The Eighth Meeting of National Programme Managers for Elimination of Lymphatic Filariasis (LF) from nine endemic countries in the WHO South-East Asia Region, was held on 26-27 April 2011 in Colombo, Sri Lanka.

At the meeting, the LF programme managers discussed progress in implementing mass drug administration (MDA) and identified key issues for further support. The participants deliberated in depth on issues related to scaling up MDA, management of severe adverse events, stopping MDA as per the LF TAS manual of WHO 2011, disability alleviation and integrated approaches. The meeting concluded with recommendations to Member States to scale up MDA and expand disability alleviation services.

This report presents a synopsis of the deliberations held at the meeting and its recommendations.

Elimination of Lymphatic Filariasis in the South-East Asia Region

Report of the Eighth Meeting of national programme managers
Colombo, Sri Lanka, 26-27 April 2011
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Abbreviations

CBO Community-based organization
DEC Diethyl carbamazine citrate
EU Evaluation unit
GNNTD Global Network for Neglected Tropical Diseases
GPELF Global Programme of Elimination of Lymphatic Filariasis
GSK GlaxoSmithKline
ICT Immuno chromatographic test
IEC Information, education and communication
IU Implementation unit
IVM Integrated vector management
LF Lymphatic filariasis
M&E Monitoring and evaluation
MDA Mass drug administration
Mf Micro filaria
MOH Ministry of Health
NGO Nongovernmental organization
NTD Neglected tropical disease
PCT Preventive chemotherapy
RPRG Regional Programme Review Group
SAE Severe adverse events
SEA South-East Asia
STAG Strategic and Technical Advisory Group
STH Soil-transmitted helminthiasis
TAS Transmission assessment survey
TB Tuberculosis
USAID United States Agency for International Development
WHO World Health Organization
The Eighth Meeting of the National Programme Managers for the elimination of Lymphatic Filariasis (LF) in the South-East Asia (SEA) Region was held in Colombo, Sri Lanka, on April 26 and 27, 2011. The members of the Regional Programme Review Group (RPRG) for Elimination of Lymphatic Filariasis in the South-East Asia Region participated in the meeting to review and discuss the progress of the LF programme in the Region.

The programme of the meeting is given in Annex 2 and the list of participants is in Annex 3.

The objective of the meeting was:

To review the programme implementation status of LF elimination in the nine endemic countries of the SEA Region.

1. **Opening session**

In his message delivered by Dr Edwin Salvador from the WHO Country Office in Sri Lanka, Dr Samlee Plianbangchang, Regional Director, WHO SEA Region, pointed out that LF is one of the oldest and most debilitating neglected tropical diseases (NTDs). Most of the infected people are adults and suffer from various clinical manifestations of LF including disfiguring elephantiasis. Approximately 40 million people globally suffer from its stigmatizing and disabling clinical manifestations. The huge economic losses from the disease total almost US$1 billion annually.

WHO estimated that 1.34 billion people were at risk of LF infection in 81 countries. China and the Republic of South Korea have been officially recognized as having eliminated LF as a public-health problem. Globally, an estimated 120 million people are infected, and approximately 873 million people are at risk in the SEA Region. Of these, 34% are children. Nine of the 11 countries in the Region are endemic for LF, and 50% of the global burden of the disease is borne by this Region. All three LF parasites are found in the Region.

As of 2009, the global programme had targeted 656 million people and treated 562 million with the two-drug combination of diethyl carbamazine citrate (DEC) and albendazole. In the SEA Region, 476 million people were
targeted and 418 million were treated in 2009. Since our Region is contributing greatly to the success of the global programme, it is our responsibility to scale up treatment coverage in the Region through mass drug administration (MDA), the Regional Director said.

All nine endemic countries have national policies in place to achieve the goal of elimination by 2020, and all of them have scaled up MDA implementation. All the LF-endemic Member countries in the Region have adopted the WHO recommended two-drug strategy for MDA and completed endemicity mapping. Bangladesh, India, Indonesia, Myanmar and Nepal are making steady progress in scaling up MDA to cover the entire endemic population. Timor-Leste will need additional resources to revive its MDA programme.

Maldives and Sri Lanka have successfully reached a point of LF elimination by reducing the microfilaraemia rate to less than 1%. Both these countries have stopped MDA and verification of the interruption of transmission of microfilarial (Mf) infection by WHO in 2011.

These achievements are the result of concerted efforts made by the national authorities and the continuous collaboration of partners. “I would like to acknowledge and congratulate the national programmes for their efforts in strengthening their work with various partners to enhance resource mobilization to further expand MDA. Uninterrupted and generous donations of albendazole by GlaxoSmithKline (GSK) through WHO to all endemic countries for the MDA initiative is a prominent example of this partnership. Recently, Eisai Co. Ltd. joined this public–private partnership network by committing to donate DEC from 2012 onwards to the LF programme. It is our responsibility to efficiently plan and distribute these free drugs to the endemic population to achieve the programme objectives,” the Regional Director added.

Research and monitoring and evaluation (M&E) are essential in identifying specific issues and social, cultural and epidemiological factors that are impeding successful programme performance. A number of challenges still remain for successful expansion of MDA implementation among the Member countries of our Region. Improved MDA coverage in urban areas and among difficult-to-reach populations, intersectoral collaboration among government agencies and appropriate local bodies, social and resource mobilization, sustained political commitment and morbidity management are all needed. Other challenges are streamlining the LF–MDA data, completing the MDA cycle in a given calendar year, drug procurement, and supply, utilization and feedback at all levels in each of the endemic countries.
Action plans to integrate LF elimination programmes with other NTDs to deliver preventive chemotherapy are being finalized in Bangladesh, Indonesia, Myanmar and Nepal. Such integrated approaches have many benefits, including significant cost savings. Appropriate expansion of integration, disability prevention and management through community involvement and resource mobilization will also be needed. Added to this, adopting integrated vector management (IVM) in LF elimination programmes is another challenge.

This programme managers’ meeting will discuss technical as well as operational issues in national programme management, challenges, and the need for strengthened collaboration with partners and other stakeholders. “I am glad that the members of the RPRG for Elimination of Lymphatic Filariasis are attending this meeting before they meet separately to make specific recommendations to scale up LF–MDA,” the Regional said.

In conclusion, the Regional Director requested the participants to discuss the challenges to achieving the elimination of LF as a public health problem by 2020.

In his opening remarks, Dr Sunil Settinayake, Director of the Anti-Filaria Campaign, Sri Lanka, on behalf of the Minister of Health, indicated that Sri Lanka stopped MDA in all eight LF-endemic districts by 2007 and initiated post-MDA surveillance including vector surveillance. The process of verification of LF elimination will be initiated with the assistance of the WHO Regional Office for South-East Asia in 2011.

Earlier, Dr C.R. Revankar, WHO-SEARO, welcomed the participants on behalf of the Regional Director and thanked them for their participation.
2. Technical sessions

Dr Rita Kusriastuti, Director of Vector-Borne Disease Control, Directorate-General of Disease Control and Environmental Health, Ministry of Health (MOH), Republic of Indonesia, was the chair. Dr PK Srivastava, National LF Programme Manager from India and Dr Rouseli Haq, National LF Programme Manager from Bangladesh were the rapporteurs.

2.1 Global Programme of Elimination of Lymphatic Filariasis

Dr Kazuyo Ichimori from WHO-HQ highlighted the progress and achievement of the Global Programme of Elimination of Lymphatic Filariasis (GPELF). She explained the two targets of GPELF: (i) to interrupt transmission of LF infection by MDA; (ii) morbidity control to reduce sufferings of LF-disabled patients. To advocate with Member countries to achieve the targets, GPELF has published a progress report from 2000-2009 and a strategic plan for 2010-2020. The Current focus is to complete mapping (wherever not done) and implement MDA (step 2). Once MDA is stopped, the programme needs to move to post-MDA surveillance (Step 3) to reach verification (step 4). She highlighted that this systematic approach would assist programme managers to plan, implement and monitor progress. Globally, an estimated 1.34 billion people are at risk and 120 million are infected in 81 endemic countries. By 2009, 53 countries were under MDA. A total of 2.7 billion treatments were delivered to 695 million people which resulted in a steady decline in the prevalence and Mf rate. Results from 131 sentinel sites in different countries showed that the Mf rate, which was 98% at the first MDA round, declined to 5% after the sixth round, indicating the efficacy of the two-drug based MDA. As a result of MDA, five countries were able to stop MDA by 2009. It is hoped that LF-endemic Member countries will continue to make best efforts to reach the expected target of 2020. By that time, all the countries should be under MDA and 70 countries should be verified for the absence of transmission of LF infection.

One of the key factors for the achievement made so far is uninterrupted supply of albendazole and ivermectin by the drug donors. The progress made so far is mainly due to drug donations. Since the beginning, about 1.4 billion tablets of albendazole and 1.2 billion tablets of ivermectin have been donated by the drug donors through WHO. While appreciating the progress, the following major issues and challenges were identified:

(1) 24% of 81 endemic countries (16 countries in Africa) have not yet started MDA.
Some countries face problems of Loa loa co-endemicity, urban areas, or large and difficult geographic locations.

Some countries have already completed five or more rounds of MDA and are waiting to initiate transmission assessment survey using immunochromatographic test (ICT) cards to decide whether to stop MDA as per the LF Transmission Assessment Survey (TAS) manual of WHO 2011.

Training of programme managers in the above-mentioned WHO manual.

Morbidity control services have been initiated in only 27 countries.

Mobilizing resources for LF programme to continue MDA, transmission assessment surveys (TAS), post-MDA surveillance and verification etc.

New initiatives are being taken to end the GPELF by the deadline. These include new implementation strategies and integrated approaches to scale up MDA, stopping MDA as per the criteria described in the TAS manual of WHO(2011). Long-term surveillance and vigilance are needed to prevent resurgence of LF disease in years to come.

WHO has published a document on IVM which needs to be referred to in the context of vector control. Country capacity-building in IVM is to be initiated. It is high time to integrate LF elimination into other NTD control activities to mobilize resources as more and more donors are inclined to support such new innovative approaches rather than LF alone. WHO has already shared a global strategy document on integrated approaches.

2.2 Comments on impact of LF elimination progress, issues and the way forward

Dr C.P. Ramachandran, an international expert on LF from Malaysia, said that overall achievement in LF elimination programme is quite encouraging as tremendous progress in the last 10 years has been made towards scaling up LF elimination activities. Fifty-three countries have implemented MDA and some are reaching the point of LF elimination. This is highly commendable. All the appreciation goes to the Member countries, WHO and many partners including drug donors who donated albendazole and ivermectin without interruption. GPELF is considered to be one of the fastest expanding global programmes. We
have many positive lessons to learn and several challenges to face in the years to come. In the SEA Region, Maldives and Sri Lanka have already stopped MDA and reached the point of LF elimination. Thailand has also stopped MDA in several implementation units (IUs). India is moving forward. Of course, some countries are facing challenges.

A declining trend in the Mf rate in implementation units where five or more MDA rounds are completed is a definite evidence of how effective MDA is. However, a large variation among the IUs in terms of Mf rates, programme and client compliance rates need to be carefully investigated. If we carefully analyse the micro-level data for sentinel/spot-check sites, variations are seen. Hence, programme reported data from the micro level need to be validated and analysed carefully to identify and address issues. Even though an estimated 6.8 million children globally have been protected from LF infection over the past few years, infection is still found among children at a negligible level. We need to study what MDA has achieved in protecting children.

We may need to reassess Mf rates in some of the endemic districts as well as neighbouring non-endemic districts (where the Mf rate was less than 1%) since migration of the population between districts is a common factor.

Dr Ramachandran drew attention to various challenges, e.g. involvement of primary health-care services, availability of drugs, LF-endemic districts not yet covered under MDA, M & E etc.

Dr Edward Michael, an epidemiologist from USA, said that it is easy to reduce the Mf rate to less than 1%, but further reduction is difficult and further sustaining at low level is very difficult. The heterogeneity makes it more difficult to reach an end point. Vector control has been playing a significant role and the mosquito biting rate has to be reduced, which will facilitate achieving LF elimination in real terms. Post–MDA surveillance including vector surveillance is very important. He also emphasized that epidemiological data management is important and programme personnel should be adequately trained for this.

Dr N.K. Ganguly, ex-Director-General, Indian Council of Medical Research, Delhi, highlighted the importance of IVM in Vector-borne disease control (VBDC). Additionally, surveillance systems in post-MDA districts should be strengthened to prevent the emergence of fresh infection.

Dr P.V. Ranganandha Rao of LEPRA India laid emphasis on sustaining the gains achieved so far once we achieve the elimination stage. Sustained
public education and adequate preparations before launching MDA delivery are needed. He cited an example of Puri district in India’s Orissa state, where the programme was able to reach a high coverage of more than 90% due to sustained public education methods and appropriate preparations before MDA campaigns. Supervised MDA delivery would yield higher dividends. Additionally, morbidity management along with MDA improves drug compliance which is also seen in the leprosy programme.

Dr P.K.Srivastava, National LF programme manager from India, clarified that the overall decline in the Mf rate is because of pooling of data for the whole district as well as rural and urban areas. Similarly, the overall picture at the state/provincial level and national level makes a lot of difference unless micro-level information is carefully analysed. Some amount of validation of reported data from sentinel sites/spot-checks is essential. The hotspots need to be identified and a decision should be taken whether MDA is to be continued in these areas even though the Mf rate declines to less than 1% in some districts. Supervised drug administration will definitely improve drug compliance, but to cover a huge population a greater number of days will be required. It will be difficult to mobilize human resources for a longer period and it will be more difficult to supervise and monitor their activity over this longer duration. Smaller countries may practise it, but for bigger countries like India or Indonesia such an approach might not be possible. Vector control has a definite role but this requires a skilled entomologist and support staff which is lacking.

2.3 Progress in elimination of LF in the SEA Region

Dr C.R. Revankar, WHO-SEARO, gave an account of LF elimination progress, issues and the way forward at the regional level. He highlighted that the WHO SEA Region bears the greatest burden in terms of at-risk population (about 63% of the 1.34 billion at the global level) and infected population (50% of the 120 million at the global level). All three parasites – *Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori* – are found in this Region. The most common infection is by *W.bancrofti*. The disease is transmitted by *Culex*, *Anopheles*, *Aedes* and *Mansonia*.

Nine of the 11 Member countries are endemic for LF and endemicity mapping was completed by 2010 (Figure 1). There are 873 million people at risk in 878 IUs. About 92% of the at-risk population are in Bangladesh, India and Indonesia. MDA implementation has progressed steadily, and the Region delivered 2.4 billion (85%) of the 2.8 billion doses delivered globally from
2000 to 2009. MDA coverage increased from 208 million in 2006 to 418 million by 2009. However, a marginal decline in 2010 was due to shortage of albendazole mainly in India (Figure 2). Programme drug coverage was 88%, which was satisfactory. This is an outcome of the political commitment and sustained efforts of the Member countries and partners including WHO.

As a result of joint efforts, the impact of MDA is quite visible (Figure 3). Maldives and Sri Lanka stopped MDA in 2009 and 2007, respectively, and have reached point of LF elimination. Planning is underway for initiating the process of verification of LF elimination. Thailand stopped MDA in 268 of the 355 IUs by 2007. MDA is being continued only in the difficult province Narathiwath, covering 87 IUs. As per the reported data, of the 878 IUs in the Region, 217 have achieved an Mf rate of less than 1%. Of these, 173 out of 250 endemic districts are in India alone and are waiting for TAS using ICT cards as per the LF TAS manual 2011 to stop MDA. Dr Revankar gave some examples of the impact of MDA from India, Maldives, Sri Lanka and Thailand to demonstrate how robust the current MDA intervention is. In India, at the national level, the Mf rate declined from 1.24% in 2004 to 0.41% in 2010. In Sri Lanka, the Mf rate decreased from 0.36% in 1993 to 0.03% in 2010. In Maldives, it declined from 18.5% in 1951 to less than 1% by 2008.

While progressing satisfactorily in reducing the disease transmission, Member countries are also initiating disability alleviation activities. Though information is not yet available from all the endemic countries on estimated/recorded LF disabilities, the estimated cases (lymph oedema and hydrocoele) were more than a million (Bangladesh, India, Indonesia, Nepal, Sri Lanka and Thailand). Health workers are being trained in disability management and guidelines are being developed.

Dr Revankar highlighted important issues and challenges to reach the global target by 2020: a rapid increase in geographic coverage by expanding MDA, ensuring high programme coverage, availability of ICT cards for TAS, high operational costs (especially in Indonesia), sustaining political commitment especially during post-MDA surveillance phase, and mobilizing resources to meet operational costs etc.

2.4 Country presentations

Bangladesh

Dr Rouseli Haq, national LF programme manager, Bangladesh, summarized the progress of LF–MDA. The total population of the country is 149 million
(2010) spread over 64 districts. The population density is 1033 sq/km. Thirty-four districts (IUs) are LF-endemic and the population at risk is 76 million. The LF programme completed endemity mapping by 2000 (Figure 4) and implemented MDA with DEC and albendazole by 2001, gradually expanding to 19 districts by 2010, covering a population of 36 million. The overall baseline Mf rate was 10.8%. The programme adopted a directly-observed treatment strategy when distributing the drugs. Household registration and door-to-door drug distribution and administration were done by public health and family planning field staff and privately paid volunteers (drug distributors) in both rural and urban areas. Only persons present in the house were given the drugs and asked to swallow them in the presence of field staff. Drugs were not left with any member of the household. On the following day, there was a supervisory visit by supervisory staff to administer the drugs to those who had been missed. Drugs were also distributed and administered directly in schools, college, madrassas, mosques, cinema halls, market/shopping areas, slums and at roadsides etc. Social mobilization was carried out using a documentary film and distributing public education materials to the community. No severe adverse effects (SAE) to DEC and albendazole administration were reported. The programme identified insufficient social mobilization and delayed arrival of funds as barriers to implementation.

During the 2010 MDA round, a total of 33.9 million eligible population were covered, and 31 million received treatment. National coverage was 45%. The reported treatment coverage or programme coverage was 92%. No information is yet available on rural and urban population coverage. In 2010, two districts were taken up for surveys to validate treatment coverage. of the 9000 people surveyed, 6537 (73%) actually consumed drugs, emphasizing the need to intensify public awareness, including community volunteers, about the treatment intake and supervised treatment. Of the above surveyed population, 0.9% reported mild side effects of MDA drugs. Out of 19 IUs, nine reported Mf rates higher than 1%, whereas 10 reported a rate lower than 1%. Five districts will be taken up for stopping MDA after completing TAS as per the WHO manual (2011) using ICT cards.

So far, the LF programme has recorded 114 426 LF-disabled people (lymphoedema: 24 386; hydrocoele: 24 690; others: 65 350). Disability alleviation services are implemented through health workers who are being trained. Bangladesh has one hospital for LF disability management.

Even though the Bangladesh LF programme is supported by WHO, GSK, the World Bank, the Japan International Cooperation Agency, the United States
Agency for International Development (USAID) and the Liverpool LF Support Centre, UK, major funding is allocated by the MOH, Bangladesh.

The programme needs to develop an integrated NTD control plan, although deworming from soil-transmitted helminthiasis (STH) is also partly covered by the LF programme. IVM is to be implemented once national guidelines are developed. The programme needs to strengthen supervision and monitoring. Along with the MDA programme, disability alleviation services are being implemented. WHO-supplied albendazole and DEC tablets are procured locally.

The programme identified the following important issues to be addressed:

1. Lack of social awareness due to inadequate information, education and communication (IEC) programme.
2. Elimination in some districts is delayed in spite of a good MDA coverage rate of 79.38%.
3. Frequent change of skilled manpower (programme manager/deputy programme manager).
4. Delay in receiving programme cost.
5. Less remuneration for volunteers, since one volunteer covers about 1000 population.
6. Funding for community-based morbidity control programme.
7. Lack of disease surveillance system/M&E.
8. Lack of capacity-building in MDA, monitoring and morbidity control.
9. Lack of operational research to improve programme quality.

**India**

Dr. P. K. Srivastava, national LF programme manager, India, gave an account of progress in the LF-MDA programme. He described India’s progress in implementing MDA in all 250 IUs (districts) covering 600 million population in 20 states/union territories (Figures 5). There are 169 districts which are non-endemic for LF. The national health policy of 2002 aims at eliminating LF by 2015. By 1996-1997, India had implemented single-drug (DEC) MDA in 13 districts in seven states, and this was expanded to 30 districts by 2003. A two-drug (DEC and albendazole) strategy was adopted by 2006 and gradually scaled up from 2007 onwards.
The MDA 2009 round was implemented in 193 IUs. MDA activities could not be carried out in seven IUs in Assam and 50 IUs in Uttar Pradesh. The 2010 MDA round was carried out in 165 IUs. A total of 378 million people were treated with MDA. The eligible population was 337 million, of whom 293 million received MDA. The reported treatment coverage (programme coverage) was 86.7%. The geographic coverage was 66% and epidemiological coverage was 78%. MDA campaigns were carried out over three to four days. Although MDA campaigns were planned for November 2010, they could not be completed that month for a variety of reasons. Reported coverage was 40% -90%, while the actual coverage among the eligible population was 45%-95%. In five IUs the coverage was <65%, in 14 IUs it was 65%-80%, and in 108 IUs it was >80%. The remaining IUs were not surveyed.

As an impact of the rapid treatment coverage of the at-risk population from 2004 (72.4%) to 2010 (85.7%), the overall national level Mf rate started showing a definite downward trend, from 1.24% in 2004 to 0.48% in 2010 (Figure 6). The decline was about 67%, which is significant.

The programme conducted Mf surveys in 2009 and 2010. In 209 IUs the Mf rate was <1%, while in another 41 IUs it was >1%. In 2009, Mf surveys were not conducted in 57 IUs (mainly in Assam and Uttar Pradesh). The programme conducted ICT card tests in a few IUs in 2009 where the Mf rate had fallen below 1%.

The remarkable achievement is that out of 250 districts, more than 180 are reporting an Mf rate lower than 1% where MDA was completed for more than five annual rounds. Since the country adopted the strategy of co-administration of DEC and albendazole from 2007, the requirement of albendazole has gone up to about 600 million. GSK is supplying a maximum of 300 million tablets and therefore the country is procuring supplies to bridge the gap. The programme is staggered depending on the availability of albendazole to ensure MDA with the two-drug regimen. However, for 2010 the data are yet to be completed as five states/UTs scheduled their MDA 2010 round for June/July of 2011.

The main issues are to meet the required quantity of albendazole through GSK and locally to maintain high coverage adhering to planned calendar and ICT card assessment of the IUs reporting Mf rate below 1%, as per LF TAS manual of WHO(2011). The programme needs support from WHO in procuring ICT cards for at least 100 districts so that the TAS can be initiated in 2011. This will inter alia reduce the quantity of albendazole required if the selected districts qualify for MDA stoppage.
The LF programme has recorded about 120 000 LF disabled-people (Lymphoedema: 80 000 and hydrocoele: 40 000) and disability alleviation services have been implemented, including self-care.

Integration of LF elimination activities into other NTDs (STH, trachoma, kala-azar) has not yet been considered.

**Indonesia**

Dr Saktiyono, national LF programme manager, Indonesia, described the progress and difficulties in expansion of the LF-MDA programme. The programme reported completion of LF endemicity mapping by the beginning of 2010 (Figure 7) due to several operational and financial difficulties. It should be noted that Indonesia is an archipelago with 17 000 islands, over 800 of which are inhabited. The Mf rate is more than 1% in 356 of the 495 districts. The rate was less than 1% in 139 districts. The MDA IU is a district. The total endemic population in endemic IUs was estimated to be around 131 million of the total population of 234 million (2010 data) spread over an area of two million square km. LF-MDA was started by 2002 and progressed slowly for various reasons.

In 2010 MDA was carried out in 88 IUs (24.7%) out of the 356 endemic districts using an annual dose of DEC and albendazole. The total and eligible population treated in the 88 IUS was 37.2 million and 22.6 million, respectively. The 2010 MDA round treated 18.5 million people. Of these, about six million were from urban areas. The overall treatment coverage was 81.7%. The treatment coverage data showed great variation from district to district, ranging from a reported 1.28% to 92.90% of the total population and from 9.40% to 95.4% of the eligible population. The strategy used for drug delivery to people varied from a house-to-house strategy to setting up distribution points within communities. In urban areas, special population groups in factories and offices were also targeted. All treated individuals ingested the drugs under observation. No SAEs were reported during this round of MDA.

As per the reports, a total of 130 districts were brought under MDA by 2010. The geographic coverage was 37%. Of these districts, MDA was discontinued or not provided during 2010 in 19 IUs, 11 of which had received five MDA rounds previously. The main reason appeared to be lack of funds, while some IUs were awaiting assessments of impact to be made following the completion of five rounds of MDA.
By 2010, about 11 000 cases of lymphoedema and hydrocoele cases were recorded as beginning disability services.

The MOH has developed and is implementing a national integrated NTD control plan incorporating preventive chemotherapy of LF, STH and schistosomiasis and also linking leprosy and yaws case-finding and treatment.

Due to vast geographic distribution of endemic districts, operational accessibility, high operational cost and insufficient funding, the LF programme is yet to scale up to reach the global target since Indonesia is the second highest burden country in the SEA Region. Efforts are being made by the programme to advocate with local governments (decentralized) as well as international donor partners to mobilize resources to scale up MDA. USAID has been supporting MDA activities since 2011. DEC tablets are procured locally and albendazole is supplied by WHO.

Dr C.P. Ramchandran, while appreciating the progress made by Indonesia in spite of difficulties, suggested that comprehensive data collection and analysis is necessary from each district (urban and rural) for each indicator. Programme managers at the national/sub-national level need to have training in this direction. Interrupted MDA is not acceptable to the programme since it may lead to drug resistance. He urged the partners who were present in the meeting to increase their support to Indonesia to rapidly increase MDA without interruption.

Dr Edwin Michael, while agreeing with Dr Ramachandran, suggested that Indonesia could think of collaborating with universities (national/international) for data management and capacity-building since careful interpretation of all kinds of data sets is important when we reach elimination level.

Dr Rita Kusriastuti, as director of the LF programme in Indonesia, remarked that there were many reasons for slow progress in the country. The MOH is committed to enhance the funding allocation. Local governments are being advocated with to contribute to the LF programme. International support is required to scale up MDA in Indonesia.

**Maldives**

Ms Neesha Nasir, LF programme manager, Maldives, highlighted how an island country, Maldives, reached LF elimination. Of the 1190 islands, 197 are inhabited. The national population was 371 504 in 2010. About 45 000 foreign
workers per year enter Maldives for work. As early as 1950, the government considered LF as a public health problem and initiated the first survey in 1951 in five atolls (Seenu, Ghaviyani, Gaaf Alif, Gaaf Dhaal, and Laamu). The disease prevalence rate was 24%. A National Control Programme was launched in 1968 in Male and a national LF control programme was launched in the atolls in 1974. In 1998 there were 10 known endemic islands. The Mf rate, which was 18.5% in 1951, reduced to less than 1% mainly by implementing case finding, selective treatment of cases and vector control methods (Figure 8). LF endemicity mapping in 2003 showed that only Fonadhoo Island in Laamu Atoll qualified for MDA, and this was implemented in 2004 (Figure 9). The fifth round was completed in June 2008 and MDA was stopped in 2009. Coverage for the three consecutive years after 2004 was 100% but in 2008 it came down to 92%. Assessment of 1459 individuals with blood films for Microfilariae showed all negative results in 2007. This was followed by ICT testing of 215 children of 2-8 year age group, showing all negative results. These results indicated that no transmission of LF infection had occurred. The programme also tested 1221 foreign workers with immunochromatographic test cards and eight were found positive. Post-MDA surveillance was initiated. All measures to control vectors in all the islands were implemented. LF-disabled persons were provided services in their islands.

The programme is planning to initiate verification of LF elimination in 2011 as per the LF-TAS manual of WHO (2011) and the recommendations of RPRG 2010 with the assistance of WHO.

Ms Nasir identified the following issues to be addressed:

- Maintaining political commitment in view of decentralization.
- Funding for procurement of ICT kits, travel expenses and other operational costs.
- Lack of trained staff and challenge of sustaining them due to decentralization process.

**Myanmar**

Dr Ni Ni Aye, national LF programme manager, Myanmar, highlighted the progress made by the programme. The total population of the country was 55.8 million (2010) spread over 65 districts. Mapping was completed by 2007 and 42 districts (IUs) were identified as LF-endemic, covering a population of about 47 million (Figure 10). The baseline Mf rate was 15.13% in 2007. MDA
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with two drugs was started in 2001 and gradually expanded. During 2005, no MDA could be implemented in Mandalay Region for various reasons. Although MDA was started in Myanmar in 2001, scaling up could not be done, mainly because of limited resources and procurement of DEC. It was also revealed that IUs of a high baseline Mf rate may need more rounds of MDA which may enhance the fund requirement.

However, by 2010, the total number of LF-endemic districts was 39 since three IUs stopped MDA. Parasitological monitoring has revealed that out of 19 IUs, eight have an Mf rate of more than 1%, whereas 11 IUs are below a 1% Mf rate. The MDA conducted in 2010 achieved a geographic coverage of 26.7%. All 12 IUs reported coverage of 84%-91% of total population and 90%-99% of eligible population. The surveyed coverage was 91%-97% of the total population and 94%-99% of the eligible population.

A house-to-house drug distribution strategy was adopted and there was one drug distribution team of community volunteers along with health workers (red sarongs) for 50 households. It took approximately one week to administer the drugs. No SAEs were reported. The programme laid stress on IEC activities to build the confidence of community members in the drugs, to achieve high compliance and increase their participation. Disability prevention activities were carried out in 42 IUs using 2002 guidelines. Training activities were conducted in all IUs and at the national level.

There were interruptions in the distribution of the drug leading to a change in the schedule of MDA. Also, activities planned in 2010 could not be completed due to delayed receipt of DEC from WHO and lack of operational funds. The programme also experienced shortage of funds in purchasing DEC and delays in shipments of albendazole. In its reapplication, the country stated that it would complete in 2011 activities that had been left incomplete in 2010. In addition it was planning to conduct another round of MDA that would be the 2011 round in 39 IUs (19 already under MDA and 20 new). Since the MDA activities were still ongoing, the stock position was not clear and a final assessment of the drug requirement may have to be made after completion of those activities.

The programme had developed an integrated plan of action for control of NTDs that included a comprehensive approach for all activities of the LF elimination programme. LF elimination has been integrated with STH and trachoma activities. However, due to shortage of funds, the plan is yet to be implemented.
Nepal

Dr Ashok Kumar Chaurasia, Regional Director, Western Regional Health Directorate, Pokhara, presented the progress of LF elimination in Nepal. The national LF programme is committed to eliminating the disease by 2018. The country’s population was 28 million in 2010. An estimated 31% of the population are below the poverty line as per the World Bank classification. The three ecological zones in Nepal are mountains, hills and the terai. Only less than 8% of the population live in the mountainous zone not known to be endemic for LF. The disease has been detected in different topographical areas ranging in altitude from 300 feet above sea level in the plain terai ecological zone to 5800 feet above sea level in high hill areas. LF endemicity mapping was completed by 2001 and identified 60 (57 rural and three urban) of the 75 districts as LF-endemic (Figure 11). The population at risk in these 60 districts (IUs) is about 25 million. The MDA was started in 2003 from one district (Parsa) with DEC and albendazole and gradually was expanded to 41 districts by 2011. The geographic coverage was 68%. The baseline Mf rate was 3.20% in 31 districts (as per available data). Of the 31 districts, 25 districts had an Mf rate >1% and the remaining six had a rate <1%. Population coverage increased from 475 000 (2003) to 11.6 million by 2010. The programme coverage has been more or less 81% since 2003. However, this programme coverage varies from rural to urban areas (e.g. 43% in one of the municipal wards in Kathmandu). Sixteen districts had completed four rounds of MDA, four had completed five rounds, and one district had completed six rounds. In six districts the Mf rate had dropped below 1%. MDA was stopped in five districts since they completed more than five rounds and the Mf rate was less than 1%. It is planned to cover all 60 districts by 2013.

The MDA round 2010 was held in March 2011. All 36 districts covering a population of 14.5 million people completed MDA. Four districts reported SAEs. The programme expressed concern at the recurrent occurrence of SAEs and is investigating these incidents.

The LF programme planned to treat people in a total of 51 districts during 2012, 41 of which would be districts where MDA had already been carried out, and 10 of which would be new districts. LF activities in bordering areas with India and Bangladesh need to be coordinated in order to ensure that the migratory and floating populations are also covered under MDA.
The LF programme has recorded 17 075 LF-disabled people (lymphoedema: 4017; hydrocoele: 11 249 and hand and breast swelling: 1809). Disability services have been initiated.

The LF programme identified the following important issues:

- Social mobilization, especially in metropolitan cities, is difficult.
- Inadequate technical staff at all levels of health facilities.
- Insufficient drug storage space especially at district and sub-district levels.
- Migrating population/labour class people.

The programme has developed a five-year national plan of action for integrated control of neglected tropical diseases in which LF, STH, and trachoma are included. Integrated mapping is in progress.

The programme is supported by external partners: WHO, USAID, the Centre for Neglected Tropical Diseases at the Liverpool School of Tropical Medicine, and the UK Department for International Development.

**Sri Lanka**

Dr Sunil Settinayake, Director, Anti-Filariasis Campaign (AFC), Sri Lanka, narrated the success story of Sri Lanka in reaching a level of elimination of LF in the country and planning for initiating the process of verification. The first all-island survey, carried out from 1936-1939, indicated that the Mf rate was in the range of 20%-24%. The AFC was initiated as early as 1947. From 1947 to 1999, the AFC started mass screening for LF and selective treatment to those with the disease and with positive Mf. From 1999 to 2001, only DEC was administered. The programme to eliminate LF with a two-drug combination (DEC and albendazole) was started in 2001 after completing endemicity mapping (Figure 12) of eight endemic districts of the total 25 districts, covering a population of about 11 million. Each district with a population of about 1-2 million was identified as one IU. In 2001, the first two-drug combination MDA was administered only in Colombo district. From 2002 onwards, all the districts launched MDA. As a result, when MDA was stopped in 2007, only Colombo district had six rounds and the rest had five rounds of MDA. Since then, post-MDA surveillance has been continued. The reported coverage was consistently above 80% (range: 80.4%-98.2%), confirmed by independent assessments.
Side effects were very minimal and self-limiting without any reports of SAE. After five rounds of MDA with DEC and albendazole, the Mf rate reduced to 0.05% (range: 0.02%-0.11%). No children in the age group 2-4 years were positive for antigenaemia in the IUs, justifying the decision to stop MDA. The Mf rate declined from 0.36% (1993) to 0.03% in 2010 (Figure 13). Post-MDA monitoring was carried out with the available infrastructure. Subsequent surveys showed that the Mf rate continued to remain below 0.05%. While an antigenaemia survey repeated in 2008 did not detect any positive children, since 2007, post-MDA surveillance has been started which included:

- Sample of school children tested in all IUs with ICT cards (2008).
- Enhanced surveillance study in a hotspot area in Colombo (2008).
- Post-MDA surveillance study in an evaluation unit in Colombo which includes schoolchildren, the community and mosquitoes (2010).

Line listing of cases of lymphoedema and hydrocele has been completed and health workers have been trained in morbidity management.

**Thailand**

Ms Kadkaew Meepian, Public Health Technical Officer, Thailand, traced Thailand’s progress in marching towards elimination of LF. The country population is 63.9 million (2010) spread over 927 districts. Thailand completed mapping in 2001 and identified 336 IUs (each village is defined as one IU) as endemic for LF covering a population of 122,821 (2002) (Figure 14). In Thailand, both *W. bancrofti* and *Brugia malayi* are causative parasites, and vectors are *Aedes*, *Culex* and *Mansoni*. As a result of population growth, the total number of IUs increased from 336 to 355 by 2006 and the population at risk increased to 166,647 (2006). MDA was started in 2002. The programme coverage was more than 80%. By 2006, a total of 268 IUs had completed five rounds, and MDA was stopped by 2007 and post-surveillance was implemented. Since then, only 87 IUs in Narathiwat province (the southernmost part of Thailand) have continued MDA in view of the unsatisfactory treatment coverage and compliance. Total eligible population for MDA in 87 IUs was 80,930 and reported drug coverage was 94.53% in 2010. The Mf rate also decreased from 0.77% in 2003 to 0.09% in 2010 (Figure 15). Although a population-based survey had not been carried out, ICT card tests in sentinel and spot-check sites showed that results for all 838 children aged between two and four were negative.
The programme recorded 203 LF cases with lymphoedema. Disability care services are being implemented.

The estimated budget for 2011 is US$ 180 000 and 100% is covered by the government. The programme receives albendazole from WHO. The programme is planning to initiate the process of verification in 2012.

The programme identified the following issues that need to be addressed further:

- Prolonged MDA (more than 10 rounds) in Narathiwat province due to frequent internal conflicts resulting in unsatisfactory coverage.
- Inadequate monitoring of post-MDA surveillance activities due to limited budgets.
- Lower priority to disability alleviation activities.

An integrated NTD control plan has not yet been developed and IVM is also not implemented in LF. A children’s blood survey in the stopped MDA IUs was carried out in 2011 to assess the programme’s achievements. The programme does not carry out night blood surveys; only ICT cards are used.

2.5 Special technical issues

Disability alleviation services

Dr Ranganadha Rao, Chief Executive, LEPRA India, made a presentation on disability alleviation in LF programmes. He presented his experiences in implementing LF-related disability care services in two districts of Andhra Pradesh, two districts in Orissa and four districts in Bihar, India. The services included foot care (including self-care as done in leprosy), hydrocoele operation, medical assistance and IEC activities. Since the disability alleviation activities were integrated with MDA, the treatment coverage during MDA increased. Different kinds of footwear, including shoes and straps of different shapes and sizes, were provided to lymphoedema patients. However, he emphasized that the footwear should be provided only after biomechanical assessment. The programme has provided footwear to 995 patients. The major achievements in the project areas have been reduction in acute attacks, healing of entry points and reduction in swelling. Dr Rao raised the following issues for improvement in the programme:

- Unmet need in deformity care.
- Generalized IEC.
• Apprehension among community.
• Private practitioners not adequately trained.
• Civil society stake.
• Medical assistance.

Severe adverse events

Dr Revankar elaborated on the definition of SAE and the methods of reporting. Management of adverse events requires adequate preparation well before and during the campaign, i.e. public awareness, including media and politicians, about the MDA drugs, possible side effects, recognition of early signs and symptoms, referral, exclusion of old and sick people in addition to pregnant and children below two years of age; proper training/orientation of MDA health workers/community volunteers; proper counselling of individuals and their families who are affected; reporting, procuring quality drugs (DEC), etc. People affected by SAE should be referred to a nearby health facility and proper reporting and investigation should be undertaken. National LF guidelines should include guidelines on SAE recognition and management including reporting as per WHO guidelines. Dr Revankar cited some examples from his experience that any drug used in any disease treatment, e.g. for leprosy, tuberculosis (TB), human immunodeficiency virus (HIV) infection, have some side/toxic/allergic effects. Similarly, vaccines may induce some side/allergic effects. For the benefit of the larger community, public health programmes should adequately prepare themselves to face SAE.

Streamlining MDA and data flow

Dr Kazuyo Ichimori spoke about regulating MDA rounds in a calendar year. In many IUs, due to various technical and administrative reasons, MDA is observed twice in a calendar year. Efforts should be made to regulate but simultaneously, it should also be ensured that MDA rounds should not be missed. At least once a year, an MDA round should be repeated in the same population group for better outcome and to prevent resistance, if any. It is important to plan well ahead the requirements for funding, manpower and drugs to complete five rounds in each district without interruption.

The current mechanism of supplying albendazole is to receive the LF annual report and reapplication for albendazole for the RPRG–LF reviews. In the SEA Region, generally it is held in April of each year. Timely submission of LF annual progress reports and albendazole reapplication would facilitate timely
procurement and shipment. Countries also should facilitate customs clearance process and internal distribution including drug distribution cost.

Since more and more drug donors are coming forward and integrated NTD control plans are being developed to deliver preventive chemotherapy (PCT) for LF, STH, trachoma, schistosomiasis and onchocerciasis (not found in the SEA Region), WHO is developing a new mechanism for managing drug supply. Dr Ichimori drew the attention of participants towards the coordination of several drug donations (GSK, Eisai, Merck, Johnson and Johnson, Pfizer etc.) through a coordination mechanism at WHO-HQ which may start functioning from 2012. A joint application form and joint annual reporting form will be developed. Member countries will submit joint application forms in line with their national integrated NTD control plans. The current RPRG–LF will be expanded by increasing the number of members (12-15) to accommodate other PCT-amenable NTD in the Region.

Dr Revankar emphasized the submission of complete, timely and regular reporting of the LF-MDA data from the periphery to the centre to WHO to monitor the progress of MDA rounds, streamline drug supply, drop in the Mf rate and stopping MDA. Delay in data flow and feedback to the periphery delays the identification of operational and technical problems and finding appropriate solutions. Drug donors and partners who are supporting LF–MDA programmes also need to receive progress reports in response to their support. To facilitate improved and timely reporting, the internet is being used increasingly since computers are now used even at the periphery. TB and immunization programmes have developed online systems of reporting.

Integrated neglected tropical diseases control

Dr Amanda Miller from the Global Network for Neglected Tropical Diseases (GNNTD), Washington DC, presented on the integration of LF elimination into other NTDs. She highlighted that GNNTD is a global advocacy and resource mobilization initiative working with international organizations, governments, technical agencies and donors to enhance collaboration and coordination to support NTD control and its elimination goals. GNNTD supports national plans and gives advice on strategic investments to help to reduce funding gaps and develop high-impact programmes in selected countries/regions of interest, to mobilize donor support etc. Currently, GNNTD is providing support to WHO-HQ and the Western Pacific and South-East Asia Regional Offices to strengthen NTD control/elimination activities. The logic behind integration, which refers to the creation of linkages among existing programmes to improve
the delivery of health interventions given existing commitments and resources, and also the presence of many common elements and general arguments about economies of scale provide strong reasons to believe that integration among partners can help to improve both efficiency and effectiveness. At present, integration in certain activities is visible such as multi-disease evaluations, joint training sessions for community volunteers, technical and financial guideline development, coordination of activities, comprehensive disease programmes and consolidation etc. When assessing the impact of interventions, indicators measuring the quality of overall improvement in health, mental improvement, increase in school attendance, improvement in quality of life should also be looked into. The SEA Region needs to work on a national integrated plan, finding the funding gap and mobilization of resources.

Dr Anand Joshi from the WHO Country Office, Indonesia discussed the process of initiating integration of LF elimination into STH, schistosomiasis, leprosy and yaws in the country. The MOH is making steady progress in developing and implementing a national plan by involving several stakeholders.

Dr Rita Kusriastuti said that though it is very complex and difficult, it is feasible to implement. A national task force has been formed for coordination, and resource mobilization is in progress. Indonesia developed a national policy document on integrating LF, STH, leprosy and yaws as early as 2007 following two pilot trials in the country. Since then, integration of the NTD concept is gaining momentum in the country.

Dr Ni Ni Aye from Myanmar gave a summary of the development of a national integrated plan to combine LF elimination into STH and trachoma and funding requirements. The national task force is yet to be formed and the plan is yet to be implemented once resources are available.

Dr Ashok Kumar Chaurasia from Nepal presented a scenario on the plan to integrate LF elimination into other NTDs. He said that there has been varying degree of experiences but the plan has been prepared and the national NTD coordination committee has been formed to implement the plan. USAID/RTI will be supporting the funding gap.

Dr C.P. Ramachandran appreciated the efforts of Indonesia, Myanmar and Nepal to move towards integrated drug delivery for LF, STH, schistosomiasis and trachoma. However, he expressed concern about integration at the primary healthcare level since this would increase the burden on one health worker. Already, one health worker is burdened with several diseases at the peripheral level. The quality of the programme has also to be kept in mind.
**Stop MDA initiatives**

Dr Kazuyo Ichimori presented the LF TAS manual of WHO which has been finalized and is being printed. The revised manual is simpler and has been made user-friendly especially for programme personnel. The printed version will be made available shortly. There was a need to revise the 2005 M&E LF guidelines due to new research results and country experience. Therefore an informal consultation meeting was held in September 2010 and the new manual was drafted.

As per the new manual, transmission assessment survey (TAS) is to be planned in evaluation units (EUs), which can be the same as an IU or a combination of IUs and the population should not be more than 2 million per EU. The TAS should be done six months after the fifth round of MDA, each with >65% drug coverage in the total population and an Mf rate <1% in sentinel and spot-check sites. It should also be planned before planning for the sixth round. If the EU passes the TAS test, MDA is stopped and if not, MDA is continued. In *W. bancrofti* areas, antigen levels should be measured using ICT cards, whereas in *Brugia* areas, antibody levels should be measured using the Brugia Rapid test. The tests should be done in school-entrant children as described below:

- If net primary school enrolment ratio is ≥75%, use school-based survey and sample is obtained for students in 1st and 2nd year of primary school.
- If net primary school enrolment ratio is <75%, use community household survey and sample 6-7 year-olds.

Dr Ichimori explained the survey methodology and requested that the guidelines be referred to for deciding the sample size and critical cut-off values. An Excel-based survey sample builder has been developed and is available on the website of the LF Support Centre. There is emphasis on post-MDA surveillance for five years after stopping MDA. During post-MDA surveillance, the TAS should be repeated after 2-3 years. The verification process in the past used for China and the Republic of Korea included report submission by MOH from respective countries followed by review by the RPRG, visit of expert team mission and further review by LF Technical Advisory Group. Subsequently, the WHO Director-General sent a letter verifying “Elimination of LF as a Public-Health Problem”. The present verification process includes the following steps:
Current meeting of the Strategic and Technical Advisory Group (STAG)-NTD Monitoring and Evaluation (M&E) Sub-working group on disease-specific indicators.

For nine countries classified as endemic, but which didn’t implement MDA.

Meeting results submitted to STAG-NTD M&E Working Group—March meeting.

M&E Working Group makes recommendations to STAG-NTD—April meeting.

Future verification process has also been included in the revised guidelines and according to that the following steps are to be followed:

- National programme manager should prepare a dossier including general description, history of LF, interventions, assessment of interventions, surveillance and bibliography. The programme managers may request assistance from WHO, RPRG and Collaborating Centres. Further, the programme manager should submit dossier to RPRG through respective WHO Regional Office.

- RPRG will review the proposal and make the recommendations to STAG-NTD M&E Working Group. The RPRG may also request an expert team to review the dossier and visit the country if needed.

- STAG-NTD M&E Working Group will review the recommendations of RPRG and give their recommendations to STAG-NTD.
3. **Group discussion and recommendations**

**Group A: Scaling up of LF–MDA in endemic countries to reach global target**

*Issues for discussion:*

- Review current progress of LF–MDA and identify key problems for scaling up MDA.
- Reaching MDA to difficult-to-reach/underserved population groups.
- Identify innovative approaches followed by individual countries to scale up MDA.
- Regulating MDA rounds within calendar year.
- Stopping MDA and surveillance as per the revised guidelines.
- MDA drug management.
- Resource mobilization.
- Reporting of SAEs/experiences.
- Involving nongovernmental organizations (NGOs)/community-based organizations (CBOs)/international NGOs/donor partners.
- Integrating LF–MDA into other NTDs control practicing preventive chemotherapy.
- Implementation of IVM.

**Group: B: Scaling up disability-alleviation services in LF–MDA programme**

*Issues for discussion:*

- Review the burden of morbidity due to LF.
- Review ongoing disability alleviation in the Member countries.
- Learning experiences in morbidity management.
- Identify problems and conduct needs assessment to plan and implement services.
- Resource mobilization.
- Partnership: NGOs/CBOs/international NGOs.
• Integrating morbidity management with other disability management programmes.

After two days of in-depth discussions, the participants made the following recommendations.

**Recommendations**

(1) All the countries have attempted to implement MDA with tremendous efforts and significant progress has been made in terms of improving coverage and compliance. The impact is also evident as the number of IUs reporting an Mf rate of less than 1% is increasing. Progress is more evident in smaller countries. Larger countries have identified the IUs with higher Mf rates and bottlenecks. Efforts have also been made to overcome these problems. Sustained efforts are recommended to improve compliance.

(2) The process of stopping MDA using LF-TAS manual of WHO 2011 should be started in those units where a minimum of five or six effective rounds of MDA have been done and the Mf rate has come down to well below 1%.

(3) Disability-alleviation programme needs to be expanded with feasible integrated approach like establishing foot-care clinic or renaming the leprosy clinic and diabetic clinic as foot-care clinic. This should be in addition to any home-based foot-care programme which is being implemented in various countries.

(4) The line listing of lymphoedema and hydrocoele cases may be done as a special drive with special emphasis on young children.

(5) To implement cost-effective control strategies by integrating LF–MDA into control of other NTDs wherever applicable.
4. **Conclusions**

While concluding the meeting, Dr A.P. Dash, Regional Advisor, Vector-Borne and Neglected Tropical Diseases, WHO Regional Office for South-East Asia, remarked that the Region has made significant progress towards MDA expansion and demonstrating success. The declining trend in Mf rates in more than 200 districts provides evidence of how robust the MDA tool is. The success stories in Maldives and Sri Lanka are a lesson to other countries. Thailand is moving towards reaching the point of LF elimination.

Dr Dash thanked all the participants for the excellent deliberations over the past two days and for their relevant recommendations regarding MDA expansion, integrating LF elimination into other NTDs, and disability alleviation. The strong partnership of all the stakeholders including nongovernmental organizations combined with sustained political commitment of the Member countries would eventually lead to LF elimination as a public health problem by 2020.
Annex-1

Country-wise LF maps and graphs

*Figure 1*: Lymphatic filariasis endemic countries of the SEA Region, 2010

*Figure 2*: Progress in LF MDA treatment coverage in SEA Region: 2001-2010
**Figure 3:** Impact of LF MDA in Member States of the South-East Asia Region, 2010

**Figure 4:** LF endemicity in Bangladesh
Figure 5: LF endemicity and impact of MDA in India

Figure 6: Impact of LF-MDA on Microfilarial rate in India: 2004-2010
Figure 7: LF endemicity in Indonesia: 2010

Figure 8: Trend of the Microfilarial rate in Maldives: 1950-2010
**Figure 9:** LF endemicity mapping in Maldives: 2003 and 2009

**Figure 10:** Mapping of LF endemicity in Myanmar: 2007 and 2009
**Figure 11:** LF endemicity mapping of Nepal 2005

**Figure 12:** Microfilarial rate in endemic districts: Pre- and post-MDA phase in Sri Lanka
**Figure 13:** Microfilarial rate in endemic districts: Pre- and post-MDA phase in Sri Lanka

**Figure 14:** Impact of LF-MDA in Thailand: 2001 - 2011

Report of the Eighth Meeting of national programme managers
Figure 15: Impact of LF-MDA on Micro-filarial rate in Thailand: 2002-2009
Annex-2

Programme of the meeting

• Registration
• Opening session
• Global programme of LF elimination
• Comments on impact of LF elimination programme
• Regional progress in LF elimination: Progress, issues and way forward
• Country presentations by national LF programme managers Bangladesh, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka and Thailand
• Special technical issues
  – Disability alleviation
  – Severe adverse events of MDA drugs
  – Regulating MDA rounds in a calendar year
  – Streamlining data flow from periphery to Centre to WHO and Joint Reporting Format
  – Integration of LF elimination into other NTD
  – Monitoring and Evaluation of LF elimination programme: Transmission Assessment Survey
• Group discussion and recommendations
• Concluding session
Annex-3

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Elimination of Lymphatic Filariasis in the South-East Asia Region

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The Eighth Meeting of National Programme Managers for Elimination of Lymphatic Filariasis (LF) from nine endemic countries in the WHO South-East Asia Region, was held on 26-27 April 2011 in Colombo, Sri Lanka.

At the meeting, the LF programme managers discussed progress in implementing mass drug administration (MDA) and identified key issues for further support. The participants deliberated in depth on issues related to scaling up MDA, management of severe adverse events, stopping MDA as per the LF TAS manual of WHO 2011, disability alleviation and integrated approaches. The meeting concluded with recommendations to Member States to scale up MDA and expand disability alleviation services.

This report presents a synopsis of the deliberations held at the meeting and its recommendations.

Elimination of Lymphatic Filariasis in the South-East Asia Region

Report of the Eighth Meeting of national programme managers
Colombo, Sri Lanka, 26-27 April 2011