Funding Request Form

Allocation Period 2020-2022

Refer to the "Full Review" Instructions to complete this form.

Summary Information

Country(s)	**Nepal**
Component(s)	**TB**
Planned grant(s) start date(s)	**16 March 2021**
Planned grant(s) end date(s)	**31 July 2024**
Principal Recipient(s)	**Save the Children International (SCI)**
Currency	**US Dollar**
Allocation Funding Request Amount	**USD 20,556,048 Allocation**
Prioritized Above Allocation Request (PAAR) Amount[1]	**USD 14,771,243**
Matching Funds Request Amount[2] (if applicable)	

Full Review

[1] PAARs can only be submitted with the Funding Request. To complete a PAAR, fill-in the Excel template that you will receive from the Global Fund Secretariat.
[2] This is only relevant for applicants with designated matching funds as indicated in the allocation letter.

Section 1: Context Related to the Funding Request

To respond to the questions below, refer to the *Instructions* and **Essential Data Table(s).**

1.1 Key References on Country Context

List key reference documents referred to in this funding request that provide the country's contextual cross- cutting and disease-specific information. A list of which types of documents can be used is included in the *Instructions*.

Reference document	Link/Attachment reference	Relevant section(s) and/or page(s)
Nepal Country Economic Memorandum, Climbing Higher: Toward A Middle-Income Nepal, World Bank, May 2017	Annex	Page 2
Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019	Annex	Pages iv,vii,6,22-23,28, 30,40,41,44,45,57
Human Development Report, UNDP, 2019	Annex	Page 2,6,22,52
COVID-19 Nepal: Preparedness and Response Plan (NPRP), UN Nepal, April 2020	Annex	Page 8
National TB Prevalence Survey, 2018-2019	Annex	Pages 8-9,13
National TB Prevalence Survey Fact Sheet, 2018-2019	Annex	Fact sheet
NTP Annual Report, 2018-2019	Annex	Pages 13,15-18,19,32, 40,26,50-51,52-53,64
Progress in the Health Sector in FY 2017-2018, National Annual Review Report 2018, MoHP/GoN	Annex	Page 1,12,19,20-21,67
National Tuberculosis Management Guidelines 2019	Annex	Page 24
Active Case Finding of TB in Nepal: Findings from TB REACH Wave-5, presentation at the Union (IUATLD) Conference, 2019	Annex	Presentation
National Strategic Plan for TB Prevention, Care and Control, 2021-2026	Annex	Page 6,19-20,55,64,75
Fact Sheet: 2019 National HIV Estimates	Annex	Pages 1-2
Factsheet 6: HIV Care and Antiretroviral Therapy (ART)Services in Nepal, NCASC, 2019	Annex	Page 14
Country Progress Report NEPAL to Contribute to Global AIDS Monitoring Report, 2017	Annex	Page 23
Epidemiological Review of TB Surveillance in Nepal, Dr Kathryn Snow and Dr Arax Hovhannesyan, WHO, 2019	Annex	Pages 4,57
National TB Laboratory Plan (Draft), 2020	Annex	Page 14
Non-communicable Disease Risk Factors: STEPS Survey Nepal, MoHP, NHRC, WHO,	Annex	Pages 43-44

2019		
Study of the magnitude of diabetes and its associated risk factors among the TB patients in Morang, Eastern Nepal, B Sharma et al, BMC Public Health, 2019	Annex	Page 5
Nepal STEPS Survey 2019, Tobacco Fact Sheet	Annex	Fact sheet
Federal Nepal: The Provinces- Socio-cultural Profiles of the Seven Provinces, Nepali S. et, al, Governance Facility, 2018	Annex	Page 76,80
Nepal's Multidimensional Poverty Index 2018	Annex	Pages 22,52
Declaration of the Rights of People Affected by TB, Stop TB Partnership, 2019	Annex	Preamble
World Bank in Nepal Overview April 2020	Weblink: https://www.worldbank.org/en/country/nepal/overview	Webpage
Nepal Demographic and Health Survey, 2016	Annex	Page 48
Audit Report Global Fund Grants in Nepal, GF-Office of the Inspector General-19-015, August 2019	Annex	Pages 14-15,16-17,21
Global Fund Portfolio Analysis, GF Country Team, 2020	Annex	Page 7
Active case finding is an effective strategy to reduce the economic impact of tuberculosis on households: The IMPACT TB longitudinal costing survey in Nepal, 2019 submitted for publication	Annex	Abstract
National Strategic Plan for Tuberculosis Prevention, Care and Control, Nepal, 2016-21	Annex	Page 4
National Guidelines on Drug Resistant Tuberculosis Management, National Tuberculosis Center, Nepal, 2019	Annex	Page 11
The re-emerging association between tuberculosis and diabetes, Cadena J et, at, Tuberculosis (Edinb). 2019 May	Annex	Pages 8-10
Nepal 2020-2022 Allocation Letter, Global Fund, December 2019	Annex	Page 5
Public Procurement Act, 2063 (2007)	Annex	Chapter 2
rGLC Report- "rGLC Mission Country Support for Updating PMDT Guidelines, Nepal, April 2019	Annex	Page 4
Summary of Country Dialogue, 2020	Annex	Summary
GDF Technical Assistance Mission Report, Nepal, June 2019	Annex	Mission Report

1.2 Summary of Country Context

Explain critical elements of the **country context** that informed the development of this funding request. The following points should be addressed in the response:

- The epidemiological context and other relevant disease-specific information;
- Information on disease-specific and the overall health systems, along with the linkages between them;
- Relevant key and/or vulnerable populations;
- Human rights, gender and age-related barriers and inequities in access to services;
- Socio-economic, geographic, and other barriers and inequities in access to health services;
- Community responses and engagement; and
- The role of the private sector.

Refer to information provided in the key reference documents listed in **Section 1.1**.

Overview of Country Context:

Nepal's history of development during the last decade witnessed the phenomenal reduction of poverty by half within seven years and equally significant decline in income inequality, linked to the spiraling of remittances from abroad from 2% of the Gross Domestic Product (GDP) in 2000 to 30% of the GDP in 2016. In 2017, the country was ranked 27th among developing countries in the Inclusive Development Index of the World Economic Forum. Nepal has met most of the Millennium Development Goal (MDG) targets despite the natural barriers to development, one of them being the country's geographic profile- landlocked externally with challenging topography internally[1]. The population in 2019, was estimated to be 29.3 million[2]. In 2019, the GDP per capita was estimated to be US$ 1,048. Nepal's Human Development Index (HDI) value for 2018 was 0.579 and was ranked 147 out of 189 countries. Life expectancy at birth has been steadily improving and in 2018 was 70.5 years[3]. According to the Asian Development Bank, the economy of Nepal was projected to have a robust growth with a GDP increase of 6.3% in the fiscal year 2020; however, the COVID-19 pandemic is likely to have a substantial impact on the country's progress[4]. Nepal is committed towards the End TB Strategy, TB-related targets of the Sustainable Development Goals (SDG) and the first United Nations High Level Meeting (UNHLM) on TB. Under the federal system of government, the country is divided into 7 provinces, 77 districts, and in total 293 urban and 460 rural municipalities (in total 753 local levels).

The epidemiological context and other relevant disease-specific information:

The first-ever National TB Prevalence Survey (TB-PS) conducted in Nepal (2018-19), revealed that the TB incidence is 1.6 times higher than previously estimated by WHO. The estimated TB prevalence rate (TB of all forms) was revised from 211 to 416 (314-518) per 100,000 population for 2018 and TB incidence, at 151 was revised to 245 (147-367) per 100,000 population. Prevalence/Notification (P/N) ratio was 3.71. While the gap between incidence and notification is declining, still the gap is more than previously estimated by WHO and significantly, 54% (31,000) of people with TB are being missed by the National TB Programme (NTP)[5], as shown in Figure-1.

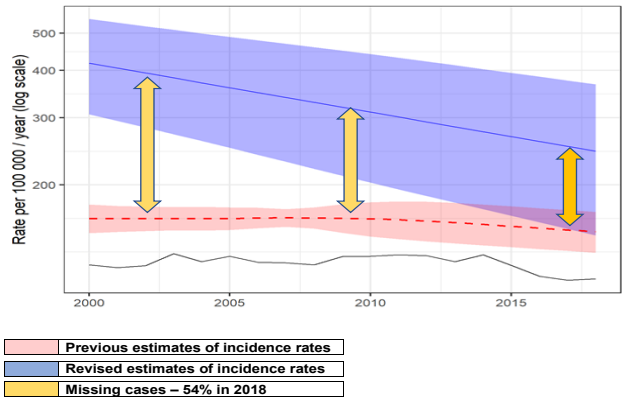


Figure-1: Previous vs New Estimates of Incidence Rates (Source: National TB Prevalence Survey, 2018-19)

[1] Nepal Country Memorandum-Climbing Higher to a Middle-Income Nepal, World Bank, 2017, page 2

[2] Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019, page 6

[3] Human Development Report, UNDP, 2019, page 2

[4] COVID-19 Nepal: Preparedness and Response Plan (NPRP), UN Nepal, April 2020, page 8

[5] National TB Prevalence Survey, 2018-2019, Fact Sheet

The re-estimation of incidence based on the TB-PS findings indicate noteworthy impact of efforts of the decade on TB epidemiology in Nepal, which had led to an estimated annual reduction of TB incidence by 3%. Apparently, this is better than the global annual decline rate of 1.5%-2%. However, this decline needs further acceleration to meet the End TB targets[6]. There has been no significant change in estimated TB mortality in the past two decades which is 58 (32-92) per 100,000 population. Geographically, there was no substantial difference in prevalence; however, there was a difference in the P/N ratio which was highest in mountains and hills, 5 and 5.1 respectively, which suggests difficulties to access health services and TB care facilities.

TB Notification Rates

During the fiscal year (2018-2019), 32,043 TB cases (all forms of TB) were registered with the NTP (Figure-2). The notification gap now is 52.8% after adjustment of incidence to 68,000 by WHO.

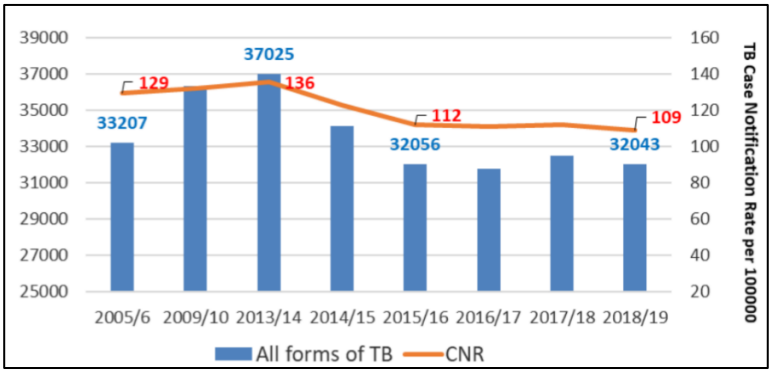


Figure-2: Notification Rates of All Forms of TB
(Source: NTP Annual Report, 2018-2019)

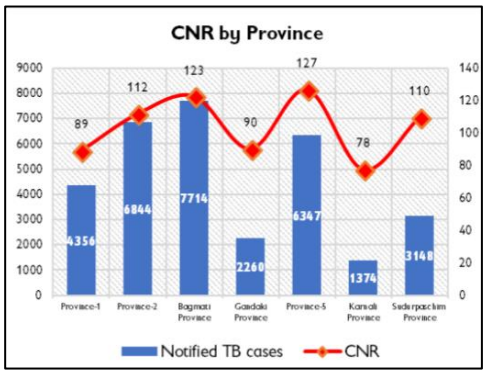


Figure 3: CNR by Provinces
(Source: NTP Annual Report, 2018-2019)

These 32,043 TB cases (new and relapse) included 18,490 (58%) pulmonary bacteriologically confirmed (PBC), 4171 (13%) pulmonary clinically diagnosed (PCD), and 9382 (29%) extrapulmonary TB (EPTB). There were 36% female and 64% male patients with TB. Among PBC cases, 78% were tested with rapid Drug Sensitivity Test (DST)[7].

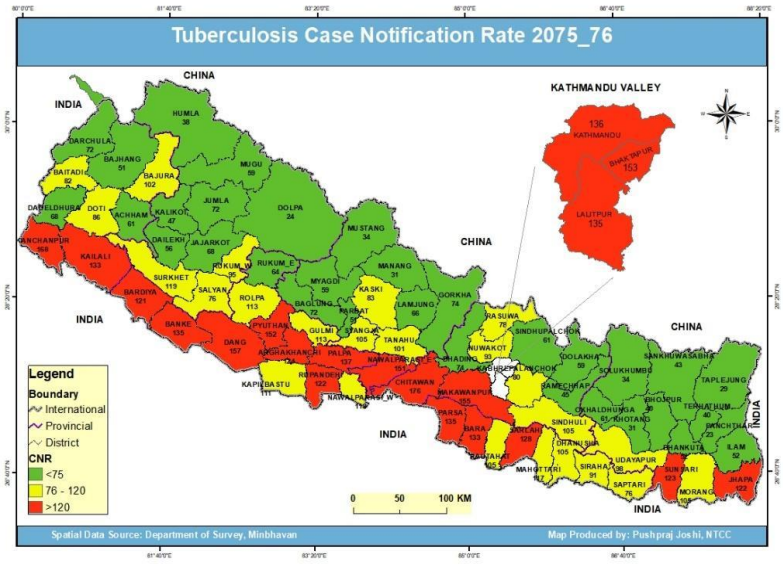


Figure 4. TB Case Notification Rates by Provinces 2075-76

TB notification rates differ by administrative regions and more so by geographic areas; lowest being in the mountains to the north of the country and highest in the terai to the south which is incidentally more urbanized. In the fiscal year 2018/19, 65% of TB cases were reported collectively from Provinces 2, 3 and 5 respectively. Province 6 reported the lowest number of TB cases, 1,374, (4%). Province 5 had the highest TB case notification rate (CNR) whereas Provinces 6, 4 and 1 had CNR below 100/100,000 population (Figures-3 and 4).

The TB-PS found that TB prevalence as well as P/N ratio is higher in older age groups above 65 years, (1,427/100 000 population).

As in previous years, TB burden was highest in the age group of 15 to 24 years followed by the age group of 65+. While males between the ages of 15 to 24 had the highest TB burden compared to other age groups,

[6] National TB Prevalence Survey, 2018-2019, page 13

[7] NTP Annual Report, 2018-2019, pages 15-18

among females it was significantly more in the group of 65+. The economically productive age group (15-64) accounted for 60.2% of the total TB cases. (Figure-5). The ratio of male to female TB patients remains stable at 1.8.

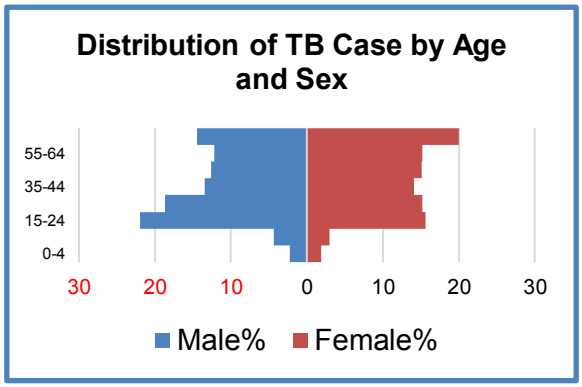


Figure 5. Distribution of TB Case by Age and Sex

Treatment

In 2018/19 treatment success rate was 91% on an average with variation across provinces. Province-wise treatment success rate was highest (94%) in Province-4 and Karnali Province, and least (88%) in Sudur Paschim Province[8].

Childhood TB

Notification rates in children have been stagnant for the last few years; the proportion of childhood TB cases among all notified TB cases remains around 5.5%, with substantial variation across the provinces (from 15% in Karnali Province and to 4% in Bagmati Province and Gandaki Province). It was observed that 63% of the childhood TB cases were between 5-14 years of age. The JMM reported that malnutrition in children was a major health problem and extrapolating from the DHS (2016) data, it concluded that there should be about 2,800 (1% of 282,469 malnourished children) TB cases among malnourished children in Nepal. Further, in view of the huge number of acute respiratory infections in children, including pneumonia (estimated around 200,000 cases/year), NTP needs to invest more to screen these pediatric cases for TB[9].

TB Prevention

In line with WHO recommendations, the NTP has introduced the short-term regimen for TB Preventive Treatment (TPT) with 3 months of Isoniazid and Rifampicin (3HR) for children under 5 years who are the contacts of bacteriologically confirmed pulmonary TB cases. During 2018-2019, contact investigations (CI) were conducted in 38 high burden districts and TPT was provided to 2,397 child contacts under 5 years, almost a 4-fold increase from 613 in 2017-2018, reaching 96% of the target set by the UNHLM on TPT for children[10]. The National Immunization Programme is responsible for BCG immunization of children under 1 year of age and the coverage in 2018 was 92% at the national level, with the highest coverage (100%) in Karnali Province and the lowest coverage (73%) in Gandaki Province[11].

TB case finding strategies in collaboration with Partners

The National Tuberculosis Control Centre (NTCC) along with Save the Children (SCI) which is the Principal Recipient (PR) work in close collaboration with 6 Sub-Recipients (SRs) under the Global Fund (GF) which are engaged in implementing innovative TB case finding strategies nationwide. The NTP has modified the diagnostic algorithm in the updated National TB Management Guidelines, specifying GeneXpert (GX) test as the initial diagnostic test[12]. To improve access to GX, NTP has implemented a sputum collection and transportation (SCT) system linking health care facilities with GX sites. Active case finding (ACF) among high-risk groups (HRGs) has been implemented since 2007, initially through TB REACH and IMPACT TB projects. Community-based ACF activities in 8 districts under TB REACH Wave 3 (2018-19) used contact investigations (CI), microscopy camps and OPD screening with GX and found 12% additionality in TB cases notified[13]. Currently, through the GF grant, household contact investigations (CI) is conducted only in high burden 38 districts which carries 85% of total TB cases notified and 79% of Nepal's total population; ACF in slums (2 districts), in refugee centres (2 districts), migrants (2 districts) and prisons (5 districts). Microscopy camps are conducted by local levels (LLs). The FAST (Finding Actively, Separating and Treating) approach is used to screen for TB cases in 40 major hospitals including teaching hospitals and would be continued and strengthened under this FR[14]. The management of TPT has started, with good adherence and completion rate

[8] NTP Annual Report 2018-2019, page 13

[9] Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019, page 40

[10] NTP Annual Report 2018-2019, page 32

[11] Progress in the Health Sector in FY 2017-2018, MoHP, GoN, page, 12

[12] National Tuberculosis Management Guidelines 2019, page 24

[13] Active Case Finding of TB in Nepal: Findings from TB REACH Wave-5

[14] National Strategic Plan for TB Prevention, Care and Control, 2021-2026, page 19

in 29 districts through six Sub-Recipients (SRs) under current Global Fund grant[15].

In addition, partner organizations support sputum collection and transportation (SCT) systems in 39 districts, diagnostic services, management of childhood TB and drug resistant TB (DR-TB). One organization, Birat Nepal Medical Trust (BNMT), in collaboration with the government health services, and DroNepal, a private company managing drones in Nepal, has developed a network linking eight rural health posts in Pyuthan district to two GX testing hubs at the District Hospital and Primary Health Care Centre (PHC) in Bhingri. Drone Optimized Therapy System (DrOTS) Nepal is a pioneering approach using drones to deliver essential drugs and samples to health centres in remote areas[16]. However, the impact of such innovation is yet to be realized.

TB/HIV

The NTP is implementing TB/HIV activities in all the districts. The adult HIV prevalence rate (15-49 years) is 0.15% and the estimated number of people living with HIV (PLHIV) is 29,503 (males-17,587; females-11,916). As of July 2018, there are 78 ART sites and 22 ART Dispensing Centers (ADCs) throughout the country. Among the registered TB cases, 69% were tested for HIV (a 9-fold increase since 2016) and 0.7% were HIV positive. There is a significant decrease in the prevalence of HIV among TB patients. The TB/HIV sentinel surveillance in 2017 showed that the prevalence of HIV among TB patients was 2.5%[17].

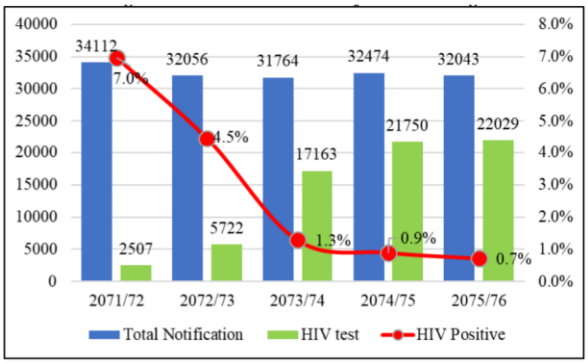


Figure-6: Trend in TB/HIV testing
(Source: NTP Annual Report, 2018-2019)

Treatment

Number of adults and children receiving ART among all estimated adults and children living with HIV is 17,987 (61%)[18] . In 2018, 164 (132 males and 32 females) HIV positive TB patients (new and relapse), were started on TB treatment who were already on ART or started on ART during TB treatment. Similarly, 13% of PLHIV were newly enrolled in HIV care with active TB disease (NCASC Data, 2018)[19].

Prevention

Currently, TB prevention therapy (TPT) services are being provided through all the ART Centers and in 2018/2019, PLHIV patients (2026) were put on TPT. Improvement in ART coverage would reduce the AIDS-related deaths and improve HIV survival, however because HIV prevalence in the population is low, the overall impact of ART, CPT and TPT coverage on the TB epidemic in Nepal would be very limited[20].

Rifampicin Resistant / Multidrug Resistant TB (RR/MDR-TB)

In 2018-2019, of the 1,400 estimated incident cases of RR/MDR-TB in Nepal, only 635 (46%) were notified to the NTP (Figure-7). The estimate of DR-TB is also subject to the revised TB burden following the TB-PS. Among those notified, only 62% (392) were enrolled in the treatment resulting in high initial loss to follow up (LTFU). One of the barriers to adequate access to treatment of DR-TB is that the network for the programmatic management of DR-TB (PMDT) is too centralized and also reliant on hospital-based models of care. At present, there are 21 DR-TB treatment centers and 81 DR-TB treatment sub-centers across the country. The NTCC, is aware of the need for further

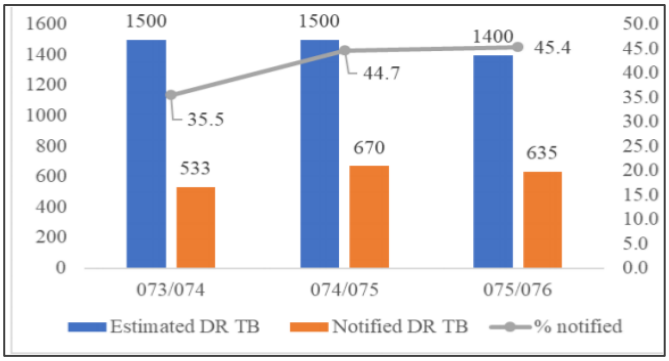


Figure-7: Notification of DR-TB
(Source: NTP Annual Report, 2018-2019)

[15] Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019, page 41
[16] NTP Annual Report, 2018-2019, page 40
[17] Fact Sheet: 2019 National HIV Estimates, pages 1-2
[18] Factsheet 6: HIV Care and Antiretroviral Therapy (ART)Services in Nepal, NCASC, 2019,
[19] Country Progress Report NEPAL To Contribute to Global AIDS Monitoring Report, 2017, page 22
[20] Epidemiological Review of TB Surveillance in Nepal, 2019, page 57

decentralization of services and expansion of ambulatory model of care and has planned to expand Referral center in each province, DR-TB treatment centers in each district and treatment sub-centers in each LLs in the next 5 years as per NSP 2021-26. The annual rGLC mission, jointly with WHO-South East Asia Regional Office (SEARO), provided technical support to the NTCC and partners for updating the PMDT guidelines in accordance with latest DR-TB WHO Recommendations (2019)[21].

Treatment

Nationally, 307 patients who started second-line MDR-TB treatment in 2018 represented 22% of the estimated 1,400 incident cases of MDR/RR-TB in same year. Province 1 accounted for the highest number of MDR treatment enrollment followed by Bagmati Province. Out of 635 DR-TB patients notified in 2018-2019, 62% were enrolled on treatment. The treatment outcome data for 2018-2019 shows success rates of 71% for DR/RR-TB, 69% for Pre-extensively drug-resistant (Pre-XDR)-TB and 88% for XDR-TB. The death rate is quite high (21.5%) among Pre-XDR TB cases; 6.3% among XDR-TB and 12.5% among MDR-TB. LTFU among RR/MDR-TB and Pre-XDR-TB is around 9%, but none among XDR-TB[22].

Infection Prevention and Control (IPC)

JMM reported that over 43% of hospitals lack implementation of infection control measures. It recommended development of IPC guidelines, providing training for HCWs, and ensure availability of PPEs, isolation rooms, negative pressure ventilation for DR cases, and other necessary equipment for environmental control of TB. Currently, as a part of IPC, 21 DR treatment centers were provided with exhaust fans, ultraviolet germicidal irradiation (UVGI), N95 masks and surgical masks. Besides this, IPC are incorporated in all TB related training curriculum. The COVID-19 pandemic has increased the awareness and need to expand and strengthen IPC measures at all levels.

TB Diagnostic Network

The TB diagnostic services are provided free of cost to all those attending government and selected private health facilities and all those referred from the private health sector for evaluation of TB. The NTCC has drafted a National TB Laboratory Plan (2020) which would be the guiding document for future activities[23]. Meanwhile, the NTP has made noteworthy progress in building up the laboratory capacity, with the installation of 60 GX machines across 56 GX diagnostic centers. The GX services have been gradually expanded to cover the entire country for diagnosis of TB. In 2018-2019, the number of GX tests had increased reaching 29,027 tests in the third quarter up from 24,447 in the first quarter of the year; however, this is still not satisfactory compared to the target and testing capacity in terms of numbers. The 2019 JMM noted that 1/3rd of the GX machines were either malfunctioning or without warranty, which has been currently addressed. Only 18% of GX machines were located in private facilities. For the optimal utilization of GX, the NTCC has focused its effort on immediate maintenance, module replacement, as well as expanding the scope of its coverage with the revision of its algorithm and strengthening of the sputum collection and transportation (SCT) for evaluation of people with TB.

Direct sputum smear microscopy (SM) with Ziehl-Neelsen /Fluorescence Microscopy is still used for diagnosis of TB where GX machines are unavailable. Additionally, SM is regularly used for monitoring treatment response of drug sensitive (DS) and DR-TB patients. The majority of the 604 Microscopy Centres (MCs) have been established within the government health facilities; while some are in non-government organizations (NGOs) as well as, in the private sector. Two culture and phenotypic and genotypic drug susceptibility testing (DST) laboratories, both for first-line drugs (FLD) and second-line drugs (SLD) by line-probe assay (LPA) have been developed and two more are in an advanced stage to start primary cultures. In 2018-2019, 382 first-line LPA tests were conducted and 7.59% among them were detected as MDR. Further, 417 second-line LPA tests were also conducted. Fluoroquinolone resistance was detected in 36.45% and resistance to second-line injectable was found in 1.67% and 6.95% were detected as XDR-TB. As TB accounts for over a third of deaths from antimicrobial resistance (AMR), the NTCC would invest in early diagnosis and appropriate treatment of DS and DR-TB and TPT which would contribute to mitigating the threat from AMR.

NTP in collaboration with partners had established a sputum collection and transportation system in 39 districts from non-diagnostic facilities to diagnostic centres. In addition, well-trained technical teams are

[21] Report- rGLC Mission Country Support for Updating PMDT Guidelines, April 2019, page 4

[22] NTP Annual Report, 2019, page 26

[23] National TB Laboratory Plan (Draft), 2020

available at the National TB Reference Laboratory (NTRL/NTCC) and at the German-Nepal Tuberculosis Project (GENETUP) in Kathmandu[24].

Health Management Information System (HMIS)

Under the health system, 1,200 public health facilities submit the HMIS monthly reports electronically. As health posts and primary health care centres are now being managed by the local levels, the Ministry of Health and Population (MoHP) is focusing on enhancing their capacities on HMIS, including the use of the DHIS2 platform. This will allow for the continuous flow of data from the health facilities to the national HMIS system. Currently, patient-based data in health facilities are recorded on a paper-based system which cannot be readily analyzed, used and shared for decision making. Hence, the MoHP has designed an electronic health record system – a digital collection and retrieval of a client's medical records from hospitals, primary health care centres and health posts[25].

NTCC had rolled out the case-base e-TB register to all districts as a tool for recording, analyzing, and reporting: patient details, treatment history and outcome. However, this system was redesigned based on federal structure and revised recording and reporting formats which was also incorporated in HMIS. In coordination with HMIS, now e-TB register can upload monthly aggregated TB reports to HMIS. NTP has planned to cover all health facilities directly reporting through e-TB in collaboration with HMIS over the next five-year period (2021 to 2026).

All NTP recording and reporting tools have been incorporated in the revised HMIS in DHIS2 platform. NTP has also introduced an online case-based e-TB recording and reporting system for MDR-TB, GX and C/DST laboratory in DHIS2 platform which has been rolled out at all service sites. This system also provides SMS notifications to patient, lab focal person and outreach worker of RIF resistance test results. Since both DR-TB Patient Tracking and TB Laboratory System are incorporated within the same system, it can track a patient with a single system ID. Data Quality Assessment is done by using triangulation e.g. checking the TB patient treatment card against the TB register and the laboratory register[26].

Information on disease-specific and the overall health systems, with the linkages between them:
Federalism has led to decentralization of planning and budgeting, governments at federal, provincial and local levels have mandates to develop annual work plans and budget and to implement their plans. The five-year (2015-2020) Nepal Health Sector Strategy (NHSS), focuses on universal health coverage (UHC) with four strategic areas of direction: equitable access, quality health services, health systems reform, and a multi-sectoral approach. Nepal has embraced international commitments towards Sustainable Development Goals (SDG) and UHC[27] and TB is a part of basic health service package.

Currently, the healthcare delivery system is managed by the 7 provincial health directorates, 77 health offices and 753 local level government offices. The health services are delivered by 11 central-level hospitals, 125 provincial hospitals, 198 primary care centers, 3808 health posts, 374 urban health centers, 299 community health units, 59 other health units. Also, 11 974 primary health care and outreach clinics, 15 853 EPI/outreach clinics and 51,420 female community health volunteers provide health service in Nepal[28].

The NTCC in Kathmandu under the MoHP is responsible for the development of policies, strategies, guidelines, planning and budgeting, human resources and training, procurement and distribution of supplies in collaboration with the Logistics Management Division, M&E in collaboration with the Health Management Information Section (HMIS) of the DoHS, reporting and surveillance, and supervision of TB prevention and care activities. Under the leadership of the Director, the NTCC has specific units responsible for Planning and Monitoring, DR-TB and Comorbidity, DS-TB, and a section for Administration, Finance and Logistics. The NTCC also operates a National Referral Clinic and a National Tuberculosis Reference Laboratory (NTRL)[29].

[24] Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019, page 30

[25] Progress of the Health Sector in FY 2017-2018: National Annual Review Report 2018, page 67

[26] NTP Annual Report, 2018-2019, pages 52-53

[27] Progress of the Health Sector in FY 2017-2018: National Annual Review Report 2018, page 1

[28] National Strategic Plan for TB Prevention, Care and Control, 2021-2026, page 20

[29] National Strategic Plan for TB Prevention, Care and Control, 2021-2026 page 64

The NTCC has overall responsibility for the provision of TB services by the NTP through the network of public health facilities nationwide, i.e. 4,382 TB treatment centres, including 96 urban health centres, 604 microscopy centres and 56 GX centres. Treatment services for drug resistant (DR) TB have been provided through 21 drug-resistant TB treatment centres and 81 sub-centres.

Since 2015, the Principal Recipient (PR) of the Global Fund (GF) in Nepal is Save the Children International (SCI). The PR has maintained the Programme Management Unit (PMU) within the NTCC which is responsible for the overall management of the GF grant. Due to the shortage of technical staff at the NTCC, about 12 technical staff of the PMU are engaged in strengthening the essential services of the NTP. In addition, WHO provides technical assistance (TA) to the NTCC.

In order to strengthen the NTP at the provincial and other levels, the PR, through the current GF grant, has embedded a team of technical staff: three senior programme managers; four senior technical coordinators for TB, HIV and Malaria; four M&E officer and five finance and logistic officers based at the provincial health directorate which will provide oversight to all seven provinces; and, one laboratory officer based at the Provincial Public Health Laboratory (PPHL) to strengthen the provincial offices and provide impromptu technical and programmatic support, enhance M&E and quality assurance of the laboratories.

In 2018, following decentralization under the federal structure, the role of the districts greatly diminished, resulting in most of the supply chain coordination functions being moved to the newly formed local levels while the monitoring and supervision functions moved to the provincial level government. Distribution of supplies is done every trimester from NTCC to the provincial medical stores. The provincial stores then distribute to the district stores to LL which is responsible for distribution to the health facilities. The NTCC sends medicines for MDR-TB and GX cartridges directly to treatment and diagnostic centres.

The JMM Report recommended that NTCC and partners must urgently work with MoHP senior officials and the Ministry of Federal Affairs and General Administration to ensure that the essential functions of the NTP are preserved in the new federal system, particularly the functions of provincial and district TB and Leprosy Officers (DTLO), with clear roles and responsibilities for the newly appointed staff[30].

Relevant key and/or vulnerable populations:
The TB-NSP (2021-2026) has clearly stated in its objectives that one of the highest priorities would be systematic screening of key and/or vulnerable populations such as: (i) household contacts of all index pulmonary TB cases including children; (ii) elderly; (iii) seasonal migrant workers; (iv) prisoners; (v) those in urban slums; (vi) factory workers; (vii) refugees; (viii) PLHIVs; (ix) diabetics (x) children with malnutrition and ARI ; (xi) smokers and (xii) frontline health workers[31].
Contacts: As contacts of Pulmonary TB cases are one of the key vulnerable population also highlighted by the study in Nepal which found that among household or social contacts of patients with bacteriologically confirmed TB, 2.5% are bacteriologically positive and 5% have TB of all forms[32]. Therefore, CI of household contacts and TPT have been planned in this FR.
Elderly: The TB-PS found that TB prevalence as well as P/N ratio is higher in older age groups above 65 years, (1,427/100 000 population). Aging of the population and an increase of diabetes prevalence are expected to drive the TB epidemic upward, despite the fact that these changes are taking place relatively slowly in Nepal and the impact on the pattern of the TB epidemic is likely to be minimal[33].
Migrants: An estimated 667,417 migrants represent the 'total absentee population' in the country, out of which 509,228 are seasonal migrants working in India, who are considered to have a high HIV risk index and hence the focus for HIV program interventions. On the other hand, 500 migrants per day on an average enter Nepal from India, which is estimated to be around 1,344,000.
Prisoners: The annual total prison population is estimated to be 22,524 in 74 prisons across Nepal.
PLHIV: In 2019, estimated population of PLHIV in Nepal was approximately 29,944; as of 2019, 23,137 (78.4%) of the PLHIVs had been diagnosed and linked with HIV care; 63.2% (18,628) were on ART; 88.9% of those on

[30] Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019, page 28

[31] Ibid, page 37-40

[32] ACF of TB in Nepal- Findings from TB REACH Wave-5, presented at the UNION Conference, 2019

[33] Epidemiological Review of TB Surveillance in Nepal, Dr K Snow and Dr A Hovhannesyan, WHO, 2019, page 4

ART were still on treatment after 12 months, and 89.6% of people tested for viral load were found to have suppressed viral load; around 66% of all estimated HIV-positive pregnant women received ART.

Diabetics: The prevalence of diabetes mellitus (DM) has increased from 3.6% in 2013 to 5.8% in 2019 across all age groups. Of all the adults diagnosed with DM, 73.5% were unaware of their raised blood sugar levels and the largest proportion was in the age-group of 30-44. The likelihood of measuring blood sugar was higher in metropolitan areas than rural Palikas; screening coverage being highest in Provinces 1 and Bagmati Province and significantly lower in Karnali and Sudur Paschim Provinces. The proportion of those who were aware of their status, but not on treatment was highest in the age group of 40-54. However, the proportion of diabetics on treatment has significantly increased (20.7%)[34]. A recent study in one district of Nepal showed the prevalence of diabetes and pre-diabetes among TB patients to be 11.9% and 17.8% respectively, indicating the urgent need for bi-directional screening for TB and diabetes[35].

Children with malnutrition and ARI: Between Jan-Dec 2019, screening of 25,868 malnourished children, resulted in 4395 presumptive TB cases and among them 275(6.3%) were diagnosed with TB. In the same period among 29,745 children with ARI, 13,057 were presumptive TB and 689 (5.3%) were diagnosed as TB.

Smokers: The percentage who currently smoke tobacco: both sexes- 17.1% (15.1-19.1); males- 28.0% (24.5-31.5); and females- 7.5% (6.1-8.9) which is equivalent to 2.8 million adults. It was also estimated that 18.3% of adults (33.3% of men, 4.9% of women) equivalent to 3 million adults were current users of smokeless tobacco. In terms of passive smoking, 22.5% of adults (3.7 million) were exposed to second-hand smoke at workplace and 33.5% of adults (5.5 million) were exposed to second-hand smoke at home[36]. Studies in Nepal show that smoking is significantly more frequent in male TB patients as compared to men in the general population (77% vs. 52%) and similarly, among female TB patients and women in the general population (23% vs. 8%)[37].

Human rights, gender and age-related barriers and inequities in access to services:

As Nepal moves into a new era of governance with federal restructuring being aimed to address unequal distribution of power among different social groups and geographic areas, the seven provinces of the country retain both common and distinct characters in terms of socio-political dynamics. Three provinces (2, Karnali and Sudur Paschim) have HDI values lower than the national average. Three provinces (1, Bagmati and Gandaki) have the highest HDI values; Bagmati has 5 out of 10 districts with the highest HDI values[38].

Nepal's population is diverse in caste/ethnicity; hierarchical caste-based and gender-based discriminations are present across the country and caste-wise disparities are noticed in major health outcomes. The national averages of health outcome indicators do not necessarily reflect the actual situation among the various castes in the population and there are wide variations in access to health services, utilization and health outcome. Among historically marginalized groups such as the Dalits, nearly three out of every fifty children die before reaching their fifth birthday and about two in fifty children die before their first month of life. In other marginalized terai castes, only six out of ten (64%) children received all eight basic vaccinations. Among children under five years, stunting (<-2SD) was higher in other terai caste groups (42%), Dalit (40%) and Muslim (38%) in comparison with other castes e.g. Newar (27%). Prevalence of anemia in women aged 15-49 years was highest in Terai caste groups (56%) and Muslim (52%). Nationally, 57% of women delivered their baby in a health facility, this percentage is higher than the 45% of Dalit women who deliver at a facility[39].

Nepal has a Gender Inequality Index (GII) value of 0.476, ranking it 115 out of 162 countries in the 2018 index (HDI, 2019). The TB-PS revealed that prevalence of TB was higher in men than in women (2.25 times); in men the rate was 530/100,000 and in women 235 /100,000 population. In terms of health-seeking behavior, the TB-PS found that 31% of people with cough more than 2 weeks or more sought medical treatment in government health facilities and only 14% in private health facilities as the first priority, while 39% did not seek any care at all. The proportion of those not visiting a health facility was higher among women and the reasons given were

[34] Non-communicable Disease Risk Factors: STEPS Survey Nepal, MoHP, NRHC, WHO, 2019, pages

[35] Study of the magnitude of diabetes and its associated risk factors among the TB patients in Morang, Eastern Nepal, B Sharma et al, BMC Public Health, 2019, page 5

[36] Nepal STEPS Survey2019, Tobacco Fact Sheet

[37] Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019, page 57

[38] Federal Nepal-The Provinces-Socio-cultural Profiles of the Seven Provinces, 2018, page 80

[39] Progress of the Health Sector, Report for Joint Annual Review 2018, MOH, Nepal, page 19

financial barriers and time constraints. The higher prevalence of TB in the elderly raises significant concern since the elderly are often the caregivers for young grandchildren in Nepal[40].

Geographic, socio-economic and other barriers and inequities in access to health services:
Nepal is prone to natural disasters, e.g. earthquakes, flash floods and landslides. The geo-demographic diversity of Nepal is reflected by the topography of the three ecological zones: Plains (Terai) with 23% land area have 48% population; Hills (42% area) with 44% population and Mountains (35% area) with only 8% population[41]. The P/N ratio of TB was highest in Mountains and Hills, 5 and 5.1 respectively, which suggests difficulties to access health services and TB care facilities. TB notification rates are lowest in the Mountains and highest in the Terai where there is more urbanization and high population density. Of the 20 districts with case notification more than 120/100,000 population, 13 districts were from the Terai and 7 districts were from the hilly areas; the majority of these high burden districts were in Lumbini. The proportion of those not seeking care was higher in women, working-age groups, those living in the mountains and among the poor.

In terms of other inequalities by ecological zones, nutrition-related indicators show that stunting was highest in the Mountain region (45.3%), vitamin A deficiency was highest in the Terai region (7.3%), zinc deficiency was highest in the Mountain region (28.1%); while prevalence of iron deficiency (32.3%), iron deficiency anemia (12.3%) and anemia (23%) was highest in the Terai region. Although three out of five (59.1%) households were food secure, 7% were severely food insecure. In dietary diversity, 41.6% of children aged 6-9 years received the minimum dietary diversity[42].

The Multidimensional Poverty Index (MPI based on 2016 survey data indicates that 34.0% of the population (9,961,000 people) are multi-dimensionally poor, while an additional 22.3% percent are classified as vulnerable to multi-dimensional poverty (6,543,000 people)[43]. Province-2 has the largest number of multi-dimensionally poor followed by Lumbini province. Gandaki has the lowest number of poor people[44]. Province-2 is also the most densely populated province with a density of 559 people per square kilometer, against the national population density of 180 per square kilometer. Lumbini has the second highest population density of 247 people per square kilometer[45].

About 31.2% of the population that are estimated to live between $1.9 and $3.2 a day, face significant risks of falling into extreme poverty, primarily because of reduced remittances, foregone earnings of potential migrants, job losses in the informal sector and rising prices for essential commodities as a result of COVID-19[46]. Migration has been an important socio-economic feature of Nepal and includes both migration from rural to urban areas and migration for foreign employment. All top 15 districts that have the highest rates of out-migration are hill districts, whereas 11 out of 15 districts with the highest rates of in-migration are Terai districts and the remaining are districts with emerging cities[47].

From 2000 to 2007 out of pocket (OOP) payments declined from 55.8% to 42.5%, but in 2008 rose sharply again and has been largely stable since then. OOP health expenditure in Nepal was much higher than the ≤25% benchmark set by WHO. Currently, patients to be evaluated for TB are charged for examination and CXR (based on the ability to pay) prior to TB diagnosis, while sputum microscopy in government institutions and TB drugs are provided free, patients and their families who travel or relocate near to TB centres for their TB treatment face economic burden including indirect costs while on TB treatment. Moreover, patients with DS-TB have to cover the cost of ancillary drugs for adverse effects of anti-TB medications, although these costs are covered by the NTP for MDR-TB patients.

Focus group discussions (FGDs) during the country dialogue revealed that KPs at highest risk of TB which is likely to drive the TB epidemic, face cultural and logistical barriers with poverty being an overarching structural

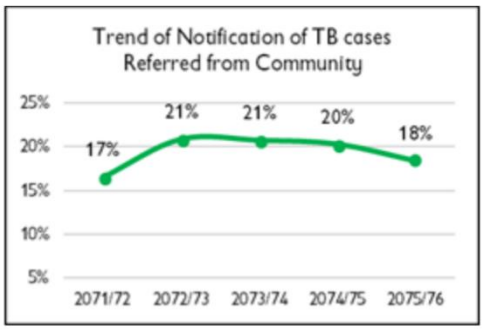
[40] National TB Prevalence Survey, 2018-2019, page 8-9
[41] National Strategic Plan for TB Prevention, Care and Control, 2021-2026 page 6
[42] Progress of the Health Sector in FY 2017-2018: National Annual Review Report 2018, pages 20-21
[43] Human Development Report, UNDP, 2019, page 6
[44] Nepal's Multidimensional Poverty Index 2018, page 22, 52
[45] Federal Nepal-The Provinces-Socio-cultural Profiles of the Seven Provinces, 2018, page 76
[46] WB in Nepal Overview, April, 2020, https://www.worldbank.org/en/country/nepal/overview
[47] Federal Nepal-The Provinces-Socio-cultural Profiles of the Seven Provinces, 2018, page 80

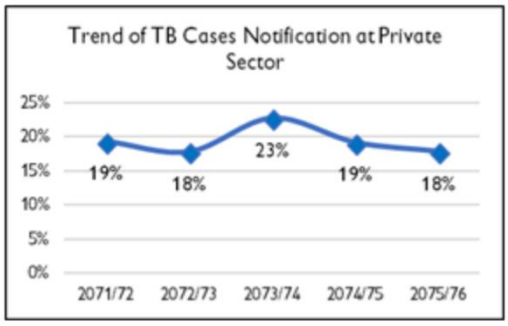
barrier to access quality health care. It also revealed that social stigma related to TB was more for TB/HIV and MDR-TB; the degree of stigma being linked to low levels of health literacy and TB awareness in the community. Cognizant of the barriers and inequities in access to health services, the NSP (2021-2026) was developed to promote a rights-based, people-centered, comprehensive approach to TB prevention, testing, treatment, care and support, as it is an integral component of universal health coverage which is essential to ending TB[48].

In 2016, the government-financed social health insurance (SHI) scheme began and has been available in 46 districts, with 1.7 million people enrolled since its inception. The current cost is NPR 3,500 for a family of five, which provides NPR 100,000 coverage. Premiums are waived for senior citizens over the age of 70 years, and for the "ultra-poor". From April 2019, families with a member having MDR-TB also can obtain free insurance.

The NTCC provides financial support to patients to be evaluated for TB, e.g. malnourished or ARI children get up to Nepali Rupees (NPR) 2,000 for diagnosis, other services being free (e.g. GX, culture and sputum microscopy); they also get NPR 2,000 for travel to reach the referral hospitals (supported by GF). Likewise, there is budgetary provision (NPR 2,000) for the travel and accommodation for DST using GX for all presumptive DR-TB patients from the domestic resources in 40 districts of Nepal. Other districts are covered by sputum collection and transport mechanism through GF/Sub-Recipients. While it is likely that there have been substantial OOP expenditures for TB, the proportion of TB patients and their families facing catastrophic costs remains unknown and hence, NTCC would conduct a TB Patient Cost Survey during this FR period.

Community responses and engagement:
Community engagement contributed to the notification of TB cases (18%) from the community to the NTP (Figure 8). The JMM noted that Female Community Health Volunteers (FCHV) and Outreach Workers (OWs) are well engaged in TB service delivery through community-based directly observed treatment services (CB-DOT) but the coverage has been very limited. One of the recommendations of the JMM was that NTCC and development partners should provide support to provincial, district and local levels (LL) in formulating a TB work plan (microplanning) to engage civil societies and TB-affected groups meaningfully for the essence of the community systems strengthening (CSS) strategies to be fully implemented[49].





Figures 8 & 9: Trend of TB Notifications from Community and Private Sector
(Source: NTP Annual Report, 2018-2019)

The aim of the CSS strategy is to promote an inclusive approach based on local partnerships and patient-centered care to reach the target of case detection and management of TB cases in 80% of the local levels by 2025. CSS adds synergy to technical and clinical TB services by addressing several barriers using a multi-sectoral approach (social, economic, legal, and political)[50].

The role of the private health sector:
Although, government health facility is most often reported as the preferred source of treatment for TB (85% of women and 92% of men), the private health sector was visited by 27% of women and 17% of men[51]. Collaboration between NTCC and the private health sector through Public-Private Mix (PPM) strategy is one of the major components of the NTP implemented since 2005-2006 as a part of the Stop TB Strategy which has been further strengthened since 2015-2016 onwards. Precise data on the numbers of different types of facility are unavailable, but there are about 350 private hospitals and as many as 26,000 pharmacies. Anti-TB drugs, which were reportedly more widely available 20 years ago, are to be found in only 10%-20% of

[48] Declaration of the Rights of People Affected by TB, Stop TB Partnership, 2019, Preamble
[49] Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019, page 45
[50] National Strategic Plan for TB Prevention, Care and Control, 2021-2026 page 55
[51] Nepal Demographic and Health Survey, 2016, page 48

pharmacies, especially those attached to private hospitals. The TB-PS noted that 22% of TB patients sought treatment in the private health sector. In 2018, an electronic case-based notification platform for private providers was launched and a number of private providers were trained to use the system; and they are eligible for incentive payments of NPR 200 (US$ 1.75) per TB patient notified and NPR 400 (US$ 3.55) per patient completing treatment[52]. The majority of patients with DM (80.2%) approached private providers for medication, 11.8% went to government facilities and 5.7% used both[53].

One of the recommendations by the JMM was that GF should support a specialized partner organization to drive NTP/Private Sector collaboration with an adequate budget. Policies and regulation are essential for engagement with private health providers and other unlinked public-sector providers. To ensure effective private provider engagement, national and provincial PPM working committees, enforcement mechanisms for TB notification and regulation on sales of anti-TB drugs and use of inappropriate diagnostics are critical. Systems for quality assurance of health care practitioners need to be strengthened. Almost 35 to 40% of TB cases notified to the NTP were from the private sector and the community collectively over the last 5 years (Figure-9).

1.3 Lessons Learned from Global Fund and Other Partner Investments

Describe how Global Fund and domestic investments, as well as those of other partners, supported national health targets during the current allocation period. Include the main lessons learned that are relevant to this funding request (for example, innovations or bottlenecks in service delivery).

The Government of Nepal (GoN) provided 51% of the budget for the country's TB response while the Global Fund grant for the funding cycle 2018- 2021 was 23%, with a funding gap of 23% (US$ 24 million). As noted by the JMM, the NSP (2016-2021) was underfunded and annual budget allocations have been 85% of the budget. In 2018, the GoN provided nearly US$10 million (over 50%) of the total budget of the NTP. Between 2015 and 2019, the GF contributed over US$ 38 million, more than 50% of the total budget for the NTP[54].

Among other international partners, WHO, a key technical partner of the NTCC, has provided technical guidance for development of policies, guidelines, strategies and surveys and supported US$ 2.23 million (2018-2019). The International Organization for Migration (IOM) has specifically focused on TB in migrants and mobile populations and in 2017, launched the TB and Migration Portal to provide a one-stop service website, intended to fill the gaps in existing data, research and knowledge on TB and Migration. The Damien Foundation (Belgium) is engaged in supporting some of the DR-TB activities and treatment centres including pilot ambulatory care (community-based DOT) for MDR-TB. The STAC (SAARC TB and HIV/AIDS Center) supports the NTCC and the National Centre for AIDS and STD Control (NCASC) through training, workshops, meetings and research activities[55].

Since 2015, Save the Children International (SCI) has been the Principal Recipient (PR) for all three GF grants in Nepal. It has established a Program Management Unit (PMU) at NTCC which is the lead implementing entity, provided technical and financial support for the NTP and GF-related activities. It assisted in strengthening laboratory capacity at NTCC, provincial and local levels; ensuring uninterrupted supply of anti-TB drugs and distribution of medical equipment including GX cartridges[56].

[52] Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019, pages 22-23

[53] Non-communicable Disease Risk Factors: STEPS Survey Nepal, MoHP, NRHC, WHO, 2019, pages

[54] National Strategic Plan for TB Prevention, Care and Control, 2021-2026 page 75

[55] NTP Annual Report, 2018/2019, pages 51-52

[56] Ibid, page 50-51

Birat Nepal Medical Trust (BNMT) has started Drone Optimized Therapy System (DrOTS-Nepal) in Pyuthan District which is used to transport samples and medications to rural health-posts in remote areas[57]. In 2017-2019, BNMT implemented the IMPACT-TB project of the Liverpool School of Tropical Medicine (UK) in four districts having a high burden of TB. The other SRs are engaged in ACF activities in several provinces including DR-TB management, advocacy, communication, social mobilization (ACSM) activities and operational research[58].

Challenges and Bottlenecks: Despite the support from partners listed above, there are several challenges and bottlenecks faced by the NTP. Firstly, there is a shortage of technical staff at the NTCC to carry out the NTP activities in the federal context[59]. There is an absence of civil society activism for TB, although such activism exists for other programs such as HIV and nutrition and there is no mechanism or platform to coordinate the NGOs/CBOs, both at the central and sub-central levels[60].

In 2018, the disbursement of the annual allocated budget was just 67%, suggesting lack of absorption capacity which affected the implementation of NTP activities: 48% were completed; 17%, partially implemented and 36% had not been started, largely due to lack inadequate human resources[61]. Further, a lack of a clear supply chain structure at the sub-national levels led to disruption of the flow of commodities and logistics information affecting the three disease programmes. During March-December 2018, the absorption for grants where MoHP (National Programs) was lead implementing entity, was only 4%, 43% and 53% for malaria, TB and HIV grants, respectively. Lack of clarity at service delivery points on where HMIS reports should be submitted resulted in the submission of incomplete data by the LLs one year after implementation of the new GF grants.

The JMM 2019 noted only 18% of GeneXpert machines were located in private facilities. In addition, limited supplies, and episodic stock-outs of GX cartridges; short working hours and low sample flow at GX centres and lack of a proper specimen transportation system are challenges for optimizing the GX capacity. The low yield from the mandatory CI including other ACF activities and the limited engagement with private health care providers which attracts 60% of patients, are other challenges that need to be addressed[62]. Only 333 TB cases (6.2% of grant target of 5,389) were notified through PPM in 2018. As of February 2019, only 29 private doctors or institutions (24% of the target) were reporting through the e-TB register. Case finding among migrants has been a challenge as the country shares a long and porous border with India and the transit border posts are not strictly controlled. The treatment coverage rate is only 51%; 50% of cases have no access to rifampicin resistance testing; 30% of diagnosed MDR patients are not enrolled on treatment and 31% of TB patients are not tested for HIV[63].

Main lessons learned:
Lessons from the TB-PS: (i) symptom screening using cough >=2 weeks could detect only 20.8% of TB cases and adding any other TB symptom, would detect additional 5.8% of TB cases; (ii) Chest X-Ray (CXR) was a better screening tool because more than 72% of confirmed TB cases which did not have cough >2 weeks were identified through CXR; (iii) GeneXpert MTB/RIF (GX) was more reliable and efficient for diagnosis of TB compared to smear microscopy (SM).

Contact investigations (CI) by the NTP target all PBC index cases and childhood TB cases in 39 districts; of the 10,394 family members to be evaluated for TB, either referred in person or through transportation of sputum samples collected for smear microscopy, only 250 TB cases (i.e. 2.4%) were diagnosed[64]. As CI is one of the cornerstones of TB case finding along with TPT, the NTP would focus on reaching the target of 10% yield and provide clear guidance on ACF to health volunteers conducting CI, ensuring adequate mentoring and monitoring mechanisms are in place and use molecular WHO recommended diagnostics

[57] Ibid, page 54

[58] Ibid, pages 60-64

[59] Audit Report Global Fund Grants in Nepal, GF-Office of the Inspector General-19-015, August 2019, pages 16-17

[60] Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019, page 44

[61] Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019, page vi

[62] Audit Report Global Fund Grants in Nepal, GF-Office of the Inspector General-19-015, August 2019, pages 14-15

[63] Global Fund Portfolio Analysis, GF Country Team, 2020, page 7

[64] Audit Report Global Fund Grants in Nepal, GF-Office of the Inspector General-19-015, August 2019, page 21

(mWRD) for ACF. The TB REACH Project (Wave 3) demonstrated that a package of ACF interventions consisting of CI, Microscopy Camps and OPD screening with GX achieved a 12% additionality of TB notifications[65]. The JMM reported that the analysis of the FAST approach showed that the proportion of persons to be evaluated for TB thus identified ranged between 0.1 – 0.4% of all attendees in the out-patient department, while this proportion is regularly around 2% in other countries.

The IMPACT TB longitudinal costing survey in Nepal (2018-2019), showed that ACF is an effective strategy to diminish the economic impact of TB on households and thus reduce OOP. It compared the costs and socio-economic impact of TB for patients diagnosed through ACF and passive case finding (PCF) in Nepal and found that during the pre-treatment plus treatment periods, the direct costs were: US$44 vs US$69 ($P<0.001$)[66].

Currently, GX utilization is around 27% of available capacity, as it is being used for diagnosing DR-TB, rather than for diagnosing TB; only 12.7% of samples of smear-negative persons diagnosed by SM were transported to GX centers for confirmatory tests. Based on lessons learned, one of the priorities of the NTP, is to invest in improving the access to utilization of quality-assured screening and diagnostic tools and accelerate systematic screening of all HRGs to find the missing people with TB. Gradually, SM should be replaced by GX as the primary diagnostic tool. The JMM recommended that NTCC should prioritize GeneXpert rollout to the highest burden health care facilities which have the potential to run the machines beyond 6-8 hours[67].

The federal process presents both challenges as well as opportunities to the NTP. The NTCC can now have meaningful engagement with provinces, municipalities (urban and rural) and multi-sectoral partners to reach further down into the community. The new TB-NSP (2021-2026) has been developed and designed to strengthen the NTP with TB focal points embedded at different levels of the federal structure. Investment in high impact interventions was triggered by a change in the diagnostic algorithm, improved access to TB services and utilization of quality assured diagnostics and increased systematic screening of HRGs.

Digital technology can facilitate the engagement of the private sector and the recent expansion of internet connections almost nationwide, makes the use of digital surveillance methods possible. Under this FR, PPM interventions would be implemented in six metros and one sub-metro taking into consideration the high concentration of pharmacies, private health facilities and private practitioners. Expansion of the health insurance scheme can provide opportunities for TB-affected families to avoid catastrophic costs[68]. The new TB-NSP (2021-26) has strategies to ensure an enabling environment conducive to community system strengthening (CSS) that would contribute towards improved access, equity through support for transport /nutrition, reduce gender disparities, stigma and discrimination and other barriers to ending TB including support for the rights of TB patients[69]. The COVID-19 pandemic has created national awareness on surveillance measures and government plans to strengthen 20 points of entry with appropriate health desks, creating integrated approaches for the three disease programmes to screen migrants.

[65] ACF of TB in Nepal- Findings from TB REACH Wave-5, presented at the UNION Conference, 2020

[66] Active case finding is an effective strategy to reduce the economic impact of tuberculosis on households: The IMPACT TB longitudinal costing survey in Nepal, 2019 submitted for publication

[67] Report of The Joint Monitoring Mission for Tuberculosis, 26 May – 9 June 2019, page 33

[68] Ibid, Executive Summary, page vii

[69] National Strategic Plan for Tuberculosis Prevention, Care and Control, Nepal, 2016-21, page 4

Section 2: Funding Request and Prioritization

To respond to the questions below, refer to the *Instructions,* as well as national strategy documents, **Programmatic Gap Table(s), Funding Landscape Table(s), Performance Framework, Budget and Essential Data Table(s)**.

2.1 Overview of Funding Priorities

Summarize the **approach used for prioritization** of modules and interventions (or in the case of Payment for Results, the performance indicators and/or milestones). The response should include:

- How these prioritized modules ensure the highest possible impact with a view to ending the epidemics of HIV, TB, and malaria; and
- How challenges, barriers, and inequities, including those related to human rights and gender, are being addressed through the modules prioritized within this funding request.

Background

The ongoing Country Dialogue which began in January 2020 and included the CCM, PR, NTCC and all the development partners, was an inclusive and transparent process. It covered all the seven provinces with special focus on key and vulnerable populations including traditionally marginalized communities; those in prisons, hard-to-reach areas, urban slums, refugee camps, old age homes and factory workers and migrants. Furthermore, high level consultative meetings were held with the officials at all levels of the government (federal, provincial and local levels), representatives from professional associations, key health staff from government and private health facilities including pharmacies. In addition, focus group discussions (FGDs) held with TB patients (DS & DR), community-based organizations, volunteers, and health workers, provided a wealth of information on the barriers and inequities in access to health services, in general and TB care in particular. (Summary of Country Dialogue in Annex)

The JMM (2019) identified the challenges faced by the NTP to reach the targets set in the End TB Strategy, the TB-related SDGs, and other international commitments (UNHLM). The evidence collected from the Country Dialogue was documented and channeled for the development of the National Strategic Plan for TB (2021-2026). The NSP is fully aligned with the National Health Policy (2019) and the Nepal Health Sector Strategy (2015 to 2020). The NTCC is cognizant of the GF's application focus requirements and programmatic commitments specified in the GF Allocation Letter. The prioritization of modules and interventions in this funding request application (FRA) to the GF is in line with the goal and objectives of the NSP and is guided by the recommendations of the JMM and the all-embracing country dialogue. The NTCC would invest in high impact interventions recommended by WHO and TGF, recent JMM Report, country dialogue process and NSP to maintain the gains achieved and address the gaps in case finding both DS- and DR-TB, including treatment adherence and preventive therapy nationwide (Table-1). Table-2 shows the estimated number of TB cases that would be detected with an incremental increase of 15% per year over 3 years. Table-3 shows the number of MDR-TB cases that will be detected in the next 3 years.

Table-1: Summary of Approach for Prioritization of Modules and Interventions	
Challenges, barriers and inequities	**Approach for prioritization of interventions**
Module 1: TB care and prevention (i) As front-line health workers lack expertise in TB, create a pool of national trainers to strengthen clinical and programmatic management of TB at all levels (ii) Insensitive diagnostic algorithms (verbal screening and smear microscopy) to be replaced by mWRD and CXR as initial screening and diagnostic tool (iii) Currently GX utilization is low, short working hours and poor maintenance of GX machines (iv) There are mainly two issues that is hindering the scale up the GeneXpert connectivity to all GX sites. Specially the obsolete computers connected with the GeneXpert machines and the issue of internet connection. (v) Another issue of internet connectivity to all GX machines; most of the computers linked in GX machines are not connected with internet. However the sites are reporting the test result through online system from another computer. (vi) Accessibility to culture and DST has logistic challenges (vii) Sputum transportation system currently in 39 districts linking hard-to-reach HF to microscopic centers (viii) Low identification of presumptive people in health facilities (ix) The high catastrophic costs borne by patients with TB and their families	1. The NTCC would invest in the following interventions and key activities to achieve the targets set by the TB NSP (2021-26) which has been adjusted to the Performance Framework (PF) targets: (i) Early diagnosis of all people with any form of TB (DS-TB and DR-TB) through improved access and utilization of quality-assured (QA) diagnostics- strengthen the NTRL and TRLs; expand and ensure functionality of GX network, strengthen, and expand the sputum transportation system, and improve access to CXR as a screening tool. (ii) Once these two issues addressed, the GX connectivity will be scaled up to all GX sites of the country. To resolve the above issues- The warranty of GX machines also covers the required computers. Hence, NTP is coordinating with CEPHEID to replace all the obsolete computers that has low processor <2 GB Ram so that the computers connected with the GX machines can be linked in GX connectivity network. (iii) The internet connectivity issue will be resolved along with the replacement of obsolete computers. Most of the GX sites themselves will bear the internet costs ad for those sites which are unable to bear the internet costs, the NTCC has allocated the budget for that. Hence, by the end of 2020 all the GX sites will be linked in GX connectivity network. (iv) Scale up systematic screening of HRGs to reach the case notification targets (Table-1a) and find the missing people with TB (36,000). (v) Case finding interventions like CI, SCT focused on 42 districts covering 80% of population and having 88% of notified TB cases. (vi) Currently Sputum collection and transportation is being implemented in 39 districts linking about 60% (1200) of the non-microscopic health facilities to microscopic centers. In the new FR the SCT mechanism will be increased to 42 districts covering 80% of the health facilities to GX centers. In the existing grant the main issues were use of Sputum Microscopy for the sputum testing and quality of MC centers. To address this issue in the new FR the SCT will be linked with Gene Xpert centers. (vii) To address the low identification of presumptive individuals in health facilities, health care workers of the facilities linked in SCT will be trained in presumptive identification, sputum collection and triple layer packaging and payment will also be provided to them for identifying presumptive, linking to SCT mechanism, enrolling in treatment and recording and reporting. So with increased coverage of health facility, testing sputum through GX, training of health care workers and regular supportive supervision, the case detection through SCT will increase. (vi) Capacity building of national, provincial, LL and health facility staff on TB care and prevention including TPT. Note: The NSP 2021-2026 has a target of increasing 15% per year from baseline of 32,000 TB cases. However, based on the available resources, the targets in the PF have been revised as shown in the table-1a below.

<table>
<tr>
<td></td>
<td>
<table>
<tr><th>Yr</th><th>Baseline</th><th>TB-NSP (2021-26) Target</th><th>PF Target</th></tr>
<tr><td>Y 1</td><td>32,000</td><td>36,800</td><td>34,400</td></tr>
<tr><td>Y 2</td><td>32,000</td><td>41,600</td><td>37,800</td></tr>
<tr><td>Y 3</td><td>32,000</td><td>46,400</td><td>41,800</td></tr>
</table>
Table 1.a: Estimated Number of TB cases to be detected
(Sources: TB-NSP 2021-2026; Performance Framework)

2. Catastrophic costs reduced by addressing financial barriers: (i) pre-diagnostic phase- early diagnosis through ACF to reduce costs which includes sputum transportation, and access to CXR & GX; (ii) Treatment phase- funding for drugs covered mainly by GoN 96% (Y1), 85% (Y2) and 100% in (Y3), financial support for transport and nutrition from GoN; (iii) NTP will advocate for inclusion of people with DS-TB in the Health Insurance system
</td>
</tr>
<tr>
<td>Module 2: MDR-TB care and prevention
The estimated total number of RR/MDR TB cases has been revised to be 1900 per year based on draft WHO report 2020.
i. High initial loss-to-follow-up
ii. High Fq resistance in RR-TB patients
iii. Management of DR TB mainly facility-based
iv. TSR among MDR/RR-TB was 71%.
v. The costs related to TB diagnosis and treatment were high
vi. Social support was minimal
vii. Identification and management of adverse events (AEs) was limited
viii. Inadequate supportive supervision to DR-TB treatment centres and sub-centres on PMDT from the NTCC and provincial level.</td>
<td>NTP would invest in increasing detection of RR/MDR-TB by DST for all TB cases (refer to table below); establish an efficient sputum collection and transportation mechanism; scaling up use of GX as the initial diagnostic test ; intensify contact tracing and MDR/RR-TB case finding; address barriers for enrolment of DR-TB patients on treatment; develop a robust referral and notification mechanism; monitor LTFU of MDR/RR-TB cases and improve treatment success rate of DR-TB from 71% to 85%.
Note: The NSP 2021-2026 target of increasing case detection of MDR-TB as shown in the table has been revised based on available resources with the following revised PF target.

<table>
<tr><th>Year</th><th>Baseline</th><th>TB-NSP (2021-26) Target</th><th>PF Target</th></tr>
<tr><td>Y 1</td><td>680</td><td>990</td><td>720</td></tr>
<tr><td>Y 2</td><td>680</td><td>1120</td><td>940</td></tr>
<tr><td>Y 3</td><td>680</td><td>1250</td><td>1090</td></tr>
</table>
Table 1.b: Estimated number of MDR/RR-TB cases detected (Source: TB NSP 2021-26; Performance Framework)

Treatment phase- NTP have already transitioned into all oral regimens as recommended by WHO. Funding for drugs is being covered by GF (64%) for the first year only and from the second year onwards by GoN (100%); financial support for transport and nutrition for DR-TB patients would be covered by GoN. TB-NSP 2021-26 envisions increase in enrollment of DR-TB cases from 60% baseline to 85% in three years.</td>
</tr>
<tr>
<td>Module 3: RSSH- Health Management Information Systems (HMIS) and M&E
i. No TB specific focal points to carry out supervision at province and below and supervision is upon new focal points who are</td>
<td>Investment will include interventions targeted on HR development and strengthening of M&E activities across all levels; enhance data collection and reporting of TB, RR/MDR-TB and TB-HIV collaborative activities; strengthen and expand HMIS reporting system and link electronic case-based system of NTP with HMIS's DHIS2 platform in collaborations with other partners (DFID, GIZ, USAID).</td>
</tr>
</table>

not only responsible for TB program. ii. Challenge to engage the newly appointed focal points of TB on M&E iii. Not all facilities have direct access to computers and internet for online reporting iv. Electronic case based online reporting is yet to be linked to the HMIS system	The Global Health Supply Chain (GHSC) program has been supporting roll out of e-LMIS and are targeting to have all facilities report through this system
Module 4: RSSH- Community systems strengthening (CSS) i. Absence of civil society engagement for TB and no mechanism for coordination with the NGOs/CBOs at the local levels are shortcomings of the NTP; ii. the role and needs of affected communities in service delivery monitoring not included; limited coverage and engagement of CB-DOT and outreach workers; iii. limited engagement of young people, survival community and key political drivers.	NTCC would provide support to provincial, district and local levels (LL) in formulating a TB work plan (microplanning) to meaningfully engage and involve civil societies and TB-affected communities; Meeting and engagement with youth groups, mothers groups, and TB survivors to identify their role and responsibility in community TB care; operationalize the NSP and CSS strategy to its full potential.
Module 5: Removing human rights and gender-related barriers to TB services i. Caste-based and gender-based discriminations exist including social stigma against TB; ii. others being financial barriers due to transport costs, loss of wages and time constraints iii. A rights-based and gender-responsive approach to TB care and prevention would strengthen the existing delivery system of TB services.	Since 2012, the MoHP started the mainstreaming of Gender, Equality and Social Inclusion (GESI) in the health sector policies, plans, health institutions, health programmes, service delivery points to ensure that activities reach underserved areas and marginalized groups. The NTCC would use the Stop TB Partnership tools on assessment of Stigma and Community, Rights and Gender (CRG) to provide guidance for meaningful interventions to address the issues.
Module 6: TB/HIV i. Coordination mechanisms between TB and HIV programmes were not in place. ii. Limited integrated TB-HIV services iii. Not all TB patients are being screened for HIV and vise versa iv. Limited use of CXR and GX tests for screening TB among PLHIVs	The NTCC would reinforce mechanisms for delivering integrated TB and HIV services; strengthen the existing coordinating body for TB/HIV collaborative activities; innovate and scale up surveillance of HIV among TB patients; joint planning and supervision with NCASC for integrated service delivery of TB and HIV; diagnosis and treatment of TB among PLHIV.

and discrepancies in recording and reporting	

2.2 Funding Priorities

a) Based on the Global Fund Modular Framework, use the table below to detail each **prioritized module** proposed for Global Fund investment for the relevant disease component(s) and/or Resilient and Sustainable Systems for Health (RSSH).

COMPONENT: TB

Module # 1	**TB care and prevention**

Intervention(s) & Key Activities*	The NTCC would invest in high impact interventions such as early diagnosis of all people with any form of TB (DS-TB and DR-TB) which includes improved access to X-rays and rapid molecular diagnostics as the initial TB diagnostic test. Systematic screening of high-risk groups would be through outreach and community-based active case finding activities; using an efficient sputum collection and transportation system; implementing FAST approach in major hospitals and expanding PPM activities.
	Intervention: Case detection and diagnosis
	Key activities:
	1. Strengthening diagnostic capacity of the NTP network:
	• Expand the coverage of Gx machines and ensure functionality by procurement of 2 GX machines, 45,800 cartridges, ensure warranty of 8 GX machines and maintenance and provide support cost to laboratory person for additional GX testing for extended services.Provide regular supportive supervision from supranational laboratory (SRL) to NTRL to ensure quality including maintenance of Biosafety cabinet
	• Conduct workshop to ensure network of quality assured designated microscopic centers with central and provincial stakeholders.
	• Procurement of consumable required for sputum collection and transportation; supply, distribution and warehouse management.
	• To ensure optimization of existing GX network and improve utilization of machines following activities have been planned which will address the identified issues of underutilization and optimization:
	  • Machine not calibrated and frequent breakdown of module: Enroll all machines in warranty so that there will be timely calibration and module replacement when needed.
	  • Stockout and unavailability of GX cartridges: Procurement of GX cartridges to fulfill country's need from both Gov and GF side.
	  • Less working hours in government health facility: Placement of the GX machines in private medical colleges and private hospital/partners to increase GX utilization times
	  • Low utilization rate of GX machine: Link all case finding intervention with GX sites to improve utilization
	• Human resources to ensure optimization and improve utilization of machines have been planned within the grant. One GX service engineer at the central level is being planned whose main responsibility will be to coordinate with provincial Lab officers and GX sites to ensure functionality, timely communication with relevant stakeholders, capacity building of provincial team. Similarly, there will be provincial lab. Officers placed in each province to ensure GX functionality, monitoring and supervision and quality assurance of MC centers.

	2. Under the lab strengthening efforts funded by the current grant, NTP has assigned a dedicated laboratory staff in each province (provincial public health laboratory-PPHL) for ensuring quality of TB laboratory services provided by the health facilities. Continuation of these lab staff has been proposed in this funding request. These lab staff will be involved in strengthening the capacity of human resources in the provinces, implementing QMS, and ensuring timely processing of samples. In addition, National TB Reference Laboratory (NTRL) will be capacitated for QMS implementation with the support from SRL. The NTRL will further support provinces- PPHLs to implement QMS. • In the PAAR, QMS and accreditation of TB reference laboratories are added. 3. The health facilities without the diagnostic facilities are planned to be linked in sputum collection and transportation network. The sputum collected in HF will be transported to nearby TB diagnostic centers, primarily GeneXpert Centers where possible and to MC when GeneXpert is not available. The sputum collection and transportation will be done by systematically linking the HFs and TB diagnostic centers. SRs will support 42 high TB case load districts mobilizing the Outreach Workers. The outreach workers distributed in 2100 HFs of 42 districts will not only collect and transport the sputum from HFs to TB diagnostic centers but also encourage the HFs to collect the samples of presumptive TB and recording and reporting at HF. The sputum test result will be collected every week by ORWs and give to the HFs while going for collection of sputum samples. Besides this, if there is any presumptive detected as TB then the diagnostic centers immediately inform the relevant HFs for the enrollment in treatment. In 35 remaining districts the GoN will fund the activity and will be implemented through the HF staff. The sputum collected in a HF will be transported by anyone of the health facility staff instead of ORWs. The other arrangement will be same as explained above. 4. As stated in the NSP and TB laboratory plan, existing microscopy centers will be reviewed and re-designated as TB microscopy centers based on predefined criteria. This will help streamlining the TB microscopy services in the context of expanding GX sites and ensuring their functionality. Workshops led by provinces for designating microscopy centers have been planned in this application. Provinces will be capacitated to ensure functionality of microscopy centers and PPHL laboratory staff funded through this grant will also ensure that full capacity functionality of MC where necessary in the context of expansion of GeneXpert. 5. Timely maintenance of GeneXpert machines, smooth supply of cartridges, GeneXpert connectivity, expanding GeneXpert to private facilities and linking SRs interventions with GX testing will contribute to reduce turnaround time for the test results. 6. Workshop to develop protocol for early detection of all forms of TB among all ages and gender through ACF (in communities/outreach and intensified case finding in facilities and through contact investigation). 7. <u>Capacity building</u>: To ensure that all physicians are sensitized following activities have been planned. • Conduct orientation and continuing medical education (CME) at central and provincial level to ensure public/private providers are following national guidelines on diagnosis, treatment, and reporting • Develop an online self-training module for diagnosis and management of TB with collaboration with different medical associations • Also, from the Gov. budget training of medical doctors on clinical management of TB have been planned and of the national TOT refresher trainings will also be supported by WHO • Build a pool of 24 trainers (3 national and 21 provincial level) to strengthen clinical and programmatic management of tuberculosis • Workshop to develop online self-training packages and contents of pre-service and in-service curriculum • Provide training on store management, commodity handling, safety and security

	for store support staff of Central and PHLMC Warehouse • Training on the ACF interventions to health care workers. Note: *In each of the interventions mentioned above focus will also be given to elderly, women, children, smokers, and diabetic cases.*
	Intervention: **Treatment** NSP had aimed to maintain the TSR of DS TB above 90% and increase TSR of DR TB cases to 85%. There are still challenges regarding how medicines are being provided to TB patients which are: Huge number of patients are still having daily DOTs from health facility and CBDOTs have been initiated only in 21 districts for DS TB cases and piloted in 2 districts for DR-TB cases; and there are no other flexible methods of DOTs being planned in country. This had led to loss to follow up and impact the treatment outcome. So, through this grant following key activities are proposed: Key Activities: • Workshop to identify and develop flexible method of treatment adherence • Management of anti-TB drugs: GF will procure FLDs- 4% in Y1, 15% in Y2 and 0% in Y3. GoN will procure 100% from Y3 onwards as stated above. • Identify flexible methods of DOTs for both DS and DR TB to ensure treatment adherence and improve treatment outcome. These flexible methods will further be strengthened through expansion of DR TB centers and sub-centers planned in Government funding and close monitoring through those centers. As the notification increases, even to maintain DS-TB TSR 90% and DR-TB TSR 85% is a huge success as compared to global TSRs for DS and DR TB.
	Intervention: Prevention Key Activities: • Develop guideline for TB Prevention and Treatment (TPT) for inclusion of all household contacts of people with pulmonary TB • Conduct meeting with MoHP, DoHS and other relevant stakeholders to include FAST approach as part of health facility-based infection control guidelines • Implement FAST approach in 32 major hospital and strengthen administrative infection control
	Intervention: Engaging all care providers (PPM) Partner with intermediary agencies and key stakeholders for expanding PPM activities in 6 metros and 1 sub-metro with high volume of private health facilities Key Activities: • Training of intermediary agencies (SR) for building capacity to support national TB programs • Engage 115 Private doctors for notification of TB cases and outcome of cases managed by them. • Strengthen HUB and SPOKEs referral mechanism of a person to be evaluated for TB from 400 private pharmacies (Spoke) for TB diagnosis and treatment to designated diagnostic health facilities (HUB). • Provide performance-based payment (enabler) to motivate care providers to deliver quality TB care and prevention services • Conduct orientation and continuing medical education (CME) at central and provincial level to ensure private providers are following national guidelines on diagnosis, treatment and reporting • Workshop to develop an online self-training module for diagnosis and management of TB with collaboration with different medical associations • Conduct regular collaborative activity with different associations like NMA, NEPAS, MELAN etc. to strengthen the engagement with NTP
	Intervention: Community TB care delivery Currently CI is being done in 39 districts where anyone who are found to be presumptive were referred to sputum microscopy examination and few of sputum smear negative was sent for GX testing. The yield from the microscopy was around 2.5% and from GX was around 7%. Building on the evidence and recommendation

	from JMM in new FR all the presumptive people identified through CI in 42 districts will be tested using GX. Key activities: • Scale up household contact investigations of index pulmonary TB cases from 39 to 42 high burden TB districts of Nepal. • Establish sputum collection and transportation mechanisms from peripheral health facilities to diagnostic centers in 42 districts through dedicated staff to increase access to quality assured diagnosis • Ensure all diagnosed TB cases through sputum collection and transportation, and CI are enrolled in treatment. In the new FR the SCT mechanism will be increased to 42 districts covering 80% of the health facilities to GX centers. To ensure quality assured diagnostic in new FR the SCT will be linked with Gene Xpert centers. • The services provided at the community are Contact investigation, sputum collection and transportation from peripheral health facility to GX sites. To ensure the quality assurance of services provided at the community following steps will be taken: o Develop SR implementation guidelines and train SR staff on it. o Training of Health facility staff and contact tracer on presumptive identification and sputum collection and transportation o Use GX as a primary diagnostic tool o Conduct regular supportive supervision from LL, province and central team. To ensure linkages to care in terms of time and structure program and SR will ensure proper linkages to the respective health centers diagnosed individual and tracked until completion of treatment. For patient follow up and treatment support SR staff will strictly monitor it and defaulter tracer will be introduced ensure continuity of treatment. Additional treatment support like CBDOT and nutritional allowance for TB patient, and enroll DR TB patients and their family in insurance scheme will be provided thorough government grant
	Intervention: Key populations (KP) – Children Key activities: Diagnosis of Childhood TB: 8. Establish referral mechanism for screening of TB among malnourished and ARI children from peripheral health facilities to Hospitals in 29 districts having high prevalence of malnutrition and TB; 9. Screening of acute malnourished and severe ARI children for TB in 45 major hospitals within above 29 districts; 10. Develop network of health facilities through capacity building of staff that will be able to diagnose and manage Childhood TB Preventive therapy among children under 5 years (TPT): a. Provide 3HR to eligible children under 5 years in contact with pulmonary TB patients at 42 districts after contact tracing; b. Procure HR for children under 5 years c. Provide travel cost for children and family members for continuation of TPT and health care workers for monitoring of TPT. Capacity Building 11. Training on diagnosis and management of childhood TB 12. Training of medical doctors at Central, Provincial, and Local level health facilities on childhood TB diagnosis and management including X ray reading and performing gastric lavage. 13. Training of para-medical and nursing staff working in peripheral health facilities on childhood TB identification, diagnosis, and management. 14. Collaborate with Family Welfare Division and relevant stakeholders in

	strengthening Childhood TB in Integrated Maternal Newborn Childhood Health (IMNCH), and TB screening among pregnant women attending ANC checkup. Treatment 15. Provision of treatment with child-friendly TB medication formulations
	Intervention: KP – Prisoners Key activities: • Active case finding in 10 big prisons of country with provision of mobile outreach services with regular screening (including using X-rays, GX) • Training of health care workers, prison officials, and inmates on ACF in prison. • Meeting with prison officials and other stakeholders to initiate entry and exit screening of TB • Provision of treatment with FLDs, treatment support and linkage with national TB information system by establishing treatment centers in prisons. • Treatment continuation of released inmates will be ensured through proper linkages to the respective health centers of the released individuals and tracked until completion of treatment.
	Intervention: KP – Mobile populations: refugees, migrants, IDPs Key activities: • Case finding and screening of migrants for TB at 9 major border's transit points by dedicated outreach workers • Orientation of outreach workers and staff working in border post on TB case finding among migrants • Regular coordination/collaboration meeting with stakeholder- local level, partners, other agencies working with migrant population.
	Intervention: Collaborative activities with other programs and sectors Key activities: • Establish collaboration between NTCC and National Diabetic programme to develop screening and management of TB in diabetics and vice versa, include TB-Diabetes in NCD package of essential non-communicable diseases (PEN) • Conduct consultative meetings with other programs such NCD, FWD, Geriatric program and other relevant programs.
Priority Population(s)	HRGs: contacts of all index pulmonary TB cases including children; elderly; migrant workers; prisoners; PLHIVs; people with diabetes; pregnant women; children with malnutrition and ARI and smokers
Barriers and Inequities	Caste-based and gender-based discriminations, social stigma; logistical barriers with poverty being an overarching structural barrier, other barriers are transport costs, loss of wages and time constraints. Mitigating measures: High level advocacy and sensitization of policy-makers to bring about protective legal frameworks; reinforce patient-centred TB care through training of frontline health workers on human rights and community-based monitoring of health services and community awareness campaigns on patients' rights.
Rationale	ACF takes the screening and diagnostic services to the key populations, which minimizes barriers for access; enhances community awareness to mobilize high-risk populations to the ACF site; results in improved case finding and reduced diagnostic and treatment delays and reduces the catastrophic costs for patients with TB.
Expected Outcome	Improves health outcomes among people with TB by detecting and treating TB earlier in order to reduce suffering, risk of poor treatment outcomes, and adverse social and economic consequences of TB; reduces transmission and incidence by shortening the average duration of TB infectiousness as well as future costs to the health system and society. Maintain TSR above 90%.
Expected Investment	**USD 10,341,836**

Module # 2	MDR-TB care and prevention
Intervention(s) & Key Activities	Many of the activities for DR-TB will be combined with care and prevention of all TB cases as noted above in Module 1. The MoHP will provide support to establish at least one TB Treatment and Referral Management Center in each province and to strengthen services at DR-TB treatment centers. MOHP will also provide financial support to scale up community-based DOTs for DR-TB, to provide psychosocial and financial support for DR-TB patients and their families, to strengthen active drug safety management (aDSM) and to monitor and address treatment interruptions. MoHP will maintain TB drugs & other commodities for treatment of TB and procure 100% of second-line anti-TB drugs by the third year. The followings are additional interventions and activities specific to DR-TB needing support from GF grant: **Intervention: Case detection and diagnosis** Key activities • Scaling up use of GX for DST with procurement of 2 GX machine and 45,800 GX cartridges (in addition to stated in module 1) • Sputum collection and transportation activity in module 1 will also transport the sputum of presumptive DR TB cases for diagnosis and DST in 42 high burden districts. • Household contact tracing of index DR-TB cases in 42 districts • Conduct Regional Green Light Committee (rGLC) visits once a year
	Intervention: Treatment Key activities: Activities specific to DR-TB include: • Procurement of second-line TB drugs (SLDs)- GF will procure 36% in Y1 only, and GoN will take over the procurement from Y2 (100%). • Support operation of TB Referral Centres in Province 1, Bagmati province and Province 5 • Train health staff on TB diagnosis, management, and aDSM (Active Drug Safety Monitoring) • Follow up and track all diagnosed TB cases are enrolled in treatment and reduce initial lost to follow-up through dedicated staff to track DR and DS patients not enrolled on treatment.
	Intervention: KP: MDR-Children Key Activities: • Procurement of child friendly SLDs
Priority Population(s)	Close contacts of patients with DR-TB; previously treated patients who either failed, relapsed or returned after loss to follow-up; patients with TB who are smear positive at 2 months or during treatment on FLDs or subsequent follow up; patients with TB not getting better/getting worse during continuation phase of the first-line treatment and patients with frequent interruptions and irregular first line drugs; health care workers to be evaluated for TB; others include- PLHIV, patients with DM, immuno-compromised patients, migrants, prisoners and refugees[70]
Barriers and Inequities	Implementation challenges related to DR-TB include poor referral practices, initial loss to follow up of DR-TB cases, supply disruptions leading to stock out in peripheral districts, lack of good storage and distribution practices at the Palikas. Lack of proper screening of prisoners and other high-risk groups is also another challenge. Mitigating measures: These challenges will be addressed with a goal to improve service delivery to a higher number of DR-TB cases with a higher rate of treatment success in this grant period. Some of the strategies include- establishment of at least one TB Treatment management and Referral Centre in each province, strengthening services at DR-TB treatment centers and sub-centers, scaling up community-based

[70] National Guidelines on Drug Resistant Tuberculosis Management, National Tuberculosis Center, Nepal, 2019, page 11

	DOT, psychosocial and financial support for DR-TB patients and families, monitoring and addressing treatment interruptions, and increased targeted screening of high risk groups including prisoners and other disadvantaged groups.
Rationale	These interventions were prioritized to meet the funding gap and overcome the challenges by strengthening the referral system, to increase rates of early DR-TB case detection, to improve referral to appropriate treatment sites, and to ensure better adherence to anti-TB drugs. These are all important activities for early treatment and decreasing transmission of RR/MDR/XDR TB.
Expected Outcome	The expected outcomes include: increase in DR-TB case detection rateimprove treatment success rate from current 70% to over 85%; improvement in referral of DR-TB patients to DR-TB centers; higher rates of treatment adherence; reduction in loss to follow up and improved identification and management of adverse events.
Expected Investment	**USD 3,128,888**

Module # 3	**RSSH- Health Management Information Systems (HMIS) and M&E**
Intervention(s) & Key Activities	Currently NTP has two Health Information System (HIS) in existence; first one is HMIS which is fully adopted for the information specially related to drug susceptible Tuberculosis and next one is NTPMIS which is developed to digitize the records of patients (service register) taking TB services in the SDPs which: also provides reports of the program. The NTPMIS enables SDPs to record the individual level information of TB patients at health facilities. NTPMIS has five different kinds of online R&R system which are; eTB register for DS TB, eTB PPM, eTB P4P, dhis2 for DR TB and laboratory system and GX connectivity. NTP receives the reports of GeneXpert and DR TB services from online system nationally. Likewise, data from private sector especially TB referral and diagnosis from community, pharmacies, and notification of TB from private doctors. The health facility having eTB register will feed report to DHIS2/HMIS since eTB register is interoperable with HMIS as a result HFs need not to enter data in DHIS2/HMIS additionally. In addition to this, the four monthly program reviews of the NTP at different level of NTP (Palika, District, Province and National) level continues in the NSP period. The budget for this is funded by GoN. The four-monthly review of program will be done as per the result reported in HMIS and NTPMIS. In addition to this, the expansion of eTB or other NTPMIS software to HF level will be supported by GoN providing skill related training and distributing computers to them as a co-financing to the GF grant. The NTCC would invest in strengthening the HMIS; implement TB upgrades as part of overall improvements to HMIS to support TB, HIV, and malaria; strengthen interoperable reporting template between e-TB register and HMIS and others like e-DRTB register and DDA reporting system, and support joint maintenance and updating of data server with partners. NTCC would develop and upgrade the mobile-based tool for NTPMIS with integrated monitoring system including biometrics in GX and e-TB online system; this system would possibly be integrated with HIV biometrics system. In the FRA, there is a proposed activity to upgrade the NTPMIS system as well as introduction of online R&R system in ACF related activities such as contact tracing, TB screening in cross borders, TB screening in high risk groups. **Intervention: Routine reporting** Since NTP has adopted the DHIS2/HMIS and relying fully on it for data of NTP services reported from Palikas or HFs starting from July 2020 onwards. Now, there are almost 4500 Health facilities who are the reporting unit for TB. The reporting rate in terms of submission from Palika or HFs is around 90% whereas regarding timeliness it is 38%. However, the status is far improved compared to last years, still there is a need of huge efforts to strengthen the quality of reporting from HMIS. Regarding online web and case-based surveillance system NTPMIS system is

	developed. It has majorly five modules; eTB register for DS TB, DHIS2 for DR and laboratory system, eTB for P4P, eTB for PPM (Hub and spoke model), and GXMIS for GeneXpert connectivity. The system is in place and are used by service sites expecting eTB register for DS TB. Now all 70 GeneXpert sites and 20 DR Treatment Centers are reporting through online web-based reporting system where as eTB register for DS TB is not initiated since TB focal persons at Palikas level could not be trained due to COVID situation. Once Similarly 70 medical practitioners and 400 pharmacies in 6 major cities of Nepal are linked in online reporting system using both eTB for P4P and PPM reporting system. To strengthen the HMIS reporting of NTP, following key activities are planned: <u>Key Activities</u>: • Upgrade electronic NTPMIS for case-based reporting and real-time TB surveillance and notification; • Develop real time database software to analyze results of ACF such as CI, FAST approach for planning and M&E purpose; • Strengthen and monitor TB referrals between diagnostic and treatment sites; • TB upgrades to be implemented as part of overall improvements to HMIS to support TB, HIV, and malaria; • Strengthen interoperable reporting template between e-TB register and HMIS and others like e-DRTB register and DDA reporting system; • Joint maintenance and updating of data server with partners; • Develop and upgrade mobile-based tool for NTPMIS with integrated monitoring system including biometrics in GX and e-TB online system; (this system will integrate with HIV biometrics system) • During the period of FRA there is plan of rolling out eTB register to all Palikas and certain health facilities providing training to them as well as computers, as necessary. Likewise, the upgradation of online surveillance system of NTP, maintenance of servers, training on GeneXpert connectivity, online MDR and GX service reporting are budgeted in the FRA. • The online web-based software for ACF activities are budgeted under FRA, which will record and report all the information related to ACF in the field. In addition, 7 laboratory officers deputed at provincial public health laboratory (PPHL) and GeneXpert Service engineer at NTC will support for the timely and complete reporting of GeneXpert which are budget in the FRA. • In addition to this, the training on DHIS2/eTB register planned for the TB focal persons covering all 753 Palikas. In addition to this, there are almost 400 staff under SRs in 42 districts who will contribute on the timely and complete reporting form HMIS while visiting HFs. All these staff are planned to be trained on HMIS so that they can be able to coach/mentor HFs on reporting.
	Intervention: Program and data quality Currently, data quality of TB is being taking care of from both the HMIS and NTP. HMIS has monthly data review system at Palika level and Data quality review annually to all districts. In addition to this HMIS provides trainings in huge number to all HFs covering NTP services too; the training capacitates them for quality reporting. Likewise, during the four monthly program reviews of NTP (DOTS Workshop) at Palika level, HFs also reviews the data quality reported in HMIS and correct as needed. Further, one of the major work of routine monitoring and supervision from provinces/districts/Palikas is cross check the reported data with the sources. In addition to this, NTP conducts RDQA annually to randomly selected health facilities using standard tool and conducts EPI-Appraisal in every two years with support of WHO to review the quality of services and its data. In addition to the regular supervision there is activity of onsite coaching/mentoring to health facilities and data review of health facilities having persistent data quality issue; this will be done specially mobilizing TB focal person, statistical officers and lab supervisors of

	provinces and districts. Besides the human efforts, there is a feedback system in both the HMIS and NTPMIS which informs the users on the issue of data quality generating feedbacks in the data entered into the system. Recently the data validation rule has been updated sitting with I-HMIS which will prevent many of the data entry error which used to cumbersome to correct following up the HFs. Likewise, NTPMIS also generates the feedback if there are any mistakes in entries including double entries too. In the FRA, the budget for RDQA, onsite coaching and mentoring for R&R of NTP, update NTPMIS with enhanced feedback system has been included. Key Activities: • Workshop to develop a costed National M&E Plan with comprehensive supervision at all levels • Conduct routine data quality assurance (RDQA) every 2 years; • Workshop to develop standards of trimester Review of NTP at all levels through meetings with key stakeholders • Formation of task teams with HIV, Malaria, and other programs to develop tools for joint planning, programme reviews and strengthening HMIS system • Revision of the training module on TB and HIV data analysis to strengthen recording and reporting at all levels (health facility and LL level) • Conduct regular monitoring, supervision, and research activities jointly with HIV and Malaria programmes; • Conduct review meeting of Case finding interventions aligning with trimester review meeting at LL •
	Intervention: Analysis, evaluations, reviews, and transparency The periodic program review such as four monthly program reviews of NTP at all level (Palika to national), EPI-Appraisal, RDQA, Dashboard on major NTP indicators both in DHIS2/HMIS and NTPMIS are the major activities for data analysis and feedback and for program planning, prioritization, monitoring, and improvements. In addition to this, the MDR Survey, Patient Cost Survey, web-based GIS mapping of service sites and vulnerable population are also used for program planning and evidence-based decision making. In the FRA, RDQA, development of a system that can provide the strategic information from one place creating dashboards with tables and graphs has been budgeted. The dashboard system will enable NTP mangers and focal person to monitor the program progress from one place that brings the key information from both NTPMIS and HMIS. Also, budget is kept for updating the web-based GIS map to present the NTP information based on key indicators of SDPs such as TB notification, enrollment, treatment success rate, etc. Key Activities: • Update GIS mapping of NTP service outlets and develop online portal with major indicators of NTP • Develop GIS mapping of hard to reach and vulnerable community • Update online dashboard monitoring system of NTP services integrating information of NTPMIS • Comparative study on the modality of initial defaulter follow up
	Intervention: Surveys Key Activities: • Conduct DR survey; • Conduct 4 operational research on TB every year; • Conduct TB Patient Cost Survey
Priority Population(s)	Health staff at health post and PHC, BMU at LL, staff at provinces and NTCC
Barriers and Inequities	Inadequate infrastructure for digital recording and reporting at point of care; lack of expertise in using the software; paper-based data entry at peripheral levels and

	transfer to eTB register and HMIS at the BMU; risk of data duplication, discrepancy and inaccuracy. Mitigating measures: Capacity building, develop interoperable reporting system; revision of the training module on TB data analysis; strengthen monitoring and supervision activities; formation of task teams to develop tools for programme reviews and research.
Rationale	Interventions targeted on staff development and strengthening of M&E activities across various levels would enhance the quality and reliability of data collection and timeliness of reporting.
Expected Outcome	Transition from paper-based to electronic case-based system (HMIS) would be expedited and made the official reporting system aligned to the general health information system. Timely and complete reporting from health facilities will increase from 67% currently to 100% by year 3.
Expected Investment	**USD 1,910,596**

Module # 4	**RSSH: Community systems strengthening (CSS)**
Intervention (s) & Key Activities	The NTCC would invest in strengthening institutional capacity at local levels as part of the community system strengthening activities through micro-planning for creating enabling environments; good governance, efficient management and ensuring adequate resources; strengthen advocacy and support for the rights for TB patients. **Intervention: Institutional capacity building, planning, and leadership development** Key Activities: • Workshop to revise CSS strategy • Advocacy o Engage parliamentarian (25 members each year) in the tuberculosis elimination initiative and the formation of the END TB committee under the chairmanship of the Prime Minister at the federal (1) and Chief Ministers at the provincial (7). o Identify the TB ambassador (1) to advocate the program at National and Provincial Levels. o Organize World Tuberculosis Day at the federal (1) provincial (7) and local levels (753) each year. o Link with poverty alleviation fund to provide social protection supports to poor and ultra-poor TB patients (25% of enrolled TB patients in treatment) each year. • Communication o Mobilization of social media (print and electronic) throughout the year to spread TB prevention, management, and care messages. o Training on health communication to health care providers (8,775) and community volunteers (9,000) will be trained on communication and provide counseling to the TB patients. o Situation analysis on gender, human rights, stigma, and discrimination (1) will be carried out to develop a comprehensive plan to address the systematic barriers that are constituted within the structures and institutions of society. o The establishment of the survival group's networks at national (1) and provincial levels (7) will allow sharing their disease and treatment experiences to the current TB patients and community.

	• Social Mobilization o Identify civil society organization and affected communities' network at national (1) and provincial levels (7) and (2,330) CSO members and affected communities will be mobilized in the program each year. o Implement the TB free "Palikas" initiative (80 Palikas) will be executed to provide comprehensive TB services at local levels each year. o Implementation and technical assistance of Micro planning (at the local levels 7 province and 17 metro and sub metros) to ensure financing for TB, HIV and Malaria program, collaborating and coordinating with local levels to support on good governance o Training of Trainers on Micro-planning o Technical assistance to develop guidelines for capacity building on data use and microplanning at province and Palika (Local level) o Workshop for finalization of guidelines on microplanning o 15,500 TB patients enroll in community-managed flexible DOTS at the local levels each year
Priority Population(s)	Youth groups and other community groups, community representatives and leaders, local level and provincial officials and local trainers.
Barriers and Inequities	CSS implementation is at risk of facing social, economic, legal, and political barriers, Additional barriers include poor levels of knowledge, lack of awareness and information, restrictive policies, stigmatizing attitudes, limited involvement of private health care providers, community members in TB, certain community groups such as women and girls, disadvantaged groups, Palikas (Local Level) in remote locations, and lower economic strata who are hard to reach. Mitigating Measures: involvement of community leaders, local groups including youth and women groups; involvement of female Community Health Volunteers (FCHV) and outreach workers; capacity building for micro-planning at local levels; spreading information and bringing general awareness though involvement of role models (e.g. celebrities) and social media and partnerships with CBOs and CSOs.
Rationale	The CSS plays a vital role in successful case detection and management of TB patients. CSS promotes an inclusive approach with the community through development of partnership and laying the foundation for patient-centered care and treatment services.
Expected Outcome	More effective ACSM activities at the community level; stronger local leadership, and improved local capacity for micro-planning
Expected Investment	**USD 463,101.**

Module # 5	**Removing human rights and gender-related barriers to TB services**
Intervention(s) & Key Activities	**Note: The budget for this module will be covered by Catalytic Fund through HIV/AIDS FRA and managed in coordination with TB program.** The NTCC would invest in a rights-based and gender-responsive approach in order to strengthen the existing TB delivery system in Nepal to facilitate marginalized and vulnerable people to access services without any discrimination. In addition, by sensitizing the health workers and making them responsive to needs of KPs. **Intervention: Stigma and discrimination reduction** Key activities: • Assessment on TB community rights, gender, and TB stigma using STOP TB partnership tools on Stigma assessment & CRG (community rights & gender) assessment • Conduct workshop on developing social media plan

	• Provide technical assistance to develop concept and plan for TB free initiative • Conduct workshop for discussion on the road map of "TB free" Palika (local level) to be shared by technical assistance • Organize MTOT on human rights and medical ethics related to HIV and TB • Training for health care workers on human rights and medical ethics related to HIV and TB
	Intervention: Community mobilization and advocacy Key activities: • Meeting with youth to identify their role and responsibility in community TB care • Conduct workshop to develop IEC /BCC materials for different platforms • Printing IEC materials, posters, pamphlets, forms, guidelines, and other documents • Conduct workshops to identify and record the hard to reach and vulnerable population • Establish survival group network at national and provincial levels and organize TB orientation to network • Organize regular meetings of survival groups at Provincial levels • Organize advocacy meetings at local levels with service providers, local leaders, & patients • Deliver messages broadcasting through Television, Radios, and other social media • Develop TB documentary for broadcasting • Set up community-based monitoring of service delivery quality, including stigma, discrimination, and confidentiality
	Intervention: Reform of laws and policies Key Activities: • Meeting with Prime Minister and other relevant Ministers • TA for coordination and facilitation to form high level End TB Committee • Workshop to define role and function of high-level End TB committee • Meeting with parliamentary committees (Health and Education) and other relevant Ministries • Engagement with parliamentarians, religious and community leaders, among others, for advocacy and sensitization including the training of parliamentarians on human rights, patient-centered care, and the role of protective legal frameworks in the TB response • Advocate for ultra-poor patients with TB to be included in poverty alleviation programme • Advocate with the Ministry of Labor to make a provision for health unit in the big factories and industries and include TB as an integral component. • Conduct coordination meetings with National Human Rights Council in collaboration with HIV programme
Priority Population(s)	Key and vulnerable populations such as mobile and migrant populations, people affected by TB, people living with HIV, people who use drugs, prisoners, socially marginalized communities, refugees, transgender and women, who are stigmatized or denied care because of their social or legal status.
Barriers and Inequities	Barriers are related to hierarchical caste-based and gender-based discriminations, social stigma, cultural and logistical barriers with poverty being an overarching structural barrier, financial barriers due to transport costs and loss of wages and time constraints. Mitigating measures: High level advocacy and sensitization of policy-makers to bring about protective legal frameworks; reinforce patient-centred TB care through training of frontline health workers on human rights and community-based monitoring of health services

Rationale	A rights-based and gender-responsive approach to TB care and prevention would strengthen the existing delivery system of TB services.
Expected Outcome	Increase in case notifications and treatment coverage and reduction in TB incidence
Expected Investment	**The budget for this module will be covered by Catalytic Fund through HIV/AIDS FRA and managed in coordination with TB program (as advised by GF country team).**

Module # 6	**TB/HIV**
Intervention(s) & Key Activities	The NTCC would invest in strengthening TB/HIV collaborative activities such as joint planning, screening, surveillance, and supervision jointly with NCASC to ensure integrated delivery of TB and HIV services including preventive treatment of co-infected patients. . **Intervention: Screening, testing and diagnosis** Key activities: • Procurement of 2 GX machines, 39200 cartridges, and warranty of 10 GeneXpert machines for testing TB among presumptive TB cases among PLHIV (in addition to module 1 and 2) • Screening of HIV patients for TB will be done through machine and cartridges procured above
	Intervention: TB/HIV collaborative interventions Key activities: • Conduct periodic TB/HIV coordination meetings at the Centre level • Conduct workshop for preparation of TB/HIV collaboration guidelines
	Intervention: Treatment Key activities: • Provide all TB/HIV co-infected patients, anti-TB treatment through the drugs procured by NTP
	Intervention: Prevention Key activities: • Provide TPT to PLHIV
Priority Population(s)	All patients with DS- and DR-TB, all patients with HIV, and TB/HIV co-infected patients, prison population
Barriers and Inequities	Under the current system, the patients with HIV and TB are treated at separate centers, and the diagnostic lab facilities are also separate. This has led to inadequate screening and testing, and poor follow up of patients who are referred from one facility to the other. Even though there is a TB/HIV collaboration committee at the central level, currently this is not fully functional and poor coordination between the two programs, Mitigating measures: In the current funding cycle, these barriers will be overcome by increasing the collaborations and integration of the two services at central, provincial and local levels by combining supervision and monitoring activities. Decentralization of referral labs and establishment of a provincial level lab in each province will allow easy access to laboratories to PLHIV .
Rationale	Since patients with HIV (PLHIV) are at high risk of TB, better diagnostic technology will strengthen the current system and help to identify more cases of TB/HIV coinfection. Collaborative activities and integration of services will need more frequent meetings between the two programs for planning and monitoring of services.
Expected Outcome	Increased identification of cases and treatment of DS and DR-TB in PLHIV; increased HIV-testing among patients with TB.
Expected Investment	**USD 563,761**

Module # 7	**Program Management**
Intervention(s) & Key Activities	**Intervention: Policy planning, coordination, and management of NTP** Key activities: • Training to develop a pool of national trainers for programmatic management of TB • Capacity building of national and provincial TB staff through participating in national and international conference/Meeting/Workshops/Trainings • Capacity building of MoHP for the Global Fund grant management
	Intervention: Grant management Key activities: • Periodic meeting between PR/SR/MoHP at national level • Support National program through human resources (including PMU at central and provincial levels) • Conduct monitoring, supervision & participation visit to Program implementing districts/Service Delivery Points (SDPs)/Regions • Procurement of necessary equipment for program implementation • Conduct annual Audit • Provide support for technical guidance from SCI HQ
Priority Population(s)	Technical staff of NTCC, PMU, trainees, trainers
Barriers and Inequities	Frequent turnover of NTP staff, limited expertise, limited access to continuing medical education, limited supportive supervision and on the job mentorship.
Rationale	Improving the standard of governance, accountability and transparency in administrative and procurement activities would address the issues related to GF's Additional Safeguard Policy (ASP)
Expected Outcome	Set high standards for governance, accountability, and transparency in all aspects of programme management to achieve results and meet expectations of development partners
Expected Investment	**USD 4,147,866**

(Add additional tables as relevant)

b) Does any aspect of this funding request use a **Payment for Results** modality?

☐ Yes No

If yes, in the table below, indicate the relevant performance indicators and rationale for the choice of performance indicators and/or milestones.

Performance indicator or milestone	Target				Rationale for the indicator/milestone selection for Global Fund funding
	Baseline	Y1	Y2	Y3	
Add rows if necessary					
Total amount requested from the Global Fund					

Specify how the accuracy and reliability of the reported results will be ensured.

Not applicable

c) Opportunities for integration: Explain how the proposed investments take into consideration:

- Needs across the three diseases and other related health programs;
- Links with the broader health systems to improve disease outcomes, efficiency and program sustainability.

Opportunities for integration:

The NTCC has taken several initiatives for strengthening integration across the three disease programmes as well as the underlying building blocks of the health system. Establishing the high-level committees provide opportunities for multi-disease committees for advocacy. From the perspective of patients, an integrated package exists for addressing co-morbidity, e.g. TB and HIV, TB and diabetes. In this FRA, screening for TB among malnourished children and children suffering from ARI would also be prioritized.

Strengthening Laboratory System and Optimization of GX

The current TB grant supports capacity building of existing laboratory technicians in each of the seven Provincial Laboratories. A dedicated laboratory technician from the NTP has been posted to ensure functionality and quality assurance of the diagnostic sites covering both microscopy and GX machines. The job description of this position would be expanded to support HIV and Malaria Quality Assurance along with overall laboratory functioning. The NTP has four TRL, one each in Kathmandu, Dharan, Pokhara and Surkhet, besides the NTRL in Kathmandu which opens further opportunities for engagement with HIV and Malaria programmes. The three disease programmes would endeavor to support the refurbishment of the provincial laboratories, provision of some basic equipment as well as integrated maintenance of laboratory equipment. Laboratory waste management is planned to be covered by the government budget for TB programme hence not included in the GF FRA.

The optimization of GeneXpert (GX) especially for viral load (VL) testing based on findings from two pilot sites would be considered. Existing GX machines under NTP would be utilized in close coordination with NCASC, while ensuring that TB testing is not affected. The HIV programme would cover the budget for GX cartridges for viral load (VL) testing. The TB programme would also include GX machines and cartridges in the TB/HIV module.

Procurement and Supply Chain Management

In terms of capacity building of staff at provincial levels engaged in procurement and supply chain management (PSM) which is supported by other development partners (GIZ, DFID and USAID), there is an opportunity for all national programmes (including TB, HIV and malaria) and the private sector to be involved. Existing TA currently placed at the logistics management division (LMD) provides support to TB, HIV and Malaria programmes for timely procurement.

Public-Private Mechanism (PPM)

In 7 metro and sub-metro cities, private institutions, doctors and pharmacies would be engaged in TB case identification and notification where Malaria and HIV could be integrated as per programme needs. Malaria and HIV can also be integrated in continuing medical education (CME) and other capacity building activities planned for the private sector. The NTP has set up working committees at federal and provincial levels for Public-Private Mix (PPM) which are conducting activities with branches of the Nepal Medical Association and other associations providing opportunities for integration with HIV and malaria programmes. The Malaria programme would target the private sector engagement through a focal person in the local body to support the elimination efforts.

Prisoners:

In addition to other TB/HIV collaborative interventions, TB and HIV services in prisons such as awareness, screening, linking to care for both TB and HIV will be done together in an integrated manner including use of GeneXpert machines for TB diagnosis and viral load testing. Synergy (and integration) in implementation with the National Tuberculosis Control Center (NTCC) for TB screening and BCC. In each prison, both HIV and TB interventions will be implemented by a single SR; the modality for this is currently being worked out.

HIV FR have planned in 13 largest prison where there will also be regular screening for TB and BCC will be integrated with HIV program. Among them through TB FR in 10 largest prison there will be ACF intervention

twice every year where Van with digital X ray and GX machines will be mobilized. While doing these ACF camps HIV services such as awareness, risk screening and linking to care will also be done. In 3 largest prison where ACF is not being done there will be regular screening for TB and BCC integrated with HIV program. Any presumptive identified during the screening will be linked with SCT mechanism and identified TB cases will be enrolled in treatment. It is also planned to have single SR in each province to implement prison intervention for both TB and HIV program. Hence, all 13 prisons will be covered in both TB and HIV FRA and integrated implementation will done and discussed during the implementation to gain synergy. Aligned numbers of prisons in both FRAs.

Migrants

The NTP has carried out TB screening of migrants in Kailali and Kanchanpur (high burden districts) though dedicated Outreach Workers. There are 9 border check point proposed in TB FRA for TB screening, diagnosis, and enrollment in treatment. The outreach workers who are placed to do the screening of TB will also be trained in providing HIV related information and counseling. These outreach workers will provide information on HIV/AIDS, importance of HIV testing and information on where HIV can be tested. Similarly, those who are tested positive for TB these outreach workers will ensure enrollment in treatment as well as screening for HIV.

TB program will collaborate with HIV program in 20 migrant districts where comprehensive package of service for male labor migrants and their spouses have been planned. TB related information will also be provided as a part of behavior change communication and also symptom based screening will be incorporated during community-led prevention and HIV testing intervention and any migrants or their spouse who needs to be evaluated for TB will be referred.

Health Information Systems and M&E

The NTCC would support HMIS at all levels of health system including capacity building of resource persons; it has also initiated case-based surveillance**.** TB upgrades to be implemented as part of overall improvements to HMIS to support TB, HIV, and malaria. Strengthen interoperable reporting template between e-TB register and HMIS and others like e-DRTB register and DDA reporting system, and support joint maintenance and updating of data server with partners. NTCC would develop and upgrade the mobile-based tool for NTPMIS with integrated monitoring system including biometrics in GX and e-TB online system; this system would possibly be integrated with HIV biometrics system.

Community Systems Strengthening and Removing Barriers

Interventions that integrate TB into broader community health systems and activities that address stigma and discrimination are included in the TB NSP (2021-26), e.g. (i) in the community and workplace; (ii) in health care settings; (iii) and in school-based health information curricula. TB-related rights literacy through community awareness campaigns or part of community systems strengthening (CSS) approach would allow people to know their rights under the national law as well as their human and patient rights with respect to TB, and HIV.

Collaboration with Other Programmes

The double burden of TB and diabetes in Nepal is a serious and growing challenge for health systems as there is a strong association of diabetes mellitus (DM) and TB including a higher TB prevalence in patients with DM and a higher mortality among patients with both diseases[71]. The NTCC would establish collaboration with the National Diabetic programme through screening and management of TB in diabetics and test DM in patients with TB. Consultative meetings with NCD, Maternal and Child Health programmes are also planned.

d) Summarize how the funding request complies with the **application focus requirements** specified in the allocation letter.

Global Fund has two requirements to strengthen the overall impact and sustainability of Global Fund

[71] The re-emerging association between tuberculosis and diabetes, Cadena J et, at, Tuberculosis (Edinb). 2019 May

investments, one of which is the **application focus requirements** which outlines how the country should invest GF financing[72]. Since Nepal is a low-income country, there are no restrictions on the programmatic scope of allocation funding for TB, however as stated in the Allocation Letter, this funding request application (FRA) would invest in two RSSH modules, namely "Health Information Management Systems (HIMS) and M&E" (USD 1,910,596) and "Community Systems Strengthening" (USD 463,101) as they are essential to fast-track the progress towards ending the epidemic. In addition, investment in the module on "Removing Human Rights and Gender-related barriers in access to TB services", is critical not only to ending the epidemic but also for implementing interventions that respond to key populations (KPs) and issues related to human rights and gender-related barriers and inequities. A rights-based and gender-responsive approach to the TB programme would improve the accessibility for marginalized communities while ensuring that health workers have been trained to be responsive to the concerns and special needs of KPs. This module would be supported by the catalytic funding (USD 440,000) requested through HIV grant for implementation of activities in 42 districts with matching funds from the GoN for implementation of similar activities in the remaining 35 districts to fulfill Nepal's compliance to the application focus requirements.

e) Explain how this funding request reflects **value for money**, including examples of improvement in value for money compared to the current allocation period. To respond, refer to the *Instructions* for the aspects of value for money that should be considered.

As Value for Money (VfM) is the key principle that guides the GF's investments throughout the grant life cycle, the totality of all the five VfM-related dimensions (economy, efficiency, effectiveness, with equity and sustainability) have been meticulously followed while developing this FRA.

Economy:
Both the PR (SCI) and the Key Implementing Entity (NTCC) participate in the procurement process as per the budget allocated from GoN and GFATM sources, respectively; to minimize the costs of inputs while confirming that quality-assured health products are budgeted at the lowest sustainable costs. All procurement from the GoN budget is done by Public Procurement Monitoring Office (PPMO) as per the Procurement Act and Regulations. Both national competitive bidding (NCB) and international competitive bidding (ICB) methods including e-bidding processes are followed in case of GoN budget, but in the case of GFATM budget, Pooled Procurement Mechanism (PPM) is used for the procurement purpose.

There is a dedicated Procurement and Supply Chain Management (PSM) Team at the NTCC. The PSM team is responsible for quantification, monitoring of the stock status, supporting procurement, and coordinating re-supply logistics downstream. The Global Drug Facility (GDF) has also been supporting the PSM team to generate an early warning system to monitor stock situations[73].

All types of commodities, laboratory chemicals and equipment; First Line Drugs (FLDs); Second Line Drugs (SLDs) and other consultancy services are procured by following the standard procurement methods mentioned above. The procurement budget is met through a co-financing funding model between the GoN and the GF. Logistic Management Information System (LMIS) reports from facilities are aggregated at the district level and transmitted to the province and eventually to NTCC in a manual system. The Global Health Supply Chain (GHSC) program has been supporting roll out of e-LMIS and are targeting to have all facilities report through this system but is not yet ready at all facilities.

Efficiency: To maximize outputs, outcomes and impact for a given level of resources several feasibility and sustainability considerations have been applied while proposing further expansion of GX to additional health facilities such as potential case load, appropriate geographic location for the machines, changes to infrastructure for the transportation of specimens, maintenance and repair of machinery, training and oversight. To effectively address the challenges and gaps of the evolving federal structure in terms of efficiency in the delivery of the TB services, the PR and the NTCC have taken steps to invest in both health and community systems that would ensure impact and sustainability in the laboratory network, supply chain, data system and human resources at facility and community levels. Strengthening the NTP at the national level is through the PMU, includes technical assistance to the PSM Team and the NTRL; embedding PMU under the Health Directorate at the provincial MoSD and strengthening the laboratory network nationwide

[72] Nepal 2020-2022 Allocation Letter, Global Fund, December 2019

[73] GDF Technical Assistance Mission Report, Nepal, June 2019

would ensure both effectiveness and efficiency. Investing in micro planning at the most peripheral levels of the federal structure, i.e. local levels (Palikas) will strengthen governance, monitoring, accountability, and efficient service delivery. This FRA would maximize health outputs, outcomes, and impact in line with the Results Framework of the TB-NSP (2021-26). The IMPACT TB longitudinal costing survey, the first such survey conducted in Nepal (April 2018-October 2019) showed that ACF compared to passive case finding (PCF) is an effective strategy to reduce the economic impact of TB on households. Patients with TB notified through ACF as compared to those through PCF, incurred lower costs during the pre-treatment period (total cost: USD 55 vs USD 87, P<0.001) and during the pre-treatment plus treatment periods (direct costs: USD 44 vs USD 69, P<0.001)[74]. This justifies the NTP investment in scaling up ACF activities which would pursue efficiencies to ensure sufficient support for high impact interventions funded by the GF.

Equity
The extensive and inclusive Country Dialogue documented the needs of key and vulnerable populations. Caste-based and gender-based discriminations exist, including social stigma against TB; others being financial barriers due to transport costs, loss of wages and time constraints. A rights-based and gender-responsive approach would enhance the accessibility for marginalized communities while ensuring that health workers have been trained to be responsive to the special needs of KPs. Hence, the module "Removing human rights and gender-related barriers to TB services" has been prioritized in this FRA.
In 2012, the MoHP started the mainstreaming of Gender, Equality and Social Inclusion (GESI) in the health sector policies, plans, health institutions, health programmes, service delivery points to ensure that activities reach underserved areas and marginalized groups.

The NTP would conduct two assessments based on the Stop TB Partnership tools namely, the Stigma Assessment and the Community Rights and Gender Assessment, to improve the understanding of human rights and gender-related barriers, including stigma and discrimination. The frontline health workers will be trained in human rights and patient-centered approach to make them more responsive to the issues concerning stigma and discrimination affecting patients. The NTP would invest in interventions that would effectively reduce the barriers and ensure equity through: (i) engagement with parliamentarians, religious and community leaders, among others, for advocacy and sensitization; (ii) training of parliamentarians on human rights, patient- centered care and the role of protective legal frameworks in the TB response; (iii) advocate for ultra-poor patients with TB to be included in poverty alleviation programme (iv) advocate with Ministry of Labor to make a provision for health unit in the big factories and industries and include TB as integral component.

The social safety net provided by the GoN under the National Insurance Policy has provisions to cover only MDR-TB patients without payment of premium among other categories of patients such as those affected by leprosy, disability, etc. but due to lack of community awareness, the enrolment of eligible patients is low. Patients with DS-TB are not covered under this scheme. Establishing high level committees for advocacy would extend the coverage for all TB patients and strengthen sustainability. The catalytic fund will further address the issues outlined above and TB cost study will be also conducted during this grant period to understand economic burden (OOP) on families affected by TB.

2.3 Matching Funds (if applicable)

This question should only be answered by applicants with designated matching funds, as indicated in the allocation letter.
Describe how the **programmatic and financial conditions**, as outlined in the allocation letter, have been met.

There are no restrictions on the programmatic scope of allocation funding for the TB request, as Nepal is classified as a low-income country. However, in line with the Global Fund's strategic focus of its investment, interventions are prioritized to respond to key populations, human rights and gender-related barriers, inequities, and vulnerabilities in accessing services. One of the priorities would be to invest in RSSH

[74] Active case finding is an effective strategy to reduce the economic impact of tuberculosis on households: The IMPACT TB longitudinal costing survey in Nepal, 2019 submitted for publication

interventions to strengthen both health and community systems.

As stated in the Allocation Letter dated 16 December 2019, Nepal is eligible for additional catalytic matching funds beyond the allocation amount of USD 20.5 million. The catalytic matching funding is for addressing issues related to the human rights and gender equity. The CCM has decided that the catalytic fund will be applied through the HIV FRA and the amount (USD 1.1 million) will be shared for the activities for both HIV and TB programmes.

The programmatic areas of investment of the catalytic funding are prioritized under the module "Removing human rights and gender-related barriers to TB services" and the main interventions cover (i) stigma and discrimination reduction; (ii) community mobilization and advocacy; and (iii) reform of laws and policies. One of the financial conditions outlined in the Allocation Letter states that there should be an increase in the allocation amount designated to Human Rights programming, compared to the budget levels in Global Fund grants from the 2017-2019 allocation period. A corresponding increase in programmatic targets and coverage is expected through (i) the increased use of country allocations and (ii) the use of matching funds towards removing human rights and gender-related barriers in access to services which is critical to ending the TB epidemic.

The catalytic fund would be invested in implementing the interventions and key activities that address human rights and gender-related barriers to TB services in 42 districts. The matching funds from the GoN would cover the remaining 35 districts and would be invested in interventions and key activities that address the human rights and gender related barriers. In addition, the domestic funds would strengthen the foundations of setting up "TB-free Palikas" (local levels) in the above 35 districts. In the other 42 districts, the new GF grant would support the "TB-free Palikas" under the community systems strengthening module.

The GoN would work together with development partners to safeguard the gains and ensure sustainability of the success achieved so far by increasing national resources for health. Hence, the GoN has given this package of interventions addressing human rights one of the highest priorities and is committed to provide total matching funds for the catalytic funding amount (USD 1.1 million).

Section 3: Operationalization and Implementation Arrangements

To respond to the questions below, refer to the *Instructions* and an updated **Implementation Arrangement Map**[3].

a) Describe how the proposed **implementation arrangements** will ensure efficient program delivery.

Save the Children International (SCI) as the Principal Recipient (PR) with five years of extensive experience in the Global Fund grant management in Nepal will manage the grant through the Program Management Unit (PMU) set up by the PR and works under the guidance of the NTCC to provide programmatic and technical support for the implementation of TB programme. To ensure efficient programme delivery, the PMU consisting of a competent team of technical and programmatic experts in various areas is embedded at the NTCC and works shoulder to shoulder as guided by NTCC Director and MESR (Monitoring, evaluation, surveillance and research) Section Chief. The PMU will support in planning, provision of technical support, quality monitoring and oversight functions. In addition, the PMU will also provide technical support to design programme and provide the targets for the Sub-Recipients (SRs) including monitoring and supervision. Embedded provincial PMUs will be tasked for capacity building to strengthen the provincial and lower levels in consultation with the provincial team to address capacity gaps at LLs to ensure ending TB. Provincial PMU with the necessary human resources will be established under the Health Directorate that will support to monitor, guide and streamline TB program in the province and also strengthen the transfer of knowledge and skill to the staff responsible for the management of NTP at province and districts.

The three grants will be provided with technical and financial management support from a dedicated team at Save the Children USA that manage the Global Fund portfolio of Awards. The Account Management team based at SC US HQ level provide overall coordination and guidance, facilitating linkages between countries, and with the GF Secretariat. Reporting to the Senior Director, HIV/AIDS & TB Unit, one or more Award Managers will provide oversight of management, compliance and operational aspects of the GF grants, and support start-up

and closeout. The Award Manager(s) will work closely with the SMT, CoP, PMU and project staff, providing guidance, support and essential linkages between other GF grants. They also serve to facilitate, and track project technical assistance needs and work with the GF account management Technical Advisors to provide focused technical support. The Technical Advisors are responsible for monitoring technical quality and impact, in collaboration with the PMU. In addition to expertise in HIV and TB, SC has access to Technical Advisors with expertise in all areas of health, including maternal and reproductive health, Health Systems Strengthening, child health, and social and behavior change.

Given the federalized structure that was adopted since February 2018, the Government of Nepal agreed that the TGF grant money will be allocated to the provincial and local levels following the federal structure, brining TB resources closer to the grass root that will enable proper program implementation and monitoring. Thus, the PR has made special implementation arrangements in the provinces of establishing provincial PMUs embedded the Health Directorate in each province. The provincial PMU will consist of necessary human resources which will function across three disease programmes including one staff particularly for TB as the TB coordinator, to meet the challenges and harness opportunity presented by the federal structure. This will ensure better coordination and reporting line with MoSD in the provinces across three diseases, efficient use of resources, provision of impromptu local technical support where needed, timely reporting and monitoring which will translate into efficient program delivery at all levels in the new federal structure.

Government has also committed to step up investment in procuring 94% of the FLDs and 36% of the SLDs in the first year and then 100% for next two years. While all the procurement by the PR during this grant period will be done using the pooled procurement mechanism, the government is committed to establishing an optimal procurement mechanism and are currently being explored within the framework of the Public Procurement Act, 2063 (2007)[75]

b) Describe the role that **community-based organizations** will play under the implementation arrangements.

Community engagement in TB programme has been strengthened over the few last years and continuing to do so. Community representatives are part of the planning and decision making and are member in the CCM, TB Technical Working group, Joint monitoring team at the central level. Community systems will further be strengthened at the local level not only in planning and decision-making front, but also helping SRs in the implementation of the grant. Another priority area would be strengthening the role of community-based organizations/ NGOs in ACF activities and community TB care to sustain demand-driven interventions for high risk groups within an accountability framework for results that would address human rights and gender-related barriers to TB services.

Under the guidance of the NTCC and in line with the role and responsibilities ascribed by the PR, eligible governmental (local or provincial level) and non-governmental (CBOs) Sub-Recipients (SRs) would play a key role in the implementation of the GF grant. The criteria for selection of SRs would be reviewed and the eligible SRs will be selected with the agreement of NTCC and relevant stakeholders. The SRs will be linked to the Palikas (LL) for ownership during implementation. They would work closely with the PR, the NTCC, PHD, local levels of the government, and health facilities. Local level and Province will identify key and vulnerable populations, implement the programme, and undertake monitoring and supervision. The PMU under Health directorate would provide oversight to the three programmes (TB, HIV and Malaria) at the provincial levels. The PMU under Health Directorate will provide technical assistance to the SRs and also monitor the activities including data collection. The SRs are responsible for submission of the progress report regularly to the PR, the NTCC and Health Directorate.

The scope of work in each province for the SRs would include the following key activities:

- Conduct screening to evaluate TB among key populations including prisoners and migrants.
- Organize sputum collection and transportation from DOTS Centres to GX centres/MCs
- Arrange contact investigation (CI) among the family members of DR and DS TB
- Integrate TB screening and referral into regular Child Health programme, e.g. integrated maternal,

[75] Public Procurement Act, 2063 (2007), Chapter 2

newborn and child health (IMNCH), deworming, Vitamin supplementation programmes
- Promote Childhood TB screening in major hospitals
- Establish FAST strategy for screening & diagnosis of TB in major hospitals
- Expand engagement of private practitioners (pay for performance) with the NTP
- Strengthen referral mechanism from pharmacy to Diagnostic and Treatment Centres
- Increase screening of children (under 5 years) for TB and provide TPT for eligible children and all eligible household contacts

c) Does the funding request envisage a **joint investment platform** with other institutions?

□ Yes No

If **yes**, describe specific arrangements and modalities.

Not Applicable

d) Describe key, **anticipated implementation risks** that might negatively affect **(i)** the delivery of the program objectives supported by the Global Fund, and/or **(ii)** the broader health system. Then, describe the mitigation measures that address these risks, and which entity would be responsible for these mitigation measures.

Key Implementation Risks	Corresponding Mitigation Measures	Entity Responsible
Recent federalization and restructuring of the health system have resulted in inadequate coordination between federal, provincial, and local level (Palikas) can affect the overall health care delivery.	Multiple meetings and workshops have been planned with leadership at national, provincial and local levels, including federal ministers and provincial chief ministers, parliament leaders, mayors, and local level leaders. A high-level End TB Committee as well as End-TB Committees at provincial level will be formed. Workshops will be geared to define roles and functions of local level health committees and End-TB committees.	MoHP, NTCC and Provincial Health Departments (PHD)
Inadequate number of dedicated and experienced TB staff at federal level, province level, health offices, and local levels;	Through this new grant there will be Central and Provincial PMUs to support National TB program. TB-NSP (2021-26) also envision one TB focal person at health office level and metro and sub-metor level. This will further be ensured through formation of END TB committee and microplanning at provincial and local level.	NTCC, PHD, local levels (LL), SCI

Inadequate mechanism for mandatory notification by private institutions and practitioners has been a major hurdle for patient notification and referral for treatment of TB.	The NTP plans to ensure effective private provider engagement and have already formed national and provincial PPM working committees, and partner with medical associations to improve notification and referral systems. Private practitioners in 6 metropolitan and 1 sub-metropolitan municipalities would be provided enablers to incentivize for case notifications and outcome notifications. Pharmacies would be provided enablers for notification of presumptive TB cases for evaluation. There is a plan for advocacy with the government to enforce mechanisms for mandatory TB notification through the Public Health Act 2019.	MoHP, NTCC, Medical Colleges, Nepal Medical Association, NCDA and other healthcare associations.
Nepal is prone to national disasters including earthquakes, floods and landslides which can cause hurdles in transportation and communication systems delaying health services. Similar to other countries, COVID-19 paralyzed Nepal affecting its financial, social and healthcare system in an epic manner.	Guidelines will be prepared for management of the TB programme during disasters. Financial Aids will be sought for necessary financial arrangements to continue NTP services during disasters.	MoHP, NTCC, WHO
Inadequate digital platform for sharing TB information and underreporting of TB data in HMIS	NTCC will coordinate with DoH HMIS section to strengthen HMIS	MoHP, NTCC, Management Division of DoHS, PHD, and external development partners
Lack of budget absorption capacity	PMU at federal and provincial levels will work closely with NTCC and MoSD to implement their proposed activities; increase budget for oversight and to address issues related to absorption of budget; monitoring and supervision & capacity building from PMU	NTCC, MoSD, SCI
Suboptimal supply chain management at provincial and local levels after federalization resulting in delays, disruption and unequal distribution of supplies; lack of buffer stock; need for capacity building; and eLMIS system not functioning in all districts and Palikas (LL).	Improved and uninterrupted supply will be ensured by establishing an effective and fast procurement and logistics management system; training for procurement and supply at all levels; and supervision and assistance by a procurement expert will be provided; training and strengthening for eLMIS.	MOHP, NTCC, SCI (PR)

[3] An updated implementation arrangement map is mandatory if the program is continuing with the same PR(s). In cases where the PR is changing, the implementation arrangement map may be submitted at the grant-making stage.

Section 4: Co-Financing, Sustainability and Transition

To respond to the questions below, refer to the *Instructions*, the domestic financing section of the **allocation letter**, **the** Sustainability, Transition and Co-Financing Guidance Note**, Funding Landscape Table(s), Programmatic Gap Tables(s)**, **and a sustainability plan and/or transition work-plan**, if available[4].

4.1 Co-Financing

a) Have **co-financing commitments** for the **current** allocation period been realized?

□ Yes No

If **yes**, attach supporting documentation demonstrating the extent to which co-financing commitments have been met.

If **no**, explain why and outline the impact of this situation on the program.

The GoN has progressively increased its contribution to the budget of the MoHP as shown by the 70% increase between the fiscal years 2010/2011 and 2016/2017. This was also reflected by the relative decline in the external funding from 42% in 2010/2011 to 21% in 2016/2017. For the fiscal year 2018/2019, out of NPR 56.42 billion budget allocated to the health sector, MoHP provided NPR 0.97 billion budget to the NTP, inclusive of GoN & Global Fund source. During 2018-2019, 51.3% (USD 7.7 million) of NTP was covered by GoN and 1.6% by WHO. During the 3-year period of 2018-2021, the government's total actual budget was USD 23.8 million which covered 53% of total NSP budget. The GoN's actual budget for 2018-2021 period are noted in table below. The GoN funding for NTP progressively increased until 2017-2018. Although the government commitment was planned to progressively increase from USD 11.2 million in 2018-19 to USD 12.76 million in 2019-20 and USD 14.49 million in 2020-21, it was not realized due to the country's transition into the federal system, and additional spending for developing and establishing a new system of federal , provincial and local level governments.

During the 2018-2021 period, the GoN funding supported 80% of FLD and 60% of SLD procurement. Other major interventions covered by GoN included patient support, improved diagnosis, collaborative TB/HIV activities, PPM activities, community involvement, human resource development, infection control, M&E, and program management and support. Allocation of government budget as per the co-financing commitments for 2019/2020 was USD 12.7 million, however, the actual budget allocated was USD 8.2 million.

	GoN Actual Budgets (USD)		
Interventions	**Budget 2018-19**	**Budget 2019-20**	**Budget 2020-21**
Improving diagnosis	2,738,810	4,044,603	2,828,247
Drugs for DS and DR TB	1,455,944	1,074,940	2,269,098
TB/HIV activities	18,908	106,057	9,454
Patient support	417,638	377,600	452,950
HRD	973,384	686,430	575,429
Programme management, supervision, and M&E	1,250,675	1,721,692	1,546,288
Other (PPM, Research, community involvement, Infection control)	902,042	211,027	216,557
Total Budget in USD	**7,757,402**	**8,222,349**	**7,898,023**

(**Abbreviations:** PPM- Public Private Mix; ISTC- International Standard for TB Care; HRD- Human Resource Development; M&E- Monitoring and Evaluation)

Table 2. GoN Commitment versus Actual Budget for 2018-2021 period

b) Do **co-financing commitments** for the **next** allocation period meet minimum requirements to fully access the co-financing incentive?

The GoN has committed a progressive budget of USD 14 million, USD 15.8 million, and USD 17.9 million between FY 2021-22 to FY 2023-24 which covers 65% of total NSP budget for this period. As shown in the table below, the GoN plans to cover purchase of more than 90% of first-line drugs (FLD) in 2021-22 which will be increased to cover 100% of FLD purchase during Y3. Similarly, 36% of the second-line drugs (SLD) would be covered by the GoN during first two years and then 100% by third year. Other major interventions committed by the government funding includes laboratory infrastructure and supplies, salaries of national TB staff, patient support, collaborative TB/HIV activities, Removing human rights and gender-related barriers to TB services, operational research and surveys. In addition, the GoN is planning to modernize the health management information system (HMIS) including digitalization and interoperability between TB system and HMIS in collaboration with other development partners (USAID, DFID, GIZ). The GoN is also building a 50-bedded TB hospital at the NTCC which is scheduled to be completed in the FY 2021-2022.

If details on commitments are available, attach supporting documentation demonstrating the extent to which co-financing commitments have been made.
If co-financing commitments do not meet minimum requirements, explain why.

Not Applicable

c) Summarize the **programmatic areas** to be supported by domestic co-financing in the next allocation period. In particular:

i. The financing of key program costs of national disease plans and/or health systems;
ii. The planned uptake of interventions currently funded by the Global Fund.

The programmatic areas that would be supported by the domestic funding (GoN) are laboratory infrastructure equipment and consumables; anti-TB drugs both FLD and SLD; human resources for the NTP; programmatic costs; collaborative TB/HIV activities; patient support, Removing human rights and gender-related barriers to TB services and operational research.

Intervention	Current Budget FY 2020/21	GoN Commitment(USD)			
		Budget FY 2021/22	Budget FY 2022/23	Budget FY 2023/24	Total
Laboratory infrastructure, equipment and supplies	1,849,852	2,264,941	2,680,741	3,179,701	8,125,383
Drugs for DS and DR TB	2,269,098	1,575,278	1,497,306	2,613,460	5,686,044
National TB Programme staff	305,200	343,006	411,607	493,928	1,248,541
Program Costs for DS and DR TB	3,012,887	7,261,678	7,938,898	8,751,563	23,952,139
Collaborative TB/HIV activities	16,072	18,063	21,676	26,011	65,749
Patient support	411,824	1,501,461	1,594,028	1,705,109	4,800,598
Operational research and surveys	33,090	130,160	137,598	146,523	414,280
	7,898,023	13,094,586	14,281,854	16,916,295	44,292,735

Table 3. GoN Budget Commitment for 2021-2023 period

The procurement budget is met through a co-financing funding model between the GoN and the GF. The government would provide funding for FLDs: 96% in Y1, 90% in Y2 and 100% in Y3, except pediatric formulations which would be procured through GF. The GoN has increased its funding commitment to cover 36% of SLDs in Y1 and Y2 and 100% by Y3 and up to 100% of laboratory diagnostics and consumables.

d) Specify how co-financing commitments will be **tracked and reported**. If public financial management systems and/or expenditure tracking mechanisms require strengthening and/or institutionalization, indicate how this funding request will address these needs.

The MoHP and the External Development Partners have an agreement under the Joint Financing Arrangement which incorporates reporting of funds from EDPs into the Transaction Accounting and Budget Control System (TABUCS). Tracking and reporting of the co-financing commitments of the GoN would be carried out through TABUCS and SUTRA described below;

1. Transaction Accounting and Budget Control System (TABUCS): Monitoring of System and spending unit by National & International Consultants, Supervisors and Executive Level.

2. Sub-national Treasury Regulatory Application (SUTRA) is a planning, budgeting and accounting software developed under the leadership of Public Expenditure and Financial Accountability (PEFA) Secretariat based on the decision of the Ministry of Finance (MoF). It is a web-based system developed for facilitating and implementing a structured financial management procedure of the sub-national government based on the Unified Charts of Accounts 2017 approved by the Auditor General on Oct 18, 2017 and related OAG accounting and reporting formats.

The Provincial team which will be supported through this funding request will strengthen the use of the systems at all levels to ensure accountability and track investment in TB and other programs.

[4] Note that information derived from the supporting documentation provided in response to the questions below, including information on funding landscape or domestic commitments, may be made publicly available by the Global Fund.

4.2 Sustainability and Transition

a) Based on the analysis in the **Funding Landscape Table(s)**, describe the funding need and anticipated funding, highlighting gaps for major program areas in the next allocation period.
Also, describe how (i) national authorities will work to secure additional funding or new sources of funding, and/or (ii) pursue efficiencies to ensure sufficient support for key interventions, particularly those currently funded by the Global Fund.

The funding need of the NTP is based on the total estimated cost of the TB-NSP (2021/26) for 3 years corresponding to the grant cycle (2021-2024), which amounts to USD 102.4 million. The anticipated funding from the domestic sources (GoN) for the above period is estimated to be about USD 44.2 million and from the Global Fund is estimated to be 20.5 million. The estimated funding gap is USD 37.4 million for three years.

Funding Needs in USD	(Y1)	(Y2)	(Y3)	Total
	07/2021- 06/2022	*07/2022- 06/2023*	*07/2023- 06/2024*	in USD
Total funding need of NSP (2021-26)	33,815,437	33,591,774	35,045,656	102,452,866
Total domestic resources: GoN	13,094,586	14,281,854	16,916,295	44,292,735
Total ext. resources (non-GF)	104,308	38,991	22,028	165,327
Funding request – GF allocation	9,498,807	6,286,877	4,770,364	20,556,048
Total anticipated resources	22,697,701	20,607,722	21,708,687	65,014,110
Funding gap	11,117,736	12,984,052	13,336,969	37,438,756

Table 4. Funding Landscape Table

The major programme areas that have funding gaps in the next allocation period (2021-2024) are:
(i) TB programme cost excluding cost of FLDs: major activities include expansion of ACF, CI, TB screening of HRGs, PPM;
(ii) Human resources for the NTP (national and sub-national levels);
(iii) Laboratory infrastructure, equipment and supplies: major activities include IGRA, expansion of FAST approach, digital X-Ray machines (with AI), refrigerators, van for ACF equipped with rapid diagnostic tools (dCXR & GX);
(iv) TB drugs for DS-TB (FLD);
(v) TB drugs for DR-TB (SLD);
(vi) DR-MDR TB programme; and
(vii) Patient support.

Major activities cover diagnostic costs for ultrasound, radiological tests, CT-scan, MRI and others, biopsy, nutrition and travel cost for estimated 1000 patients, reimbursement of cost of CXRs, screening of diabetics, income generation activities for MDR-TB patients

The MoHP is committed to securing additional funding for the NTP and to ensure long term sustainability of the NTP, a significant volume of core commodities (previously through the GF grant) would be procured by GoN fund, such as the following: procurement of FLD and SLD, GX machines and cartridges and laboratory consumables; and printing of IEC materials, supply, and distribution. Government funds would also cover human resources and training. Another priority area would be strengthening the role of community-based organizations/NGOs in ACF activities and community TB care to sustain demand-driven interventions for high risk groups within the accountability framework for results, that would address human rights and gender-related barriers to TB services.

b) Highlight challenges related to sustainability (see indicative list in *Instructions*). Explain

how these challenges will be addressed either through this funding request or other means. If already described in the national strategy, sustainability and/or transition plan, and/or other documentation submitted with the funding request, refer to relevant sections of those documents.

After federalization of the government system in 2018, Nepal is in the process of restructuring its health system and transitioning into the Federal, Provincial and Palikas (local level) system. Following federalization, health care delivery in Nepal has been decentralized, giving more autonomy to provincial and municipal governments (local levels). The central level is responsible for policy formulation, resource mobilization, and monitoring and regulating TB services and capacity building of the provincial level. The Ministry of Social Development (MoSD) has been established to oversee the work of the newly formed seven provinces and 753 municipalities, which are responsible for delivering health services. Federalization resulted in a revised administrative structure which has limited role for the district. While steady progress has been made in clarifying roles and responsibilities of the MoSD with regards to leadership and oversight, implementation, and reporting arrangements of the three disease programs, it still is in nascent stage and needs concrete support to ensure that these new three levels structure works in sync for efficient delivery of the programme. The federalization has also impacted supply chain, fund flow, and reporting of programmatic and logistic data.

These challenges are realized by the MoHP and following interventions and changes are proposed through this funding request as well as actions planned by the MoHP.

1. Governance structure and capacity building:
The MoHP is committed to full-filling the HR needs of the TB programme as per the proposed organogram in the TB-NSP over the years as country accelerates TB response to meet the TB-NSP targets which are aligned to the End-TB targets. In the interim period, the PMU consisting of a competent team of technical and programmatic experts in various areas will be embedded at the NTCC to support in planning, provision of technical support, quality monitoring and oversight functions. Also, to offset the challenges presented by the federalization, for efficient fund flow and implementation, provincial PMU will be instituted in each province embedded under Health Directorate which will ensure better coordination and reporting line with the MoSD in the provinces across three diseases, efficient use of resources, provision of impromptu local technical support where needed. This implementation structure is envisioned to be transitioned to the provincial HR structure over the years for sustainability. In addition, the MoHP also plans to conduct O&M (operation and management) survey and fulfill the key positions, capacity building of health care workers, and revise staff contract policy and employment packages to give more stability to persons serving in these positions.
The HR capacity assessment of Government at federal, province and Palika (local) level has been already initiated in the current grant. The final recommendations with a time-bound recommendations are expected to be available by the end of October if the COVID-19 situation remains at the present level. Based on these recommendations, costed capacity building plan will be developed by early next year. Three hundred thousand dollars (USD 300,000) lump sum have been budgeted in the main allocation from HIV, TB and Malaria; a further lump sum of USD 200,000 is added to the HIV PAAR to cover these activities. Once the plan is available, it will be detailed out and included in the new funding budget during the grant-making period and will be implemented at all levels.

2. Financial management system:
Some of the challenges in financial management system such as timely fund disbursement, low burn rate, inadequate control mechanism, manual accounting system and fund recovery system will be addressed in phased manner. The MoHP plans to develop mechanisms for timely fund transfer to the service delivery points (SDPs), brining resource closer to the grass root that will enable proper program implementation and monitoring. This will enable SDPs to immediately start the program implementation from the first day of new fiscal cycle and help for efficient and timely delivery of programme. The financial system strengthening strategies also covers inclusion of required TB resources in the red book and quick amendment of red book where required, quick reprogramming of savings with necessary flexibility and use of a common GoN accounting software at all SDPs and timely reporting through the software. The MoHP is also looking at a standard fund recovery mechanism especially for donors such as Global Fund. MoF has developed Sub-national Treasury Regulatory Application (SUTRA) for Provincial and Local level budget transfer and timely monitoring expenditure. At the Federal level TABUCS has been used for funds flow and expenditure monitoring, which needs to be further strengthened.

3. Monitoring and Evaluation:
Surveillance, monitoring and evaluation has been a challenge in the current system requiring actions for system restructuring and capacity building. The TB-NSP (2021-26) plans to work with provincial and local levels to establish M&E and supportive supervision to the municipalities and health facilities. The embedded PMUs at the provinces will also support in surveillance and supportive supervision. There are programs targeted for staff development and strengthening of M&E activities across various levels. There is also planning to enhance data collection and reporting, completing transitioning from paper-based to electronic integrated health management system (IHMIS) aligned with the general health information system. The MoHP plans to ensure timely reports are collected and submitted to the NTCC at the central level in a timely manner. NTCC will conduct regular data quality audit and onsite data verification before finalizing and submitting the report and plan to prepare an annual M&E plan, onsite coaching plan, use a proper M&E checklist, and set up a proper feedback mechanism.

4. Procurement and Supply:
Decentralization has resulted in problems with supplies of medicines and diagnostics at the Palikas (local levels) and health facilities as the distribution function was transferred to the Palikas from districts with limited support system. This has led to delays and near stock outs at times of necessary diagnostics and treatment of TB. Adequately skilled personnel for managing commodities at the facility level and supportive supervisions for supply management were missing. The government procurement policy procedures need to allow quick, quality procurement of services and goods. While the Logistic expert in the PMU team will support proper planning, forecasting and capacity building the national team of logistic management for TB drugs and commodities, the MoHP is committed to establishing an optimal procurement mechanism which are currently being explored. The GoN plans to assess current PSM system and prepare a plan for smooth transition to logistic division based key PSM areas for all three diseases. It will also set up a system for integration of procurement supply chain system through Logistics Management Division and strengthen Logistic Management and Information System (LMIS) for systematic reporting and tracking of health logistics including TB drugs and commodities.

5. Financial share and sustainability:
The GoN/MoHP plan to transition from dependency on external funding by increasing its financial share on TB program over time. In the next 3-year's budget, the purchase of majority of the first and second-line drugs will be covered by the MoHP. Similarly, the GoN funding covers large shares of budget for providing patient support, TB programmatic cost for DS and DR-TB, and for laboratory infrastructure, equipment and supplies. The GoN plans to increase its budget to support TB program by annual increment of about 20% at federal level.

Annex 1: Documents Checklist

Use the list below to verify the completeness of your application package.

	Funding Request Form
	Programmatic Gap Table(s)
	Funding Landscape Table(s)
	Performance Framework
	Budget
	Prioritized above allocation request (PAAR)
	Implementation Arrangement Map(s)[5]
	Essential Data Table(s) (updated)
	CCM Endorsement of Funding Request
	CCM Statement of Compliance
	Supporting documentation to confirm meeting co-financing requirements for current allocation period
	Supporting documentation for co-financing commitments for next allocation period
□	Transition Readiness Assessment (if available)
	National Strategic Plans (Health Sector and Disease specific)
	All supporting documentation referenced in the funding request
	Health Product Management Template (if applicable)
	List of Abbreviations and Annexes

[5] An updated implementation arrangement map is mandatory if the program is continuing with the same PR(s). In cases where the PR is changing, the implementation arrangement map may be submitted at the grant-making stage.