A Report on The National Tuberculosis Program Post-Disaster Needs Assessment and Recovery Plan

The National Tuberculosis Centre

Prepared by: NTC Rapid Response Committee

2015

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Acknowledgement

It is my delight to bring this Post Disaster Need Assessment (PDNA) report for TB control program to you all. Nepal was hit by a massive earthquake on 25 April (11:56 local time) of a magnitude of 7.8 Mw (7.6 Ml) in Barpak VDC in Gorkha district, 80km northwest of Kathmandu was the epicenter. That together with continued aftershocks followed throughout has led to the disaster, which was un-parallel to what Nepal has ever faced in recent days and has left a huge challenge for all of us to rebuild. Among Many other programs, National TB program has also been hit hard.

This is a comprehensive assessment that was carried out in the top 11 TB priority districts affected by the disaster aimed at collecting and collating information on damage, losses, tracing TB (particularly DR TB patients) and identifying post-disaster needs for reconstructing and rebuilding TB service with the broader concept of building back better.

I would like to thank all Rapid Response team members for their hard work and dedication in getting this document produced. Along with that I would also like to thank WHO for providing both technical and financial support in carrying out PDNA data collection. But, most importantly I would like to thank our partner organizations (esp. BNMT, HERD, IOM, JANTRA and LHLI), which at many instance even voluntarily supported NTC in carrying out this assessment.

Thanking you,

.....
Dr. Bikash Lamichanne
Director

15th October, 2015

Abbreviations

BNMT	British- Nepal Medical Trust
DOTS	Directly-observed therapy short course
D(P)HO	District (Public) Health Officer
DTLO	District TB and Leprosy Officer
HERD	Health Research and Social Development Forum
IDP	Internally Displaced Person
	IOM International Organization for Migration
HP	Health Post
JANTRA	Japan-Nepal Health & TB Research Association
MDR-TB	Multidrug-resistant TB
MoHA	Ministry of Home Affairs
	MOHP Ministry of Health and Population
NTC	National Tuberculosis Centre
NTP	National Tuberculosis Programme
PDNA	Post- Disaster Needs Assessment
RRC	Rapid Response Committee
SOP	Standard Operating Procedure
TB	Tuberculosis
	WHO World Health Organization
	XDR-TB Extensively drug-resistant TB
CB DOTS	Community Based Directly-observed therapy short course

Executive Summary

Background:

In line with the broad framework of the Post Disaster Needs Assessment (PDNA) undertaken by the National Planning Commission and PDNA of the health and population sector undertaken by the Ministry of Health and Population (MoHP), the National Tuberculosis Centre (NTC) has conducted a comprehensive assessment of the National Tuberculosis Program (NTP) in the 11 most affected districts (Kathmandu, Lalitpur, Bhaktapur, Dhading, Sindhupalchowk, Nuwakot, Gorkha, Dolakha, Ramechhap, Rasuwa, Kavrepalanchowk) which aimed at collecting and collating information on damage, losses, tracing TB (particularly DR TB patients) and identifying post-disaster needs for reconstructing and rebuilding TB service with the broader concept of building back better.

The work accomplished by the assessment team has provided (i) analysis of the situation before the earthquake, (ii) a thorough assessment of damage and losses incurred following the earthquake and an estimation of the effect of the earthquake on TB services; and (iii) identification of needs for recovery and reconstruction in the intermediate, medium and long terms.

Effect of the earthquake:

The NTP and TB patients have been severely affected as evident from damages and losses to infrastructure and assets and disruption in TB service access and delivery. A total of 151 DR TB patient and 2411 male and 1609 female drug susceptible TB patients experienced varying degrees of disruption to their TB care.

In the 11 most affected districts out of a total of 738 TB treatment facilities including administrative building, 340 (46%) (5 hospitals, 9 Primary Health Care Centers, 318 Health Posts, 2 Urban Health Centres and 12 private facilities) are completely destroyed while a total of 209 (28.3%) TB treatment facilities (204 public and 5 private) structures are partially damaged. Likewise, out of total 112 microscopy centers, 19 (17%) microscopy centers are completely destroyed while a total of 35 (31.2%) are partially damaged. Even though damaged of microscopy centers in the most of districts, 90.7% MCs were resumed and continued the regular activities. Out of a total 4020 TB patients in 11 most affected districts, 3993 (99.3%) TB patients were traced and status of 10 TB patients is still unknown.

As a result, the ability of the health facilities to respond to the healthcare needs has been affected by the destruction and service delivery is disorganized. Consequently, vulnerable populations, including disaster victims, have been further disadvantaged in accessing health services in remote areas. A total of 1 DTLO, 7 Health Workers and 10 FCHW volunteers have lost their lives and 75 got injured adding further challenges in health resumption of services delivery.

Estimates of Damage and Loss (DALA):

Based on the data reported by district offices and information collected through field visits from most affected 11 districts, inventory of damages of Infrastructure, equipments, instruments, furniture and drug and supplies were taken. Out of total 850 DOTS centers and Microscopic centers, 359 facilities were completely damaged while 244 facilities were partially damaged. Gorkha, Sindhupalchowk, and Dolakha are the top three districts in terms of estimated value of damage and loss.

Total damage and loss due to the earthquake is estimated to be NPR 131.65 million of which the public shares 97% rest being that in the private sector including NGO and Community owned service providers. Gorkha, Sidhupalchowk and Dolakha are the hardest hit districts in terms effects of the earthquake sharing 29.4% of damages and losses. Out of total value of damage and loss is estimated, 93% share was of damage and rest 7% being losses. Damaged status of TB drugs was reported only in Nuwakot district (HRZE 21 st and HR 10 st).

Recovery and Reconstruction Strategy

National Tuberculosis Centre had formed a Rapid Response Committee for coordination with district health offices, health cluster meetings, stakeholders and donors; assessment of needs and planning for recovery and

reconstruction of the TB treatment facilities and microscopy centers under the chair of NTC director. Based on the information available from the districts an initial set of necessary activities was defined, cost was estimated and submitted to the supporting agencies. However, detail planning for the recovery was carried out together with concerned District (Public) Health Offices followed by the situation assessment.

While the reconstruction of the TB treatment facilities and microscopy centre may take some years while the prime concern at present is resuming TB services to cater immediate needs of the TB patients. Considering this scenario, NTC has adopted three pillar strategies for the recovery and reconstruction which are basically adopting the immediate until end of September 2015, medium term (during FY 2015/16) and long term (FY 2015/16 to 2019/20 which will be incorporated in the TB NSP) implementation framework which is described in detail in recovery and reconstruction needs. Priority will be to available local resources and generous support of partner agencies to address the NTP needs.

Recovery and reconstruction needs:

Short term

- Mobilization of volunteers to trace missing 10 TB cases and unknown number of TB patients in unreachable northern belt of Gorkha District
- Timely replacement of damaged assets (furniture, essential equipment, etc.) to TC 's and MC's
- Construction and functionalize TCs and MCs not assigned for rebuilding by MoHP (eg. NATA and DPHO DOTS clinic is Bhaktapur)
- MC camps and chest camps is needed immediately at camps for internally displaced populations where health access is not available
- MC camps for ACF
- Awareness campaigns and infection control program in camp sites as are crowded and people live in close proximity (integrated with health and hygiene promotion activities)
- HR in some DOT centers, needs to be filled immediately, where there is shortage.
- CB DOTS in areas where access to health service is limited due to lack of transportation or infrastructure
- Psychosocial support for TB staff and patients
- Provision of nutritional support and transportation allowance for DR TB and all SSP TB patients
- Rehabilitation packages for many needy TB patients

Medium term

- Mobilize local partners to focus on PPM activities to increase access to DOTS services
- Mobilization of volunteer for priority DST/Gene X-pert testing of all retreatment cases post-earthquake
- Budget and HR to manage contact tracing of index cases on regular basis (particular DR TB)- utilize front loaded approach
- Only one MDR hotel in highly affected districts at full occupancy. Require establishment of MDR hostels in other Districts (10 bed capacity)
- Provision of livelihood rebuilding programme for DR TB patients
- Stigma reduction and awareness programme

Long term

- Preparedness planning, training of Rapid Response Team in place for prompt action
- Strengthening of TB information management and development of master TB register for TB patient tracing
- Emergency TB kits in place

Table of Contents

Acknowledgement ..... **III**

Abbreviations ..... **IV**

Executive Summary ..... **V-VI**

1. Disaster Situation including Context analysis **1-8**

1.1 Disaster Situations in the context of overall Health Services of MoHP 1

1.2 Background in the context of National Tuberculosis Program (NTP) 1

1.2.1 The situation of NTP before the earthquake 2

1.3 Post Disaster Situation 3

1.3.1 Response from NTC 3

1.3.2 Effect of the earthquake 3

1.3.3 Estimates of Damage and Loss (DALA) 6

2. Post Disaster Need Assessment and District Recovery Plan **9-12**

2.1 Recovery and Reconstruction Strategy 9

2.2 Recovery and reconstruction needs 9

2.3 Recovery and reconstruction Initiatives and costs 11

2.4 Implementation Strategy for Recovery 12

3. MDR TB patients status after earthquake **12**

4. District wise challenges in implementation of TB program **12**

5. Assessment Methodology **13-14**

5.1 Scope of Assessment Defined 13

5.2 Field Visit in Eleven Affected Districts 14

5.3 Data Compilation, Cleaning and Analysis 14

5.4 Costing Approach and Assumptions 14

5.5 Drafting of Report, Consultation and Finalization 14

References **15**

1. Disaster Situation including Context Analysis

1.1 Disaster Situations in the context of overall Health Services of MoHP:

1.1.1 Pre Disaster Situations:

Ministry of Health and Population (MoHP) has a network of 4,118 health facilities ranging from the Central level specialized hospitals to Health Posts and Urban Health Centers at the Village Development Committee (VDC) and Municipality levels respectively. Fourteen Districts were severely affected by the earthquake of April 25, 2015 causing 8,699 deaths until 2nd June and over 21,000 injured resulting into increased health care needs (Ministry of Home Affairs, 2015) at the time when health facilities in 61 districts were directly affected. Out of the total public health facilities of the country, 19% and 23% of total health facilities are located respectively in highly and moderately affected districts as summarized in Table 1 (Department of Health Services, 2014).

Table 1: Number of Public Health facilities

District category	Hospitals	PHCCs	HPs	Total
Highly affected (14)	26	44	723	793
Moderately affected (17)	20	44	882	946
Others (44)	58	120	2,201	2,379
Total	104	208	3,806	4,118

Source: Annual Report 2070/71, DoHS

Bedsides above-mentioned facilities, Ayurveda health services are being delivered through two hospitals 14 Zonal Aushadhalayas, 61 District Ayurveda Health centers and 214 Aushadhalayas in the country. Moreover, more than 350 health facilities in private sector cater the health care demands of the population in Nepal majority of them being in Kathmandu Valley and other urban areas. Further to this, Department of Drug Administration also has four regional offices in addition to its central office for the regulation and quality control of drugs and equipment.

Percentage of visits to public facilities, private facilities and others including pharmacies for health services are respectively 37%, 33% and 30% (Central Bureau of Statistics, 2011). Per capita government expenditure on health is NPR 827 in 2013/14 (Ministry of Finance, 2013/14) while the per capita total health expenditure is estimated to be US$ 38 in 2012 (Global database, WHO).

1.1.2 Post Disaster Situation:

The assessment shows that existing infrastructure of 5 hospitals, 12 Primary Health Care Centres (PHCCs), 417 Health Posts (HPs) and 12 other facilities are completely damaged in the public sector by the earthquake while a total of 701 public health facility structures are partially damaged. Similarly, reporting from the private sector shows that 16 health facilities are completely damaged while 64 are partially damaged in the private sector including NGO and community institutions. A total of 8,792 deaths have been reported along with 22,220 injuries requiring immediate response from the health sector for the treatment of those injured and resumption of regular health services.

1.2 Background in the context of National Tuberculosis Program (NTP):

In line with the broad framework of the Post Disaster Needs Assessment (PDNA) undertaken by the National Planning Commission and PDNA of the health and population sector undertaken by the Ministry of Health and Population (MoHP), the National Tuberculosis Centre (NTC) has conducted a comprehensive assessment of the National Tuberculosis Program (NTP) in the 11 most affected districts (Kathmandu, Lalitpur, Bhaktapur, Dhading, Sindhupalchowk, Nuwakot, Gorkha, Dolakha, Ramechhap, Rasuwa, Kavrepalanchowk) which aimed at collecting and collating information on damage, losses, tracing TB (particularly DR TB patients) and

identifying post-disaster needs for reconstructing and rebuilding TB service with the broader concept of building back better.

The work accomplished by the assessment team has provided (i) analysis of the situation before the earthquake, (ii) a thorough assessment of damage and losses incurred following the earthquake and an estimation of the effect of the earthquake on TB services; and (iii) identification of needs for recovery and reconstruction in the intermediate, medium and long terms.

1.2.1 The situation of NTP before the earthquake:

Historically, Nepal has been a leader in the South-East Asian Region in the fight to eliminate TB. Nepal was the first country in Asia to introduce the internationally recommended Direct Observed Treatment Short-Course (DOTS) strategy for which the country now has 100% coverage in primary health care centers and health posts in the country. Further, Nepal was one of the first countries globally to introduce ambulatory MDR-TB case management and has expanded this programme to all five Regions of the country.

TB services were provided through 4221 Treatment Centers, 564 Microscopic centers and 22 GeneXpert centers in the country. DR TB services were provided through 13 treatment centers and 71 Treatment Sub-centers. Though the DR TB services are ambulatory, facility based services were also provided though 10 hostels for patient without access or needing inpatient services. Culture and DST facilities for DRTB cases were provided from NTC and GENETUP reference laboratories at the central level.

Out of the total DR TB treatment facilities (DR TB treatment center and DR TB Treatment sub-centers) 21% of the facilities are located in highly affected districts and 17.5% of general TB treatment facilities (DOTS and DOTS sub-centres) are located in highly affected districts. One DR Hostel is located in a highly affected district and was at full occupancy at the time of the earthquake (15 beds).

In 2014, 6.7 Million US$ was spent annually in TB program in Nepal, 26% from Government expenditure and 69% was from the Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund), and 5% from LHL International Tuberculosis Foundation, Norway and 5% from the World Health Organization (WHO).

Table 3: Population and TB patient's profile in 11 affected districts

District	Total Population	Total TB patients	Male TB patients	Female TB Patients	Total DR TB Patients	Male DR TB Patients	Female DR TB Patients
Bhaktapur	327907	367	211	156	10	6	4
Dhading	342210	191	129	62	5	5	0
Dolakha	186160	64	42	22	0	0	0
Kathmandu	1916667	2097	1197	900	104	70	34
Kavre	389550	239	162	77	1	0	1
Lalitpur	505490	491	293	198	20	9	12
Nuwakot	280878	140	86	54	5	0	5
Ramechhap	203966	107	72	35	2	2	0
Rasuwa	43885	28	21	7	0	0	0
Gorkha	260509	133	82	51	1	1	0
Sindhupalchok	289780	163	116	47	3	3	0
Total	**4747002**	**4020**	**2411**	**1609**	**151**	**95**	**56**

1.3 Post Disaster Situation

1.3.1 Response from NTC:

Historically when there is a disaster of high scale, focus is immediately directed towards the rescue and relief efforts and care and control of communicable diseases such as TB are rarely addressed during the acute phase. In this perspective, the Nepal's National Tuberculosis Centre formed a Rapid Response Committee on the 20th May 2015 that has set about conducting a Post-Disaster Rapid Assessment of the National Tuberculosis Program for effective management of TB cases and continuation of its services to maintain the achievements of TB program. Rapid Response committee started to coordinate with the affected districts and updated the situation for the necessary decision and action such as deployment of NTC's staffs and supply of TB drugs, lab commodities and other logistics.

High level Officials of NTC sent to the highly affected districts to ensure proper coordination and support districts in responding immediate needs. A central Information Management Unit was set up under Rapid Response Committee (RRC) for the compilation of the TB services delivery related information and surveillance system was also initiated. A Hot Line was also set up at the NTC to help people access information regarding TB treatment services and handle grievances.

The committee has conducted a rapid assessment of the structural damage to, functionality of DOTS and microscopy centers and TB patient's status as well following the earthquake. With logistical support from WHO, the NTC rapid response committee have started tracing TB patients in the 14 most affected districts, with a priority to reach those with Drug Resistant TB (DR TB). NTP partners were also mobilized for the additional support in the area of treatment and management of TB patients. On 21 May, NTC, LHLI and WHO staff met with District TB and Leprosy Officers in Bhaktapur to explore issues surrounding post-earthquake TB care and control in the district. The team also met with TB patients living in temporary camps in order to identify patients' immediate needs and ensure their continued care and access to treatment. NTC have also identified the following key areas of action; addressing living conditions of TB patients in temporary camps; increasing patient access to infection control measures and DOTS- through patient centered approaches; minimizing stigma and providing psychosocial support.

1.3.2 Effect of the earthquake:

The NTP and TB patients have been severely affected as evident from damages and losses to infrastructure and assets and disruption in TB service access and delivery. A total of 151 DR TB patient and 2411 male and 1609 female drug susceptible TB patients experienced varying degrees of disruption to their TB care.

In the 11 most affected districts a total of 738 TB treatment facilities including administrative building, 5 hospitals, 9 Primary Health Care Centers, 312 Health Posts, 2 Urban health centres and 12 private facilities are completely destroyed while a total of 738 TB treatment facilities (204 public and 5 private) structures are partially damaged. As a result, the ability of the health facilities to respond to the healthcare needs has been affected by the destruction and service delivery is disorganized. Consequently, vulnerable populations, including disaster victims, have been further disadvantaged in accessing health services in remote areas. A total of 1 DTLO, 7 Health Workers and 10 FCHW volunteers have lost their lives and 75 got injured adding further challenges in health resumption of services delivery.

Similarly, existing capacity of the NTC in general and that of concerned District (Public) Health Offices and District Tuberculosis and Leprosy Officers (DTLOs) have been stretched to ensure the resumption of disrupted services delivery, coordination with concerned agencies and stakeholders and management of increased case load for treatment for patients transferring to functioning facilities.

Table 4: Damage status of TB treatment facilities and status of continuation of services in the 11 affected districts

District	No. of TB treatment facilities*	No. of facilities Completely Damaged	No. of facilities Partially Damaged	% of facilities continuing DOTS service	% of facilities able to undertake patient tracing	% of facilities able conduct contact tracing	% of facilities with TB Register intact	% of DOTS Centre with availability to ATT	Comment
Bhaktapur	39	5 (13%)	17 (44%)	90%	90%	90%	90%	90%	MoPH planning does not address NATA and DPHO DOTS clinic for replacement.
Dhading	55	33 (60%)	13 (13%)	98%	96%	98%	98%	98%	
Dolakha	56	50 (89%)	4 (7%)	100%	100%	0%	100%	98%	Most of HFs damaged and lack of HWs to conduct contact tracing
Kathmandu	122	9 (7%)	42 (34%)	100%	10%	100%	100%	99%	
Kavre	106	50 (47%)	36 (34%)	95%	95%	95%	95%	96%	
Lalitpur	55	10 (18%)	21 (38%)	98%	98%	98%	98%	96%	
Nuwakot	74	31 (42%)	17 (23%)	97%	97%	22%	3%	97%	Most of HFs damaged and lack of HWs to conduct contact tracing
Ramechhap	56	25 (45%)	27 (48%)	100%	100%	100%	100%	100%	
Rasuwa	20	15 (75%)	3 (15%)	90%	95%	90%	90%	90%	
Gorkha	74	49 (66%)	16 (22%)	80%	80%	80%	73%	78%	
Sindhupalchok	81	63 (78%)	13 (16%)	91%	93%	84%	98%	80%	
Total	**738**	**340 (46%)**	**209 (28.3%**	**94.5%**	**86.7%**	**77.9%**	**85.9%**	**92.9%**	

In the 11 most affected districts a total of 340 (46%)TB treatment facilities including hospitals, Primary Health Care Centers, Health Posts, Urban health Centers and private facilities are completely destroyed while a total of 209 (28.3%) TB treatment facilities are partially damaged as presented in the table 4. The ability of health facilities to respond to health care needs has been affected and service delivery is disorganized. Vulnerable populations, including disaster victims, have been further disadvantaged in accessing health services in remote areas.

Table 5: Damage status of Microscopic centers (MCs) and status of continuation of services in the 11 affected districts

District	Microscopy Centre No.	Microscopy Centre Completely Damaged	Microscopy Centre Partially Damaged	Continuity of MC services	Lab register in tact	Comment
Bhaktapur	12	0	0	100%	100%	
Dhading	7	2	4	100%	100%	Microscope replaced by NTC at Salyautar MC
Dolakha	5	3	2	100%	100%	
Kathmandu	34	0	11	100%	100%	
Kavre	15	2	5	93%	100%	Ghartichhap HP lab not function before earthquake
Lalitpur	16	1	5	82%	82%	Lele PHC- HR shortage Bungamati HP- No lens of microscope
Nuwakot	5	1	1	80%	80%	DHO lab- completely destroyed
Ramechhap	6	3	3	100%	100%	
Rasuwa	2	1	0	100%	100%	
Gorkha	6	3	3	83%	83%	Machhikhola HP - completely destoryeddestroyed
Sindhupalchok	4	3	1	60%	60%	Melamchi PHC - Unavalability of Lab technician pre earthquake
Total	**112**	**19 (17%)**	**35 (31.2%)**	**90.7%**	**91.3%**	

In the 11 most affected districts, out of total 112 microscopy centers, 19 (17%) microscopy centers are completely destroyed while a total of 35 (31.2%) are partially damaged. Even though damaged of microscopy centers in the most of districts, 90.7% MCs were resumed and continued the regular activities as shown in the table 5.

Table 6: Status of TB Patients in the 11 affected districts

District	No. (%) of TB patient traced			No. TB patient deceased			No. TB patient Discontinued			No. TB patient Status Unknown			Treatment phase of discounted and unknown TB Patients	
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Intensive	Continuation
Bhaktapur	364 (99.2)	211 (100)	153 (98.1)	3	2	1	3	0	3	0	0	0	2	1
Dhading	191 (100)	129 (100)	62 (100)	1	1	0	0	0	0	0	0	0	0	0

District	No. (%) of TB patient traced			No. TB patient deceased			No. TB patient Discontinued			No. TB patient Status Unknown			Treatment phase of discounted and unknown TB Patients	
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Intensive	Continuation
Dolakha	63 (98.4)	41 (97.6)	22 (100)	1	0	1	1	1	0	0	0	0	1	0
Kathmandu	2081 (99.2)	1186 (99.1)	896 (99.6)	2	1	1	11	9	2	5	3	2	7	9
Kavre	238 (99.6)	162 (100)	76 (98.7)	1	1	0	1	0	1	0	0	0	1	0
Lalitpur	488 (99.4)	291 (99.3)	197 (99.5)	0	0	0	0	0	0	3	2	1	1	2
Nuwakot	140 (100)	86 (100)	54 (100)	0	0	0	0	0	0	0	0	0	0	0
Ramechhap	107 (100)	72 (100)	35 (100)	0	0	0	0	0	0	0	0	0	0	0
Rasuwa	28 (100)	21 (100)	7 (100)	0	0	0	0	0	0	0	0	0	0	0
Gorkha*	133 (100)	82 (100)	51 (100)	5	5	0	0	0	0	0	0	0	0	0
Sindhupalchok**	160 (98.2)	115 (99.1)	46 (97.9)	3	3	0	0	0	0	2	1	1	2	0
Total	**3993 (99.3)**	**2396 (99.4)**	**1599 (99.4)**	**16**	**13**	**3**	**16**	**10**	**6**	**10**	**6**	**4**	**14**	**12**

* 12 TB Treatment Facilities unable to be contacted to trace TB patients, number of patients at these facilities is unknown
** 10 VDC cannot be reached

*** All records destroyed at Tatopani HP as such no details on the one patient can be obtain HW informs one patient receiving treatment

Out of a total 4020 TB patients in 11 most affected districts, 3993 (99.3%) TB patients were traced and status of 10 TB patients is still unknown. It means they are not on regular TB treatment as shown in the table 6.

1.3.3 Estimates of Damage and Loss (DALA):

Based on the data reported by district offices and information collected through field visits from most affected 11 districts, inventory of damages of Infrastructure, equipments, instruments, furniture and drug and supplies were taken. Out of total 850 DOTS centers and Microscopic centers, 359 facilities were completely damaged while 244 facilities were partially damaged as presented in the Table 7. An attempt has been done to decompose the value of damages and losses by the affected districts and categories which are summarized in Table 7 below. Gorkha, Sindhupalchowk, and Dolakha are the top three districts in terms of estimated value of damage and loss.

Table 7: Status of damages of infrastructure, equipment, other logistics and losses

District	Institution Type	Baseline	Number of Infrastructure		Number of Furniture		Number of Equipment		Medical Equipment and Medicine supply (NPR)	Ownership -No or %_	
			Totally Destroyed	Partially Damaged	Totally Destroyed	Partially Damaged	Totally Destroyed	Partially Damaged	Destroyed	Public	Private
Bhaktapur	DOTS Center	39	5	17	0	4	0	0	0	28	11
	Microscopic center	12	0	0	0	0	0	0	0	6	6
Dhading	DOTS Center	55	33	13	20	3	20	13	2	52	3
	Microscopic center	7	2	4	2	4	2	4	2	6	1
Dolakha	DOTS Center	56	50	4	0	56	0	56	Partialy-56	55	1
	Microscopic center	5	3	2	0	5	0	5	Partialy-5	4	1
Kathmandu	DOTS Center	122	9	42	0	4	0	0	0	104	18
	Microscopic center	34	0	11	0	14	10	0	0	15	19
Kavre	DOTS Center	106	50	36	3	0	0	0	0	102	4
	Microscopic center	15	2	5	0	0	0	0	0	11	4
Lalitpur	DOTS Center	55	10	21	15	27	5	8	10	48	7
	Microscopic center	16	1	5	4	6	1	9	3	11	5
Nuwakot	DOTS Center	74	31	17	4	1	0	0	HRZE 21 st HR 10 st	74	0
	Microscopic center	5	1	1	2	0	0	0	0	5	0
Ramechhap	DOTS Center	56	25	27	105	81	25	27	Partialy-52	56	0
	Microscopic center	6	3	3	27	19	3	3	Partialy-6	5	1
Rasuwa	DOTS Center	20	15	3	300	100	15	10	400	20	0
	Microscopic center	2	1	0	300	25	50	20	100	2	0
Gorkha	DOTS Center	74	49	16	200	50	40	10	60	73	1
	Microscopic center	6	3	3	150	30	15	5	35	4	2
Sindhupalchok	DOTS Center	81	63	13	81	10	75	25	57	81	0
	Microscopic center	4	3	1	30	20	44	16	50	3	1
Total		**850**	**359**	**244**	**1243**	**459**	**305**	**211**	**719**	**765**	**85**

Total damage and loss due to the earthquake is estimated to be NPR 131.65 million of which the public shares 97% rest being that in the private sector including NGO and Community owned service providers as presented in the table 8 below. Gorkha, Sidhupalchowk and Dolakha are the hardest hit districts in terms effects of the earthquake sharing 29.4% of damages and losses. Out of total value of damage and loss is

estimated, 93% share was of damage and rest 7% being losses. Damaged status of TB drugs was reported only in Nuwakot district (HRZE 21 st and HR 10 st). Unit cost was defined in consultation with respective districts supervisors and technical experts based on which the cost of damages and losses was estimated.

Table 8: Cost of Damages and Losses by Category

Amount in Thousand

District	Type of facilities	Type of facilities totally and partial damaged	Public	Private	Infrastructure cost (NPR)	Furniture cost (NPR)	Office Equipment (NPR)	Medical Equipment and Medicine supply (NPR)	Others losses	Total
Bhaktapur	DOTS Center	22	19	3	3300	1000	20	200	330	4850
	Microscopic center	0	0	0		5	0	10	0	15
Dhading	DOTS Center	46	44	2	6900	330	150	300	690	8370
	Microscopic center	6	5	1	900	300	200	200	90	1690
Dolakha	DOTS Center	54	54	0	8100	96	26	256	810	9288
	Microscopic center	5	4	1	750	5	5	5	75	840
Kathmandu	DOTS Center	51	51	1	7650	5000	200	200	765	13815
	Microscopic center	11	10	1	1650	100	50	50	165	2015
Kavre	DOTS Center	86	86	0	12900	500	150	150	1290	14990
	Microscopic center	7	5	2	1050	50	12	15	105	1232
Lalitpur	DOTS Center	31	29	2	4650	1500	2000	1000	465	9615
	Microscopic center	6	4	2	900	500	200	300	90	1990
Nuwakot	DOTS Center	48	48	0	7200	6600	1500	500	720	16520
	Microscopic center	2	2	0	300	500	400	300	30	1530
Ramechhap	DOTS Center	52	52	0	7800	1200	110	100	780	9990
	Microscopic center	6	5	1	900	150	70	70	90	1280
Rasuwa	DOTS Center	18	18	0	2700	600	500	300	270	4370
	Microscopic center	1	1	0	150	200	200	100	15	665
Gorkha	DOTS Center	65	65	0	9750	450	200	50	975	11425
	Microscopic center	6	4	2	900	275	100	75	90	1440
Sindhupalchok	DOTS Center	76	76	0	11400	700	500	300	1140	14040
	Microscopic center	4	3	1	600	400	350	275	60	1685
Total		**603**	**585**	**19**	**90450**	**20461**	**6943**	**4756**	**9045**	**131655**

2. Post Disaster Need Assessment and District Recovery Plan

The NTC has just completed Post Disaster Need Assessment (PDNA) and district planning process at the district level. A central team comprising NTC officials and staff from NTP partners were mobilized in each of the highly affected 11 districts. The mobilized teams shared their observation briefly and submitted the report to NTC. It mainly focused on TB services, TB patients tracing and TB related infrastructure, furniture, equipment and supplies status and risks at the district level. The exercise will help the NTC in identifying the post disaster needs and support the districts for preparation and implementation the district recovery plan.

2.1 Recovery and Reconstruction Strategy

National Tuberculosis Centre has already formed a Rapid Response Committee for coordination with district health offices, stakeholders and donors; assessment of needs and planning for recovery and reconstruction of the TB treatment facilities and microscopy centers under the chair of NTC director. Based on the information available from the districts an initial set of necessary activities was defined, cost was estimated and submitted to the supporting agencies. However, detail planning for the recovery was carried out together with concerned District (Public) Health Offices followed by the situation assessment.

While the reconstruction of the TB treatment facilities and microscopy centre may take some years while the prime concern at present is resuming TB services to cater immediate needs of the TB patients. Considering this scenario, NTC has adopted three pillar strategies for the recovery and reconstruction which are basically adopting the immediate until end of November 2015, medium term (during FY 2015/16) and long term (FY 2015/16 to 2019/20 which will be incorporated in the TB NSP) implementation framework which is described in detail in recovery and reconstruction needs. Priority will be to available local resources and generous support of partner agencies to address the NTP needs.

2.2 Recovery and reconstruction needs

Priority Recovery Needs	Interventions		
	Immediate- term	Medium- term	Long-term
To repair / rebuild damaged infrastructure and physical assets, and Building Back Better (BBB)			
1. To rebuild/ strengthen structurally damaged DOTS centres	Debris management	Building of DOTS centers	Prepare permanent setup with sufficient HR and volunteers at district and the centers
2. To rebuild/ strengthen structurally damaged MC centres	Repair/replace Microscope	Continued supply of reagents and logistics for microscope	Human resource Uninterrupted power supply to run lab in different microscopic centers
To resume service delivery and access to goods and services, and BBB			
1. To maintain 100% universal coverage of TB services in Disaster settings.	Volunteers for TB tracing	Volunteers for TB tracing	Volunteers for TB tracing
1.1 Continue functional TB services interrupted by the disaster.			
1.2 Continue and strengthen all regular services.	FCHV for TB tracing/LTFU Human resource	FCHV for TB tracing/LTFU	FCHV for TB tracing/LTFU

Priority Recovery Needs	Interventions		
	Immediate- term	Medium- term	Long-term
1.3 Continue Identify vulnerable populations/sites and focus on additional services for example Temporary camps	Active case finding Microscopy camps Awareness program (Stigma reduction program)	Active case finding Awareness program (Stigma reduction program)	Active case finding Awareness program (Stigma reduction program)
2. To achieve 100% case enrolment rate post disaster	Volunteers (HR) to trace and identify patients	Volunteers (HR) to trace and identify patients	Volunteers (HR) to trace and identify patients
2.1 Continue Maintain, supervise and promote of those in regular DOT	Transportation and nutritional support for all TB patients in affected districts	Transportation and nutritional support for all TB patients in affected districts Implementation of CB-DOTS program	Transportation and nutritional support for all TB patients in affected districts Implementation of CB-DOTS program
2.2 Continue to trace and enroll TB patients who have discontinued and/or whose status is unknown back into DOTS	HR support and local call cost	HR support and local call cost	-
3. To manage and BBB DR services for 100% MDR cases	Hostel Nutritional and transport Psychosocial support	Hostel Nutritional and transport Psychosocial support	Hostel Nutritional and transport Psychosocial support
3.1 Continue and BBB DR Diagnostic, follow up and Treatment services.	Psychosocial support and counseling	Most MDR patients are referred to nearest city. There is a need of DR service in the district. It will be fulfilled by it. Psychosocial support and counseling	Psychosocial support and counseling
3.2 Continue Strengthen the living quality of MDR patients.	Nutritional and transportation cost needs to be increased	Nutritional and transportation cost needs to be increased	Nutritional and transportation cost needs to be increased
To restore governance and social processes, and BBB			
1. To strengthen governance mechanism in place of disaster	HR Supervision cost Logistic management	HR Supervision cost Logistic management Implementation of CB-DOTS program	-
To address immediate new risks, and Disaster Risk Reduction			
1. To develop, establish and strengthen outbreak control, monitoring and management.	Awareness campaigns and active case finding camps	Awareness campaigns and active case finding camps	-
2. To prepare for future preparedness for swift and efficient management of NTP programs in such cases.	HR Logistic Supervision cost	-	-

2.3 Recovery and reconstruction Initiatives and costs

The NTC has developed a comprehensive plan base on analysis of risk and vulnerability for immediate resumption of critical TB services by establishing post-earthquake TB surveillance system for monitoring of TB outbreak, set-up of the NTC hotline and TB sub-clusters. It also covers logistics supply for examples; furniture and other goods, equipment's, lab equipment and reagents, medicine in the damaged TB treatment facilities and microscopy centers, nutrition support for needy TB patients of affected districts and, where appropriate, expansion of TB services to new settlements and CB-DOTS. It includes package of services for targeted vulnerable population groups- pregnant mothers, new born, and senior citizens – and additional services to meet urgent health needs in the aftermath of the earthquake: mental health, rehabilitation, etc. The NTC seeks to strengthen TB surveillance (contract tracing) to protect communities from risk of getting TB infection and mitigating chance of TB transmission. Recovery and reconstruction plan consist of district level activities which are summarized in the below table.

Table 9: Cost of District Level Recovery and Reconstruction Plan

Amount in Thousand

S.N.	Immediate term (Until end of November 2015)	Amount	Medium Term (FY 2015/16)	Amount
1	Mobilization of Volunteers to trace 10 TB patients missing	50	MC camps and chest camps for IDP	400
2	Hire volunteers for Gorkha district to trace unknown number of TB patients	18090	Awareness campaigns and infection control program in camp sites (integrated with health and hygiene promotion activities)	495
3	Procure of furniture and essential equipment for TCs and MCs	6000	MC camps for ACF	495
4	Nutritional support and transportation allowance for DR TB and all SSP TB patients	1500	HR for some DOTS and MCs Centers	330
5	Appreciative Inquiry (AI) Package	3000	Expansion of CB DOTS program in affected districts	2640
6	Rehabilitation packages for needy TB patients		Mobilization of volunteer for priority DST/Gene X-pert testing of all retreatment cases post-earthquake	
7	Additional Transportation cost for emergency TB medicine supply in the most remote area of affected district	165	Establishment of MDR hostels for earthquake affected patients	11000
8	Monitoring and supervision visit in the affected districts	440	Medical instruments and Lab materials supply	550
	Total	**29355**	**Total**	**21185**

Note: Some of activities reflected in intermediate plans will also be continued in medium term.

Source: Cost estimated based on the district and NTC assessment and planning.

2.4 Implementation Strategy for Recovery

Recovery and reconstruction of the TB treatment facilities and microscopy centers will be guided by a Joint RRC which is led by the NTC director and include members of NTP partners. The Committee will oversee the standards and specifications for facilities infrastructure and will be responsible for the reconstruction plan for damaged Treatment facilities and microscopy centers.

After the finalization of the implementation plans, budgets will be allocated to districts considering the identified needs and resource availability. While major equipment and common supplies and human resources and volunteers will be provided from the center, the remaining activities will be accomplished by the districts based on a guideline developed by the NTC. Recovery and reconstruction initiatives will be implemented over next year.

3. MDR TB patients status after earthquake

Total MDR TB patients before earthquake recorded in the NTC register were 151. During TB PDNA, MDR TB patient's related data were also collected and analyzed the status of MDR TB patients. It was found that 149 MDR TB patients related information were got acquainted and rest 2 patients from Lalitpur district died.

Table 10: MDR TB patient's status

District	Total DR TB Patients	Male DR TB Patients	Female DR TB Patients
Bhaktapur	10	6	4
Dhading	5	5	0
Dolakha	0	0	0
Kathmandu	104	70	34
Kavre	1	0	1
Lalitpur	18	7	11
Nuwakot	5	0	5
Ramechhap	2	2	0
Rasuwa	0	0	0
Gorkha	1	1	0
Sindhupalchok	3	3	0
Total	**149**	**94**	**55**

4. District wise challenges in implementation of TB Program:

Immediate response for human resource, medicine and other logistics needs are major challenge for resuming the TB services in the remote areas of earthquake affected districts. Districts are continuously demanding tents, diagnostic equipment/kits, food supply for both patient and care givers. There is growing demand from districts for rehabilitation of the earthquake displaced TB patients. In addition to this, below table 10 shows the district wise challenges in managing TB patients and resuming TB treatment facilities and microscopy centers:

Table 11: District wise challenges:

District	Challenges in managing of TB patients	Challenges in resuming TB Treatment facilities and microscopy centers
Bhaktapur	DR TB & TB patients not adhering to Daily DOTS receiving >1 week supply Patients difficult to trace in temporary camps	Hostel needed for MDR TB Patients
Dhading	Transport cost to TC for remote Patients	Most patients are homeless and travel from remote places to obtain ATT. Hostel needed for MDR TB Patients
Dolakha	Need volunteer for LTFU patient as difficult to trace.	Most TCs in tent, need basic infrastructure Need lab staff for MC
Kathmandu	Most patients homeless, returning to hometown, difficult to trace	CB DOTS required No provision of MC near hard-to-reach population and slums
Kavre	DR TB & TB Patients not adhering to Daily DOTS receiving >1 week supply	Lack of accessibility and transportation from remote areas to DOTS centre
Lalitpur	Small number of patient in remote areas not adhering daily DOTS receiving >2 day supply	Hostel needed for MDR TB Patients
Nuwakot	Volunteers shortage for TB patient home visit and tracing of LTFU cases	Lack of MC, service needs strengthening
Ramechhap	Most patients living in tent, poor conditions (no food). Need FCHW to trace patient LTFU as difficult through usual mechanism	Most TCs damaged; in need of health workers for DOTS
Rasuwa	DR TB & TB patients not adhering to Daily DOTS receiving >1 week supply	Most TCs in tent; need basic infrastructure
Gorkha *	Northern VDC un-reachable number of patients in these VDCs is unknown	Inaccessible terrain and a lack of motorable roads for ATT supply (northern belt) CB DOTS required
Sindhupalchok	DR TB & TB patients not adhering to Daily DOTS receiving >1 week supply Patient record destroyed in Tatopani unable to trace patient	Logistic supply of ATT (Landslides) HR needed to provide DOTS

5. Assessment Methodology

5.1 Scope of Assessment Defined

NTC formed Rapid Response Committee along with NTP supporting partners at central level for TB PDNA. The committee has conducted a rapid assessment of the structural damage to and functionality of DOTS and microscopy centers following the earthquake. The NTC rapid response committee has started tracing TB patients in the 14 most affected districts, with a priority to reach those with Drug Resistant TB (DR TB). After observing the TCs and MCs status of the districts and compiling TB patient's data form rapid assessment, RRC has decided to conduct TB PDNA only in 11 districts among 14 earthquake affected districts because very limited missing cases have been noticed (Makwanpur, Okhaldhunga and Sidhuli) and additionally limited resource. Under the RRC, a working team was also formed for drafting scope of work, working timeline, assessment tools for the situation assessment of TB service delivery, infrastructure DOTS and microscopy centers, as well as planning template for recovery and reconstruction.

The Assessment tools mainly covered three aspects of work: validation of data already compiled at the centre, collection of additional information on damages and its effects and identification of recovery and reconstruction needs.

5.2 Field Visit in Eleven Affected Districts

Eleven teams were formed for the visit to each of 11 most affected districts which were led by senior officials of the NTC and co-facilitated by partner agencies. Two days orientation to the field team was organized on 28th and 29th of July and the teams dispatched to the field on 2nd August and worked until 8th of August in the field. The field assessment teams consulted with the district health offices, TB focal person/DTLO/A and health facility staff as appropriate as well as other key stakeholders and collected information on the status of damages and needs as per the provided templates. Collected information and field observations were shared by each of field team on 12th of August 2015.

5.3 Data Compilation, Cleaning and Analysis

While the field teams were compiling data from the districts, central team in the meantime started preparing the assessment report based on the analysis of secondary data that were already available. All the data collected from the districts were compiled and analyzed to produce the summary tables. Unit costs were defined for the infrastructure and major equipment in consultation with experts of the relevant area which was applied to estimate monetary value of damages and reconstruction.

5.4 Costing Approach and Assumptions

Overall estimates of the cost consist of the damage of DOTS and microscopy centers (complete and partial) and damages of equipment and other logistics plus losses incurred as an effect of earthquake in terms of TB treatment cost and management of NTP response. Costing of the damages has been done in a disaggregated by the DOTS and Microscopy center and by districts. Estimate of damages and losses was done based on the data from 11 districts. Unit cost of damages was defined in consultation with technical experts which are applied for the estimates of total costs by type of facility and equipment.

5.5 Drafting of Report, Consultation and Finalization

Preliminary cost estimates of the damages and losses as well as recovery and reconstruction needs were discussed within RRC, TB Sub-cluster and PDNA working team. Preliminary estimates of damages, losses and needs were further refined based on the suggestions received. Finally a draft report was produced which was further refined based on the feedback received.

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NTC Annual report 2013/14

A Report on Post Disaster Need Assessment and Recovery Plan of Health and Population Sector June 2015

Health Sector Response Situation Update Report Earthquake 2015