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Reducing Poverty, Sustaining Growth—What Works, What Doesn’t, and Why
A Global Exchange for Scaling Up Success

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Nepal’s National Tuberculosis Control Program

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Executive Summary

Tuberculosis (TB) has been one of the foremost public health problems in Nepal, causing a significant burden of morbidity and mortality. Some 45 percent of the total population of Nepal is infected with TB. Each year, 40,000 people develop active TB, of whom 20,000 have infectious pulmonary disease and are able to spread the disease.

As late as the mid-1990s, the detection and treatment success rate for TB was very low (about 60 percent). Since 1996, however, a Directly Observed Treatment Short-Course (DOTS) strategy has been implemented, initially as a pilot in four districts, integrated with the government’s existing health delivery structure. DOTS combines five elements: political commitment, microscopy services, drug supplies, surveillance and monitoring systems, and highly efficacious regimes of direct observation and treatment.

In this context, the National Tuberculosis Control Program (NTP) was implemented in the late 1980s with the establishment of a national tuberculosis center (NTC) as the national focal point for the disease control. DOTS has now been scaled up to all 75 districts, covering 94 percent of the population in 335 treatment centers and 1,407 subcenters. The NTP has quickly achieved internationally set indicators, with a cure rate consistently above 85 percent and a case detection rate of 70 percent. The goal of the NTP is to reduce the mortality, morbidity, and transmission of TB until it is no longer a public health problem. Specific objectives include having all TB patients treated under the DOTS strategy by 2006.

The strategies of the NTP include establishing treatment centers and subcenters at the community level; establishing diagnostic microscopy facilities; collaborating with HIV/AIDS programs for TB/HIV co-infection; and focusing on TB control activities in rural and urban poor communities.

Under NTP policy, the basic units for diagnosis and treatment are the district hospital, primary health care center, and medical colleges. Passive detection by smear microscopy is done in quality-assured laboratories. All centers offering TB treatment must use, with DOTS, the standardized regimens of short course chemotherapy adopted by the NTP. Free treatment is available to all patients with active TB through the basic health services. Treatment is evaluated, and communities are involved in DOTS implementation.

The TB program has received consistently high priority in government policy documents. Nepal has initiated activities to facilitate individual ministries to fine-tune their respective plans and programs in line with Millennium Development Goals (MDGs) and monitor progress. Financial and technical assistance for expanding DOTS and reaching unreached areas are priorities.
Political commitment and institutional coordination

Political commitment to the program is the key factor in attracting both government funding and the involvement of external donor partners. Upgrading the TB program from a “chest clinic” level to a “national center” was critical.

The NTP is fully integrated into existing public health structures. The NTC is the focal point of the program, and provides technical support in many areas. It also has a referral clinic and laboratory. All NTP activities are planned and carried out within the region with the close cooperation and coordination of the Regional Health Services Directorate. The district health officer or the district public health officer is responsible for planning and implementing NTP activities within the district. The basic unit for diagnosis and treatment of patients with tuberculosis is the district hospital and the primary health centers (DOTS centers).

Many national and external development partners and NGOs are involved in the NTP. International NGOs have important roles, including drug supplies. Bilateral and multilateral agencies have contributed through training, microscopy networks, drug supply, system development, physical facilities, and so on. The program’s physical facility, supported by the Japanese International Cooperation Agency, provided a firm basis for the program before implementation of the DOTS strategy. In 1994, a five-year plan based on the WHO framework for TB control was adopted by NTP.

There is strong cooperation between the government and external donors, including international NGOs, for continued funding and technical support. Network and partnership at all levels of the program promote donor collaboration in mutually connected ways, among them system development and human resources management.

DOTS committee formation and the peer review system are results of operational research and pilot activities; learning mechanisms are also built into the DOTS system itself.

Impact

Cost-benefit studies show the strategic value of investment in TB control, which clearly benefits the poor, who are the most vulnerable to the disease. Quality is manifested in the emphasis on quarterly reporting as well the microscopy quality control system. Data are peer-reviewed every four months, fostering ownership of the information and the program as well as promoting quality service.

Seminars, workshops, and network forums have led to better understanding of the issues surrounding TB. Based on standard national policies and guidelines, the implementing partners have adopted locally appropriate management arrangements. A DOTS committee of local people is a key factor, providing accommodation and assistance to poor patients coming from far away. Local institutions also participate in the NTP.

Lessons learned

Several factors indispensable to the successful implementation of the NTP can be extrapolated to other situations. The program’s position was gradually upgraded, securing physical identity and operational
mandate, and now has a clearly identified central focal point. There is strong commitment, strong leadership, and a strong team approach; motivation and empowerment of the staff are ensured by a results-based program with local ownership and responsibility. The program also has consistent, high-quality technical support and positive relationships with technical assistance agencies.

Although it has clear national policy, manuals, and guidelines, the NTP encourages local innovation. Technology is simple and appropriate. A recording and reporting system has been established. And international WHO/IUATLD guidelines for DOTS have been adopted for NTP—particularly important for a country where a satisfactory level of health information is rather difficult to obtain.

A strong capacity-building component covers all aspects of the policy package for all levels of staff. Other strong points include multi-tier peer-review and supervision systems; twinning, networking, and partnerships among institutions; and popular participation in the way DOTS committees are recognized and supported. There are also systems to secure quality of service delivery, including the microscopy network and the logistics system used to supply drugs and diagnostic materials.

**Figure 1. Trend of DOTS Expansion**

![Figure 1. Trend of DOTS Expansion](chart.png)
Figure 2. Increasing Trend of Case Finding

![Graph showing increasing trend of case finding from 2051/52 to 2056/57 with percentages increasing from 30% to 71%]


Figure 3. Beyond Global Target (85 percent) in Treatment Success

![Graph showing treatment success rates from 2052/53 to 2058/59 with specific rates for each year]


(Source of Figure 1-3: MOH, NTC, 2003)
Implementation Process

Rationale and objectives

TB has been one of the major public health problems in Nepal. 49 percent of total death in Nepal is due to infectious diseases and maternal, perinatal and nutrition problem. TB alone constitutes 7 percent of Burden of Disease for Nepal (MOH 2002). About 45 percent of the total population is infected with TB, out of which 60 percent are in the productive age group. Every year, 40,000 people develop active TB, of whom 20,000 have infectious pulmonary disease. These 20,000 are able to spread the disease to others. Therefore, the risk of infection to general population is still very high.

The case finding and treatment success rate for TB was very low (about 60 percent only) around mid 1990’s, although some regional based INGOs and Operational Researches run by JICA project had achieved some better result. Directly Observed Treatment Short-Course (DOTS)\(^1\) strategy has been implemented since 1996, initially as pilot in four districts, in a well-integrated manner with existing health delivery structure of government. In other words, each tier of health units is accountable and responsible for specific tasks of NTP (refer to Figure 5.).

The result so far has been very encouraging with cure/completion rate consistently exceeding 85 percent since 1995 with increasing case finding rate (70 percent). Expansion of this cost effective and highly successful treatment strategy of DOTS, which already has proven its efficacy in Nepal, will have a profound impact on mortality and morbidity. By achieving the global targets of diagnosing 70 percent of new infectious cases and curing 85 percent of these patients we will save up to 50,000 deaths over the next five years. High cure rates will reduce the transmission of TB and lead to a decline in the incidence of this disease, which will ultimately help the country to achieve the objectives of TB control. The Objectives and strategies of NTP are as follows (NTC 2003).

\(^1\) DOTS combines five elements: political commitment, microscopy services, drug supplies, surveillance and monitoring systems, and use of highly efficacious regimes with direct observation of treatment.
Goal: To reduce the mortality, morbidity and transmission of tuberculosis until it is no longer a public Health problem.

Objectives of the NTP

- 85 percent cure rate in new smear-positive pulmonary tuberculosis cases;
- 70 percent case detection rate among the new smear-positive pulmonary tuberculosis cases;
- DOTS available in all 75 districts of the country; and
- By the year 2006 all TB patients should be treated under DOTS strategy.

Strategies of the NTP

- Expansion of DOTS throughout the country up to the community level.
- Establish a treatment center and sub center in health posts and sub health post or in partnership at community level.
- Establish diagnostic microscopy facilities at each constituency level either at PHC (Primary Health Care Center with 40,000 – 100,000 population) or run by private sector.
- Collaborative action with HIV/AIDS program for TB/HIV co-infection.
- Focus TB control activities on rural and urban poor communities through urban DOTS and community based DOTS.
- Public private partnership in expansion of DOTS collaborative action with NGOs and INGOs.

The NTP policies

- The basic unit of the NTP for diagnosis and treatment is the district hospital, primary health care center and medical colleges.
- Passive case finding by smear microscopy with laboratories operating under quality assurance.
- All centers offering TB treatment must utilize the standardized regimens of short course chemotherapy (SCC) adopted by the NTP, with DOTS.
NEPAL’S NATIONAL TUBERCULOSIS CONTROL PROGRAM

- Free anti-tuberculosis treatment to all patients with active TB, through the basic health services; with a priority for sputum smear positive cases, in every district of the country.
- Evaluation by four monthly cohort analysis of treatment outcome.
- Community involvement for DOTS implementation.

**Political context**

In order for the NTP to work effectively, the political commitment to the NTP is the key factor in attracting both government funding and the involvement of external donor partners.

Upgrading the TB programme from a “chest clinic” level to an apex level of “National Center” was one of the most critical moments in the history of TB Control in Nepal and probably the first such strong political commitment expressed by the government. This upgrading opened up windows of opportunity for resource mobilisation and scaling up the program. For long time, TB control in Nepal had remained in a low profile with very limited scope for expansion and resources mobilisation. A chest clinic and some peripheral hospitals and INGOs-run clinics used to provide TB services. It was only in 1988 when government decided to integrate the existing the Central Chest Clinic (CCC) and the TB Control Project (TBCP) into a full fledged National Tuberculosis Center (NTC). Supported by Japan’s grant aid and JICA’s technical cooperation, NTC has been established as the focal point for nation-wide TB control with a high quality physical infrastructure and clinical, managerial and training capacity (HMG decision Sept. 1988/89). This repositioning effort of the TB activity in Nepal was further supported by JICA’s technical cooperation project, the “National Tuberculosis Control Project (Phase 1 & 2)” from 1987 to 2000. In 1989, the National TB Programme (NTP) was officially established. At the same time, capacity development for the NTP was carried out with strong supports by JICA and other development partners through varieties of inputs. In 1993, Short Course Chemotherapy (SCC) was adopted as the national TB treatment by the NTP and operational researches were implemented in several districts. In 1995, a policy of Directly Observed Treatment Short-course (DOTS) was approved by HMG. DOTS was introduced into four districts in the beginning in 1996, and expanded through out the country in the following five years. During the process, JICA assistance was instrumental in shaping the policy and creating a conducive environment where many donors found a role to play.
The success of the NTP is, to a larger extent, attributable to the financial security obtained by the government though political lobbying. The size of the budget provided in 1998/99 was US$ 0.6 million, but this has grown by 2001/02 to US$ 1.4 million. In addition to the domestic financial resources, external donors provided nearly US$ 1 million. Prior to 1995, JICA was a major source funding. Post 1995, however, attracted many donors particularly WHO and LHL. Lately, DFID has committed funding the Drug component of NTP from 2001 to 2005.

Government funding for TB has also increased more than five times since 1995, large portion of which is used to pay the salary of staff.

**Consistency of the objectives with NHSP-IP, PRSP**

TB programme has received consistently high priority in many government policy documents. Preceding plans (9th Five Year Development Plan and Second Long-term Health Plan (SLTHP)) had also recognized the critical importance of TB control. The Tenth Plan (PRSP 2002-07) further recognizes the need of curbing infectious diseases like TB in order for realizing better impact on national poverty reduction strategy. Particularly, it points out the improvement of service delivery in rural areas. The government formulated Nepal Health Sector Programme – Implementation Plan (NHSP-IP) in August 2002, which stipulates one of its objectives as “Ensuring effective control of communicable diseases, such as Malaria, and Tuberculosis, as well as HIV/AIDS”. Therefore, the NTP is fully consistent both with PRSP and the Health Sector Programme.

In relation to the Millennium Development Goals (MDGs), Nepal has initiated number of activities to facilitate individual Ministries to fine-tune their respective plans and programme in line with MDGs; and monitor the progress regularly. The NHSP-IP is being finalized taking into consideration of MDG.

A recent MDGs progress report, while concluding with overall satisfaction on the achievements of existing efforts in tuberculosis control, identified some priorities for development assistance. The priorities are financial and technical assistance for expansion of DOTS and for reaching the unreached areas.

**Changes in scale**

The achievements of the Nepal NTP have been remarkable. DOTS strategy was started as a pilot project in April 1996 in four centers only in four districts. Total population coverage at that time
was only 1.7 percent. By 2002, DOTS was already expanded to 357 DOTS centers with 1657 Treatment sub centers all over the country with 94 percent of population coverage. In spite of such rapid scaling up, the quality of the services has been upgraded and maintained at quite high level above the two WHO Global Targets in Treatment Success Rate of 85 percent and a Case Detection Rate of around 70 percent. The Treatment Success Rate of around 40 percent in 1996 has increased to around 90 percent and the Case Detection Rate has increased from 30 percent to 71 percent. Such expansion with high quality services was matched with the expansion and standardization of microscopy network, training, supervision and support, logistic management throughout the country.

**Institutions involved and initial degree of commitment**

Implementation arrangement of NTP is fully integrated in existing PHC structures up to the sub health post level – closer to community. Collaboration and cooperation with many national and external development partners have been quite impressive. The National Tuberculosis Center (NTC) is the focal point of the NTP. Technical support in the areas of implementation of DOTS, planning, monitoring, programming, training, supervision, logistics, laboratory services, health information education and communication, and research related to TB control is provided by
NTC. It also has a referral clinic and laboratory. The Regional Tuberculosis Centre (RTC) in Pokhara provides a focus for technical support in the Western Region.

At the regional level, all the NTP activities are planned and carried out within the region with the close cooperation and coordination of the Regional Health Services Directorate supported by Regional Tuberculosis/Leprosy Assistants (RTLA).

At the district level, the district health officer (DHO) or the district public health officer (DPHO) is responsible for the planning and implementing of the NTP activities within the district. District Tuberculosis /Leprosy Assistants (DTLA) support the DHO/DPHO in management of TB control activities. Within the district, the basic unit of for diagnosis and treatment of patients with tuberculosis is the district hospital and the primary health centres (DOTS centres). Health posts and sub health posts provide DOT as sub centres.

NTC is responsible for national estimates and procurement of anti-TB drugs, and drugs are distributed through the Logistic Management Division of Department of Health Services supported by RTC and INGOs acting at regional level.

DOTS committees operate within all 75 districts at DOTS centre level and include groups of motivated people; social workers, political leaders, civic leaders, health service providers, journalists, teachers, representatives of local organizations, NGOs, medical schools and colleges and TB patients. DOTS committees, functioning effectively by local people with DOTS centres, are important key for the success of DOTS expansion. They have been involved in advertising TB and DOTS, in organizing home visits for patients who fail to attend for treatment and even in providing accommodation for patients unable to travel from their homes to the clinics. (Figure 5.)

**Other actors involved**

Many national and external development partners (EDPs) and NGOs are involved in NTP. International NGOs have played important roles as provider of TB services including drug supplies, whereas, bilateral and multi lateral agencies have contributed in strengthening the NTP through training, Microscopy networks, drug supply, system development, physical facilities and so on.

Many EDPs have been involved in NTP implementation. Support of EDPs to NTP has grown over the past 10 years and in general the trend has been for new donors to express interest
rather than established donors to withdraw. JICA was the first one to provide technical cooperation project “National Tuberculosis Control Project (phases I & II)”. The activities included the construction and provision of the NTC and the RTC facilities, support to NTP activities in a comprehensive way so that overall NTP is strengthened. Recently, JICA implemented “Community TB and Lung Health Project (CTLHP)”.

NTP with strong initiative and improving human and institutional capacity has attracted other donors. Norwegian Aid (NORAD) has been supplying anti-TB drugs to the NTP for the recent few years. The Norwegian Heart and Lung Association (LHL) has supported the NTP through the provision of funds for supervision, training, and research. World Health Organization (WHO) and The International Union Against TB and Lung Diseases (IUATLD) provides technical support and consultancy to NTP. DfID is currently providing anti-TB drugs and manpower support, channeled through WHO for a five year period. (Refer to Table 1)
Figure 5: Institutions Involved in Tuberculosis Control Programme

**Central Level**
National Tuberculosis Center (NTC)
Policy development, Technical support to implementation units, Training and supervision. Monitoring & Evaluation, Resource mobilisation, donors’ coordination, Research

External Development Partners
JICA, LHL, DFID, WHO, IUATLD – Technical support, funding

**Regional Health Directorates (5 Regions)**
Coordinates NTP at the regional level, Regional TB/Leprosy Assistances (RTLA) coordinates and supports TB activities and reports to NTC, supports trainings.

Regional TB Center (RTC)
Regional coordination, training, quality control

Regional quality control
Centres also run Lab training

**Regional Level**

NGOs/INGOs in the region support training, logistics and supervision.

NATA

**District Public Health Office (75 districts)**
Planning and Implementation of NTP at the district level, District TB and Leprosy Assistants (DTLA) supervise and coordinate DOTS implementation, organize orientation for DOTS Committee.

**Community Level**

VDC and Primary Health Centres (PHC), Health Posts, Sub Health Posts
Patient counselling, diagnosis, treatment, follow up, orientation

VDC and Municipalities, Private Sectors (Urban Area)
Collaborates with NTP, organize Urban DOTS Center, awareness raising and social events on TB activities
### Table 1: Major organizations involved in NTP

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<tr>
<th>Organization</th>
<th>Area assistance</th>
<th>Remarks</th>
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<tbody>
<tr>
<td><strong>National Level</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LHL</td>
<td>(T,F) Supervision, training, research, Annual review</td>
<td>(1998-)</td>
</tr>
<tr>
<td>DfID</td>
<td>(F) Anti TB Drugs, Manpower</td>
<td>Fund through WHO (2001-2005)</td>
</tr>
<tr>
<td>Japanese Government</td>
<td>(F) Drug cost</td>
<td>From Debt Relief Fund</td>
</tr>
<tr>
<td>WHO</td>
<td>(T,F) Technical support, training, research and surveillance (MDR, HIV-TB co-infection)</td>
<td></td>
</tr>
<tr>
<td>IUATLD</td>
<td>(T,R) Technical support, Drug cost</td>
<td></td>
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<tr>
<td>NORAD</td>
<td>(F) Drugs</td>
<td></td>
</tr>
<tr>
<td>The Nuffield Institute of Health, UK</td>
<td>(T,R) Research on DOTS, linkage building</td>
<td></td>
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<tr>
<td>SAARC Tuberculosis Center (STC)</td>
<td>(T) Regional training courses, technical assistance</td>
<td></td>
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<tr>
<td><strong>Regional Level</strong></td>
<td></td>
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<tr>
<td>The Britain Nepal Medical Trust (BNMT)</td>
<td>(I) Training, supervision, drug logistic, staff secondment at NTC.</td>
<td>Eastern Region</td>
</tr>
<tr>
<td>International Nepal Fellowship (INF)</td>
<td>(I) Training, supervision, quality control, community orientation, logistic supply.</td>
<td>Mid West Region</td>
</tr>
<tr>
<td>Netherlands Leprosy Relief (NLR)</td>
<td>(I) Drug distribution, laboratory quality control, training and supervision.</td>
<td>Far West region</td>
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**District Level**
<table>
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<tr>
<th>Organization</th>
<th>Area assistance</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>The United Mission to Nepal (UMN)</td>
<td>(I) Full TB services in its Hospitals, counseling on HIV-TB</td>
<td></td>
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<tr>
<td>German Nepal TB Project (GENETUP)</td>
<td>(I) TB control activities in Kathmandu and some districts in Tarai.</td>
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<tr>
<td>Medicine Du Monde (MDM)</td>
<td>(I) TB support activities in few hill districts, Integrated HIV and TB services.</td>
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<tr>
<td>Nepal Anti TB Association (NATA)</td>
<td>(I) TB support activities in 28 districts</td>
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T: Technical support, F: Financial support, G: Gift in kind, I: implementation, R: Research
(Source: compiled from N. Hamlet, NTC Report)

**Preliminary results**

Prior to the introduction of DOTS strategy in NTP, there were remarkable achievements which became foundation of the rapid DOTS expansion.

**Strengthening of the NTP**

The physical facility of the NTC, supported by Japan/JICA, has provided a firm basis for the NTP of Nepal. The training of the NTP officials at RIT, Tokyo through JICA’s contribution has significantly contributed to capacity building with high motivation for the NTP. The annual TB Seminars have facilitated to obtaining commitment from programme managers at national, regional and district levels. The NTP manuals, guidelines and formats were developed and revised. Systematic regular supervision and evaluation mechanisms have been established.

**Establishment of the logistics management system for anti-TB drugs**

To ensure continuous supply of anti-TB drugs, logistic management system from the central down to the very peripheral level has been established. Monitoring system for drug distribution based on the number of reported TB cases has been developed. Training manuals for the store management have been created and series of training have been carried out.
Establishment of microscopy network and its quality control system
Microscopy network based on the sputum smear examinations has been developed. Standard training system has been established with laboratory training manuals for smear examinations. Binocular microscopes were provided by JICA for establish network in the whole country.

Adjustments and fundamental changes to original plan
Since NTP has been established in 1989, the first fundamental change was the Short course Chemotherapy (SCC), which was adopted as the national drug regimen for TB treatment. Following a joint HMG/WHO review of the NTP in 1994, a five year plan based on the WHO framework for effective TB control, with a policy of DOTS was prepared, and approved by HMG in August 1995.

Impact Analysis
The impact of NTP can be assessed from different perspectives, particularly from direct benefits and lessons for total health sector.

The NTP has rapidly expanded the DOTS strategy from 1.7 percent population coverage in 1996 to nearly 94 percent by July 2003. The treatment success rate in DOTS is now around 90 percent. Nationally, in 2002, 33,158 TB patients have been registered and are being treated under the NTP. TB case finding has also increased every year since 2002. Now it has achieved 71 percent going beyond the international case finding target of 70 percent. By these high achievements, up to 50,000 deaths are expected to be saved over the next five years. High cure rates will reduce the transmission of TB and lead to a decline in the incidence of this disease. Control of infectious diseases including TB is the direct objective for poverty reduction as the target 6 of MDGs. Besides, since 60 percent of TB infected people are in the productive age group, the good achievement of TB control is highly positive for poverty reduction from economic point of view.

In terms of efficiency, equity and quality, the results are clearly positive. The NTP adopted the WHO/IUATLD programme model, which proved both allocative and technical efficiency. Cost-benefit studies have also demonstrated the strategic value of investment in TB
control. As for equity, TB control pays due attention to the poor which is the most vulnerable in the society and a chief target in the PRSP. Quality is manifested in the emphasis on the quarterly reporting as well microscopy quality control system. The information and data is peer-reviewed every 4 months by DTLAs and RTLAs at the district and regional level. This mechanism has fostered ownership of the information and the programme as well as promoted quality service.

**Driving Factors**

**Commitment and Political Economy for Change**

A number of seminars, workshops and network forum has resulted into better understanding of the issues surrounding tuberculosis among the policy makers, practitioners and donors. Especially, many NTP related policymakers and practitioners including the current director of NTC were benefited from trainings in TB control at Research Institute of Tuberculosis (RIT) in Japan through JICA’s training scheme. Most of them are still remaining at NTP related posts or at the policy level of Ministry of Health officers. The strong leadership of the NTC Director is the major key factor of the successful NTP. The staff members are highly motivated by his action-oriented leadership style. The better understanding and commitments thus created have impacted on national policy particularly in keeping TB high in government agenda.

Likewise policy at the local level has been positively changed as reflected in Municipality and VDCs - who are now allocating some of their resources for TB control activities. (e.g. Urban DOTS Programs)

**Institutional Innovation**

Establishment of the NTC as the focal point of national TB control was the fundamental factor for the successful NTP. However, there are some more institutional arrangements that have been accelerating the momentum.

Based on standard national policies and guidelines, the implementing partners have adopted locally appropriate management arrangements. A DOTS committee consists of local people is the one of the key factors for the driving force of NTP, providing hostel or assistance to those poor coming from long distance who could not afford food during intensive period of
DOTS, home visits and follow-up to trace the late patients and so on. Similarly, local institutions like municipalities, VDC and private sectors including teaching hospitals are actively participating in NTP.

TB Control Network (TBCN) was established based on a desire by JICA project, implementing INGOs and NATA to harmonize case definitions, reporting mechanisms and health promotion activities. It has developed into a national group, which provided the NTP with the ideal platform for the required change management process necessary to implement all the enhanced features embedded in the TB development plan.

Beside these, in order to ensure uninterrupted supply of anti-TB medicines, logistics management system from the central, regional and peripheral level was developed and put into practice with the full involvement of implementing team and NGO partners. Therefore, there is a strong sense of belonging and ownership among the government staff.

**Learning and Experimentation**

In the beginning of NTP, Operational Researches (OR) were undertaken in the selected districts. In 1996 DOTS has been introduced in four districts as pilot projects. These experimental processes supported by JICA and INGOs working in regions have helped NTP to create the logistic and monitoring systems and have provided fruitful lessons fitting to Nepali context which have been integrated into national strategy and training contents. DOTS committee formation and peer review system are good examples of devices extracted from the OR and pilot activities.

Learning mechanisms are also built in the DOTS system itself, which upgrade and maintain the quality of services and skills and motivation of NTP staff. The quarterly cohort reporting, the technical review meetings, TB Control Networks (TBCN, TB Net), regular external evaluation are some of the proven devices in Nepal that can be emulated in the countries of the regions. In addition to this, a few other activities have also contributed in institutional learning.

- Peer based review system and multi-tier supervising system for reviewing program results and staff performance: This system has proved to be highly effective, enriching, and participatory. The process takes place at all levels – International, Regional (Asia) and national level, including all the way to district levels.
• Seminars and training programs: WHO, IUATLD, JICA and other organizations regularly host international training programs, thereby strengthening skill, motivation and commitments of staff to NTP. Benefit gained from the experiences in other South Asian countries, through exchange visits are added advantage of such activities.

• Adjusted the program for field reality: Field activities are regularly adjusted to suit the local context. For example, DOTS implementation varies from 6 days week supervision at the health facility to administration of the medicines under the eyes of the health care worker, and to community or family based DOTS (Hamlet and Baral 2002).

• Numbers of operational research (Multi-drug resistant TB (MDR-TB), HIV/TB co-infection, family based DOTS) as well as experimentation in working with national NGOs and community groups have provided valuable insights for betterment of NTP.

External Catalysts

NTP has been strengthened and expanded based on ownership of Nepali side lead by NTC director’s strong leadership. The roles of EDPs are injection of technical and financial cooperation at a critical point of evolution of NTP. Technical cooperation has its role to support building staff capacity, creating the focal point of NTP, policies, innovative systems and devices fitting to local context (e.g. review and monitoring system, microscopy network, logistic management system and so on). It should be highlighted that technical cooperation promotes long lasted human and institutional network with external technical organizations such as RIT, WHO, IUATLD and etc., which provides the NTP a continuing back supports. The NTP with clear strategy and potential of human/institutional capacity attracted other EDPs financial support. Financial cooperation supported NTP in terms of scaling up of the programme to nation wide through providing drugs and fund for a number of training courses. Those varieties of inputs from EDPs have been well coordinated with each others under the ownership of NTC.

In this sense, the best and the most important external catalyst in NTP implementation are the donors that founded the budgetary setting for the Programme right at the early stages when NTP was just started. The 1995-99 NTP Development Plan detailed unit budgets that provided the solid platform on which a partnership of government and donor was made possible.
Lessons Learned

Following issues can be noted as indispensable factors for successful implementation of NTP that provide generic insights of programme management, organizational culture and implementation to be applied to other sectors.

Repositioned national programme with a clearly identified central focal point
Upgrading National Tuberculosis Center (NTC) from “a Chest Clinic” to a National Center has given the NTP a clear physical identity and operational mandate with increased responsibility and budget.

Strong commitment, leadership and strong team approach
TB control has been recognized as one of the priority area in the HMG’s development policy. Under the commitment of HMG, the NTC Director’s strong leadership is a key factor of the success of the programme. Highly motivated and technically capable team consists of the NTC staff, the regional and district level supervisors. Team members of EDPs and INGOs with high morale have contributed to uplift both technical skill and motivation of their counterparts.

Staff motivation
Empowered staff from central to local level is a powerful driver for success and innovative implementation. Motivation of staff is ensured by result based program with local ownership and responsibility, various training programmes including refresher training, peer-led monitoring and evaluation system and so on.

Capacity Development for the programme by high quality technical support
A reason for the success of the programme was the consistent high quality technical support to the NTP over the previous period of DOTS. It is not only the quality of the technical assistance, but also the generally positive nature of relationships between NTP and technical assistance agencies. Injection of technical and financial input at a critical point of evolution of NTP during early 1990s’ has strengthened and expended quality TB control services in the country making it one of the best programme. And the potential programme has created opportunity for other external development partners to support TB programme to scale up to nation wide. This variety of inputs
chronologically contributed from EDPs has been well coordinated and supplementing with each other under the ownership of NTC.

**Evidence based national policy and local innovation**

The NTP has clear national policy, manuals and guidelines, but still encourages the innovation and application of the model to local context. In the central, evidence based planning of NTP programme on findings of reviews, cohort results and projected need, with details on budget, sources of funding and the responsibilities. A carefully planned programme document can work as catalyst to promote domestic as well as international support for TB control. At the local level, diversity of initiatives are taken to apply the basic philosophy of the DOTS strategy.

**Simple and appropriate technology and system**

Technical skills, protocol and management systems for NTP, such as recording and reporting system, are simple and appropriate, and was adjusted to suit the local context. They are compiled in manuals, trainings, forms and guidelines to be acquired easily by staff. Such system were developed or redesigned with direct participation of the staff members who are supposed to use it in their regular work. As such, the developed mechanism or arrangements were further supported to make a root in the system. This has promoted a strong sense of ownership at the central, regional, district and health facility level, while at the same time sharpening their skills.

**Establishment of the recording and reporting system**

WHO/IUATLD guidelines for DOTS were adopted for NTP. This is particularly important for a country like Nepal where satisfactory level of health information is rather difficult to obtain. This system, in one hand, has allowed the districts and regional team to review their performance regularly at their respective areas so that corrective action can be immediately taken, and on the other, the information culminates into national analysis where overall performance is assessed and adjustment in the policy is made.

**Strong capacity building component covering all aspects of the policy package for all level of staff.**

From the beginning of DOTS, preparation of training programme was carefully supported by external donor partners. In this context, the regional INGOs helped substantially to rapidly deliver
quality training to a large number of health workers. Increased number of treatment centers corresponds with training with health workers.

**Multi-tier peer review system**

Peer based review system for staff working in TB control is set up in various levels (international level including South-East Asia region, national level, regional level, district level and treatment centre level. This system promotes communication, motivation and increases the ownership of staff.

**Multi-tier supervision system**

Supervision system of the key operations at the regional and district level were created implemented from the start of the programme. The supervision programme was a nice collaboration between government staff and external donors. There is a very systemic supervision channel set up for NTP, starting from health post level to all the way to Central level. Regional Directors’ integrated supervision also complements the NTP supervision.

**Twinning, network and partnership of institutions**

The NTP is supported by structured network and partnership. Through JICA’s technical cooperation, RIT of Japan has supported NTC for a long time in a positive relationship. This “twinning” of both institutions has functioned as continuous technical and moral support for NTP. TB Control Network (TBCN) was formed among JICA, NATA and regional INGOs, which has become the platform of all the partners. Partnership between NTP and relevant organizations to deliver DOTS strategy has gradually expanded including regional INGOs, some EDPs in the beginning, and later academic institutions, private medical colleges, private hospitals/clinics, NGOs, Community based organizations (CBO), media and so on.

**People’s participation**

People’s participation is visible in the way of DOTS committees are being recognized and Municipality/VDC supports few of them. DOTS committee appears to be more effective if VDC or Municipality are involved in coordination and supported financially. Involvement of Municipality and VDCs is in line with government decentralization policy. DOTS committee is appropriate approach towards reaching the unreached and promotes people’s participation. DOTS committee is gradually proving its effectiveness in the community.
Systems to secure quality of service delivery

DOTS has expanded to nation wide rapidly, but quality of services has been maintained. There are systems to secure the quality.

- Microscopy network with appropriate equipment and training of laboratory technicians
- Logistics system for supply of Anti-TB drugs and diagnostic materials based on previous case notification data.
References

Collins, C et al “developing Health Sector Decentralisation in Nepal, Collaborative policy Development” HMGN-DFID District Health Strengthening Project, British Council, 2003 (pp 80-93)


Ministry of Health “Health Sector Strategy – agenda for change 2002” Ministry of Health, Kathmandu


National Tuberculosis Centre/JICA/CTBLH Project (date), TB facts, figures and concepts, NTC, Thimi


## Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>BNMT</td>
<td>Britain Nepal Medical Trust</td>
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<tr>
<td>CCC</td>
<td>Central Chest Clinic</td>
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<td>CTLHP</td>
<td>Community TB and Lung Health Project</td>
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<td>DfID</td>
<td>Department for International Development, UK</td>
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<td>DHO</td>
<td>District Health Officer</td>
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<td>DoHS</td>
<td>Department of Health Services</td>
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<td>DOTS</td>
<td>Directly Observed Treatment Short-course</td>
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<td>DTLA</td>
<td>District TB/Leprosy Assistant</td>
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<td>EDPs</td>
<td>External Development Partners</td>
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<td>EHCS</td>
<td>Essential Health Care Services</td>
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<td>FCHV</td>
<td>Female Community Health Volunteers</td>
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<td>GENETAP</td>
<td>German Nepal Tuberculosis Project</td>
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<td>HMG</td>
<td>His Majesty's Government of Nepal</td>
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<td>INF</td>
<td>International Nepal Fellowship</td>
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<td>INGO</td>
<td>International Non-governmental organization</td>
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<td>IUATLD</td>
<td>International Union Against TB and Lung Health</td>
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<td>JICA</td>
<td>Japan International Cooperation Agency</td>
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<td>LHL</td>
<td>Norwegian Heart and Lung Association</td>
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<td>MDGs</td>
<td>Millennium Development Goals</td>
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<td>MDR-TB</td>
<td>Multi-drug resistant TB</td>
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<td>MoH</td>
<td>Ministry of Health</td>
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<td>NATA</td>
<td>Nepal Anti-TB Association</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<td>NHS</td>
<td>National Health Service, UK</td>
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<td>NHSP-IP</td>
<td>Nepal Health Sector Programme-Implementation Plan</td>
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<td>NIH</td>
<td>Nuffield Institute of Health</td>
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<td>Acronym</td>
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<tr>
<td>NLR</td>
<td>Netherland Leprosy Relief</td>
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<td>NORAD</td>
<td>Norwegian Government Aid</td>
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<td>NTC</td>
<td>National Tuberculosis Centre</td>
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<td>NTP</td>
<td>National Tuberculosis Control Programme</td>
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<td>OR</td>
<td>Operational Research</td>
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<td>PHC</td>
<td>Primary Health Care</td>
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<td>PRSP</td>
<td>Poverty Reduction Strategy Paper</td>
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<td>RIT</td>
<td>Research Institute of Tuberculosis (Tokyo, Japan)</td>
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<td>RTC</td>
<td>Regional TB Centre (Pokhara, Western Region)</td>
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<td>RTLTA</td>
<td>Regional TB/Leprosy Assistant</td>
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<td>SAARC</td>
<td>South Asian Association for Regional Co-operation</td>
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<td>SCC</td>
<td>Short Course Chemotherapy</td>
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<td>SLTHP</td>
<td>Second Long Term Health Plan</td>
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<tr>
<td>SWAp</td>
<td>Sector Wide Approaches</td>
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<td>TAG</td>
<td>Technical Advisory Group</td>
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<td>TB</td>
<td>Tuberculosis</td>
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<td>TBCN</td>
<td>TB Control Network</td>
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<td>TBCP</td>
<td>TB Control Project</td>
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<td>UMN</td>
<td>United Mission to Nepal</td>
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<tr>
<td>VDC</td>
<td>Village Development Committee</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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