The Regional Strategic Plan for TB control
2006-2015
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2006-2015

World Health Organization
Regional Office for South-East Asia
New Delhi
Contents

Abbreviations .................................................................................................................. v

Foreword ....................................................................................................................... vii

Executive Summary ........................................................................................................... viii

1. Introduction ................................................................................................................. 1
   1.1 Progress towards TB Control .................................................................................. 1
   1.2 Issues and Challenges .......................................................................................... 4
   1.3 What can be Achieved ......................................................................................... 5

2. Goal and Objectives ...................................................................................................... 7
   2.1 Goal .................................................................................................................... 7
   2.2 Objectives ........................................................................................................... 7

3. Strategies and Interventions .......................................................................................... 11
   3.1 Sustaining and Enhancing DOTS to Reach all TB Patients, Improve Case Detection and Treatment Success .................................................................................. 11
   3.2 Establishing Interventions to Address HIV-Associated TB (TB/HIV) and Drug-Resistant TB ............................................................................................................. 20
   3.3 Forging Partnerships to Ensure Equitable Access to an Essential Standard of Care to all TB Patients ................................................................................................. 24
   3.4 Contributing to Health Systems Strengthening ....................................................... 31

4. WHO Support in the Region .......................................................................................... 41

5. Cost of Planned TB Control Activities in the Region, 2006-2015 ........................................ 47

6. Indicators and Targets .................................................................................................. 53
   6.1 Process Indicators ............................................................................................... 53
   6.2 Impact Indicators ................................................................................................. 56

7. Conclusions ................................................................................................................. 57

Annexes

List of Partners ............................................................................................................... 59

Glossary ....................................................................................................................... 60
Abbreviations

ACSM advocacy, communication and social mobilization
AFR AFR WHO African Region
AIDS acquired immunodeficiency syndrome
AMR WHO Region of the Americas
ART antiretroviral therapy
ARV antiretrovirals (drugs)
BAN Bangladesh
BCG Bacillus Calmette Guerin
BHU Bhutan
CBO community-based organization
CDC Centers for Disease Control and Prevention (USA)
CPT co-trimoxazole preventive therapy
DALY disability-adjusted life year
DPRK Democratic People’s Republic of Korea
DRS drug resistance surveillance
DST drug-susceptibility testing
EMR WHO Eastern Mediterranean Region
EQA external quality assurance
EUR WHO European Region
GAVI Global Alliance for Vaccines and Immunization
GDF Global Drug Facility
GFATM Global Fund to Fight AIDS, Tuberculosis and Malaria
GHS General Health systems
GLC Green Light Committee
GLRA German Leprosy Relief Association
GMP good manufacturing practice
GTZ Deutsche Gesellschaft für Technische Zusammenarbeit [German Development Agency]
HAART highly active antiretroviral therapy
HBC high-burden country
HIPC highly-indebted poor countries
HIV human immunodeficiency virus
HIV+ HIV-positive
HRD human resource development
IDU injecting drug user
IEC information, education, communication
IND India
INO Indonesia
IPT isoniazid preventive treatment
ISAC intensified support and action countries
IUATLD International Union Against Tuberculosis and Lung Disease (UNION)
KNCV Koninklijke Nederlandse Centrale Vereniging ter Bestrijding van Tuberculose [KNCV Tuberculosis Foundation]
LTBI latent TB infection
MAV Maldives
MDG Millennium Development Goal
MDR-TB multidrug-resistant TB
MMR Myanmar
MoH ministry of health
MTEF mid-term expenditure framework
NAP national AIDS programme
NEP Nepal
NGO nongovernmental organization
NTP national TB programme
PAL Practical Approach to Lung Health
PHC primary health care
PLWHA people living with HIV/AIDS
PPM public-private, mix
PRSP Poverty Reduction Strategy Paper
PRSC Poverty Reduction Support Credit
PTB pulmonary tuberculosis
QA quality assurance
R & D research and development
SCC short-course chemotherapy
SEAR WHO South-East Asia Region
SRL Sri Lanka
SWAp sector-wide approach
TB tuberculosis
TBCAP TB Control Assistance Programme
TDR UNICEF/UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases
THA Thailand
TLS Timor-Leste
UNAIDS Joint United Nations Programme on HIV/AIDS
UNDP United Nations Development Programme
VCT voluntary counselling and testing (for HIV)
WHO World Health Organization
WPR WHO Western Pacific Region
Tuberculosis (TB) is an important cause of human suffering and poverty. The South-East Asia Region bears the brunt of the global TB burden. With the spread of HIV, TB control efforts could be undermined.

Major progress has been achieved in Member countries in the Region through the implementation of the DOTS strategy over the last decade. While a strong foundation has been laid, acceleration of efforts is required to sustain and expand effective TB control. The long-term goal is to eliminate TB by 2050. Meanwhile, all Member countries in the Region must achieve the TB targets linked to the Millennium Development Goals, set to be reached by 2015. Much remains to be done.

The Regional Strategic Plan for TB Control 2006-2015, developed in consultation with national tuberculosis programme managers of all Member countries, as well as technical agencies and partners working with TB control programmes in the Region, highlights the key strategic approaches towards achieving these targets in the South-East Asia Region. The Plan is in line with the new global Stop TB Strategy, and contributes to the global plan to stop TB, 2006-2015, through focusing on issues and challenges most relevant to our Region. It sets out the actions and the quantum of funds required over the next 10 years to accelerate the progress in this regard. The Plan also outlines the role that WHO can and should play in supporting Member countries in planning, implementing, monitoring and evaluating the interventions envisaged.

I am confident that our Member countries will find this Regional Strategic Plan very useful in designing their own medium and long-term plans for TB control. It will also facilitate in maximizing the contributions of all partners and stakeholders in the implementation of national plans.

A sound strategy and a strong partnership between governments, civil society, technical and financial partners are the keys to the success of the programme. Together, we can make a dramatic difference in the lives of millions of people threatened with TB.

Samlee Plianbangchang, M.D., Dr.P.H.
Regional Director
Executive Summary

The South-East Asia Region carries the highest burden of tuberculosis among all WHO Regions. One in every three cases of tuberculosis in the world is from this Region. This represents a case burden of nearly six million cases of TB to which approximately three million new cases are added every year. In addition, it is estimated that over half a million people continue to die needlessly from TB each year in the Region. Five of the 22 countries with the highest number of TB cases in the world are in this Region. These are Bangladesh, India, Indonesia, Myanmar and Thailand. The global HIV epidemic has had a variable impact on TB morbidity and mortality in countries of the Region, particularly in countries reporting generalized HIV epidemics. Fortunately, levels of multidrug resistance are believed to be still low at under 3%. However, in absolute terms, this translates into a large number of TB cases with drug resistance, considering the large numbers of TB patients in the Region. Given this burden of disease, progress with tuberculosis control in the Region will necessarily have an impact on overall global progress in TB control.

This is the opportune time for consolidating past success and instituting new interventions for TB control in the Region. National TB control programmes are achieving excellent outcomes owing to earlier investments in human resource and infrastructure development and rigorous monitoring. Collaborations for TB control through the involvement of a wide range of partners have been established and are growing. New resources which have recently become available are being effectively used to further strengthen national programmes. Medium-term plans have been developed in all Member countries and are now being revised and further expanded, based on the new stop TB strategy.

Encouragingly, significant milestones have been achieved with regard to TB control services in the Region. Due to rapid expansion of high quality DOTS services, TB case-detection rates have steadily increased to over 60%, with treatment success rates over 85% consistently being achieved among new smear positive cases since 2004. Nearly fifteen million TB patients were registered for treatment in the Region over the past ten years, two million alone during the past year. Progress in the Region compares well with overall case-detection and treatment success rates which globally now stand at 42% and 82% respectively. For the first time in decades, a demonstrable impact on the burden of the disease is being seen. A seven-fold decrease in TB deaths has been shown in a limited survey in India, while a national survey in Indonesia has demonstrated a decrease in the prevalence of TB.

A wide range of issues, however, need to be addressed in order to sustain and further build on these achievements. Primary health care systems in many countries are overstretched in terms of skilled staffing and infrastructure. In Member Countries instituting health reforms, transitions to decentralized systems or sector-wide approaches has been difficult and prolonged as in Thailand and Indonesia, due to limited management and technical capacity at sub-national levels. Improving human resource capacity is therefore one of the persistent challenges of the Region. Indonesia, supported by WHO and partners, has set an excellent example in human resource development which has since made a significant contribution to effective decentralization. Greater involvement of other sectors, particularly the private sector is necessary to enhance the reach and access to services. At the same time collaborative interventions through these partnerships will require close attention and monitoring to ensure adherence to internationally recommended standards for TB care in order
to ensure quality and rational use of drugs to continue to achieve high cure rates. In recent years, the emergence of both HIV-associated TB and anti-TB drug resistance threaten to reverse hard-won gains in TB control. This calls for urgent and decisive action. Planning and implementing interventions to address TB/HIV and multidrug-resistant TB (MDR-TB) particularly in Member Countries with high HIV prevalence are a priority. National TB programmes together with other related programmes will need to pay greater attention to advocacy, communication, information and social mobilization approaches to improve community awareness and utilization of services. In order to report objectively on progress towards the Millennium Development Goals (MDGs), national programmes will also need to build capacity for better surveillance, monitoring and evaluation.

The focus for TB control in the coming years is to achieve the TB targets under the MDGs in all Member Countries by 2015. Towards this end, a Regional Strategic Plan for TB Control 2006-2015 incorporating the new expanded global stop TB strategy, but focusing on priorities in this Region has been developed. This has been done in consultation with the Regional Technical Working Group on TB national programmes and partners involved in TB control in Member Countries. The interventions proposed will enable countries to improve the quality of DOTS implementation, including improving laboratory services through phased expansion of culture and drug susceptibility testing; introduction of additional facilities to better diagnose smear-negative, extra-pulmonary and childhood TB; ensuring uninterrupted supplies of high quality anti-TB drugs; enhancing case management through patient-centred community-based approaches; initiating and scaling up approaches to increase collaboration among all health providers for TB control; building capacity to effectively address TB/HIV and multidrug-resistant TB and strengthening surveillance, monitoring and evaluation to more accurately determine trends in the TB epidemic in the Region including levels of TB/HIV and drug resistance. Recognizing that effective TB control necessarily depends on strong health systems, efforts will also be made to effectively streamline TB services within primary health care systems, optimize use of common resources for delivery of TB services alongside those of other programmes, adapt innovations in TB control to improve overall health service delivery while, at the same time, adopting the successful approaches of other programmes to improve TB services.

The benefits of full and effective implementation of all the planned interventions would be substantial. These will result in 20 to 25 million TB cases being treated including several thousand drug-resistant cases. HIV co-infected TB patients eligible for anti-retroviral treatment will also receive care through collaborative efforts between national TB and HIV/AIDS programmes. As a consequence, it is expected that the number of TB deaths will decrease to between less than a third, prevalence halved and the incidence begin to decline significantly during this period. There would also be substantial economic benefits considering that TB disproportionately affects adults in their most productive years.

In this regard, national governments and development partners must fulfill their commitments to mobilize and sustain adequate resources to support the full range of activities envisaged in these plans.
Introduction

The South-East Asia Region of WHO which covers 11 countries with a combined population of over 1.5 billion, carries the heaviest burden of TB among all WHO Regions. The majority of TB patients are in the age groups 15-54 years; men and women at their most productive period. This adds to the implications of this disease not only on health but also on social and economic development in the Region. Figure 1 shows the burden of TB in the world.

Figure 1: The SEA Region suffers disproportionately from TB

<table>
<thead>
<tr>
<th>The Burden</th>
<th>The SEA Region with 25% of the world’s population, accounts for 34% of TB cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 5.7 million cases; 34% of the global burden;</td>
<td>AFR 19%</td>
</tr>
<tr>
<td>- 3 million new cases and 600,000 TB deaths annually</td>
<td>AMR 5%</td>
</tr>
<tr>
<td>- 80% of active TB among adults aged 15-54 years</td>
<td>EME 8%</td>
</tr>
<tr>
<td>HIV and TB</td>
<td>EUR 6%</td>
</tr>
<tr>
<td>- Nearly 3 million co-infected</td>
<td>SEAR 34%</td>
</tr>
<tr>
<td>- TB increasing in areas hard-hit by HIV</td>
<td>WPR 28%</td>
</tr>
</tbody>
</table>

HIV and TB
- Nearly 3 million co-infected
- TB increasing in areas hard-hit by HIV

MDR-TB
- Multi-drug resistance: <3% overall

The Regional Strategic Plan for TB Control 2006-2015 describes the future directions and focus of work for TB control in the South-East Asia Region. The targets and strategies in this document are consistent with the new global stop TB strategy and global plan 2006-2015, but focus on priorities most relevant to this Region and build on what has been achieved during the previous 5-year plan period 2000-2005. The structure is linked to the principal planning tool used by WHO – the Programme Budget and reflects the key expected results projected over the next plan period. A range of interventions has been proposed. These are aimed at accelerating progress in the context of evolving challenges, and the requirements of national programmes in effectively meeting these challenges. Developing these further will require flexibility and adaptation to suit the varying country contexts – the tuberculosis burden and specific situations in Member Countries in the Region. This document is intended for policy makers, members of technical advisory groups, inter-agency coordination committees or equivalent bodies at national level and all partners supporting TB control in the Region.

1.1 Progress towards TB Control

Considerable progress has been made since the internationally recommended DOTS strategy was adopted for TB control by all Member Countries in the early 1990s. Rapid DOTS expansion has continued to take place in all Member Countries so that by the end of 2005, over 97% of the population in the Region lived in areas where TB diagnostic and treatment services under DOTS had
The Stop TB Strategy

**Vision:** A world free of TB.

**Goal:** To dramatically reduce the global burden of TB by 2015 in line with the Millennium Development Goals and the Stop TB Partnership targets.

**Objectives**
- Achieve universal access to high-quality diagnosis and patient-centred treatment;
- Reduce human suffering and socioeconomic burden associated with TB;
- Protect poor and vulnerable populations from TB, TB/HIV and multidrug-resistant TB, and
- Support development of new tools and enable their timely and effective use.

**Six Key Elements of the Stop TB Strategy**

1. **Pursue quality DOTS expansion and enhancement,** by improving case-finding and cure through an effective patient-centred approach to reach all patients, especially the poor.

2. **Address TB/HIV, MDR-TB and other challenges,** by scaling up TB/HIV joint activities, DOTS-Plus, and other relevant approaches.

3. **Contribute to health system strengthening,** by collaborating with other health programmes and general services, for example in mobilizing the necessary human and financial resources for implementation and impact evaluation, and in sharing and applying achievements of TB control.

4. **Involve all care providers,** public, nongovernmental and private, by scaling up approaches based on a public-private mix (PPM), to ensure adherence to the International Standards of TB care.

5. **Engage people with TB, and affected communities** to demand, and contribute to, effective care. This will involve scaling-up of community TB care; creating demand through context-specific advocacy, communication and social mobilization.

6. **Enable and promote research** for the development of new drugs, diagnostics and vaccines. Research will also be needed to improve programme performance.

been made available. Overall treatment success rates have consistently remained over 85% while case-detection rates have steadily increased to over 60% in 2004. Nearly 15 million patients were registered for treatment, 6 million of these under DOTS, between 1997 and 2004, averting nearly 5 million deaths. Due to quality expansion of TB control services, nearly 2 million TB patients are being registered for treatment every year in the Region. For the first time in decades, a demonstrable impact on the burden of the disease is being seen, with both India and Indonesia showing a decrease in the prevalence of TB. Figures 2 and 3 show progress towards the 70% case detection and 85% treatment success rates in countries and in the Region as a whole.
This progress is attributed to wider coverage, intensified efforts to improve the quality of services and growing partnerships with other providers particularly NGOs, the private health sector, medical teaching institutions and large public employment sectors. Collaboration with NGOs is growing; for example, over 90% of DOTS services in Bangladesh are undertaken by NGOs under memoranda of understanding with the Government. Partnerships with private providers are being scaled up in India, Indonesia, Myanmar and Nepal and similar initiatives have commenced in Bangladesh and Thailand. In areas where public-private partnerships have been established, case-notification rates have increased, on an average, by 24%. Medical schools in Bangladesh, India, Indonesia, Nepal,
Thailand and Sri Lanka have been involved in their respective national programmes; more than 200 medical colleges in India have established DOTS centres in their practice areas. TB services are also beginning to be provided in workplaces, for example, in factories in Bangladesh and India, in tea estates in Sri Lanka, and by the Railways in Myanmar, among many others. Collaborative interventions for HIV-related TB are being established jointly by national TB and HIV/AIDS control programmes in India, Indonesia, Myanmar and Thailand. Thailand has taken a lead and is providing comprehensive services in the entire country.

Financial resources for TB control have been augmented and the overall resource gap in the Region is currently estimated at under 10%, based on commitments from Global Fund to Fight AIDS, TB and Malaria (GFATM) and support being provided through bilateral agreements with donors and development partners in several Member Countries.

1.2 Issues and Challenges

While good progress has been made towards reaching the World Health Assembly treatment success and case detection targets set in 2000, many challenges will need to be effectively addressed in order to meet the TB target set to be achieved by 2015 under the Millennium Development Goals (MDGs).

A major challenge is to find and register all cases that have not so far been diagnosed or registered for treatment under national TB programmes and collaborating sectors despite full coverage of services, while at the same time continuing to sustain the quality of implementation.

HIV-associated TB and anti-TB drug resistance threaten to reverse hard-won gains in TB control. National TB and HIV/AIDS control programmes will need to work very closely to accelerate efforts to address the needs of the increasing numbers of patients dually affected. While the quality DOTS services must be sustained to halt and reverse the development of further resistance, national TB programmes must, at the same time, begin to extend diagnosis and treatment to TB patients who already have multidrug resistant TB (MDR-TB).

Inter-sectoral collaborative interventions both public and private, are presently insufficient to make a significant impact on case-detection and treatment success rates at the national level. Ensuring the quality of services within the programme as well as through these collaborative interventions as they expand beyond initial pilots will require considerable inputs.

Community awareness and utilization of available services and civil society involvement in TB control continue to be inadequate. NTPs need equally to ensure equitable access to services for all TB patients particularly the poor and the marginalized, in urban slums and shanty towns, remote border areas or among displaced communities, if transmission and thereby the incidence of TB is to be reduced. Advocacy, communication and social mobilization (ACSM) efforts have not been satisfactorily addressed by most national TB programmes. High profile, well designed and sustained ACSM campaigns are required to have a substantial impact.

Primary health care systems in countries are overstretched. Most suffer from inadequate infrastructure and a lack of sufficient numbers of adequately skilled staff to provide essential services including those for TB. In addition, poor preparation for health sector reform has led to prolonged and difficult transition periods for traditionally vertical TB control programmes in some countries. Steps must therefore be taken concurrently to enhance the performance of TB programmes in the context of health systems development through effective integration and streamlining of TB services within primary health care services. Several key elements of the DOTS strategy, such as ensuring commitment and resources, quality and accountability, have much to contribute to strengthening
primary health care systems, while TB services will benefit from innovative approaches of related programmes.

Last but not least, adequate resources must be secured to ensure the required technical capacity and infrastructure to sustain current implementation, introduce additional interventions and then sustain these in the longer term.

### 1.3 What can be Achieved

Given strong commitment and due attention to resolving the above issues and challenges, and sustained resources to fully implement all the interventions envisaged in the Plan, the TB targets linked to the Millennium Development Goals (MDGs) will be achieved in all the eleven Member countries of the Region. TB prevalence and deaths would be more than halved and the incidence of TB reversed. Over the next 10 years, over five million lives that would otherwise have been lost due to TB will be saved. Nearly 25 million TB patients will have been treated, including 150 000 with drug-resistant forms of TB. Over a quarter of a million people with active TB and HIV co-infection eligible for antiretroviral therapy (ART) will begin to receive ART during this period. In addition, given the links between tuberculosis and poverty, better TB control will have contributed not only to better health, but also to overall social and economic development in the Region.
2.1 Goal

The overall goal for TB control is to reduce morbidity, mortality and transmission of TB until it is no longer a public health problem in the Region.

2.2 Objectives

The objectives for tuberculosis control in all Member countries in the Region are to:

- sustain or surpass the 70% case-detection and 85% treatment success rates among TB cases set by the World Health Assembly in 2000 (related to Indicator 24 under the MDGs) in order to then,
- halve TB deaths and prevalence by 2015 (related to Indicator 23 under the MDGs) towards halting and beginning to reverse the incidence of TB as implicitly stated under the Millennium Development Goals set for 2015.

<table>
<thead>
<tr>
<th>Goal 6:</th>
<th>To combat HIV, malaria and other diseases</th>
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<tr>
<td>Target 8:</td>
<td>To have halted by 2015, and begun to reverse the spread (incidence) of malaria and other major diseases</td>
</tr>
<tr>
<td>Indicator 23:</td>
<td>Prevalence and death rates associated with tuberculosis</td>
</tr>
<tr>
<td>Indicator 24:</td>
<td>Proportion of tuberculosis cases detected and cured under DOTS</td>
</tr>
</tbody>
</table>

Figures 4 and 5 show the past trends and future projections for cases estimated to be detected and treated until 2015.

Figure 4: Projected impact of planned activities on case detection rates in the SEA Region (2006-2015)
Figures 6, 7 and 8 show the projected impact of all planned interventions on TB prevalence, mortality, and incidence in the Region by 2015.
Figure 7: Projected Impact of Planned Interventions on TB Mortality

Figure 8: Projected Impact of Planned Interventions on TB Incidence
The Regional Strategic Plan for TB Control: 2006-2015
Strategies and Interventions

The interventions proposed towards achieving the set targets and the overall goal for TB control are grouped under the following four key strategies:

1. Sustaining and enhancing DOTS to reach all TB patients, improve case detection and treatment success;
2. Establishing interventions to address HIV-associated TB and drug-resistant TB;
3. Forging partnerships to ensure equitable access to an essential standard of care to all TB patients, and
4. Contributing to health systems strengthening.

3.1 Sustaining and Enhancing DOTS to Reach all TB Patients, Improve Case Detection and Treatment Success

Key expected result

Implementation of TB control policies, strategies, plans and interventions towards reaching the MDGs, based on the expanded DOTS framework.

The five basic components of the DOTS strategy have been expanded to include:

- Government commitment supported by long-term planning, adequate human resources and sustainable financing.
- Case detection through bacteriology (microscopy first, then culture and drug-susceptibility testing (DST)) and strengthening of the laboratory network to facilitate detection of all forms of TB.
- Access to standardized treatment, under proper case management conditions, including directly observed treatment and patient support to increase adherence, chance of cure, and reduce the risk of acquiring drug resistance.
- Uninterrupted supplies of quality drugs and other consumables at all facilities providing TB services through improved procurement and supply management.
- Efficient monitoring of programme performance and measurement of the impact of TB control interventions.

The broad activities that will be the focus of work to sustain and improve the quality of DOTS are described below:

Advocacy, planning and information exchange

One of the major elements towards maintaining and further improving the implementation of TB services is sustaining political will and financial commitment for TB control among policy makers, governments and other key decision makers at each level–global, regional, national and local.
This will require profiling TB as a health concern requiring urgent attention, and demonstrating the cost-effective contribution of TB control measures to overall health and development, in order to ensure sustained allocation of adequate national and external resources for TB control.

The Ministers of Health of Member countries in the Region with the highest burden of TB committed their governments to the Amsterdam Declaration to Stop TB in March 2000 and are signatories to the Washington Commitment of October 2002. This political will, however, has not been universally translated into sustaining adequate resources for TB control at the operational level, particularly in countries with decentralized health systems. Although advocacy at global and regional levels must continue to ensure high-level political commitment, much more needs to be done at national and sub-national levels to enhance commitment at the level of local governance. Securing political commitment should be supplemented by an equal emphasis on developing effective and sustainable policies supported by sound and cost-effective plans of action.

The broad interventions proposed are:

**At the regional level to:**

- Develop an advocacy and communications strategy to obtain greater commitment at the highest policy levels for TB control e.g. through the meetings of Ministers of Health in the Region, the Regional Committee as well as through global forums such as the World Health Assembly;
- Raise the profile of TB with development partners through documenting the burden of disease complemented by a strong evidence base demonstrating the contribution of TB control to improving overall health and development;
- Promote evidence-based policy and strategy development at regional and national levels through the Regional TB Technical Advisory Group, regional meetings and consultations;
- Assist Member States with developing medium and long-term national plans for TB control as integral components of national health sector and development plans;
- Advocate for TB services as an entry point to strengthening health systems and ensure the inclusion of key components of DOTS within integrated health systems, and
- Develop guidelines and support countries to enhance advocacy, communications and social mobilization efforts at national and local levels.

**At the country level to:**

- Develop medium and long-term budgeted plans of action in line with national health and development plans;
- Disseminate these plans and related resource requirements widely among policy makers, development partners, local governments and civil society;
• Assess the cost-effectiveness of existing and newer interventions for TB control and their impact on poverty and socio-economic development;
• Develop an evidence base on the impact of TB interventions, and
• Develop and implement advocacy and communications campaigns for dissemination of information on the burden of TB and the cost-effectiveness of TB interventions on overall health and development.

Quality-assured laboratory networks and standard diagnostic facilities

Quality-assured regional and national laboratory networks are essential to ensure reliable diagnosis under the DOTS strategy.

Effective case detection by sputum smear microscopy among symptomatics who report to health services requires providing real access to microscopy centres. In areas and regions where this is not possible, sputum collection centres should be established and means to transport sputum samples to the nearest microscopy centre identified. Special attention must be paid to ensuring access to population sub-groups that are likely to need assistance in reaching the services, particularly marginalized populations, migrants, women and children.

National programmes also need to effectively diagnose smear-negative, extra-pulmonary TB and drug-resistant forms of TB including those with HIV co-infection. Decreasing the burden of TB mortality and morbidity will also require greater attention to efficiently diagnosing and treating TB among children. It is therefore essential to establish quality culture facilities both for the detection of these cases and to develop capacity for drug-susceptibility testing (DST) both for drug resistance surveillance (DRS) purposes and to support the management of cases with drug-resistant forms of TB. Addressing these expanded laboratory activities will require that NTPs, national reference laboratories and key partners review the organization and structure of the laboratory networks in countries make a real assessment of the resources needed for laboratory strengthening and then assist countries in establishing these facilities at the appropriate levels within the national health system. National reference laboratories will need to be linked to designated supra national reference laboratories for external quality assurance and assistance with capacity building.

Recognizing that large numbers of patients will continue to access laboratory services in the private sector, it is equally necessary to develop capacity and establish quality-assured microscopy services within private laboratories. It is also essential to implement quality control systems for these laboratories to improve their efficiency and reliability through quality assurance mechanisms which should include on-site supervisory visits and external quality assessment.

NTPs will also need to ensure access to additional modalities such as radiology where appropriate, linking TB services to health facilities where these are available in order to follow the diagnostic algorithms for the detection of smear-negative, extra-pulmonary and paediatric TB. As newer modalities become available in future, NTPs will need to make these widely available and train staff at various levels of the
heath system to make effective use of these tests to more quickly and easily diagnose both latent TB and active disease at an earlier stage.

The broad interventions proposed are:

At the regional level to:

- Assist countries in developing a national strategic plan for improvement of TB laboratory services to undertake smear microscopy, culture and drug susceptibility testing within national health systems;
- Promote the utilization of standardized training curricula to develop the capacity of laboratory staff at participating public and selected private laboratories;
- Facilitate designation of additional centres to act as national reference laboratories and assist in building capacity to widen the scope of their activities; facilitate linkages between national reference laboratories and supranational reference laboratories;
- Develop a comprehensive document that covers all aspects of capacity building and quality assurance for laboratories including the quality of laboratory consumables and assist in establishing adequate technical capacity and quality assurance mechanisms for laboratories in all countries;
- Assist countries in establishing effective diagnostic networks including quality-assured laboratories, radiology and other modalities;
- Develop and disseminate standardized diagnostic algorithms for the detection of smear-negative, extra-pulmonary, HIV-associated TB and childhood TB;
- Advise on policy development, develop and promote the implementation of guidelines on case finding, and reporting on childhood TB as a routine within NTPs, and
- Assist countries in obtaining the necessary funds for improving diagnostic networks including strengthening national reference laboratories;

At the country level to:

- Develop capacity for culture and drug-susceptibility testing at the appropriate levels of the programme, including laboratories in other sectors where appropriate;
- Implement quality-assurance mechanisms including external quality assessment and on-site supervision of laboratories: establish links with the designated supranational reference laboratories for quality assurance;
- Build capacity (infrastructure and staffing) at national and sub-national levels to ensure equitable access to recommended diagnostic modalities;
- Develop a national plan to improve the capacity of diagnostic networks within primary health systems; strengthen coordination and collaboration with other disease control programmes to ensure adequate allocation of resources for diagnostic services;
- Adapt policy, develop and implement guidelines for expanded case finding of smear-negative, extra-pulmonary forms of TB and childhood TB, and
- Ensure adherence to recommended diagnostic algorithms by all health care providers and, under national diagnostic protocols.
Access to standardized treatment under proper case management including patient support and supervision

Free access to anti-tuberculosis drugs and their use through recommended treatment regimens, is a key component of the DOTS strategy.

Failure to complete treatment leads to prolonged infectivity, poor outcomes and, in the long run, to multidrug resistance. The success of treatment, assuming that a proper regimen has been prescribed, depends largely on whether the advice to take the medication is followed. Achieving treatment adherence has not proved to be easy either for the patient or the provider. The use of health-facility-based observation of treatment is associated with several disadvantages such as distance, out-of-pocket expenses to reach the facility, loss of wages, and stigmatization among others. Ideally, a flexible mix of health facility and community-based treatment, observation and supervision must be made available.

A patient-centred approach to ensuring treatment completion based on the patient’s needs and on a closest-to-home basis should be developed for all patients. This approach should draw on a full range of innovative approaches using available support systems within the health services, both public and private, as well as within communities. Countries in the Region have developed several useful models for direct observation, patient motivation and support to ensure continuous medication over the six to eight month period of treatment. Once again, special attention must be paid to ensuring access to population sub-groups that are likely to need assistance in reaching the services, particularly marginalized populations, migrants, women and children.

The broad interventions proposed are:

At the regional level to:

- Develop an effective communication and social mobilization strategy and guidelines for adoption at country level on providing standardized treatment at community level;
- Promote inclusion of TB treatment services under comprehensive primary care approaches such as the integrated management of adolescent and adult illness and continuum of care approaches of HIV programmes;
- Support operations research on effective provision of patient-friendly treatment and care at community level to further improve treatment adherence;
- Support studies on social, economic and other factors determining patient adherence from both the patients’ and providers’ perspectives;
- Disseminate information on innovative and successful approaches developed at the local level in Member Countries, including use of patient enablers and provider incentives where these can be supported by local NGOs or community-based organizations, and
- Establish policy and adapt guidelines on case finding including contact tracing, treatment of children with TB, and reporting on BCG coverage and childhood TB as part of routine activities within NTPs.
At the country level to:

- Adapt and utilize an effective communication and social mobilization strategy and guidelines to provide treatment in a patient-friendly manner at community level;
- Include TB treatment services under comprehensive integrated primary care approaches such as the integrated management of adolescent and adult illness (IMAI), the practical approach to lung health (PAL) and continuum of care approaches of HIV/AIDS programmes;
- Study social, economic and other factors determining patient adherence from both the patients’ and providers’ perspectives;
- Undertake operations research on effective provision of patient-friendly treatment and care and adopt successful approaches to provide treatment support at the community level, and
- Implement policy and guidelines for contact tracing, treatment of children with TB, and reporting on childhood TB as part of routine activities within NTPs.

Uninterrupted supplies of quality drugs and other consumables at all facilities providing TB services, through improved procurement and supply management

The uninterrupted availability of quality assured first- and second-line drugs is paramount to ensuring continued high treatment success rates.

Mechanisms for ensuring this must therefore be actively pursued. WHO and partner agencies have developed a short list of manufacturers following good manufacturing practices (GMPs) for the production of first-line anti-TB drugs. A similar white list has been prepared of global manufacturers of second-line drugs. The number of listed manufacturers in this category is currently very limited and attempts have been made to encourage more manufacturers to apply to the WHO and International Drug Authority (IDA) pre-qualification projects. However, the pace of submission and approval of additional manufacturers has been extremely slow. In the interest of procuring sufficient quantities of high quality drugs at competitive prices, efforts must be made to have additional first- and second-line drug manufacturers with the capacity to produce and supply sufficient quantities of these drugs, particularly in Regions with the highest burden of TB and MDR-TB. This will facilitate not only drug procurement by NTPs, but also contribute to reducing the sale of poor quality drugs in the market, particularly in high-TB-burden countries with limited resources. Mechanisms must also be put in place to ensure quality at every level from the stage of manufacture to the point of service delivery.

Improved formulations and packaging, such as the introduction of fixed-dose combinations (FDCs), paediatric formulations, and use of patient-wise boxes, will help to ensure the appropriate use of drugs while, at the same time, simplifying drug prescription, management and in-country logistics.
Cost-effective procurement needs to be complemented by effective logistics to ensure that drugs reach all health facilities offering TB services in an uninterrupted and timely manner. This requires clear guidelines to be followed for accounting of stock including buffer stocks at national and sub-national levels as well as proper storage and transport to province and district levels. This calls for training of related staff on proper procurement, management and logistics. These interactions must also be extended to ensure the uninterrupted availability of all necessary laboratory supplies and other consumables.

The broad interventions proposed are:

**At the regional level to:**
- Coordinate with the Global Drug Facility (GDF), other partner agencies and drug manufacturers for the procurement of quality assured anti-TB drugs for NTPs in the Region at the most competitive prices;
- Assist national TB control programmes in accessing quality drugs at competitive prices, and in establishing adherence drug management capacity at country level;
- Promote drug formulations and packaging that facilitate both easier logistics and rational use of drug regimens;
- Assist with ensuring availability of paediatric formulations of anti-TB drugs, and
- Identify candidate manufacturers following GMPs and maintain a database of pre-qualified suppliers, manufacturers and funding sources for anti-TB drugs in the Region.

**At the country level to:**
- Promote adherence of the pharmaceutical industry to recognized good manufacturing practices and encourage applications by national manufacturers in the Region to the global “white list” of internationally recognized drug manufacturers;
- Promote the use of fixed-dose combination tablets and/or patient-wise boxes and properly formulated paediatric anti-TB drugs to allow for easier logistics, prescribing practices and patient adherence;
- Train relevant staff on effective drug procurement management and in-country logistics, and
- Strengthen national drug regulatory mechanisms to limit the use of anti-TB drugs to TB treatment alone, and ensure the quality of anti-TB drugs.

Efficient monitoring of programme performance and measurement of the impact of TB control interventions

Progress in tuberculosis control is currently assessed on the basis of the proportion of estimated smear-positive cases detected (case-detection rate), and the proportion of these cases then successfully treated (treatment success rate).

Substantial gains have been made in capturing data on cases notified and treatment outcomes under DOTS by national TB programmes. However, all TB control programmes need to improve their capacity to more accurately and easily compile, analyse and use data emanating from routine surveillance and vital registration systems. Effective surveillance of the TB epidemic will also need to
include surveillance for HIV-associated TB and drug resistance. Improved surveillance and monitoring systems are required not only to measure programme performance but also to measure the impact of tuberculosis interventions on tuberculosis prevalence and mortality rates. Concurrent with strengthening routine surveillance, consecutive surveys of TB prevalence and mortality will also need to be undertaken to monitor and report on progress towards the TB targets set under the Millennium Development Goals (MDGs) in all Member countries. The modalities for these vary and the use of one or the other modality will necessarily depend on country situations, cost and complexity. It is therefore necessary for national programmes to have a clear understanding of the use and drawbacks of the different modalities and then plan for suitable activities to accurately evaluate the impact of TB control interventions. A better analysis of trends in the specific TB indicators will help also in developing future policies, strategies and targeted interventions for better programme impact.

The broad interventions proposed are:

At the regional level to:

- Assess the needs and strengthen routine surveillance systems within the NTPs to accurately reflect trends in TB case notifications, treatment outcomes and deaths at national and sub-national levels;
- Assist countries in adapting and implementing effective data management systems including use of appropriate softwares;
- Assist countries in developing national expertise in surveillance, analysis and use of routinely collecting data to guide policy for better implementation;
- Assist countries in developing and adapting global monitoring indicators to monitor the quality of programme performance through internal reviews;
- Maintain a data base on on-going surveillance and impact monitoring activities and the outcomes from these;
- Develop standardized protocols for population-based or special surveys and assist countries in undertaking special studies/population-based surveys as appropriate, to better estimate the burden of TB, TB/HIV and drug resistance;
- Update projections on tuberculosis trends in the Region based on data received from Member Countries, and
- Undertake periodic monitoring and review missions to Member countries to assess progress in TB control in collaboration with technical agencies and donor / development partners.

At the country level to:

- Evaluate the needs and build capacity to strengthen TB surveillance;
- Develop capacity to analyze routinely collected data to develop evidence-based policies and guidelines for improved programme implementation;
• Adopt relevant internationally recommended monitoring indicators to measure progress;
• Conduct regular monitoring and evaluation including internal and external reviews of tuberculosis control activities;
• Undertake limited studies or nation-wide population-based surveys to better estimate the incidence and prevalence of TB;
• Establish TB/HIV and drug resistance surveillance;
• Undertake studies to evaluate the impact of TB control on poverty alleviation, and
• Publish and disseminate information from national epidemiologic reviews and data from routine surveillance and any specially undertaken population surveys

Research

From the programme point of view, there is a need to focus on operational research to determine better ways to implement and monitor current interventions and to identify newer and more effective approaches suited to local circumstances.

From the programme point of view, there is a need to focus on operational research to determine better ways to implement and monitor current interventions and to identify newer and more effective approaches suited to local circumstances. National programmes must therefore pay due attention to developing adequate operational research capacity and links with research institutions to channel research to address programme needs. There are several programme areas that need to be addressed through research – improving diagnosis and treatment delivery, effectively integrating TB control within primary health care systems, ensuring equitable access to all population sub-groups especially women, the poor, and the marginalized and addressing interventions in the area of TB/HIV and MDR-TB. Another vital area is the development of information and communication systems for programme oversight and surveillance, particularly targeted at settings with underdeveloped infrastructure. Operational research should also help to yield realistic assessments of the cost-effectiveness of various interventions and their impact on health, social and economic development.

New tools are equally important in achieving the long-term goal of eliminating TB. Building on advances in mycobacterial genome sequencing and profiling, highly accurate but simple to use diagnostic tests such as test strips for detection of TB from blood, urine or saliva are expected to become available within the next five years. This would be a great advancement over the microscopic examination of sputum, which has serious limitations for the diagnosis of smear-negative, extrapulmonary and paediatric cases and particularly among HIV-infected patients.

Over 40% of the Regions’ population is infected with tuberculosis. A tool which could reliably identify latent TB and define the risk of future progression to active disease would enable rational use of preventive therapy.

New drugs and new TB regimens that will cure in shorter periods of time, with greater compatibility with anti-retroviral treatment, and efficacy against development of multidrug resistance are expected by 2010. This is keeping in mind given ongoing clinical trials using combinations of
currently available drugs and recent renewed attention to identifying new compounds with novel modes of action.

Similarly, the development of new vaccines against tuberculosis is gaining momentum. New, safe and effective TB vaccines that will prevent all forms of TB will fundamentally alter our approach to TB control. The wide availability of a licensed vaccine at reasonable cost is anticipated by 2015.

Research institutions in the Region have a significant role to play in the development of new tools for the diagnosis, treatment, and prevention of TB.

The broad interventions proposed are:

At the regional level to:

- Facilitate networking between research institutions within and outside the Region and maintain a database and disseminate information on published and ongoing research;
- Define operational research priorities for TB control in the Region and assist Member Countries in developing research agendas channeled to address programme needs;
- Assist with building capacity for operational research within national TB control programmes, and promote linkages with research institutions;
- Promote the development and wide dissemination of generic research protocols for use at multiple centres/sites in the Region to generate an evidence base for future policy development;
- Promote the involvement of research institutions in the Region in global research on health systems, and in the development of new TB diagnostics drugs and vaccines, and
- Support operational research aimed at increasing equity, access and greater utilization of services through better TB control interventions and development of innovative approaches.

At the country level to:

- Develop capacity for operational research and commission research that addresses programme needs;
- Establish linkages between national TB control programmes and research institutions to channelize research to address programme priorities;
- Disseminate research findings and encourage formulation of research questions and protocols to address improvements in the implementation of DOTS at operational level, and
- Develop capacity to contribute, where possible, to the global efforts in strengthening service delivery and in identifying new approaches to TB diagnosis and treatment.

3.2 Establishing Interventions to Address HIV-Associated TB (TB/HIV) and Drug-Resistant TB

Key expected result

Development and implementation of policies and strategies to effectively address TB/HIV and multi-drug resistance.
The Regional Strategic Plan for TB Control: 2006-2015

Interventions to address TB/HIV

The TB/HIV co-epidemic in the Region demands an urgent and effective response.

The main consideration for national TB control programmes is that full implementation of the DOTS strategy alone is unlikely to improve the sub-optimal treatment outcomes that result from HIV co-infection, or to result in reducing the incidence of TB in the face of the ongoing HIV epidemic. An integrated strategy outlining the expanded scope of activities to control TB/HIV have been defined in the global “Strategic framework to decrease the burden of TB/HIV” and in the “Regional Strategic Plan on HIV/TB”. The key elements of the Regional Strategy include preventing HIV; preventing the progression of latent TB infection to active TB; reducing morbidity and mortality of HIV-associated TB; and strengthening the health systems response to TB/HIV. Collaboration between TB and HIV/AIDS care and control programmes should include identifying areas of mutual benefit and necessary support required for both programmes to jointly deliver TB/HIV interventions including joint surveillance, offer of HIV testing and counseling for TB patients and antiretroviral treatment (ART) for all HIV-positive TB patients who require ART and vice versa, including preventive therapy. HIV programmes should be encouraged to make use of lessons learnt from DOTS in the application of principles for large-scale diagnosis and treatment of those dually affected, while NTPs should make use of lessons learnt from HIV programmes in social mobilization and advocacy.

Emerging multidrug resistant TB poses an added threat to TB control in the Region. While higher rates of drug resistance to any anti-TB drug have been reported, the mean prevalence of MDR-TB (defined as resistance to at least rifampicin and isoniazid) among newly-detected, smear-positive cases in the Region is estimated to be low at an overall 3%. India, Nepal and Thailand have participated in the previous rounds of the WHO Global drug resistance survey (DRS) and the MDR-TB rates among previously untreated patients were reported to be 1.1%, 3.4% and 2.4%, respectively. A survey conducted in Myanmar in 2004 recorded a rate of 4.0% multidrug resistance among new sputum-positive TB patients. Isolated reports of higher levels of MDR-TB are reported mainly from hospital settings. Rates as high as 60% have been reported among previously treated cases mainly from tertiary care facilities. While these levels of resistance do not affect the efficacy of current first-line treatment regimens offered under programme conditions, given the absolute numbers of patients with MDR-TB in the Region, national TB control programmes must include and rapidly scale up therapy for patients with MDR-TB.

The HIV epidemic threatens to reverse hard-won gains in TB control. Thailand, Myanmar and six states in India currently report generalized HIV epidemics (prevalence of >1% among pregnant women). Indonesia and Nepal are at the stage of concentrated epidemics (>5% prevalence in high-risk groups such as injecting drug users in both countries, and among female commercial sex workers in Indonesia). Other countries in the Region with lower prevalence of HIV also need to achieve a state of preparedness based on a basic minimum package of interventions as recommended in the Regional Strategy on TB/HIV.
The broad interventions proposed are:

**At the regional level to:**

- Organize joint meetings of national HIV/AIDS and TB programmes and the Regional Technical Advisory Groups on TB and HIV, to strengthen mechanisms for collaboration between the respective programme managers;
- Provide technical assistance to countries in developing national policy, guidelines and implementation plans for TB/HIV activities, based on experience in the Region and recommended policies and strategies;
- Assist with building capacity to scale-up implementation and expand the scope of TB/HIV collaborative activities for intensified surveillance, effective diagnosis and management of HIV-associated TB;
- Assist countries with preparing general health systems to better address TB/HIV within the context of strengthening primary health care services, including mobilizing adequate resources;
- Promote the engaging of public and private providers and the community in ensuring the provision of an essential standard of care to all patients affected by TB/HIV and drug resistant TB;
- Develop mechanisms to regularly monitor and evaluate TB/HIV interventions and their impact, and
- Promote and coordinate research aimed at improving prevention, early diagnosis and treatment of TB among People Living With HIV/AIDS (PLWHA).

**At the country level to:**

- Strengthen mechanisms for collaboration between HIV/AIDS and TB programme and establish national coordinating mechanisms to guide the development of national policies / guidelines and oversee implementation of interventions for TB/HIV;
- Develop implementation plans at national level based on national TB/HIV policies and strategies, to pilot, scale-up implementation and expand the scope of TB/HIV activities;
- Strengthen capacity of both programmes for enhanced surveillance, diagnosis and management of HIV-associated TB, including mobilizing adequate resources;
- Engage in public and private partnerships including communities and patient groups in ensuring the provision of an essential standard of care to all co-infected patients;
- Develop mechanisms to regularly monitor and evaluate TB/HIV interventions and their impact, and
- Promote and coordinate research aimed at improving prevention, early diagnosis and treatment of TB among PLWHA.

**Interventions to address drug-resistant TB including multidrug-resistant TB (MDR-TB)**

It is well recognized that good TB control programmes help to prevent and reverse the further development of MDR-TB.
However, the costs of containment of already existing multi-drug resistant TB, if not addressed at an early stage, will be beyond the capacity of national health systems and worse; epidemic proportions of multidrug resistance could emerge over a period of time. On the other hand, the introduction of second-line drugs without strict control could be disastrous since the development of resistance to these drugs will mean that there are no alternatives left. The Green Light Committee (GLC) established to provide assistance and oversight for the use of second-line drugs under programme conditions should be involved wherever programmes or projects for the management of patients with drug-resistant forms of TB are planned. NTPs must ensure the rational use of drugs and proper case management to prevent the emergence of strains of TB that are resistant to both first- and second-line drugs.

The priorities are to establish quality-assured culture and drug-susceptibility testing facilities, expand drug resistance surveillance to monitor trends in MDR-TB and then to establish and rapidly scale-up services to treat TB patients with drug-resistant forms of TB. In this regard the pharmaceutical sector will need to be encouraged to provide competitively priced high quality second-line drugs.

The broad interventions proposed are:

**At the regional level to:**

- Assist countries with building the capacity of national reference laboratories for quality-assured culture and drug susceptibility testing;
- Establish effective linkages for continued technical assistance and quality assurance of culture and drug susceptibility testing including facilitation of transport of cultures within a regional network of national reference laboratories and designated supra-national reference laboratories;
- Promote and facilitate the undertaking of regular drug resistance surveillance (DRS) in higher burden countries particularly in settings where levels of drug resistance are reported to be high to monitor trends in MDR-TB;
- Disseminate guidelines, build capacity within countries to pilot interventions to diagnose and treat drug-resistant TB in selected settings and thereafter in rapidly scaling-up these interventions to reach all estimated culture-positive, MDR-TB cases, and
- Coordinate efforts to ensure adequate supplies of competitively priced quality second line anti-TB drugs.

**At the country level to:**

- Build capacity at national reference laboratories to undertake quality-assured culture and drug-susceptibility testing, also paying attention to infection control in laboratory settings;
• Undertake regular rounds of drug resistance surveillance: link with network of national laboratories and supranational reference laboratories, and
• Build capacity and secure resources to pilot and then implement interventions to treat drug-resistant TB under programme conditions in line with international recommendations.

3.3 Forging Partnerships to Ensure Equitable Access to an Essential Standard of Care to all TB Patients

Key expected result

Engagement of a wide range of partners including policy makers, development and technical partners at global, regional and national levels, public and private providers, nongovernmental organizations, and civil society to ensure equitable access to care to all TB patients.

Building partnerships at global and regional level with policy makers, development and technical partners

The Global Partnership to Stop TB today comprises over 300 institutions and individuals and is a result of a paradigm shift in global thinking on TB as being purely a concern for public health, to thinking of tuberculosis as a health concern with political, social and economic dimensions.

The partnership is also a result of a recognition that different partners, not all of whom are necessarily directly involved in health or TB control, bring different strengths to help overcome the multidimensional challenges posed by TB.

Countries in the South-East Asia Region, some with the highest burden of disease and the least ability to pay, are fortunate to have strong ties with several international development partners who provide financial and technical support.

Support from partners is especially needed to build and sustain international and domestic commitments including sustained financing to
support adequate technical, managerial and operational capacity. This is necessary to carry forward current activities and undertake additional interventions for TB control and effectively establish interventions to address HIV associated TB and DOTS-plus programmes to address MDR-TB under strengthened health systems. National TB control programmes in the region are currently supported by a number of national and international technical and development partners as shown in Figure 9.

Figure 9: Partnerships in action – major international donors and development partners in the SEA Region

The broad interventions proposed to engage and sustain a wide range of partnerships are:

**At the regional level to:**

- Promote exchange of information between partners at global, regional, and national levels through forums such as the annual global and regional meetings of programme managers, experts and technical agencies working on tuberculosis control and to advocate for greater commitment from potential and existing stakeholders and partners, within and outside the Region;
• Share the regional strategic plan and national five-year plans for TB control with various stakeholders and partners within and outside the Region in order to attract additional contributions from various partners;
• Coordinate exchange of information and technical expertise between partners and national programmes within the Region and with other regions, including the Western Pacific Region of WHO, and
• Enhance the involvement of regional centres of excellence to augment capacity, particularly in the areas of training, surveillance and research.

At country level to:
• Develop an evidence base and disseminate information on the burden of TB and the cost-effectiveness of interventions in the country;
• Actively participate in international and regional forums for exchange of information and partner engagement, and
• Coordinate all plans and activities including those supported by donor and development partners for optimal implementation of the programme.

Building partnerships with national policy makers, private and public health providers, in the delivery of an essential basic standard of care to all TB patients,

National TB programmes will need to liaise with other departments and ministries such as finance, health policy and planning, human resources, social welfare, maternal and child health and other disease control programmes in order to achieve the goal of strengthening TB control services within the overall context of strengthening health services as a whole.

There are special challenges involved in extending the reach of TB services to less cohesive and marginalized communities, in adjusting to the time constraints of TB patients especially in urban settings, and in addressing the stigma associated with TB. National TB control programmes therefore need to continue to engage a wide range of stakeholders both within the health sector and other sectors, to ensure that the distribution and coverage of DOTS is equitable across all geographic locations and reach various socio-economic groups.

At the level of implementation several initiatives have been taken by national TB programmes in countries to build partnerships with other sectors to widen the resource base, reach and utilization of DOTS. The initiatives to involve the private and unlinked public health sectors, NGOs, business and industry, medical schools and others have shown that these collaborations are indeed valuable for national TB control. These private and public partnerships for DOTS have helped to integrate the strengths of individual partners into national and local programmes, and enhance national capacities to deliver DOTS. The challenge now is to continue to effectively engage these partners while, at the same time, ensuring that
the quality of the implementation does not suffer as these partnership initiatives expand. It must be recognized that scaling up existing partnerships and engaging new partners will require adopting different approaches.

The evidence-based standards for TB care as articulated in the “International Standards for Tuberculosis Care” were launched in 2006. These describe a widely accepted level of care that all practitioners, public and private, should apply in dealing with patients with tuberculosis or with symptoms and signs suggestive of tuberculosis. These include the following specific actions: prompt and accurate diagnosis; use of standardized treatment regimens of proven accuracy; appropriate treatment support and supervision until cure; monitoring of the response to treatment, and essential public health responsibilities such as reporting on patients diagnosed and their treatment outcomes to national programmes.

NTPs will also need to work closely with other programmes and departments that provide health services to different population sub-groups. NTPs would need to increasingly collaborate very closely with HIV/AIDS, maternal and child health programmes, prison systems, metropolitan administrations and large employment sectors among others in order to extend TB services within these sectors. NTPs will need to be assisted by these partners including professional associations and academic bodies to develop and establish country-specific plans and operational guidelines so that patients presenting to any health care facility or provider will receive an essential standard of care through for TB.

In addition, it is essential to address the needs of the large numbers of legal and illegal migrants traversing the long and porous international borders between some countries in the Region. Among these migrants are displaced TB patients who need to be found and followed up until they are cured in order to reduce the transmission of TB in the Region.

The broad interventions proposed are:

**At the regional level to:**

- Advocate wider linkages between the NTPs, other ministries, departments and related programmes;
- Advocate and promote the development of national policy for wider inter-sectoral collaboration based on evidence of the value of these collaborations;
- Disseminate and promote the uptake of the International standards for TB care;
- Develop new and adapt available guidelines and training materials for the implementation and monitoring of public-public and public-private mix for DOTS (PPM DOTS) under programme conditions, and
- Promote cross-border collaboration for TB control through inter-country forums and regional associations such as SAARC and ASEAN and develop guidelines and training materials to operationalize cross-border TB control activities.

**At the country level to:**

- Establish national inter-agency coordination committees (ICCs) or equivalent bodies under the stewardship of ministries of health, with representation from all relevant sectors and
partners to provide direction for policies, planning and implementation of joint interventions;

- Adapt guidelines for implementation including mechanisms to jointly ensure quality of TB control activities through partnerships;
- Build capacity of all existing and potential care providers and partners involved or intending to be involved in TB control to effectively support national efforts, and
- Use regional forums e.g. SAARC and ASEAN to develop mechanisms for cross-border collaboration and coordination at national and sub-national levels.

**Informing, involving and empowering communities to effectively partner national TB control efforts**

*Each community’s problems are best understood by them and solutions therefore also lie with them.*

Experiences to date show that wherever implemented, community-based services where effectively supported by health care staff have resulted in improved awareness and greater utilization, leading to shorter delays in seeking care, improved case detection and treatment success rates. Community involvement and participation in TB control efforts are essential if traditional stigmas and misconceptions are to be overcome and self-referral on which case detection, and adherence to treatment on which treatment success depend, are to improve. In this context, the Patient’s Charter for Tuberculosis Care was developed to promote a patient-centred approach. It sets out the ways in which patients, communities, and health providers could work together to improving both the use and responsiveness of services.

Facility-based treatment at even the most basic health care facilities is difficult and expensive for patients when they have to travel long distances from their homes to health centres as is the case in many countries. Therefore, there is clearly a need to decentralize the provision of TB services beyond health facilities to communities to foster participation, patient support and to improve access. Scaling up services at the community level and greater community involvement and indeed active participation, in delivering DOTS services are also essential for future sustainability. Cost-effective community-based care models in a number of settings in the Region could be adapted for use elsewhere.

**Addressing gender differences in TB**

Attention will also need to be paid to addressing gender specific differences in TB epidemiology and barriers to effective care. In the Region as elsewhere in the world, the ratio of males to females with active TB shows a male predominance. Studies in the Region have shown that this reflects the epidemiology of disease rather than differential access to health care. However, a different picture is emerging in countries with a higher prevalence of HIV such as in Thailand and in parts of Indonesia.
where greater numbers of TB cases are being notified among young women aged between 15-24 years. The TB epidemic is beginning to show a change from being traditionally male dominated in these settings. It has therefore become important to monitor trends in the sex ratio among TB patients. In countries and areas with high HIV prevalence, steps to respond to the needs of the increasing numbers of female patients will include greater collaboration with services that cater primarily to women such as maternal and child health programmes and the involvement of women’s groups and organizations in TB care and prevention.

Ultimately, success will depend on effectively informing and then empowering both men and women to utilize existing services and then create a demand for additional and user-friendly services. This calls for sustained advocacy communication and social mobilization (ACSM) approaches to be established in countries. In this regard, mass media campaigns supported by point-of-service health education have much to offer, provided they are carefully tailored to bring about the appropriate behaviour change.

The broad interventions proposed are:

**At the regional level to:**

- Develop an advocacy and communications strategy and assist Member Countries in adopting and piloting appropriate ACSM methodologies and approaches through tools development, training, technical advice and information exchange;
- Support piloting and scaling-up DOTS in special settings such as in large urban areas, workplaces, and closed communities through social mobilization and ‘marketing’ approaches to create demand, enhance utilization and participation in delivering services;
- Promote strategies and develop guidelines to ensure equity in access and address the special needs of women with TB such as those relating to reproductive health;
- Assist countries in strengthening surveillance mechanisms to obtain disaggregated data that will reflect the sex ratio and differential access among different population groups, and
- Document and disseminate successful community-based approaches for wider replication including successful examples of community empowerment in ensuring equitable access to TB control services.

**At the country level to:**

- Develop and implement a national advocacy and communications strategy for nation-wide campaigns including the use of mass media and traditional point-of-service health education;
- Engage in social mobilization to increase community participation in creating a demand for and in delivering DOTS services utilizing community-based organizations including women’s groups, patients on treatment or cured patients;
- Adapt and replicate successful examples of community involvement and empowerment;
- Collect and compile disaggregated data that will reflect the sex ratio and differential access among different population groups;
• Support operational research to assess gender-specific barriers to accessing services and in improving user-friendly and community-based approaches to provision of DOTS services, and

• Involve all stakeholders in planning, implementing, obtaining resources for and monitoring community-based approaches for better TB control.

### Reaching the poor and vulnerable

The South-East Asia Region is home to a disproportionately large number of the world’s poorest. The Region also carries the highest burden of tuberculosis.

There is a growing body of evidence from the Region that shows that TB further vitiates poverty through unemployment, the need to adopt poor coping strategies such as reduction in food intake, withdrawal of children from school, and social deprivation further reducing access to basic needs including health care. While addressing the adverse social and economic determinants of health will gradually lead to reduction in tuberculosis incidence, the increased availability of quality TB control services would more immediately and substantially contribute to both reduction in the incidence of TB and poverty.

Reaching specific population groups such as slum dwellers, the urban poor, internal migrants and prisoners will need special strategies. A wide range of care providers based in communities and other government ministries and departments will need to be targeted including the informal sector which is often utilized by the poor and marginalized. Referral and proper information systems to allow for the movement of patients between different geographical areas will need the involvement of communication and information management experts as well as NGOs and community-based organizations.

In addition, political unrest, wars and natural disasters which cause large uncontrolled and unexpected population movements result in a breakdown of services and social support networks which add to poverty and increase vulnerability. TB programmes need to link with emergency and humanitarian action programmes to determine rapid response interventions to restore TB service in these situations.

Recognizing the need to break this strong link between TB, poverty and social deprivation, the broad interventions proposed are:

### At the regional level to:

• Advocate for the inclusion of TB under national poverty reduction strategies and plans, such as poverty reduction strategy papers (PRSPs);

• Assist with establishing the profile of poor and vulnerable groups among TB patients and assess the barriers to access to health care services;

• Promote adaptations already made in delivering TB services to serve the poor and vulnerable including among marginalized communities, urban slums and prison populations;

• Assist countries in evaluating and disseminating information on the impact of TB control on poverty alleviation;

• Assist countries in obtaining resources for TB services among population groups requiring special consideration through international initiatives such as the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM);
• Promote strategies to ensure equity in access to TB services among the poor especially in urban and remote areas, and marginalized population sub-groups, and
• Assist countries in rapidly responding to emergency situations which disrupt services.

At the country level to:
• Include TB control services under poverty reduction plans for overall health and development;
• Link with community-based groups, other ministries and departments to mobilize human and other resources required for ensuring and monitoring equity in access to all;
• Promote community-based TB care addressing barriers by engaging TB support groups and patients and consider patient enablers to promote equity;
• Conduct surveys on socio-economic variables and poverty-related disparities among TB patients; ensuring that TB-related questions are included in national health and household surveys and socio-economic questions in TB prevalence surveys, and
• Conduct operational research linking care-seeking diagnostic delays and unfavourable outcomes with socio-economic data.

3.4 Contributing to Health Systems Strengthening

Key expected results

Strengthened health systems for equitable access to quality health care, including for TB, through the development of human and other key resources, improved service provision, financing, stewardship and responsiveness.

Many of the constraints to effective implementation of the TB control services relate to underlying weaknesses and under-financing of national health systems in general, many of which are already overstretched in terms of both infrastructure and staffing. Strengthening TB services will necessarily require investing in health systems since successful TB control strategies rely on well-functioning primary health care systems. However, many of the challenges in health systems strengthening are beyond the influence of TB control programmes alone. They relate to fiscal issues for expanding resources for the health sector, building development, planning and budgetary frameworks that prioritize poverty reduction and development objectives, civil service structures, reforms and decentralization policies. In these fields, NTPs and partners can contribute through documenting the public health impacts of failure to improve systems, financing and human resource development frameworks. They can also proactively engage with partners including donor agencies that can influence decisions in some of these areas to promote effective sector-wide planning and policies.

Contributing to policy, planning, priority setting, financing and ensuring complementarity of action

A few Member Countries in the Region have put into place health sector reforms in order to develop effective and equitable health services to achieve favourable health outcomes, including for TB.
These health sector reforms present both threats and opportunities for national TB control programmes.

On the one hand, reductions in personnel and budgets specific for TB services, cost sharing, integrated drug and supply procurement and management, integrated data and health information management systems have had adverse effects on ensuring sufficient numbers of skilled staff for TB services at various levels, ensuring uninterrupted drug supplies, supervision, monitoring and reporting mechanisms. On the other hand, these reforms provide for an expanded network, increased capacity for providing DOTS services closer to communities, strengthening linkages with related programmes, adapting effective approaches used by various other health programmes, all leading to greater sustainability in the longer term. It is critical that TB services are effectively positioned and streamlined within basic health care services during the process of health systems development, in order to optimize both the implementation of TB control services and the contribution of TB services to strengthening health services as a whole. NTPs will necessarily need to join forces with other programmes and stakeholders involved in health systems development to strengthen human resources, increase health financing and improve health systems management.

This calls for action at global, national and local levels.

At the global level, this will involve working with several partners looking at commonalities between TB and other priority programmes towards reaching the MDGs such as health systems financing innovations, comprehensive human resource development, poverty reduction strategies, service reforms, common fiduciary arrangements, budgetary support approaches such as franchising, health insurance, etc. It would also involve engaging NGOs and academic partners in looking at health systems management to develop and implement best practices.

At the national level, this will involve engaging other government ministries and departments, health and non-health related providers and sectors and civil society through broadened advocacy and social mobilization across multiple health fields including TB, rather than pursuing solely single issue agendas. Efforts will need to focus also on ensuring that TB control contributes to sector-wide planning frameworks, poverty reduction strategies and opportunities for sharing successful approaches in building core public health functions.

At the local level, TB-specific programme management approaches and human resource development will add to the competence of the existing health systems. The skills to follow guidelines and use standardized care referral, recording, reporting and quality assurance mechanisms, attention to ensuring infrastructure, equipment, drugs ahead of commencing implementation and building local capacity for supervision and monitoring, will contribute to the overall package of the improved health systems.

The broad interventions proposed are:

**At the regional level:**

- Engage with a wide range of partners and stakeholders who can help facilitate implementation of policy and legislation, share best practices in building core public health...
functions, effective financing schemes, service delivery strategies, sector-wide planning frameworks, medium-term expenditure frameworks (MTEFs), and poverty reduction strategies;

- Devise together with partners, common responses to challenges and opportunities associated with civil service reform, decentralization, civil society engagement and accountability;
- Help minimize parallel administrative, reporting and monitoring systems through effective coordination with donors and development partners;
- Disseminate and promote the enforcement of clear quality standards (such as the International Standards for TB care) during health sector reform processes, and
- Promote and assist with developing broader approaches across multiple health fields including TB, to engage with a wider range of providers and stakeholders.

At the country level:

- Include TB control in sector-wide planning frameworks, poverty reduction strategies and opportunities for sharing successful approaches in building core public health functions;
- Ensure mainstreaming and effective integration of TB services within basic health care services, while simultaneously ensuring that quality of implementation is not compromised during health sector reforms;
- Ensure that accountability for TB service delivery by all partners is to the Ministry of Health and to clients;
- Harmonize and better coordinate external technical assistance for TB with other technical assistance;
- Integrate and harmonize TB management, human resource development and supervision structures within general health systems operations and managerial structures, and
- Broaden advocacy and social mobilization efforts across multiple health fields.

Securing and sustaining adequate financial, technical and operational resources for improved delivery of TB services and overall health systems functioning

Ensuring adequate financing

Sustained and predictable funding is critical for the proper planning and implementation of interventions to combat a long-haul disease such as TB.

There are numerous collaborative efforts on innovative health systems financing such as PRSP/PRSCs, budgetary support approaches such as contracting and franchising models, aimed at achieving better overall health outcomes from all available funding sources. Issues that are of common concern across several sectors relate to fiscal space concerns, decentralized budgeting and management capacity, and MTEFs. These are all relevant to improving financing for TB control and must therefore be paid due attention by those planning and managing national TB control programmes.
A majority of financing agencies in global health today are supportive of increasing funding for health systems strengthening, as well as continuing support for specific priority diseases. Greater efforts are required to harmonize and align financing streams, funding strategies and approaches, to ensure less short-term volatility in funding flows and to ensure better use of funds.

In the short term, financial resources for TB control in the Region have been augmented and the overall resource gap for TB control programmes, provided all commitments are realized, are now estimated to be less than 10%. These include commitments from the GFATM in nine countries and considerable contributions through bilateral agreements concluded between donors and development partners and several Member States in the Region.

The overall requirements for implementation of TB control services in the Region is estimated in excess of US$ 500 million/year. Current estimates will change as added costs for new interventions are accounted for under national TB control plans developed for activities to be undertaken beyond 2006. One of the challenges will be to maintain and gradually increase contributions from national health budgets, both for the operational costs as well as for anti-TB drugs and supplies over the years. Contingency funds will also be required to fulfill unforeseen requirements such as disaster management.

The broad interventions proposed to augment and sustain funding for TB control efforts in the Region are:

**At the regional level to:**

- Assist countries in developing medium- and long-term costed plans of action within the context of national health plans;
- Determine actual resource requirements over the next five- and ten-year periods to fully fund existing and future interventions for TB control;
- Link with the regional resource mobilization efforts and develop a resource mobilization action plan supported by a strong advocacy, communication and media strategy in line with the regional strategy and resource requirements at country and regional levels;
- Assist countries in mobilizing resources through existing and potential bilateral and international funding initiatives for overall strengthening of primary health care delivery including TB services, in the medium and longer term;
- Advocate with ministries of health and finance for improved funding for priority public health programmes including TB, and address TB control as part of poverty reduction processes such as PRSPs and initiatives such as the Highly Indebted Poor Countries (HIPC) Initiative;
- Promote health systems financing innovations of relevance in countries of the Region, and
- Engage with key agencies and high net-worth individuals and institutions especially those with the potential to influence policy at key economic/policy forums.
At the country level to:

- Include TB control under priority health programmes at national level and as part of PRSP and HPIC initiatives;
- Prepare comprehensive and realistically budgeted medium (5-year) and longer-term (over 10 years) plans for TB control, in line with health master plans;
- Advocate with local governments to ensure adequate funding for TB control at intermediate (regional or provincial) and peripheral levels (district and sub-district) under decentralized health systems;
- Develop long-term resource mobilization plans supported by a good advocacy and communication strategies and plans to mobilize and sustain both external and domestic, public and private funding, and
- Coordinate external financial assistance for health system strengthening (HSS) and TB with relevant national and international health partners.

Human resource development

Primary health care systems in many countries are overstretched in terms of skilled staffing and infrastructure. In Member Countries instituting health reforms, the transition to decentralized systems or sector-wide approaches has been difficult and prolonged, due to limited management and technical capacity at national and sub-national levels.

Improving human resource capacity is therefore one of the persistent challenges faced by the Region. Excellent examples of human resource development which have made a significant contribution to effective decentralization are also available in the Region. Human resources (HR) refers not only to the numbers of staff, but to their distribution, capacity and competence to effectively undertake multiple tasks at various levels of the health system and in responding to new needs. Human resource development (HRD) must also be reviewed in the larger perspective of national health care delivery systems rather than specific TB control services alone. National TB control programmes in the Region have uniformly identified the lack of an adequately skilled work-force as one of the major constraints to DOTS implementation. There has been a lack of attention to overall HR development including a systematic approach to addressing the loss of skilled staff due to staff turnover, or to more attractive placements in other sectors or abroad. Continued attention to upgrading training materials and repeated trainings are essential to ensure that the existing workforce remains competent to implement TB control activities in an increasingly complex environment. This will also require increasing managerial capacity to handle a wider variety and number of training programmes for staff at more peripheral levels.

In addition, HRD has, in general, not included updated pre-service training of medical and paramedical undergraduates by including training on the principles and the practices of NTPs in the curricula of medical and paramedical and nursing schools.

The broad interventions proposed to build and ensure technical and managerial capacity are:

At the regional level to:

- Assist countries in undertaking needs assessments of the levels of staffing, distribution and skills mix required at various levels;
• Collaborate with governments, external development partners and technical agencies in developing/revising and supporting comprehensive national plans for human resource development including training and staffing;

• Organize regional group educational activities including training courses, fellowship programmes and participation in global workshops to continue to strengthen skills and competencies of central level staff in countries;

• Develop and adapt tools and guidelines for all aspects of HRD to facilitate capacity building at country level;

• Sustain and increase the level of in-country technical assistance through Intensified Support and Action in Countries (ISAC) and similar initiatives, especially in priority countries, and

• Assist with capacity building in identified priority areas and new needs at the national level e.g social mobilization, advocacy, planning, management of human resources, MDR-TB and TB/HIV.

At the country level to:

• Develop/update and implement comprehensive HRD plans for TB control at central and peripheral levels to ensure adequate staffing and strengthen training to address current and new needs in both the public and the private sectors;

• Establish collaboration between relevant ministries (health, planning, education) to address the human resource development needs of the health system in general and TB control in particular;

• Develop management structures and mechanisms for HR planning and development to address programme requirements and career/employment opportunities for public health staff in the context of health systems development as a whole, and

• Ensure inclusion of the DOTS strategy in the training curricula of medical and paramedical and nursing schools and into the agenda of continuing medical education programmes.

Health infrastructure

Inadequate health infrastructure in many countries is today hampering the delivery of essential basic health care services including TB services. Scaling-up implementation of TB services to achieve full access for all TB patients will require additional investment in basic health infrastructure (which do not appear in NTPs specific budgets).

National TB programmes and relevant departments within the ministries of health concerned with achieving global TB targets and other health targets under the MDGs must therefore coordinate with other departments and ministries such as planning and finance responsible for organizing and supporting basic health care services, in order to ensure that necessary investments in basic health infrastructure are made. Only then can priority programmes including TB control be effectively carried out through public health care networks.

The broad interventions proposed are:

At the regional level:

• Assist in mobilizing funding for building necessary infrastructure for implementation and in restructuring of basic logistics and quality control systems for all essential health services in Member Countries;
• Harmonize quality standards for TB with general health system quality standards, and
• Coordinate and harmonize through dialogue with technical agencies, external technical assistance for Health Systems Strengthening (HSS) including for TB.

At the country level:
• Coordinate necessary investments in basic health infrastructure with other departments and ministries such as planning and finance responsible for organizing and supporting basic health care services;
• Develop efficient national procurement, distribution and stock management and supply systems, and
• Engage in general efforts to improve the physical infrastructure of primary public health facilities including transport and ensure adequate resources for maintaining and running these.

Adapting innovations in TB control to strengthen health services and approaches from other programmes to strengthen TB services under integrated health systems

The core components of the DOTS strategy have much to contribute to strengthening health systems. Areas where TB control programmes can contribute and complement health system strengthening are broadly through transferring the experience in:

• Policy and strategy development, planning and phased systematic implementation to ensure improved organization, management and supervision of services;
• Human resource development: improving technical and managerial skills and coordination among health staff for services at different levels within the health system;
• Strengthening laboratory networks: to establish quality-assured laboratory networks for key communicable disease control programmes;
• Procurement and supply systems: for timely procurement and uninterrupted supplies of high quality drugs and consumables at different levels of health services through integrated systems;
• Patient support: building capacity of frontline workers and community providers to share essential health tasks such as patient outreach for supervised and supported treatment;
• Health information systems for improved disease surveillance, standardized recording and reporting;
• Harnessing public and private partnerships: through policies, strategies and operational guidelines for implementation of a uniform standard of care through all providers including private practitioners, NGOs, medical schools, business and industry, through PPM DOTS;
• Involving communities: through volunteers and self-help groups such as women’s groups to improve community awareness and outreach for diagnosis and treatment, and

• Sharing pragmatic examples of how to establish national partnerships with a wide range of stakeholders for enhanced commitment and resources.

In this context, the practical approach to lung health (PAL) which is a strategy for integrated management for all respiratory conditions in patients aged over five years of age is a cost-effective approach to improve the diagnosis and management of TB within primary health care systems. PAL comprises of two major components: i) standardization of clinical care procedures through the development and implementation of clinical practice guidelines and ii) coordination between health care levels within the district health system as well as among various players such as human resource development planners, HIV/AIDS programmes, essential drugs departments, health management information units and others. The PAL approach could be considered in high HIV burden countries to improve the identification of TB among PLWHA who have respiratory symptoms. PAL should also be considered in countries with intermediate or low TB prevalence where TB may not be considered a health priority, in order to improve and strengthen TB control services within integrated primary health and or respiratory care services.

Further integration of TB control activities within the community and primary care outreach interventions pursued in maternal and child health programmes, adoption of social mobilization approaches of HIV/AIDS programmes, regulatory actions used by tobacco control and financing initiatives to reach the poorest developed by immunization services will help to further enhance TB control services in the overall context of improved health systems.

The broad interventions proposed are:

**At the regional level to:**

• Promote health systems strengthening including delivery of TB control services through policies for comprehensive human resource development, effective procurement and supply management, accountability and patient and community-centred approaches;

• Assist in adapting innovative initiatives such as PPM DOTS and conversely, adaptation of innovations from other programmes such as advocacy and communications and continuum of care approaches developed by HIV/AIDS programmes to advance common goals;

• Assist in assessing the impact of the health sector reform process and the contribution of TB control in Member Countries in the Region;

• Support countries in providing TB services under comprehensive approaches such as PAL, where appropriate, and

• Promote operational research to improve the delivery of all services including TB services in the context of health sector development.

**At the country level to:**

• Build on the strong human resource development, procurement and supplies systems, patient support, and surveillance components of TB control programmes to strengthen overall health service delivery;

• Ensure the prioritization of TB control under national health and development plans and sector-wide approaches;
• Strengthen TB and primary health care services through training, ensuring appropriate
distribution and remuneration of health staff, mobilizing additional financial resources for
implementation, and investing in health infrastructure common to several programmes;

• Coordinate with other national disease control programmes, relevant departments within
the Ministry of Health and related ministries, and with other sectors to ensure the provision
of TB services through a full range of health care providers; ensure that the fundamental
components of DOTS are retained during the process of health sector reform;

• Adopt innovative TB initiatives such as PPM DOTS to advance HIV care and treatment
and conversely, adapt innovations from other programmes such as advocacy and
communications and continuum of care approaches developed by HIV/AIDS programmes,
and

• Assess the impact of health sector reform and undertake operational research including
cost analyses studies to improve the delivery of primary services including TB under general
health care systems.
WHO Support in the Region

The Corporate Strategy of WHO

- Articulating consistent, ethical and evidence-based policy and advocacy positions;
- Managing information, assessing trends and comparing performance of health systems; setting the agenda for and stimulating research and development;
- Catalyzing change through technical and policy support, in ways that stimulate action and help to build sustainable national capacity in the health sector;
- Negotiating and sustaining national and regional partnerships;
- Setting, validating, monitoring proper implementation of norms and standards;
- Stimulating the development and testing of new technologies, tools and guidelines for disease control, risk reduction, health care management and service delivery.

The WHO regional and country offices will continue to assist Member Countries in achieving TB control targets through policy and strategy development, assistance with planning, coordination, information exchange, implementation and monitoring, human resource development, resource mobilization and operational research. The support provided by long-term international staff placed at the WHO country offices and the network of National Professional Officers and National Consultants working at the field level in countries will continue. This technical support is expected to be further augmented under the ISAC (Intensified Support and Action for Countries) initiative launched in 2004. The establishment of mechanisms for collaboration between WHO country offices also allows for staff to assist national programmes in neighbouring countries. In the endeavour to support countries to achieve successful collaboration, WHO regional and country offices will work closely with other stakeholders for better implementation of inter-country and country activities.

The work of WHO Regional Office for South-East Asia and its country offices will be to continue to assist and support Member countries in undertaking a wide range of TB control interventions towards reaching set targets through:

1. **Advocacy**: for greater commitment and resources for TB control through global and regional forums such as SAARC and ASEAN, and with national governments;
2. **Policy and strategy development**: for better implementation of TB control: community TB care approaches, TB/HIV integration, involvement of private practitioners, management of drug-resistant patients and translating outcomes from successful operational research pilot projects into policy;
3. **Development of norms and guidelines**: adapting internationally recommended guidelines to region- and country-specific situations;
4. **Laboratory support**: training, technical support for strengthening laboratory capacity, quality assurance, linkages to supra-national reference laboratories;
(5) **Drug procurement, and supply management**: facilitating competitive procurements or grants in kind through the Global Drug Facility (GDF), and training on effective procurement and in-country supply management;

(6) **Surveillance and monitoring**: assisting countries with TB, TB/HIV and drug-resistance surveillance and publishing regular surveillance reports;

(7) **Technical assistance**: providing in-country technical support for HRD, strengthening national laboratory networks, implementation of TB control activities, and improved surveillance and monitoring;

(8) **Capacity building**: preparing training materials and undertaking intercountry and national-level trainings for national and district level staff to build technical and managerial capacity for programme implementation;

(9) **Planning**: assisting countries with developing medium- and long-term realistically budgeted national TB control plans;

(10) **Information exchange**: through regional meetings, publications, exchange visits and electronically through the regional websites;

(11) **Support for research**: for pilot testing and evaluating new interventions including projects supported by TDR: development of new diagnostics, drugs and vaccines;

(12) **Building partnerships** at regional and national levels with technical and development partners, and

(13) **Resource mobilization**: assisting countries with developing proposals for submission to donors/development partners to mobilize additional external resources.

The WHO country offices collaborate directly with national Ministries of Health. They also facilitate cooperation from external donors and provide sustained in-country technical assistance. Staffing at WHO country offices varies according to the resources available and priorities set by Member countries.

In addition to WHO international staff, national professional officers (NPOs) have a substantial role in supporting national TB programmes. They are local professionals financed, trained and guided by WHO international staff, who work closely with the national staff as supervisors and trainers, mainly at intermediate management level. They are key to ensuring programme quality and supervision, an area difficult to cover for national programmes due to the requirement for frequent travel. NPOs are currently working in Bangladesh, DPR Korea, India, Indonesia, Myanmar, Sri Lanka and Timor-Leste.

Several countries place young professionals within WHO to acquire experience and provide support to WHO activities at country, regional or headquarters level. These Associate or Junior Professional Officers (APOs/JPOs) work directly under the supervision of experienced WHO staff, particularly at country level. Some of them later become regular WHO staff. At present, there are APOs working on TB in Indonesia and Myanmar.

**Some examples of initial catalytic work supported by the SEA Regional Office and country offices together with partner organizations and institutions, which have since been translated into national policy and operationalized under programme conditions are:**

- Introducing the Practical Approach to Lung Health (PAL): developing generic care guidelines and training tools for intermediate and peripheral health services on the management of priority respiratory diseases including TB, among adults;
• Promoting TB/HIV activities: developing models of effective prevention, control, care and treatment of HIV-related TB in countries with higher HIV prevalence;

• Disseminating community care approaches: models of effective community contribution to the care of patients of TB and other infectious diseases, and scaling up of successful interventions in selected countries;

• Introducing the public-private mix for DOTS: assessments of private sector involvement in care/control of TB and other infectious diseases; and testing of schemes to involve private practitioners in pilot projects;

• Piloting DOTS-Plus for the management of MDR-TB: coordinating operational research efforts by partners to identify programmatic interventions for effective case management of MDR-TB within the DOTS strategy;

• Involving medical schools in national TB control efforts: through pilot DOTS centres in medical schools, consensus on inclusion of training on the principles of DOTS in medical and para-medical undergraduate and post-graduate core curriculum;

• Establishing TB control in special settings: generic protocols, pilot projects for TB control in workplaces, prisons and closed communities, engagement of business and industry, and

• Studies on gender and TB: developing a strategic paper on gender and TB control, and guidance for implementation of generic protocols to study gender-specific issues.

**Coordination and Collaboration**

The Regional Technical Advisory Group on TB, comprising of experts in the field of tuberculosis, programme staff, WHO and partner agencies in the Region, will continue to advise on strategic approaches and interventions for TB control in the Region.

The annual meetings of the NTP Managers will continue to be held regularly to review progress, exchange experiences and jointly plan interventions and innovative approaches based on country experiences for better TB control in the Region.

The designated WHO Collaborating Centres and supra-national reference laboratories in the Region will continue to support national programmes in sustaining the quality of implementation of services including laboratory services through capacity building, monitoring and the development of newer approaches and interventions through operations research.

In addition, the technical unit at the Regional and country offices of WHO will continue to collaborate with several international governmental and nongovernmental agencies within and outside the Region and with other technical units within WHO which focus on integrated disease control, laboratory services and quality assurances, communicable disease surveillance and response, health promotion and research among others to promote and provide intensified support for TB control in the Region.

In order to continue to provide and further intensify technical support to national TB control programmes in the Region, WHO needs to maintain core staff at the Regional and Country levels. Table 1 shows the full complement of staffing required at the Regional and Country levels, while Table 2 shows the costs towards supporting the Regional and country office functions during 2006-2007.
Table 1: \textit{WHO TB programme staff in the Region}

<table>
<thead>
<tr>
<th>WHO Office</th>
<th>MO(TB)$^a$</th>
<th>NPO/APO (TB)</th>
<th>MO/NPO (CDS)$^a$</th>
<th>SSAs and Consultants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>1</td>
<td>1</td>
<td>–</td>
<td>12</td>
</tr>
<tr>
<td>DPR Korea</td>
<td>–</td>
<td>1</td>
<td>1</td>
<td>–</td>
</tr>
<tr>
<td>India</td>
<td>2</td>
<td>2</td>
<td>–</td>
<td>&gt; 140</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2</td>
<td>1</td>
<td>–</td>
<td>10</td>
</tr>
<tr>
<td>Myanmar</td>
<td>1</td>
<td>–</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Nepal</td>
<td>1</td>
<td>–</td>
<td>–</td>
<td>5</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>1</td>
<td>–</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Thailand</td>
<td>1</td>
<td>–</td>
<td>1</td>
<td>–</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>–</td>
<td>–</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>SEARO</td>
<td>2</td>
<td>1</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>5</strong></td>
<td><strong>5</strong></td>
<td><strong>&gt;175</strong></td>
</tr>
</tbody>
</table>

$^a$ including short-term professionals, associate professional officers and technical officers seconded to WHO.
Table 2: *WHO workplan 2006-2007, budget lines for various programme components (US$)*

<table>
<thead>
<tr>
<th>Component</th>
<th>Bangladesh</th>
<th>Bhutan</th>
<th>DPR Korea</th>
<th>India</th>
<th>Indonesia</th>
<th>Maldives</th>
<th>Myanmar</th>
<th>Nepal</th>
<th>Sri Lanka</th>
<th>Thailand *</th>
<th>Timor-Leste</th>
<th>SEARO</th>
<th>Total Region</th>
</tr>
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<tbody>
<tr>
<td>Technical support to NTPs</td>
<td>764,000</td>
<td>0</td>
<td>81,000</td>
<td>9,273,500</td>
<td>1,604,000</td>
<td>0</td>
<td>1,172,800</td>
<td>540,000</td>
<td>17,000</td>
<td>–</td>
<td>26,000</td>
<td>1,989,500</td>
<td>15,467,800</td>
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<tr>
<td>Information exchange, coordination and collaboration</td>
<td>46,000</td>
<td>2,000</td>
<td>50,000</td>
<td>235,000</td>
<td>85,000</td>
<td>4,000</td>
<td>40,000</td>
<td>16,000</td>
<td>22,000</td>
<td>–</td>
<td>20,000</td>
<td>533,500</td>
<td>1,073,500</td>
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<tr>
<td>Advocacy, partnership building, resource mobilization</td>
<td>47,300</td>
<td>0</td>
<td>57,000</td>
<td>210,000</td>
<td>230,000</td>
<td>4,000</td>
<td>22,200</td>
<td>4,000</td>
<td>10,000</td>
<td>–</td>
<td>20,000</td>
<td>297,000</td>
<td>901,500</td>
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<tr>
<td>Capacity building, tools development and laboratory support</td>
<td>236,800</td>
<td>14,000</td>
<td>183,000</td>
<td>435,000</td>
<td>575,000</td>
<td>52,000</td>
<td>78,000</td>
<td>23,100</td>
<td>41,000</td>
<td>–</td>
<td>10,000</td>
<td>310,000</td>
<td>1,957,900</td>
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<tr>
<td>Surveillance &amp; monitoring</td>
<td>162,075</td>
<td>4,000</td>
<td>57,000</td>
<td>1,598,000</td>
<td>1,035,000</td>
<td>3,000</td>
<td>146,910</td>
<td>70,400</td>
<td>0</td>
<td>–</td>
<td>15,000</td>
<td>498,000</td>
<td>3,589,385</td>
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<tr>
<td>Miscellaneous</td>
<td>118,500</td>
<td>3,000</td>
<td>217,500</td>
<td>2,005,000</td>
<td>173,000</td>
<td>15,000</td>
<td>186,800</td>
<td>9,000</td>
<td>0</td>
<td>–</td>
<td>5,000</td>
<td>62,000</td>
<td>2,794,800</td>
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<tr>
<td><strong>Total budget required</strong></td>
<td><strong>1,374,675</strong></td>
<td><strong>23,000</strong></td>
<td><strong>645,500</strong></td>
<td><strong>13,756,500</strong></td>
<td><strong>3,702,000</strong></td>
<td><strong>78,000</strong></td>
<td><strong>1,646,710</strong></td>
<td><strong>662,500</strong></td>
<td><strong>90,000</strong></td>
<td>–</td>
<td><strong>96,000</strong></td>
<td><strong>3,710,000</strong></td>
<td><strong>25,784,885</strong></td>
</tr>
</tbody>
</table>

* The WHO country budget for Thailand is integrated and thus not include a specific TB budget line.
Cost of Planned TB Control Activities in the Region, 2006-2015

Tables 3 and 4 show the total estimated cost for all planned TB control activities in the Member Countries of the South-East Asia Region during 2006-2015. This includes the costs for technical assistance to national programmes as well as the operational costs of delivering all planned interventions in Member Countries during the period.

| Summary of Major Activities and Milestones to be Reached by 2015 |
|---------------------|-----------------|-----------------|-----------------|
|                     | 2005                     | 2010                     | 2015                     |
| DOTS coverage*      | All 11 Member countries achieve full coverage. | Full DOTS coverage. |                     |
| DOTS quality improvement | Considerable investments and achievements, especially in SEAR HBCs. | Completed in all Member countries. |                     |
| PPM DOTS            | Pilot-tested in a few Member countries; scale-up in a few high-burden and other countries. | Scale-up completed in most Member countries. | Scale-up completed throughout the Region. |
| Community DOTS      | Used in a number of Member countries. | Full scale-up. | Scale-up completed in all 11 Member countries. |
| PAL                 | Progress in one Member country. | Scale-up started in selected countries. | Scale-up completed in selected Member countries. |
| Culture and DST facilities | Very limited facilities available. | At least 50% of the population in all member countries live in areas with culture and DST services. | Scale-up completed in all Member countries. |
| DOTS-Plus           | Three GLC-approved DOTS-Plus projects. | GLC-approved DOTS-Plus projects for the management of drug-resistant TB in all Member countries; scaling up under national programmes in four Member countries. | All detected MDR cases treated with quality-assured drugs in all 11 Member countries. |
| TB/HIV collaborative activities | Member countries with high prevalence of HIV-associated TB scaling up collaborative TB/HIV activities. | Full scale-up completed in countries with highest prevalence of HIV-associated TB. | Full scale-up in all relevant settings (i.e. where adult HIV prevalence >1% in general population or >5% among TB patients). |

* The population covered refer to the number of people living in areas where the approaches have been implemented.
### Table 3: National TB Control Programme budgets in Member countries per programme component, 2006-2010 (in US$)

<table>
<thead>
<tr>
<th>Component</th>
<th>Bangladesh</th>
<th>Bhutan</th>
<th>DPR Korea</th>
<th>India</th>
<th>Indonesia</th>
<th>Maldives</th>
<th>Myanmar</th>
<th>Nepal</th>
<th>Sri Lanka</th>
<th>Thailand*</th>
<th>Timor-Leste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff</td>
<td>15,495,305</td>
<td>14,135,000</td>
<td>74,903,284</td>
<td>72,631,150</td>
<td>17,346,573</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>650,469</td>
</tr>
<tr>
<td>Training</td>
<td>3,544,050</td>
<td>378,018</td>
<td>677,800</td>
<td>11,286,679</td>
<td>35,061,792</td>
<td>30,000</td>
<td>6,178,943</td>
<td>1,184,918</td>
<td>1,226,380</td>
<td>253,208</td>
<td></td>
</tr>
<tr>
<td>External technical support</td>
<td>1,108,470</td>
<td>62,200</td>
<td>65,000</td>
<td>25,593,377</td>
<td>10,000</td>
<td>1,461,163</td>
<td>1,226,380</td>
<td>245,730</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planning and administration</td>
<td>5,117,499</td>
<td>14,400</td>
<td>300,000</td>
<td>46,196,046</td>
<td>9,577,939</td>
<td>10,000</td>
<td>7,423,374</td>
<td>765,889</td>
<td>854,500</td>
<td>137,878</td>
<td></td>
</tr>
<tr>
<td>Infrastructure, supplies and equipment</td>
<td>9,684,690</td>
<td>20,200</td>
<td>5,241,240</td>
<td>4,973,646</td>
<td>8,697,339</td>
<td>20,000</td>
<td>4,252,817</td>
<td>1,893,511</td>
<td>1,269,000</td>
<td>538,034</td>
<td></td>
</tr>
<tr>
<td>Drugs</td>
<td>29,232,957</td>
<td>75,000</td>
<td>3,660,000</td>
<td>86,360,586</td>
<td>57,393,168</td>
<td>15,000</td>
<td>8,860,660</td>
<td>5,133,328</td>
<td>946,000</td>
<td>518,337</td>
<td></td>
</tr>
<tr>
<td>Supervision, monitoring and evaluation</td>
<td>3,226,295</td>
<td>285,193</td>
<td>1,026,500</td>
<td>17,898,302</td>
<td>13,102,881</td>
<td>15,000</td>
<td>10,278,407</td>
<td>2,607,691</td>
<td>1,168,284</td>
<td>94,596</td>
<td></td>
</tr>
<tr>
<td>Advocacy, Communication, Social Mobilization</td>
<td>1,574,615</td>
<td>95,528</td>
<td>33,000</td>
<td>39,413,801</td>
<td>21,847,189</td>
<td>14,000</td>
<td>1,874,000</td>
<td>1,691,510</td>
<td>1,804,500</td>
<td>118,700</td>
<td></td>
</tr>
<tr>
<td>Research</td>
<td>1,180,961</td>
<td>3,000</td>
<td>3,267,421</td>
<td>5,973,452</td>
<td>1,060,000</td>
<td>224,632</td>
<td>254,500</td>
<td>2,590</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other/contingencies</td>
<td>13,306</td>
<td>3,386,857</td>
<td>62,962,375</td>
<td>6,512,808</td>
<td>64,421</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>70,164,842</td>
<td>946,845</td>
<td>25,138,540</td>
<td>313,280,000</td>
<td>287,247,285</td>
<td>114,000</td>
<td>63,787,582</td>
<td>15,027,063</td>
<td>7,523,164</td>
<td>8,547,125</td>
<td>2,645,931</td>
</tr>
</tbody>
</table>

*Sub-programme budget lines not identified*
Table 4: **National TB Control Programme budgets in Member countries per year (2006-10) and funding gap (2006-07) (in US$)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>13,558,257</td>
<td>12,688,622</td>
<td>13,011,480</td>
<td>15,592,344</td>
<td>15,314,139</td>
<td>70,164,842</td>
<td>0</td>
</tr>
<tr>
<td>Bhutan</td>
<td>253,115</td>
<td>231,037</td>
<td>108,992</td>
<td>138,701</td>
<td>215,000</td>
<td>946,845</td>
<td>0</td>
</tr>
<tr>
<td>DPR Korea</td>
<td>5,100,980</td>
<td>5,808,740</td>
<td>5,451,040</td>
<td>4,392,240</td>
<td>4,385,540</td>
<td>25,138,540</td>
<td>3,800,000</td>
</tr>
<tr>
<td>India</td>
<td>65,540,000</td>
<td>70,550,000</td>
<td>68,860,000</td>
<td>64,390,000</td>
<td>43,940,000</td>
<td>313,280,000</td>
<td>0</td>
</tr>
<tr>
<td>Indonesia</td>
<td>57,090,000</td>
<td>59,080,000</td>
<td>56,744,339</td>
<td>57,612,432</td>
<td>56,720,515</td>
<td>287,247,285</td>
<td>0</td>
</tr>
<tr>
<td>Maldives</td>
<td>66,500</td>
<td>11,500</td>
<td>12,000</td>
<td>12,000</td>
<td>12,000</td>
<td>114,000</td>
<td>0</td>
</tr>
<tr>
<td>Myanmar</td>
<td>12,677,694</td>
<td>13,119,603</td>
<td>12,600,934</td>
<td>12,793,707</td>
<td>12,595,644</td>
<td>63,787,582</td>
<td>20,000,000</td>
</tr>
<tr>
<td>Nepal</td>
<td>3,009,087</td>
<td>2,780,365</td>
<td>3,052,247</td>
<td>3,117,871</td>
<td>3,067,493</td>
<td>15,027,063</td>
<td>0</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>2,453,199</td>
<td>1,451,780</td>
<td>1,255,185</td>
<td>1,082,500</td>
<td>1,280,500</td>
<td>7,523,164</td>
<td>0</td>
</tr>
<tr>
<td>Thailand *</td>
<td>1,400,000</td>
<td>1,540,000</td>
<td>1,694,000</td>
<td>1,863,400</td>
<td>2,049,725</td>
<td>8,547,125</td>
<td>0</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td>510,465</td>
<td>510,466</td>
<td>530,000</td>
<td>540,000</td>
<td>555,000</td>
<td>2,645,931</td>
<td>0</td>
</tr>
<tr>
<td>SEARO</td>
<td>1,964,500</td>
<td>1,745,500</td>
<td>1,800,000</td>
<td>1,800,000</td>
<td>1,800,000</td>
<td>9,110,000</td>
<td>2,530,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>163,623,797</strong></td>
<td><strong>169,517,613</strong></td>
<td><strong>165,120,217</strong></td>
<td><strong>163,335,196</strong></td>
<td><strong>141,935,556</strong></td>
<td><strong>803,532,377</strong></td>
<td><strong>23,800,000</strong></td>
</tr>
</tbody>
</table>

---

* Only central-level NTP budget included
* provided all financial commitments are provided
However, there is still considerable uncertainty regarding existing estimates of resource requirements and funding gaps. For several countries it is not clear exactly what additional resources are required to cover the expected increase in TB caseloads over time and innovative approaches to increase case detection and improve treatment success such as public-private and public-public partnerships, social mobilization and communication efforts. An accurate estimate of additional funding required to address TB/HIV and MDR-TB will also need to be made. A more precise estimate of funding requirements and consequent gaps will require a country-by-country analysis of the costs of fully implementing both planned activities and additional interventions that will need to be put in place. Based on this assessment, additional resources through increased allocations from national budgets and external sources will need to be sought to sustain TB control programmes over the next ten years. In this context, it will be necessary in some countries to coordinate the process of planning and budgeting under integrated or decentralized health systems.

Figure 10 shows the costs budgeted by national TB programmes for 2005-2010 added to which are general health system (GHS) costs that contribute to TB control services, but are not included in NTP budgets. Figure 11 shows the additional projected costs for DOTS-Plus and TB/HIV interventions to be undertaken by NTPs in Member countries as shown in the Global Plan 2006-2015. The differences between the costs as shown in the Global and country plans are due to differences in costing for DOTS-Plus, and TB/HIV, particularly in the area of TB/HIV interventions, where the costs for anti-retrovirals (ARVs) and VCT services are expected to be included in NAP budgets. The costs for ACSM are also not accurately reflected since there is limited information about the range of activities that are needed and their actual costs in countries in the Region.
Notes:

Projections for NTP budgets excluding DOTS-Plus and TB/HIV interventions are broadly consistent with those in the Global Plan, and hence the costs shown for general health system resources that support TB control services are also consistent.

NTP plans for 2006-2010 currently budget for fewer patients to be treated under DOTS-Plus programmes than have been included in the Global Plan. The Global Plan has been calculated to treat 40,054 patients with drug resistance over the same period.

The major difference in costing between Global and country plans is in the area of costing TB/HIV interventions; NTPs assume that the major cost items for these interventions, (notably ART) will be part of NAP rather than NTP budgets.
<table>
<thead>
<tr>
<th>부류</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>통계적 유의</th>
<th>비율</th>
<th>비교</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2814</td>
<td>394</td>
<td>2493</td>
<td>0.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3329</td>
<td>1640</td>
<td>2710</td>
<td>0.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3271</td>
<td>1647</td>
<td>2855</td>
<td>0.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3057</td>
<td>1729</td>
<td>2644</td>
<td>0.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1386</td>
<td>480</td>
<td>1204</td>
<td>0.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Indicators and Targets

## 6.1 Process Indicators

The key process and output indicators and targets through which progress in implementation of TB control activities will be reflected are as shown in Table 5.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Indicators</th>
<th>Baseline 2005</th>
<th>2007</th>
<th>2010</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>DOTS population coverage</td>
<td>100%</td>
<td></td>
<td></td>
<td>Maintained</td>
</tr>
<tr>
<td>2.</td>
<td>Treatment success rate</td>
<td>≥ 85%</td>
<td>≥ 85%</td>
<td>≥ 85%</td>
<td>≥ 85%</td>
</tr>
<tr>
<td>3.</td>
<td>Proportion of new cases detected under DOTS</td>
<td>≤ 70%</td>
<td>≥ 70%</td>
<td>≥ 70%</td>
<td>≥ 70%</td>
</tr>
<tr>
<td></td>
<td>- Smear-positive</td>
<td>≤ 50%</td>
<td>≥ 70%</td>
<td>≥ 70%</td>
<td>≥ 70%</td>
</tr>
<tr>
<td></td>
<td>- All forms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Proportion of smear-positive re-treatment cases</td>
<td>≤ 20%</td>
<td>≤ 15%</td>
<td>≤ 12%</td>
<td>≤ 10%</td>
</tr>
<tr>
<td>6.</td>
<td>National 5-year plans (2006-10) for TB control including procurement plans available</td>
<td>All countries</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Fully operational national quality assurance mechanisms including EQA established</td>
<td>2 countries</td>
<td>5 countries</td>
<td>All 11 countries</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Quality controlled national laboratory networks including capacity for culture and drug susceptibility testing</td>
<td>2 countries</td>
<td>5 countries</td>
<td>All 11 countries</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Proportion of DOTS facilities at district level reporting any stock-out of drugs and laboratory consumables</td>
<td>&lt; 10% in all countries</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>10.</td>
<td>Number of countries with pilot/scaling up urban DOTS programmes</td>
<td>5 countries</td>
<td>At least 7 countries</td>
<td>All 11 countries</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Assessment of status of health sector reforms (HSR) as relating to TB control</td>
<td>In 2 countries</td>
<td>In 2 additional countries</td>
<td>Plans for sustainable TB control under HSR developed</td>
<td></td>
</tr>
<tr>
<td>S. No.</td>
<td>Indicators</td>
<td>Baseline 2003</td>
<td>2007</td>
<td>2010</td>
<td>2015</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td></td>
<td><strong>Partnerships</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Establishment of National-level inter-agency coordination committees or equivalent forums for TB control</td>
<td>8 countries</td>
<td>All countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Establishment of national policy and guidelines for involvement of other sectors (public and private)</td>
<td>6 countries</td>
<td>All countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>National advocacy, communications and social mobilization strategy in place</td>
<td>2 countries</td>
<td>All countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Proportion of microscopy centres in other sectors involved</td>
<td>&lt; 10%</td>
<td>&gt; 25%</td>
<td>&gt; 25%</td>
<td>&gt; 40%</td>
</tr>
<tr>
<td></td>
<td><strong>Addressing TB/HIV &amp; MDR issues</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>National coordination bodies/task forces guiding national policy on TB/HIV</td>
<td>5 countries</td>
<td>10 countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Proportion of VCT clients screened for TB</td>
<td>&lt; 30%</td>
<td>≥ 50%</td>
<td>≥ 70%</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Percentage of estimated PLWHA with active TB receiving treatment under DOTS</td>
<td>≤ 50%</td>
<td>≥ 50%</td>
<td>≥ 75%</td>
<td>≥ 85%</td>
</tr>
<tr>
<td>4.</td>
<td>Mortality among patients registered with both HIV and TB</td>
<td>≥ 10%</td>
<td>5-10%</td>
<td>≤ 5%</td>
<td>≤ 5%</td>
</tr>
<tr>
<td>5.</td>
<td>Number of countries with DOTS-plus projects/programmes established</td>
<td>Pilot projects in 3 countries</td>
<td>At least 5 countries</td>
<td>9 countries</td>
<td>All countries</td>
</tr>
<tr>
<td>6.</td>
<td>Proportion of confirmed MDR-TB cases receiving treatment under DOTS-plus</td>
<td>NA</td>
<td>10-30%</td>
<td>≥ 50%</td>
<td>≥ 70%</td>
</tr>
<tr>
<td>7.</td>
<td>Treatment success for MDR-TB cases under DOTS plus</td>
<td>NA</td>
<td>&gt; 60%</td>
<td>≥ 70%</td>
<td>≥ 75%</td>
</tr>
<tr>
<td>S. No.</td>
<td>Indicators</td>
<td>Baseline 2005</td>
<td>2007</td>
<td>2010</td>
<td>2015</td>
</tr>
<tr>
<td>--------</td>
<td>----------------------------------------------------------------------------</td>
<td>---------------</td>
<td>---------------------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>1.</td>
<td>Electronic HMIS for timely and accurate data transfer in use</td>
<td>5 countries</td>
<td>All countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Population based national/limited surveys planned/conducted to determine TB prevalence/mortality</td>
<td>6 countries</td>
<td>At least 9 countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Nationwide TB/HIV surveillance established according to agreed guidelines</td>
<td>4 countries</td>
<td>At least 9 countries</td>
<td>All countries</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>National drug resistance surveillance established</td>
<td>2 countries</td>
<td>8 countries</td>
<td>All countries</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Annual internal reviews and regular supervision of TB control activities undertaken</td>
<td>3 countries</td>
<td>All countries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Number of countries undertaking regular (biennial) external reviews</td>
<td>9 countries</td>
<td>All countries</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Financing**

| 1.     | Funding gap less than 5% at national level                                 | 9 countries   | All countries       |                     |                     |
| 2.     | Assessment of the proportion TB patients notified under DOTS from specific sub-populations (poor, urban and marginalized groups) | Limited studies | Operational research in 2-3 countries | Operational research in additional countries |                     |

**Human resource development**

| 1.     | Availability of a national human resource development (HRD) plan           | 5 countries   | All countries       |                     |                     |
| 2.     | Number of countries with >80% of key staff in place at all levels           | 5 countries   | All countries       |                     |                     |
| 3.     | Teaching on national programmes introduced into medical, nursing and paramedical curricula | 6 countries   | All countries       |                     |                     |
| 4.     | Human resource development plans specific to laboratories included in national HRD plans | 1 country     | All countries       |                     |                     |
6.2 Impact Indicators

The impact indicators, targets and means of measuring these to report on progress towards the Millennium Development Goals are shown in Table 6.

Table 6: Impact indicators

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Target</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mortality</strong></td>
<td>Reduce TB deaths to less than 150,000 annually by 2015</td>
<td>Through notified case fatality rates, vital registration systems, mortality surveys</td>
</tr>
<tr>
<td><strong>Prevalence of disease</strong></td>
<td>Halve TB prevalence rates to 175/100,000 by 2015 (baseline 1990)</td>
<td>Through disease prevalence surveys or estimated from incidence and duration of disease.</td>
</tr>
<tr>
<td><strong>Incidence of disease</strong></td>
<td>Achieve decline in TB incidence to &lt;100/100,000 population by 2015</td>
<td>Estimated from notification data, case detection rates and annual risk of infection surveys</td>
</tr>
<tr>
<td><strong>Annual risk of infection</strong></td>
<td>Incidence of infection reversed</td>
<td>Through estimates of incidence based on results from tuberculin surveys carried out among children 5-10 years old</td>
</tr>
<tr>
<td><strong>Case-fatality rate</strong></td>
<td>Death rates less than 5%</td>
<td>Through routinely collected cohort data</td>
</tr>
</tbody>
</table>
Conclusions

DOTS has expanded rapidly in the South-East Asia Region over the last ten years, with full geographical coverage having been achieved in 2005. All countries have made impressive progress in improving coverage and quality. This progress has been made possible through strong political commitment and large investments in TB control for improved infrastructure, reliable drug supply, increased staffing, improved laboratory services, and intensified training and supervision.

Accomplishing the objectives outlined in this document will require sustaining the progress in all countries and particularly in the five high burden countries (HBCs) in the Region. National TB programmes will need to be supported to maintain or surpass the 70% case detection and 85% treatment success rates. The achievement of the TB-related targets under the MDGs will also depend on how effectively initiatives such as DOTS-Plus, PPM DOTS and interventions for TB/HIV among others, are implemented. National governments and development partners must fulfill their commitments to mobilizing and sustaining adequate resources to support the full range of activities envisaged.

The benefits of full and effective implementation of all the planned interventions would be substantial. These will result in 20 to 25 million TB cases being treated in DOTS programmes and more than 150 000 drug-resistant cases receiving treatment through DOTS-plus during the period 2006-2015. In addition, at least 250 000 HIV infected TB patients will also receive anti-retroviral therapy. As a consequence, the prevalence of TB is expected to fall below 175/100 000 and the number of TB deaths is expected to fall to between 100 000 and 150 000 per year. There would also be substantial economic benefits given that TB disproportionately affects adults in their most productive years. Considering these aspects, it is expected that TB incidence will decline significantly during this period so that the Millennium Development Goals would be met by or ahead of 2015 in the Region.
Annex 1

LIST OF PARTNERS

Australian Agency for International Development
BRAC (Bangladesh Rural Advancement Committee)
Canadian International Development Agency
Caritas, Norway
Centres for Disease Control and Prevention, Atlanta, USA
Danish International Development Agency
Damien Foundation, Belgium
Department for International Development, UK
Global Drug Facility
Global Fund to Fight AIDS, Tuberculosis and Malaria
International Union Against TB and Lung Disease
Japan Foundation for AIDS Prevention
Japan International Cooperation Agency
Royal Netherlands Tuberculosis Association
Management Sciences for Health
Norwegian Association of Heart and Lung Patients
Netherlands Leprosy Relief
Norwegian Agency for International Development
Research Institute for Tuberculosis, Japan
South Asian Association for Regional Cooperation
TB Control Assistance Programme
United Nations Development Programme
United Nations High Commission for Refugees
United States Agency for International Development
World Bank
World Health Organization.
Annex 2

GLOSSARY

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Antiretroviral therapy</td>
<td>Drugs for the treatment of HIV infection.</td>
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<tr>
<td>Default</td>
<td>Patient stopping treatment before completion.</td>
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<tr>
<td>Disability-adjusted life year (DALY)</td>
<td>A health gap measure that combines the time lived with disability and the time lost due to premature mortality.</td>
</tr>
<tr>
<td>DOTS strategy</td>
<td>The WHO-recommended strategy for TB control (based on case-finding and cure and comprising five key elements) that forms the precursor to, and basis of, the Stop TB strategy.</td>
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<tr>
<td>DOTS-Plus</td>
<td>The adaptation of the DOTS strategy to respond to multidrug-resistant TB.</td>
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<tr>
<td>Drug susceptibility testing</td>
<td>Determining in a culture of <em>Mycobacterium tuberculosis</em> the anti-TB drugs that are effective against that particular sample.</td>
</tr>
<tr>
<td>Extrapulmonary TB</td>
<td>TB affecting a part of the body other than the lungs.</td>
</tr>
<tr>
<td>Global Drug Facility</td>
<td>Mechanism established as an initiative of the Stop TB Partnership to expand access to, and availability of, high-quality TB drugs to facilitate global DOTS expansion.</td>
</tr>
<tr>
<td>Global Fund to Fight AIDS, Tuberculosis and Malaria</td>
<td>An international health financing agency that supports interventions against these three diseases.</td>
</tr>
<tr>
<td>Green Light Committee</td>
<td>A committee established under the Working Group on DOTS-Plus for MDR-TB, which reviews applications from potential DOTS-Plus pilot projects to determine their compliance with guidelines for access to concessionally priced second-line anti-TB drugs.</td>
</tr>
<tr>
<td>Highly Indebted Poor Countries (HIPC) initiative</td>
<td>An initiative launched in 1996 by the World Bank and the International Monetary Fund, which created a framework for all creditors to provide debt relief to the world's poorest and most heavily indebted countries.</td>
</tr>
<tr>
<td>HIV-negative</td>
<td>Describes a person in whom a blood test has shown the absence of antibodies against HIV.</td>
</tr>
<tr>
<td>HIV-positive</td>
<td>Describes a person in whom a blood test has shown the presence of antibodies against HIV.</td>
</tr>
<tr>
<td>HIV-related TB</td>
<td>TB occurring in somebody infected with HIV.</td>
</tr>
<tr>
<td>Incidence</td>
<td>The number of new cases of a disease arising in a given period in a specified population.</td>
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<tr>
<td>International Standards for Tuberculosis Care</td>
<td>A minimum level of care that all practitioners should follow in dealing with patients with TB or with symptoms and signs suggestive of TB.</td>
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<td>Term</td>
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<tr>
<td>Latent TB infection</td>
<td>The presence in the body of tuberculosis bacilli that are dormant (usually in the lung) and not causing harm, but that may become active and cause disease.</td>
</tr>
<tr>
<td>Mid-Term Expenditure Framework (MTEF)</td>
<td>A multi-year public expenditure planning exercise, which is used to set out the future budget requirements for existing services, and to assess the resource implications of future policy changes and any new programmes.</td>
</tr>
<tr>
<td>Multidrug-resistant TB</td>
<td>TB resistant to at least isoniazid and rifampicin (the two most effective anti-TB drugs).</td>
</tr>
<tr>
<td>Mycobacterial culture</td>
<td>Growth of mycobacteria in special medium in the laboratory.</td>
</tr>
<tr>
<td>Mycobacterium tuberculosis</td>
<td>The microorganism (a bacillus) that causes tuberculosis.</td>
</tr>
<tr>
<td>Poverty Reduction Strategies</td>
<td>The major instrument for national planning in low- and some middle-income countries.</td>
</tr>
<tr>
<td>Poverty Reduction Strategy Paper (PRSP)</td>
<td>A document that describes a country’s macroeconomic, structural and social policies and programmes to promote growth and reduce poverty, as well as associated external financing needs and major sources of financing. It is required for debt relief through the Heavily Indebted Poor Countries (HIPC) initiative.</td>
</tr>
<tr>
<td>Poverty Reduction Support Credit (PRSC)</td>
<td>A mechanism that provides support for the implementation of a country’s poverty reduction strategy and the associated programme of social, structural, institutional, and policy reforms.</td>
</tr>
<tr>
<td>Practical Approach to Lung Health</td>
<td>A comprehensive, symptom-based approach to the management of patients with respiratory symptoms within the primary health care system.</td>
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<tr>
<td>Prevalence</td>
<td>The number of cases of a disease in a defined population at a specified point of time.</td>
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<tr>
<td>Preventive treatment</td>
<td>Treatment aimed at preventing disease, e.g. isoniazid for the prevention of TB.</td>
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<tr>
<td>Public-private mix for DOTS</td>
<td>A comprehensive approach to involve all relevant health care providers (public and private) in providing effective TB services.</td>
</tr>
<tr>
<td>Pulmonary TB</td>
<td>TB affecting the lungs.</td>
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<tr>
<td>Sector-Wide Approach (SWAp)</td>
<td>A process in which funding for a sector (whether internal or from donors) supports a single policy and expenditure programme, under government leadership, and adopting common approaches across the sector.</td>
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<td>Term</td>
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<tr>
<td>Sputum smear-negative</td>
<td>Absence of TB bacilli on sputum microscopy.</td>
</tr>
<tr>
<td>Sputum smear-positive</td>
<td>Presence of TB bacilli on sputum microscopy.</td>
</tr>
<tr>
<td>Stop TB strategy</td>
<td>The new WHO-recommended strategy for TB control elaborated in 2006 that encompasses and goes beyond the DOTS strategy</td>
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<tr>
<td>TB/HIV</td>
<td>The interaction between the epidemics of TB and HIV (sometimes refers to TB patients who also have HIV infection).</td>
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