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INSTITUTE OF HIV/AIDS, DISEASE PREVENTION&CONTROL (IHDPC)
TB & OTHER RESPIRATORY COMMUNICABLE DISEASES DIVISION
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NATIONAL STRATEGIC PLAN FOR TUBERCULOSIS 2010-2013

ANNUAL REPORT FOR JULY 2011 - JUNE 2012

Kigali, October 2012

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ACRONYMS AND ABBREVIATIONS

ART	Antiretroviral Therapy
BCC	Behaviour Change Communication
CAAC	Cellule d'appui à l'approche contractuelle (PBF Unit/MOH)
CDC	Centre for Disease Control
CDT	Centre for Diagnosis and Treatment of Tuberculosis
CHD	Community health Desk (MOH)
CHUs	University teaching hospitals (CHUB and CHUK)
CHW	Community health worker
CNJR	National Youth Council for Rwanda
CPT	Cotrimoxazole Preventive treatment
CSO	Civil Society Organization
CT	Centre for Treatment of Tuberculosis
CXR	Chest X-ray
DFB	Damien Foundation Belgium
DH	District Hospital
DOT	Directly Observed Treatment
DOTS	Directly Observed Treatment Short Course Strategy
DST	Drug Susceptibility Testing
IHDPC	INSTITUTE OF HIV/AIDS, DISEASE PREVENTION&CONTROL
IPT	INH preventive treatment
KNCV	KNCV Tuberculosis Foundation
LED	Light Emitting Diode
MDG	Millennium Development Goal
MDR-TB	Multidrug Resistant Tuberculosis
M&E	Monitoring and Evaluation
MOH	Ministry of Health
NRL	National Reference Laboratory
NSA	National Strategy Application
NSP	National Strategic Plan
PAL	Practical Approach for Lung diseases
PBF	Performance-based Financing
PF	Performance framework (of the Global Fund consolidated project)
PTHW	National women's council
RBC	Rwanda Biomedical Center
RDQA	Routine Data Quality Audit
RH	Reference Hospital
RHCC	Rwanda Health Communication Center
RRP	People living with HIV/AIDS Network
SDA	Service Delivery Area
SPIU	Single Project Implementation Unit (MOH)
SSF	Single source of Funding
TB-HIV	TB and HIV coinfection
TB & ORD	Tuberculosis and Other Respiratory Communicable Diseases
TH	Traditional healer
TRAC PLUS	**C**enter for **T**reatment and **R**esearch on **A**IDS, **M**alaria, **T**uberculosis and **O**ther **E**pidemics
WHO	World Health Organization

SUMMARY OF THE REPORT

Introduction

With this report, we outlined the main achievements during the 2011-2012 SSF-TB implementation period (which is the second year of the project). This project is roughly covering roughly 96% of the total needs for the implementation of the TB Strategic Plan (TB NSP) for 2009-2013. We presented both programmatic and financial performances; using indicators as set in the performance framework of the SSF-TB project and in the TB NSP 209-2013 monitoring and evaluation plan; And budget consumption as well. For the purpose of measuring our progress to achieve the SSF-TB project targets for the three years period, we have compared results of the year 2 and those of the year 1. We also highlighted challenges met during the implementation (indicators not achieved), as well as main domain of interventions during the 2012-2013 fiscal year (FY).

Main achievements

Financial Performances

In terms of budget, USD 2.9 millions from the Government of Rwanda (GoR), the Global Fund (91%), Foundation Damien and the USG, were budgeted to implement the operational plan of the 2011/2012 fiscal year. Generally, all contributors fulfilled their pledges; 83% of the planned budget was disbursed, with the only exception of the Global Fund which disbursed 64% due to Conditions Precedent and Special Terms and Conditions that were to be fulfilled by the Ministry of Health (Principal Recipient) and project sub-recipients.

Main Programmatic Performances and next orientations

As during the 2010-2011 FY, during the 2011-2012 FY we have achieved the target on TB suspicion rate among the general population. Efforts started during the Y1, on intensified cases finding, by CHWs, continued. The later brought to health facilities 44% (from 38% during Y1) of all persons with symptoms suggestive of TB (TB suspects), and were accountable of 25% (from 17% during Y1) of all SS+ TB cases diagnosed. Despite that, our target on TB notification rate remained low compared to target, probably due to highly estimated targets, and calling to revision of those targets and to further determination of the TB burden in our country. For that,

the TB prevalence survey is being implemented. In the meantime for better planning, and as suggested by both TB NSP and TB NSA mid-term evaluations, targets have been revised to better reflect all our detection efforts. While waiting for results of both TB prevalence survey and those of 2nd drug resistance survey, our detection interventions will be more re-oriented to high risk groups of TB (PLHIV, contacts of SS+ TB cases, prisoners, schools boarding, etc.), using new and more sensitive technologies like LED microscopy, GeneXpert etc.

The high treatment success rate for the new smear-positive TB patients (88%), has been one of our other high performance, with an extraordinaire improvement in cure rate (form 77% during Y1 to 83% during Y2). For MDR-TB cases (88%), and for those detected among prisoners (93%), we experienced a very good treatment success rate as well, going beyond targets. Those achievements were possible because of trainings and refreshers of planned medical personnel (239% of those planned), a high proportion of planned CHWs (62% of those planned), and traditional healers (133% of those planned), to regular supervisions (80% of those planned) and to PBF incentives.

TB-HIV collaborative activities were performed successfully and here as well, targets were achieved: 99% of all TB suspects were tested for HIV infection, 98% of all TB patients were tested for HIV infection, 97% of HIV+ TB patients received Cotrimoxazole preventive treatment and 70% were on ART by the end of their TB treatment.

As for the drug sensitive TB, the multi-drug resistant TB (MDR-TB) notification remained low, with only 88 MDR-TB patients enrolled on second-line treatment, far below the expected number, despite many active efforts and, calling to the implementation of the 2nd TB drug resistant survey, planned for the 2012-2013 FY, to better capture the current burden of MDR-TB in Rwanda.

As measure of TB prevention, a minimum package of TB infection control (IC) basic measures has been proposed to health facilities that are centers of TB diagnosis and treatment (CDTs). By the end of June 2012, 170 CDTs out of 194 (88%) were implementing those measures, which exceeded the target.

The Global Fund SSF project allowed introduction of TB indicators in the PBF scheme benefiting to both health facilities and communities. During the 2011-2012 FY, 98.6% of all health facilities received PBF for having achieved targets for at least 50% of all indicators. For communities, 76.5% of Cooperatives of CHWs received PBF for at least 80% of their indicators.

I. INTRODUCTION

The Rwanda National TB Control Strategic Plan 2009-2013 (TB NSP) was developed in line with the goals and objectives set in 2nd Health Sector Strategic Plan (HSSPII) that aims at improving the health status of the population, and thereby reduce poverty in line with the Poverty Reduction Strategy (EDPRS) 2008-2012.

The Rwanda TB NSP focuses on the six objectives of the Stop-TB Strategy. Those are:

1. Pursue high quality DOTS expansion and enhancement;

2. Address TB/HIV, MDR-TB and other challenges;

3. Contribute to health system strengthening (HSS);

4. Engage all care providers;

5. Empower people with TB and communities;

6. Enable and promote research.

The plan includes 16 specific objectives also known as SDA (Service Delivery Area) and 86 main activities measured by 5 impact indicators and 46 performance/strategic indicators which are detailed in the monitoring plan. Different sectors and partners are engaged in TB NSP implementation, so that it is a comprehensive national TB control plan whose overall goal is to reach the Stop-TB and MDGs targets.

The TB NSP receives the financial support of several funding sources among which the Global Fund is the first donor. The Government of Rwanda provides staff from several departments, infrastructures, equipments, and contributes to the running costs as well as to provision of drugs and support to MDR-TB patients. USG agencies support technically and financially TB/HIV collaborative activities, laboratory development and TB infection control. By the end of 2011, Damien Foundation was providing a full time technical advisor and contributed to TB & ORD Division (Rwanda NTP) general performance. WHO regularly monitors the program and provides punctual technical assistance.

The Global Fund approved the Rwanda National Strategic Application (NSA) to cover the gap identified in the TB NSP funding. The approved budget was thereafter consolidated with

previous grants in order to manage a unique “Single Stream of Funding project” (SSF-TB). The principal Recipient is the Ministry of Health (MOH), and 12 sub-recipients are responsible for its implementation.

The TB and Other Communicable Respiratory Diseases Division (new name given to the TB UNIT-Rwanda NTP) within RBC/IHDPC is responsible for the technical guidance and coordination of the plan. The Single Project Implementation Unit (SPIU) of the Ministry of Health (MOH) is managing the funding and oversees the implementation of the whole project on behalf of the MOH. NRL is responsible for the development and decentralization of the laboratory diagnosis activities. CHUs, district hospitals and health facilities are responsible for increasing TB case detection and offering successful treatment to patients, which require trainings, supervisions, monitoring and evaluation as well as provision of medicines/reagents and financial management.

The Medical Production and Distribution Division, together with the Medical Procurement Division, both under the RBC (former CAMERWA) are respectively in charge of production and distribution and procurement of TB reagents and medicines.

Community interventions are implemented by the National Youth Council, Profemme Twese Hamwe (a women’s umbrella organization) and the Network of People Living with HIV. In addition five NGOs (CARITAS Rwanda (Faith-based organization), CREDI NGO, SWAA Rwanda, STRIVE Foundation and ACCESS Project), support the cooperatives of community health workers under the supervision of the Community Health Desk (CHD) of the MoH.

The CHD and the Performance-Based Financing Desk (PBF, or CAAC) are responsible for the interventions that intend to improve the quality and increase the quantity of health care services, benefiting respectively the community health workers and the health facilities.

II. TB NSP IMPACT AND OUTCOME INDICATORS

II.1. Tuberculosis impact indicator

The National Tuberculosis Control Strategic Plan (TB NSP) 2009-2013 has one impact indicator, aimed at decreasing by 50% the TB prevalence by the year 2015 compared to 1990. Many activities were carried out during the year to prepare the first national TB prevalence survey (see SDA 1.4.1). The implementation of the TB prevalence survey started end of March 2012. Results of this survey are expected to be released by June 2013. However, by using the World Health Organization (WHO) estimates for Rwanda, the TB prevalence decreased from 521 per 100,000 population in 1990 to 117 per 100,000 population in 2010[1], representing a decrease of 78%.

II.2. Tuberculosis outcome indicators

Five outcome indicators have been defined in the TB NSP 2009-2013 monitoring and evaluation (M&E) plan, to summarize outcomes of essential activities carried out for TB detection and management. Those are TB case notification rate for new SS+, TB case notification rate for all-forms TB, TB case detection rate for new SS+, TB treatment success rate for new SS+ and TB treatment success rate for MDR-TB.

II.2.1. Tuberculosis case notification rates

From July 2011 to June 2012, 6 352 all-forms TB cases were registered, including 5 725 (90%) new cases, 387 (6%) retreatment cases and 242 (4%) 'other' cases. 77% of all cases had pulmonary TB, and 56% of all cases were new SS+. The sex ratio among new smear-positive cases was 1.9 (males to females).

Table 1 : Tuberculosis Notification in Rwanda, by category, from July 2011 to June 2012.

N (%)	Sputum Smear-positive TB (SS+)				Sputum Smear-negative TB (SS-)	Sputum Smear-not done (SS0)	Extra Pulmonary (EP)	Other	Total
	New	Relapse	Failure	Return after default					
Number of TB cases	3 576	252	108	27	642	274	1 242	242	6 352
% of total TB cases	56%	4%	2%	0.4%	10%	4%	19.6%	4%	

[1] 2012 World Health Organization TB Report.

The TB notification rate is a proxy of TB incidence rate. It is calculated by dividing the number of notified TB cases by the size of a specific population during a one year period. The notification rates were respectively 59% and 33% per 100,000 population for all forms and for new smear-positive pulmonary TB. For the 2010-2011 year, the above rates were respectively 72% and 39% per 100,000 population for all forms and for new smear-positive pulmonary TB.

From the WHO estimates, the TB detection rate, which is the proportion of registered TB cases among those expected for a specified time period, was estimated to be at 64% for 2011[2] (the WHO target is to detect ≥70%).

Table 2 : TB detection outcome indicators in Rwanda, from July 2011 to June 2012.

TB NSP detection outcome indicators	Baseline	2010-2011		2011-2012	
		Target	Result	Target	Result
Case notification rate of new smear positive TB cases (per 100.000 pop) [3] ***(PF outcome indicator 1)***	44	45	39	47*	33¶
Case notification rate of all TB cases (per 100.000 pop)	80	86	72	88*	59¶
Case detection rate of new smear-positive TB cases	4,183/15,270 **28%**	4,428/15,270 **29%**	3,962/15,270 **26%**	**31%***	**64%**β¶†

*: targets for December 2011, for new SS+. β: WHO estimates for 2011 calendar year ¶: results for July 2011-June 2012. †: for all-forms TB.

II.2.2. Tuberculosis treatment success rates

The main achievement in the fight against tuberculosis remained the sustained high treatment success rate for the new smear-positive patients (88%), which went over the target, due mainly to decrease in transferred out rate.

For multi-drug resistant Tuberculosis (MDR-TB), the treatment success rate was 88%.

[2] 2012 World Health Organization TB Report.
[3] Population estimated at 10 091 009 habitants.

Table 3 : TB treatment outcome indicators in Rwanda, from July 2011 to June 2012.

TB NSP treatment outcome indicators	Baseline	2010-2011		2011-2012	
		Target	Result	Target	Result
Treatment success rate of new smear-positive TB cases ***(PF outcome indicator 2)***	3584/4140 (86,6%) Cohort 2008	3630/ 4183 (86,8%) Cohort 2009	3,379 / 3,940 (86%) Cohort From July 2009 to June 2010	87%	3 501 / 3 962 (88%) Cohort From July 2010 to June 2011
Treatment success rate among MDR-TB cases ***(PF outcome indicator 3)***	73/84 (87%) cohort 2007	66/75 (88%) cohort 2008	57/64 (89%) Cohort From July 2008 to June 2009 (confirmed and not confirmed cases)	88%	73/83 (88%) Cohort From July 2009 to June 2010 (confirmed and not confirmed cases)

These results are detailed in SDA 1.1.d and SDA 2.2.c.

III. TB NSP RESULTS INDICATORS BY OBJECTIVE AND SERVICE DELIVERY AREA (SDA)

III.1. Objective 1: Pursue high quality DOTS expansion and enhancement

III.1.1. SDA 1.1. Improving TB diagnosis and high quality DOTS

III.1.1.1. Fluorescence microscopy diagnosis (FM)

The TB NSP includes the progressive extension of fluorescence microscopy to 50 CDTs, mainly district hospitals. 25 LED microscopes arrived in country and were distributed to Health Facilities in June 2012. The procurement process of remaining 25 LED microscopes is in progress. So that, by end of June 2012 only 9 CDTs were routinely performing fluorescence microscopy among which 7 DHs, 1 reference Hospital and 2 health centers with high workload in Kigali area. They examined 15 160 TB suspects out of all TB suspects detected countrywide during year 2.

Table 4 : Numbers and percentages of TB suspects examined through Fluorescence microscopy in Rwanda, from July 2011 to June 2012.

CDT	Jul-Sep 2011	Oct-Dec 2011	Jan-Mar 2012	Apr-Jun 2012	Total
Ruhengeri DH	671	983	613	818	3 085
Kabgayi DH	307	348	556	484	1 695
Kabutare DH	130	301	195	232	858
Nyagatare DH	600	1 413	628	760	3 401
Gisenyi DH	598	781	801	501	2 681
Nyamata DH	98	100	112	90	400
CHUK	227	186	209	220	842
Biryogo HC	471	292	193	173	1 129
Kicukiro HC	183	246	396	244	1 069
Total examined with FM	3 285	4 650	3 703	3 522	15 160
Total Nb of TB suspects	38 576	41 429	43 529	44 542	168 076
% examined with FM	9%	11%	9%	8%	9%

During the 2011-2012 FY, 9% of all TB suspect examined with FM which is lower than the target but is explained by the limited FM capacity due to the delayed procurement procedures.

III.1.1.2. Quality assurance of microscopy

The laboratory network in 2011-2012 included 194 health facilities carrying out TB microscopy diagnosis (CDT). According to NRL quality assurance policy, all CDT must have quarterly quality control through the re-reading of a sample of smears. Quality control is organized at 2 levels: firstly district hospitals (DH) perform quality control CDT-HCs of their catchment areas. At the second level, the National Referral Laboratory (NRL) performs quality control for all hospitals and CDT using fluorescence microscopy. NRL is also the second controller for all discordant smears detected countrywide.

Table 5 : TB Microscopy quality control carried out in Rwanda, from July 2011 to June 2012.

Type of CDT	Nb CDT controlled	Nb and type of slides controlled				Errors detected					Nb CDT with major errors†
		Total	Pos	Rares	Neg	HFP	LFP	HFN	LFN	QE	
DH	36/36 (100%)	2755	311	59	2385	4	1	4	4	0	8
CDT-HC	136/149 (91%)	8 715	617	60	8038	2	0	2	2	3	4
FM	9/9 (100%)	662	85	12	565	0	3	4	0	0	4
Total	181/194 (93%)	12 132	1 013	131	10 988	6	4	10	6	3	16

HFP: high false positive. LFP: low false positive. HFN: high false negative. LFN: low false negative.
QE: quantification error. †: cumulatively during the whole year. FM: Fluorescence (CDTs with-).

During the Y2 of the SSF-TB project, 93% of all CDT had regular quality control, meaning that the 89% target was achieved. In total 12 132 smears were checked.

III.1.1.3. Detection of new smear-positive TB cases

The number of TB suspects increased by 20% as compared to Y1, as a result of continuation of active strategies, among others the inclusion of TB indicators in the PBF of health facilities and community health workers strong involvement. However, the positivity rate decreased to 2% of all TB suspects examined against a target of 4%. This is in accordance with the current decrease in TB notification in Rwanda, and highlights the need of revising current notification targets in general population and focussing more on high risk groups of TB.

44% of all TB suspects were brought by CHWs. The later contributed up to 25% of all SS+ TB cases.

Table 6 : TB detection and contribution of each level in Rwanda, from July 2011 to June 2012.

	CDT	CT	CHWs	THs	Total
Nbr of TB Suspects	51 375	42 137	73 542	1 006	168 076
Nbr of AFB+ suspects	2 021	888	984	20	3 910
Positivity rate	4%	2%	1%	2%	2%
Contribution of each level (CDT, CT, CHWs and THs) in TB suspicion	31%	25%	44%	0.6%	
Contribution of each level (CDT, CT, CHWs and THs) in TB positivity	52%	23%	25%	0.5%	

Table 7 : TB detection indicators in Rwanda, from July 2011 to June 2012.

NSP result indicators related to TB diagnosis	**Baseline**	**2010-2011**		**2011-2012**	
		Target	**Result**	**Target**	**Result**
Percentage of TB suspects benefiting from a smear examination through fluorescent microscopy.	6%	20%	10%	30% (January to Dec 2011)	9%
Number and percentage of laboratories performing regular quality assurance (at least 3 times per year) for microscopy (ZN and Fluorescence). (***PF result indicator 1)***	150/191 (79%)	159 / 194 (82%) (January to Dec 2010)	152 /194 (78%)	161/194 (83%) (January to Dec 2011)	181/194 (93%)
Percentage of laboratories showing adequate performance (no major error) among those that received EQA for smear microscopy	92%	93%	93%	94% (January to Dec 2011)	98%
Number of new sputum smear-positive cases detected among all TB suspects examined with microscopy. (***PF indicator 2)***	4 183/68 172	4 428 NS+ out of 88 051 TB suspects	3 962 /134 536	4 885 out of 132 319 TB suspects (4%)	3 910 out of 168 076 TB suspects (2%)

The number of new smear-positive cases detected reached 89% of the target, while the number of TB suspects largely exceeded the target (147%).

III.1.1.4. Treatment outcomes for Tuberculosis cases

The analysis of treatment results was done for the cohort of TB patients registered from 01 July 2010 to 30 June 2011.

A total of 3 962 new smear-positive cases were evaluated, out of which 3 278 were treated successfully. This represents **88.4%** as treatment success for new SS+, against a target of 87%. It represents also a progress of 2.9% as compared to the Y1 results, due to decrease in transferred out and lost to follow up. The cure rate (83%) reached the target as well (80%).

For new sputum smear (SS) negative (SS-), SS not done (SS0) and extra-pulmonary TB (EPTB) forms together, the treatment success rate was **74%**, due to increased rates of deaths and transferred out. This highlights the need of evaluating reasons behind and providing more efforts in order to overcome the problem.

Table 8 : TB Treatment outcomes. New SS+ and new SS-/0/EP TB cases enrolled in Rwanda from July 2010 to June 2011.

TB treatment Outcome	New SS+			New SS-/0/EP		
	Number	%	TSR	Number	%	TSR
Nb registered	3 962					
Cured	3 278	83%	**88.4%**	NA	NA	**74%**
Complete treatment	223	5.4%		1503	74%	
Failure	157	4.0%		4	0%	
Death	196	4.9%		332	16%	
Lost to follow up	73	2%		44	2%	
Transferred	26	0.7%		117	6%	
Not evaluated	8	0.2%		24	1%	

TSR: Treatment success rate. SS: sputum smear. SS+: SS positive. SS-: SS negative. SS0: SS not done. EPTB: extra-pulmonary TB.

Table 9 : TB Treatment outcomes. New smear-positive TB cases enrolled in Rwanda from July 2010 to June 2011.

NSP result indicator on Cure rate	Baseline Cohort 2008	2010-2011		2011-2012	
		Target Cohort 2009	Result Cohort July 09-June 10	Target Cohort 2010	Result Cohort July10-June 11
5.Number and % of New SS+TB cases who were cured.	3266/ 4140 (78.9%)	3 325/4 183 (79.5%)	3 032 / 3940 (**77%**)	3 542/4 428 (80%)	3 278/3 962 (**83%**)

Table 10 : TB Treatment outcomes. Retreatment TB cases enrolled in Rwanda from July 2010 to June 2011.

TB treatment Outcome	Relapses		Return after default		Failures		All Retreatment cases	
	N	%	N	%	N	%	N	%
Nb registered	263		38		141		442	
Cured	168	64%	20	53%	110	78%	298	67%
Complete treatment	32	12%	5	13%	7	5%	44	10%
Failure	17	6%	0	0%	10	7%	27	6%
Deaths	32	12%	5	13%	6	4%	43	10%
Lost to follow up	9	3%	7	18%	1	1%	17	4%
Transferred	4	2%	1	3%	3	2%	8	2%
No evaluated	1	0%	0	0%	4	3%	5	1%
Treatment success rate		**76%**		**66%**		**83%**		**77%**

For TB retreatment cases, the treatment success rate was **77%**, due to a high death rate (as compared to new SS+) mainly among relapse cases, and to a high failure rate mainly among failure and relapse cases.

III.1.2. SDA 1.2. Patients' support

Nutritional support is provided to MDR-TB patients. They receive monthly food basket and transportation fees to take daily DOT at the health facility for the whole duration of the second-line treatment.

Table 11 : Number of MDR-TB patients beneficiating from nutritional support in Rwanda, during July 2011 to June 2012.

NSP result indicator on patient support	Baseline	2010-2011		2011-2012		Comments
		Target	Result	Target	Result	
6.Number & % of MDR-TB cases on Cat IV benefiting from nutritional support	77 (2009)	161 (100%)	145	206 (100%)	138 (67%)	82 New MDR TB patients started treatment in Y1

The total number of MDR-TB patients on treatment, either hospitalized or as outpatients, was 138 at the end of June 2012.

III.1.3. SDA 1.3. First line drug management

No CDTs reported interruption to treatments as a consequence of stock out of drugs.

Table 12 : Number of CDTs experiencing stock out in first line TB medicines in Rwanda, during July 2011 to June 2012.

NSP result indicator on first line drug management	Baseline	Y1 Targets	Y1 Results	Y2 Target	Y2 Result
7. Number & % of CDT which reported a stock out in first line drugs during the reporting period out of all CDT. (***PF indicator 4)***	NA	10 / 194 (5%) max	0 CDT had drug stock out	10 / 194 (5%) max	0 CDT had drug stock out

III.1.4. SDA 1.4.1. Monitoring and evaluation

III.1.4.1. Implementation of the National Tuberculosis Prevalence Survey

The national TB prevalence survey started during the 2011-12 FY. By the end of June 2012, field operations were conducted in 24 out of 73 clusters (33%). Participation rate is 95% (14 276/14 991) until now, which is in accordance with our sampling, and no major challenge was observed.

Data management is on track with the field data being collected with the data for 24/24 clusters entered. The chest X ray images are sent to central archive for radiologist reading. Sputum samples are sent to National Reference laboratory as well, for microscopy and culture.

The TB & ORD Division received one monitoring mission by Dr Evelyn Klinkenberg a senior epidemiologist from KNCV-Netherlands, with the aim of monitoring if ongoing field data collection both at cluster and central level are well. The three mains recommendations from that mission were: Ensure sputum collection space is private space if this is not feasible in some sites provide a structure; Link quality assurance (QA) result from central laboratory and field laboratory to have QA overview; Organize QA for HIV counselling.

Table 13 : Summary data on the process of implementation of the TB prevalence survey by end June 2012.

CENSUS TAKING	**Number**
Total population of the cluster	28 786
Number of household	6 262
Non eligible person	1 002
Eligible person	14 991
Enrolled person	14 611
Person age less done 15 years old	12 383
Absentee (those who were eligible but absent during the census after 3 tentative)	198
REGISTRATION	
Consented person	14 613
Refused person	68
Absentee	311
Absentee(those who were enrolled but didn't attend the central site of survey)	109
INTERVIEW	
SES questionnaires conducted (number and proportion of households listed)	6 260
Screening questionnaires conducted	14 276
Risk factor conducted	364
Questionnaire for participant eligible for sputum	1 775
Questionnaire for TB cases detected in NTP	64
Participants with positive screening symptom	1 064
participation rate	95,2%
CHEST X RAY	
Participants taken chest x-ray	**14 253**
Participants with abnormal chest x-ray suggestive for TB	918
SPUTUM	
Participants eligible for sputum collection	1 775
Participants with two sputum samples collected	1 644
Number of two sputum sample sent at NRL	2 159
HIV	
Participants tested for HIV	1 598
Participants who refused HIV testing	142
Participants with a positive HIV test	12
Participants who known his positive HIV status	43

Photo 1 : Truck with incorporated radiologic equipments, used during the TB prevalence survey in Rwanda.

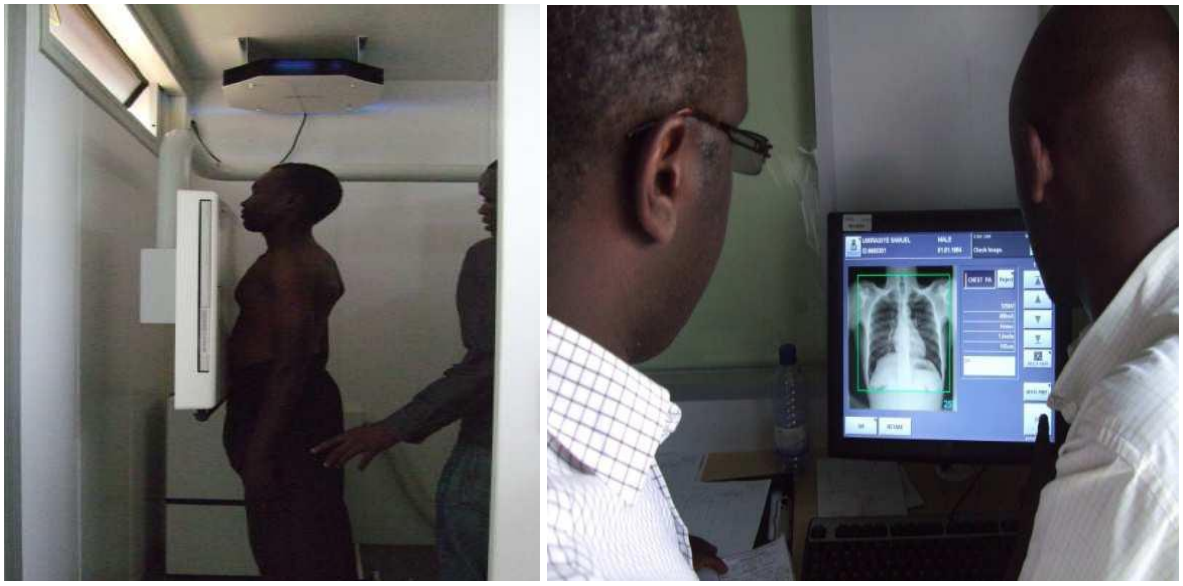


Photo 2 : A man of a village surveyed, is being positioned to take his chest X-ray picture (Right) and the picture is interpreted (Left).

III.1.4.2. Routine monitoring and evaluation activities

a) Workshop (Atelier) with M&E Officers and Supervisors of TB control activities at District Hospitals.

Two sessions held in Huye District, with M&E Officers and Supervisors of TB control activities at District Hospitals of all provinces. In total 86 participants attended. During those workshops, we aimed at discussing the below objectives: To refresher on main objectives of the national strategic control plan; Identifier current strengths and weaknesses in its implementation, and ways to solve them, as highlighted by the TB program evaluations (NSP and NSA mid-term review); Introducing them to the TB monitoring and evaluation procedures manual.

b) Workshop to strengthen M&E capacity of local NGOs and sub-recipients

The implementation of the SSF-TB project activities involves sub-recipients from local public institutions and local NGOs. Those are women association, youth council, association of PLHIV and five NGOs working with CHWs cooperatives. During the 2011-12 FY, a workshop held in Rubavu District, to build and/or strengthen their capacity in monitoring and evaluation of TB control activities. 50 M&E officers from those institutions attended the workshop.

Specific objectives were to evaluate and discuss their achievements one year after the beginning of the SSF-TB project and the level of support they provide and their budget execution as well. Important recommendations that came up from the workshop were among others: NGOs should support more CHWs cooperatives to develop their business plans, and work with DHs steering committee to establish meetings programs; And NGOs staff should systematically participate in quarterly evaluation meetings organized by the TB & ORD Division;

c) Retreat of TB & ORD Division Staff and partners

This held in La Palisse Gashora-Bugesera District in March 2012. Participants were TB & ORCD Division staff, MOH partners involved in TB control activities like CAAC, CHD, NRL; and international partners like WHO and CDC. Key Issues discussed were among others those related to TB and MDR-TB notification. Outcomes from the retreat were: Challenges related to notification of TB and MDR-TB were identified as well as the current threats to TB control activities. It was highlighted that notification rates are decreasing instead of increasing, as

planned in the NSP and NSA. Currently, it is not known to what factor this can be attributed: to real decrease of TB cases in General population or to poor performance of TB detection services? It has been agreed on to discuss again these points in deep during the mid-term evaluations of the NSP. In mid time, it has been advised to continue current detection services, with more focus on high risk groups by using active case finding strategies that have been experienced in some districts.

d) Development of the TB &ORD M&E Procedures Manual

Three sessions held to develop the TB &ORD M&E Procedures Manual. Partners like NRL, CAAC, SPIU, CDC, and ICAP were also present. Procedures were developed on use of TB tools, TB supervisions, TB quarterly evaluation meetings, TB activities reporting and feedback. The final version of the mentioned document is available for printing. Trainings are planned for people concerned by those SOPs.

e) Quarterly evaluation meetings

Quarterly evaluation meetings were organized by all DHs and supported technically and financially by the TB & ORD Division. These meetings gather the M&E officers from the district hospitals, the TB & ORD Division District coordinator and the TB nurses from the CDTs and CTs. They exchanged data on transferred cases, compiled the quarterly report and analysed their results against the targets. CDTs submitted their reports at the end of the meeting. Districts submit their compiled report to the central level through the TB & ORD Division District coordinators. As a result, all reports were received on time at central level **(indicator 8)**.

f) Routine TB data quality audit (RDQA)

The central level M&E staff conducted data quality audit visits to 50 health facilities, selected purposively from all provinces, to check concordance between health facilities (CDTs) reports and data in source documents, using a standardized DQA tool targeting the most essential data as the number of cases notified, number of cases successfully treated, number of smear-positive suspects referred by the community health workers, number of HIV positive cases, etc. Out of the 50 CDT audited, 43 had adequate performance.

Table 14 : Number of CDTs with timely reports and adequate performance of data in Rwanda, during July 2011 to June 2012.

NSP result indicators on M&E	Baseline	2010-2011		2011-2012	
		Y2 Target	Y2 Result	Y2 Target	Y2 Result
8. Number & % of CDT submitting timely their reports in line with national guidelines	NA	155/194 (80%)	194/194 (100%)	165/194 (85%)	194/194 (100%)
9. CDT showing adequate performance on routine data quality audit (RDQA)	NA	43/50 (85%)	25/33 (76%)	44/50 (88%)	43/50 (86%)

III.1.4.3. SDA 1.4.2. Supervisions

According to the plan, TB coordinators have to supervise quarterly all TB activities in the 30 administrative districts, including hospitals and a number of CDTs and CTs.

Table 15 : Supervisions carried out TB coordinators in Rwanda during July 2011-June 2012

NSP indicator on supervision	Baseline	2010-2011		2011-2012	
		Target	Result	Target	Result
13. Number and percentage of quarterly supervision visits from TB coordinators to districts with documented feedback (numerator) of all planned visits (denominator). (***PF indicator 5)***	107/120 (90%)	108/120 (90%)	118/120 (98%)	114/120 (95%)	96/120 (80%)

During Y2, Of 120 supervisions visits planned for all districts (one visit by quarter and by district), 98 (80%) were executed. Those formative supervisions visits were aimed at discussing with district hospitals problems that hamper the TB control, mainly TB detection and notification and management, especially respect of TB diagnosis and treatment guidelines, tracing of transferred out, verify if sputum cultures are done for all MDR-TB high risk groups, etc. Generally TB guidelines are well followed; however there is need to improve the quality of TB suspicion by consultation services.

For the same period, NRL staff carried out integrated supervision to 175 laboratories, including 43 visits to the 43 Hospitals.

III.1.4.4. SDA 1.4.3. Human resources development

a. Recruitment

During the Y2 period, many staffs were recruited to fulfil posts planned in the TB NSP. They are the Focal point of PAL activities, the Focal point of community DOT, the pharmacist, the IT officer, the TB data analyst at PBF desk and the Administrative assistant to Head of TB & ORD Division.

b. Trainings

These trainings sessions were conducted with technical support from the TB District coordinators and TB & ORD staff specialist of each area of activities. Trainees were trained on topics like TB and MDR-TB screening, TB and MDR-TB diagnosis, TB and MDR-TB treatment, TB and HIV collaborative activities, TB infection control and monitoring and evaluation of TB control activities. A group of medical doctors was trained on chest x-ray reading as well. As during previous years, this X-ray training was conduct in collaboration with an international consultant to conduct a specialized training on chest X-ray reading for medical doctors.

Table 16 : Number of medical personnel trained on TB in Rwanda during July 2011 to June 2012

Categories of staff trained	Jul11-Sep12	Oct 11-dec 12	Janv11-Mar12	Apr12-June12	Total
Nurses	96	658	96	406	1256
Private clinics' health providers	0	50	0	0	50
Medical doctors	0	66	33	100	199
TB focal points & M&E staff from DH	450	0	0	83	533
TOTAL (Indicator 15)	**546**	**774**	**129**	**589**	**2038**
MDR-TB training (Indicator 16)	**0**	**31**	**33**	**49**	113

Table 17 : Number of medical personnel trained on TB in Rwanda during July 2011 to June 2012

NSP indicator on HR training	Baseline	2010-2011		2011-2012	
		Target	Result	Target	Result
15. Number of medical personnel trained (and retrained) in DOTS. (***PF indicator 6)***	473	426 x 2	1 599	853	2 038
16. Number of health workers trained on management and care of MDR-TB patients	92	100	94	100	113

III.2. Objective 2: Address TB-HIV, MDR-TB, and other challenges

III.2.1. SDA 2.1. Improving TB-HIV integration and management

This component is one of the most successful: **98%** of all TB patients registered from July 2011 to June 2012 were tested for HIV (PF indicator 7). The prevalence of HIV was **28%** and **97**% of all co-infected cases received Cotrimoxazole preventive treatment.

Table 18 : Detection of HIV among all TB patients registered in Rwanda from July 2011 to June 2012.

Registered	Tested	HIV+	CPT	% tested	% HIV+	% CTX
6 352	6 201	1 742	1 695	98%	28%	97%

The proportion of TB/HIV patients on antiretroviral therapy (ART) by the end of TB treatment was **70%** (1480/2119) for the cohort of patients (all forms) registered from July 2010 to June 2011 (PF indicator 8).

HIV test is also routinely done for TB suspects: **99%** of those with unknown HIV status were tested and **2.4%** were HIV infected.

Table 19 : Detection of HIV among all TB suspects registered in Rwanda from July 2011 to June 2012.

Total Nb of TB suspects	PLHIV	Unknown HIV status		
		Nb	Nb Tested	HIV+
167 806	11 754	156 155	154 408	15 589
	7%		99%	2.4%

Most CDTs follow the “one-Stop TB-HIV” model, i.e. the TB nurse gives counseling and takes the blood sample for HIV test for all TB patients. When the result is positive, the TB nurse is also responsible for providing more counseling, registering the patient at the HIV clinic, drawing blood for CD4 count, initiating CPT and ART according to the norms of the program.

Targets related to TB-HIV detection and management were fully met.

Table 20 : TB/HIV indicators in Rwanda from July 2011 to June 2012.

NSP indicators on TB-HIV	Baseline	2010-2011		2011-2012	
		Target	Result	Target	Result
17. Number & % of TB patients (all forms) tested for HIV of all TB patients (all forms) registered (***PF indicator 7)***	7448/7664 (97%)	8148/ 8400 (97%)	7044/7230 (97.3%)	8555/8820 (97%)	6201/6352 (98%)
18. Number & % of TB/HIV patients receiving Cotrimoxazole during TB treatment of all TB/HIV patients	2329/2529 (92%)	2604/ 2770 (94%)	2048/2100 (98%)	2763/2909 (95%)	1695/1742 (97%)
19. Number & % of TB/HIV patients receiving ART by the end of TB treatment out of all TB/HIV patients. (***PF indicator 8)***	1534/ 2560 (60%) Cohort 2008	1644/ 2529 (65%) Cohort 2009	1482 / 2221 (68%) Cohort July 09-June 2010	1884/2770 (68%)	**1480/2119 (70%)** Cohort July 10-June 2011
20. Number & % of TB suspects tested for HIV among all suspects with unknown HIV status	63%	65%	96%	75%	99%
21. Number (%) of CDT with a functional "one-stop TB-HIV" service out of all CDT.	75%	80%	176/194 (90%)	85%	176/194 (90%)

III.2.2. SDA 2.2. MDR-TB detection and management

III.2.1.1. MDR-TB diagnosis

From July 2011 to June 2012, the NRL performed 999 tests to diagnose MDR-TB. 157 were by drug susceptibility tests (DST) and 842 by rapid test (Hain test[4]).

III.2.1.2. Enrollment on second line treatment

From July 2011 to June 2012, 88 patients were enrolled for second line treatment including 82 confirmed patients and 6 empiric cases. 43 patients initiated treatment at Kabutare MDR-TB Unit, 30 at Kibagabaga MDR-TB Unit and 15 at Kibungo MDR-TB Unit.

[4] Genotype® MTBDR*plus*

Table 21 : Enrollment on MDR-TB treatment in Rwanda during July 2011 to June 2012

	Nb of MDR-TB patients enrolled			Site of treatment initiation			
	Confirmed	Empiric	Total	Kabutare	Kibaga-baga	Kibungo	Other site
Q1(Jul-Sept 2011)	30	5	35	19	9	7	0
Q2(Oct-dec 2011)	20	0	20	10	4	6	0
Q3(Jan- Mar 2012	8	1	9	4	3	2	0
Q2 (Apr-Ju ne 12-	24	0	24	10	14	0	0
Total	**82**	**6**	**88**	**43**	**30**	**15**	**0**

III.2.1.3. MDR-TB treatment follow-up and outcomes

The proportion of patients who had negative smear and culture by the end of the sixth month of treatment is indicative of the efficacy of the treatment and of the program performance. This preliminary evaluation is done quarterly for the cohort of patients enrolled in the last 9 to 12 months, due to the long delay for receiving culture results (at least 8 weeks). It was established in the Performance Framework to report this indicator by the end of year 1 only for the patients enrolled in the first quarter 2010.

Table 22 : Culture conversion at the 6th month of treatment, for confirmed MDR-TB patients enrolled in Rwanda from July 2011 to September 2011.

Nb of patients registered	Negative smear and culture	$\geq$ 1 positive smear and/or culture	smear and/or culture not done	Contaminated culture	Deaths	Not evaluated (return to fist-line)
31	27	0	0	3	1	0
	87%	0%	0%	10%	3%	0%

One started MDR-TB treatment course as an empiric case, but has been confirmed later. Out of the 31 confirmed patients enrolled, 1 died before 6 months and 27 had both negative culture and smear, which is 87% (27/31) and exceeded the target, one was contaminated.

Table 23 : Treatment outcomes for MDR-TB patients enrolled in Rwanda from July 2009 to June 2010 (confirmed and not confirmed).

	Nb registered	Cured	Complete treatment	Failure	Dead	Lost to follow up	Not evaluated	Still on treatment
Q1 (Jul09-Sep09	20	11	7	1	2	0	0	0
Q2 (Oct09-Dec09	19	7	9	0	1			1
Q3 (Jan10-Mar10)	25	14	9	0	2	0	0	0
Q4 (Apr10-Jun10	19	10	6	0	3	0	0	0
Total	83	42	31	1	8	0	0	1
%		51%	37%	1%	10%	0	0	1%

83 MDR-TB patients started second-line TB treatment from July 2009 to June 2010. 73 (88%) completed the treatment successfully, 4 (10%) died. One patient could not be evaluated because he was returned to first-line treatment. The treatment success rate was 88% which exceeded the 80% target and highlights the efficacy of the treatment regimen and good adherence of patients treated at decentralised level.

Table 24 : MDR-TB related indicators Rwanda during July 2011 to June 2012.

NSP indicators related to MDR-TB	**Baseline**	**2010-2011**		**2011-2012**	
		Targets	**Results**	**Targets**	**Results**
22. Number of DST done (1st line DST)	247	430	771	610	999‡
23. Number (%) of MDRTB (bacteriologic ally confirmed) detected of WHO estimate* (denominator) per year '*Global report 2007	79/1818 (4.3%)	161/1818 (8.9%)	71/1818 (3.9%)	206/1818 (11.3%)	82/1818 (5%)
24. Number of MDR-TB patients enrolled for 2nd line treatment. (**PF indicator 9)**	77	161	73	101	88
25. Smear conversion rate of confirmed MDR-TB cases at 6 months (Nb and % with negative smear and culture at month 6). (**PF indicator 10)**	7/10 (70%) Cohort Q1 2009	20/26 (75%) Cohort Q1 2010	14/18 (78%) Cohort Q1 2010	80%	27/31 (87%)

‡: this includes DST tests and Hain tests.

III.2.3. SDA 2.3.1 High-risk groups

III.2.2.1. TB and Prisons

Prisons constitute a challenge because the risk of transmission is potentially high and the proportion of HIV infected inmates is also higher than in the general population. The clinical screening is routinely done for the majority of new prisoners upon entry. It includes the screening of TB based on symptoms and sputum examination for those who have TB signs (TB suspects). All smear-positive cases must have a culture and DST in order to quickly identify any possible MDR-TB case.

Table 25. Notification of Tuberculosis in prisons in Rwanda during July 2011-June 2012

Quarter	New SS+	Relapses	Failures	RAD	SS-	SS_0	EP	Others	Total
Q1	28	2	1	1	4	1	5	7	49
Q2	26	3	3	0	7	0	8	3	50
Q3	26	3	1	0	7	0	2	3	42
Q4	32	1	0	1	9	0	9	2	54
TOTAL	112	9	5	2	27	1	24	15	195

Table 26: Treatment outcomes for New SS+ patients registered in prisons in Rwanda from July 10 to June 11.

	Nb registered	Cured	Complete treatment	Failure	Dead	Lost to follow up	Transfer	Success rate by cat
NTPM+	101	91	3	1	6	0	0	**93%**
TPM-,TPM0, EP	45	11	26	0	7	1	0	**82%**
Retrait	11	8	1	0	1	1	0	**82%**
Other	3	1	1	0	1	0	0	**67%**
Total	160	111	31	1	15	2	0	**89%**
		69%	19%	1%	9%	1%	0	

The treatment success rate for new smear-positive patients treated in prisons was **93%**.

Table 27 : Indicators related to Tuberculosis in prisons in Rwanda during July 2011 to June 2012.

NSP indicators related to TB in prisons	Baseline	2010-2011		2011-2012	
		Targets	Results	Targets	Results
26. Number of new SS+ TB cases detected in prisons. (***PF indicator 11)***	144	150	136	83	112
27. Treatment success rate of new SS+ TB cases registered in prisons	86%	>85%	93%	>85%	93%

III.2.4. SDA 2.3.2 Infection control (IC)

Infection control component aims at reducing the transmission of TB within the health facilities through 3 categories of measures, by priority order: administrative measures, environmental measures and respiratory protection. The NSP includes all these interventions. The TB program defined a minimum package of administrative measures which are summarized below.

Table 28. Basic package of infection control measures for health facilities in Rwanda.

1. To have an infection control plan and an IC focal point (or team)
2. To have trained or retrained the health facility staff on IC during the last 12 months
3. To perform "triage" of people with cough in the waiting areas (consultations, ARV clinic) and wards
4. To carry regular IEC sessions on TB and cough hygiene in the waiting areas
5. The TB infectious patients who need to be admitted are put in a separate room.
6. Windows and doors are kept opened in the TB and ARV clinics as well as in OPDs and wards

By June 2012, 170 out of 194 CDTs (87,6%) applied all six measures**.**

Table 29 : Indicators related to Tuberculosis infection control in Rwanda during July 2011 to June 2012.

NSP indicator related to infection control	Baseline	2010-2011		2011-2012	
		Target	Result	Target	Result
28.Number and percentage of CDTs meeting minimum infection control requirements (numerator) of all CDTs (denominator). (**PF indicator 12)**	NA	116/194 60%	125/194 64%	155/194 (80%)	170/194 (87.6%)

III.3. Objective 3: Strengthen the health system

III.3.1. SDA 3.1. Performance based financing (PBF)

The PBF implementation is done by the PBF desk of the Health Financing Unit of the Ministry of Health. During the Y2 of the SSF-TB project, the following activities have been conducted:

III.3.1.1. Capacity reinforcement of CAAC and other actors in PBF

- A Data Analyst was recruited to regularly analyze TB data related to PBF;
- A workshop has been organized to discuss on the PBF TB indicators evolution grid. This activity grouped PBF supervisors based at DH, TB Focal points from Health Centers & District Hospitals and PBF supervisors from Central level/MoH ;
- It has also been organized a workshop on dissemination of PBF TB data analysis results and review of PBF evaluation tools.

III.3.1.2. For monitoring and Evaluation of PBF activities:

- Quarterly analysis of reports from PBF District Steering Committees ;
- All District Hospitals have been assessed once per semester by peer evaluators and central level evaluators ;
- All Health centers have been evaluated monthly for quantity indicators and quarterly for quality indicators;
- PBF District Steering Committees have been evaluated quarterly according to their terms of references ;
- PBF TB indicators have been evaluated quarterly by central level and peer evaluators.

PF indicator 13 was established to monitor the PBF impact on targets' achievement by the health facilities. For the Y2 of the SSF-TB project, the indicator on "number and Percentage of health facilities that received PBF for reaching targets for at least 50% of their indicators" achieved the target, 98.6%.

PF indicator 13 related to PBF	Baseline	Baseline March 11	2010-2011		2011-2012	
			Target	Result	Target	Result
30. Number & % of health facilities that received PBF for reaching targets for at least 50% of their indicators (***PF indicator 13)***	NA	86%	86%	Not yet available	432/480 (90%)	491/498 (98.6%)
33. Percentage of TB suspects detected among the general population	0.7%		0.9%	134 536 TB suspects / 10117029 pop (1.3%)	1.2%	168 076/ suspects / 10718379 pop (1.6%)

By the end of Year 2, the TB suspicion among the general population achieved the target (1.6% against 1.2%). As during the previous year, this could be more related to CHWs involvement and the PBF for both health facilities and CHW. For next years, activities in specific high risk group will be more encouraged.

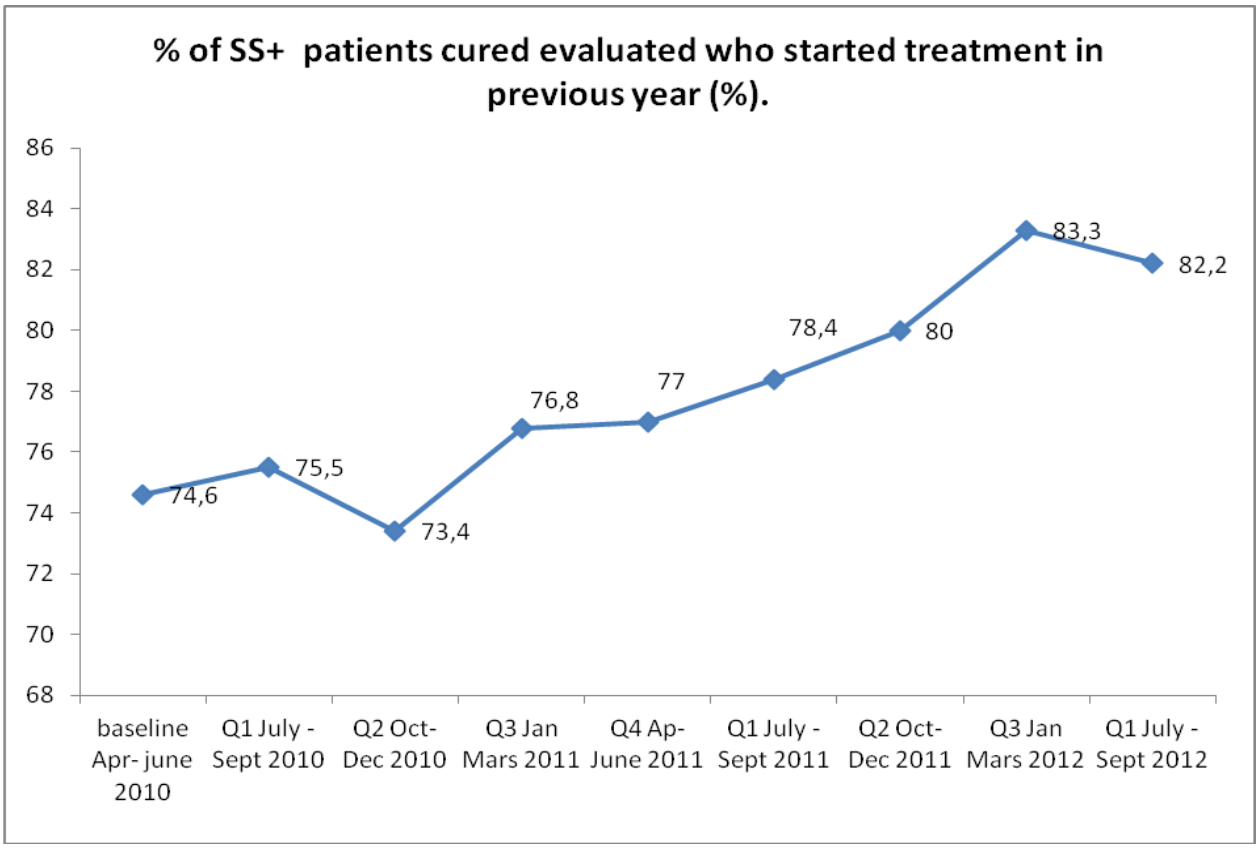
III.3.1.3. PBF sustainability

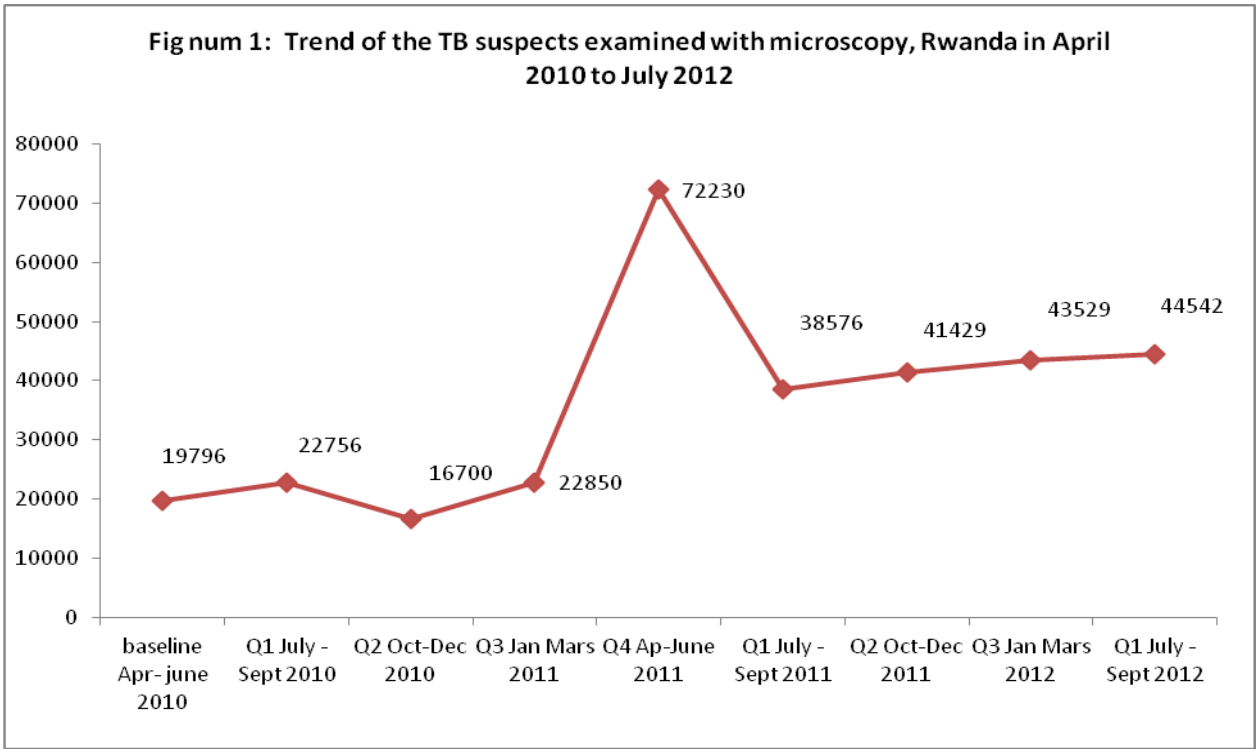
a. Clinical PBF

The key indicators for the program are the TB detection and the success rate of the treatment. Those two indicators are selected to demonstrate the impact of PBF which was effectively introduced in January to March 2011.

Treatment success rate (the proportion of those who were cured or completed therapy) for new smear-positive cases has increased from 58% in 2002, to 87.6% in 20114.

The broad mobilization of multidisciplinary implementers led communities to increase awareness and mobilization for fighting against TB. Considerable efforts and resources were dedicated to increase case-finding among the general population with participation of the civil society (essentially the Community Health workers, but also NGOs and other associations of vulnerable people). The number of people screened for TB was multiplied by a factor of 2.5 from 2010 to 2011. Screening of TB was reinforced among high risk groups especially contacts of TB cases, people infected with HIV and prisoners.





As a result of the above case-finding strategies, the number of TB suspects tested for TB through microscopy increased dramatically in 2011(April-June 2011) and largely exceeded targets.

Table 30 : Financial contributions to the Clinical Performances Based Financing Scheme

Clinical PBF					
Sources of funds	**Indicators**	**Total contributions for 2010-2011**		**Total contributions for 2011-2012**	
		Rwf	**%**	**Rwf**	**%**
OB	CPA (DH, SH, RH, SAMU)	5 834 293 163	68	5 879 083 688	57
	MPA	1 930 589 655		1 735 586 560	
	CP (Steering committees)	136 882 110		108 563 805	
Subtotal Ordinary Budget		**7 901 764 928**		**7 723 234 053**	
GF	HIV	1 836 852 422	20	3 321 876 140	34
	TB	436 789 860		1 289 038 751	
Subtotal GF Budget		**2 273 642 282**		**4 610 914 891**	
IH	HIV	158 136 495	12	143 640 143	10
FHI	HIV	268 835 107		275 605 396	
CDC/COAG	CPA and HIV	675 215 336		675 853 679	
EGPAF	HIV	246 244 193		233 584 325	
Subtotal US Gov Agencies		**1 348 431 131**		**1 328 683 543**	
GIZ		**68 033 995**	1	0	0
Total PBF Clinical Budget		**11 591 872 336**		**13 662 832 487**	
Total Population		**9 820 863**	**100%**	**10 091 009**	**100%**
GF contribution to PBF in US$/c/y		0,4		0,8	
GoR contribution to PBF in US$/c/y		1		1	

Sources: CAAC Annual reports 2010-2011 and 2011-2012

The Government of Rwanda is supporting the PBF model which is boosting the quality of services. But during the second year of the SSF, GTZ was no longer a grant provider of the PBF fund.

b. Community PBF

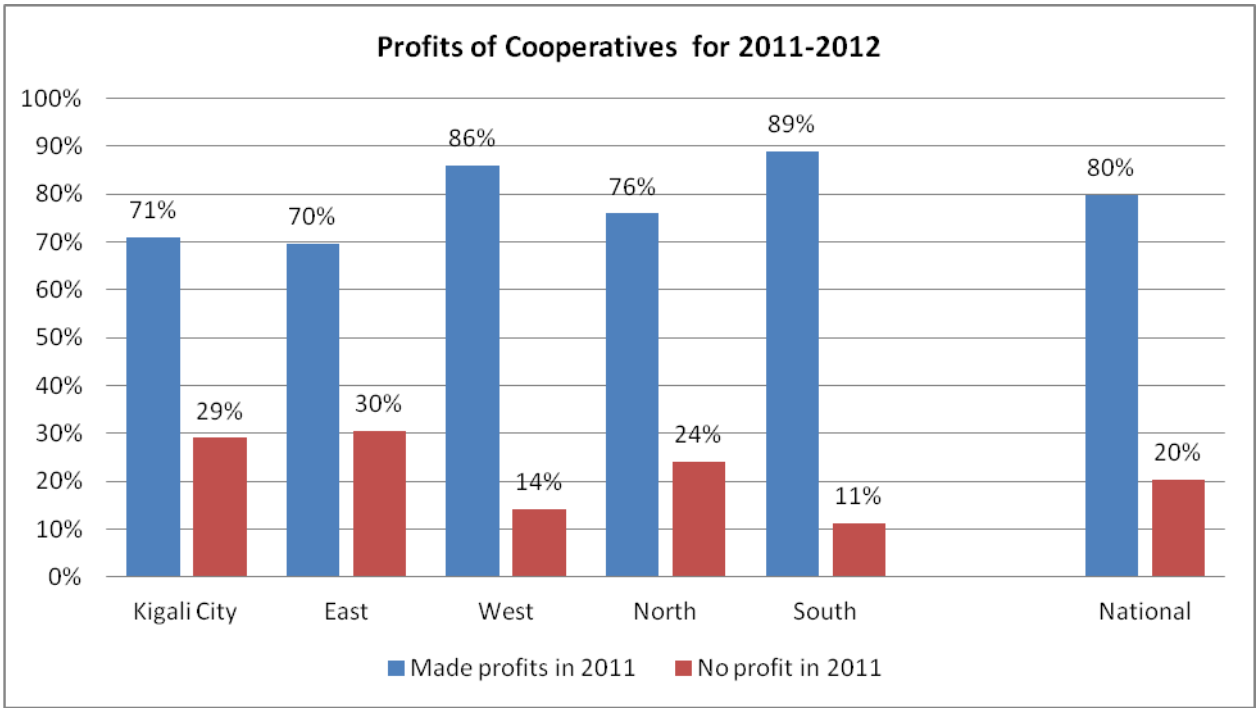
Currently, there exists **444 CHW's cooperatives** and **100%** of them are engaged in one of the economic activities below. Some of them are operating more than 1 economic activity so as to maximize profits.

CHW's cooperatives have ventured into various income generating projects that are majorly farming and these include:

- Cattle, Pig, Goat, Rabbit, Sheep rearing.
- Crop farming such as maize, beans, mushroom, fruit, cassava and wheat farming.
- Off-farm activities such as transport (motor cycles and commuter cars), rental properties where some cooperatives own commercial and residential houses for rent.

- Sale of building materials such as bricks and tiles.

The figure below shows the profitability of CHW's cooperatives for the year 2011-2012.



c. Key elements on Sustainability of CHW's Cooperatives:

- Skills provided by The NGO's which were recruited to provide technical support to cooperatives in terms of market research, business planning and financial management among others.
- Government contribution: Ongoing government support in terms of training and refresher trainings, study visits, field supervisions, provision of legal registration certificates by the Rwanda Cooperatives Agency, financial and operational audits, business advice from the Rwanda Development Board.
- Formation of cooperative unions and federations for advocacy and better bargaining power on the market.
- Furthermore, the introduction of a web based financial reporting tool will also enable MOH to make follow up on financial operations.

III.3.2. SDA 3.2. Practical Approach to Lung Health

For development and implementation of Practical Approach to Lung Health (PAL) activities, the following steps have been achieved during the year 2 of the SSF-TB project:

III.3.2.1. Elaboration of PAL guidelines

At the level of TB&ORD Division, two drafts of PAL module have been developed, one for health centers and the other one for district hospitals.

A first PAL workshop has been organized. For this workshop held since May the 12th 2012 for lasting four days at Musanze. Participants came from different Institutions (Central and decentralized level, partners and institutions including academic one). They were chosen to be members of National working Group on (PAL). During that workshop, draft of guidelines pre-elaborated within TB&ORD Division have been reviewed for additions and corrections prior their use while training health providers practicing in health facilities leading to improvement of management of respiratory diseases.

III.3.2.2. Trainings on PAL

After the first PAL workshop, corrections and additions have been done accordingly and trainings have been organized with the following objectives:

- be able to provide adequate care, using standard guidelines for the diagnosis and treatment of patients with respiratory symptoms attending Health Center/DH services;
- be familiar with the system for collecting and reporting essential data for monitoring and evaluating PAL activities;
- be competent in interpreting the results of peak flow and spirometric measurements for the classification and follow-up of asthma and COPD;

For piloting, three sessions of trainings have been organized, two for health providers practicing at health centers and one for medical doctors practicing in District Hospitals.

III.3.2.3. Implementation of PAL activities in Health Facilities

21/43 (50%) CDTs-Hospitals have begun implementation of PAL activities, against a target of 21/43 (50%) of the target (**PF indicators 14)**. For CDTs-HCs, 23/151 (15.2%) have began implementation of PAL activities against a target of 26/194 (13%) (**PF indicators 15)**.

III.4. Objective 4: Engage all care providers from the public and private sectors

III.4.1. Traditional healers

Engaging traditional healers is a new activity that became possible with SSF-TB funding. It started during the last quarter of 2010. Health facilities were encouraged to prepare a list of traditional healers and to train them with the support of the TB coordinators.

Table 31 : Sensitization of traditional healers, on Tuberculosis, by the health facilities in Rwanda during July 2011-June 2012.

N0	Hospital	# of THs trained	N0	Hospital	# of THs trained
1	MIBIRIZI	420	9	KADUHA	510
2	KIBOGORA	310	10	KIGEME	304
3	RUBAVU	343	11	RUTONGO	313
4	KIRINDA	249	12	MUHORORO	173
5	MUGONERO	300	13	BYUMBA	548
6	KIBUYE	138	14	GAKOMA	225
7	REMERA RUK	790	15	SHYIRA	169
8	GITWE	433	16	BUTARO	103
TOTAL=5 328					

16 districts trained a total of 5 328 traditional healers. Trainings put emphasis on TB signs and symptoms which require the reference to the health centres.

III.4.2. Private Clinics

The 4 private clinics working as CDTs (performing TB microscopy) detected 50 new smear-positive TB cases, which is lower than the expected 60 new SS+ cases, but similar to other detection targets.

Table 32 : Detection of TB in the private clinics working as CDTs in Kigali-Rwanda, during July 2011-June 2012.

Clinic	NSS+	Relapses	Failures	RP	Sm-	Sm0	EP	Other	TOTAL
Carrefour	6	0	1	0	2	0	7	0	16
Lamedicale	40	1	0	1	14	0	11	0	67
Plateau	4	0	0	0	1	0	0	0	5
Triade	0	1	0	0	0	0	0	0	1
TOTAL	50	2	1	1	17	0	18	0	89

Table 33 : Indicators related to PPM in Tuberculosis in Rwanda, during July 2011-June 2012.

NSP indicators related to PPM	Baseline	2010-2011		2011-2012	
		Target	Results	Target	Results
34. Number of traditional healers trained on TB signs and symptoms. (***PF indicator 16)***	NA	4000	6,485 (162%)	4 000	5 328 (133%)
35. Number & % of new SS+ TB patients detected in private clinics (numerator) of all new SS+ registered for treatment country-wide	51 / 4183 (1.2%)	58 / 4428 (1.3%)	45 /3962 (1.1%)	66/4 733 (1,4%)	50/3 576 (1,4%)

III.5. Objective 5: Empowering people with TB and communities

III.5.1. SDA 5.1. Advocacy, communication, and social mobilization (ACSM)

As during the previous year, IEC/BCC messages were aired on local private and public and international radio stations, with the following topics being discussed: what are the signs and symptoms suggestive of TB and how to diagnose, prevent and treat TB; the medico-social management of MDR-TB patients, including testimony of cured MDR-TB patients; the importance of contact examination and follow-up examinations during MDR-TB treatment; and the role of community health workers in early detection of TB.

In addition, articles were published in local newspapers and posted on websites (like umuganga.com, focus.com and MoH website), on the achievements of the programme and on early detection of TB.

The TB & ORD IEC officer trained 50 journalists on TB prevention and management. These trainings were organised in collaboration with the "Rwanda Health Communication Centre" (RHCC).

The impact of IEC/BCC activities (indicator 36/PF indicator 17) will be evaluated during the 3rd year of the project, through a KAP survey focusing on the knowledge about TB transmission, symptoms, and curability.

III.5.2. SDA 5.2. Community-based DOTS

By end of June 2010, the community DOTS already covered all districts, but it needed to be strengthened in Kigali urban areas and in districts where CHW were not trained for several years.

III.5.2.1. Training of community health workers (CHWs)

Eight districts conducted a refreshment course for their CHW. In total, 6 229 CHWs were trained on community-based DOTS, TB signs and MDR-TB issues.

Table 34 : Number of CHWs trained on TB, by district in Rwanda, during July 2011 to June 2012.

District	Nb of CHWs trained
Nyagatare	2 478
Rusizi	2 258
Nyarugenge	113
Gasabo	1 220
Ngoma	160
Total	6,229

III.5.2.2. TB Detection and treatment follow up by CHWs

Out of the 6 352 TB cases notified from July 2011 to June 20121, 3 052 (48%) were entrusted to CHWs for administration and observation of the TB treatment. This strategy is highly appreciated by the patients because they receive DOT close to their home.

The TB treatment success rate among TB patients followed up through the community-DOT (by CHWs) was excellent and, reached 92%. This result is slightly lower than the target which was established based in previous years success rate and is really challenging.

Table 35 : Treatment success rate among TB patients managed by CHWs in Rwanda aong TB patients enrolled from July 2010 to June 2011.

	TB patients followed by CHW (all forms)
Nb registered	2 782
Nb successfully treated	2 573
Success rate	92%

III.5.2.3. Community PBF

As during the outgoing FY, the MOH Community Health Desk continued to pay two indicators that have been identified to encourage CHWs in fight against tuberculosis. The first one is related to the identification of people with cough and their referral to the health facilities for clinical examination and sputum microscopy. The second indicator is related to the follow-up of TB patients and administration of DOT. PBF money is benefiting to CHW cooperatives.

76.5% of all cooperatives registered countrywide reached 80% of their targets and received PBF incentives (indicator 45).

III.5.2.4. Civil society organizations

Since several years, the TB program engaged 3 civil society organizations working with people and communities at higher of developing TB. The PLHIV associations' network implemented a new peer educator strategy in order to sensitize PLHIV on the risks of TB exposure and signs of TB disease. They first performed several preliminary tasks as the selection and training of the peer educators. Therefore supervision started only in the last quarter and the corresponding indicator (indicator 42) was not reached. The National Youth Council sensitized the boarding schools and executed 57% of the planned activities (indicator 43). Profemmes (women association) sensitized 52% of the targeted members.

Table 36 : Indicators related to TB and communities, in Rwanda during July 2011-June 2012.

NSP indicators related to community DOTS	Baseline	2010-2011		2011-2012	
		Y1 Target	Y1 Results	Y2 Target	Y2 Results
37. Community DOTS coverage	24/30 (80%)	30/30 (100%)	30/30 (100%)	30/30 100%	30/30 100%
38. Number & % of SS+ TB cases referred by CHW of all SS+ detected countrywide. (**PF indicator 18)**	275/4445 (6%)	466/4663 (10%)	843/5007 (17%)	398/2654 15%	984/3910 25%
39. Number & % of patients receiving DOT by CHW	2627/7644 (34%)	2940 /8400 (35%)	3307/7230 (45.7%)	3528/8820 (40%)	3352/6352 (53%)
40. Number & % of TB patients (all forms) successfully treated among all TB patients managed by CHW. (**PF indicator 19)**	1566/ 1630 (96%)	2522/ 2627 (96%)	2123/2251 (94.3%)	1693/1764 (96%)	2573/2782 (92%)
41. Number of CHW trained/ refreshed on TB and MDR-TB issues. (**PF indicator 20)**	5467	10000	10885	10000	6229
42. Number and % of supervisions conducted to districts with peer educators	88 (100%)	88 (100%)	14/88 (16%)	88	84/88 (95%)
43. Number and % of schools sensitized on TB in collaboration with health facilities	689 (100%)	689 (100%)	391 (56.7%)	689	630 (91%)
44. Number of women in charge of social affairs at sectors and cells who were sensitized on TB	416 sectors (100%)	416 (100%)	217 (52%)	416	287
45. Number and % cooperatives that received PBF for at least 80% of their indicators	416 Sectors (100%)	Baseline established by March 2011 & targets set	220/421 52%	442	338 (76.5%)

III.6. Objective 6: Enable and promote operational research

With the support of different partners, the TB & ORD Division launched and implemented many evaluations activities. These were either TB & ORD Division based-evaluations, either evaluations conducted by post-graduate students on Tuberculosis or TB program implementation and impact evaluations; All with the aim of more informing the TB & ORD Division for the more improvement of TB control policy.

III.6.1. Tuberculosis Division based survey/studies/evaluations

III.6.1.1. All-cause mortality and associated risk factors among tuberculosis (TB) patients during anti-TB treatment in Rwanda: A retrospective cohort analysis

The implementation of this study started in March 2012. Data of ALL TB cases notified in selected CDTs in 2009 year are being collected, in order to increase the power of the study. Until June 30, 2012, TB District Coordinators have worked on 2 587 eligibles (64% of the total sample). Our data collection methods use the triangulation of TB and HIV files. The main challenge was to find out where HIV tools are archived within some health facilities. A well defined archiving system for TB and HIV tools must be set up. During the new fiscal year, we will complete the data collection, by end August 2012 and organize a one week retreat for data entry. Data will also be analyzed and preliminary results reported by end of 2012.

III.6.1.2. Trends of TB notification rates in Rwanda and scale up of antiretroviral therapy (ARTs) program

This project used data from TB and HIV surveillance systems, to analyze the potential impact of ARTs program scale up on the TB notification rates in Rwanda. The potential impact of scale up of ART coverage on decline of TB notification rates, especially for SS-, EPTB and HIV infected TB patients has been shown. The conclusion is in favour of an early HIV testing for an early start of ART, to avoid occurrence of TB disease. In Rwanda, this is achieved through systematic HIV testing for all persons with TB symptoms (TB suspects). These results have been compiled in an abstract, presented as a poster during the XIX International AIDS Conference that held in Washington D.C., USA from 22-27 July 2012 [Date of poster display: Tuesday, 24 July 2012. Location: Poster Exhibition Area]. The abstract was also accepted to be presented during a

Poster Discussion session in the 43rd World Conference on Lung Health to held in Kuala-Lumpur/Malaysia in November 2012 [(reference: PC-536-15) during a 09 Public-policy – I, on Thursday, 15 November 2012 from 10:15 to 11:15 in Hall 4].

III.6.1.3. Evaluation of GeneXpert MTB/RIF Assay for Diagnosis of Mycobacterium tuberculosis in Rwanda

This project funded by PEPFAR through its grant CDC/COP11 has been presented to Rwanda National Ethics Committee (RNEC) and reviewed during its February 11th, 2012 meeting. The final ethical approval by RNEC has been obtained. The project is also under review by partners IRBs (ICAP and CDC).

Different meetings were held between TB & ORCD Division, NRL and ICAP (laboratory advisors), to plan the implementation of this evaluation. Other activities performed as preparation of this evaluation were among others:

- An Assessment of the capacity of the laboratory network to implement the GeneXpert in 6 sites (CHUK, Kabgayi hospital, Rwinkwavu hospital, Rwanda Military Hospital, Muhima hospital, and Biryogo Health center) has been conducted from 11 to 18 January 2012 in collaboration with the Mycobacteriology Section of the NRL Division. Main findings during that assessment were that: all except Kabgayi DH have contracts for equipment maintenance, all are connected to water and electricity network and had automatic generators, only Muhima and Kabgayi didn't have freezers, only Biryogo didn't have enough space, but renovation were expected soon, and finally all have waste management system (with incinerators).
- From 11 to 18 February 2012, a team of two staff from Rwanda (Dr Alaine from ICAP and Semuto Jean Claude from NRL) visited South Africa GeneXpert sites. They visited NHLS (national health laboratory service) at central level and one rural laboratory performing the GeneXpert to learn from the roll out experience.
- The training on the use of GeneXpert technology, by site laboratory technicians, is planned for August 2012.

III.6.1.4. Evaluation of impact of new tuberculosis diagnostics on patient health outcomes: an East Africa Multicounty proposal

This project has been presented to Rwanda National Ethics Committee and approved.

III.6.1.5. Clinical and social long term outcomes among multi-drug resistant tuberculosis (MDR-TB) patients who successfully completed MDR-TB treatment under the Rwanda TB program

This project has been presented to Rwanda National Ethics Committee and approved. Its implementation is planned for the July-September 2012 quarter.

III.6.1.6. Prevalence of TB, HIV and TB/HIV in Rwandan prisons

The data entry process was completed and the data cleaning process is ongoing. Dummy tables for data reporting have been developed as well. The report format was developed. Background, rationale, objectives and methodology sections already developed.

III.6.1.7. Validation of tuberculosis screening approaches and use of Isoniazid Preventive Therapy for children living with HIV/AIDS in Rwanda

Many meetings including conference call were held, with HIV/AIDs and CDC staff to design the study and identify sources of funding. Field visits were conducted to selected sites and collaborating institutions (NRL, CHUK).

III.6.2. Students theses on Tuberculosis

The TB & ORD Division provided technical and financial support to four post-graduate students projects on Tuberculosis. Those were:

III.6.2.1. Isoniazid prophylaxis for children under five in contact with smear positive tuberculosis patients in Kigali City

This study, conducted by a post graduate medical doctor in Pediatrics Department of the National University of Rwanda-Faculty of Medicine evaluated the implementation of the IPT among ≤5 years children in contact with SS+ TB cases. Awareness of TB health care workers and TB source cases about the IPT, and adherence on IPT were evaluated. It came up with this evaluation, that the awareness of both health provider and parents on TB is satisfactory, but still

need improvement for IPT for under five. The thesis was presented and accepted by the NUR-Faculty of Medicine.

III.6.2.2. Assessment of factors associated with Loss to follow up of Patients on tuberculosis treatment in Rwanda

This study, conducted by a post graduate student in MPH program of the National University of Rwanda-School of Public Health aims at determining risk factors associated with lost to follow up during TB treatment, in CDTs of Kigali City. The data collection process is ongoing.

III.6.2.3.One Stop TB-HIV Services evaluation in Kicukiro and Rulindo Districts: Comparison of the cohorts of 2001-2005 and 2006-2010

This study, conducted by a post graduate student in MPH program of the National University of Rwanda-School of Public Health is analyzing changes in TB treatment outcomes of TB patients and HIV+ TB patients for the period of 2001-2005 (before integration of TB/HIV activities) and 2006-2010 (after integration of TB/HIV activities), and associated risk factors. The data collection has finished and the student is currently analyzing data.

III.6.2.4. Evaluation of knowledge and risk behavior towards TB among patients diagnosed with TB in Rwanda

This study is conducted by a post graduate student in MPH program of the National University of Rwanda-School of Public Health. The aim is to evaluated knowledge of TB among TB patients and their behaviors in regards with compliance to TB treatment and TB transmission control. Data collection finished, will start analysis with the July-September 2012 quarter.

III.6.3. Evaluations of Tuberculosis projects (Program evaluations)

III.6.3.1. Mid-term Review of the Tuberculosis National Strategic Plan of Rwanda 2009-2012

A mid-term review of the Tuberculosis National Strategic plan (TB-NSP) held from March 26, 2012 to April 05, 2012. It evaluated the period from July 2009 to June 2011 on programmatic aspects (achievements and challenges), and provided recommendations for the remaining period of the 2009-12 TB NSP and for the next TB NSP (2013-18). This review was conducted by two consultants from MSH (USAID) and CDC-Atlanta. Interviews were conducted with TB & ORD

staff. Field visits were performed as well at Kabgayi DH, Kivumu HC, Kabusunzu HC, CHUK and NRL. Additionally, a one day workshop held, to discuss with other stakeholders like WHO, CDC, NGOs, CAAC, CHD, DHs and HCs. Main findings were an increased awareness on the community regarding Tuberculosis, an increased TB suspicion rate especially by CHWs and improved health care workers awareness and practices regarding TB infection control. TB/HIV indicators were also another success for TB control activities. Generally the TB notification in the general population is decreasing, but the risk of TB in some groups of population (like PLHIV, contacts, prisoners, etc) is still high. For that, it has been recommended to continue active TB cases findings activities with focus on high risk groups and areas, with a more increased involvement of CHWs like for TB contacts investigations.

III.6.3.2. Global Fund Single Stream of Funding TB Evaluation Rwanda-June 2012

This was an external evaluation of the first phase of the Single Stream of Funding of Tuberculosis (SSF-TB) that held in June 2012. This review evaluated the period from July 2010 to March 2012. The objective was to analyze effectiveness, efficiency, impact and equity of NSA interventions and funds, with the main focus of cost analysis (budget disbursement and execution, in comparison with programmatic achievements). It came up that the TB & ORD Division is on the track of reaching all Millennium Development / Stop TB Partnership goal and targets by 2015, except case detection rate; due to strong commitment and governance at all levels. The Main challenge highlighted was the high dependence on external funding, especially from the Global Fund, with a recommendation of strengthening sustainability of funding of the national TB program (TB & ORD Division), by generating further domestic contribution starting with SLD for 9 month short regimen and diversification of the donor base.

III.6.3.3. TB/HIV collaborative activities in Rwanda

The TB & ORCD Division co-authored a scientific paper entitled “PEPFAR Support for the Scaling up of Collaborative TB/HIV Activities”, published in the Journal of Acquired Immune Deficiency Syndromes (JAIDS) [Reference: Howard, Andrea A; Gasana, Michel; Getahun, Haileyesus; Harries, Anthony; Lawn, Stephen D.; Miller, Bess; Nelson, Lisa; Sitienei, Joseph; Coggin, William L. PEPFAR Support for the Scaling Up of Collaborative TB/HIV Activities. Journal of Acquired Immune Deficiency Syndromes. 60():S136-S144, August 15, 2012]. Other co-author to this

manuscript are coming from ICAP-New York, WHO-Geneve, IUATLD-Paris, Desmond Tutu Center-South Africa, CDC-Atlanta, CDC-Maputo, Kenya Ministry of Health-Nairobi and PEPFAR-Washington. This paper discussed achievements made with PEPFAR funding. As most of TB/HIV activities in Rwanda are financed through PEPFAR, this was a great opportunity for Rwanda to highlight and share with the international scientific community its successes in the mentioned domain.

IV. UTILIZATION OF FINANCIAL RESOURCES FOR THE PERIOD OF JULY 2011-JUNE 2012

IV.1. Sources of Funding July 2011-June 2012

The 2009-2012 National Strategic Plan for TB has a budget of US$ 44,490,413 for 3 years, covering July 2010 to June 2013. This budget includes the contribution of all partners which are the GoR, the Global Fund, Damian Foundation, Columbia University and USG/CDC.

The main contributor to the NSP-TB is the Global Fund, with a share of 91% through the Single Stream of Funding for Tuberculosis (SSF-TB). The SSF-TB grant consolidated together 2 existing projects (Strengthening Tuberculosis control in Rwanda, or TB/R4/RCC Phase, and Strengthening Multidrug Resistant Tuberculosis Control in Rwanda or TB/R6/Phase 2) with the newly approved budget of the National Strategic Application (NSA-TB) that was destined to covering the NSP-TB gap. The grant will cover the period starting with July 1, 2010 to June 30, 2013. The first disbursement by the Global Fund to the Principal Recipient was effective in September 2010.

As the table below shows, all funding partners have mostly fulfilled their pledges; any variances were due to either delay in project implementation/procurement process or overlapping between Rwanda's fiscal year and donors.

The Government released additional budget for TB activities such as salaries for 3 health providers (medical doctors trained on TB who are focal points, a nurse in charge of treatment in the health facilities and one laboratory technician) and the cost shared for hiring the RBC building where TB Division is using one floor.

The Government spent USD 2,887,363 in 2011-2012 for implementation of TB activities even last year. The ordinary budget fund is directly disbursed to RBC for TB activities but USD 2,652,490 directly to the districts.

Table 37: Sources of financing for the Rwanda 2009-2012 TB NSP during July 2011-June 2012.

Financing source	Commitments in USD	Share (% as of Total Commitments)	Disbursed in USD	Disbursement rate	Comments
1.a Government of Rwanda	232 826	2%	234 873	101%	TB Division used more than planned to pay salaries and unplanned activities such as the installation of fluoroscopy machine.
1.b Additional fund to Ordinary Budget	Not planned for TB Div.	NA	2 652 490	NA	The Government released USD 97,450 for renting the floor used by TB Division and USD 2,555,040 for salaries of the TB Focal point, one nurse appointed for TB treatment and one laboratory technician in bacteriology services.
2. Global Fund	13 929 025	91%	8 973 651	64%	The undisbursed funds are planned to be used in TB for implantation of activities on going.
3. Damian Foundation	213 383	1%	151 970	71%	Variance due to the fact that the Fiscal year of Damian Foundation corresponds to calendar year
4. Columbia University	139 481	1%	126 861	91%	The balance remained for the 2009/2010 fiscal year was used in 2010/2011
5. CDC	789 621	5%	492 102	62%	The balance remained for the 2009/2010 fiscal year was used in 2010/2011.
TOTAL	**15 304 336**	**100%**	**12 631 947**	**83%**	

IV.2. Funds Used per NSP Objective (all sources of funds)

The first objective has more funds compared to others. It includes the Prevalence Survey as one budgeted activity. The low budget consumption is due to the delay in the procurement of vehicles and others inputs to be used in the survey. In addition, the SSF-TB grant was subject to a number of Conditions Precedent (CPs) and Special Terms and Conditions (STCs) to be fulfilled by both the PR and sub recipients, which had impact on the effective start of project activities.

Table 38 : Funds used per NSP objectives, for the Rwanda 2009-2012 TB NSP during July 2011-June 2012.

NSP objective	Budget Committed (USD)	Total budget Disbursed (USD)	Total Expend. (USD)	Variance	% Used as of commitment	Share (% as of Total Expend.)	Comments
Objective 1: Pursue high quality DOTS expansion and enhancement	7,434,483	4,789,600	8,982,553	-1,548,070	121%	55%	The variance of $- 1,548,070 is composed of the $ -665,857 for the improving diagnosis , $ 128,259 for Patients support, $ 44,424 for drugs, $ -491,761 for Monitoring and evaluation, $ -774,655 for Program management and supervision, $ 211,520 for Human resources development financed by the Global Fund.
Objective 2: Address TB/HIV, MDR-TB and Other Challenges	1,231,796	793,574	424,666	807,130	34%	3%	The variance of $ 807,130 is composed of $ -23,549 for TB-HIV, $ 310,608 for MDR-TB, $ -3750 for High risk group, $ 514,523 for infection control, $ 9,298 for Childhood those all activities are financed by the Global Fund.
Objective 3: Contribute to Health Systems Strengthening	2,236,652	1,440,943	2,656,695	-420,043	119%	16%	The variance of **$ -420,043** is composed of the $ -47,987 for HSS plus $-372,056 for PAL.
Objective 4: Engage all care providers	85,065	54,802	66,959	18,106	79%	0.41%	The variance of **$ 215,168** is for PPM.
Objective 5: Empower People with TB and Communities	2,889,029	1,861,231	4,291,342	-1,402,313	149%	26%	The variance of $ -1,402,313 is composed of $ -184,705 for ACSM, $-1,217,608 for community care, those activities are financed by the Global Fund.
Objective 6: Enable and promote research	52,000	33,501	37,107.00	14,893	71%	0.23%	The variance of $ 14,893 is for operational research.
Grand Total	**13,929,025**	**8,973,651**	**16,459,322**	**16,937,998**	**118%**	**100%**	

IV.3. Funds Used per Budget Category (all sources of funds)

As previously indicated, the was a significant delay of about 4 months in the implementation of SSF-TB grant, and that affected the use of funds. At the end June 2011, only 25% of planned budget for year 1 had already been spent, with some tenders unde way. There was an overspending of management fees by the Community Health Desk; the reason behind being that the budget for Community PBF Steering Committee at sector level was underestimated during the planning phase. The budget for procurement and supply management was not used due to the procurement process (most tenders not yet completed). Health products and drugs were procured taking into account the actual needs of the year.

Table 39 : Funds used per budget category, for the Rwanda 2009-2012 TB NSP during July 2011-June 2012.

Budget Category	Budget Committed (USD)	Total Expenditures (USD)	Variance	% Used as of commitment	Comments
Human Resources	1,822,193	1,722,277	99,916	95%	The variance was caused by the delay in the start of the project and recruitment process by project sub-recipients. This variance is broken down follow as:$ 318,121 for DH-HC, $ 42,852 for TB Division, $ 41,772 for CHUB, $ 39,339 for PFTH, $ 2,679 for CHUK, $ 1,169 for CNJR, $ 952 for RRP, -$ 3,588 for SPIU, - $ 28,346 for SWAA RWANDA, $- 46,305 FOR ACCESS PROJECT, $- 51,389 for CARITAS RWANDA, $-66,362 for STRIVE FOUNDATION, $-88,429 for CREDI, -$ 62,550 for LNR .N.B: Those overspends for NGOs have been adjusted by the reallocations approval.
Technical Assistance	95,040	50,509	44,531	53%	This variance is broken down follow as: $ 42,992 for TB Division, $ 944 for CREDI, $ 881 for SWAA, $ -20 for ACCESS, $ -109 for STRIVE FOUNDATION, $-157 for CARITAS.
Training	852,036	802,296	49,740	94%	This variance is broken down follow as: $ 50,405 for SWAA RWANDA, $ 49,223 for CREDI, $ 46,688 for STRIVE FOUNDATION, $ 37,116 for CARITAS, $ 27,724 for ACCESS PROJECT those positive variances for NGOs have been used to compensate the salaries, $ 23,752 for PFTH, $ 22,700 for CHUB, $ 1,218 for LNR, $ -13,538 for CHUK, $-41,997 for TB Division, $ -46,653 for RRP+, $ -106,899 for DH_HC.
Health Products and Health Equipment	1,861,006	2,716,522	-855,516	146%	This variance is broken down follow as: $ 453,210 for DH-HC, $ -129,414 for CHUK, $ -278,147 for LNR, $-303,713 for CHUB, $ -597,451 for TB Division.
Medicines and Pharmaceutical	833,972	459,542	374,430	55%	This variance is broken down follow as: $ 228,060 for TB Division, $146,370 for MPD Division.

Products					
Procurement and Supply Management Costs	32,089	40,632.00	-8,543	127%	This variance is broken down follow as: $ -2,215 for MPD Division, $ -6,329 for DH-HC.
Infrastructure and Other Equipment	2,108,210	2,862,143	-753,933	136%	This variance is broken down follow as: $ 204,409 for LNR, $ -3,477 for ACCESS PROJECT, $ -11,421 for CARITAS, $ -19,035 for CREDI, $- 19,035 for STRIVE FOUNDATION, $ -21,860 for SWAA RWANDA, $-88,074 for CHUK, $ -146,040 for TB Division, $ -650,400 for DH-HC.
Communication Materials	7,135	233,322	-226,187	3270%	This variance is for TB Division caused by the paying the previous invoices.
Monitoring and Evaluation	3,117,908	3,793,697	-675,789	122%	This variance is broken down follow as: $ 183,396 for DH-HC, $ 8,953 for SPIU, $ 8,318 for SWAA RWANDA, $ 6,000 for MPD Division, $ 533 for ACCESS PROJECT, $ -1272 for CARITAS, $ -5,614 for CREDI, $-5,919 for STRIVE FOUNDATION, $ -36,884 for RRP, $-46,357 for LNR, $-47,987 for PBF, $ -126,042 for PFTH, $ -135,000 for CHD, $ -477,915 for TB Division.
Living Support to Clients/Target Population	2,140,194	2,507,635	-367,441	117%	This variance is broken down follow as: $ 164,389 for DH-HC, $ 11,250 for PFTH, $ 2,402 for RRP+, $ -1,778 for TB Division, $ -543,704 for CHD.
Planning and Administration	646,335	684,898	-38,563	106%	This variance is broken down follow as: $ 27,505 for CNJR, $ 26,068 for DH-HC, $ 15,767 for SWAA RWANDA, $ 4,877 for SPIU, $ -324 for RRP+, $-4,997 for STRIVE FOUNDATION, $ -5,581 for CHD, $ -5,944 for ACCESS PROJECT, $-6,309 for LNR, $ -10,439 for CARITAS, $- 11,387 for PFTH, $-14,478 for CREDI, $ -53,321 for TB Division.
Overheads	126,403	351,670	-225,267	278%	This variance is for CHD for the payment of invoices for previous period.
Other	286,504	234,179	52,325	82%	This variance is broken down follow as: $38,626 for DH-HC, $ 30,647 for TB Division, $ 3,516 for SWAA, $3,438 for STRIVE FOUNDATION, $ 3,434 for CREDI, $ 2,616 for CARITAS, $ 1,997 for ACCESS, $ -31,948 for CNJR.
TOTAL	**13,929,025**	**16,459,322**	**-2,530,297**	**118%**	

IV.4. Funds Used per Implementing Organization (all sources of funds),

During the fiscal year of 2012-2012, the Global Fund, which is the principal contributor to the NSP-TB transferred to the PR USD 8,973,651 and the amount of $ 16,479,331 was transferred to SRs. All SRs together have already used USD 16,459,322 equivalent to 118% of of the total budget planned for this fiscal Year of the project.

Table 40 : Funds used per implementing organization, for the Rwanda 2009-2012 TB NSP during July 2011-June 2012.

Name	Budget Committed (USD)	Total Expend. (USD)	Variance	% Used as of commitment	Share (% as of Total Expend.)	Comments
1. Ministry of Health (MoH)	**12,546,726**	**14,928,305**	**-2,381,579**	**119%**	**91%**	
Community Health Desk	1,916,830	2,826,383	-909,553	147.45%	**17%**	This negative variance of $ -909,553 was generated by the payment of invoices for the activities of previous period
Community-Based Performance	1,826,881	1,874,868	-47,987	102.63%	**11%**	This negative variance of $-47,987 was generated by the payment of invoices for the activities of previous period
National Reference Laboratory	1,116,550	1,304,286	-187,736	116.81%	**8%**	This negative variance of $ -187,736 was generated by the payment of invoices for the activities of previous period
District Hospitals and Health Centers	5,279,376	4,859,194	420,182	92.04%	**30%**	This variance will be used to pay the commitments
University Teaching Hospitals	226,351	692,939	-466,588	306.13%	**4%**	This negative variance of $ -466,588 was generated by the payment of invoices for the activities of previous period
RBC/IHDPC/TB Division	1,802,577	3,002,716	-1,200,139	166.58%	**18%**	This negative variance of $ -1,200,139 was generated by the payment of invoices for the activities of previous period
Single Project Implementation Unit (SPIU)	378,161	367,919	10,242	97.29%	**2%**	This variance will be used to pay the supervisions
2. NGO/CBO/ Academic	**865,776**	**1,161,375**	**-295,599**	**134%**	**7%**	
RRP+	129,711	210,217	-80,506	162.07%	**1%**	This negative variance was generated by the payment of invoices for the activities of previous period
Profemme Twese Hamwe	176,047	239,133	-63,086	135.83%	**1%**	This negative variance was generated by the

						payment of invoices for the activities of previous period
Other NGOs	560,018	712,025	-152,007	127.14%	**4%**	This negative variance was generated by the payment of invoices for the activities of previous period
3. Private Sector	**399,011**	**248,855**	**150,156**	**56%**	**2%**	
RBC/MPDD Division (former CAMERWA)	399,011	248,855	150,156	62.37%	**2%**	This variance will be used to pay the commitments
4. Other Government	**117,512**	**120,787**	**-3,275**	**103%**	**1%**	
National Youth Council	117,512	120,787	-3,275	102.79%	**1%**	This negative variance was generated by the payment of invoices for the activities of previous period
GRAND TOTAL	**13,929,025**	**16,459,322**	**16,937,998**	**118%**	**100%**	

During the year two, the TB budget execution was greater than the budget planned because of the payments related to the activities of previous period.

V. CONCLUSION

V.1. Summary of key achievements during the 2011-2012 fiscal year

- As during the 2010-2011 fiscal year (FY), a high TB suspicion rate in the general population was observed during the 2011-2012 fiscal year (FY) (1.6% against 1.2% as target).
- The treatment success rate target was fully reached for TB and MDR-TB patients (respectively 88% against 87% and 88% against 88%). The same applied for TB cases treated in prisons (93%). Particularly for new SS+, the cure rate increased from 77% during 2010-2011 to 83% during 2011-2012.
- TB prevalence survey: By the end of June 2012, field operations were conducted in 24 out of 73 clusters (33%), with a good participation rate of 95% (14 276/14 991).
- All targets related to TB-HIV detection and management were fully met.
- Trainings of health staff and traditional healers exceeded the targets.
- The minimum package of infection control measures was applied in 88% of the CDT, which is above the 80% target.
- The expected number of health facilities that should have received PBF for reaching targets for at least 50% of their indicators was achieved.
- Implementation of PAL activities started and, by the end of 2011-2012 FY, fixed targets were achieved.
- CHWs contribution to TB detection increased significantly; they identified 44% (against 38% during 2012-2011 FY) of all TB suspects and 25% (against 17% during 2012-2011 FY) of all SS+ cases detected countrywide, largely exceeding the target.
- All partners demonstrated their commitment to the fight against TB in Rwanda by providing their financial and technical contribution as expected.

However, a number of key challenges need to be addressed and are summarized in the table below.

V.2. Summary of key challenges during the 2011-2012 fiscal year and orientations for the 2012-2013 year

Table 41 : Key challenges to be addressed during the 2012-2013 FY.

Key challenges	Possible reasons	Corrective measures for 2012-2013	Responsible
Insufficient TB notification in the general population	Overestimate of expected cases. Note that WHO revised its estimates (see Global report 2011) and Rwanda reaches now 60% case detection rate	• Obtain more accurate estimates by conducting a national TB prevalence survey • In the	TB & ORD Division
	Insufficient diagnosis capacity	• Expand the use of LED Microscopy	NRL and HFs
		• Introduce new technologies (Genexpert)	NRL
		• Training of laboratory technicians	NRL and HFs
		• Strengthening of the microscopy quality assurance system	NRL and DHs
		• Strengthen samples transportation system	NRL and DHs
		• Continue and strengthen active TB cases finding interventions focused in high risk people (PLHIV, children, TB contacts, prisons, schools, etc);	TB & ORD Division and HFs
		• Strengthen detection with participation of CHWs	TB & ORD Division and HFs
		• Strengthen engagement of the private sector (private clinics and traditional healers) in referring TB suspects	TB & ORD Division
Insufficient notification of MDR-TB cases	Overestimate of expected cases	• Revise estimates by conducting a new drug resistance survey (Y3)	TB & ORD Division and NRL
	Insufficient testing in high risk groups	• Increase drug resistance testing in all high risk groups • Include in high risk groups all HIV-positive TB cases countrywide • Continue testing of all new smear-positive TB cases diagnosed in Kigali districts.	TB & ORD Division and HFs
	Insufficient diagnosis capacity	• Decentralization of rapid (Hain test) • Implementation of GeneXpert	NRL
TB treatment rate among other than new SS+ category		• Improve management and supervisions focused on other forms of TB (SS-/0, EP and retreatment) and special settings like cDOT and prisons;	TB & ORD Division
		• Strengthen the implementation of the guideline on ART among HIV+ TB patients, to decrease death rates	TB & ORD Division and HFs

In addition, our interventions for 2012-2013 will aim to maintain and try to improve more achieved targets.

We will also work to address all challenges as they have been identified through TB program evaluations realized during the outgoing Fiscal Year.

Finally, the TB NSP gave opportunity to all sub-recipients to increase their commitments in the fight against TB in Rwanda and to reach several positive achievements. Therefore we reaffirm our commitment to further joint efforts and reach TB NSP targets.