against a target of 600.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• Mandalay Regional TB Laboratory achieved concordance of 95% between Liquid and Solid DST. Liquid DST and LPA mutation concordance was 93% at the end of 2012. • The third National Drug Resistant Study was launched in September 2012
Milestones reached (As per annual plan)	• None
Challenges	• Non-availability of contingency budget to buy minor spare parts for repair of equipment resulting in delays in repairing equipment. • Delays in obtaining spare parts for the ventilation systems leads to delays in servicing of the system. • High calcium content in water supply at Mandalay TB Laboratory affecting routine activities • Increased workload at the 2 main laboratories to diagnose DR-TB suspects and follow-up examinations for DR-TB cases on treatment. • No TB technicians at some Township TB Centers. • Frequent electricity cut off and low voltage power supply in most of Regional /State TB Centers, which result in frequent work interruptions.
Actions addressing challenges	• WHO Myanmar through Global Fund will continue to support additional staff at the Mandalay RRL and NTRL • Myanmar Medical Association will recruit 12 technicians to fill additional vacant posts. • Water will be procured for use at the Mandalay RRL

b. Laboratory Progress Update

Targeted Laboratories.	
Number of targeted labs and type of technology	Two labs NTRL Yangon and Mandalay RRL: supported with Liquid Culture and DST, and LPA

Number of reporting labs	Two
Status of non reporting labs	N/A
Number of labs targeted for GeneXpert support under EXPAND-TB	None
Number of Xpert supported labs reporting	N/A

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	865
2012 Target for MDR-TB cases detected	600
Provide brief justification if 2012 MDR-TB case target is not achieved	N/A
Number of patients put on treatment in 2012	442
Number of patients for whom 2nd line treatment was available in 2012	• MDR-TB treatment expanded to 16 more townships for a total of 38 MDR-TB Township treating DR-TB patients. • Ambulatory Treatment for DR-TB cases initiated. • 2nd line treatment available for all diagnosed cases in serviced areas. Another batch of 2 line Drugs for 400 patients will arrive in 1st Quarter of 2013.

d. Summary of Activities in 2012

Activities	
Activities in 2012	• The Store rooms at NTRL were renovated and air conditioners were installed to ensure supplies are stored at recommended temperatures • The third Nationwide Drug Resistant Survey was carried out at 30 randomly selected townships. • 2nd line DST introduced with support from NTRL Thailand • Monitoring visit to review and evaluate ongoing implementation of rapid tests performed at the NTRL and Mandalay RRL and GeneXpert roll-out • The existing national diagnostic Algorithms revised for maximum use of GeneXpert machines.

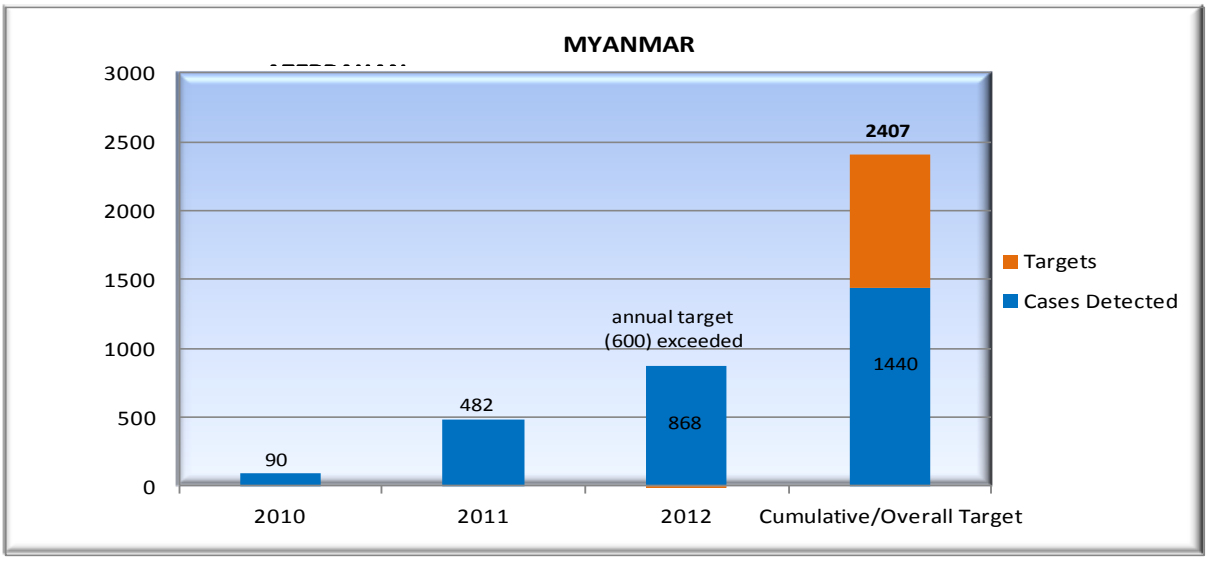

Figure C4: Summary of MDR-TB cases detected against MDR-TB cases targeted – Myanmar

5. UZBEKISTAN

Activities covered to date:

Uzbekistan	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory infrastructure	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance reviewed	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	1728
MDR-TB cases reported (cumulative)	4894
MDR-TB cases to be detected (project target)	9976
On site mentoring	☑

Update:

In 2012 only one of the two laboratories to be supported under EXPAND-TB were providing routine diagnostic services. 84% of the 2012 target of MDR-TB cases to be detected was diagnosed with 1728 MDR-TB cases being diagnosed against a target of 2070.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• A consultant/project manager with a coordinating role for the Eastern Europe & Central Asia region was engaged; • Supplies were partially cleared from customs after a considerable delay of 3 months • The extension of the FIND MoU with the MOU with the MoU was endorsed by the NTP • Technical specifications for renovations of the lab in Samarkand were completed allowing for the renovation work to start • A national TB diagnostic algorithm was developed
Milestones reached (As per annual plan)	• None
Challenges	• Delays in the approval of the MoU extension by the NTP; • Political commitment to the project needs to be intensified; • Need to strengthen coordination and collaboration within NTP; • Stock out of essential laboratory supplies as a result of delays in custom clearance of goods.
Actions addressing challenges	• Advocated for MoU extension with the NTP; • Advocated for custom clearance of goods with the NTP and sought support from local partners; • Coordination of efforts and support through GLI- WHO regional office

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	• 2 NRL and Samarkand RRL; LJ, MGIT, LPA and Xpert
Number of reporting labs	1
Status of non reporting labs	• Technical specifications for renovations

	of the Samarkand RRL have been completed and renovations are expected to start in 2013
Number of labs targeted for Xpert support under EXPAND-TB	8
Number of Xpert supported labs reporting	6

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	1728
2012 Target for MDR-TB cases detected	2070
Provide brief justification if 2012 MDR-TB case target is not achieved	• Stock out in laboratory reagents; • Delays in getting political commitment to extend MoU; • Need to strengthen coordination and collaboration within NTP.
Number of patients put on treatment in 2012	869
Number of patients for whom 2nd line treatment was available in 2012	869

d. Summary of Activities in 2012

Activities	
Activities in 2012	• Consultant placed in Tashkent in September 2012 to coordinate Eastern Europe and Central Asia; • Supported the development of National TB laboratory strategic plan that will also be used as a legislative base. • Technical support missions were conducted in May and October 2012 • GeneXperts were rolled out with 6 machines out of the supported 8 fully operational • Funding through a TB REACH proposal was obtained for the introduction of Xpert analyzers in Fergana. This project is aimed to reinforce country laboratory activity – as an adjunct activity for EXPAND-TB • Training on Xpert use (May 2012); • National algorithm was developed in collaboration with SRL (Gauting);

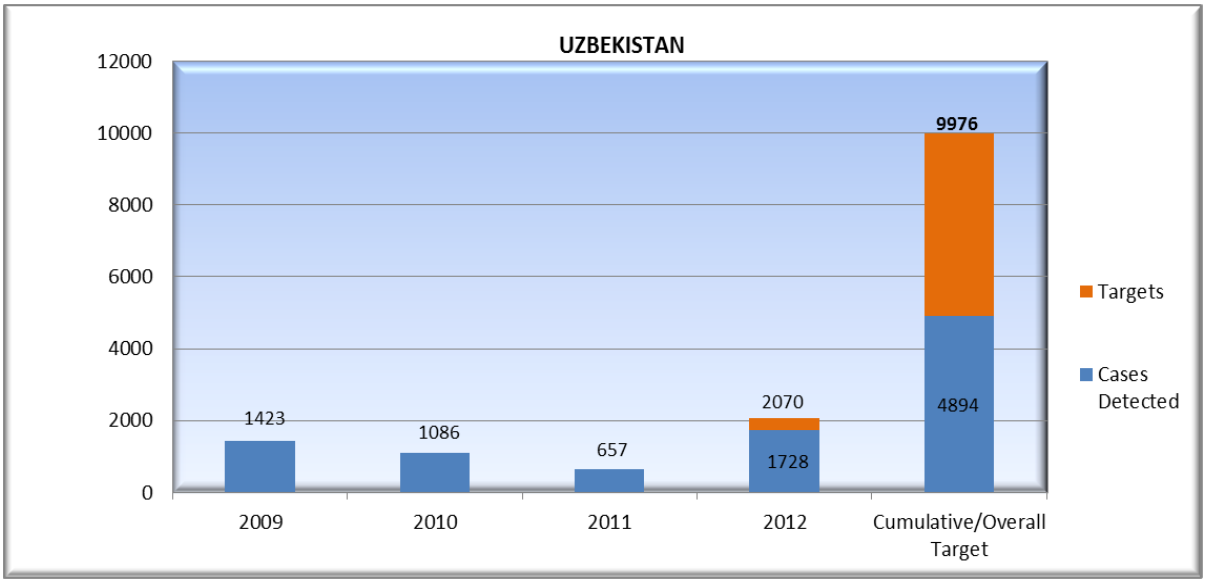

Figure C5: Summary of MDR-TB cases detected against MDR-TB cases targeted – Uzbekistan

6. INDIA

Activities covered to date:

India	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	16028
MDR-TB cases reported (cumulative)	20215
MDR-TB cases to be detected (project target)	62996
On site mentoring	☑

Update:

At the end of 2012, 25 out of the 40 laboratories supported were providing routine diagnostic services. The 2012 target of MDR-TB cases to be diagnosed was exceeded with 16,028 cases being detected against a target of 12,926

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• 16 LPA sites became operational • 12 MGIT sites became operational • 8 Xpert (CBNAAT) sites became operational (one training site)

Milestones reached (As per annual plan)	• Lab upgraded:
	  • LPA: 30/ 40 labs were established
	  • MGIT labs: Infrastructure was established in 16/ 31 labs,
	  • Xpert : 8/ 12 labs established including a training site
	• Green light for reporting:
	• LPA: 30/ 40 labs reporting
	• LC : 12/ 31 labs reporting
	• Xpert : 7/ 11 labs reporting

Challenges	• Delays in obtaining Request for Custom Exemption Certificate from CTD leading to shortage in consumables at several sites • Delay in obtaining road permits from respective state Commercial Tax authorities leading to shortage in consumables • Local regulations make institution of equipment warranty difficult as an in-country supplier agency is required • Lack of maintenance contracts for supplied equipment is resulting in huge challenges in getting equipment serviced and repaired • GFATM: Delay in revised SSF budget signing resulting in budgetary shortage particularly in Office management • Availability of very few vendors for BSL 3 Lab upgrading • Storage capacity: Lack of proper secure space to store large quantities of consumables • High mono R resistance observed with LPA
Actions addressing	• Interaction with CTD, on a daily basis for obtaining Request for

challenges	Custom Exemption Certificate • Official communication from Health Secretary to all states requesting early road permits from respective state Commercial Tax authorities have been requested from CTD • Tools for forecasting requirements developed and are being used • HAIN has recently identified BioMérieux as in-country agency for HAIN products but no such agency has been identified for TTM equipment. GDF is likely to start in-country procurement for 2014 • GFATM: revised SSF budget signing is in final stage • More vendors for BSL 3 lab upgrading are being investigated • All labs are being informed to develop their secure storage space during visits and during quarterly PMDT review meetings • Regional Microbiologists are reviewing high mono Rifampicin resistance results

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	LPA 40 MGIT 31
Number of reporting labs	• LPA: 25 /40 reported in 2012 excluding 2 NRLs, which only provide training and EQA for LPA sites • MGIT: 10 /31 reported in 2012, excluding 2 NRLs, which only provide training and EQA for liquid culture sites
Status of non reporting labs	• LPA: 2 sites will start reporting in the 1st Quarter of 2013, 5 in the 2nd quarter 2013, 6 in the 3rd quarter of 2013 • MGIT: 6 labs will start reporting in the 1st Quarter of 2013 and 13 will report in 2nd/ 3rd Quarter 2013
Number of labs targeted for Xpert support under EXPAND-TB	12 including one training site
Number of Xpert supported labs reporting	7 sites have started reporting, excluding one training site

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	16028
2012 Target for MDR-TB cases detected	12926
Provide brief justification if 2012 MDR-TB case target is not achieved	N/A
Number of patients put on treatment in 2012	15,842 patients on treatment; this number also includes MDR TB cases diagnosed by solid culture and by non-EXPAND-TB sites. The information is obtained from the programme.
Number of patients for whom 2nd line treatment was available in 2012	2nd line TB treatment was available for all MDR TB patients who were diagnosed by the labs accredited by the programme, which include MDR TB cases diagnosed by solid culture and by non-EXPAND-TB sites.

d. Summary of Activities in 2012

Activities	
Activities in 2012	• 16 LPA sites, 12 LC sites and 8 Xpert (CBNAAT) sites were made operational. • The RNTCP national algorithm was implemented in the states and sites. The algorithm which includes Criteria A, B & C for patients(Criteria A = all failures of first line treatment + contacts of known MDR TB patients, Criteria B = Criteria A + all smear positive re-treatment cases + smear positive follow up TB patients, Criteria C = Criteria B + smear negative re-treatment cases + all HIV TB cases) • A total of 71357 LPA tests were conducted for MDR TB suspects and 14871 MDR TB and Rif mono resistant TB cases were identified by LPA • A total of 18952 MGIT cultures and 492 MGIT DST were conducted, and 124 MDR TB cases were identified. • A total of 5477 Xpert tests were conducted and 801 Rif resistant TB cases were detected • A total of 13 national and 72 onsite trainings were conducted • Out of 625 RNTCP districts implementing PMDT, 510 districts are covered by LPA and 87 districts by Xpert. A total of 597 (96%) of sites are covered by rapid MDR TB diagnostics in India

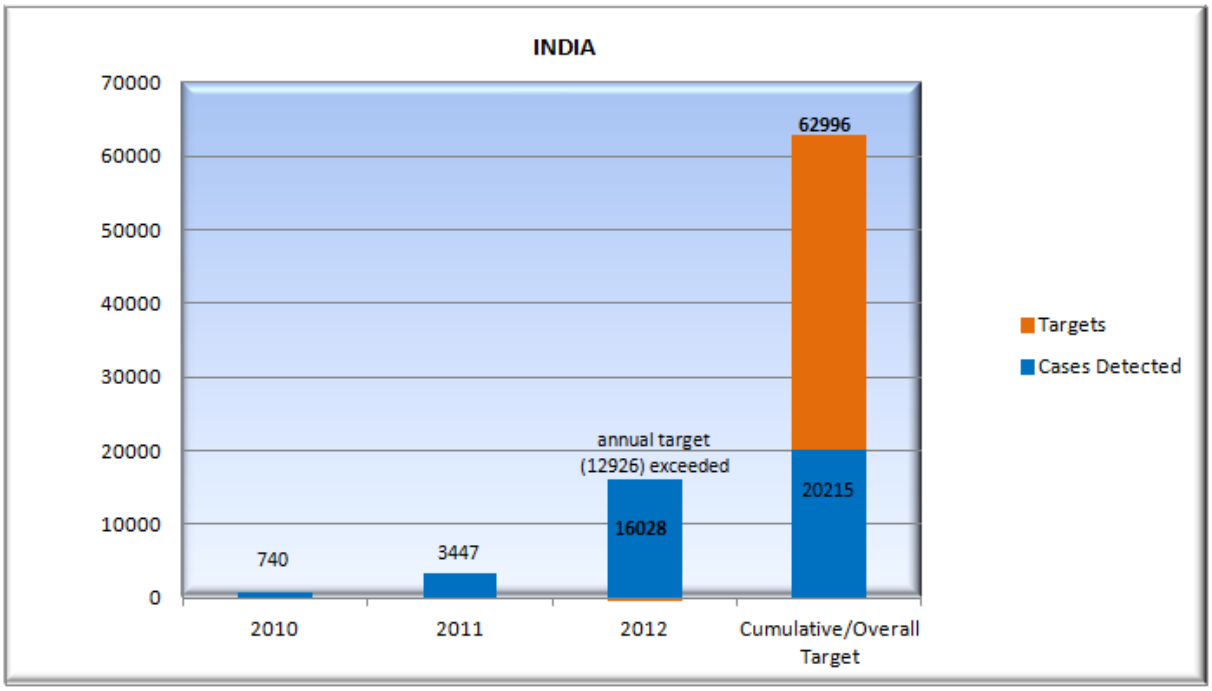

Figure C6: Summary of MDR-TB cases detected against MDR-TB cases targeted – India

7. AZERBAIJAN

Activities covered to date:

Azerbaijan	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided (limited)	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	516
MDR-TB cases reported (cumulative)	631
MDR-TB cases to be detected (project target)	2850
On site mentoring	☑

Update:

In 2012, 2 of the 3 supported laboratories provided routine diagnostic services, and 115 MDR-TB cases were diagnosed in 2011. In 2012, a total of 516 MDR-TB cases were diagnosed, exceeding the target set at 500 cases.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• High testing volumes were obtained in both reporting laboratories • Renovations at Ganja RL premises were completed
Milestones reached (As per annual plan)	• Ganja RL progressed from Phase 1 to Phase 2 of the project
Challenges	• Customs authority does not have a warehouse resulting in a very tight schedule for custom clearance • The UPS provided by BD has limited capacity to support the MGIT 960. During electricity cut-offs the UPS was not able to provide backup power for the MGIT 960 machine and culture/DST samples were lost on multiple occasions.
Actions addressing challenges	• Assist the NTP to plan for additional customs clearance costs. • Two new UPS with sufficient capacity to provide backup power for the MGIT 960 machines will be procured with support from GF.

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	3; LJ, MGIT, LPA and Xpert
Number of reporting labs	2
Status of non reporting labs	• Upgrading of the regional laboratory is ongoing
Number of labs targeted for Xpert support under EXPAND-TB	10
Number of Xpert supported labs reporting	6

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	516
2012 Target for MDR-TB cases detected	500
Provide brief justification if 2012 MDR-TB case target is not achieved	N/A
Number of patients put on treatment in 2012	579 (some are MDR cases detected in 2011)
Number of patients for whom 2nd line treatment was available in 2012	579

d. Summary of Activities in 2012

Activities	
Activities in 2012	• Placement of an EXPAND-TB consultant in Baku, responsible for EE countries, with special focus on Azerbaijan • Training for Ganja RL's staff in NRL in the use of MTBDRplus V2.0, sample decontamination by NALC method and Xpert MTB/RIF use. • Training for NRL's staff in the use of MTBDRplus V2.0. • Placement of order and receiving goods from Expand-TB for NRL and laboratory of MoJ; • Training for MoJ laboratory's staff in using MTBDRplus V2.0; • Renovation of the Ganja RL premises ; • Technical support for design of the ventilation in MoJ lab

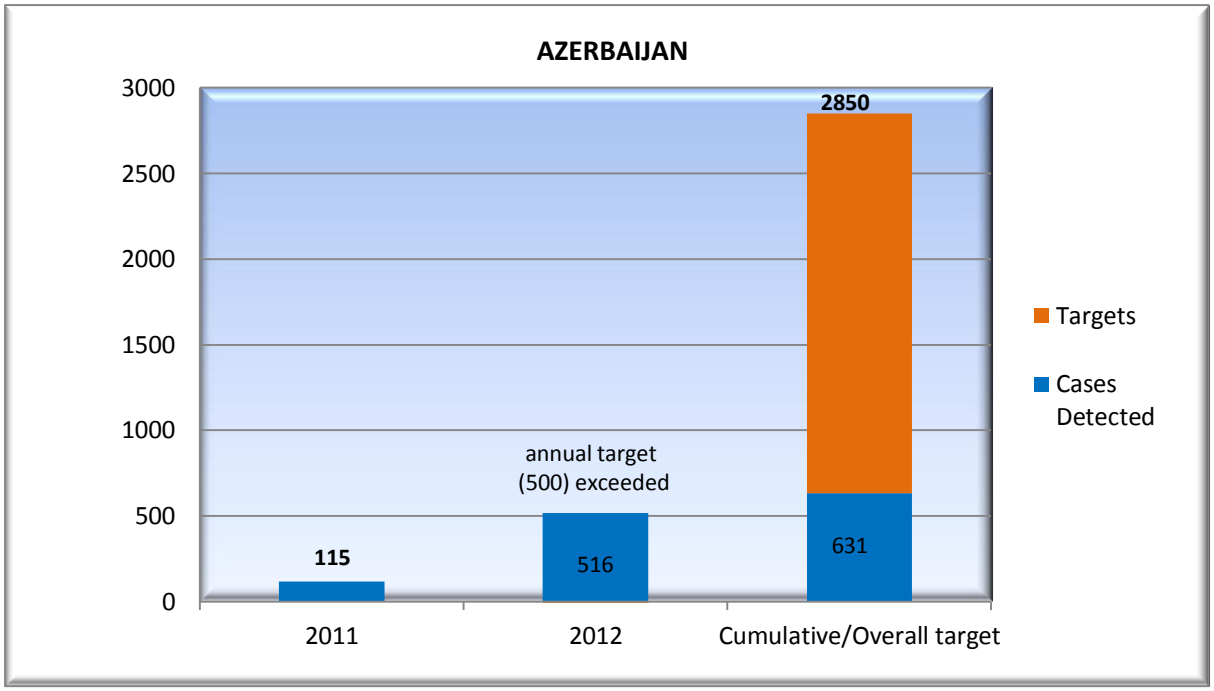

Figure C7: Summary of MDR-TB cases detected against MDR-TB cases targeted – Azerbaijan

8. GEORGIA

Activities covered to date:

Georgia	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided (limited)	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	654
MDR-TB cases reported (cumulative)	1458
MDR-TB cases to be detected (project target)	3000
On site mentoring	☑

Update:

In 2012 both supported labs continued to provide routine diagnostic services. 82% of the 2012 target for MDR-TB cases to be detected was achieved with 654 reported against a target of 800.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• The high testing volumes were maintained for both laboratories included in the project.
Milestones reached (As per annual plan)	• None
Challenges	• After integrating the TB laboratory network into the NCDC laboratories network, the quality of ZN smear-microscopy decreased, as NCDC has revised methodology for smear preparation and staining by ZN. As a result of these changes the numbers of false positive and false negative cases increased and the sensitivity of LPA decreased (due to the fact that according to national algorithm - all smear positive diagnostic cases are tested by LPA). • Sputum samples for culture at RL and NRL are being transported with delay of 4 -8 days, due to the decrease in transportation availability. Because of the delay, approximately 35% of newly detected samples became ineligible for culture using MGIT • The laboratories experienced some technical difficulties with implementation of LPA.
Actions addressing challenges	• The discrepancies in smear microscopy were addressed by obtaining agreement with NCDC to carry out smear microscopy according to WHO recommendations. • SOPs for sample collection, storage and transportation (according to WHO recommendations) were introduced • The specific aspects of the use of LPA MTBDR*plus* V2.0

	were highlighted to the laboratory staff

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	2; LJ, MGIT, LPA, and Xpert
Number of reporting labs	2
Status of non reporting labs	N/A
Number of labs targeted for Xpert support under EXPAND-TB	4
Number of Xpert supported labs reporting	0

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	654
2012 Target for MDR-TB cases detected	800
Provide brief justification if 2012 MDR-TB case target is not achieved	82% of target achieved. Problems with sample transportation and changes in the structure of the lab (integration into NCDC) might have had an impact on not achieving 100%.
Number of MDR TB patients put on treatment in 2012	654
Number of patients for whom 2nd line treatment was available in 2012	654

d. Summary of Activities in 2012

Activities	
Activities in 2012	• 3 NRL staff trained (online via Skype conference) on MTBDRplus V2.0

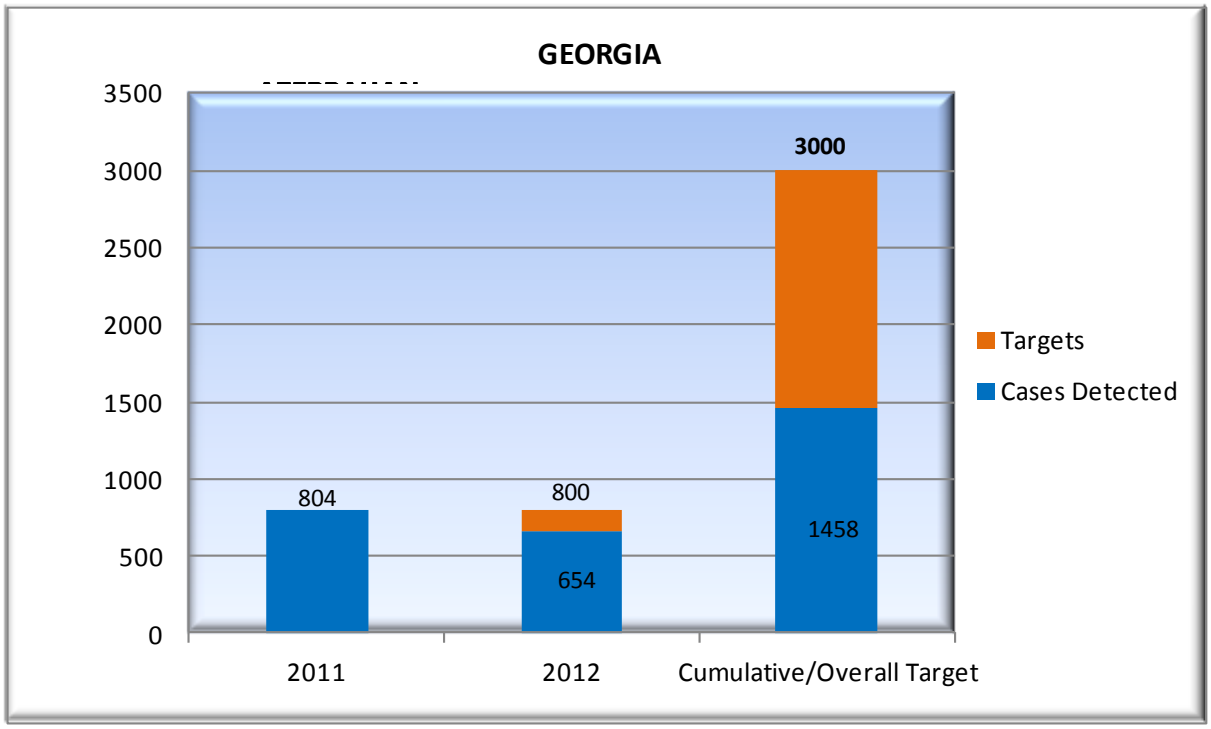

Figure C8: Summary of MDR-TB cases detected against MDR-TB cases targeted – Georgia

9. KAZAKHSTAN

Activities covered to date:

Kazakhstan	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory infrastructure	
Laboratory norms and standards reviewed	
Good Laboratory Practice reviewed	
Quality Management and Assurance reviewed	
Equipment and reagents provided	
New diagnostic tool training course	
Validation of diagnostic algorithm	
Detection of MDR-TB patients	
MDR-TB cases reported (2012)	0
MDR-TB cases reported (cumulative)	0
MDR-TB cases to be detected (project target)	2940
On site mentoring	

Update:

In 2011 the MOU with the country was signed and thereafter the GDF MoU. By the end of 2012 the procedures to get approval from custom authorities (green light) was underway.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• Placement of EXPAND-TB consultant in the region with a coordinating role for the EE & CA countries, including Kazakhstan.
Milestones reached (As per annual plan)	• None
Challenges	• Political commitment for the project needs to be intensified for implementation to progress smoothly • Extended delays with obtaining the "green Light" to ship prepared order of supplies • Coordination and collaboration within NTP needs to be strengthened • Delays with project start-up.
Actions addressing challenges	• Advocacy to strengthen political commitment; • Advocacy for obtaining the « green light » to ship ordered goods • Discussions held with WHO-CO and Global Fund in Geneva for lobbying authorities to facilitate the start up of the program;

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	3; LJ, MGIT, LPA, Xpert
Number of reporting labs	0
Status of non reporting labs	• All laboratories are awaiting supplies that will permit that routine diagnostic services to introduced

Number of labs targeted for Xpert support under EXPAND-TB	6
Number of Xpert supported labs reporting	0

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	0
2012 Target for MDR-TB cases detected	0
Provide brief justification if 2012 MDR-TB case target is not achieved	N/A
Number of patients put on treatment in 2012	Data not available
Number of patients for whom 2nd line treatment was available in 2012	Data not available

d. Summary of Activities in 2012

Activities	
Activities in 2012	• Technical support missions were conducted: (1) Jointly with SNL, February 2012; (2) November 2012 during which training was provided to laboratory staff • Three laboratories to be supported by EXPAND-TB were selected • Preparation of order as agreed with NTP • Placement of EXPAND-TB consultant in Tashkent with a coordinating role for the EE & CA region, including Kazakhstan in August 2012;

10. KYRGYZSTAN

Activities covered to date:

Kyrgyzstan	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	941
MDR-TB cases reported (cumulative)	1766
MDR-TB cases to be detected (project	3000
On site mentoring	☑

Update:

In 2012 supported laboratories provided routine diagnostic services. The 2012 target of MDR-TB cases to be detected was exceeded with 941 MDR-TB cases diagnosed against a target of 600.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• The laboratories maintained their high testing volumes • Positive trend in the organization of the NRL its management and technical performance
Milestones reached (As per annual plan)	• None
Challenges	• Disruption in working process while the NRL was moving to its new premises; • Stock-out of key laboratory supplies.
Actions addressing challenges	• Technical support was provided in collaboration with the SRL (Gauting) to assure smooth transition of the NRL to its new premises; • Timely preparation of the next laboratory order

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	2; LJ, MGIT, LPA
Number of reporting labs	2
Status of non reporting labs	N/A
Number of labs targeted for Xpert support under EXPAND-TB	-
Number of Xpert supported labs reporting	-

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	941
2012 Target for MDR-TB cases	600

detected	
Provide brief justification if 2012 MDR-TB case target is not achieved	N/A
Number of patients put on treatment in 2012	775
Number of patients for whom 2nd line treatment was available in 2012	775

d. Summary of Activities in 2012

Activities	
Activities in 2012	• Monitoring mission in November 2012 • Training of the NRL staff in decontamination methods • National algorithm was developed in collaboration with SRL

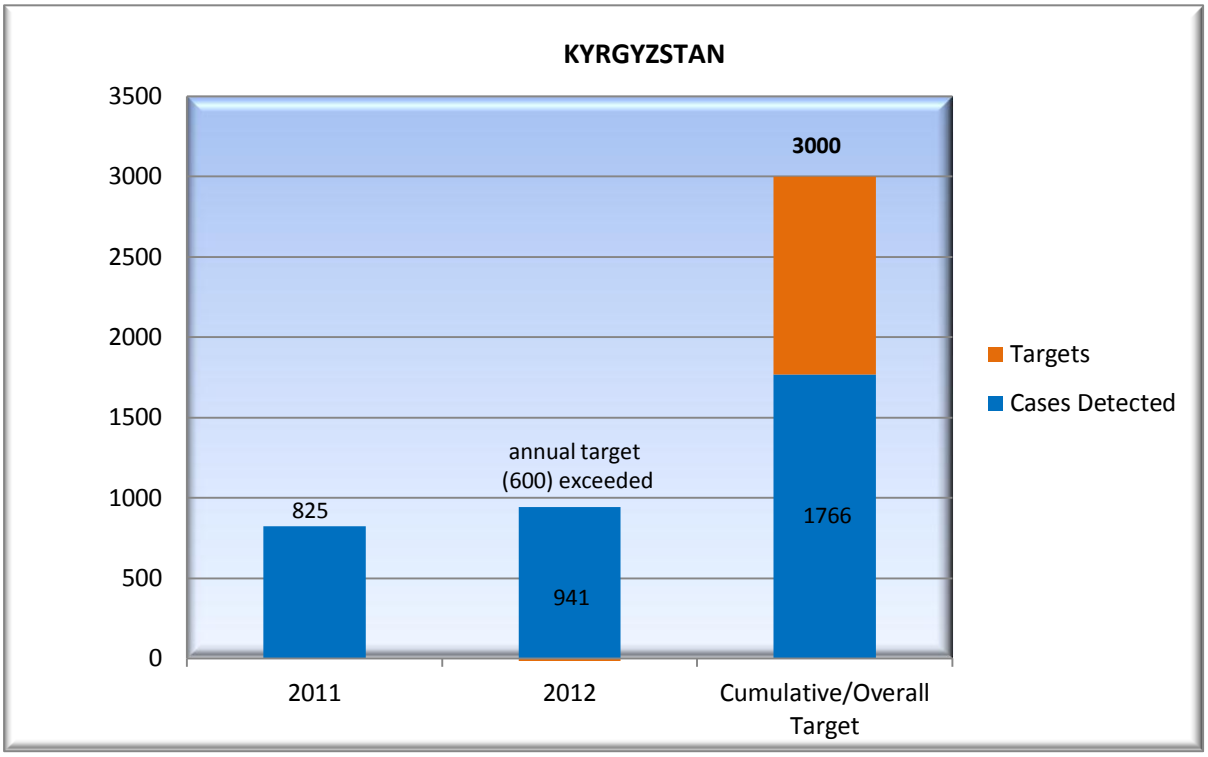

Figure C10: Summary of MDR-TB cases detected against MDR-TB cases targeted – Kyrgyzstan

11. MOLDOVA

Activities covered to date:

Moldova	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	884
MDR-TB cases reported (cumulative)	1304
MDR-TB cases to be detected (project	3878
On site mentoring	☑

Update: In 2012 all 3 supported laboratories supported provided routine diagnostic services. The 2012 target of MDR-TB cases to be detected was exceeded with 884 MDR-TB cases diagnosed against a target of 650.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• A second regional laboratory (Vorniceni RRL) was approved for support by EXPAND-TB
Milestones reached (As per annual plan)	• Vorniceni and Balti RRLs moved from Phase 2 to Phase 3 of implementation.
Challenges	• Delays in the custom clearance of goods • The laboratories experienced technical challenges with LPA as they transitioned to using version 2 of the MDRTBplus kits. • Data from the Vorniceni and Balti RRLs was not being reported thus negatively distorting number of reported MDR-TB cases • A general countrywide decrease in the numbers of diagnosed MDR-TB cases was observed and this could affect the ability to achieve the set target for the country
Actions addressing challenges	• The delays in the customs clearance of goods was addressed with the relevant authorities during a monitoring visit and a resolution was achieved. The goods were delivered after a 3 months delay • The training on use of the LPA MTBDRplus V2.0 was conducted • Reasons for the observed decrease in the numbers of reported MDR-TB cases are being investigated.

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	3 NRL, Vorniceni RRL and Balti RRL: sypported with MGIT and LPA;
Number of reporting labs	3

Status of non reporting labs	N/A
Number of labs targeted for Xpert support under EXPAND-TB	-
Number of Xpert supported labs reporting	-

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	884
2012 Target for MDR-TB cases detected	650
Provide brief justification if 2012 MDR-TB case target is not achieved	N/A
Number of patients put on treatment in 2012	793
Number of patients for whom 2nd line treatment was available in 2012	793

d. Summary of Activities in 2012

Activities	
Activities in 2012	• Monitoring mission conducted in December 2012 • Training of the NRL's staff in the use MTBDRplus V2.0 • Vorniceni Regional Laboratory - set-up and initial introduction to the use of LPA instruments

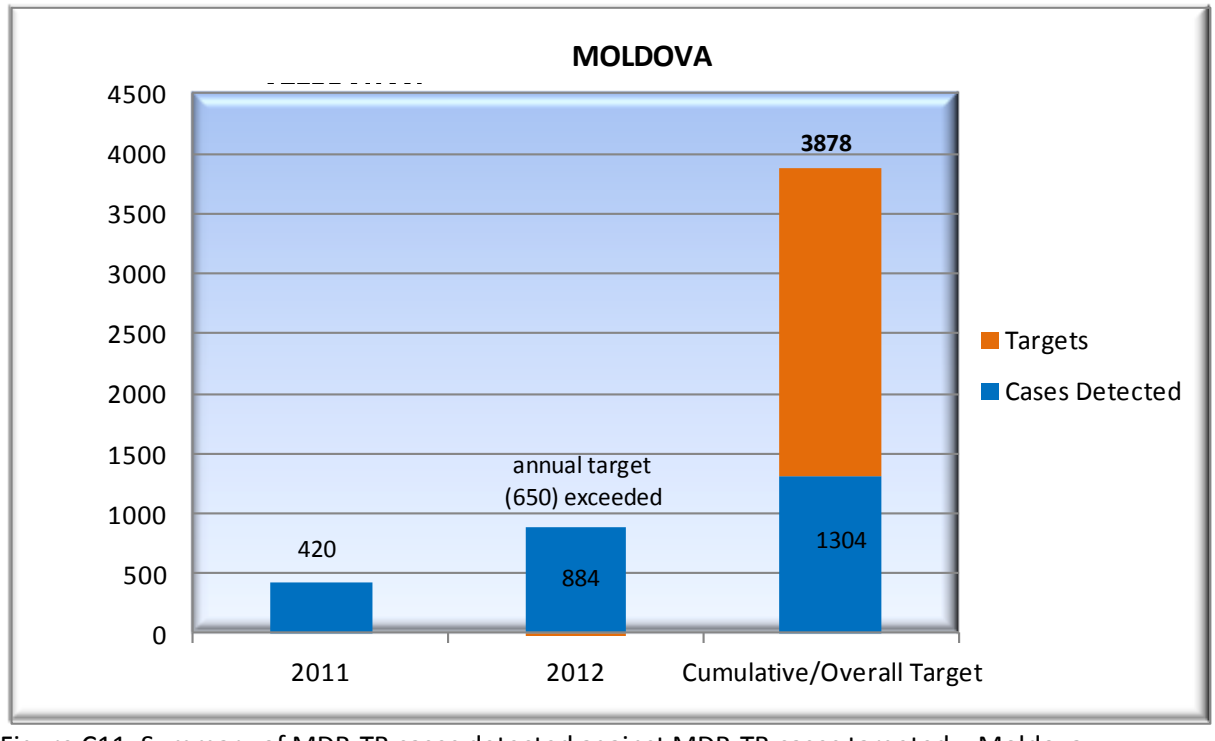

Figure C11: Summary of MDR-TB cases detected against MDR-TB cases targeted – Moldova

12. TAJIKISTAN

Activities covered to date:

Tajikistan	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	600
MDR-TB cases reported (cumulative)	805
MDR-TB cases to be detected (project	2563
On site mentoring	☑

Update:

In 2012 the NRL provided routine diagnostic services, 86% of the 2012 target of MDR-TB cases to be detected was achieved with 600 MDR-TB cases diagnosed against a target of 700.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• An in-country consultant was engaged October 2012 • Laboratory data management system is improved resulting in more accurate reporting of data • Consensus on lab request forms and national algorithm for TB diagnosis was achieved. • Communication/coordination among international partners working in TB laboratory was improved • Communication with the NTP was strengthened • Contributed to the development of the national TB laboratory strategic plan.
Milestones reached (As per annual plan)	• None
Challenges	• Human Resources shortages as several members of staff at the NRL have left during the 4th quarter of 2012 for various reasons. • Two laboratory technicians were diagnosed with MDR-TB (most likely relapse considering clinical history), and therefore needed long-term hospitalization. • Discrepancies in previous data reporting were discovered and all previously reported data had to be reviewed • An order delivered in July was missing MPT64 Ag kits that were confirmed as having been shipped
Actions addressing challenges	• Some efforts were made to fill the staff gaps by hospital management; however the full staffing complement has not been reached yet. • Cleaning of previously reported data was carried resulting in 2011 reported data being decreased to 205 from the previously incorrectly reported 565 • An investigation with procurement and with local clearing agent to identify the missing kits. The kits were finally delivered after New Year.

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	2 labs supported; MGIT, LPA and Xpert
Number of reporting labs	1
Status of non reporting labs	A decision on which RRL lab is to be included for support is still yet to be made together with the NTP. Two RRLs were assessed in December for possible inclusion for support
Number of labs targeted for Xpert support under EXPAND-TB	3
Number of Xpert supported labs reporting	-

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	600
2012 Target for MDR-TB cases detected	700
Provide brief justification if 2012 MDR-TB case target is not achieved	Delays in the identification of the second laboratory to be supported and challenges with HR affected the ability to reach the target.
Number of patients put on treatment in 2012	536 (preliminary data)
Number of patients for whom 2nd line treatment was available in 2012	536

d. Summary of Activities in 2012

Activities	
Activities in 2012	• In country consultant engaged in October 2012; • A monitoring visit by the regional coordinator and by SRL Gauting conducted in Q4. • Training was provided to staff at the NRL and regional laboratories • Several meetings on the Xpert strategy and TB diagnostic algorithm were held in order to reach a consensus on lab request forms and algorithms to be used. Final documents were presented to different levels of the NTP and informal approval was obtained at the end of the Q4 for the request form and diagnostic algorithm to be utilised.

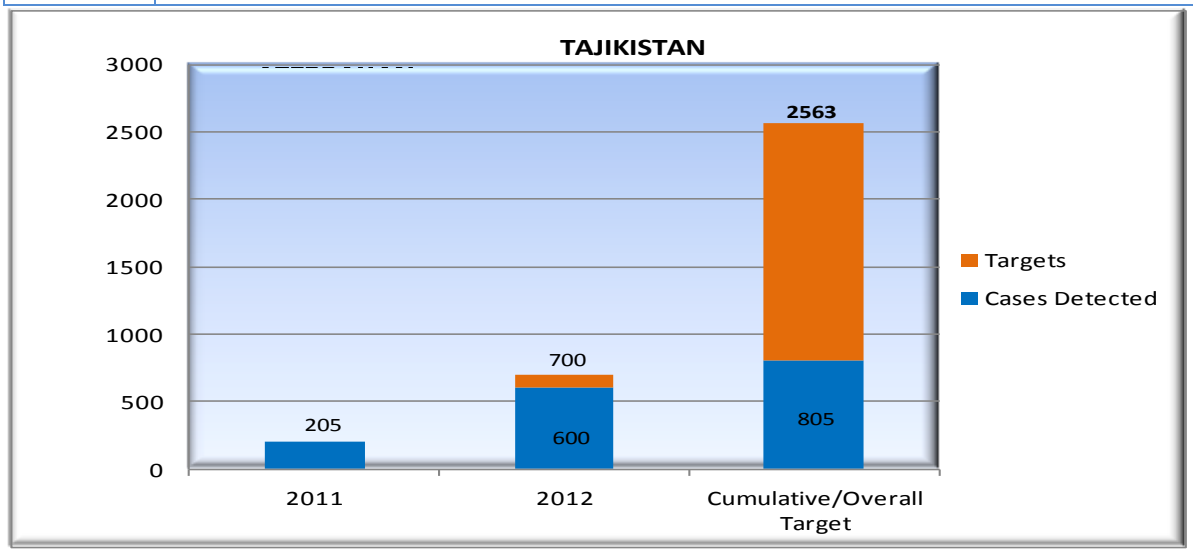

Figure C12: Summary of MDR-TB cases detected against MDR-TB cases targeted – Tajikistan

13. BELARUS

Activities covered to date:

Belarus	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory infrastructure	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance reviewed	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
MDR-TB cases reported (2012)	192
MDR-TB cases reported (cumulative)	192
MDR-TB cases to be detected (project target)	2000
On site mentoring	☑

Update:

In 2012 both of the supported laboratories provided routine diagnostic services. The 2012 target of MDR-TB cases to be detected was exceeded, with 192 MDR-TB cases diagnosed against a target of 150.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• Both laboratories included in the project started routinely diagnosing and reporting MDR-TB cases; • Strong political commitment to implementation of the project; • Effective coordination and collaboration on a national level.
Milestones reached (As per annual plan)	• Both supported laboratories have progressed to Phase 3 of implementation
Challenges	• High number of false positive results LPA results; • Delays in the renovation of NRL; • There were flaws in the ventilation system of the renovated NRL; • Delays in the customs clearance of laboratory goods;
Actions addressing challenges	• Technical support was provided to the laboratories to increase competency in LPA testing • Technical support was provided to correct flaws in the ventilation system. Recommendations on the utilisation of the ventilation system and its maintenance were provided • Documentation required for customs clearance were prepared in advance in order to decrease the time required for customs clearance

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	2; MGIT and LPA
Number of reporting labs	2
Status of non reporting labs	N/A
Number of labs targeted for Xpert support under EXPAND-TB	4
Number of Xpert supported labs reporting	-

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	192
2012 Target for MDR-TB cases detected	150
Provide brief justification if 2012 MDR-TB case target is not achieved	-
Number of patients put on treatment in 2012	192
Number of patients for whom 2nd line treatment was available in 2012	192

d. Summary of Activities in 2012

Activities	
Activities in 2012	• A consultant was engaged in January 2012 to support four Eastern Europe EXPAND-TB countries, including Belarus; • Two monitoring missions were conducted • On the job training on use of LPA MTBDR*plus* V2.0;

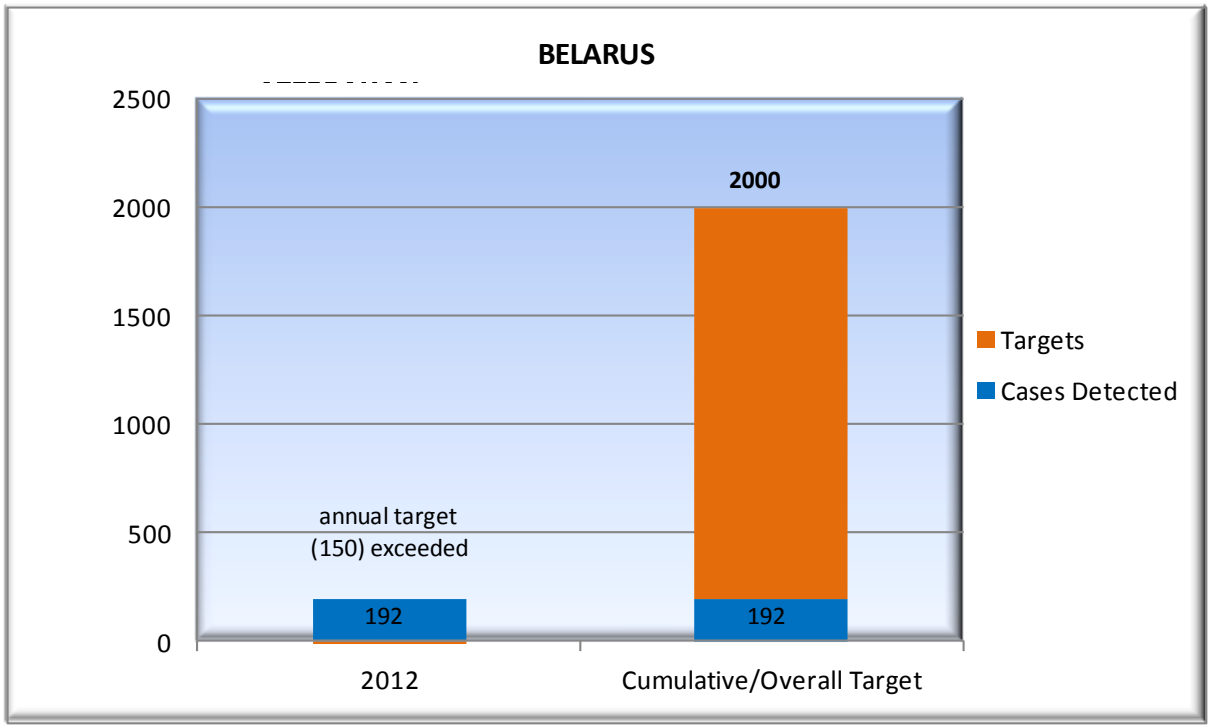

Figure C13: Summary of MDR-TB cases detected against MDR-TB cases targeted – Belarus

14. UR TANZANIA

Activities covered to date:

UR Tanzania	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	43
MDR-TB cases reported (cumulative)	76
MDR-TB cases to be detected (project	400
On site mentoring	☑

Update:

In 2012 only the NRL provided routine diagnostic services. 43% of the 2012 target of MDR-TB cases to be detected was achieved with only 43 MDR-TB cases diagnosed against a target of 100.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• The national diagnostic algorithm was endorsed • CTRL Dar-es Salaam achieved 100% correlation for the LPA EQA using GLI tools. • Validation of new technologies completed and the laboratory progressed to providing routine diagnostic services • External sites: Mount Meru, Sekou Toure and Mbeya regional sites were assessed for potential inclusion for support under EXPAND-TB. Mbeya was the only site identified as suitable for inclusion.
Milestones reached (As per annual plan)	• None
Challenges	• Delays in the customs clearance of goods • Stock-outs of key laboratory goods • Poor referral of MDR samples from MDR-TB suspects
Actions addressing challenges	• Provision of import documents well in advance to address delays in customs clearance of goods • Laboratory staff were trained on inventory management • Lobbied partners to support referral of samples to CTRL

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	2; MGIT and LPA
Number of reporting labs	1
Status of non-reporting labs	There were delays in the selection of the regional laboratory to be supported. This laboratory has been selected and supplies for it have been ordered
Number of labs targeted for Xpert	None

support under EXPAND-TB	
Number of Xpert supported labs reporting	N/A

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	43
2012 Target for MDR-TB cases detected	100
Provide brief justification if 2012 MDR-TB case target is not achieved	• Stock outs of key lab goods resulted in diagnostic services being interrupted. • Poor referral of MDR-TB suspect samples to CTRL due to a lack of sample transportation
Number of patients put on treatment in 2012	Data not available
Number of patients for whom 2nd line treatment was available in 2012	Data not available

d. Summary of Activities in 2012

Activities	
Activities in 2012	• Orders were placed for both the CTRL and Mbeya RL • Regular partner coordination meetings were held to avoid duplication of efforts and advocate for unsupported activities. • On site trainings on MGIT and LPA were provided to CTRL staff • Monitoring visits were conducted • EQA of LPA using GLI panels showed 100% correlation of results

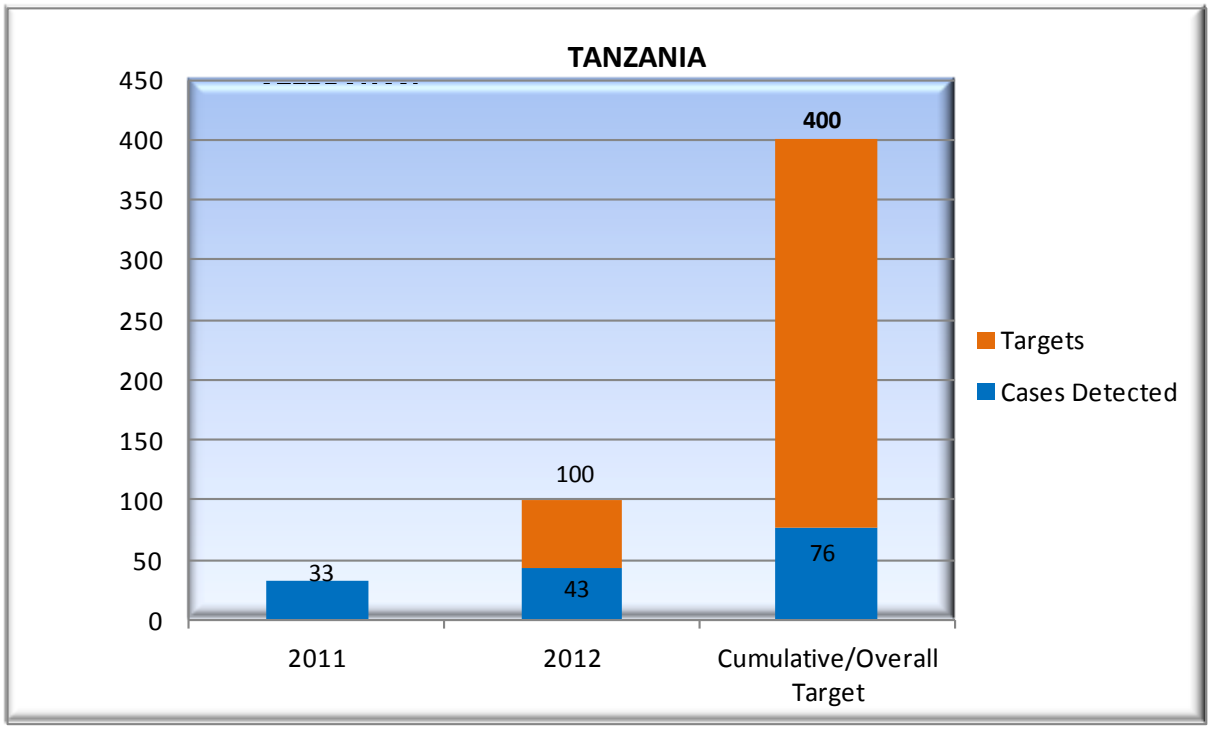

Figure C14: Summary of MDR-TB cases detected against MDR-TB cases targeted – Tanzania

15. HAITI

Activities covered to date:

Haiti	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory infrastructure	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance reviewed	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	81
MDR-TB cases reported (cumulative)	172
MDR-TB cases to be detected (project target)	476
On site mentoring	☑

Update:

In 2012 both laboratories targeted for support routinely diagnosed and reported MDR-TB cases. 78% of the 2012 targeted MDR-TB cases to be diagnosed was reached with 81 cases being detected against a target of 104 MDR-TB cases.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• Validation of technologies was finalized at the LNSP (NRL) • LNSP initiated routine activities and reporting in quarter 3 2012. • An in-country consultant was engaged 6 months period in 2012 to provide technical assistance to the laboratories. • LNSP performed well on the QC panel provided by CDC indicating that the laboratory is competent to handle provided technologies • The laboratory diagnostic algorithm was finalized and is in use
Milestones reached (As per annual plan)	• LNSP progressed from Phase 2 to Phase 3 of implementation in July 2012 • Both EXPAND-TB supported laboratories are in Phase 3 of implementation
Challenges (As per annual plan)	• Duplication of efforts/activities and lack of coordination amongst partners • No coordination between EXPAND-TB supported centres • No MDR-TB cases were diagnosed by the LNSP despite the lab culturing 309 samples
Actions addressing challenges	• Partners had coordination meetings during the year to enhance the support provided to LNSP • Schedule for training and other activities at LNSP was shared amongst partners • The in-country consultant assisted in coordinating communication between LNSP and GHESKIO • A consultant will be sent to work with LNSP in Q1 2013 to review their data and troubleshoot possible causes of lack of MDR-TB diagnosis by the lab and provide possible solutions

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	• NRL and 1 external lab (GHESKIO) • MGIT, Capilia and LPA.

Number of reporting labs	• 2
Status of non reporting labs	N/A
Number of labs targeted for Xpert support under EXPAND-TB	• 3
Number of Xpert supported labs reporting	• None

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	81 (all reported by from GHESKIO)
2012 Target for MDR-TB cases detected	104
Provide brief justification if 2012 MDR-TB case target is not achieved	• No cases were diagnosed by the LNSP despite ongoing culture activities. • Data from LNSP needs to be reviewed to confirm that no MDR-TB cases were diagnosed and determine possible reasons for lack of case detection. Data will be revised by a consultant visit in early 2013.
Number of patients put on treatment in 2012	Data not available
Number of patients for whom 2nd line treatment was available in 2012	Data not available

d. Summary of 2012 Activities

Activities	
Activities in 2012	• Monitoring and support visits combined with consultative meetings with partners and the NTP manager was conducted. • Links with the SRL were established and an ongoing capacity building program for lab staff established. • Lab orders prepared and dispatched for the NRL and GHESKIO labs. • Onsite support was coordinated amongst partners (UMASS SRL and CDC) • An in-country consultant was engaged for 6 months to support training, supervision and validation • Validation was finalized at LNSP and the lab progressed to providing routine diagnostic services • Discussions were initiated with the NTP regarding the placement of Xpert analyzers

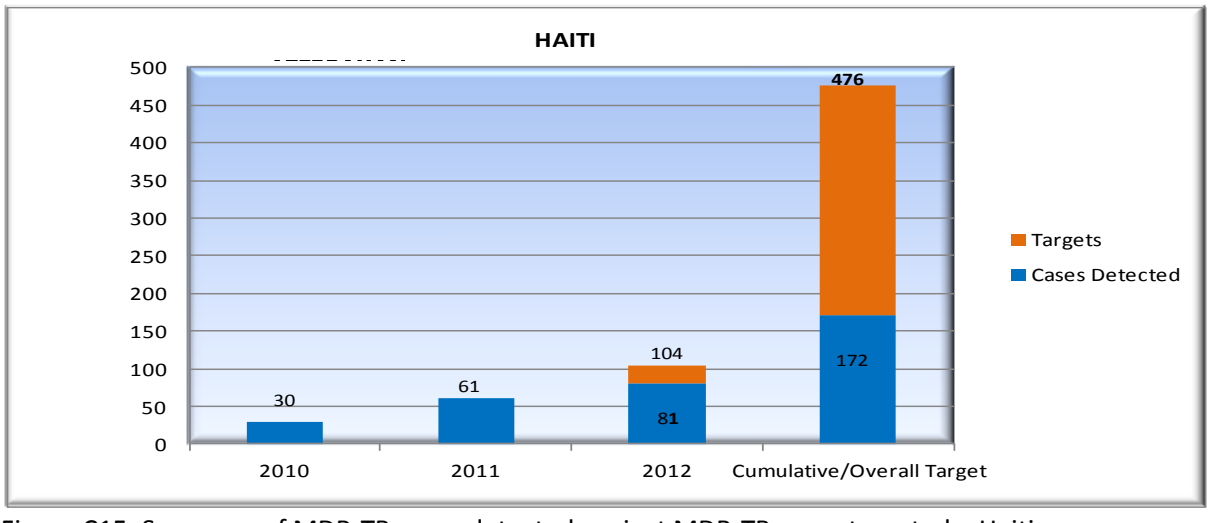

Figure C15: Summary of MDR-TB cases detected against MDR-TB cases targeted – Haiti

16. DJIBOUTI

Activities covered to date:

Djibouti	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	58
MDR-TB cases reported (cumulative)	58
MDR-TB cases to be detected (project	329
On site mentoring	☑

Update:

In 2012 the NRL progressed to providing routine diagnostic services. 58% of the 2012 target of MDR-TB cases to be diagnosed was achieved with 58 cased diagnosed against a target of 100 MDR-TB cases.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• MDR-TB diagnosis and monitoring of patients on treatment was initiated using LPA and MGIT • The MOU with the SRL (Milano) was signed by the country ensuring continued technical support beyond EXPANDx TB • Transitioning of the project supported activities back to the country was initiated
Milestones reached (As per annual plan)	• The NRL progressed from Phase 1 to Phase 3 of project implementation • The MOU with the country expired and was not extended • The project was transitioned back to the country
Challenges	• Persistent delays in initiation of routine diagnostic services hindered progress • Frequent failures of the ventilation system were experienced
Actions addressing challenges	• Validation of LPA as well as retesting in Milan SRL prior to initiating routine MDR-TB diagnostic services • Engineers were engaged to repair the ventilation system

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	1 NRL: MGIT, Capilia and LPA
Number of reporting labs	1
Status of non-reporting labs	N/A
Number of labs targeted for Xpert support under EXPAND-TB	None
Number of Xpert supported labs reporting	N/A

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with	58

EXPAND-TB support	
2012 Target for MDR-TB cases detected	100
Provide brief justification if 2012 MDR-TB case target is not achieved	• Diagnostic services were only initiated in May 2012 • Lack of a sample transportation system limited the number of samples that were received at the laboratory
Number of patients put on treatment in 2012	No treatment is available under the NTP, information shared with WHO
Number of patients for whom 2nd line treatment was available in 2012	0

d. Summary of 2012 Activities

Activities	
Activities in 2012	• 4 technicians at the NRL were trained on LPA • 1 lab manager received laboratory management training at the SRL in Milano • EQA on LPA using GLI panels showed 100% correlation of results • An order of supplies placed and dispatched to cover the laboratory testing requirements for the NRL for 2013, and the laboratory will continue reporting on MDR-TB cases detected in 2013, in spite of handover implemented since end of the MoU • 2 support visits were conducted • Terms of reference for the consultant to help on transitioning strategy developed and agreement being finalized. • Djibouti was identified for piloting the transitioning strategy.

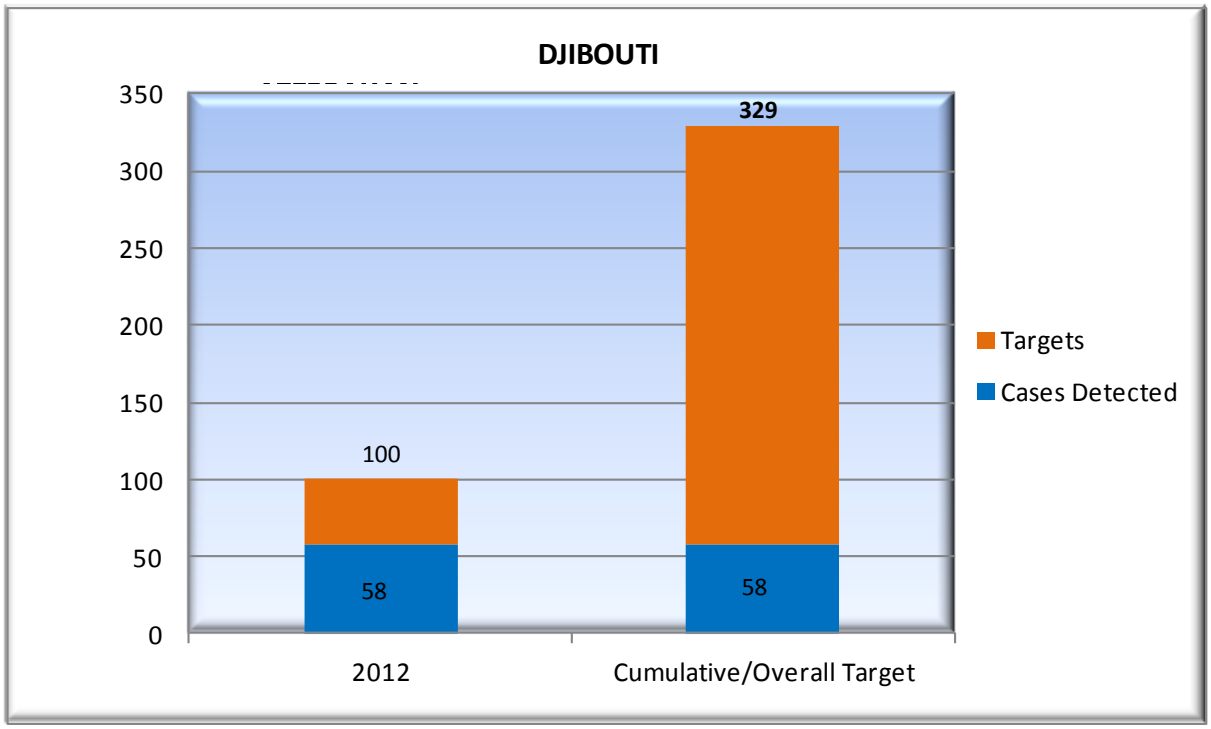

Figure C16: Summary of MDR-TB cases detected against MDR-TB cases target – Djibouti

17. UGANDA

Activities covered to date:

Uganda	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory infrastructure	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance reviewed	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	141
MDR-TB cases reported (cumulative)	343
MDR-TB cases to be detected (project target)	509
On site mentoring	☑

Update:

In 2012 the Mulago LPA laboratory was incorporated into NRL forming one laboratory. This laboratory provided routine diagnostic services and 94% of the 2012 target of MDR-TB cases to be detecetd was achieved with 141 MDR-TB caeses reported against a target of 150.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• The NTRL received the ASLM best Practice in Laboratory Medicine Award in December 2012. • The NRL was recognized as a WHO candidate supranational laboratory facility for the region. • The UNITAID M&E team from Geneva visited the Mulago LPA laboratory and the EXPANDx TB supported lab was appreciated for good practices
Milestones reached (As per annual plan)	• None
Challenges	• Difficulties were experienced in indentifying partners to sustain laboratory support for MDR-TB diagnosis and treatment monitoring beyond EXPAND-TB
Actions addressing challenges	• The NTLP Manager was sensitized on the need to start preparation for the transitioning the laboratory activities to the MoH. This process is being coordinated with MSH.

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	• 2 : (NTRL including Mulago LPA lab) and Mbale RRL; LPA, MGIT and Capilia
Number of reporting labs	1
Status of non reporting labs	• Mabale RRL still required renovations to upgrade it to a level suitable for the introduction of EXPAND-TB supported technology. • An agreement was reached with the NTLP to exclude Mbale from laboratories to be supported by the project.
Number of labs targeted for Xpert support under EXPAND-TB	None

Number of Xpert supported labs reporting	N/A

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	141
2012 Target for MDR-TB cases detected	150
Provide brief justification if 2012 MDR-TB case target is not achieved	• The sputum transport network is linked with the 'HUB' system supported by CDC Uganda and there were delays in implementation of this system.
Number of patients put on treatment in 2012	• 47 MDR-TB patients on treatment under NTLP after change in the NTLP leadership.
Number of patients for whom 2nd line treatment was available in 2012	• 300 Treatment courses were procured by NTP in 2012 after long-standing stock out on which many in country and international partners including Global Fund were informed.

d. Summary of 2012 Activities

Activities	
Activities in 2012	• An agreement was reached with the NTLP to exclude Mbale from laboratories to be supported by the project, reducing the number to 2. In addition, the Mulago LPA lab was incorporated into the NTRL reducing the number of supported laboratories to just one. • Participated as part of the assessment team for DRTB treatment site evaluations, and helped expedite the roll-out of services • Total four PMDTR centers were assessed and provided treatment by the end 2012 • Country-wide programmatic management of DRTB was rolled out from the Mulago National referral hospital and Kitgum Referral hospitals in May 2012. • The NTRL continued to provide high quality diagnostic services. • Supplies for LPA/LC were ordered and delivered by May 2012.

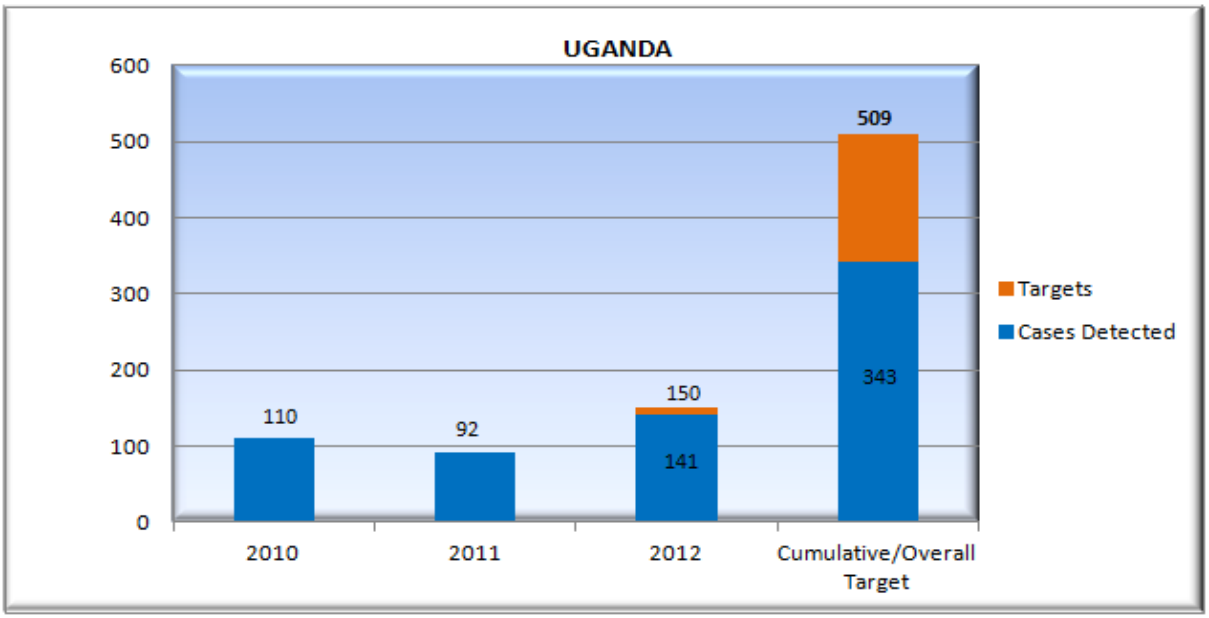

Figure C17: Summary of MDR-TB cases detected against MDR-TB cases targeted – Uganda

18. CAMEROON

Activities covered to date:

Cameroon	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	207
MDR-TB cases reported (cumulative)	217
MDR-TB cases to be detected (project	810
On site mentoring	

Update:

In 2012 two of the three supported laboratories provided routine diagnostic services for MDR-TB. 83% of the 2012 target for MDR-TB cases to be diagnosed was achieved with 207 MDR-TB cases rpeorted against a target of 250.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• Construction on the 2nd regional laboratory at Douala RRL started in December 2012 with support from GIZ. • An electronic data reporting and management system was introduced in the NTRL and Bamenda RRL with support from WHO and MEDES
Milestones reached (As per annual plan)	• None •
Challenges	• There were two stock outs for both LPA and MGIT culture and DST supplies experienced. • The delay in the construction of the 2nd RRL in Douala meant another year passed with the lab still in the lab preparedness phase.
Actions addressing challenges	• An agreement was reached with the WHO country office for them to act as consignee for all EXPAND-TB shipments in place of GIZ who were previously acting as consignee. • A final agreement was reached between GIZ and the NTP that a laboratory would be constructed in Douala instead of procuring a container laboratory.

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	• 3 NRL, Bamenda RRL and Douala RRL . All labs supported with MGIT, Capilia and LPA
Number of reporting labs	• 2 reporting labs. NRL and Bamenda RRL
Status of non reporting labs	• Construction of the Douala RRL started in December 2012 with support from GIZ. The laboratory is expected to be completed by April 2013.
Number of labs targeted for Xpert	3 Laboratories

support under EXPAND-TB	
Number of Xpert supported labs reporting	0

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	207
2012 Target for MDR-TB cases detected	250
Provide brief justification if 2012 MDR-TB case target is not achieved	• The two stock-outs of reagents experienced throughout the year resulted in the laboratories not functioning at their normal level for at least 6 months of the year
Number of patients put on treatment in 2012	• 192 patients were reported as being put on treatment
Number of patients for whom 2nd line treatment was available in 2012	• 2nd line treatment was reported as being available for all diagnosed MDR-TB patients

d. Summary of 2012 Activities

Activities	
Activities in 2012	• The NRL worked with the NTP to finalise the national diagnostic algorithm that included all available technology including GeneXpert. • Training of staff at the NRL and Bamenda RRL on the use of the electronic data reporting and management was conducted by MEDES in December 2012. • A monitoring visit was conducted in August 2012 and it was linked with the provision of technical support to the NRL on data management. • As GIZ was no longer able to quickly clear goods from customs, support was obtained from the WHO country office to act as consignee for all future shipments from EXPAND-TB.

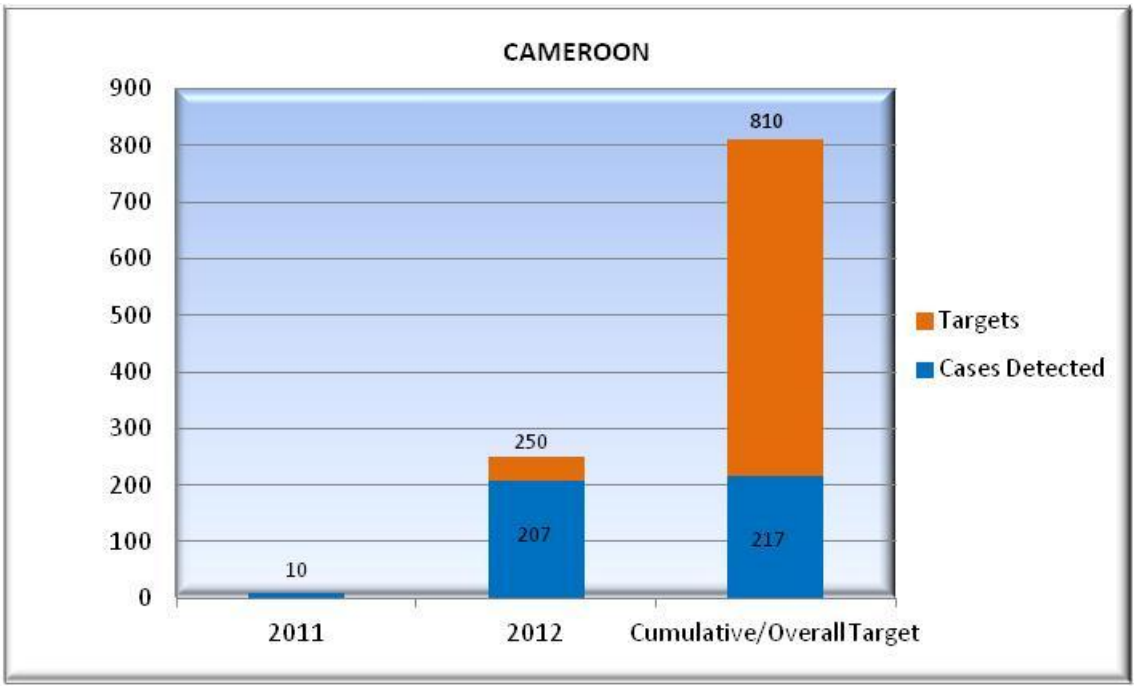

Figure C18: Summary of MDR-TB cases detected against MDR-TB cases targeted – Cameroon

19. SENEGAL

Activities covered to date:

Senegal	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	29
MDR-TB cases reported (cumulative)	29
MDR-TB cases to be detected (project	350
On site mentoring	☑

Update:

In 2012 the supported laboratory provided routine diagnostic services and 36% of the 2012 target for MDR-TB cases to be detected was achieved with only 29 cases being reported against a target of 80 MDR-TB cases.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• The NRL started routine diagnostic testing and reporting in Quarter 3 of 2012.
Milestones reached (As per annual plan)	• The NRL progressed to the routine reporting and monitoring phase- from phase 2 to phase 3 of implementation
Challenges	• Lack of sample transportation is limiting the coverage of MDR-TB diagnostic services to Dakar • The laboratory staff are more comfortable with using solid media for culture and DST and are reluctant to transition to liquid media
Actions addressing challenges	• A long-term consultant was engaged to work with the laboratory for a period of 3 months to build their confidence with working with liquid media

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	1 Laboratory, NRL: supported with MGIT, Capilia and LPA
Number of reporting labs	1
Status of non reporting labs	N/A
Number of labs targeted for Xpert support under EXPAND-TB	3 laboratories
Number of Xpert supported labs reporting	0

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	29
2012 Target for MDR-TB cases detected	80

Provide brief justification if 2012 MDR-TB case target is not achieved	• The NRL only started routine diagnostic testing and reporting in Quarter 3 of 2012. • Lack of sample transportation limits coverage of the laboratory to only referrals from Dakar therefore the sample load is low. • The laboratory staff were reluctant to transition to liquid culture and still used primarily solid culture (slower method compared to liquid culture) for MDR-TB diagnosis
Number of patients put on treatment in 2012	29
Number of patients for whom 2nd line treatment was available in 2012	Data not available

d. Summary of 2012 Activities

Activities	
Activities in 2012	• Renovations to upgrade the laboratory to meet the required biosafety standards were completed by FHI in Q1 of 2012. • Training of 6 laboratory staff on LPA and MGIT culture and DST was conducted in July 2012. • 1 shipment of supplies was delivered in 2012. • 1 monitoring visit was conducted in November 2012 • A long-term consultant was engaged to work with the laboratory for a period of 3 months from October to December 2012 on improving liquid culture and LPA capability. • The NRL was supported to update all their SOPs and translate English SOPs to French where required. • Participated in the review process of the NTP.

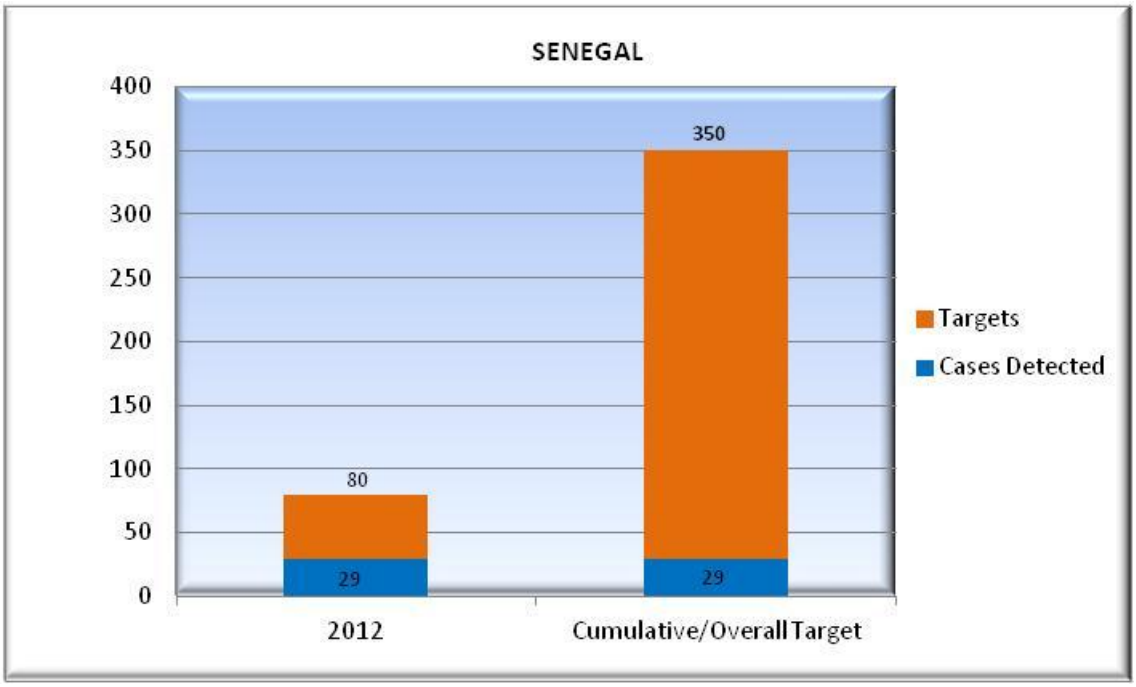

Figure C19: Summary of MDR-TB cases detected against MDR-TB cases targeted - Senegal

20. KENYA

Activities covered to date:

Kenya	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	202
MDR-TB cases reported (cumulative)	228
MDR-TB cases to be detected (project	890
On site mentoring	☑

Update:

In 2012 an agreement was reached with the NTP to limit support to just the NRL as no suitable regional site could be identified. The 2012 target of MDR-TB cases to be diagnosed was exceeded with 202 MDR-TB cases being diagnosed as against a target of 200.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• Lab upgrading works at the NRL were finalized
Milestones reached (As per annual plan)	• 2012 target achieved
Challenges	• The management of the human resources at the NRL requires strengthening
Actions addressing challenges	• Lobbied the NTP manager to improve the management of the HR

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	1
Number of reporting labs	1
Status of non-reporting labs	N/A
Number of labs targeted for Xpert support under EXPAND-TB	None
Number of Xpert supported labs reporting	N/A

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	202
2012 Target for MDR-TB cases detected	200
Provide brief justification if 2012 MDR-TB case target is not achieved	N/A
Number of patients put on treatment	57 (preliminary data)

in 2012	
Number of patients for whom 2nd line treatment was available in 2012	308

d. Summary of 2012 Activities

Activities	
Activities in 2012	• MGIT culture and DST training was provided to the NRL staff • Amendment of MoU to exclude external sites • Two orders placed and received in the laboratory • EQA on LPA performed using GLI panels showed 100% correlation of results • Assessment of external sites was conducted and recommendations made to NTP to focus support only on the NRL as the external sites were found to require major renovation work to meet the required standards for the introduction of EXPAND-TB supported technology • The MOU was amended to exclude the external sites • Onsite culture and DST training

Figure C20: Summary of MDR-TB cases detected against MDR-TB cases targeted – Kenya

21. SWAZILAND

Activities covered to date:

Swaziland	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided (limited)	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	287
MDR-TB cases reported (cumulative)	656
MDR-TB cases to be detected (project	1959
On site mentoring	☑

Update:

In 2012 the NRL continued to provide routine diagnostic services and 72% of the 2012 target of MDR-TB cases to be detected was achieved with 287 MDR-TB cases diagnosed against a target of 400.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• LPA incorporated in testing algorithm
Milestones reached (As per annual plan)	• None
Challenges	• Lack of a clear diagnostic algorithm • Stock-outs of key laboratory supplies resulted in interruption of services • Poor correlation between LPA and liquid culture DST results
Actions addressing challenges	• Lobbied with the NTP and partners to endorse a diagnostic algorithm • Training on inventory management and implementation of a stock management system to avoid future stock-outs was conducted • A reference laboratory in South Africa retested discordant strains and discordance was confirmed. The SRL was engaged on discussion of the placement of LPA in the diagnostic algorithm

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	1, NRL: supported with MGIT, LPA and Capilia
Number of reporting labs	1
Status of non reporting labs	N/A
Number of labs targeted for Xpert support under EXPAND-TB	0
Number of Xpert supported labs reporting	0

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	287
2012 Target for MDR-TB cases detected	400
Provide brief justification if 2012 MDR-TB case target is not achieved	• Testing interruptions due to power supply problems, stock-outs and LIS problems.
Number of patients put on treatment in 2012	Data not available
Number of patients for whom 2nd line treatment was available in 2012	Data not available

d. Summary of 2012 Activities

Activities	
Activities in 2012	• An in-country consultant was engaged to support both Lesotho and Swaziland • Concerns of discordant LPA and liquid culture results were resolved • Monitoring visits were conducted to TBP supported Xpert sites • Two orders for supplies were made and received by the country • Supported the development of M & E tools for Xpert, liquid culture and LPA • Assisted in the development of SOPs for TB Culture, DST, • LPA and Xpert • Conducted audits for the NRL

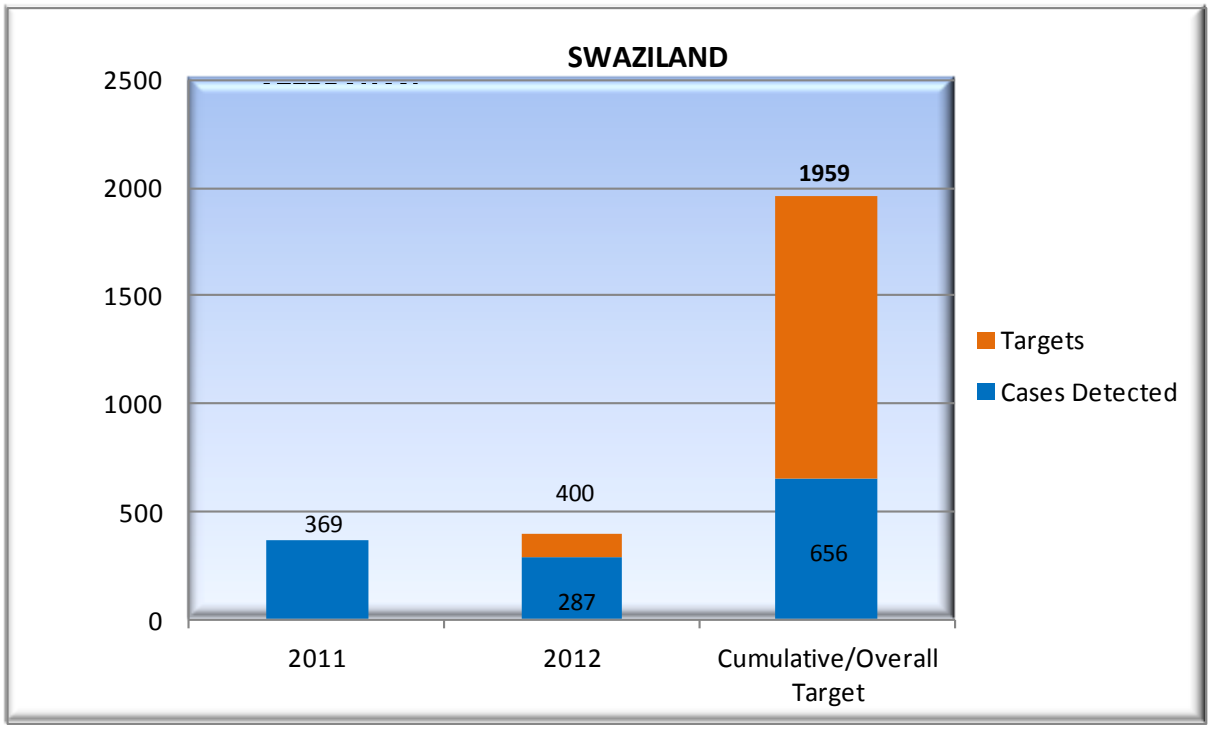

Figure C21: Summary of MDR-TB cases detected against MDR-TB cases targeted - Swaziland

22. PERU

Activities covered to date:

Peru	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory infrastructure	☑
Laboratory norms and standards	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	
Equipment and reagents provided	
New diagnostic tool training course	
Validation of diagnostic algorithm	
MDR-TB cases reported (2012)	
MDR-TB cases reported (cumulative)	
MDR-TB cases to be detected (project	1800
On site mentoring	☑

Update:

The MOU with the country was signed on the 28th June 2012 and GDF MoU signed shortly afterwards, allowing the roll out of the implementation plan, planning of training and onsite technical assistance.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• The MoU between the MoH and FIND was signed. • The MoU between NTP/NRL and WHO/GDF was signed in October 2012. • An in-country consultant was engaged to support the planned activities in June 2012.
Milestones reached (As per annual plan)	• Project implementation progressed from phase 1 to 2 of.
Challenges	• Long delays in obtaining signature of the MoUs • The diagnostic algorithm with the country is yet to be formalized. • Human resources at the NRL need to be increased. • The ventilation system at the two external sites needs to be upgraded to meet the required biosafety standards • Delays in the customs clearance of goods
Actions addressing challenges	• Advocated for the signature of the MOUs with the MoH • Advocated for the appointment of additional staff at the NRL. 6 lab technicians were appointed by the MoH. • A deadline was established for external sites to complete renovation work. A decision will be made in March 2013 on whether support should continue for the external sites or focus should be placed on just the NRL. • Discussions are ongoing regarding testing algorithms.

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	• NRL and 2 external labs. • MGIT, Capilia and LPA.
Number of reporting labs	0. Expected to have NRL reporting on Q1 2013

Status of non reporting labs	• Infrastructure and ventilation modifications at the external sites on going and are expected to be ready by Apr-13.
Number of labs targeted for Xpert support under EXPAND-TB	0
Number of Xpert supported labs reporting	• N/A

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	0
2012 Target for MDR-TB cases detected	0
Provide brief justification if 2012 MDR-TB case target is not achieved	Delays in project initiation (because of delays in MoU signatures and custom requirements) the activities started at the end of 2012. First report with data from NRL will be received in Q1 2013.
Number of patients put on treatment in 2012	NA
Number of patients for whom 2nd line treatment was available in 2012	NA

d. Summary of 2012 Activities

Activities	
Activities in 2012	• Two monitoring visits were conducted with a primary intention of following up on the signing of the MOUs • An in-country consultant was engaged in June 2012. • Monthly follow-up visits to NRL and external labs to assess progress on infrastructure modifications/meet new authorities. • The first order of supplies was made in November 2012 and the shipments arrived at customs in December 2012,

23. VIETNAM

Activities covered to date:

Viet Nam	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	244
MDR-TB cases reported (cumulative)	244
MDR-TB cases to be detected (project	1800
On site mentoring	☑

Update:

In 2012, three of the four supported laboratories provided routine diagnostic services. 73% of the 2012 target of MDR-TB cases to be diagnosed was achieved with 244 MDR-TB cases diagnosed against a target of 336.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• NRL Hanoi and DaNang lab started to provide routine diagnostic services supported by EXPANDx TB
Milestones reached (As per annual plan)	• Supported laboratories progressed to Phase 3 of implementation, LPA: 1/ 2 labs, liquid culture: 4/ 4 labs
Challenges	• Staff at the NRL is frequently rotated amongst the different sections of the laboratory. • Delays in the expansion of the project to Hanoi Lung Hospital and PNTH, HCMC • Delays in making a decision on the items to be procured by the NTP • Delays in the reporting of stock levels • DaNang lab has only been granted permission by the NTP to monitor treatment and not diagnose MDR-TB cases.
Actions addressing challenges	• Staff at the laboratories will be provided with refresher training • Advocate for stock management with a buffer for 3 months avoiding stock-outs of reagents. • The DaNang laboratory provides testing with Xpert and culture may also be allowed for initial diagnosis with positive cultures referred to PNT/NRL for DST. This will help reduce the burden at the two referral sites.

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	LPA 2 LC 4 Xpert 3
Number of reporting labs	LPA: 2 /2 reported in 2012 LC: 2 /4 reported in 2012
Status of non reporting labs	Hanoi Lung Hospital and PNTH, HCMC

Number of labs targeted for Xpert support under EXPAND-TB	0
Number of Xpert supported labs reporting	0

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	244
2012 Target for MDR-TB cases detected	336
Provide brief justification if 2012 MDR-TB case target is not achieved	• Majority of the MDR TB cases diagnosed in the country are from the regional reference lab in South Vietnam, Pham Ngoc Thach Hospital (PNTH, Ho Chi Minh City), and this site was not approved by the NTP for EXPAND- TB support. • NTP has approved support for diagnosis in only two laboratories that cover only approximately 40% of the total MDR suspects.
Number of patients put on treatment in 2012	198
Number of patients for whom 2nd line treatment was available in 2012	Data not available

d. Summary of 2012 Activities

Activities	
Activities in 2012	• 2 LPA sites, 4 liquid culture sites became operational. • 3 onsite trainings were conducted. • All equipment provided by EXPANDTB was installed • NRL, Hanoi reporting results of liquid culture/DST and LPA • Procurement list for all the sites compiled and the procurement is in the process

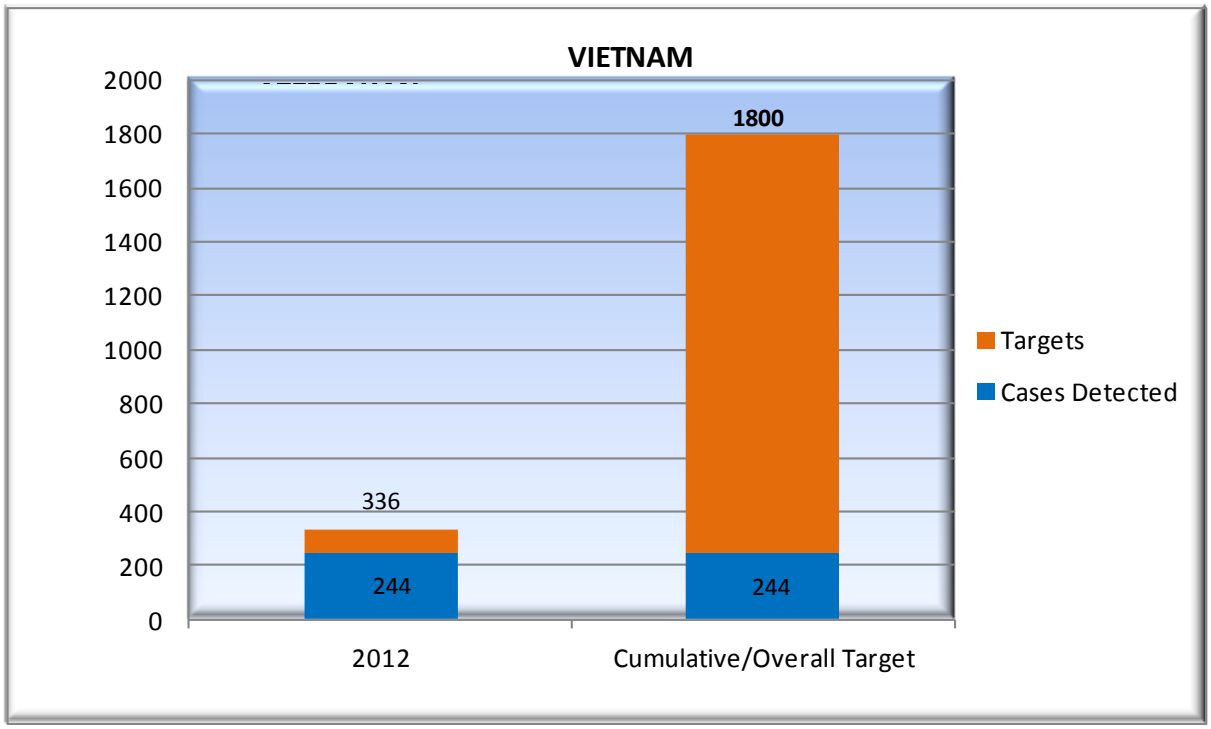

Figure C23: Summary of MDR-TB cases detected against MDR-TB cases targeted – Vietnam

24. MOZAMBIQUE (Added in 2012)

Activities covered to date:

Mozambique	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards reviewed	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	
Validation of diagnostic algorithm	☑
MDR-TB cases reported (2012)	29
MDR-TB cases reported (cumulative)	29
MDR-TB cases to be detected (project target)	1458
On site mentoring	

Update:

In 2012 both of the supported laboratories provided routine diagnostic services. 50% of the 2012 MDR-TB target was achieved with 29 MDR-TB cases reported against a target of 58. (Reporting from the country initiated in Q4 2012)

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• Assessment of the laboratories was completed • The MOU between FIND and the MoH was signed on the 30th May 2012 • GDF MOU was signed and an order for laboratory goods placed and received by the country
Milestones reached (As per annual plan)	• Implementation progressed rapidly from Phase 1 to Phase 3
Challenges	• Delay in clearance of goods from customs • The training materials were not available in Portuguese
Actions addressing challenges	• The documents required for customs clearance were sent for pre-shipment inspection in advance of the supplies being shipped • Local English and Portuguese-speaking technicians were used to translate the training materials to Portuguese

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	2, NRL and Beira RL: MGIT, Capilia and LPA
Number of reporting labs	2
Status of non reporting labs	N/A
Number of labs targeted for Xpert support under EXPAND-TB	None
Number of Xpert supported labs reporting	N/A

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	29
2012 Target for MDR-TB cases detected	58
Provide brief justification if 2012 MDR-TB case target is not achieved	• Reporting represents only last quarter of the year when the labs initiated operations under EXPAND-TB support
Number of patients put on treatment in 2012	• Data not available
Number of patients for whom 2nd line treatment was available in 2012	• Data not available

d. Summary of 2012 Activities

Activities	
Activities in 2012	• Supported laboratories were assessed. • Both MOUs required for implementation of activities were signed • Orders for laboratory goods were made and received by the laboratories • The training materials were translated from English to Portuguese

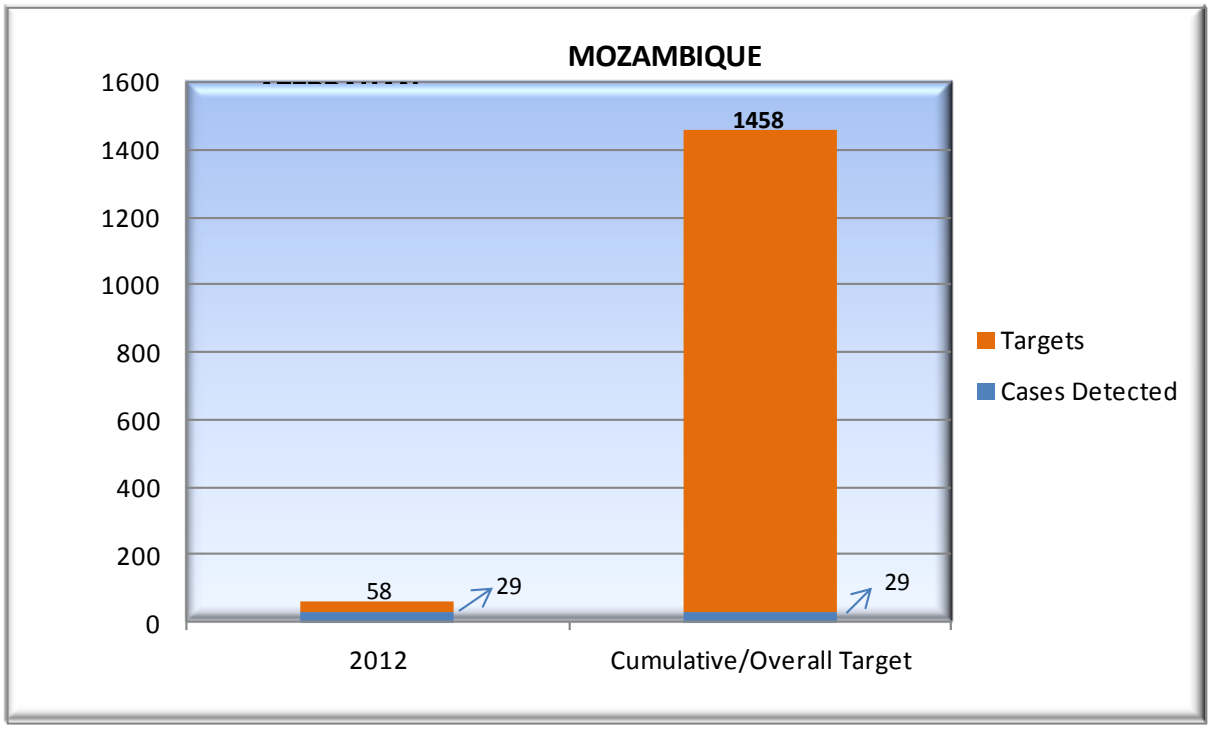

Figure C24: Summary of MDR-TB cases detected against targets – Mozambique

25. RWANDA (Added in 2012)

Activities covered to date:

Rwanda	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	
Validation of diagnostic algorithm	☑
MDR-TB cases reported (2012)	16
MDR-TB cases reported (cumulative)	16
MDR-TB cases to be detected (project	1022
On site mentoring	

Update:
In 2012 the NRL provided routine diagnostic services. 32% of the 2012 target of MDR-TB cases to be diagnosed was achieved with 16 MDR-TB cases reported against a target of 50.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• The MOUs with country required to initiate implementation of activities were signed. • Both supported laboratories were assessed • Renovations at the Butare RL were completed and the ventilation system was upgraded.
Milestones reached (As per annual plan)	• Implementation progressed from Phase 1 to Phase 2 at the Butare RL • Implementation progressed from Phase 1 to Phase 3 at the NRL
Challenges	• Long delays in obtaining signatures of both MoUs • Delays in lab renovations at Butare RL and biosafety upgrade • Delays in equipment inventory review
Actions addressing challenges	• Constantly lobbied the NTP Manager to get the MOUs signed • Frequent follow up on progress of the renovations at the RL to ensure there were no work interruptions

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	2, NRL and Butare RL: MGIT, LPA, Capilia and Xpert
Number of reporting labs	1
Status of non-reporting labs	• Renovations recently completed and order placed
Number of labs targeted for Xpert support under EXPAND-TB	5
Number of Xpert supported labs reporting	N/A

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	16

2012 Target for MDR-TB cases detected	50
Provide brief justification if 2012 MDR-TB case target is not achieved	• Reporting represents only last quarter of the year when the labs initiated operations under EXPAND-TB support
Number of patients put on treatment in 2012	58
Number of patients for whom 2nd line treatment was available in 2012	85

d. Summary of 2012 Activities

Activities	
Activities in 2012	• Both supported laboratories were assessed • Both MOUS required to initiate implementation of activities were signed. • Order of supplies was placed and received by the NRL • LPA was validated by the NRL • LPA EQA using GLI panels showed 100% correlation of results • Renovation of regional lab funded by the NTP was completed. • 3 monitoring visits were conducted.

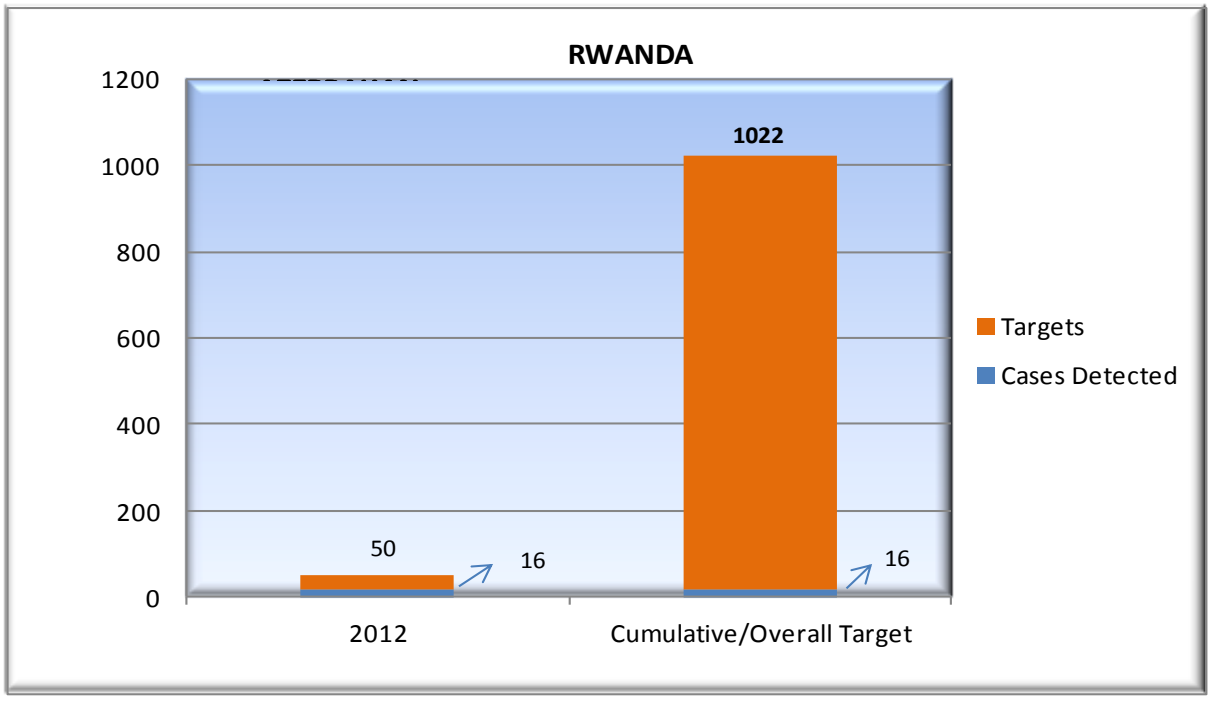

Figure C25: Summary of MDR-TB cases detected against MDR-TB cases targeted – Rwanda

26. INDONESIA

Activities covered to date:

Indonesia	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	
Laboratory norms and standards reviewed	
Good Laboratory Practice reviewed	
Quality Management and Assurance	
Equipment and reagents provided	
New diagnostic tool training course	
Validation of diagnostic algorithm	
Detection of MDR-TB patients	
MDR-TB cases reported (2012)	
MDR-TB cases reported (cumulative)	
MDR-TB cases to be detected (project	1000
On site mentoring	

Update:

The first assessment of the laboratories was conducted and procedures to get the MOU signed were initiated in 2011.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• MoU with the MoH was signed on the 09th February 2012 • BBLK Surabaya laboratory was upgraded to meet the required standards for introductions of supported technology.
Milestones reached (As per annual plan)	• Implementation progressed from phase 1 to phase 2.
Challenges	• Delay in singing of the MOU resulted in delays of implementation • Diagnostic algorithm incorporating the diagnostic technologies supported by the project has not been endorsed by the NTP • Long delays in the lab upgrade in of RS Persahabatan lab • Long delays in the importation process
Actions addressing challenges	• Advocated for the signing of the MoU by the NTP manager • Advocated for the endorsement of the diagnostic algorithm incorporating supported technologies with the NTP Manager • Followed up closely on the progress of renovations at RS Persahabatan lab • WHO Indonesia was requested and agreed to be consignee for all project supported shipments

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	2, RS Persahabatan lab and BBLK Surabaya laboratory: MGIT, LPA and Capilia
Number of reporting labs	• 0
Status of non reporting labs	• Validation of the supported technologies was initiated at BBLK Surabaya laboratory • Renovations at RS Persahabatan lab are ongoing.
Number of labs targeted for Xpert support under EXPAND-TB	0

Number of Xpert supported labs reporting	N/A

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	0
2012 Target for MDR-TB cases detected	0
Provide brief justification if 2012 MDR-TB case target is not achieved	• Delay in singing of the MOU resulted in delays of implementation • Long delays in the lab upgrade in of RS Persahabatan lab • Long delays in the importation process
Number of patients put on treatment in 2012	Data not available
Number of patients for whom 2nd line treatment was available in 2012	• Standardized 2nd line TB treatment was available for all MDR TB patients who were diagnosed by the 5 labs accredited by the programme, in 9 hospitals (8 provinces).

d. Summary of Activities

Activities	
Activities in 2012	• Lab upgrade in RS Persahabatan are ongoing and completed at BBLK Surabaya • Calculated projected testing volumes for 2013 and compiled list of requirements • Monitoring visit was conducted in collaboration with the SRL

27. BANGLADESH

Activities covered to date:

Indonesia	
Laboratory assessment	☑
Memorandum of Understanding	☑
Technical assistance in laboratory	☑
Laboratory norms and standards	☑
Good Laboratory Practice reviewed	☑
Quality Management and Assurance	☑
Equipment and reagents provided	☑
New diagnostic tool training course	☑
Validation of diagnostic algorithm	☑
Detection of MDR-TB patients	☑
MDR-TB cases reported (2012)	247
MDR-TB cases reported (cumulative)	247
MDR-TB cases to be detected (project	1500
On site mentoring	☑

Update:

In 2012 the supported laboratory provided routine diagnostic services. 71% of the 2012 target for MDR-TB cases to be diagnosed was achieved with 247 MDR-TB cases diagnosed against a target of 300.

a. Summary of major achievements and challenges

Achievements and Challenges	
Achievements	• The provision of routine diagnostic services was initiated at the NRL
Milestones reached (As per annual plan)	• Implementation progressed from Phase 1 to Phase 3 at the supported laboratory
Challenges	• Delay in obtaining the Custom Exemption Certificate from CMSD. • Frequent power outages resulting in frequent interruptions of services. • Lack of a maintenance contract of equipment supplied through EXPAND-TB. • Non availability of in-country agency for maintenance of all equipment supplied through EXPAND-TB • Lack of proper secure space to store large quantities of consumables
Actions addressing challenges	• Interaction with NTP, CMSD, on a daily basis for clearing the goods. • The NIDCH was requested to make available more space for the storage of laboratory supplies • MSH has been requested to upgrade the storeroom to meet the storage requirements for the reagents supplied for LPA and liquid culture.

b. Laboratory Progress Update

Targeted Laboratories	
Number of targeted labs and type of technology	1, NRL: LPA, MGIT, Capilia
Number of reporting labs	1
Status of non reporting labs	N/A

Number of labs targeted for Xpert support under EXPAND-TB	0
Number of Xpert supported labs reporting	N/A

c. MDR-TB Diagnosis and Second Line Treatment

MDR-TB Cases Detected and Second Line Treatment Availability	
Number of MDR-TB cases detected in 2012 with EXPAND-TB support	213
2012 Target for MDR-TB cases detected	300
Provide brief justification if 2012 MDR-TB case target is not achieved	• Routine diagnosis and reporting of cases only started in Quarter 2 of 2012
Number of patients put on treatment in 2012	289
Number of patients for whom 2nd line treatment was available in 2012	289

d. Summary of 2012 Activities

Activities	
Activities in 2012	• The NTRL provided routine diagnostic services based on the NTP developed algorithm. • Two onsite trainings were conducted and nine trainees were trained on LPA and liquid culture. • An order of supplies was prepared, dispatched and delivered to the NRL • Monitoring visits were conducted to provide support to the laboratories and network with the NTP and local partners • An in-country consultant was engaged to support implantation of project activities

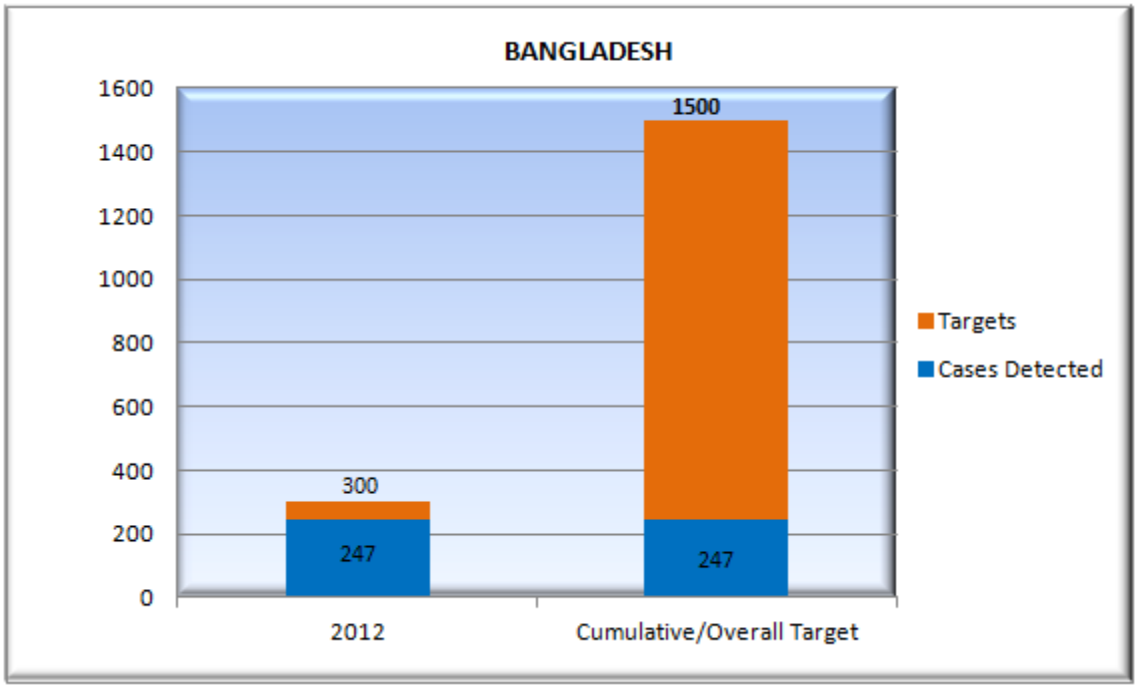

Figure C27: Summary of MDR-TB cases detected against MDR-TB cases targeted - Bangladesh

E. Resource mobilization strategy

With the support to countries from various partners complementing the efforts and commodities mobilized by the EXPANDx TB project, the total value of the project can be estimated to reach approximately 350 million USD.
Details in the M&E "Transition" spreadsheet attached.

E.1. Agreements GLI/GDF/FIND, GDF/GIZ and FIND/GIZ

- Agreements between FIND and initial technology suppliers (liquid culture and LPA) covering product prices and terms of supply have been signed.
- The original general Procurement Services Agreement between WHO/GDF and GIZ and its Extension were renewed in June 2009 specifically for new diagnostics under EXPAND-TB. A new framework Agreement between WHO/GDF and GIZ for EXPAND-TB was signed in October/November 2011.
- GIZ has access to FIND-negotiated prices and terms of supply. All quotes provided by suppliers are based on these negotiated prices.
- Agreement signed between GIZ and freight forwarder and insurance agents.
- Agreements between GIZ and initial technology suppliers are under further negotiation. Nevertheless, the initial suppliers have fully complied with FIND negotiated prices while finalizing these agreements. Agreement with a wholesaler for standard laboratory items was renewed in June 2011. Further agreements were entered with providers of rapid speciation tests and laboratory ventilation systems.
- Procurement SOPs developed by GIZ and GDF with input from FIND for Phase I of procurement and supplies are in place, and were presented and approved at the 23 October 2009 PMM. SOPs are regularly updated, based on experience gained in all countries.

E.2. Reporting Requirements spelt out in MOU

1	2	3	4	5	6
MOU Ref.	Title of Report	Met? Y/N	Ref.	Remarks	UNITAID Remarks
	Annual Programmatic and Financial Report	Y			
	To be submitted by 15 March 2013	Y			
	To cover the period from 1st January 2011 to 31st December 2012	Y			
	Signing authority - Director, WHO Stop TB Department	Y			
	Certifying Authority (Finance) - FIND Chief Financial Officer - Stop TB department PMU - TB Partnership Resource Administrator	 Y Y Y			
	Information requirements	N/A*			

*Not applicable

F. Financial management

Details in the Combined Section C for financial reporting.

G. Annexes

1. Revised targets
2. Monitoring and financial tables (Excel file)
3. Financial section GDF-GLI in PDF
4. Financial section GLI in PDF
5. Financial sections FIND in PDF

ANNEX 1: Revised targets

Country	Original target	Proposed new target until end 2014	Cumulative cases by Q3 2012	Operational update and target justification
Azerbaijan	463	2,850	631	In 2011 only one of the three laboratories to be supported under EXPANDx TB were providing routine diagnostic services, two labs are currently operational and reporting. In 2013 a third lab (Ganja) will start activities and reporting. In 2012 two Xpert analyzers were introduced with support from STBP. 702 MDR TB cases have been diagnosed to date. The roll-out of Xpert under EXPAND TB is also expected to contribute to MDR-TB cases detected through the confirmatory testing of all samples with RIF resistance
Bangladesh	11666	1500	247	The MOU with the country was signed in December of 2011. The required infrastructural upgrades have delayed the initiation of validation of the tools and progress to routine diagnostic testing. Lack of a sample transportation system limits the number of samples that are referred and received at the referral laboratories. A sample transportation network will be established with support from the NTP and URC. One laboratory targeted and currently reporting.
Belarus	877	2,000	192	In 2011 the MOU with Belarus was signed and procedures to sign the GDF MOU and procure the necessary equipment and supplies were initiated. According to 2012 WHO Global TB Report Case detection rate (CDR) is 70%. Primary resistance 32%, Secondary 75%. The projected annual number of MDR cases in the country is 2,100. The NRL has joined the project in Q3, 2012. In 2013 the second lab (Minsk oblast) is expected to start reporting. Target has been increased considering the current situation in the country, high prevalence and rapid implementation in process.
Cameroon	495	810	217	In 2011 two of the three supported laboratories validated the supported tools and provided routine diagnostic services and 10 MDR-TB cases were diagnosed in the last 2 months of the year. The country currently has the ability to detect 240 MDR-TB cases/ year with 2 out of 3 laboratories reporting. In 2013 a 3rd laboratory will start to report at the end of Q2 and MDR-TB detected is expected to 270 cases in 2013 and 300 cases in 2014

Country	Original target	Proposed new target until end 2014	Cumulative cases by Q3 2012	Operational update and target justification
Côte d'Ivoire	1,992	600	235	Civil war ended in June 2011 and routine activities resumed in the laboratories. In 2011 only one of the two laboratories to be supported under EXPAND-TB was providing routine diagnostic services. In 2012 both supported laboratories were providing routine diagnostic services. The two supported labs are able to detect 200 MDR-TB cases per year. Lack of sample transportation limits the number of samples received at the supported. CDC-CI in collaboartion with the NTP has plans to introduce sample transportation but there is currently no timeline for this activity. The introduction of Xpert through support from EXPAND TB will increase coverage under the project laeding to more MDR-TB cases being diagnosed.
Djibouti	329	329	58	In 2011 the supported laboratory did not provide routine diagnostic as frequent challenges with the ventilation system and equipment were experienced. The laboratory only started testing in May 2012 and is scaling up the number of tests as the staff have acquireproficiency. EXPANDx TB is phasing outof the country 2012. A transitioning strategy is in place to ensure diagnostic services are not interrupted and reports from the country will be still received in 2013
Ethiopia	4,660	3,500	1127	In 2011 two additional laboratories (Jimma University hospital and Harar regional laboratory) were added to the list of laboratories to be supported under EXPANDx TB following a request from EHNRI for a total 8 laboratories under EXPANDx TB support. In 2011 only two of the eight laboratories were providing routine diagnostic services and 101 MDR-TB cases were diagnosed. By the end of 2012, 5 out of the 8 supported laboratories were providing routine diagnostic services increasing the number of cases diagnosed per quarter. In 2013 all the 8 laboratories will be reporting. A lack of sample transportation will limit the coverage of the laboratories but from the NRL projected load in each laboratory the new target may be slightly reduced from the original target to 3500.
Georgia	522	3,000	1458	In 2010 the NRL was the only laboratory included for support under EXPANDx TB. In 2011 the Kutaisi Regional Laboartory was also included for support. 2011 both of the laboratories supported under EXPAND-TB were providing routine diagnostic services and 804 MDR-TB cases were diagnosed. According to 2012 WHO Global TB Report Case detection rate (CDR) is 84%. Primary resistance 11%, Secondary one 32%. . It is expected that in the next two years the 2 laboratories continue working at full capacity and achieve an overall target of 3000 cases which is a substantial increase from the original target.

Country	Original target	Proposed new target until end 2014	Cumulative cases by Q3 2012	Operational update and target justification
Haiti	476	476	172	In 2011 the container laboratory to house the NRL was established and to date only one of the two laboratories supported under EXPAND-TB is providing routine diagnostic services. 172 MDR TB cases have been diagnosed so far by the GHESKIO lab. However, the national lab (LNSP) is expected to initiate reporting in Q4 2012, the original target can be achieved over the span of two years between the two labs. Xpert will also be rolled as part of EXPANDx TB support increasing number of MDR-TB cases that can e diagnosed.
India	45,684	62,996	20215	In 2011 out of the 40 laboratories supported under EXPAND-TB 14 laboratories were routinely reporting MDR-TB cases using LPA, and 9 laboratories using liquid culture. To date, supplies were replenished in 27 laboratories and 18 laboratories had their LPA equipment upgraded to a GT Blot 48 due to the workload in each of the labs. Xpert has been also introduced in 7 sites with STBP support. In the quarter total number of DR-TB suspects tested using Xpert was 554. Total diagnosed with Rif resistance:89. The target has been increased considering the exponential growth in reporting from all supported labs over the next two years.
Indonesia	9,714	1,000	0	The first assessment of the laboratories was conducted and procedures to get the MOU signed were initiated in 2011. Delays in the lab upgrade have hampered the progress in the laboratory outcomes and therefore the target has been revised to reflect current reality. A high volume lab is being supported. Over the span of two years it is expected that a targeted 1000 cases are reported from the supported labs.
Kazakhstan	5,286	2,940	0	In 2011 the MOU with the country was signed and procedures were started to get the GDF MOU signed and procurement underway. The CDR is 87%. Primary resistance 30%, Secondary is 51%. The projected annual number of MDR cases by the NTP in the country is 7,935. the EXPANDx TB project has revised the target to reflect the current situation of delays in initiation of activities due to political constraints. In 2013 the 3 laboratories supported under EXPAND TB will start reporting.
Kenya	1,766	890	228	One laboratory is currently supported under EXPANDx TB as agreed with the NTP. The central TB reference lab in Nairobi is currently under routine operation and to date 228 MDR TB cases have been reported.

Country	Original target	Proposed new target until end 2014	Cumulative cases by Q3 2012	Operational update and target justification
Kyrgyzstan	1,094	3,000	1766	In 2011 only the Osh Regional Laboratory supported under EXPAND-TB was providing routine diagnostic services and 50 MDR-TB cases were diagnosed. MSF (a major partner) suspended activities at the NRL as the laboratory was deemed unsafe but routine diagnostic services continued but these cases were not reported under the project. In 2012 MSF resumed providing support to the NRL and routine reporting of cases from the NRL commenced. The CDR is 80%. Primary resistance 26%, Secondary 52%. The projected annual number of MDR cases in the country by the NTP is 1,815. MDR TB cases reported to date are in exponential increase. In 2013 the 2 laboratories supported under EXPAND TB will continue working at full capacity and therefore we have increased the target
Lesotho	176	1,200	583	In 2011 only one of the two laboratories supported under EXPAND-TB was providing routine diagnostic services and 118 MDR-TB cases were diagnosed. The laboratory has been reporting for 3 years consecutively and therefore the cases detected are a good indication of the current prevalence. The project in the country has overachieved, and the original target reached early in the project implementation. The target has therefore been increased to reflect the capacity of the labs. Xpert will be rolled out with support from EXPANDx TB and this will lead to an increase in the number of MDR-TB cases diagnosed.
Moldova	1,628	3,878	1304	In 2012 both of the laboratories supported under EXPANDx TB were providing routine diagnostic services and 1304 MDR-TB cases were diagnosed. The reports provided by the country are exponentially increasing, target has been adjusted (increased) accordingly to reflect these changes.
Mozambique	1,458	1,458	29	Consent for the inclusion of Mozambique on the list of countries to be supported under EXPAND-TB was obtained in 2011 and roll out strategy put in place during 2012. MoUs have been signed, and orders prepared, as well as provision of emergency orders to cover operational gaps in the NRL in Maputo. Training was delivered and the NRL initiated reporting on Q4 2012.
Myanmar	3,401	2,407	1440	In 2011 both of the laboratories supported under EXPANDx TB were providing routine diagnostic services and 408 MDR-TB cases were diagnosed. In 2012 we have observed an important increase in number of cases diagnosed, to achieve a cumulative 1440 cases, however we needed to revise the target down to reflect the current annual load of cases being reported.

Country	Original target	Proposed new target until end 2014	Cumulative cases by Q3 2012	Operational update and target justification
Peru	2,616	1,800	0	In 2011 the first assessment visit was conducted and procedures to sign the MOU with the country initiated. However it took almost a year to initiate operations (order preparation, planning of training etc) due to the slow response from the country for signature of the MoU. TA is currently provided on site, training is planned for January 2013 and reporting is expected from the NRL in Lima during Q1 2013: The other two labs supported are expected to initiate activities soon afterwards. The long process for signature of the MoU has hampered the project initiation, making it necessary to revise the target down from the original estimate.
Rwanda	4,222	1,022	16	Consent for the inclusion of Rwanda on the list of countries to be supported under EXPAND-TB was obtained in 2011 and roll out strategy put in place during 2012. MoUs have been signed, and orders prepared, technical assistance is provided. In Q1 2013. Xpert analyzers will be introduced with support from EXPANDx TB and this will lead to an increase in the number of cases reported.
Senegal	1,000	350	29	Only the NRL is supported under EXPAND TB. The NRL started to routinely report in Q3 2012. The lack of effective sample transportation system to the NRL may impact negatively the number of cases diagnosed. A DRS will be conducted in 2013 and this is expected to contribute about 100 MDR-TB cases to the load of detected cases. Under normal activities that NRL has the potential to diagnose 250 MDR-TB cases over 2 years. Target has been revised down reflecting this situation.
Swaziland	181	1,959	656	The NRL is the only laboratory supported under the MOU with the country. In 2011 the target for cases to be diagnosed under the project was exceeded with 369 MDR-TB cases being diagnosed. In 2012 four Xpert analyzers were introduced with support from STBP. The target has therefore been increased substantially from the original, considering the current reporting rate.
Tajikistan	2,563	2,563	805	In 2011 the NRL was providing routine diagnostic services, However, cases were not being reported in spite of having been diagnosed at the Machiton lab with EXPANDxTB support. This has been corrected and the cases reported in 2012 reflect this. The projected annual number of MDR cases in the country is 1,128. An additional lab - Kulyab- (Potentially two), will start reporting. GX will be decentralized in Sugd and Kulyab regions. Target has been kept as the original.

Country	Original target	Proposed new target until end 2014	Cumulative cases by Q3 2012	Operational update and target justification
Tanzania	1,664	400	76	In 2011 the MOU with UR Tanzania was signed and the tools validated at the NRL. A consultant based in the country was engaged to provide ongoing technical support and 33 MDR-TB cases were diagnosed. Original target according to prevalence estimates has been set too high and therefore thetarget has been revised down taking into consideration this updated epidemiological information. The inclusion of Mbeya should provide additional MDR cases.
Uganda	644	509	343	In 2011 there was very limited 2nd line treatment available which curtailed diagnostic activities. Only one the two supported laboratories provided routine diagnostic services and 92 MDR-TB cases were diagnosed. To date 343 MDR TB cases have been diagnosed, the target slightly reduced to correlate with current reporting rate in the country.
Uzbekistan	7,863	9,976	4894	In 2011 only one of the two laboratories to be supported under EXPAND-TB were providing routine diagnostic services and 657 MDR-TB cases were diagnosed. In 2012 we have seen an important exponential increase in number of cases diagnosed and therefore the target has been increased from its original number to reflect this. In 2013 the second lab (Samarkand) will start reporting. Roll out of GeneXpert in the country will also contribute to the scale up in reporting over the next two years.
Vietnam	5,137	1,800	244	The MOU with the NTP of Vietnam was signed in March 2011. 4 labs supported under EXPANDx TB, target can be achieved over 2 years, based on current country reporting, prevalence and technical support provided.
TOTAL	**117,577**	**115,213**	**36,965**	