Western Pacific Region
Programme Managers' Meeting on Neglected Tropical Diseases

Manila, Philippines
16–18 July 2013
WESTERN PACIFIC REGION PROGRAMME MANAGERS MEETING ON NEGLECTED TROPICAL DISEASES
16 - 18 July 2013, Manila, Philippines
MEETING REPORT

WESTERN PACIFIC REGION
PROGRAMME MANAGERS’ MEETING
ON NEGLECTED TROPICAL DISEASES

Convened by:
WORLD HEALTH ORGANIZATION
REGIONAL OFFICE FOR THE WESTERN PACIFIC
Manila, Philippines
16–18 July 2013
## ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<tr>
<td>CWW</td>
<td>Children Without Worms</td>
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<tr>
<td>FBT</td>
<td>foodborne trematodiasis</td>
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<td>GIZ</td>
<td>Deutsche Gesellschaft für Internationale Zusammenarbeit</td>
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<td>ICT</td>
<td>immunochromatographic</td>
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<td>MDA</td>
<td>mass drug administration</td>
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<td>MDG</td>
<td>Millennium Development Goal</td>
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<td>MMDP</td>
<td>managing morbidity and disability prevention</td>
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<td>NTD</td>
<td>neglected tropical disease</td>
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<tr>
<td>RPRG</td>
<td>Regional Programme Review Group</td>
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<tr>
<td>SAFE</td>
<td>surgery, antibiotic therapy, facial cleanliness and environmental improvement</td>
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<td>STH</td>
<td>soil-transmitted helminth</td>
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<tr>
<td>TAS</td>
<td>treatment assessment survey</td>
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<td>USAID</td>
<td>United States Agency for International Development</td>
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<td>WASH</td>
<td>water, sanitation and hygiene</td>
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<tr>
<td>WCBA</td>
<td>women of child-bearing age</td>
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<td>WHO</td>
<td>World Health Organization</td>
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<td>WPRO</td>
<td>WHO Regional Office for the Western Pacific</td>
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The Regional Programme Managers’ Meeting on Neglected Tropical Diseases (NTDs) was held in Manila, Philippines, from 16 to 18 July 2013. In attendance were representatives from 22 of the 28 Member States in the Region, 12 of 14 Regional Programme Review Group Members, 14 observers and the Secretariat (i.e. personnel from World Health Organization [WHO] Country Offices, WHO Regional Office for the Western Pacific and WHO Headquarters). The meeting had three objectives:

1) to compile and analyse data, and to update the status of national lymphatic filariasis elimination and other NTD programmes;

2) to review and revise the country-specific action plans for lymphatic filariasis and other NTD programmes based on the Regional action plan for neglected tropical diseases in the Western Pacific (2012–2016) and Accelerating work to overcome the global impact of neglected tropical diseases: a roadmap for implementation (2012) to achieve elimination goals; and

3) to review the progress of integrated approaches in NTD control or elimination, and to explore new opportunities in this regard.

The meeting began with a review of the history of the Global Programme to Eliminate Lymphatic Filariasis, which highlighted the tremendous progress already made. It was noted that the focus on schistosomiasis is now shifting from control to elimination, and interventions for soil-transmitted helminth (STH) infections are gradually being scaled up. It was also discussed how foodborne trematodiases have become a serious concern in the Western Pacific and the Americas. Efforts are underway to facilitate development of appropriate interventions. There was a lengthy discussion on the potential for integrating programme activities to eliminate trachoma and yaws. However, for many NTDs, there is a need for more research to formulate appropriate control programmes.

The panel discussion on lymphatic filariasis morbidity management and disability prevention highlighted the importance of reporting the activities of this component and the need to include this information in the dossier for verification of lymphatic filariasis elimination when countries and areas reach that stage. The new drug applications for preventive chemotherapy and the process of review through a new virtual panel were discussed, and country and area experiences on using the new reporting and application forms for preventive chemotherapy were shared.

The importance of addressing water and sanitation issue to complement efforts to control and/or eliminate schistosomiasis and STH infections was highlighted.

NTD partners in the Region spoke about their activities and future plans in support of NTD programmes. It was noted that countries and areas should take advantage of the available funding for operational research from the Bill & Melinda Gates Foundation. Some of the information gaps that can be addressed by operational research include identification of optimal post-mass drug administration (MDA) surveillance techniques, development of efficient and rapid coverage survey techniques to determine MDA programme coverage and compliance, and assessment of the current state of STH infection prevalence in areas that have been under lymphatic filariasis elimination programmes for years.
The meeting also provided a forum for countries and areas to develop and/or update their national workplans on NTDs for 2013–2014.

The participants agreed on the following key conclusions:

Control and elimination of NTDs is a priority in the Region, and significant progress has been made, especially towards elimination of lymphatic filariasis and leprosy. Nevertheless, more work is necessary to achieve elimination in all endemic countries and areas and to sustain case management and disability prevention activities.

Major efforts from countries, areas and partners; mobilization of financial resources; and cooperation with other health programmes and sectors will be needed to scale up and maintain interventions for the control and elimination of STH infections, schistosomiasis, yaws, trachoma and foodborne trematodiases and to address the other eight NTDs prevalent in the Region. This will require innovative, interdisciplinary and intersectoral approaches to strengthen and expand partnerships.
1. INTRODUCTION

The Regional Programme Managers’ Meeting on Neglected Tropical Diseases (NTDs) was held in Manila, Philippines from 16 to 18 July 2013. In attendance were representatives from 22 of the 28 Member States in the Region, 12 of 14 Regional Programme Review Group (RPRG) members, 14 observers and the Secretariat (i.e. personnel from World Health Organization [WHO] Country Offices, WHO Regional Office for the Western Pacific [WPRO] and WHO Headquarters).

1.1 Objectives

1) To compile and analyse data, and to update the status of national lymphatic filariasis elimination and other NTD programmes;

2) To review and revise the country-specific action plans for lymphatic filariasis and other NTD programmes based on the Regional action plan for neglected tropical diseases in the Western Pacific (2012–2016) and Accelerating work to overcome the global impact of neglected tropical diseases: a roadmap for implementation (2012) to achieve elimination goals; and

3) To review the progress of integrated approaches in NTD control or elimination, and to explore new opportunities in this regard.

1.2 Opening remarks

Dr Shin Young-soo, Director-General, WPRO, welcomed the delegates to the meeting. He pointed out how Member States are in a crucial position of being on the front-lines in the battle against NTDs. An important output of the meeting is the review and revision of the country- and area-specific action plans.

NTDs are diseases of poverty. They are a public health problem in 28 Western Pacific Region countries and areas. Lymphatic filariasis has already been eliminated in two countries. Palau, Niue and Vanuatu are also progressing towards lymphatic filariasis elimination. Twelve countries and areas are conducting deworming programmes, with Cambodia, Kiribati and Tuvalu achieving more than 75% treatment coverage among school-aged children. Trachoma, schistosomiasis, yaws and foodborne trematodiases (FBTs) are also prevalent, but many countries and areas are making steady progress to address them.

Further, Cambodia, China, the Lao People’s Democratic Republic and the Philippines are on their way to eliminating schistosomiasis. Vanuatu is the first country in the Region to launch a yaws eradication campaign. Solomon Islands and Papua New Guinea are also planning a similar campaign.

Dr Shin applauded the life-saving roles of partners who answered the call of duty with a firm commitment. He emphasized the need to finish what has been started, giving special attention to NTDs. He cited the recent resolution of the World Health Assembly, which emphasized the need to address 17 NTDs that are now placed into one platform in Accelerating work to overcome the global impact of neglected tropical diseases: a roadmap for implementation. This calls for fostering more effective collaboration and mobilization of resources and technical expertise.
Dr Shin noted that honouring the resolution will be a challenge to everyone present at the meeting. He encouraged everyone to work harder, and assured them of having WPRO alongside, assisting them on various fronts such as scaling up preventive chemotherapy, ensuring drug availability and mobilizing funding and technical resources.

Dr Shin encouraged everyone by saying that they had the power to make NTDs a thing of the past—something that will no longer cause suffering to people in the Region.

2. PROCEEDINGS

2.1 Global and Regional updates

2.1.1 History of the Global Programme to Eliminate Lymphatic Filariasis

Professor Dato C.P. Ramachandran gave the historical background of the Global Programme to Eliminate Lymphatic Filariasis. He cited lymphatic filariasis as one of the oldest parasitic diseases and outlined historical milestones in the diagnosis, control and prevention of the disease.

Lymphatic filariasis affects 120 million people worldwide—50 million with overt disease and an additional 70 million with hidden lymphatic damage. An estimated 1.3 billion people are at risk of lymphatic filariasis, which causes disability, economic loss and social stigmatization.

Around 18 years of research and development on lymphatic filariasis at the global level, focusing on drug trials, combination therapy, immunodiagnosis and disease burden, has been supported by the WHO Special Programme for Research and Training in Tropical Diseases. He recounted breakthroughs such as the development of effective interventions, chronic disease management techniques and new diagnostic tools including the immunochromatographic (ICT) card test. Milestones towards eliminating lymphatic filariasis include identification of control strategies during consultative meetings in 1994, and definition of goals in 1997, such as interruption of transmission and morbidity control.

A 1997 World Health Assembly resolution urged Member States to strengthen activities towards elimination of lymphatic filariasis as a public health problem and requested that the Director-General mobilize support for global and national elimination activities. He also cited the launch of the Global Programme to Eliminate Lymphatic Filariasis in 2000.

There was a progressive increase in the number of treatments given from 2000 to 2009 under the programme. In terms of health and economic impact, an estimated $21 billion was saved through the protection of individuals and prevention of disease.

The programme has been ongoing for more than 10 years in over 52 countries and areas, using mass drug administration (MDA) as a main strategy to bring down the prevalence and to interrupt transmission. It is estimated that by 2012, the global prevalence declined to about 55 million infected or lower and that millions more have been prevented from acquiring new infections and lymphatic pathology.

The programme operates under the new public health paradigm that public–private partnerships are essential in sharing responsibilities and responses to global health problems. He expressed hope and anticipation that real progress can be made towards strengthening
these partnerships. He concluded his talk with an encouraging note on how everyone should take pride in the programme’s success to date, but much more needs to be done to cover all countries and areas globally where lymphatic filariasis is still endemic and to prevent new infections, towards a world free of lymphatic filariasis by 2020.

2.1.2 Updates on global neglected tropical disease programmes

Dr Albis Gabrielli, Department of Control of NTDs, WHO Headquarters, presented an update on NTDs. He focused on the global roadmap for the control or elimination of 17 diseases that are prevalent in tropical and subtropical Africa, Asia and South America, which mainly affect populations who are living in poverty, in areas where sanitation is lacking and who have close contact with infectious vectors and infected animals.

Over 1.25 billion people are infected with one or more NTDs due to soil-transmitted helminth (STH) infections. Over 10 million people are infected with one or more protozoan, bacterial or viral NTDs. He went on to say that recent calculations attribute, to a group of 12 NTDs, a burden of 534 000 deaths per year and 56.6 million disability-adjusted life years lost per year.

Dr Gabrielli pointed out the importance of controlling NTDs as a means to contribute to poverty reduction. Because of the close link between poverty and disease (both as a root cause and effect), any disease control intervention indirectly results in improving socioeconomic conditions of affected communities.

He presented the key documents that could guide and provide normative reference such as the global NTD roadmap, which provides a time frame for control or elimination of all NTDs with clear milestones for 2015 and 2020; Sustaining the drive to overcome neglected tropical diseases, which tracks progress towards achievement of milestones and goals set in the global NTD roadmap; and the World Health Assembly 66.12 Resolution on NTDs, which endorses the global NTD roadmap and is the first resolution that brings together 17 NTDs under one umbrella. Key partners also pledged support towards achievement of milestones of the global NTD roadmap through the London Declaration in 2012. Key aspects include country ownership of programmes, integration of control programmes into primary health care services, expanded interventions to reach roadmap milestones and targets, and support by partners as well as national commitment.

The mission of the Department of Control of NTDs is to prevent, control, eliminate or eradicate NTDs towards the achievement of Millennium Development Goals (MDGs). This is to be achieved through the three strategic approaches of intensive case management, preventive chemotherapy and transmission control. Diseases that benefit from preventive chemotherapy with no need for individual-level diagnosis and treatment are lymphatic filariasis, onchocerciasis, schistosomiasis and STH infections. Through preventive chemotherapy strategy, low-cost and feasible community diagnosis as well as safe and easy-to-administer drugs are now available. Large-scale donations of drugs for preventive chemotherapy assure the programme access to essential medicines in the next 5–6 years.

Other diseases, such as FBTs, taeniasis and cysticercosis, are being progressively included in the packages. Intensified disease management, on the other hand, entails individual case management with decentralized diagnosis and treatment offered to patients by specialized personnel. These apply to leishmaniasis, human African trypanosomiasis, Chagas disease and Buruli ulcer.
Dr Gabrielli then reported on the status of the different NTDs as follows:

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<tr>
<th>Neglected tropical disease</th>
<th>Programme</th>
<th>Status</th>
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| Dracunculiasis (Guinea worm disease)           | Global eradication campaign                                               | • 187 countries and areas certified free of transmission by 2010  
• In 2010, 1,797 cases reported from 5 countries or areas                                                                                                                                            |
| Lymphatic filariasis                            | Global Programme to Eliminate Lymphatic Filariasis                        | • 72 endemic countries or areas  
• 53 countries or areas under MDA  
• 3.4 billion treatments delivered to 897 million people (cumulative)                                                                                                                                 |
| Onchocerciasis                                  | Africa:                                                                   | • In the Americas, it has been eliminated in 33% of countries, interrupted in 63% and continues in 4%.                                                                                                                                                  |
| Schistosomiasis                                 | • 2012 resolution on elimination of schistosomiasis (WHA65.21)           | • 243.1 million people in 52 countries need PC  
• 28.1 million treated in 2011                                                                                                                                                                                                                                    |
| Soil-transmitted helminthiasises                | • Global Soil-Transmitted Helminthiasises Strategic Plan (2011–2020)      | • 874.5 million children in 114 countries need PC  
• 267.9 million treated in 2011                                                                                                                                                                                                                                    |
| Foodborne trematodiases                         | • Clonorchiasis, opisthorchiasis, fascioliasis and paragonimias           | • Over 56 million infected individuals worldwide; significant associated morbidity  
• Progressive inclusion into the PC package or individual case management  
• Disease control activities ongoing in an increasing number of countries, including Bolivia, Cambodia, Republic of Korea, Lao People’s Democratic Republic, Peru, Thailand and Viet Nam (> 500,000 treatments per year)  
• Expansion of PC: triclabendazole in Bolivia; praziquantel in Cambodia, Lao People’s Democratic Republic and Viet Nam                                                                                                                                 |
<p>| Trachoma                                       | Elimination of blindness from trachoma (WHO Alliance for the Global Elimination of) | • 7 countries reported achieved ultimate intervention goals (2012)                                                                                                                                                                                                     |</p>
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<td><strong>Blinding Trachoma by 2020</strong> using the SAFE strategy (WHA51.11)</td>
<td>• Target: elimination &quot;as a public health problem by 2020&quot; • Integration with NTD programmes for selected SAFE components</td>
<td>• 1 country WHO-verified as WHA51.11-compliant (2012) • 53 countries endemic • 166000 operated for trichiasis and 48 million treated with single administration of azithromycin in 2012</td>
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<td><strong>Yaws</strong></td>
<td>• Global Yaws Control Programme1950–1970 achieved 95% reduction, but it re-emerged • Target: eradication by 2020 • Strategy developed at Morges Meeting in 2012</td>
<td>• 13 countries currently endemic, including Papua New Guinea, Solomon Islands and Vanuatu</td>
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<td><strong>Buruli ulcer</strong></td>
<td>• Strategy: early detection and antibiotic treatment</td>
<td>• 33 countries have ever reported cases • 15 countries actively reporting cases • 3 endemic countries in the Western Pacific, including Australia, Japan and Papua New Guinea</td>
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<td><strong>Leprosy</strong></td>
<td>• Most countries and areas now applying the same elimination strategy at regional, district and subdistrict levels. • Access to information, diagnosis and treatment with multidrug therapy remain key elements in the strategy to eliminate the disease as a public health problem.</td>
<td>• Most countries and areas that were previously highly endemic for leprosy have achieved elimination at the national level and are intensifying their efforts at regional and district levels. • Between 1985 and 2010, more than 15 million cases were cured with multidrug therapy. • Global registered prevalence at the beginning of 2012 stood at 181,941 cases. • New cases detected during 2011 totalled 219,075. • As of January 2012, only 7 countries (Brazil, Burundi, Kiribati, Liberia, the Marshall Islands, Micronesia and South Sudan) have a prevalence rate above 1 per 10000, compared to 122 countries in 1985.</td>
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<td><strong>Human African trypanosomiasis</strong></td>
<td>Towards elimination in 80% of foci by 2015 and in all foci by 2020.</td>
<td>A total of 7,214 new cases were reported to WHO during 2012, compared with 6,750 cases in 2011.</td>
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<td><strong>Chagas disease (American trypanosomiasis)</strong></td>
<td>Trying to interrupt/reduce: • Transmission via intra- and peri-domestic vectors • Transmission via blood transfusion and organ transplantation • Oral transmission and congenital infection</td>
<td>• Now a global disease • About 8 million people worldwide are estimated to be infected with Trypanosoma cruzi, mostly in Latin America. Chagas disease has now spread to other continents, including Europe and the Western Pacific.</td>
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<td><strong>Leishmaniasis</strong></td>
<td>• Elimination of visceral leishmaniasis is aimed for in India by 2020 • Increased case detection (≥70%) and access to treatment (≥90%) for cutaneous leishmaniasis, especially in the Eastern Mediterranean Region, by 2015</td>
<td>• Prevalence: 12 million–14 million cases of visceral and cutaneous leishmaniasis • Incidence: 2 million cases per year (75% cutaneous; 25% visceral)</td>
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MDA = mass drug administration; NTD = neglected tropical disease; PC = preventive chemotherapy; SAFE = surgery, antibiotic therapy, facial cleanliness and environmental improvement; WHA = World Health Assembly; WHO = World Health Organization.
Dr Gabrielli concluded his presentation with a summary of how NTDs are a group of diseases mainly prevalent in tropical countries and areas that do not enjoy the attention that they deserve, and how these represent a significant public health burden, especially in terms of morbidity. He also said that with the two main strategies of preventive chemotherapy and intensified disease management, hundreds of millions of treatments have been delivered every year. He ended saying that the global NTD roadmap is expected to encourage, guide and support field interventions and contribution from partners towards achievement of specific goals by 2015 and 2020.

Dr Kazuyo Ichimori then presented the updates on the Global Programme to Eliminate Lymphatic Filariasis. In 1997, the World Health Assembly resolved to eliminate lymphatic filariasis as a public health problem (WHA Resolution 50.29) and in 2000, WHO launched the Global Programme to Eliminate Lymphatic Filariasis.

For the goal of global elimination by 2020, the programme has two aims:
(1) transmission interruption through MDA; and (2) alleviation of suffering caused by the disease through morbidity management and disability prevention. These two components have a stepwise approach progressing towards verification of elimination status, and eventual integration of the rehabilitation and morbidity management and disability prevention into healthcare services.

By the end of 2020, the programme aims to ensure that 70% of countries and areas are verified free of lymphatic filariasis, the remaining 30% of countries and areas have stopped MDA and are entering post-MDA surveillance (i.e. no transmission), and 100% of endemic countries and areas have achieved full geographical coverage with access to basic care for chronic patients (i.e. no new lymphatic filariasis cases).

Progress to date includes the following: (1) as of 2011, 53 countries and areas were implementing MDA; (2) 952 million people were treated from 2010 to 2011; (3) 12 countries and areas are under post-MDA surveillance; and (4) 27 countries and areas have active morbidity management activities.

WHO Headquarters provides technical guidance and facilitates key technical publications such as strategic plans; monitoring and evaluation including transmission assessment surveys (TASs) and morbidity management and disability prevention (MMDP); reports on subworking group meetings; as well as position statements on lymphatic filariasis and malaria, TASs and MMDP. Among the publications highlighted are those on TASs, which are a critical decision-making step for national programmes to decide whether they can stop MDA and move to the surveillance phase. It is a simple survey design for documenting that the prevalence among children aged 6–7 years is below a critical cut-off threshold. It is implemented when all eligibility criteria have been met. The publication on MMDP details the steps in the development of the MMDP component. She also added that the dossier for verification will now require inclusion of MMDP information.

The publication on integrated vector management provides guidance on how to identify the need for vector control and how to develop a tailor-made vector control plan.

Next steps for the programme include moving more countries and areas to post-MDA surveillance, development and promotion of a minimum package of MMDP care, and improvement and streamlining of the lymphatic filariasis elimination verification process.

Dr Ichimori concluded with a plea to make the programme a successful global public health programme.
2.1.3 Current status of neglected tropical disease control and elimination in the Western Pacific Region

Dr Eva Maria Christophel, Team Leader, Malaria, Other Vector-borne and Parasitic Diseases, WPRO, gave a background on NTDs in the Region. NTDs are endemic in 28 of 37 countries and areas, with 114 million requiring preventive chemotherapy. Countries and areas in the Region are endemic for 13 of the 17 NTDs included in the global NTD roadmap.

Resolutions and frameworks under which the programme is working include the regional NTD action plan (endorsed last year by the Regional Committee), and the World Health Assembly resolution passed in May 2013 that covers 17 NTDs and the action needed to address all NTDs.

She elaborated on the progress made as well as the barriers to NTD control and elimination. Only 52% of the population (excluding women of child-bearing age [WCBA]) who require preventive chemotherapy against STH infections are covered by MDA. This coverage will be much lower if WCBA are also included in the calculation.

The Region is on course for elimination of lymphatic filariasis as a public health problem by 2020, and the disease has been already eliminated in three countries (i.e. China, Republic of Korea and Solomon Islands). Regionally, there has been impressive overall progress in 20 out of 22 remaining endemic countries and areas, with 211 million treatments distributed during 2000–2011. They are now progressing from MDA to stop-MDA and post-MDA surveillance. Three countries are submitting dossiers in 2013 for verification of elimination of the disease as a public health problem as well.

There is a lack of progress in Papua New Guinea, which may necessitate innovative strategies. While there is good progress in MDA, MMDP continues to lag behind. Advocacy, resources and further support from partners may be required to address this concern. There is also a risk of resurgence of lymphatic filariasis in Aedes transmission areas, necessitating robust post-MDA surveillance.

While there is already good success with lymphatic filariasis, significant scaling up of STH infection programmes is required. This suggests the need to expand the preventive chemotherapy programmes in the Region. For STH infections, 10 out of 16 endemic countries or areas began implementing the programme partly or fully in 2011. A total of 194 million treatments were delivered during 2003-2011.

Three countries-Cambodia, Kiribati and Tuvalu-have achieved more than 75% treatment coverage consistently. There is a need for significant scaling up of the programme in other countries and areas, with a focus on improving the treatment coverage among WCBA. Monitoring and evaluation needs strengthening, and increased investment in water, sanitation and hygiene (WASH) is needed.

The schistosomiasis elimination programme is in place in all four endemic countries (i.e. China, Cambodia, Lao People’s Democratic Republic and the Philippines). An estimated 19 million treatments were delivered during 2006–2011. The population at greater risk of infection has been targeted with preventive chemotherapy, and there is a declining trend of infection in all four countries. However, the presence of animal reservoirs and the lack of snail control activities are a threat to eliminating the disease. A more robust WASH programme is also needed, underscoring the importance of multisectoral collaboration. The other concern is possible spread of the infection to newer areas due to development.
She discussed other NTDs in the Region, such as the FBTs, which are present in seven countries and areas. Control efforts are in place in some areas, but more comprehensive strategies are needed. Trachoma, present in 11 countries and areas, is declining in some, but the situation is unclear in others.

Fewer countries are affected by leprosy, yaws, echinococcosis and leishmaniasis. Buruli ulcer, cysticercosis, scabies and strongyloidiasis have patchy distributions, and control strategies are still unclear.

Dr Christophel then outlined the way forward, starting with the regional NTD action plan. There is political commitment from various health ministers, having discussed NTDs in their Tenth Pacific Health Ministers’ Meeting agenda. The RPRG is coordinating drug donations, and there has been a significant increase in funding in the past 2 years. She cited these as good conditions for moving forward. She also said, however, that a significant gap exists between available resources and the requirements for the scale-up.

She concluded by enumerating the tasks ahead: (1) finish the lymphatic filariasis elimination job; (2) address lymphatic filariasis MMDP issues; (3) massively scale up intervention to reach 75% of children and women for STH infection control; (4) update national NTD plans; and (5) ensure NTDs are part of national health plans. This, she said, is necessary for getting partners on board. She also emphasized the need to intensify and expand partnerships; mobilize required resources, including technical assistance; and significantly strengthen surveillance and monitoring and evaluation.

In the discussion that followed, data quality was cited as a major challenge for country programmes, and a strong plea was made for countries and areas to ensure that data are being recorded and analysed correctly. Countries and areas were encouraged to seek assistance as needed.

A question was also raised on how much the WHO Department of Control of NTDs is willing to invest in WASH, aside from the treatment of STH infections. Dr Gabrielli clarified that the department does not fund WASH as a means to address specific diseases, and that interventions should come as part of a country’s developmental strategy. The department provides less direct support for WASH measures as it does for preventive chemotherapy. She emphasized the need to increase prioritization of WASH in areas that are approaching elimination and recommended that implementation of WASH be included as part of elimination plans (as they are similarly included in global NTD roadmap).

Specific queries and comments from countries and areas included: (1) the need for standard indicators for each particular disease (Solomon Islands); (2) request for funding assistance for the STH infection programme, particularly for the drugs for MDA for school-aged children in view of the high prevalence among this age group (Tonga); (3) clarification on the meaning of integration of programmes, whether it pertains more to recording and reporting on NTDs; and (4) that the countries and areas expect to see integration also of vector control strategies (Tuvalu).

2.1.4 Neglected tropical diseases in the Western Pacific Region: considerations on the way forward

Dr John Patrick Ehrenberg, Director, Combating Communicable Diseases, WPRO, elaborated on the way forward in dealing with NTDs in the Region. He highlighted achievements and challenges faced by the NTD programmes in the Region.
In 2000, 25 countries and areas were endemic for lymphatic filariasis. By 2008, China and the Republic of Korea had eliminated the disease. In 2011, Solomon Islands was declared lymphatic filariasis-free. Three more countries (i.e. Niue, Palau and Vanuatu) are in the process of submitting lymphatic filariasis elimination dossiers in 2013. An estimated 78% of the population in the Region requiring MDA for the disease live in the Philippines, while 17% live in Pacific island countries and areas. Among these countries and areas, Papua New Guinea has the largest population requiring MDA (i.e. approximately 12% of the total population).

MDA coverage rates in the Region have increased. By 2016, it is expected that 16 countries and areas will have approached lymphatic filariasis elimination. By 2020, all countries and areas, except Papua New Guinea, are expected to have completed post-MDA surveillance.

Dr Ehrenberg spoke about the complex situation of Papua New Guinea. He said there is a need to understand the low coverage rates, explaining that the country is coping with many other public health problems and priorities. It is of paramount importance that the status of lymphatic filariasis in Papua New Guinea is better understood so better assistance can be provided.

For STH infections, coverage throughout the Region is significantly below actual targets despite the decline in the size of the at-risk population. China readjusted its at-risk population after 2008, resulting in a reduction of the country’s denominator as of that year, influencing overall Regional estimates. This could account for the reduction in the number of at-risk children in the Region in 2011. China also reported that STH infection prevalence was less than 20% in all of its endemic areas in 2012.

Treatment coverage is well below the 75% for school-aged children at risk. Overall low coverage is primarily driven by some of the high-burden countries and areas. Although the planned coverage of 75% was not reached in the Region as a whole, Cambodia has been regularly achieving these coverage rates since 2006. Compared to the school-aged children target population, better coverage rates have been attained in pre-school-aged children probably because they often piggyback onto other programmes such as the Expanded Programme on Immunization. This requires further analyses.

Cambodia has also sustained very good treatment coverage rates in schistosomiasis control. While the same is true of the Lao People’s Democratic Republic, programme activities have been declining since 2008. The denominator (i.e. the at-risk population) of the schistosomiasis programmes in China and the Philippines are quite large, accounting for the low coverage rates. This issue needs to be examined.

Dr Ehrenberg then showed that the funding gap to implement the regional NTD action plan was about 45% of the total budget. The estimate took into account the five objectives in the regional NTD action plan and the seven key NTDs. This significant financial gap would obviously lead to a large programmatic gap.

He then mentioned some of the good-performing countries in terms of programme implementation in spite of funding gaps. Fiji mobilized only half of the needed financial resources, with no apparent funding gaps, while Cambodia still has a large funding gap in spite of having allocated a national budget complemented by external funding. The Lao People’s Democratic Republic depends entirely on external funding to support its NTD programme.
Viet Nam also has a large gap. Available funding is only about 20% of the required amount. The Philippines reported having funds to cover 80% of its needs. While remarkable, this leads to a question on the reasons for the programmatic gaps in the country. These cannot be entirely attributed to the lack of funding and maybe related to the decentralization of national health budgets.

The financial gap in Cambodia is certainly related to FBTs and strongyloidiasis, which are not being supported by any donor. This is also the case in the Lao People’s Democratic Republic, although the Government of Luxembourg and the Asian Development Bank (ADB) have supported FBT activities in three endemic provinces there in the past.

Drug donation has increased dramatically, but the associated operational costs need to be seriously considered. There is a need to understand how to conduct massive scale-up of the programmes and to address the issue of funding gaps.

He concluded his discussion with issues related to data management and reporting. He emphasized that NTDs are not subject to compulsory reporting. Obtaining quality data is critical so that partners can be mobilized to help. He said that the discussion on denominators is an old issue that needs to be settled.

Plans for a massive roll-out of NTD programmes should be carefully analysed in light of current severe financial constraints. Solutions need to be found to assist programmes. It is WHO’s role to provide guidance on how prepare for the endgame strategy, including development of dossiers. Encouraged by WHO, several countries and areas in the Region are now at the point where they would like WHO to process their lymphatic filariasis dossiers. However, much work remains to be done to attain schistosomiasis elimination as a public health problem on the Mekong River. The target date is 2016. On the STH infection front, several countries and areas have made impressive progress. However, major efforts need to take place to scale up to the 75% coverage target among school-aged children throughout the Region.

WHO welcomes the much-needed collaboration of stakeholders, as the task is daunting and cannot be achieved by any single agency on its own. It requires a concerted effort, by multiple stakeholders and partners. It is therefore important that roles and responsibilities of the different stakeholders be carefully defined and that close collaboration and communication are ensured to avoid duplication of efforts. Member States need to translate political dialogue into action (e.g. ensuring human resources are available on the ground). WHO is working towards improving data collection and review, fine-tuning financial gap analyses and improving programme monitoring. The RPRG has been doing an excellent job in supporting the drug donation review process. Last but not least, the collective expertise of the RPRG is a definite asset to the NTD programme and is very much appreciated by WHO.

2.2 Eliminating lymphatic filariasis in the Western Pacific Region

2.2.1 Lao People’s Democratic Republic

Dr Rattanaxay Phetsouvanh, Ministry of Health, began his presentation on the country’s lymphatic filariasis elimination programme with the results of a national survey conducted from 2002 to 2007, which showed one endemic area with 17.6% prevalence. Remapping, which was done in 2009 using the ICT card test, revealed four districts of the same endemic province with prevalence of 4.4%–27.4%. A recent remapping done in 2013 in the adjacent provinces of Champasack and Sekong using ICT card tests found six lymphatic filariasis seropositive cases in Kok Pung Village, Thateng District, Sekong province.
Recently, the Prime Minister joined the lymphatic filariasis MDA launch providing the needed endorsement for the intervention.

The pilot Madman 2008 and 2009, were done in one implementing unit, and expanded in 2010 to cover four implementing units. An implementation unit is defined as a district. No MDA was done in 2011 due to resource constraints. Resumption of MDA in five implementing units was done in 2012, with coverage of 67.5%.

The caseload of affected persons is very low in the country, with only two cases of lymphoedema in patients older than age 50 years. No new clinical cases among young people have been detected for several years. Doctors in the endemic areas have been trained in disability alleviation of lymphatic filariasis cases. Refresher training was not required since the caseload was low.

Other key interventions include vector control and morbidity care. Vector control will be achieved through synergistic effects of malaria bednet distribution and integrated vector management. A key strategy is MDA of diethylcarbamazine citrate and albendazole. The national programme will target elimination of lymphatic filariasis as a public health problem by 2020.

Challenges include the need for emphasis on behaviour modification, such as community education on personal protection; reduction in external donor support, which poses a risk to the sustainability of intervention programmes; and the limited financial resources in countries with low financial allocation by governments to sustain the control interventions.

In the discussion that followed, the current prevalence rate after several rounds of MDA was clarified. In 2007, the prevalence was 17%, and in 2009, it ranged from 4% to 27%. It was clarified that MDA was not done in 2010 due to some constraints, but by 2011, MDA was resumed. The other colleagues of Dr Phetsouvanh also shared that a mosquito survey was done during which Anopheles, Mansonia and Culex mosquitoes were collected. Vector incrimination studies are in progress, and the results will be available by the end of this year.

2.2.2 Malaysia

Malaysia has a total of 994 implementing units, and 116 of them (21%), with a population of 1117733 (4%), are endemic for lymphatic filariasis. Endemicity mapping was done from 2002 to 2003. Five cycles of MDA were done from 2004 to 2008 using albendazole and diethylcarbamazine. The first round of MDA in 2004 covered 84.3% (1169610 of endemic implementing units). There was a progressive increase in epidemiological drug coverage from 2005 to 2008 (88% to 93%).

A post-MDA assessment conducted in 2009 showed Sarawak Province as having a microfilaraemia prevalence of 1%. In 2010, a WHO expert group meeting decided that East Malaysia (i.e. Sabah and Sarawak Provinces) should continue two more rounds of MDA. TASs done in 2011 showed four implementing units with reported antibody prevalence of more than 2%, which is higher than the critical cut-off level. In 2011, a TAS in Peninsular Malaysia noted that four implementing units failed, and the programme decided to continue another two rounds of MDA.

Activities for the next 3 years include continuation of MDA in areas that have not achieved target prevalence, a drug coverage survey and an STH infection survey. The programme is integrated with other community-based, primary health care activities, and is
part of a vector-borne diseases sector control programme of the Ministry of Health. The operational budgets were used to support the programme activities of the states and the districts. Albendazole and diethylcarbamazine were supplied by WHO.

Issues include delayed MDA implementation due to late delivery of diethylcarbamazine, and security issues in Sabah Province. Migrant workers (from bancroftian-endemic countries such as Bangladesh, India and Nepal) pose a risk of re-introducing bancroftian filariasis, which was actually eliminated in the 1970s in some areas. Filariasis is not, so far, included in the migrant workers screening programme.

The remoteness of endemic areas in East Malaysia makes access difficult. The presence of mobile populations, such as indigenous persons, poses a challenge to MDA, testing and treating, and follow-up. Side-effects of diethylcarbamazine also affect patient compliance. The fast turnover of staff (i.e. the programme manager and staff in-charge) makes programme documentation difficult.

In the discussion that followed, it was clarified that microfilaraemia was looked into (aside from the antibody assay). It was also emphasized that all children detected with the antibody assay were treated. No morbidity has been reported as of last year.

2.2.3 Philippines

Of the 80 provinces in the Philippines, 44 provinces are endemic for lymphatic filariasis (situated in 12 regions), and the total endemic population is close to 30 million. Twelve provinces have already reached the level of elimination of lymphatic filariasis as a public health problem.

MDA activities started in 2001, initially with municipalities as implementing units and later changed to provinces as advised by WHO. By 2007, funding increased, and the programme was able to procure diethylcarbamazine for endemic provinces. In 2011 and 2012, MDA coverage was high, mainly because of the performance-based grant system that provided funds to implementing units that reached elimination level, enabling them to sustain their gains. They were also able to prevail to include schistosomiasis and lymphatic filariasis control in the local government unit score cards, a system of rating their performance for targets in public health programmes.

Plans include implementation of preventive chemotherapy, and selective treatment in areas that have stopped MDA. The programme has commissioned an academic institution to prepare a document for guidance on integrated vector management to include malaria, lymphatic filariasis, Japanese encephalitis, and dengue. Provision of lymphatic filariasis disability kits will be continued, as will integration of lymphatic filariasis disability management with leprosy. Operational research on other diagnostic tools, surveillance protocol and morbidity management will also be pursued. Dr Hernandez also enumerated the TAS activities up to 2014.

In filariasis-endemic areas that passed the TAS and have stopped MDA, STH deworming will continue based on the National Parasite Survey, during which there will be stratification of areas that will determine the package of intervention for each group based on endemicity.

Funds are ensured with current Department of Health management in support of a disease-free initiative under universal health care. Issues include difficulty in programme implementation in Autonomous Region in Muslim Mindanao conflict areas and development of a surveillance system for implementing units that passed the TAS 1, TAS 2 and TAS 3. Dr
Hernandez also expressed the need for guidelines for implementing units that passed the TAS 1 and TAS 2, but failed the TAS 3, assuming such a situation may arise. She said there is also a need for inputs on an additional treatment scheme for disabilities caused by lymphatic filariasis.

During the discussion, Dr Hernandez clarified selective treatment. She explained that some provinces will conduct border operations and treat cases as they are identified. Vector control piggybacks on insecticide-treated bednet use for malaria control, zooprophylaxis (i.e. carabao) and personal protection. She also described how the national STH prevalence survey will be done, covering 80 provinces and selected schools.

2.2.4 Fiji

Ms Kelera Oli started her presentation with country background. Fiji has a population of 863,000 (as of the 2007 census) with 4 divisions and 14 provinces. These four divisions are subdivided into administrative medical subdivisions (totalling 20), and currently divisions are the implementing units for the lymphatic filariasis elimination programme.

A survey using ICT card tests conducted in 2000 found a prevalence rate of 16.6%. This was also the same year that the country joined the programme, and by 2002, countrywide MDA was introduced. A repeat survey with ICT card tests conducted in 2006 showed a prevalence rate of 14.4%, and a subsequent 2007 national prevalence survey (C-survey) with ICT card tests showed four implementing units with an overall prevalence rate of 9.5%.

MDA coverage was variable over time (from 2000 to 2011), sometimes lower than the recommended level. Directly observed treatment was not universally practised until 2012. There is low coverage in urban areas, and the long MDA period (2–4 weeks) affected the health system and other public health programmes. There was also some fatigue from the repeated MDAs, prompting the programme to ponder the actual duration of its implementation. To address these issues, a national task force for lymphatic filariasis was formed in 2012.

New strategies for the 2012 MDA included the Fiji Filariasis-Free Weekend, during which universal directly observed treatment was implemented, backed up by a massive mass media campaign. The MDA period was shortened to 3 days, and the number of drug distributors increased (1 per 200). Performance-based payment was also introduced (per registration).

The campaign included 4 weeks of communication for behavioural impact strategy implementation with intensive media campaigns in October. A total of 2092 volunteers trained for 2 weeks on the strategy and directly observed therapy. Drug distribution by volunteers was done from 28 to 30 October 2012 plus 2 extra weeks by public health nurses in low-performance areas. Directly observed therapy coverage was 85% (out of 566,338 targeted), with 96% of accessed population having swallowed the tablets. The coverage rate was below 80% in most urban areas.

Future plans include sentinel site surveillance and a C-survey for the Central and Eastern Divisions (quarter 3, 2013) and a TAS 2 for the Western Division (quarter 4, 2014). MDA as necessary in Central and Eastern Divisions will be done in 2014. Morbidity control through a hydrocelectomy project is also being planned.

Ms Oli also outlined the roadmap for lymphatic filariasis elimination in Fiji with a projection of elimination in the Western Division by 2016, in the Northern Division by 2018, and other divisions by 2020–2022.
There is also a transition to STH deworming from the lymphatic filariasis MDA. The National Iron/Micronutrient Supplementation Programme has been initiated since 2009, with six monthly cycles of deworming targeting pre-school-aged children, school-aged children, and WCBA.

An impact assessment is scheduled for early 2014.

The lymphatic filariasis elimination programme has had the Pacific Programme to Eliminate Lymphatic Filariasis as a partner since its inception. The Government of Japan, Government of the Republic of Korea, and the New Zealand Agency for International Development are other important partners. Budget support has been provided by WHO. GlaxoSmithKline provides albendazole tablets and budget support for MDA, and the Japan International Cooperation Agency provides the ICT cards. The French Embassy in Fiji and the Pacific Leprosy Foundation provided support for morbidity control.

Challenges include funding, as the Ministry of Health budget is limited to just $42000 per year; logistical challenges associated with island settings (with an estimated 100 islands); and coping with high staff turnover.

Ms Oli also raised a question regarding the sentinel site prevalence of 2% from Taveuni and the appropriateness of undertaking TASs. In the discussion that followed, Ms Oli explained that through the strategy of test and treat, which supplemented the MDA in 10 islands, they have been following up positive cases for the last 2.5 years. Everyone who tested positive has cards and is treated every 3 months. Since July of this year, this component has been integrated into the health system. MDA remains the main policy, and test and treat will be practised where it is deemed necessary. She also clarified that directly observed therapy is used in MDA only.

When questioned about the current situation of morbidity control in Fiji, Ms Oli pointed out that Fiji is the only country conducting active surveillance for morbidity cases, and conducting management where appropriate. However, she expressed that they have limited capacity for operations.

On the query of how feasible it is to address pre-school-aged children, school-aged children and WCBA in separate STH campaigns, she explained that deworming is done together with iron supplementation as part of the school health programme to address the finding of nutritional anaemia in a nutrition survey. The public health nurses visit the schools for quarterly monitoring. WCBA access the deworming services in the clinics and during outreach activities of health staff.

2.2.5 Papua New Guinea

Ms Wendy Houinei, Technical Officer of NTDs, National Department of Health, Papua New Guinea, presented on the lymphatic filariasis country programme. Papua New Guinea has 22 provinces with 90 districts, with 61 of them endemic for lymphatic filariasis. The estimated population is 4,391,593 in the endemic areas. Lymphatic filariasis is caused by W. bancrofti, and the vectors are An. punctulatus, An. farauti and An. kolinensis. There is no consistency in the implementation of the MDA programme. Often, treatment coverage in MDA was less than 50%.

Results of sentinel sites and spot-check site data in some implementing units showed filarial antigen prevalence of 32.7% (n=2902). Plans for next 3 years include MDA implementation in New Ireland Province and possible extension to Gulf and Sandaun.
Provinces. This year, there are plans for mapping STH infection prevalence and intensity in sentinel sites in the tropical mountain zone, back-to-back with the lymphatic filariasis survey.

Partners include WHO and the United States Agency for International Development (USAID) through End Neglected Tropical Diseases in Asia. USAID support is provided via Family Health International.

The challenges to the programme are: (1) funding problems (there is no national and provincial financial support to the lymphatic filariasis programme); (2) logistical problems associated with island situations; (3) high turnover of staff; (4) no lymphatic filariasis technical officer at the national level; (5) poor political and administrative support from the implementing units; and (6) poor compliance with MDA due to fear of side-effects.

In the discussion that followed, Dr Christophel expressed optimism about the situation in Papua New Guinea, citing the progress made in malaria control and how more than 80% long-lasting insecticide-treated net coverage was achieved with a resulting reduction in malaria incidence. She said that the same progress is possible for the lymphatic filariasis programme. She encouraged the country representatives to think of systems, processes and strategies to address the challenges. She also suggested that instead of doing an STH prevalence study, they should focus on improving MDA implementation since STH prevalence will decline as a result of the MDA campaign.

Ms Patricia Graves explained that the whole of Papua New Guinea does not require MDA, considering that areas have not been critically verified for lymphatic filariasis prevalence. She reiterated Dr Christophel’s words of encouragement, saying that donors are providing support to the malaria programme, and the lymphatic filariasis programme also has the potential to receive support. She also pointed out that nine districts have not yet had a lymphatic filariasis survey, which is why they are also doing STH survey.

Dr Ake of Tonga affirmed that compliance with MDA is a critical issue and that it should not be downplayed.

Ms Houinei acknowledged the situation in the country and how NTDs are not among the priorities of the government. She assured to work to include NTDs in the health plan during the midterm review of the national health plan next year, so that NTDs will receive higher priority.

2.3 Eliminating lymphatic filariasis in the Western Pacific Region (continued)

2.3.1 Recap of Session 2

Dr Patricia Graves, James Cook University, gave a recap of the foregoing session, focusing more on the recommendations for each of the countries. For the Lao People’s Democratic Republic, the goal is to implement three more rounds of MDA in the five districts. However, the country has to overcome some issues, such as reaching all population groups and resource constraints. Malaysia has to improve the drug supply chain, screen incoming migrants and develop a strategy to screen mobile populations. She encouraged them (and all countries) to plan the writing of the lymphatic filariasis dossier, as it involves considerable work.

In the Philippines, conflict areas need special attention. Other concerns include need for guidance on the post-TAS surveillance and management of disability. Dr Graves, too, expressed concern about implementing units failing the TAS. She said there should be clear guidance for such situations.
Fiji has issues with its budget, access to far-flung islands and fast staff turnover. Taveuni Island in Northern Division, with many hotspots, appears to require a different approach to overcome the problem. The country seems to be on track for lymphatic filariasis elimination by 2022.

Dr Graves expressed optimism about Papua New Guinea, saying that there is a new approach and a new feeling in the country. She affirmed the importance of compliance issues and the problem of generating demand for the programme. A new approach of going district by district might be the appropriate step.

2.3.2 Updates on the treatment assessment survey and diagnostics

Dr Patrick Lammie discussed updates on the TAS and diagnostics. He started by citing the challenges surrounding the use of ICT card tests such as high cost, the cold-chain requirement, the need to read the results at 10 minutes, and the development of false-positive reactions at later times.

With the support from the Bill & Melinda Gates Foundation to Alere, a new test format with specific design criteria will now be made available. It does not require a cold chain, has stable results, lower costs, and its laboratory sensitivity and specificity are equivalent to that of the old card test. As for sensitivity in the field, the strip test was shown to be more sensitive than the old version of the card test. Next steps for the test include determining sensitivity in low-prevalence settings (seen during pre-TAS and TAS exercises in implementing units).

Currently, antibody assays for lymphatic filariasis such as the Bm14 and BmR1 are commercially available. Wb123 is specific for W. bancrofti, and Dr Lammie said this is a challenge to use in African settings where multiple filaria species are present. He went on to say that three papers were published in PLoS NTDs on these tools. Studies show that antibody response comes up even before the antigen (infection) is detected.

For trachoma, initial results with an antibody assay were published by Goodhew et al. (2012), which showed more than 95% sensitivity for PCR+ children. Studies on antibody clearance following treatment are underway. He explained how they found that in areas where transmission had been interrupted, children are antibody-negative.

Dr Lammie posed important research questions such as whether antibody tests are sensitive enough to use as surveillance tools and how these tools can be deployed for surveillance. He also highlighted opportunities for integrated surveillance for NTDs.

He presented data on an integrated national serosurvey conducted in Cambodia that was designed to provide a national estimate of tetanus coverage among WCBA and, at the same time, was an opportunity to generate a national estimate of seroprevalence for lymphatic filariasis, malaria, cysticercosis, strongyloidiasis, dengue and Chikungunya. The study showed that integrated serosurveys are feasible, will generate useful data, and have the potential to save money and human resources. Efforts to standardize assays are needed to guarantee that data can be compared across laboratories.

2.3.3 Transmission assessment survey implementation issues

Dr Kimberly Won of the United States’ Center for Disease Control and Prevention, presented on TAS implementation issues. She started with an introduction on the TAS—it is a survey used to make the critical decision of stopping MDA for lymphatic filariasis.
programmes. It has a simple survey design for determining whether the prevalence among 6–7-year-old children is below a critical level.

The eligibility criteria for a TAS in each implementing unit are as follows: (1) at least five rounds of MDA should be completed; (2) more than 65% epidemiological drug coverage should be achieved at each round; (3) a sentinel site with microfilaria rate of less than 1% or filarial antigen of less than 2% after the last effective round at all sites; and (4) spot-check site with microfilaria rate of less than 1% or filarial antigen rate of less than 2% after the last effective round at all sites.

Implementing units can be combined, divided or retained to form an evaluation unit, but all implementing units in which MDA is conducted must be eventually included in a TAS. The population of an evaluation unit should not exceed 2 million. Implementing units in an evaluation unit are usually contiguous. All implementing units in an evaluation unit should meet all the eligibility criteria, and all areas in the evaluation unit should have similar epidemiological features and lymphatic filariasis transmission dynamics.

She then explained the survey design, indicating that the sampling unit is either a household member from the community or a child in school. Actions required after a TAS include interpretation of the result. The evaluation unit can stop MDA if the number of positives is at or below the established critical cut-off. If the number of positives is greater than the critical cut-off, the evaluation unit should continue MDA for at least two more rounds. Decision-makers in the country should be informed of the result to make an appropriate decision to stop or continue MDA.

She emphasized that it is important to follow up positive cases and conduct post-MDA surveillance. Dr Won then highlighted the monitoring and evaluation and TAS guidelines published by WHO and TAS training workshops conducted in endemic regions and those scheduled in the coming months.

Some concerns include the need for WHO to keep track of TAS implementation in different countries and areas; forecast and give feedback on ICT card test needs, in collaboration with WHO Regional Offices; and update the information annually in the Weekly Epidemiological Record.

The TAS Coordination Group is tasked with ensuring that the TAS is implemented at an appropriate time and with high quality, and supporting WHO in capturing an accurate measure of progress of the Global Programme to Eliminate Lymphatic Filariasis.

Next steps include building capacity to conduct TAS within the country, encouraging use of the WHO TAS Eligibility and Reporting Forms, ensuring feasibility of the TAS and availability of ICT card tests, translating operational research to policy, developing new tools for post-MDA surveillance, and developing criteria and mechanisms for lymphatic filariasis elimination verification.

2.3.4 Cambodia

In Cambodia, 4 out of 18 administrative units with a population of 502,982 are endemic for lymphatic filariasis. Dr Muth Sinuon, National Center for Malaria Control, Parasitology and Entomology, presented the current status of the lymphatic filariasis elimination programme in the country. Cambodia uses two definitions for implementing unit, one of which is a province where all people in the province are targeted for MDA; the other definition is a district. There are in total six implementing units, two of which are provinces and four of which are districts (within two provinces).
Five rounds of MDA were implemented during 2005–2009, with consistent and effective treatment coverage of more than 75%. Post-MDA, the microfilaria prevalence was 0% in all implementing units. TAS 1 was conducted in 2010, and less than 1% of children were positive for the antigen, which is well below the critical cut-off for each of the six implementing units. TAS 2, conducted in 2013, also showed 0% antigen prevalence. Plans for the next 3 years include conducting TAS 3 in 2015 according to the guidelines, disability management activities, preparation of the elimination verification dossier in 2015–2016, deworming for STH in the target population, and treatment against schistosomiasis in the target areas.

Partners include WHO and USAID, which provide budgetary and logistical support. Critical issues mentioned were the role of vector surveillance and molecular xenomonitoring in surveillance activities.

2.3.5 Kiribati

Dr Sung Hye Kim, Division of Pacific Technical Support, WHO Fiji Office, gave the presentation on behalf of Teiti Bwenawa, National NTD Programme Coordinator. There are three implementation units in Kiribati: South Tarawa (where the capital is located and is described as urban and the most crowded); North Tarawa; and the outer islands, the Line Islands.

MDA coverage from 2001 to 2005 shows variable figures, with only the 2005 MDA reaching more than the target coverage. Based on the 2007 prevalence survey, South Tarawa resumed MDA, while North Tarawa commenced the TAS in 2010, and the Line Islands introduced the test and treat strategy. From 2009 to 2011, South Tarawa has achieved higher coverage, and by 2012 completed TAS 1. The Line Islands stopped the test and treat strategy by 2012 due to feasibility issues and switched back to MDA, and then had 95% coverage.

Plans for the next 3 years include conducting TAS 2 in South Tarawa (by 2014), TAS 2 and TAS 3 in North Tarawa, TAS 1 in the Line Islands, morbidity management, and training for foot care. Ongoing deworming campaigns among pre-school-aged children and school-aged children will continue.

She also shared some lessons learned from the programme such as how NTD control/elimination needs long-term investment, and how scaling down of the lymphatic filariasis programme warranted scaling up of the deworming programme. She explained that MDA against lymphatic filariasis was conducted as a campaign, while deworming took place as a year-round school-based activity. This turned out to be more health system friendly, less expensive and more sustainable. Community and multisectoral involvement are also necessary, which were illustrated by the participation of the Department of Education and women’s groups. She also acknowledged timely and continued support from partners.

Issues enumerated were logistical challenges, the expense entailed in conducting TASs in the islands, and migration and funding constraints.

2.3.6 Samoa

Dr Take Naseri, Ministry of Health, presented the details of the lymphatic filariasis elimination programme. Samoa joined the Pacific Programme to Eliminate Lymphatic Filariasis in 1999 with the whole country as one implementing unit. MDA started in the same year. Interventions up to 2011 show that it was only in the first year (1999) that the coverage crossed the 80% target. Coverage fell short in the succeeding years until 2008, when greater than 80% was achieved. There was no MDA in 2009 because of the tsunami. By 2011,
MDA achieved over 80% coverage. Samoa had a high-visibility campaign at this time with the Prime Minister taking the drugs.

The 2013 TAS showed two out of three evaluation units passing the evaluation. Issues enumerated included delayed MDA rounds due to the tsunami in 2009, difficulty in verification of denominators due to small mobile populations, the low-priority status of the programme, and greater focus now on non-communicable diseases and emerging and re-emerging infectious diseases (e.g. typhoid fever). He also raised the issue of determining how many rounds of MDA are necessary in total, given that the country programme has already undergone eight rounds of MDA. There is also low emphasis on integrated vector management (e.g. source reduction and bednets), access to drugs and limitations with drug formulation.

Samoa plans to conduct MDA and source reduction in the Northwest Upolu evaluation unit (the one which failed the TAS) in 2014, and to conduct TAS 2 in the two other evaluation units by 2015.

In the discussion that followed, Professor Dato C P Ramachandran congratulated the team for having done TASs in three implementing units. He proposed that the area that failed the TAS should be investigated. Dr Naseri agreed and said that 50% of those found positive did not participate in MDA before. He pointed out that they were isolated before in the islands, but now have improved access. Dr Patricia Graves reminded the team that they should already be doing their elimination verification dossier considering that they have already completed TASs in all three implementing units.

In response to comments from the floor about the many surveys that the countries are required to conduct, Dr Ichimori clarified that while the surveys may be numerous and seem to be similar, they are conducted at different points of the timeline of the lymphatic filariasis elimination programme.

2.4 Neglected tropical disease morbidity management

2.4.1 Recap of Session 3

Dr Ramaiah Kapa gave a synthesis of the third session, citing the discussion on the latest diagnostic methods for lymphatic filariasis, which could possibly be used as a post-MDA surveillance tool, since it has more advantages over the ICT card test. The countries of Kiribati and Samoa shared their long history of interventions and resulting successes, along with the common problems of access of the population and logistics management. He pointed out that these stories remind countries and areas to be vigilant.

2.4.2 Update on lymphatic filariasis morbidity management and disability prevention

Leading a panel discussion on this subject, Dr Eric Ottesen gave an update on lymphatic filariasis MMDP. He elaborated that the definition of lymphatic filariasis, medically, includes subclinical infection, subclinical pathology and clinical manifestations. Programmatically, it refers to lymphoedema or scrotal enlargement in persons living in a lymphatic filariasis-endemic area. Lymphatic filariasis disability can be prevented by first, averting infection and disease through MDA to stop new infections and progress from subclinical to clinical disease; second, by managing the disease (to prevent progression or actually reverse damage) using simple hygiene measures to prevent acute attacks, and surgery for hydrocele; and third, caring for affected individuals, addressing their psychological and socioeconomic needs.
WHO's goals for MMDP are to alleviate suffering in people with lymphatic filariasis-related disease; promote quality of life; and on the programmatic side, provide access to basic care for lymphatic filariasis-related disease to every person affected in endemic areas.

He enumerated the milestones that national lymphatic filariasis programmes are expected to achieve based on the Global Programme to Eliminate Lymphatic Filariasis strategic plan. By 2014, all endemic countries are reporting MMDP data to WHO (right now only one-third are doing so). By 2015, all lymphatic filariasis programmes have active MMDP components, and by 2020, all have full geographic coverage and access to basic care.

The minimum package of MMDP care includes: (1) providing access to surgery for hydrocele; (2) treating acute attacks among people with lymphoedema and elephantiasis; (3) preventing acute attacks and progression of lymphoedema and elephantiasis; and (4) providing antifilarial medicines to help destroy any remaining worms and microfilaria through MDA.

He explained that it is important to focus on the MMDP component of national lymphoedema programmes because dossier development and verification will now include WHO’s MMDP requirements, and also because countries and areas need to show that this component is being addressed as part of the milestones.

Dr Ottesen said that this could be made into reality by finally getting the framework together. Through advocacy, WHO issued its position statement in 2011 on MMDP, which tackles MMDP in the Global Programme to Eliminate Lymphatic Filariasis. WHO also issued guidelines and the MMDP toolkit, which details the steps in setting up and monitoring and evaluating the MMDP component of national lymphatic elimination programmes. Partners are also being mobilized for support.

In summary, Dr Ottesen concluded that there is new energy and determination to strengthen the MMDP pillar of the Global Programme to Eliminate Lymphatic Filariasis with specific targets, goals, frameworks and tools, as well as a new focus on integration with primary health care and partnering with other chronic disease programmes. There is modest interest in funding MMDP relative to the requirements, but funding is potentially available through new partnerships. He expressed optimism, particularly since it is easier to sell a programme that is well structured and has defined targets.

He ended his talk by posing programmatic questions for discussion among the countries:

- What are the opportunities to scale up MMDP activities now?
- What best practices have programmes identified for implementing MMDP?
- What are the barriers to scaling up MMDP activities, and how should they be overcome?
- What do national programmes need now with reference to MMDP? Funds and other resources? Technical assistance?

2.4.3 Panel discussion on neglected tropical disease morbidity management

Dr Pauline Keintiz, Division of Building Healthy Communities and Populations, WPRO, commended the development of framework guidelines and emphasized the need for advocacy for enforcement of these policies. She also highlighted the need to understand the
link between chronic diseases and disability, and to consider how to deal with disability, not just how to prevent it.

She recounted how disability as a concept has evolved in the past decades. It is now understood as an interaction between an impairment and the environment. WHO has developed an international classification of disability in health, and this helps understand various roles in addressing both of these aspects. She explained that the role of the health sector is early identification, capturing people with conditions that can lead to disability and how these are part of good management of NTD morbidity.

She pointed out that NTDs are not alone as a sector, because the noncommunicable disease sector is also grappling with the same issues of MMDP. She underscored the importance of understanding continuum of care and referral. She said that there is often failure to refer to rehabilitation, particularly community-based rehabilitation. She also cited the fact that civil society and persons with disabilities organizations are important networks to nurture since many are often active in rehabilitation.

The continuum of care must involve tailoring services into primary health care and piggybacking community-based rehabilitation onto it. She said that there is a movement that is trying to promote an inclusive approach that attempts to address diverse conditions. She emphasized the value of improving not just their health but the quality of life—the psychosocial and socioeconomic aspects of their life.

The next panelist was Dr Gemma Cabanos, Leprosy Officer, WPRO, who started her discussion by citing Kiribati, the Federated States of Micronesia and the Marshall Islands as countries that have not yet achieved leprosy elimination. WHO supports capacity-building activities for early detection, case management, programme management and referral of leprosy cases. There is a central unit in charge of monitoring and evaluation, and policy formulation. National programmes are guided by general normative guidelines developed by WHO such as operational guidelines and guidelines on management of patients.

She informed the group that multidrug therapies are available in blister packs at the health sector level for free. There is a memorandum of agreement with Novartis and WHO Headquarters to provide unlimited multidrug therapy medicines.

She cited country initiatives such as the lymphatic filariasis-help groups in the Lao People’s Democratic Republic, which has patients grouping themselves together and meeting to attend to their plantar ulcers using local indigenous materials once a week at the health centre, and once a week also at home. The nurse and footwear-makers have a chance to attend to them afterwards.

Dr Hugh Taylor discussed the management of trachoma, which involves surgery, antibiotics, facial cleanliness and environmental improvement (SAFE). Standardized corrective surgery works in 90% of patients affected with in turned eye lashes. He said that careful attention to details during surgery results in pain resolution and improvement of vision.

Trichiasis is often difficult to detect. He explained that diagnosis of the condition requires three Ts: Think of it, use your Thumb to lift the eyelids up, and use a Torch. He emphasized the importance of good-quality ophthalmic surgery and how surveillance for trichiasis needs to continue for decades even after surgery, especially in children.

During the discussion that followed, Dr Pauline Keintiz emphasized that elimination of leprosy does not stop at reaching prevalence of less than one. Countries and areas should
maintain that status, and this can be done through active case-finding through family household members and population surveys. She highlighted the importance of quality leprosy care at all levels of the health system.

Dr Scott affirmed how the issue of referral is a common concern for all diseases. He pointed out how surgical uptake is better in the community with a team out at the local level rather than requiring patients to go to the central level. He said that diagnosis of trichiasis is simple, and surgeons at the local could also be trained on trichiasis surgery. It is important to integrate this into the primary health care system.

Dr Wayne expressed his concern that there is great focus on physical disability but little action to address the psychosocial aspect. He pointed out that fear of the stigma and of becoming nonfunctional can be debilitating as well.

Dr Ichimori reiterated the appeal for countries and areas to report work being done on MMDP and emphasized the importance of describing the filariasis disease in the dossier. For trachoma, there are two criteria: (1) the threshold of operable trichiasis is less than 1000; and (2) a documented process for surveillance and management of cases.

2.5 Drug applications and data management

2.5.1 Introduction of the new joint application and reporting process of preventive chemotherapy

Dr Albis Gabrielli began his discussion with a review of the World Health Assembly 66.12 resolution on NTDs, which endorsed the global NTD roadmap and previous disease-specific resolutions on NTDs. Key aspects of the resolution include country ownership of programmes, integration of control programmes into primary health care services, expansion of interventions to reach roadmap milestones and targets, and the need to match partners’ support with national commitment. Consistent with the stipulations of the resolution, the discussion focused on the replacement of the current mechanism for requesting preventive chemotherapy medicines donated through WHO, and reporting on their use with the new joint process.

Drug donations that are being managed by WHO were enumerated, with details on the target population and eligibility criteria for applying. The old system had requests that were drug- or disease-specific, resulting in the requirement of disease-specific reports. Weaknesses of that system included poor coordination among preventive chemotherapy programmes at the country level with regard to drug requests, data reporting and implementation of preventive chemotherapy.

The joint application package now consists of a single form called the Joint Request for Selected PC Medicines—albendazole, mebendazole, praziquantel and diethylcarbamazine. A single form to report on their use, the PC Joint Reporting Form, was introduced to accompany the Joint Request for Selected PC Medicines. The report should include data on individuals treated by type of preventive chemotherapy intervention and by disease, and number of tablets used. The Annual Workplan (+/- the Tool for Integrated Planning and Costing) is also part of the joint application package, which includes planned activities and their calendar. Regional adaptation is ongoing, including translation. Applications are submitted by e-mail and uploaded into a country folder on an accessible web-based platform.

The Joint Request for Selected PC Medicines can also be used to express ivermectin needs; however, applications should also be submitted to MDP. It cannot be used to apply for azithromycin or triclabendazole.
Three versions of the Joint Request for Selected PC Medicines are available, for countries:

1) Requiring preventive chemotherapy for lymphatic filariasis, onchocerciasis, schistosomiasis and STH infections;

2) Requiring preventive chemotherapy for lymphatic filariasis, schistosomiasis and STH infections; and

3) Requiring preventive chemotherapy for STH infections only.

The Joint Reporting Form is used to report on any preventive chemotherapy intervention carried out in the year before that of submission, and entailing the use of diethylcarbamazine, albendazole, mebendazole, praziquantel and ivermectin, no matter whether such medicines have been donated through WHO or not. Three versions of the Joint Reporting Form are available:

1) requiring preventive chemotherapy for lymphatic filariasis, onchocerciasis, schistosomiasis and STH infections;

2) requiring preventive chemotherapy for lymphatic filariasis, schistosomiasis and STH infections; and

3) requiring preventive chemotherapy for STH infections only.

The Annual Workplan allows ministries of health to clarify the specific objectives to achieve in the year, refocus on key activities that need to be implemented to achieve the specific objectives, identify what needs to be done each month, and identify gaps in financial and technical needs. It also allows WHO to monitor the progress of each country programme, identify the issues or obstacles if activities are not moving as planned, and provide support and medicines in a timely manner. The templates for the request form, report form and annual workplan were shown.

The Joint Request for Selected PC Medicines, Joint Reporting Form and Annual Workplan will be submitted to WHO and undergo external review. This step ensures fairness and independence. The scenario is different in each WHO Region as a reflection of the changing role of the RPRG. While RPRGs are expanding towards technical supervision of all preventive chemotherapy and NTDs, review can be delegated to a Joint Virtual Review Panel. Membership of the panel is extended to RPRG members. Once the new, integrated structure of the RPRG is operational, the review of applications is delegated back to the RPRG.

Pilot testing of the panel process took place in 2012 and 2013 in six countries (i.e. Cambodia, Ghana, Mozambique, Myanmar, Nepal and Senegal). The report is being finalized. Weak points and lessons learned for the future include the development of the Annual Workplan template, epidemiological form, need for coordination with other suppliers of preventive chemotherapy medicines, and stronger involvement of WHO Country Offices and Regional Offices for adaptation.

Scaling up of the joint application package will take place in 2013 and 2014. Official communication to WHO Country Offices and Regional Offices was sent out on 31 May, and all forms are available on the WHO/NTD website. There will be a 2-year transition period.

Dr Gabrielli then outlined the rollout plan, which includes a user’s guide and a virtual training package (video guide and user manual) that are currently available in English and
being translated into French and Spanish. There will also be dedicated sessions during any other planned meeting attended by country programme managers to facilitate information dissemination, review and support. Support will be given to countries and areas by e-mail or telephone and through national workshops.

The PC Epidemiological Data Report Form is used to collect epidemiological data (baseline and impact), and morbidity and disability data will be disseminated together with the joint application package. Data can be forwarded when available, matching performance and impact. The participants were assured that confidentiality of data will be guaranteed.

The procedure for application was then explained:

1) Submit the Joint Application package by 15 August to receive medicines to be used the following year (e.g. by 15 August 2013, submit the Joint Request for Selected PC Medicines and the Annual Workplan for 2014 and the Joint Reporting Form with 2012 data);

2) Submission is by e-mail to PC_JointForms@who.int; the Joint Request for Selected PC Medicines (full, Excel) + scanned, signed copy of the SUMMARY tab, the Joint Reporting Form (full, Excel) + scanned, signed copy of the SUMMARY tab, and the Annual Workplan;

3) Contact the appropriate WHO Country Offices and Regional Offices, and share plans with them for joint planning and feedback on the application; and

4) Partners are encouraged to contact WHO Country Offices and Regional Offices to coordinate support to ministries of health, including the expression of drug needs.

2.5.2 Preventive chemotherapy data collection for neglected tropical diseases: experience in Cambodia

Dr Muth Sinuon, National Center for Malaria Control, Parasitology and Entomology, shared the experience on the use of preventive chemotherapy data collection for NTD. She shared the outputs of the national lymphatic filariasis elimination programme, which showed discontinuation of MDA by 2010 in all six implementing units due to good results of the TAS. TAS 2 is underway in 2013.

The STH control programme also showed very good treatment coverage ranging from 92.6% in 2010 to 95.4% in 2012. The proportion of school-aged children found positive for STH infection during monitoring and evaluation across the six provinces has been variable, with a high of 24.78% in one province and a low of 9.23% in another. Treatment coverage for pre-school-aged children shows similar results. However, coverage for WCBA has not been as high.

The Schistosomiasis Control Programme also showed favourable results, with treatment coverage of 96% and two provinces having a relatively low proportion of school-aged children positive for schistosomiasis. Similar results were shown for community members covered by treatment under the programme.
2.6 Elimination of schistosomiasis, trachoma and yaws

2.6.1 Schistosomiasis elimination in the Western Pacific Region: status and next steps

Dr Padmasiri Esware Aratchige, Technical Officer, Malaria, Vectorborne and Other Parasitic Diseases, WPRO, presented the status of schistosomiasis elimination in the Region and the next steps for the programme. He gave a short background on the causative agent and vector, citing the lack of sanitation as a key factor in transmission. He discussed the life cycle. In the past, about 25% of all cases progressed to a severe stage, and severe cases survived, on average, for 5 years. Treatment with praziquantel prevents the severe stage and can even reverse it.

Schistosomiasis in the Region is distributed in China and the Philippines (S. japonicum), and the Lao People’s Democratic Republic and Cambodia (S. mekongi) with 260 million estimated to be at risk. All four countries are targeting elimination by 2016.

He highlighted the World Health Assembly resolutions on elimination of schistosomiasis and NTDs, and various publications brought by WHO on the role of preventive chemotherapy in STH infection and schistosomiasis control.

Dr Aratchige then relayed the progress made in schistosomiasis control. National programme reviews have been conducted in Cambodia, the Lao People’s Democratic Republic and the Philippines. The reviews revealed that preventive chemotherapy is effective and needs to be continued. Water and sanitation need much improvement, along with proper understanding and control of infection among animal hosts. There is also a need to improve surveillance, vigilance on ectopic transmission (in the light of man-made environmental changes such as dam construction) and for coordination across borders. He also cited the opportunities for integration in view of existing co-endemicity of NTDs and availability of support for schistosomiasis programmes in the Region.

With regard to funding, China’s programme is fully self-funded, while other countries have both internal funding (which includes in-kind contributions) and external funding. ADB’s Greater Mekong Subregion Communicable Diseases Control Project partly funds the Cambodia and Lao People’s Democratic Republic programmes. Dr Aratchige also mentioned that the possibility of establishing a regional trust for NTDs is being explored.

Dr Aratchige then discussed the impact of mass chemotherapy on schistosomiasis in different countries and areas. Sentinel surveillance in Cambodia showed a steep decline, while in China, there was a 99% reduction of acute cases by 2012 (versus the 2002 baseline). Reduction in morbidity rate was also seen in the Philippines. The thrust now is to focus on elimination while continuing with morbidity control and infection control in three countries. The complex epidemiology of the disease makes control and elimination challenging. Snail control is difficult, with the use of chemical molluscicides ineffective as a stand-alone strategy. They have noted some impact when used with other strategies (in China and the Philippines). In Cambodia and the Lao People’s Democratic Republic, snail control has had no impact. Biological control was shown to have only limited effectiveness.

S. japonicum has over 40 mammals implicated in transmission, while for S. mekongi, 6%–29% of dogs were found infected, with other animals not showing any significant infection. There is a need for more research on the role of animals on maintenance of transmission when human infection is close to zero.
Issues and challenges include poor sanitation (due to the impoverished nature of the community in some endemic areas) despite the socioeconomic improvement in all countries. He emphasized that there is still a long way to go.

With regard to when MDA can be stopped, Dr Aratchige cited the lesson from the Lao People’s Democratic Republic where there was a resurgence to pre-MDA levels within 6 years of stopping MDA. This was because the other factors of transmission remained the same. He advised to not stop MDA until environmental improvements have been made. He added that natural boundaries must be considered against programmatic ones. The risks in the contagious areas must be considered.

Next steps include updating of national plans for NTDs. There is a need to overcome key challenges to achieve and maintain elimination. The gains of preventive chemotherapy can be sustained through implementation of supplementary public health measures such as improvement of water sanitation, health education and control of vector and animal reservoirs. The other thrusts include improvement of surveillance, monitoring the risk of transmission in new areas, cross-border synchronization and strengthening research.

2.6.2 Philippines Schistosomiasis Programme Review

Dr Leda Hernandez presented the results of the Philippines Schistosomiasis Programme Review. She said schistosomiasis is the most challenging among diseases targeted for elimination in the Philippines. It is endemic in 12 of 17 regions, in 28 provinces, 20 cities and 190 municipalities. There is a 2.5 million total directly exposed population, and the total population at risk is estimated at 12 million. There are an estimated 3012 snail-infested bodies of water as of 2008. The national average prevalence is at 3.8% (but the report is 2 years behind). There was an increase in prevalence by 2007 due to lack of drugs. According to the epidemiology data she presented, rats have a higher prevalence of infection than other animals such as pigs, cats and dogs.

The review conducted in 2012 showed that target treatment coverage was not being met. Endemicity was found to be variable across the areas included in assessment. It also found that the programme has highly experienced, knowledgeable and motivated personnel but involvement of local authorities in the programme was variable. Male farmers and fishers were seen to be the most at-risk for infection. She pointed out that young school-aged children may not be the most appropriate age group to determine prevalence.

Control of morbidity has been successful, but the status of having eliminated schistosomiasis as a public health problem (when this is achieved) must be validated. National guidelines have been disseminated and are being followed, and praziquantel is available with the treatment dosage at 40 milligrams per kilogram body weight with directly observed therapy. The period of treatment campaigns is widely known to all stakeholders and the community.

The recommendations of the review include the development of a 5-year strategic plan within an overall NTD control plan, the need for explicit political commitment, re-establishment of an intersectoral schistosomiasis committee, and revision and clarification of technical guidelines. It is recommended that interventions be focused on real at-risk communities and quality praziquantel be ensured. Time should also be allocated for an impact assessment.

The programme was also advised that praziquantel can be safely given with albendazole to school-aged children. Other recommendations include WASH advocacy, surveillance of snail sites and strengthening of the animal management system and
information and reporting system. Sentinel site surveillance should be based on adequate and valid sample sizes, and people of the appropriate age group should be monitored.

Issues and gaps include MDA coverage, which is affected by adverse reactions to praziquantel, and the availability of a test that is sensitive and can be used for assessment and evaluation. The degree of certainty that no new cases have been detected depends on the reliability of the surveillance system and the sensitivity of the diagnostic method. The operational performance of the reporting system is also a crucial issue. Another concern is that the disease is not a priority of the Department of Agriculture, making collaboration challenging.

In the discussion that followed, Dr Ohmae encouraged the Philippines that elimination by 2016 is possible, but that caution should be taken in ensuring that MDA coverage levels remain high and that severe cases are kept at less than 1%. He cited the resurgence of cases in Cambodia and the Lao People’s Democratic Republic when MDA was stopped and how this should serve as a cautionary reminder to countries and areas. He also emphasized the inclusion of improved environmental sanitation in the elimination plan.

Dr Zhou added the need for intersectoral collaboration, citing experience in China where cooperation among sectors contributed to control of animal hosts. He also affirmed the need for improved sensitivity of diagnostic methods and how this should be considered during the elimination stage, particularly in Asia.

With regard to the role of infected animals, it was explained that this was more important in S. japonicum since the life cycle is sustained by an animal reservoir. S. mekongi is much different.

The need for cross-border collaboration was affirmed. Dr Padmasiri said that ADB organized a meeting among Mekong countries during which schistosomiasis and cross-border issues were discussed. A regional network for zoonotic diseases may be offered with an annual workshop that would be a venue for exchange of information on epidemiology and technical issues.

It was also emphasized that with the new foci found in the countries (e.g. in the Philippines), which may be attributed to population mobility and economic development, surveillance should be kept intensive. Another area that needs to be kept in mind involves the possible effects of global warming on transmission.

WHO developed a strategic plan for the elimination of schistosomiasis, which includes the definitions and criteria for elimination as a public health problem. When these criteria have been met, it is likely that morbidity will also be low but it does not entail transmission interruption. It is important to complement preventive chemotherapy with other public health interventions such as WASH. It was also discussed that the tools to measure the achievement of these criteria, especially with regard to interruption of transmission, are still lacking. WHO is currently working on these tools.

A question was also raised on the experience with adverse reactions with praziquantel and diethylcarbamazine in view of the co-endemicity of lymphatic filariasis and schistosomiasis in the Philippines. Dr Hernandez explained that the drug administration for the two diseases is done in different months. There were adverse reactions in the first few months of the schistosomiasis campaign, but currently there have been none. Dr Gabrielli explained that in the in the protocol, adverse events are actually due to the dying worms and not related to the drugs themselves.
2.6.3 Trachoma elimination: status and next steps

Dr Hugh Taylor presented the status of trachoma in the Region and the efforts for eliminating the disease. Trachoma is the leading infectious cause of blindness. It is caused by Chlamydia trachomatis, with cycles of re-infection following poor personal and community hygiene. An estimated 21.3 million children are infected with trachoma. The infection will initially lead to conjunctivitis, but with repeated infection, there is intense inflammation and scarring that develops over time, which distorts the eyelid, resulting in the lashes turning in and rubbing on the cornea resulting in blindness. These occur mostly in children (from babies to school-age).

With improvements in living conditions, trachoma disappeared in almost all high-income countries (e.g. in Japan, it disappeared after World War II). Currently, the disease is prevalent in dry, dusty places with women becoming more affected since they also look after children. It is widespread particularly in Africa and the Pacific. An estimated 324.8 million people live in endemic areas and are at risk of trachoma.

The global elimination of blinding trachoma is targeted by 2020 and is defined as trachomatous inflammation follicular of less than 5% in 1–9-year-olds in a community with no operable trachoma; trachomatous trichiasis of less than 0.1% population; and real corneal blindness of less than 1 case per 1000. This will be achieved using WHO's SAFE strategy.

Projections for scale up in surgery and antibiotics are required. With the global NTD roadmap and the London Declaration, there has been a commitment from the Government of the United Kingdom for €20 million for mapping of trachoma globally and the Queen Elizabeth Diamond Jubilee Trust, which has been set up to eliminate trachoma in endemic countries that are members of the Commonwealth.

During the discussion, Dr Taylor explained that data on prevalence are being generated for one community at a time. He also affirmed Dr Wayne’s statement on the need for systematic training and rapid assessment in areas. He said that training would be easy since the tools (e.g. magnifying lenses) are cheap and the skills easy to teach. He pointed out that diagnosis can be done at the community level and not necessarily by doctors only.

The possibility of programme integration is being discussed in view of the fact that azithromycin is used as treatment for trachoma and yaws. The need for close collaboration with nongovernmental organizations and other partners supporting work on trachoma was also emphasized.

2.6.4 Yaws elimination in the Region: status and next steps

Dr Lasse Vestergaard, Medical Officer, Malaria, Vectorborne and Other Parasitic Diseases, WPRO, discussed yaws elimination in the Region. Until recently, yaws was a very low priority NTD. A skin infection caused by Treponema pallidum pertenue through direct contact and lack of hygiene, it affects mostly remote and marginalized populations. It is characterized by chronic wounds, warts and painful swollen bones.

It is easy to treat with single-dose antibiotics. The problem is that there are many asymptomatic carriers for each clinical case (20:1), making it essential to treat patient contacts (e.g. those in the household and classmates). Benzyl penicillin has been the standard treatment for years. The discovery of the effectiveness of oral azithromycin (as effective as injectable penicillin) was a breakthrough. In the Republic of the Congo, 17,432 persons were treated with azithromycin with excellent results and no severe adverse events.
Present in most tropical countries and areas, yaws was one of the first diseases targeted for MDA in the 1950s, and prevalence was cut down to half. In 2013, only three countries are left in the Region with yaws—Papua New Guinea, Solomon Islands and Vanuatu. In fact, there has been a marked increase in reported yaws cases in Vanuatu for the past 5 years, with one province having a very high burden as confirmed during a malaria indicator survey.

The successful elimination of yaws in India (declared eliminated by 2006) was achieved through case-finding, treatment of cases and contacts, public awareness activities and a multisectoral approach. Serosurveillance was conducted to confirm elimination afterwards.

In 2007, yaws was brought back into the international agenda. It was taken up during the Strategic and Technical Advisory Group on NTDs meeting in 2011, and included in the global NTD roadmap, with the goal of global eradication by 2020. There are two targets set in the regional action plan: (1) one country has zero clinical cases in high-risk areas, compared to baseline of 2011; and (2) three countries have made progress towards elimination.

New policies for yaws eradication include (1) total community treatment, which entails initially treating an entire endemic community irrespective of the number of active clinical cases; and (2) total targeted treatment, after total community treatment, which involves treating all active clinical cases and their contacts during repeat surveys or retreatment or in a small targeted area. Rapid tests for syphilis and yaws include a new dual point-of-care test, which makes it possible to distinguish active from previous treponemal infection, which in turn, allows for targeting of azithromycin use.

National consultation meetings and technical discussions have been conducted in Papua New Guinea, as well as national strategies and plans for yaws elimination, epidemiological mapping and verification of cases. In Vanuatu, mapping as part of the national malaria indicator survey has been done, and azithromycin has been adopted for yaws in national treatment guidelines. MDA and awareness campaigns have also been completed. In Solomon Islands, cases are being verified, and adoption of azithromycin is still up for discussion.

Dr Vestergaard highlighted the need for further operational guidelines including the verification of elimination (further discussed in yaws consultation), and the clarification of the role of the dual rapid test in routine health care settings. Trachoma surveys and MDA are underway in all three countries to explore potential synergies between the control of the two diseases. He cautioned that this requires careful coordination and planning, particularly since the dose for trachoma and yaws differ (i.e. 20 milligram per kilogram versus 30 milligrams per kilogram). Another issue is the sustainability of elimination efforts. There is no major funding available for yaws in any of the Pacific islands countries. Donors are reluctant, and health systems need strengthening. He raised the question of whether to avoid the campaign approach and emphasized that yaws elimination needs to be highly integrated, but the path towards this is not as clear-cut.

In the discussion that followed, it was explained that patients are instructed about keeping wounds clean and covered, but the role of flies in yaws transmission is unclear. Dr Taylor clarified that data are weak to support the importance of flies in trachoma transmission.

Dr Vestergaard clarified that 90% of cases are seen in children under age 15 years. He also shared that serosurveys show an estimated 20% who are asymptomatic carriers, those
with latent yaws who later exhibit active infection. He said that the conversion rate is approximately 100%, which underscores the need to treat everyone.

He also affirmed the presented figures, saying that the data are based on the routine health information system, and are fairly consistent despite the challenges. He said the data represent a real increase, which is of a focal nature. He also said that the shift in age groups and the seasonality of transmission (i.e. it is more prevalent during the rainy season) reflect classic epidemiology.

As for management of yaws in Papua New Guinea, a field study on azithromycin is being conducted to inform the programme decision on its national roll-out. The country, however, also needs to improve on diagnosis and reporting of yaws.

2.6.5 Yaws elimination efforts in Vanuatu

Dr Len Tarivonda began his presentation with the programme objectives: (1) reduce yaws transmission intensity in high-prevalence areas; (2) establish a yaws surveillance and containment system in all provinces; and (3) strengthen prevention through safe water, hygiene and sanitation. There is cluster endemicity with high prevalence of antibodies among children under age 15 years in some villages (0–80%). There are more cases during the rainy season.

Programme interventions include selective preventive chemotherapy or selective MDA. In Tafea province, the target population is all age groups except children ages under 6 months. Azithromycin is given as a single dose through health facility-based active surveillance. At these surveillance points, cases are detected, treated, reported, investigated and contained through targeted total community preventive chemotherapy intervention. These are complemented by an awareness campaign, which entails dialogue with chiefs, villages, church leaders, teachers and the community. Key messages are about washing with soap and proper hygiene maintenance. Preliminary results show initial intake coverage of 86%, and 83% of population was treated (equal to 35,727).

Operational research will be done with collaborative support from the United States’ Center for Disease Control and Prevention. The programme, however, has major resource constraints; at least $1 million is required.

An interesting discussion on the integration of the MDA campaigns for yaws and trachoma ensued after the presentation. There were differing views on the risk of development of drug resistance with use of a lower dose of azithromycin. Dr Taylor cited the long tissue half-life of azithromycin, which renders it efficacious even at a low single daily dose. He also mentioned how the drug has been used to treat sexually transmitted infections for nearly 20 years with no development of resistance. He suggested that piggybacking on potential resources as committed by the Australian Agency for International Development (to provide support for trachoma in Vanuatu and Solomon Islands) and Pfizer (to provide azithromycin) will help cover a portion of the needs for yaws. It was also agreed that guidelines need to be developed on the drug regimen for an integrated approach.

2.7 Soil-transmitted helminth infections and other parasitic diseases

2.7.1 Recap of session 6

Dr Wayne Melrose summarized the key points of the preceding session. He said that they were reminded about the impact of preventive chemotherapy for schistosomiasis. This should not stop until the water and sanitation has improved; otherwise, resurgence can occur.
He also cited the lack of understanding on the interaction of zoonotic hosts and the difficulty in snail control, which would be different in lakes and in fast rivers.

They were also reminded about the importance of cross-border collaboration.

He noted the very good progress achieved through preventive chemotherapy in the Philippines and how the rat population has very high schistosomiasis prevalence. There was strong emphasis on public–private partnerships, but the agriculture sector seems reluctant to come on board. He brought up issues on surveillance and surveys, and the proper age group to do the survey, given the high prevalence in adults. He said the Philippines presentation emphasized the efficacy of praziquantel and the need for directly observed therapy.

With regard to trachoma, the emphasis is in trying to find out where exactly the disease is in the Region and the need for resources. Integration between yaws and trachoma is a potential avenue that needs to be explored, noting the issue of appropriate dose of azithromycin as something to be settled.

2.7.2 Control of soil-transmitted helminth infections: update

Dr Albis Gabrielli gave a background on STH infections, which mainly consist of intestinal worms: Ascaris, Trichuris, Ancylostoma and Necator. He presented the schematic life cycle and emphasized that they do not replicate in the human host.

Morbidity is proportionate to the intensity. With intestinal obstruction or rectal prolapse, surgery may be required. Most commonly experienced problems associated with STH infections are blood loss resulting in malnutrition, growth retardation and eventual poor school performance. Children suffer most from STH infection since they are the ones hosting a high number of worms.

Hence, the target populations are pre-school-aged and school-aged children because they are more vulnerable to infection and morbidity, are mainly responsible for environmental contamination, and are easily reachable through maternal and child health interventions and school health programmes. It is also important to control STH infections among these age groups because they are fast-growing, and STH infections result in a gap between energy requirements and available energy.

The WHO strategy is the regular administration of anthelminthics to pre-school-aged and school-aged children (i.e. preventive chemotherapy with albendazole or mebendazole). Regular treatment for several years reduces and keeps the number of worms in each child low, thus preventing the development of morbidity. Albendazole or mebendazole can also be given to pregnant and lactating women, except during the first trimester.

The recommended treatment strategy for STH infections with preventive chemotherapy depends on the prevalence category (i.e. more than 50% high risk, 20%–50% low risk), and based on this, the decision is made to treat twice a year, once a year or not at all. The objective is that all countries and areas requiring preventive chemotherapy start national control programmes by 2015. All should achieve 75% national coverage and 100% geographical coverage among pre-school-aged and school-aged children by 2020. The goal is to achieve a level of moderate- and high-intensity prevalence of less than 1%.

Treatment administered in 2011 showed that out of 114 countries and areas requiring preventive chemotherapy, 47 reported for pre-school-aged children and 54 for pre-school-aged and school-aged children. Treatment coverage was 30.59% and 30.65% for pre-school-
aged and school-aged children, respectively. A total of 267,900,971 children were given treatment (30.63% of 874,552,417 children requiring preventive chemotherapy).

Drug shipments for STH have been increasing from 2011 to 2013. Costing analysis shows that $1 is sufficient to treat 37 pre-school-aged children through the Expanded Programme on Immunization and 25 school-aged children through schools. In both cases, the cost is low, underscoring the value of piggybacking on to an existing campaign to lower operational costs.

Dr Gabrielli concluded his discussion with some updates—the availability of standard operating procedures for drug efficacy monitoring, a model to predict impact of STH infection interventions, mapping aid to standardize the use of historical STH infection data to prepare operational intervention maps, and a module to guide inclusion of STH assessment into the lymphatic filariasis TAS (to help transition from lymphatic filariasis to STH infection programmes).

Dr Ohmae advised that for reduction of morbidity and environmental contamination, treatment with preventive chemotherapy three times a year in high prevalence areas is better. He also recommended that the target group be expanded and the frequency of treatment rounds be increased together with strengthened drug efficacy monitoring.

2.7.3 Soil-transmitted helminth infection control in Tuvalu

Dr Nese Ituaso-Conway of Tuvalu shared the experience in STH infection control in Tuvalu, which is endemic for both lymphatic filariasis and STH infections.

A baseline egg positivity in stool examination done in 2001 revealed 88% positivity in urban and 100% in rural areas. There were fluctuations from 2004 to 2006 (67%–73% positivity in 2004 versus 75% in 2006). From 2009 to the present, there have been four to five rounds of annual deworming with albendazole in all nine islands in Tuvalu targeting those ages 2–13 years. There has been high percentage coverage of targeted population and a decrease in STH infection prevalence. This was complemented by outreach health programmes and radio health education programmes. To date, the deworming campaign has achieved good coverage in most islands, with some reaching more than 100% because of in-migration.

Dr Ituaso-Conway cited the follow-up of children who are absent during school hours, internal migration and delay in receiving reports from outer islands as among the challenges encountered in the programmes. High staff turnover and multiple tasks of the limited health human resources and competing health priorities on funding from the national budget are additional concerns mentioned. She also said that they also find the template of STH infection reporting complex.

Future plans include improving sustainability of deworming activities in all islands. Activities will be conducted simultaneously to overcome inconsistency in programme performance and to avoid confusion within the communities. The frequency and duration of the deworming campaigns was also discussed.

The country also plans to scale up the health education programmes to school-aged children and adults, and to upgrade capacity of health staff on STH infections. Other measures include ensuring adequacy and timely availability of tablets, continuing to update surveys on STH infections and annual reporting (national) with a more user-friendly template.
2.7.4 Soil-transmitted helminth infection control in Viet Nam

Dr Huong Nguyen Thu gave a background on STH infections in Viet Nam. An estimated 76.5 million are living in STH infection-endemic areas. There are different schedules for deworming of the various target groups. National coverage was 53% among school-aged children, 43% among pre-school-aged children and more than 20% among WCBA in 2012. Programme coverage remained high at 98% with some fluctuations in the targeted provinces. As a result, prevalence, particularly among school-aged children, has been going down. For instance, a prevalence range varying between 35% and 98% in 7 provinces in 2000–2001 was reduced to a range between 2.7% and 54% by 2010–2011 in the same provinces. Yen Bai, which had the highest prevalence of 98% in 2000–2001, fell to 54% by 2010–2011. Similarly, Tra Vinh, which had moderate prevalence of 35%, fell to 2.7% by 2010–2011. Programme coverage for WCBA was also high at 95.8% (average of 2007–2009), with a slight decrease in 2012 to 91.9% in the targeted provinces.

Water and sanitation activities have been partly implemented with health education in schools. Limited funding from the government, limited human resources, guidelines that need updating and high reinfection rates are among the issues and challenges cited.

Identified needs are the following: (1) establishment of a national NTD programme; (2) continuation of the MDA for STH infections when drugs and funds become available; (3) strengthening of collaboration from the Ministry of Health with the National Center for Rural Water Supply and Sanitation, Ministry of Agriculture and Rural Development as well as Health Environment Management Agency, Ministry of Education and school health programmes.

Dr Thu concluded her presentation with an assessment that the expansion of the STH infection control programme in the last 10 years has made a positive impact on STH infection prevalence in Viet Nam.

2.7.5 Foodborne parasitic diseases: update

Professor Zhou Xiao-Nong made a presentation on updates on the foodborne parasitic diseases in the Region and the status of control and elimination efforts.

An estimated 600 million people are at risk (with higher prevalence in Asia) for liver fluke, which is transmitted through consumption of raw fish. It poses greater morbidity due to cholangiocarcinoma. Studies have also shown a direct correlation between this FBT and O. viverrine, which in the Lao People’s Democratic Republic, is found mostly in the middle parts of the country. In one province, the infection rate has been shown to be as high as 85% among the older age group. In Cambodia, studies in different provinces have shown prevalence rates between 0 and 65%. The distribution around river sites points to the influence of the environment as well.

Hotspots for Taenia solium (taeniasis or cysticercosis) are found in Latin America, Sub-Saharan Africa, India, Nepal, Bhutan, Papua New Guinea and Indonesia. Taeniasis or cysticercosis in Viet Nam is distributed in more than 50 provinces.

Transmitted through dogs, echinococcosis is prevalent among the Tibetan population in China, South America and some parts of Europe. Echinococcosis is found in the western part of China and Mongolia; the burden is highest in China, with more than 23 provinces reporting cases. The pastoralist lifestyle, close contact with animals, and poor animal husbandry practices explain its existence in Mongolia.
Fascioliasis is an emerging FBT, which has two different species, and is found in 52 provinces with over 20000 cases in Vietnam. Similarly in China, a new outbreak occurred in 2012 with 30 cases from just one county. The high infection rate among cattle (more than 28%) and sheep (26%) poses a threat to humans (found to have a 1.19% infection rate). Other emerging FBTs include paragonimiasis and human fasciolopsiasis, trichinellosis in China and Viet Nam, and angiostrongyliasis (caused by Angiostrongylus cantonensis) in China.

Professor Zhou Xiao-Nong recommended that control programmes be developed for diseases of public health and agricultural importance. He said that some control interventions are already underway, but gaps in knowledge about the epidemiological distribution still need to be filled.

He concluded his discussion by stating that for taeniasis and cysticercosis, the information generated by research projects must be translated into wider public health interventions. Tools to enable the implementation of disease control interventions must also be refined. He said it is important to make a critical assessment of the potential for cestode zoonoses control, focusing on the regions where the populations are at higher risk.

For echinococcosis, he recommended the promotion of the concept of “One Health” through the development of an integrated control package to deal with health problems in people, livestock and other animals (both domestic and wild). Greater efforts should be exerted in taking effective measures to raise the profile of the neglected zoonotic diseases both internationally and locally.

In the discussion that followed, Dr Gabrielli clarified that triclabendazole is available from WHO. He also emphasized the importance of water and sanitation in the control of FBTs. He said that in resource-poor settings, a decision has to be made on what to prioritize, and he recommended preventive chemotherapy as a better investment.

2.7.6 Control of neglected zoonotic diseases in Mongolia

Dr Bolor Bold shared the experience of Mongolia in the control of neglected zoonotic diseases. With a population of 2.7 million living in 21 provinces and 1 city, there are more livestock (40 million) in Mongolia than there are people. With a high consumption of animal products (i.e. meat and dairy), animal husbandry is a very important source of living among the locals, rendering them at risk because of their daily exposure to animals and vectors.

Dr Bold cited the following factors contributing to the risk of zoonoses: the wide range in ecotype and climate, difficulty in access to water in some areas, weak control system of animal products, remoteness of households, difficulty in access to health care services, traditional behaviours and lack of knowledge of prevention.

A total of 674 human cases of zoonotic infections were registered from 2002 to 2012, with the majority consisting of tickborne rickettsial diseases, anthrax and tickborne encephalitis. The increased incidence of parasitic diseases is due to centralized meat safety and weakened quality control (due to increased privatization of livestock and meat factories, which negatively influenced slaughtering practises), consumption of undercooked meat products, imported vegetables and fruits and lack of training in parasitic disease research.

She then discussed other parasitic diseases and their distribution among different population groups. The most recent study shows high prevalence of enterobiasis among preschool-aged children (46%). Taeniasis is distributed in at least 10 of the 21 provinces, with highest prevalence noted among herders (12.7%) and schoolchildren in junior high school (11.8%). The most common factor among those affected is the consumption of undercooked
meat and dumplings. The prevalence of ascariasis, leishmaniasis and toxoplasmosis is not very clear since there is a dearth of studies.

The current zoonotic disease of concern in Mongolia is echinococcosis. With the number of sheep and dogs, and the high contact rate between humans and animals, the potential for widespread transmission is great. Dr Bolor said that control measures have not been established, and there is insufficient information on the actual prevalence in both humans and animals. With dogs and sheep as the main hosts, thousands of stray dogs were euthanized in the provinces and the city in 2011. She also reported that 18% of surgical diseases are caused by echinococcosis.

Most echinococcosis cases are reported by the surgery departments of hospitals, with the primary care-level facilities lacking knowledge of diagnosis and management of the disease. The lack of human resources and laboratory capacity poses a challenge to accurate case detection.

A national multisectoral coordinating committee on zoonoses was established in February 2010, with members coming from the Ministry of Health, Ministry of Food and Agriculture, National Emergency Management Agency, National Inspection Agency and WHO. Current actions to address zoonoses include a pilot study of seroprevalence of anthrax and brucellosis, vaccine development for anthrax, and a mass vaccination campaign for brucellosis. Further, veterinary and public health sectors have collaborated with local governments for the past 2 years for community education campaign on rabies in schools and the workplace.

A short-term World Bank-funded retrospective study on echinococcosis and development of strategy was launched this year. The development of the national NTD strategic plan is currently underway.

2.7.7 Control of foodborne trematodiasis in the Lao People’s Democratic Republic

FBT is another widespread parasitic disease in the Lao People’s Democratic Republic, mainly due to opisthorchiasis caused by infection with Opisthorchis viverrini. It is highly endemic in the central and southern provinces with prevalence of more than 20%, and in most other areas with prevalence 5%–20%, which actually involves over 70% of the population at risk. This has become a big public health burden, requiring urgent attention.

Recent research findings (2008) indicated that infection rates continue to increase, and approximately 5% of those infected develop cholangiocarcinoma (Unpublished data, Korea Association of Health Promotion).

The 2008 revised Ministry of Health policy on control of STH infections suggests a stratification of areas at risk based on levels of endemicity of opisthorchiasis, as follows:

1) in areas of intense transmission of opisthorchiasis (i.e. prevalence over 20%), anthelmintic chemotherapy with praziquantel and health education should be provided once a year to the entire population in the district;

2) in areas where prevalence is in between 5% and 20%, health education should be offered and MDA organized once every 2 years; and

3) in areas where prevalence is less than 5%, a case-management strategy should be applied (i.e. treatment of positive cases); improvement of sanitation is also part of the thrust.
Preventive chemotherapy and transmission control was initiated in 2002 in two districts, and later in 2008 was extended to another province with support from ADB. In 2009, MDA commenced and continued through 2012. Treatment coverage was inconsistent due to lack of funding and delay in drug arrival.

Risk factors include the deep-seated cultural habit of eating raw fish, poor sanitation and poor health-seeking behaviour. These were affirmed by a knowledge, attitude and practices survey conducted in 2007, which showed regular consumption of undercooked or raw fish, low proportion of families with sanitary toilets, and low level of knowledge about the parasite.

In 2012, there were three reported deaths related to the intake of single dose of praziquantel (40 milligrams per kilogram) in Champasack Province. MDA was suspended in the rest of the high-risk provinces after the event. There was a field investigation (only individual verbal autopsy) and re-assessment of the drug’s quality in reference laboratories in Viet Nam and Portugal.

However, in the absence of post-mortem examinations, the Ministry of Health could only provide presumptive explanations of the severe adverse event, based on verbal autopsies, the results of drug quality control testing and the drug procurement process. Therefore, as a precautionary measure, the remaining praziquantel stock was withdrawn and safely disposed of. With opisthorchiasis control identified as a priority of the Ministry of Health, the challenge is to provide public health measures that prevent the severe consequences of the disease while minimizing the risks of severe adverse events.

The government has been able to establish good partnerships for parasitic control. The Government of Luxembourg and ADB are the major partners for opisthorchiasis control along with WHO. In addition, the Swiss Tropical and Public Health Institute, Korea Association of Health Promotion and Hiroshima University have been conducting research projects on FBT, contributing significantly to improvement of knowledge on FBT in the Lao People’s Democratic Republic. Partnership for FBT control to operate MDA in six targeted provinces includes WHO, ADB, Government of Luxembourg, and World Vision Australia.

Future plans include training of Ministry of Health personnel, schoolteachers and health volunteers, procurement for the endemic provinces, health education, collaboration with animal health and food safety sectors, monitoring and evaluation, and operational research (including assessment of impact of MDA). Challenges cited were praziquantel quality control and ensuring its availability to support MDA, reduction in external donor support especially in the backdrop of economic recession, and the lack of funding from the national government.

2.7.8 Integrated and intersectoral approaches

Dr Jurg Utzinger, Ecosystem Health Sciences, Swiss Tropical and Public Health Institute, presented on the integrated and intersectoral approaches for NTD control and elimination. He shared highlights from selected articles published over the past 10 years that focus on various aspects of NTD control programmes. One article pointed out that the indefinite dependence on praziquantel is a serious limitation of chemotherapy, noting that such dependence reduces the useful lifespan of the drug. Preventive measures focusing on water, sanitation and health education are essential features of an effective and sustainable strategy for reduction and elimination of schistosomiasis. The importance of provision of safe water supplies, sanitation facilities and promotion of hygiene measures was further underscored by other articles, which dealt with measures beyond deworming.
Dr Utzinger showcased examples of efforts at integrated NTD programmes, emphasizing that integrated disease control goes beyond chemotherapeutic approaches and targets multiple pathogens simultaneously. According to him, integration is more than uniting two or more drugs—a more comprehensive view involves uniting of multiple constituents such as strengthening the health system, health and education sector, health and water and sanitation sector, and health and agriculture engineering sector.

Dr Utzinger cited Japan’s schistosomiasis elimination programme, which ran from 1945 to 1977, and indicated that it focused on the nationwide, interdisciplinary multisector public health campaign to combat parasitic diseases, including S. japonicum and STH infections. He also described the programme in China, which focused on transmission control from the 1960s to 1980, then focused on morbidity control with praziquantel and health education in the 1990s. From 2004 onwards, the strategy was integrated control with the final objective of elimination. A key strength was the flexibility of the programme, which facilitated the constant adaptation to changing circumstances. He enumerated the five elements of integrated schistosomiasis control in China—mechanization of agriculture, fencing of pastures, supplying tap water at home, improving sanitation, and provision of acceptable onboard collection containers. The impact of these measures was not only limited to decreasing schistosomiasis but also decreasing STH infection prevalence.

Dr Utzinger highlighted the cycle of deworming and reworming, underscoring the need for improvement of living socioecological conditions to prevent reworming. He also shared the results of a meta-analysis, which showed that people who have access to and utilize sanitation measures are at half the risk of getting infected with STH infections.

He cited opportunities for collaboration, including the NTD-WASH Roundtable Discussion, supported by the Bill & Melinda Gates Foundation, which has had more than 30 experts engaged in a series of talks since 2012. The common vision is to have communities that are disease-free, have adequate and equitable access to water and sanitation, and practise good hygiene.

Four key areas for collaboration were identified: (1) advocacy, policy and communication; (2) capacity-building and training; (3) mapping, data collection and monitoring; and (4) applied research.

He also raised the question of how the WASH sector would benefit, which at the moment is not clear. The school as one key place for harmonization was emphasized during the meetings.

He concluded his discussion by citing the paper of Nakagawa et al. (2013), which showed integration of NTD into other health programmes such as environmental health and rural development, Expanded Programme on Immunization, food safety, maternal and child health, nutrition, tuberculosis and malaria, as well as integration into other sectors such as agriculture and aquaculture, education, food industry, livestock, rural development, and water and sanitation as a way forward.

In the discussion that followed, Dr Christophel emphasized the importance of cooperation with the animal husbandry sector. She pointed out that the strong relationship with the Food and Agriculture Organization established during the severe acute respiratory syndrome and swine flu experience could be harnessed for use in NTD control/elimination programmes.
2.8 Group work on the development and/or updating of country neglected tropical disease plans

Dr Eva Christophel described the group work objective, which was to develop a 2-year workplan for each country relevant to their target NTDs. Each country was tasked to develop their respective workplans with technical support from RPRG members and the WHO secretariat. They were instructed to identify priority diseases and key activities corresponding to the five objectives of the regional NTD action plan.

National programme managers and participants representing ministries of health were grouped according to geography and common NTDs, with experts on relevant sectors also allocated to each group. Group work was expected to be completed in two sessions, but several participants requested more time and worked on the plans after the meeting.

2.9 Partnership and resource mobilization

The different partners involved in NTD work presented the background and extent of their work in various countries.

*Asian Development Bank.* ADB is an international development finance institution owned by 67 members, 48 of which are from the Asia and Pacific. Its vision is an Asian and Pacific region free of poverty. Its core areas of operation include infrastructure, environment, regional cooperation and integration, finance sector development, and education. Health is not included, but 20% of the aggregate operations are to be allocated to noncore areas of operations such as health, agriculture, and disaster and emergency assistance. It assists in addressing health issues through infrastructure, water and sanitation, and governance for cost-effective delivery of health services for all. ADB also targets control of communicable diseases in its transport and infrastructure projects, targeted assistance to manage risk of communicable diseases due to migration of individuals, and assistance at the regional level in the event of a potential pandemic threat.

The Kathmandu Valley Wastewater Management Project is one ADB-supported project that aimed to improve access to, and efficiency of, waste water services for the residents of Kathmandu Valley. The Second Greater Mekong Subregion Communicable Diseases Control Project enhanced regional communicable disease control systems, improved communicable disease control along borders and economic corridors, and integrated project management.

ADB is a partner, not a stand-alone donor, involved in the promotion of private sector investments and public–private partnerships, regional collaboration with the poor in remote rural areas and in new urban settings as the target populations. ADB would target neglected people to a greater extent than neglected diseases.

*Children Without Worms.* Children Without Worms (CWW) was established in 2005 in partnership with Johnson & Johnson and the Task Force for Global Health. It helped manage Johnson & Johnson's donation of mebendazole for treatment of STH infections among school-aged children, provided technical assistance and promoted WASH. From 2007, a total of 14 countries have been supported with 116.94 million doses of mebendazole.

Technical support included workshops held in the Philippines and Cambodia, and development and dissemination of WASH and STH infection prevention curriculum in schools in collaboration with Johnson & Johnson and Helen Keller International.
In 2011, Johnson & Johnson expanded mebendazole donation to 200 million doses annually (through WHO). GlaxoSmithKline announced a donation of 400 million doses of albendazole for STH infections annually as well. “Two Companies—One Program” resulted in 600 million doses per year, with 5 billion doses pledged between now and 2020.

CWW intends to keep focusing on STH infections in an integrated NTD environment, and facilitate scaling up of albendazole and mebendazole donations, working closely with WHO and pharmaceutical companies. Other emerging roles include provision of support to other partners such as nongovernmental organizations, and to convene and facilitate dialogue among the health, education and WASH sectors. Through the STH Advisory Committee, they will provide technical support and guidance, monitoring and evaluation beyond coverage targets, and eventual scaling down.

_Eisai_. Eisai signed a statement of intent with WHO to supply diethylcarbamazine free of charge for the elimination of lymphatic filariasis in November 2010. This was the first time that a Japanese pharmaceutical company has established a partnership with WHO in an effort to combat the global health problem of NTDs. Eisai agreed to produce and supply up to 2.2 billion 100-milligram tablets of diethylcarbamazine in accordance with the high-quality standards of WHO, over a 7-year period between 2013 and 2020.

The company remains committed to proactively taking measures to help eliminate NTDs and to improve access to medicines, and will continue to look to increase the benefits of human health care to patients and their families worldwide.

The project timeline for the production of diethylcarbamazine started in November 2010, extending to completion of tablet provision in 2020. Eisai will continue to work at full speed to provide diethylcarbamazine as early as possible to WHO.

_GIZ Fit for School Technical Assistance for Effective School Health_. The Fit for School approach is being implemented as part of the Philippines Department of Education’s Essential Health Care Program. Backed by international policies of WHO, as well as national policies of the health and education sector in the Philippines, the programme focuses on the implementation of hand-washing with soap and tooth-brushing with fluoride toothpaste as institutionalized daily group activities as well as bi-annual deworming of all children in a school setting. The programme is implemented by teachers who are oriented by health personnel. Currently, 1 million children are covered by the programme.

The evidence-based interventions in the school routine have reached scale in the Philippines. This has impressed neighbouring countries, and expanded to the Lao People’s Democratic Republic, Cambodia and Indonesia (West Java). The regional programme has three components: (1) strengthening of school health with SEAMEO Innotech;(2) capacity-strengthening within national education systems; and (3) piloting of the Fit for School approach in intervention schools and preparation of expansion. The programme's total term is 3 years, from December 2011 to November 2014, with a scope of four countries (4000–8000 children per country). It has recently been extended to 2016.

A template for large-scale implementation has recently been designed. The intention was to help governments find a model for implementation, and to help them develop a system to bring it to scale. It also aims to measure implementation quality in model schools, involving parents and the community. A1-year health outcome study showed improved school attendance, improved nutritional status and oral health, and less intestinal worms.

_Global Network for Neglected Tropical Diseases_. The Global Network for Neglected Tropical Diseases is an advocacy and resource mobilization initiative that works with
international organizations and governments. Its activities focus on strengthening political commitment and the policy environment in endemic countries and areas; enlisting champions to help increase commitment, investments and accountability of endemic countries, areas and donors; engaging bilateral and multilateral donors; and profiling and sharing stories and success to raise public awareness and support. The support of the participants and partners present in the meeting was acknowledged.

A good example of this is the Association of Southeast Asian Nations, which drafted regional health cooperation to achieve equity and end the burden of NTDs among its member states, outlining opportunities for them to introduce NTDs into the formal dialogue that occurs during meetings, to raise the profile of such issues and encourage countries to endorse the London Declaration on NTDs.

NTDs are increasingly being recognized as a global and regional health priority. This is seen in various policy milestones, starting with the May 2013 World Health Assembly landmark resolution on NTDs. This resolution urged Member States to ensure country ownership and predictable, long-term financing; integrate NTD programmes into primary healthcare services and existing programmes; and achieve universal access to available interventions. Among other milestones are the inclusion of the integrated NTD control and elimination in the regional health plan of the Council of Ministers of Health of Central America and the Forum on China–Africa Collaboration, and identification of schistosomiasis control as a priority area for health collaboration and the regional NTD action plan.

Engaging bilateral and multilateral donors is a long process, which involves sharing information on NTD burden and national NTD programme successes and challenges. The use of the web to profile and share stories and successes was cited as an easier vehicle with extraordinarily high readership.

The importance of countries prioritizing NTDs and requesting support was emphasized since donors can only react to their call for assistance. It is important to think about how we can build on the momentum and progress to date, and move forward. Countries and areas need to demonstrate and communicate that the NTDs are a priority at the highest levels of government. Demonstrating country ownership through investment and capacity through action, as well as communicating specific gaps and challenges, is key.

There are many wonderful examples of how countries and partners are addressing NTDs through integrated, cross-sector approaches. Within the health sector, the same populations are being reached with multiple, different programmes, and streamlining these programmes can help improve efficiency and effectiveness.

Integrating NTD control as a basic and essential component of maternal and child health programmes is one way to maximize the reach to these vulnerable populations. Looking beyond sectors facilitates use of the same delivery mechanisms, such as schools or the workplace, and thinking more comprehensively about the different factors that contribute to the spread of NTDs and other diseases to improve coordination and to align efforts. There are many opportunities for policy and programme integration when NTD control is viewed as a strategy to address poverty and inequality.

James Cook University–WHO Collaborating Centre for Lymphatic Filariasis, Soil-Transmitted Helminths and Other Neglected Tropical Diseases. Dr Patricia Graves gave an overview of the key programmes in support of NTD control and elimination. Mapping and review done in support of the Papua New Guinea programme enabled an analysis by survey site, capturing the intensity of surveillance and infection. This has been extended to other countries as well.
Support for diagnostics, particularly microscopy, ELISA and PCR for the lymphatic filariasis and STH infection surveys, has resulted in identification of remaining clusters of transmission in American Samoa (done in collaboration with the United States’ Center for Disease Control and Prevention and the University of Queensland). Use of antibody tests for post-MDA surveillance has also been useful in Samoa. In Papua New Guinea and Bangladesh, support was provided for early detection of lymphoedema for prevention of disability. Tools for assessing psychosocial impact were also implemented in Bangladesh in support of country programmes. NTD net is an illustration of how social networking can help disseminate information and tell the story of NTDs and share simple solutions for the world’s most neglected.

For monitoring and evaluation, James Cook University provides assistance with the TAS design and dossier preparation, data management, quality assurance archiving and training. Vector studies have also been conducted: (1) field evaluation of selected traps and lures for monitoring the filarial and arbovirus vector, Aedes polynesiensis, in French Polynesia; and (2) a pilot study investigating filariasis vectors in Samoa, which showed an estimated 5.8% as Aedes-positive.

VECNet is an analytic framework assembling all known data on malaria transmission and making it accessible through mathematical models in an intuitive and user-friendly manner for improvement of control and elimination. While it currently focuses on malaria, it may be expanded to dengue and lymphatic filariasis.

Other NTDs and support areas include dengue control using mass release of Wolbachia-infected Aedes aegypti in Cairns, training master’s of public health and doctoral students, developing medical entomology and parasitology master classes, and collaborating with WHO and the Queensland Tropical Health Alliance.

The partners of James Cook University in these efforts are GlaxoSmithKline, the United States Center’ for Disease Control and Prevention, the United States National Institutes of Health, WHO and the Bill & Melinda Gates Foundation.

Japan International Cooperation Agency. Japan’s global health policy for 2011 to 2015 has the vision and mission of delivering results effectively and efficiently by addressing bottlenecks impeding progress on the health MDGs; ensuring sustainable health system strengthening through acceleration of progress towards MDGs4 and 5; further progress in MDG6; and assistance to other importance challenges such as emerging and re-emerging infectious diseases and NTDs.


Task Force for Global Health, Neglected Tropical Diseases Support Center. The purpose of the Neglected Tropical Diseases Support Center is to facilitate the operational research necessary to support WHO’s efforts and programmes targeting NTDs. Funding is from the Bill & Melinda Gates Foundation and GlaxoSmithKline operational research support funds. Other partners involved in the different research include CWW, International
The END Fund. The END Fund in Asia is assisting national NTD programmes across Asia to fill in gaps and strengthen efforts to eliminate and control lymphatic filariasis, STH infections, schistosomiasis and trachoma. Countries being supported are Bangladesh, Cambodia, Lao People’s Democratic Republic, Papua New Guinea, Philippines and Viet Nam.

2.10 Neglected tropical disease research

2.10.1 Opportunities for neglected tropical disease research

Dr Patrick Lammie, Senior Scientist, Division of Parasitic Diseases and Malaria, United States’ Center for Disease Control and Prevention, described the genesis of a new grant proposal. It was started with the original idea of having lymphatic filariasis as the endgame, with a focus on surveillance, mostly a continuation of current activities. The idea evolved into having NTDs as the eventual endgame, looking at common issues across NTDs with elimination (or high-level control) goals. Key operational research issues were identified during a larger meeting held in August 2011 with many cross-cutting themes recognized; as a result, significant research is now underway with funding support of $28 million over 5 years.

The project, Filling the Gaps—Operational Research to Ensure the Success of NTD Control and Elimination, has two principal goals: (1) to provide a forum for the NTD community, including the key objectives of identification of current unmet research needs, priority-setting for addressing these needs, and continuous monitoring of the programme landscape to identify new research needs; and (2) to support the NTD research community through undertaking of effective research initiatives, working closely with WHO to strengthen the evidence base for programmatic decision-making and programme impact, and promotion of collaborative work.

He described the project’s grant structure, which has the Coalition for Operational Research on NTDs advisory panel spearheading the NTD operational review of research needs, and the Programme Technical Group that provides oversight of the research activity. The Coalition for Operational Research facilitates community engagement, linking the first two groups with the Secretariat providing support, facilitating the convening of these groups and ensuring accountability.

He identified possible research gaps during programme scale-up, which includes what is required to overcome obstacles to programme implementation. NTD elimination is relevant during the endgame stage, and ensuring sustainability of programme achievements is the challenge past this phase.

Dr Lammie presented the 10 needs particularly relevant to WPRO:

1) What is the most cost-effective strategy for defining the evaluation units when conducting the TAS to stop lymphatic filariasis MDA?

2) Can Brugia rapid antibody tests be interpreted in the same way in Brugia areas as ICT antigen tests are in bancroftii areas?

3) How does one deal with residual hotspots post-MDA?

4) What are the optimal surveillance techniques post-MDA?
5) What are the criteria for verifying elimination of lymphatic filariasis or trachoma infection?

6) Are there enhanced lymphatic filariasis elimination strategies that can be used in difficult or late-starter countries or areas?

7) What are the most efficient and rapid coverage survey techniques to follow programme coverage and compliance?

8) Are there new approaches to the problem of compliance?

9) What is the current state of STH infection prevalence in areas that have been under lymphatic filariasis elimination programmes for years?

10) What happens to the STH infection prevalence when lymphatic filariasis programmes stop and STH infections revert to only school-based programmes?

Dr Lammie concluded the discussion by emphasizing WPRO involvement and clarifying that operational research is not merely academic. Its purpose is to address programmatic barriers. He said research on this scale must be a collaboration between ministries of health and specific research teams. He also encouraged the group with the fact that funding is now available for this research and that they must take advantage of the opportunities to work together to solve the programmatic challenges facing NTDs.

2.11 Group work to develop integrated national workplans on neglected tropical diseases for 2013–2015

The participants were grouped into four groups, according to the target NTDs for their countries: Group 1—lymphatic filariasis and STH infections; Group 2—FBTs, lymphatic filariasis, STH infections and schistosomiasis; Group 3—echinococcosis and other; and Group 4—yaws, trachoma, lymphatic filariasis and STH infections. Group 1 was further divided into three subgroups based on their phases in the programme (subgroup I: lymphatic filariasis MDA, subgroup II: lymphatic filariasis post-MDA, and subgroup III: lymphatic filariasis post-MDA and needing STH infection transition).

The task of the group work was for each country to develop an NTD workplan with technical advice from RPRG members, WHO staff and observers:

1) identify priority diseases;

2) identify key activities of each planning element in the template;

3) identify resources available, as well as resource and funding needs and gaps;

4) highlight key challenges; and

5) select one country per group to present its workplan.

The groups were instructed to appoint a chair and a rapporteur for each group. The groups referred to the regional NTD action plan, taking into account the five objectives:

1) strengthen political commitment, advocacy and resource mobilization for NTDs;

2) enhance NTD programme management and intersectoral collaboration to sustain and scale up NTD programmes;
3) scale up access to quality NTD prevention and case-management interventions;

4) strengthen integrated NTD surveillance, monitoring and evaluation;

5) strengthen research capacity in NTDs, and implement research to fill programmatic knowledge gaps.

The Federated States of Micronesia, French Polynesia, Mongolia, Solomon Islands and Viet Nam made presentations. All countries and areas plan to finalize their workplans and submit them to WHO in 2013.

**Federated States of Micronesia.** Target diseases include leprosy, lymphatic filariasis, dengue, STH infections and blinding trachoma. It set specific goals, which include: (1) to achieve a lymphatic filariasis prevalence rate of less than 1% by 2015, and (2) to increase national coverage of STH infections in pre-school-aged and school-aged children (1–14-year-olds) and lymphatic filariasis target population in Chuuk outer islands (2-year-olds and older) to 100% by 2015. Estimated cost of projected activities is $105,000, with available funding of only $15,000, resulting in a gap of $90,000. Issues and challenges cited were those of logistics and transport constraints, integrated versus vertical approaches and staff burnout. WHO will be providing albendazole and diethylcarbamazine tablets. Dr Melrose pointed out the timing of the MDA and TAS, which is set on the same month. Mr Moses clarified that they would adjust the timeline for these two milestone activities.

**French Polynesia.** Target diseases are lymphatic filariasis, STH infections and scabies. Specific goals identified are lymphatic filariasis elimination, lymphatic filariasis morbidity control (evaluation in 2013) and vector control for lymphatic filariasis and dengue. It plans to update NTD strategies to include STH infections and scabies. Strengthening of technical capacity of staff and ensuring adequate infrastructure and logistics to support MDA as well as institutionalization of integrated vector management are among the activities for enhancement of NTD programme management and intersectoral collaboration. For scaling up access to quality NTD prevention and case-management interventions, it plans to conduct a fifth MDA with directly observed therapy and active case-finding in the Leeward Islands and to secure political commitment for vector control coordination. Design of pre-TAS surveys and preparation for STH infection assessment areas are also planned for under strengthening of integrated NTD surveillance and monitoring and evaluation. Research on vector control (through the Institut Louis Malardé) is ongoing, and it plans to do research on scabies and ivermectin. Challenges include securing political commitment, implementation of an effective directly observed therapy strategy up to 2014, design of the post-MDA assessment planned for late 2014, and continuation of work on morbidity. Financial issues and vector control are additional concerns.

During the discussion that followed, the experts raised the importance of building up parasitological capacity. ADB pointed out that the Institut Pasteur supports setting up of laboratory capacity. Professor Dato C.P. Ramachandran said that there are many institutions in the area that can provide support for capacity-building. Dr Wayne then raised the question on sources of funding for sending people for training.

**Viet Nam.** STH infections, FBTs, trematodiasis, trachoma, lymphatic filariasis, strongyloida is and toxocariasis are the target diseases for Viet Nam. Specific goals to be achieved are: (1) 75% coverage of preventive chemotherapy against STH infections among pre-school-aged and school-aged children at the national level by 2015; (2) 30% coverage of preventive chemotherapy against STH infections among WCBA at the national level by 2015; (3) 50% preventive chemotherapy coverage for FBTs in all 38 endemic districts; (4) assessment of trachoma endemicity; and (5) continue post-MDA surveillance for lymphatic
Filariasis (TAS 2 in 2015). Activities include development of the NTD national action plan and engaging local stakeholders and partners to support it, and meetings with different ministries, departments of ministries of health, and NTD staff. Regional workshops on trachoma are also set for district ophthalmic nurses and doctors on survey methodology. Similar workshops are targeted for the different diseases included in the plan. Viet Nam also plans to conduct NTD surveys and MDA for STH infections for the different target groups complemented by an information, education and communication campaign on different NTDs. FBT pilot MDA will also be done in one province with high prevalence as well as case-finding and treatment in hospitals for fascioliasis, toxocariasis, strongyloidiasis and trachoma. For strengthening of integrated NTD surveillance and monitoring and evaluation, lymphatic filariasis data will be reviewed in 2014, and TAS 2 will be conducted in 2015. The Vietnam National Institute of Ophthalmology will conduct a national mapping distribution of trachoma and blinding trachoma. Training of laboratory staff on the correct diagnosis of specific NTDs will also be done. It also plans to conduct a strongyloidiasis study with support from the Region, strengthen the capacity for surveillance, and confirm the reliability of serodiagnosis for Fasciola and Toxocara cases. Other research includes a seroepidemiological survey on cysticercosis, including genetic classification; animal reservoir host of Fasciola, Clonorchis and Paragonimus; and an intermediate host survey and knowledge, attitude and practices survey on NTDs, which includes issues on systematic noncompliance to MDA. Issues and challenges include the number of NTDs that are highly endemic and the co-endemicity across the country. STH and FBT reinfection occurs rapidly due to the habit of eating raw food and the poor access to clean water supply and sanitation, especially in the mountainous areas. The total budget requirement is $2 479 000, but available funding amounts only to $164 001, leaving a funding gap of nearly $2.3 million.

During the discussion, Dr Gabrielli reminded them that medicines for fascioliasis are available from WHO so they can use the funds for other priorities.

Mongolia. Echinococcosis and other zoonotic diseases are included in the country workplan. Set goals include the identification of the current epidemiologic patterns of these diseases, designing the intervention strategy, and obtaining baseline data for human and animals to set up surveillance scheme. The national NTD plan will be developed through consultation with experts from various sectors and partners. Mongolia also plans to set up the management team and integrate an echinococcosis component into the existing data-sharing system. Capacity-building for medical doctors, local health specialists and epidemiologists will also be done. Mapping of cases and setting up of regulatory activities and strengthening of health education among veterinarians, herders, schoolchildren and dog owners are among the activities. Sentinel surveillance sites will be set up, and annual evaluation for sharing of information will be conducted. It will also ensure reporting to all sectors in all levels. Identification of research needs and prioritizing the needs to undertake operational research as well as strengthening of operating room capacity through international regional partnership will also occur. They did not indicate their estimated budget.

During the open forum, Dr Melrose suggested that the Ministry of Health talk to New Zealand, which has extensive experience on echinococcosis.

Solomon Islands. Targeted diseases include lymphatic filariasis, trachoma, yaws, STH infections, Buruli ulcer and strongyloidiasis. It intends to establish an integrated programme structure and team for NTD control/elimination, reduce morbidity of key NTDs, and improve case management of targeted diseases at the health facility and community level. Activities include development of an integrated plan of NTD control/elimination and advocacy for support of this plan. Solomon Islands also plan to implement preventive chemotherapy for trachoma, yaws and STH infections; case management in morbidity to prevent disability; strengthen WASH in schools and communities; and build capacity for diagnosis and
treatment of key NTDs at all levels. Surveys on lymphatic filariasis, trachoma, yaws, Buruli ulcer and STH infections are also being planned, along with development of technical capacity for NTD operational research.

3. CONCLUSIONS

The main conclusions of the meeting were as follows:

3.1 General

3.1.1 Control and elimination of NTDs is a priority in the Western Pacific Region, as underlined by the 2012 Regional Committee Resolution WPR/RC63.R4, which endorsed the Regional action plan for neglected tropical diseases in the Western Pacific (2012–2016).

3.1.2 Significant progress has been made, especially towards elimination of lymphatic filariasis and leprosy in the Region. Nevertheless, more work is necessary to achieve elimination in all endemic countries and areas of the Region and to sustain case-management and disability-prevention activities.

3.1.3 Major efforts from countries, areas and partners; mobilization of financial resources; and cooperation with other health programmes and sectors will be needed to scale up and maintain interventions for the control and elimination of STH infections, schistosomiasis, yaws, trachoma and FBTs and to address the other eight NTDs prevalent in the Region. This will require innovative, interdisciplinary and intersectoral approaches to strengthen and expand partnerships.

3.2 Policy and advocacy recommendations

3.2.1 All 28 NTD-endemic countries and areas as well as partners should accord high priority for implementation of the Regional action plan for neglected tropical diseases in the Western Pacific (2012–2016) endorsed by the Regional Committee in 2012.

3.2.2 All countries and areas should develop and/or revise their national plans to control/eliminate NTDs in accordance with the regional NTD action plan and the global NTD roadmap, and include NTDs in their national health plans. In the light of the recent World Health Assembly resolution on NTDs (WHA66.12), country programmes should address at least the 13 NTDs currently prevalent in the Region.

3.2.3 Endemic countries and areas should include NTDs in national health policies and elevate NTDs as a priority in poverty reduction plans and strategies to achieve the MDGs, thereby demonstrating commitment to reducing inequality and poverty among the most marginalized communities.

Endemic countries and areas should ensure that NTD programmes have sufficient resources, as well as the necessary policy and political support, to accelerate the scale-up of national NTD programmes, and to promote multisectoral approaches by working across sectors including finance, water and sanitation, education, social welfare and health.

3.2.5 Endemic countries and areas should work with Regional bilateral development agencies in China, Japan and the Republic of Korea to encourage and invite further investment in NTD control and elimination in the Region.
3.2.6 Endemic countries and areas should work with development agencies such as ADB and the World Bank to address NTDs as part of their social protection strategies to reduce poverty and to better link water and sanitation improvements projects with NTD control and elimination efforts.

3.3 **Lymphatic filariasis recommendations**

3.3.1 Decisive efforts need to be made to achieve lymphatic filariasis elimination in all countries and areas in the Region by 2020. Countries and areas facing challenges need to bring these issues to the attention of WHO, which will work with potential donors to obtain needed support.

3.3.2 MMDP should be made an integral part of all lymphatic filariasis elimination programmes and integrated into health systems.

3.3.3 Strong support for surveillance activities, including adopting appropriate measures to address the risk posed by mobile populations and migration in areas that have achieved lymphatic filariasis elimination, should be provided by the RPRG, WHO and partners.

3.3.4 Support for dossier preparation should continue to be provided by the RPRG, WHO and partners.

3.4 **Soil-transmitted helminth infection recommendations**

3.4.1 Significant scaling up of activities must be undertaken by all countries and areas requiring preventive chemotherapy to achieve 100% geographic coverage and deworming of at least 75% of school-aged children, pre-school-aged children and WCBA at risk.

3.4.2 Complete mapping should be carried out in all countries and areas where information is incomplete or not available, and information on distribution (i.e. prevalence and intensity) of STH infections in the Region should be consolidated after taking into account the impact on STH infections of MDA implemented to eliminate lymphatic filariasis.

3.4.3 Efforts must be made to strengthen collaboration between the education and health sectors and partners to roll out supplementary control measures, particularly WASH.

3.4.4 Efforts must be made to ensure uninterrupted transition from preventive chemotherapy for lymphatic filariasis to that for STH infections in areas where lymphatic filariasis elimination has been achieved and large-scale treatment for STH infections is still required.

3.4.5 Monitoring and evaluation of ongoing programmes should be strengthened to adjust national policies to changing epidemiology that includes reduction in STH infection prevalence and consequent opportunities to downscale MDA programmes.

3.4.6 Countries and areas should take advantage of existing drug donations by manufacturers for treatment of school-aged children. WHO should explore the possibility of receiving donations, on a case-by-case basis, from manufacturers or other partners for pre-school-aged children and WCBA. Countries and areas should also strengthen the collaboration between deworming programmes and maternal and child health programmes to cover these groups.

3.5 **Schistosomiasis recommendations**

3.5.1 Schistosomiasis-endemic countries and areas should take necessary steps to switch their programmes from control to elimination (based on the *WHO strategic plan for*
schistosomiasis, 2012–2020, and the 2012 WHA resolution [WHA 65.21]), including addressing the issues concerning animal hosts and snail control.

3.5.2 Country NTD programmes should coordinate with programmes in charge of water and sanitation to prioritize the inclusion of all schistosomiasis-endemic foci for adequate water and sanitation interventions.

3.5.3 Measures should be taken to clearly define and quantify areas and populations to be targeted for preventive chemotherapy with praziquantel and those to be prioritized for the implementation of complementary public health measures.

3.5.4 Coordination and exchange of information among schistosomiasis-endemic countries and areas should be strengthened. Interventions between and within endemic countries and areas should be harmonized.

3.6 Leprosy recommendations

3.6.1 Leprosy-endemic countries and areas, even after having achieved leprosy elimination as a public health problem, must sustain access to good-quality leprosy services, including case management and disability prevention, which should be integrated into health systems.

3.6.2 Leprosy-endemic countries and areas that have not yet eliminated leprosy as a public health problem should make their needs known to WHO, to enable it to work with potential donors to obtain needed support.

3.6.3 WHO and partners should continue to provide support for surveillance and monitoring and evaluation activities.

3.7 Trachoma recommendations

3.7.1 Complete mapping should be carried out in all countries and areas where information is incomplete or not available on trachoma, and information on distribution of trachoma in the Region should be consolidated.

3.7.2 Based on the mapping results, trachoma control activities following the SAFE strategy should be implemented.

3.7.3 As appropriate, countries and areas should carry out non-inferiority trials to test the effectiveness of azithromycin dosage used in trachoma elimination programmes for yaws treatment.

3.7.4 Work should continue on developing monitoring and evaluation guidelines for verification of elimination of trachoma.

3.8 Other neglected tropical disease recommendations

3.8.1 For FBTs, measures should be taken to (1) identify and quantify areas and populations at risk; (2) expand access to quality-assured medicines (including through manufacturer donations of triclabendazole) and services for case management and preventive chemotherapy; and (3) implement complementary measures including WASH, veterinary public health and behaviour-change communication.

3.8.2 Steps should be taken to initiate or scale up yaws eradication programmes in all three endemic countries.
3.8.3 For countries and areas where echinococcosis is endemic, measures should be taken to (1) identify and quantify areas and populations at risk; (2) strengthen case management and access to services; and (3) implement complementary measures, including veterinary public health and behaviour-change communication.

3.8.4 Access to ivermectin should be increased for public health interventions for scabies and strongyloidiasis and the mechanism for availing ivermectin needs to be worked out under WHO.

3.8.5 Steps should be taken to introduce the new set of joint request and reporting forms to facilitate access to manufacturers’ drug donations by Member States through WHO.

3.8.6 At the country level, systems should be in place to adequately detect, manage and report adverse events occurring in conjunction with preventive chemotherapy.

3.8.7 Country programmes should strengthen collection, verification, management and reporting of NTD data.

3.8.8 Collaboration among different NTD programmes, including combined mapping, drug distribution and impact evaluation, should be strengthened at the country level.

3.9 Partnership recommendations

3.9.1 A gap analysis of the requirements of NTD programmes until 2020 should be conducted, at the country level and regionally, and a major innovative resource mobilization effort should be undertaken.

3.9.2 A united partner effort for NTDs should be launched to support NTD control and elimination in the Region, with existing and new partners from government and nongovernment sectors, particularly education and development, with clear definition of roles and responsibilities.

3.9.3 Organizations involved in trachoma elimination, such as the International Trachoma Initiative and International Coalition for Trachoma Control, should be invited to join the regional NTD community as new partners.
# The Western Pacific Region Programme Managers Meeting on Neglected Tropical Diseases
## 16 - 18 July 2013

### DAY 1 (July 16)

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<thead>
<tr>
<th>Time</th>
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<tr>
<td>8:00 - 8:30</td>
<td>Registration</td>
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<tr>
<td>08:30 - 09:15</td>
<td><strong>Opening</strong></td>
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<tr>
<td>8:30 - 8:40</td>
<td>Welcoming remarks</td>
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<td>Dr Shin Young-soo</td>
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<tr>
<td>8:40 - 8:55</td>
<td>Self-introductions</td>
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<td>Participants</td>
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<tr>
<td>8:55 - 9:05</td>
<td>Designation of chairperson, vice-chairperson and rapporteurs</td>
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<td>Dr Shin Young-soo</td>
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<tr>
<td>9:05 - 9:15</td>
<td>Administrative announcement</td>
<td>0:10</td>
<td>Dr Eva Christophel</td>
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<tr>
<td>09:15 - 09:45</td>
<td><strong>Group photograph &amp; Coffee break</strong></td>
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<tr>
<td>09:45 - 11:15</td>
<td><strong>Session 1. Global and regional updates</strong></td>
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<tr>
<td>9:45 - 9:50</td>
<td>Objectives of the meeting</td>
<td>0:05</td>
<td>Dr Eva Christophel</td>
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<tr>
<td>9:50 - 10:05</td>
<td>Keynote address: History of global lymphatic filariasis elimination programme</td>
<td>0:15</td>
<td>Prof Dato CP Ramachandran</td>
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</table>
| 10:05 - 10:20 | Update on the global NTD programme                                   | 0:15     | Dr Kauno Ichimori/  
<pre><code>                |                                             |         | Dr Albis Gabrielli       |
</code></pre>
<p>| 10:20 - 10:35 | Current status of the NTD control &amp; elimination in the Western Pacific Region | 0:15     | Dr Eva Christophel            |</p>
<table>
<thead>
<tr>
<th>Time</th>
<th>Session/Activity</th>
<th>Location</th>
<th>Duration</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>10:35</td>
<td>NTDs in the Western Pacific Region: Considerations on the way forward</td>
<td></td>
<td>0:15</td>
<td>Dr John Ehrenberg</td>
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<tr>
<td>10:50</td>
<td>Discussion</td>
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<td></td>
<td><strong>Session 2. Eliminating lymphatic filariasis in the Western Pacific Region</strong> (10 minute presentation + 5 min discussion)</td>
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<td>11:15</td>
<td>Lao PDR</td>
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<td>Dr Rattanaxay Phetsouvanh</td>
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<tr>
<td>11:30</td>
<td>Malaysia</td>
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<td>0:15</td>
<td>Dr Rose Faiza</td>
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<td>11:45</td>
<td>Philippines</td>
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<td>Dr Leda Hernandez</td>
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<td>12:00</td>
<td>Fiji</td>
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<td>0:15</td>
<td>Ms Kelera Oli</td>
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<td>12:15</td>
<td>Papua New Guinea</td>
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<td>0:15</td>
<td>Ms Wendy Houinei</td>
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<td>12:30</td>
<td>Discussion</td>
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<td>12:45</td>
<td>Lunch</td>
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<td></td>
<td><strong>Session 3. Eliminating lymphatic filariasis in the Western Pacific Region (continued)</strong> (10 min presentation + 5 min discussion each)</td>
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<tr>
<td>13:45</td>
<td>Recap of the session 2</td>
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<td>0:10</td>
<td>Dr Patricia Graves</td>
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<tr>
<td>13:55</td>
<td>Update on TAS and new diagnostics</td>
<td></td>
<td>0:15</td>
<td>Dr Patrick Lammie</td>
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<tr>
<td>14:10</td>
<td>TAS implementation issues</td>
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<td>Dr Kazuyo Ichimori</td>
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<td>14:25</td>
<td>Cambodia</td>
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<td>Dr Huch Chea</td>
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<td>Kiribati</td>
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<td>Dr Teatao Tira</td>
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<td>Samoa</td>
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<td>Dr Take Naseri</td>
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<td>15:10</td>
<td>Discussion</td>
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<td>15:30</td>
<td>Coffee break</td>
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<tr>
<td>16:00</td>
<td>Session 4. NTD morbidity management</td>
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### Recap of the session 3
- **Recap of the session 3** 16:00 - 16:10
- **Update on LF morbidity management** 16:10 - 16:25
- **Panel discussion on NTD morbidity management** 16:25 - 17:25

### Conclusion of Day 1
- **Conclusion of Day 1** 17:25 - 17:30

### Reception
- **Reception** 18:30 - 20:00

### Day 2 (July 17)

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>08:30 - 10:00</td>
<td><strong>Session 5. PC drug applications and data management</strong> (10 min presentation + 5 min discussion each)</td>
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<tr>
<td>8:30 - 8:40</td>
<td>Recap of session 4</td>
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<td>Dr David Addiss</td>
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<tr>
<td>8:40 - 8:55</td>
<td>Introduction of the new joint application and reporting process of Preventive Chemotherapy (PC)</td>
<td>0:15</td>
<td>Dr Albis Gabrielli</td>
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<tr>
<td>8:55 - 9:10</td>
<td>PC data collection using new forms - country experience</td>
<td>0:15</td>
<td>Dr Muth Sinuon</td>
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<tr>
<td>9:10 - 9:25</td>
<td>Role of programme managers on data collection</td>
<td>0:15</td>
<td>Prof. Dato CP Ramachandran</td>
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<tr>
<td>9:25 - 10:00</td>
<td>Discussion</td>
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### Session 6. Elimination of schistosomiasis, trachoma and yaws (10 min presentation + 5 min discussion each)

<table>
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<tr>
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<th>Duration</th>
<th>Presentation</th>
<th>Speaker</th>
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<tr>
<td>10:30</td>
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<td>Schistosomiasis elimination in the Western Pacific Region - Status and next steps</td>
<td>Dr Padmasiri Aratchige</td>
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<tr>
<td>10:45</td>
<td>0:15</td>
<td>Philippines Schistosomiasis Programme Review</td>
<td>Dr Leda Hernandez</td>
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<tr>
<td>11:00</td>
<td>0:15</td>
<td>Trachoma elimination - status and next steps</td>
<td>Dr Hugh Taylor/ Dr Andrea Muller</td>
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<tr>
<td>11:15</td>
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<td>Yaws elimination in the Western Pacific Region - Status and next steps</td>
<td>Dr Lasse Vestergaard</td>
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<tr>
<td>11:30</td>
<td>0:15</td>
<td>Yaws elimination efforts in Vanuatu</td>
<td>Dr Len Tarivonda</td>
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<tr>
<td>11:45</td>
<td>0:30</td>
<td>Discussion</td>
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### Session 7. Soil-transmitted helminthiasis and other parasitic diseases (10 min presentation + 5 min discussion each)

<table>
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<th>Time</th>
<th>Duration</th>
<th>Presentation</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>13:15</td>
<td>0:10</td>
<td>Recap of the session 6</td>
<td>Dr Wayne Melrose</td>
</tr>
<tr>
<td>13:25</td>
<td>0:15</td>
<td>Control of Soil-transmitted helminthias (STH): Update</td>
<td>Dr Albis Gabrielli</td>
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<tr>
<td>13:40</td>
<td>0:15</td>
<td>STH control in Tuvalu</td>
<td>Country representative/Dr Sunghye Kim</td>
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<td>13:55</td>
<td>0:15</td>
<td>STH control in Viet Nam</td>
<td>Dr Huong Nguyen Thu</td>
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<tr>
<td>14:10</td>
<td>0:15</td>
<td>Foodborne parasitic diseases: update</td>
<td>Prof. Zhou Xiao-nong</td>
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<tr>
<td>14:25</td>
<td>0:15</td>
<td>Control of neglected zoonotic diseases in Mongolia</td>
<td>Dr Bolor Bold</td>
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<tr>
<td>14:40</td>
<td>0:15</td>
<td>Control of Foodborne trematodiasis in Lao PDR</td>
<td>Dr Ratanaxay Phetsouvanh</td>
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<tr>
<td>14:55</td>
<td>0:15</td>
<td>Integrated and intersectoral approaches</td>
<td>Prof. Juerg Utzinger</td>
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<tr>
<td>15:10</td>
<td>0:10</td>
<td>Discussion</td>
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**DAY 3 (July 18)**

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<th>Time</th>
<th>Item</th>
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<th>Name</th>
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<tbody>
<tr>
<td>8:30-10:00</td>
<td>Group work to develop draft national plan of action (Continue)</td>
<td>1:30</td>
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<tr>
<td>10:00-10:30</td>
<td>Coffee Break</td>
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<tr>
<td>10:30-12:00</td>
<td>Session 8. Partnership and resource mobilization (Approx. 5 minute each)</td>
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<tr>
<td>Time</td>
<td>Presenter/Topic</td>
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12:00-13:00  Lunch  1:00

**Session 9: NTD research**

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<td>Opportunities for NTD research</td>
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13:30 – 15:00  **Session 10. Group work presentation**  (10 min presentation + 5 min discussion each)
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<td>14:00 Group 1 (Sub-group 2)</td>
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<td>15:00 Discussion</td>
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<td><strong>Session 11: Conclusions and recommendations</strong></td>
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<td>15:00</td>
<td>16:00 Conclusions and Recommendations</td>
<td>1:00 Dr Eva Christophel</td>
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<td>16:00</td>
<td><strong>Coffee Break</strong></td>
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<td>16:30</td>
<td>16:45 Tribute to Dr Kazuyo Ichimori</td>
<td>0:15 WHO and RPRG</td>
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<td>16:45</td>
<td>17:00 Closing remarks</td>
<td>17:00 Dr John Ehrenberg</td>
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