Programme for the Elimination of Neglected Diseases in Africa (PENDA)*
Strategic Plan of Action and Indicative Budget 2016-2025
Programme for the Elimination of Neglected Diseases in Africa (PENDA)*

* The name PENDA is a provisional name and may still be changed

Strategic Plan of Action and Indicative Budget 2016-2025

November 2013

AFRICAN PROGRAMME FOR ONCHOCERCIASIS CONTROL
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<th>Description</th>
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<tbody>
<tr>
<td>APOC</td>
<td>African Programme for Onchocerciasis Control</td>
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<td>CAR</td>
<td>Central African Republic</td>
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<tr>
<td>CDD</td>
<td>Community Directed Distributor</td>
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<td>CDTI</td>
<td>Community Directed Treatment with ivermectin</td>
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<td>CSA</td>
<td>Committee of Sponsoring Agencies</td>
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<td>COC</td>
<td>Continuum of care</td>
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<td>DEC</td>
<td>Diethylcarbamazine-citrate</td>
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<td>DRC</td>
<td>Democratic Republic of the Congo</td>
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<td>GAELF</td>
<td>Global Alliance to Eliminate Lymphatic Filariasis</td>
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<td>GPELF</td>
<td>Global Programme to Eliminate Lymphatic Filariasis</td>
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<td>GSK</td>
<td>GlaxoSmithKline</td>
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<td>IU</td>
<td>Implementation Unit</td>
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<td>JAF</td>
<td>Joint Action Forum</td>
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<td>LF</td>
<td>Lymphatic filariasis</td>
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<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
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<td>MDA</td>
<td>Mass Drug Administration</td>
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<td>MDP</td>
<td>Mectizan Donation Program</td>
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<td>MOH</td>
<td>Ministry of Health</td>
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<tr>
<td>NGDO</td>
<td>Non-Governmental Development Organization</td>
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<tr>
<td>NTD</td>
<td>Neglected Tropical Diseases</td>
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<tr>
<td>OCP</td>
<td>Onchocerciasis Control Programme (in West Africa)</td>
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<td>PC</td>
<td>Preventive Chemotherapy</td>
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<tr>
<td>PTS</td>
<td>Post-treatment surveillance</td>
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<tr>
<td>PHC</td>
<td>Primary Health Care</td>
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<tr>
<td>REA</td>
<td>Rapid Epidemiological Assessment</td>
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<td>REMO</td>
<td>Rapid Epidemiological Mapping of Onchocerciasis</td>
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<td>RPRG</td>
<td>Regional Programme Review Group</td>
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<tr>
<td>SAE</td>
<td>Serious Adverse Event</td>
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<tr>
<td>TAS</td>
<td>Transmission Assessment Survey</td>
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<tr>
<td>TCC</td>
<td>Technical Consultative Committee</td>
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<tr>
<td>WB</td>
<td>World Bank</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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<td>WHO/AFRO</td>
<td>World Health Organization Regional Office for Africa</td>
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Neglected Tropical Diseases (NTDs) disproportionately affect the most vulnerable people and the poorest communities. They lead to chronic and debilitating physical and mental symptoms which affect more than one billion people including more than 500,000 million children. The global NTD burden amounts to between 46–57 million disability adjusted life years (DALYs) lost annually; this means that this group of diseases is one of the most important global causes of illness and disability. Africa bears about half of the global health and economic burden of these diseases. Due to their impact on the ability of children to learn and people to work, NTDs are a constraint to economic growth and development and are a major reason why the “bottom 500 million” people in Sub-Saharan Africa cannot escape poverty. These diseases are in reality the diseases of neglected communities and neglected people.

This economic and social burden can be ended. Endemic countries are making great efforts to tackle NTDs. The World Health Organisation (WHO) has developed a roadmap to accelerate work on NTDs with ambitious and inspiring targets for elimination. The WHO Regional Office for Africa (WHO/AFRO) has developed a Regional Strategy on NTDs covering the period 2014–2020 with clear targets for 11 NTDs. A wide range of public and private partners have signed up to the London Declaration on NTDs which commits them to work for the WHO targets. There is a strong global consensus about the need to act and how to achieve change.

“The world is now paying attention to these [neglected] diseases and making progress in unprecedented ways, with ambitious goals, excellent interventions, and growing evidence of multiple benefits for health.”

Margaret Chan, Director General, World Health Organization

Five NTDS can be tackled using preventive chemotherapy (PC): lymphatic filariasis, (LF) onchocerciasis, schistosomiasis, soil-transmitted helminthiasis and trachoma. The medicines used for PC are almost all donated by pharmaceutical companies making these interventions excellent value for money.

Approximately 40% of the global disease burden for lymphatic filariasis occurs in Africa and 99% of the disease burden for onchocerciasis. Both these diseases can be eliminated after a number of years of PC given in the form of mass drug administration (MDA). In 30 countries in Africa these diseases are co-endemic and in these countries they both require the same medicine and treatment coordination. Strategies to eliminate these two diseases affect each other and can best be implemented together. Medicines to treat these two diseases also help to control scabies and soil transmitted helminthiasis; both of which represent a significant economic and health burden in Africa.

The medicines, the knowledge and the will to end the burden of these diseases are all available. But a new sense of urgency, additional resources, continued country commitment and regional coordination are needed to ensure that efforts are consistent and successful throughout the continent and lead to elimination and freedom from NTDS for future generations.

“The elimination of the ten NTDS for which medicines have been donated by the pharmaceutical industry, represents good value for money, given the very low per capita expenditure and the high realisation of the outcome based on well-documented experience.”

The Lancet Commission on Investing In Health 2013

The global target for the elimination of lymphatic filariasis is set for 2020 and, for onchocerciasis, 2025. This Strategic Plan of Action and Indicative Budget outlines a ten-year plan to realise both targets and eliminate both diseases in Africa. This plan is built on the assumption that mapping is completed and treatment initiated in all target populations by 2016. This in itself will require a major effort in the lead up to the Programme.

The plan builds on progress already made and contributes to the broader NTD goals. The strategy will be implemented by, and with, endemic countries and partners to achieve elimination by:

- defining and delivering country specific support strategies (jointly developed with countries) and crafting adapted interventions designed to overcome key elimination constraints;
- implementing an innovative integrated approach to the elimination of onchocerciasis and lymphatic filariasis (in countries where both are present);
- building capacity of national integrated NTD teams;
- providing regional coordination and leadership to monitor and ensure progress towards elimination throughout the continent.

See above
2.2. Joining forces to maximise impact

The total population in 34 African countries at risk for lymphatic filariasis is estimated to be about 447 million by 2016 (this figure estimates the total, after mapping is completed, and allows for some population growth). The total population at risk for onchocerciasis in 31 endemic countries will reach circa 253 million in 2016. The total population at risk for both will be about 190 million in 2016.3

Remarkable efforts are being made to achieve the elimination of lymphatic filariasis and onchocerciasis4 and impressive results have already been achieved. However, elimination throughout Africa will require new approaches, intensified efforts in the most challenged countries, and a high degree of regional coordination to monitor and maintain progress. 4

This effort will be supported and coordinated at a regional level by a new and innovative support structure: the Programme for the Elimination of Neglected Diseases in Africa (Penda).5

An integrated approach to the two diseases will help to achieve synergies, solve operational challenges and increase efficiency. Regional support is needed to coordinate this effort and to ensure that urgent priorities are identified and addressed. The Strategic Plan outlines a programme of regional support 2016-25 and identifies a number of critical next steps, which need to be taken so that the plan can be implemented, at full speed, in 2016.

2.2. Rationale for a regional entity to support accelerated elimination efforts

Major progress has been made towards the elimination of onchocerciasis and lymphatic filariasis using evidence-based and proven interventions and medicines donated by pharmaceutical companies. The progress so far has significantly reduced the economic and health burden. The results have been reductions in poverty, improvements in school attendance, better use of agricultural land and improved health. This has increased the economic resilience of poor communities. Up-scaling of treatment has been made possible by mobilising and empowering communities to become responsible for treatment programmes. Elimination will make these diseases history and will consolidate health gains for generations to come. But in order to achieve this all populations at risk must have access to treatment and all endemic countries should achieve elimination goals to avoid the risk of re-crudescentce.

An integrated approach to the two diseases will help to achieve synergies, solve operational challenges and increase efficiency. Regional support is needed to coordinate this effort and to ensure that urgent priorities are identified and addressed. The Strategic Plan outlines a programme of regional support 2016-25 and identifies a number of critical next steps, which need to be taken so that the plan can be implemented, at full speed, in 2016.

3 See annex 1 and 4 for additional details.

4 Global elimination of lymphatic filariasis as a public health problem is operationally defined as reduction in the prevalence of infection with Wuchereria bancrofti, Brugia malayi or B. timori to below target thresholds in all endemic areas in all countries. (WER GPELF: progress report 2012) Elimination of onchocerciasis is demonstrated in four steps which establish the reduction of O. volvulus infection and transmission to the extent that interventions can be stopped but post-intervention surveillance is still necessary if there is any risk of re-infection from other sources.
This ten-year programme will bring together the partners, expertise and best practices developed to date, in programmes working to eliminate lymphatic filariasis and onchocerciasis. It will draw on the existing strengths and knowledge of both programmes and will develop joint approaches to the elimination of both diseases. In doing this it will work closely with WHO/AFRO to achieve the broader goals of the Regional NTD strategy and to support countries in the implementation of their national master plans.

The control of onchocerciasis in Africa is widely acknowledged as one of the major public health achievements of recent decades. Firstly, twenty years of control coordinated by the Onchocerciasis Control Programme (OCP) countries led to effective control and reduction in blindness and morbidity in West Africa.

“The Onchocerciasis Control Programme in West Africa, which operated from 1974 to 2002, reduced levels of the infection and prevented eye lesions in 40 million people in 11 countries. About 600,000 cases of blindness were averted. In addition, 25 million hectares of abandoned arable land were reclaimed for settlement and agricultural production.”

Second WHO Report on Neglected Tropical Diseases

Following OCP, twenty years of MDA using ivermectin donated by Merck and Co. Inc. has expanded control efforts to countries served by the African Programme for Onchocerciasis Control (APOC). In 2011 more than 80 million people received treatment through community distribution schemes. This success has been made possible by a powerful and successful partnership which has worked for 25 years to bring together communities, policy makers and health workers in endemic countries, the UN system and donors, Non-Governmental Development Organizations (NGDOs) and Merck to combat the disease. APOC serves and facilitates this partnership and has been at the heart of successes achieved. During the last decade, evidence has accumulated to show that onchocerciasis can be eliminated using existing strategies and this has generated a new ambition – to eliminate the disease in Africa and thereby permit annual preventive MDA treatment to be stopped. Beyond the direct health impact of onchocerciasis elimination, associated socio-economic benefits can be expected, including improved employment, land and workplace productivity and school-attendance especially for women and children.

The Global Programme to Eliminate Lymphatic Filariasis (GPELF), which was officially launched in the year 2000 is the most rapidly scaled-up medicine administration programme in public health history. This scale-up was made possible by the donation of albendazole in 1997 by GlaxoSmithKline (GSK). The results already achieved in some countries, such as Togo and Burkina Faso, show that elimination of the diseases is a realistic target. An assessment of the economic benefits of the first 8 years of the global scale-up estimated that US$ 21.8 billion of direct economic benefits would be gained over the lifetime of 31.4 million individuals treated.

In Africa alone, the number of people receiving MDA for the elimination of lymphatic filariasis increased from

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5 PENDA is a provisional choice of name and this may still change.
6 Sustaining the drive to overcome the global impact of neglected tropical diseases. World Health Organization 2013.
7 Initially efforts were led in West Africa by OCP which closed in 2002. Since 1995 APOC has led the partnership which was launched to establish sustainable community managed systems for ivermectin distribution in 19 countries where the disease was a significant public health problem.
around 240,000 in six implementation areas in 2001, to around 113 million in 771 implementation areas in 2011. This major scale-up was achieved through a well coordinated effort between drug donation companies, implementing partners and strong country driven programmes, aided by the coordination and technical guidance from WHO/AFRO.

There are two aims of the GPELF: to interrupt transmission using MDA, and to help people suffering from the symptoms by providing access to the basic care needed to manage morbidity and prevent disability.

### 2.2. The case for an integrated approach

Lymphatic filariasis and onchocerciasis are both vector borne diseases caused by filarial worms susceptible to a common medicine: ivermectin. This medicine is used to combat both diseases using similar strategies and has been donated for the control of onchocerciasis since 1987 and for the elimination of lymphatic filariasis since 1997.\(^\text{10}\) It is estimated that both diseases are co-endemic in up to 80% of the areas in which onchocerciasis occurs.\(^\text{11}\) There is a considerable overlap in the population targets for each disease and the elimination of both diseases is inextricably linked, as it is impossible to verify elimination of one disease if treatment for the other is still in progress. Decisions about when to treat, and when to stop treatment, have to be coordinated. Elimination protocols cannot be carried out for one disease without reference to the other. Many countries have already made major steps in developing integrated NTD master plans and the implementation of these is absolutely critical and will greatly improve coordination and performance at country level. Two examples are given in the box below.

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**Tanzania and Ghana working to integrate efforts to eliminate NTDs**

In **Ghana** merging onchocerciasis and lymphatic filariasis elimination activities has resulted in the building of synergies between the two programmes. Mass drug administration for the two programmes is undertaken together. Planning and budgeting, resource mobilisation, social mobilisation and capacity building for medicine delivery are sub-activities and areas of synergies between the two programmes. A single programme team under one programme management structure carries out these activities. Synergies between the two programmes include case detection of elephantiasis, hydrocele and blindness within the communities during the medicine delivery by community directed distributors (CDDs). Monitoring and supervision is carried out jointly, as are coverage surveys.

In **Tanzania** co-implementation of LF and onchocerciasis treatment began in 2005 with joint administration in Tanga. Positive experience with early co-implementation in some districts has led to rapid expansion of co-implemented programmes. Organisationally NTD work has been brought together at all levels. There is one single NTD coordinator, not only at the national level, but also at the regional and district levels. They are responsible for the coordination of NTDs and co-implementation at their respective levels of operation, for procurement of medicines, for accounting for medicines used, and the preparation of annual reports.

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\(^{10}\) In countries in Africa where both diseases are endemic, lymphatic filariasis MDA involves treatment with ivermectin donated by Merck & Co. Inc. and albendazole donated by GSK.

The integration of interventions will strengthen community-based delivery platforms that can serve to scale-up the delivery of treatments for PC NTDs and other health interventions.

However, whilst there are excellent examples of increasing integration at country level, a truly integrated approach to the elimination of onchocerciasis and lymphatic filariasis is lacking. This is essential to guide implementation and to establish integrated approaches, tools and decision-making. At the moment country programmes do not have these integrated tools or guidance to proceed towards elimination in areas where both diseases are treated.

“The International Task Force for Disease Eradication considered it imperative that the two initiatives to eliminate onchocerciasis and lymphatic filariasis work together more closely to coordinate mapping activities and MDA in Africa at the continent, national and district levels.”


2.3. Joint approaches to solve common problems

Improving results and getting on track for elimination in countries or regions that are lagging is dependent on working closely with countries to overcome a number of key challenges. Opportunities to address these jointly have been identified and shape the choices made in developing this plan.

These most important challenges, and opportunities to overcome them with joint work, are briefly described below.

Overlapping onchocerciasis and lymphatic filariasis areas

To date it has been very difficult to get reliable data on the overlap of onchocerciasis and lymphatic filariasis treatment areas and develop an accurate estimate of the target population. As stated above the total population at risk for both diseases is estimated at about 190 million in 2016. Ongoing joint work is resulting in a much clearer picture and when this work is completed it will be possible to optimise decisions about when and where to treat and to fine-tune optimal medicine supply (avoiding both waste and shortages).

Harmonizing treatment units

Historically onchocerciasis control has worked in project areas where the disease is hyper and meso-endemic. Lymphatic filariasis programmes have worked within Implementation Units (IUs) which cover entire administrative or health districts. Work has already started to introduce harmonized IUs, and new population treatment targets are being developed. This will allow for more efficient and effective treatment and collection of compatible data sets.

Completing scale-up for elimination

Whilst lymphatic filariasis scale-up has been rapid it is not yet complete and in some countries the necessary epidemiological mapping has not been completed, so the treatment population for these areas is not yet known. The change to the goal of onchocerciasis elimination requires treatment in hypo-endemic areas that were not included as part of the control strategy. Starting treatment in these areas requires detailed definition of those areas and harmonizing and redefining the guidelines about starting


13 These figures include an estimate for areas not yet mapped for lymphatic filariasis and for people living in areas which are hypo-endemic for onchocerciasis and will require treatment as part of an elimination strategy. See annex 1 and 4 for additional details.
and stopping treatment and developing MDA delivery systems that are compatible with the need for accelerated scale-up as well as the monitoring and evaluation (M&E) and surveillance systems that these actions require. These guidelines need to be jointly developed and introduced. This work should be completed by 2016, and any areas that are lagging behind require urgent attention.

**MDA in areas co-endemic for onchocerciasis, lymphatic filariasis and loiasis**

In areas co-endemic for onchocerciasis and loiasis, cases of severe adverse reactions (neurological signs, encephalopathy and coma) have been reported as the result of treatment with ivermectin. After the first cases were reported, measures were taken to avoid and deal with this problem. In areas where lymphatic filariasis and onchocerciasis are co-endemic with loiasis, different MDA strategies will be needed. Research is still on-going about the best strategy for these areas. In the meantime, WHO has developed interim guidelines on treatment of lymphatic filariasis in areas co-endemic for loiasis. These guidelines, which should be implemented quickly, recommend the use of albendazole twice-yearly for MDA and mass distribution of insecticide treated nets. For onchocerciasis the strategies for treatment in hypo-endemic areas still need to be defined. In the near future, a test and treat strategy will probably enable a large proportion of the population to receive ivermectin. For those with *Loa loa* microfilaremia too high for ivermectin it will be necessary to consider the use of alternative therapies such as the use of doxycycline daily for 5 weeks. Detailing the map of transmission and level of endemicity of loiasis may help to identify areas of hyper-endemicity for


**MDA in countries affected by conflict**

In some countries, treatment has been severely disrupted, or made impossible, by conflict and civil unrest. As situations stabilize, partners have engaged to work through these situations and to help countries catch up. In countries, where localized conflicts have delayed treatment rounds, a accelerated treatment schedules and additional treatment rounds can help the national programme to catch up. In other countries, such as the Democratic Republic of the Congo (DRC), treatments take place but irregularly and displaced populations often miss treatment rounds. To support these countries, there is a need for alternative delivery strategies for accelerated impact and financial resources to meet the demands of working in challenging and unstable situations. These strategies and the support to implement them will be developed and delivered jointly for both diseases.

**High burden countries**

There are a number of high burden countries in which intensive support will be needed to achieve elimination. The scale of the challenge to achieve national coverage is considerable and the complexity of the logistics, the human and financial resource needs and managerial challenges are such that additional support will be essential. This support can best be planned together for both diseases. Countries falling in this category include those with high endemic
populations and those with high disease intensity. **Newly identified and late starting areas** In addition to the areas in which treatment has been disrupted, there are also areas which have only recently been identified as needing treatment or where scale-up is still happening. In these areas treatment programmes are still very young and may require the use of accelerated and flexible approaches to enable catch-up. Guidelines to deal with these areas and additional resources will be planned for both diseases. **Addressing under-performance** A number of treatment programmes are well advanced, and report adequate coverage data, but do not achieve the expected results in epidemiological evaluations. The reasons for under-performance are not always clear. Explanations could lie in a variety of factors including the validity of coverage data; differences in vector species and biting rates, or in a reduction in drug efficacy. A detailed analysis is needed so that specific remedial actions can be identified in a timely fashion. PENDA will contribute to the analysis and development of national remedial plans. **Cross-border issues** Cross-border collaboration is important in achieving and sustaining progress towards elimination. Where there is local transmission, cross-border foci and long-distance vector migration, epidemiological and entomological evaluation is needed and MDA should be extended to cover the total targeted population at risk. To achieve this objective, cross-country intervention teams should be established and trained in M&E of the impact of treatment of both diseases. Political advocacy is needed to promote cross-border collaboration. These activities can be most effectively carried out for the two diseases together. **Vector control and entomological surveillance in the elimination of lymphatic filariasis and onchocerciasis** Vector control is known to be an effective tool for the interruption of both lymphatic filariasis and onchocerciasis transmission, either as a single strategy or as a complementary MDA. Therefore, PENDA will promote integrated vector management as an additional intervention in areas where effective and safe PC is not possible, (e.g. in areas where ivermectin usage is not possible due to hyper-endemicity with Loiasis) or, where PC programmes have started late or are under-performing, and acceleration of elimination needs to be achieved. PENDA will promote the necessary coordination, with the malaria control programme, to ensure that priority in bednet distribution is given to areas where the burden of both lymphatic filariasis and malaria is high. For onchocerciasis, selective vector control may be used as an additional tool with MDA, in transmission hot spots, if MDA is judged insufficient to interrupt transmission. **Evaluation and Surveillance** Achieving elimination requires meeting criteria established by WHO and carrying out post-treatment surveillance for a number of years. The M&E and surveillance approaches for onchocerciasis and lymphatic filariasis need to be integrated for areas where the two disease are co-endemic. Identification of lymphatic filariasis and onchocerciasis hotspots will be identified for further evaluation and accelerated delivery of adapted interventions. Elimination places major technical and scientific demands on programmes, and maintaining the entomological and epidemiological expertise to carry out
these integrated tasks is a challenge that requires investment in human resources. Expertise and human resource capacity is critical, and should be maintained and, where necessary, augmented.

**Morbidity management and disability prevention**

Addressing stigma management and the mental health impact of NTDs are essential components of comprehensive NTD programmes. Both onchocerciasis and lymphatic filariasis can cause serious disabilities which impact on wellbeing and livelihoods. A significant proportion of the public health problem represented by lymphatic filariasis is due to morbidity and disability related to lymphoedema (elephantiasis) and hydrocele. Therefore, national programmes must focus on managing morbidity and preventing disability, as part of a continuum of care, as well as on providing MDA. These activities are important to meet the needs of lymphatic filariasis patients and they help to improve drug coverage by highlighting the importance of compliance.

Management of morbidity and disability in lymphatic filariasis requires both secondary and tertiary prevention. Secondary prevention includes simple hygiene measures, such as basic skin care to prevent infections and the onset of elephantiasis. For management of hydrocele, surgery may be appropriate. The well-established community networks used to conduct MDA can be used to promote case identification, community care and self-care as well as integrated foot care. This approach could be the basis for the development of morbidity management and disability prevention for other diseases.

**2.4. The case for regional support**

For the first time, there is a real and important opportunity to eliminate lymphatic filariasis and onchocerciasis. Major progress has been made towards these goals and a remarkable wealth of implementation experience has been accumulated. But progress has not been consistent throughout the continent. Some countries are on track to complete treatment and achieve elimination. Other countries are lagging behind and will only achieve elimination if they receive intensive support.

To achieve elimination in Africa, the weakest programmes and most affected regions will have to match the achievements of the strongest. This will require, not only determination and commitment, but also the flexibility to adapt strategies to meet special conditions and the introduction of new tools and strategies to overcome specific persistent problems and constraints.

Collaboration at a regional level will need to be strengthened but should go hand in hand with the strengthening of country capacity and integration around country NTD master plans and strengthened health systems. PENDA will bring together the solid institutional structure and community drug delivery experience of APOC and the rapid scale-up experience and country ownership of lymphatic filariasis programmes in Africa. This will result in new synergies and the efficiency to accelerate the pace towards reaching the targets set for elimination of both diseases. (The synergies and efficiencies are further discussed below in Section 9 on value for money).

PENDA will work within the overall WHO/AFRO Regional Strategy on NTDs. Its prime purpose will be to accelerate progress on the elimination of onchocerciasis and lymphatic filariasis by supporting country
programmes. It will operate within the broader NTD goals and will seek synergies and support other NTD work. The role of PENDA will be:

• to give intensive financial and technical support to the countries facing the biggest challenges in relation to elimination of onchocerciasis and lymphatic filariasis by working with, and strengthening the capacity of national NTD programmes;
• to provide support and technical advice to all countries about when to stop treatment and how to proceed through elimination procedures for both diseases;
• to provide regional coordination and leadership in relation to the elimination of lymphatic filariasis and onchocerciasis, in particular in relation to cross-border issues;
• to provide strategic information to promote evidence-based decisions in relation to the two diseases, ensuring that up-to-date information is available and knowledge shared between countries and programmes with special attention to overcoming common constraints and enabling good-practises to be shared and scaled up;
• to advocate for increased country support and commitment to achieving the WHO NTD targets;
• to play a role in mobilising resources for elimination priorities and maintain an overview of the financing landscape for elimination, so that important gaps are identified in a timely fashion with a special focus on high-burden and post-conflict countries.
3. The elimination of onchocerciasis and lymphatic filariasis – A unique opportunity for joint action

Major successes have been achieved towards the elimination of onchocerciasis and lymphatic filariasis and joint action will help to accelerate progress towards achieving these global targets.

Nearly two billion treatments will be needed in Africa between 2016 and 2025 to eliminate both onchocerciasis and lymphatic filariasis. This can be done but requires that implementation be pursued with an even greater sense of urgency by all partners. Regional coordination should be optimized to support country efforts.

A number of critical implementation milestones must be reached by the commencement of PENDA in 2016. These include:

- The completion of epidemiological mapping
- Initiation of MDA in all target populations
- Process to prioritise country needs started
- The completion of guidelines for integrated approaches to stopping MDA.

3.1. Achievements to date

Over the past two decades major efforts have been made to control onchocerciasis and eliminate lymphatic filariasis in the African region. As of 2012 over 200 million people received MDA with ivermectin for periods ranging from 1 to 25 years. For the elimination of lymphatic filariasis, 118 million people have received MDA with ivermectin and albendazole for periods ranging from 1 to 11 years.

The recent evidence of the feasibility of elimination of onchocerciasis makes it almost certain that in some of the areas which have been under treatment for over 12 years, transmission will have been interrupted. This has to be fully assessed. The same applies to those areas endemic for lymphatic filariasis where annual MDA has been continuous for 6 years.

3.2. A major effort still to come

Despite much progress a major effort remains in order to reach the global elimination goals of 2020 for lymphatic filariasis and 2025 for onchocerciasis.

Under a control strategy, onchocerciasis hypo-endemic areas did not need MDA in order to control the disease as a public health problem. However, the new paradigm of elimination of the disease requires the extension of treatment operations to hypo-endemic areas. Preliminary estimates indicate that around an additional 18 million people will require treatment in these areas, but some may have
already received, or are receiving MDA, for lymphatic filariasis. Despite a major scale-up in the past few years, there remains a long way to go to reach full coverage of the areas where treatment is required for elimination of lymphatic filariasis. Over 100 million people, living in areas known to be endemic for the disease, are not yet receiving MDA. Another 176 million are in areas where mapping for disease has not been completed. This scenario indicates that two major issues must be addressed with the greatest urgency. Transmission assessment surveys (TAS) must be conducted in all areas where the number of treatment rounds has exceeded the number believed to be necessary to interrupt transmission of both diseases. These assessments provide evidence necessary to decide whether, and when, treatment can be stopped. On the other hand, a major scale-up of MDA is still needed for lymphatic filariasis. Given that a minimum of 5–6 years is required (with normal MDA regimens) to achieve transmission interruption, the scale-up needs to be accelerated. Finalizing the considerable gap in mapping for lymphatic filariasis, and starting treatment, is an absolute priority for the years preceding 2016.

It is estimated that nearly two billion treatments will be needed between 2016 and 2025 to eliminate both onchocerciasis and lymphatic filariasis. Fig 1 shows the required trends in numbers of treatments according to the patterns of co-endemicity. In areas endemic only for onchocerciasis, despite an expected major scale-down in areas that have received more than 12 rounds of MDA, around 435 million treatments will need to be administered during the programme period.

In areas already mapped for lymphatic filariasis, and where the disease is not co-endemic with onchocerciasis, a massive 680 million treatments will have to be provided during the first five years of the programme if interruption of transmission of the disease is to be achieved by the year 2020 in all endemic areas. On the other hand, where the disease is co-endemic with onchocerciasis another 142 million treatments will have to be administered to complete at least 12 years of MDA are required to interrupt the transmission of onchocerciasis.

Another important challenge is the areas not yet mapped for lymphatic filariasis in which 180 million people are estimated to live. In these areas, it is expected that between 60–80% of the population will need annual MDA that should start at the latest by 2015 and continue until 2020.

The completion of mapping and treatment scale-up – an urgent priority before 2016

Elimination of lymphatic filariasis generally requires six annual rounds of MDA and an estimated 12 annual treatments with MDA for onchocerciasis. Late starters will not achieve elimination by the target dates.

• Currently 100 million people are known to need MDA for lymphatic filariasis but do not have access to it.
• 176 million people who may need treatment are living in areas which have not yet been mapped for lymphatic filariasis.
• An estimated 18 million people living in areas hypo-endemic for onchocerciasis need to start MDA.

Communities can be mobilised to achieve this major task but there is no time for delay.
when transmission interruption must have been achieved. However, this number may be slightly over-estimated as some of the lymphatic filariasis endemic areas may fall in onchocerciasis areas already receiving MDA.

In summary, the overall effort to eliminate both diseases within the globally agreed deadlines will require around two billion treatments administered through MDA between 2016 and 2025 in areas of Africa endemic for onchocerciasis and lymphatic filariasis or both, with adequate geographic and therapeutic coverage to achieve the elimination of both diseases by the end of the programme.

The challenges will not be limited to scaling-up and delivering the drugs. Once evidence of transmission interruption is available, treatment can be stopped, but surveillance must be conducted to confirm interruption as a prerequisite for elimination verification. This is a complex and costly effort that must be carried out to the highest scientific standards. This can only be achieved with adequately trained human resources at the country level, augmented by regional support.

Considering the patterns of MDA prior to 2016, and anticipated after the start of the programme, a prediction of the surveillance requirements has been made using school-aged children surveyed, as the indicator. For the purposes of overall regional estimates it is estimated that the surveillance efforts will remain relatively stable throughout the programme duration. This is a consequence of the fact that surveillance efforts will be as big in the beginning of the programme as in its final years. The number of districts that are likely to stop MDA for onchocerciasis and lymphatic filariasis is likely to increase sharply in the immediate years prior to 2016 since a considerable number have already exceeded the number of rounds of MDA required to achieve interruption of transmission. Likewise, the major scale up of MDA needed in the beginning of the programme will mean that, post 2020, there will be an increased need for post-MDA surveillance in districts where lymphatic filariasis transmission is thought to have been interrupted.

**Figure 1:** Trends of required treatments for the elimination of onchocerciasis and lymphatic filariasis until 2025
The governments of Africa have made commitments to work together for an Africa free of NTDs as envisioned in the WHO Regional NTD Strategy. This joint commitment is being followed up in countries using NTD master plans as guiding policy documents and working with increasingly integrated national NTD programmes.

WHO/AFRO coordinates and leads on the Regional Strategy as well as setting guidelines and fulfilling its normative role. PENDA will work with partners, as part of the WHO effort, to give focussed support to countries. Its focus will be on achieving the WHO elimination targets for lymphatic filariasis and onchocerciasis. More broadly PENDA will support the other NTD goals and the implementation of country NTD master plans.

Its work will include:

- Fully integrated approaches for lymphatic filariasis and onchocerciasis treatment and cessation of treatment;
- Special tailor-made support programmes to address the most serious challenges to elimination;
- Ensuring access to high quality up-to-date information to enable evidence-based decision-making about elimination and knowledge sharing to maximise effective programme implementation;
- Strengthening the capacity of national NTD teams and communities to achieve sustainable health gains.

4.1. Structure and governance

PENDA will be set up as a regional ten year programme with WHO as the Executive Agent. It will have a clear mandate and a governance structure that reflects the breadth and strength of the partnerships involved. A new governance structure will be in place by 2016. This will draw on the existing institutional framework established for APOC but will be fully revised and streamlined to reflect the common approach of the partnership, the new urgency associated with the elimination goal, the current policy framework and the long-term commitments of partners. It will draw on the expertise, the strengths of, and lessons learnt from, both the APOC and GPELF programmes.

A new legal undertaking will clarify the mandate in detail including a specification of the roles and responsibilities of PENDA. It will also ensure alignment with the broader WHO/AFRO Regional Strategy and governance structure for NTDs.

Within the framework of the WHO/AFRO NTD strategy, PENDA will serve and promote effective unified country-led programmes for the elimination of onchocerciasis and lymphatic filariasis. It
will also contribute to the broader PC NTD goals on the basis of clear comparative advantage and country demand. PENDA will play a crucial role in ensuring that countries move forward in time to meet the elimination goals for onchocerciasis and lymphatic filariasis by guiding and coordinating efforts towards implementation. In order to achieve, PENDA will provide leadership as an implementing agency on onchocerciasis and lymphatic filariasis with a mandate from WHO/AFRO and partners to promote and achieve elimination goals. In 2013 the WHO/AFRO Regional Committee agreed “on the need to expand the mandate of a transformed APOC to cover lymphatic filariasis and to contribute to other preventive therapy NTDs”.

PENDA will align consistently with the work of the WHO/AFRO which provides guidance and leads on the overall Regional NTD strategy. WHO fulfils the key normative tasks by developing the overall strategy guidelines, and an integrated M&E framework. WHO/AFRO provides general leadership and coordination and monitors and evaluates progress on the overall NTD strategy and progress on country master plans. The PENDA Technical Committee will be part of the broader technical advice structures established by WHO/AFRO.

A new legal undertaking which clarifies the PENDA mandate and the roles and responsibilities of stakeholders will be developed and presented to the APOC Joint Action Forum (JAF) in 2014 to formalise the new structure by the end of 2015. This agreement will define stakeholders (governments, donors, NGDOs, sponsoring agencies, etc.) and their respective roles and obligations in the functioning of the entity.

It is envisaged that the new governance structure will provide for (a) a Partner Forum which will function as a high level stakeholders meeting; (b) a Programme

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16 This agreement was reached in September 2013 at the 63rd Session of the WHO Regional Committee for Africa. ARR/RC63/16 para 79
Executive Committee consisting of stakeholder representatives; (c) one technical committee (to replace the APOC TCC and lymphatic filariasis Regional Programme Review Group). The technical committee will deal with both onchocerciasis and lymphatic filariasis and will provide high level scientific and technical advice. It will be convened by PENDA but will operate as a sub-committee of the planned WHO/AFRO Regional Advisory Group on NTDs. For each of the above bodies, the composition, functions and operations should be specified. In addition the institutional framework will set out the:

- role and composition of the Secretariat;
- definition of the entity’s main purpose;
- modification of the entity’s name and geographical scope;
- financing mechanisms and the role of the Trust Fund.

Development of the new governance structures will require close and immediate consultations between WHO (as executive agent) and the World Bank (as fiscal agent). Preparations for these discussions are already underway. It will also be necessary to review possible changes to the current financial arrangements including changes to the scope and name of the APOC Trust Fund.

### 4.2. Partnership around elimination goals

PENDA will work as a regional support programme within a much broader partnership for the elimination of NTDs. This Strategic Plan of Action has been developed in consultation with endemic countries and a broad range of partners, many of whom have been supporting onchocerciasis and lymphatic filariasis efforts for decades. The effectiveness of this partnership lies in the consistency of partner commitment, the breadth, shared vision and expertise it provides and the willingness to develop coordinated approaches and identify areas of comparative advantage.

**PENDA will work in partnership with:**

- Onchocerciasis and lymphatic filariasis endemic countries
- Multi-lateral and bilateral development partners
- Global alliances such as the GAELF
- UN organisations (with the WHO as Executive Agency)
- International Development Banks (with the World Bank as fiscal agent)
- Foundations
- Private sector organisations (in particular Merck & Co. Inc. and GSK as major donors of medicines)
- International and national non-governmental and community-based organizations
- Drug donation programmes (principally MDP)
- Research and academic institutions.
5. Strategic Framework

The Strategic Framework will provide the basis for full work plans and for results-based reporting. In this section is given of the main components of the Strategic Framework and the key principles which underpin it and will guide its further development and implementation.

5.1. The vision

PENDA’s vision is of: an Africa free of the social and economic burden of neglected tropical diseases.

5.2. Geographical scope

PENDA will include all countries in Africa which are endemic for onchocerciasis or lymphatic filariasis. Endemic countries are already doing much to address NTDs through their national master plans and integrated NTD programmes. These integrated programmes need support in “going the last mile” and achieving elimination. Greater intensive support will be needed in countries facing the most serious challenges. An integrated overview is being developed of country progress towards elimination. On the basis of this overview a classification will be established and regularly updated. This breakdown will show:

- which countries are on track to achieve elimination by the target dates;
- which countries are making progress but will need to make a special effort, and may need additional support to achieve elimination; and
- in which countries will elimination only be possible if specific intensified support is provided, if alternative treatment strategies are introduced and technical assistance is given over a number of years.

Achieving elimination targets will require a sustained effort across the continent and PENDA will be active in all endemic countries. It will provide regional coordination, support in surveillance and capacity building where needed. It will be a key resource for expertise and technical assistance in achieving elimination and managing the “end game”. However it will have a strong focus on the group of countries that require intensified support and a high proportion of resources mobilised through the World Bank Trust Fund will be allocated to meeting the needs of the countries with the most serious challenges and the biggest burden of disease. Priority countries will be decided in the light of completed mapping, country consultations and reviews of data (and financing) for both diseases.

5.3. Key principles

A number of key principles form the foundation for partnership and these will guide the further development and implementation of the PENDA Strategic Plan of Action.

- Country leadership and country specific strategies are essential for improved integrated programme implementation.

17 Some endemic countries in Africa are served the WHO/EMRO regional office. Sudan is already involved in APOC and will work with PENDA. Egypt may also follow the same pattern. This still has to be explored.
tion. The PENDA strategy is determined and led by country specific needs;

- Partnerships are key to achieving international targets, maintaining commitment and mobilising resources. PENDA aims to strengthen and promote these partnerships, by valuing the contributions of all partners and working inclusively;

- The empowerment of people and communities is essential to increase access and strengthen health systems, particularly in remote, rural areas. Another important aspect to ensuring equitable access is to strengthen gender equity. It is important that the factors that influence access to treatment and participation in community activities are addressed in the planning of interventions and at all levels of PENDA activities.

The WHA resolution 66.12, the London Declaration on NTDs and the WHO/AFRO Regional Strategy for NTDs provide the overall framework for strategic planning. The PENDA programme is fully aligned to these overarching policy documents. The PENDA Strategic Plan of Action will contribute to the overall vision by specifically targeting the elimination of two major NTDs. The way in which PENDA fits into the Framework of the WHO/AFRO Regional Strategy is illustrated in Figure 3 below.

5.4. The overall objective and specific objectives

The goal of PENDA is: the elimination (in Africa) of lymphatic filariasis by 2020 and onchocerciasis by 2025 and strengthened national programmes to combat other NTDs.

Seven specific objectives

Objective 1: Complete and maintain full geographic and therapeutic coverage ensuring access to interventions for onchocerciasis and lymphatic filariasis to achieve elimination of both diseases.

Objective 2: Safely scale down and stop lymphatic filariasis and onchocerciasis

Figure 3: PENDA contributing to the WHO/AFRO Regional NTD Strategy
interventions and support countries to verify elimination.

**Objective 3:** Strengthen capacity of national NTD programmes to sustain progress towards eliminating onchocerciasis and lymphatic filariasis.

**Objective 4:** Contribute to regional capacity to free Africa of onchocerciasis and lymphatic filariasis.

**Objective 5:** Reduce suffering and disability through morbidity management and disability prevention.

**Objective 6:** Maximize the effectiveness of interventions and strategies by developing, disseminating and using state of the art evidence.

**Objective 7:** Contributing to the broader NTD agenda.

### 5.5. How PENDA will work

A number of key operational strategies provide the backbone of the plan to achieve the specific objectives. These are:

**Fully integrated approaches for lymphatic filariasis and onchocerciasis**

Where rapid-scale up is needed, and in countries facing major constraints, it is important that MDA, and the activities supporting MDA for the two diseases, are delivered as an integrated package. Working with country NTD programmes, PENDA will strengthen these activities and support their implementation. PENDA will ensure that co-endemic countries have an integrated approach to enable them to go through the steps towards elimination for both diseases.

**Special tailor-made support programmes to address the most serious challenges**

Together with national ministries PENDA will develop special strategies to address the most persistent problems in high burden countries, countries facing specific challenges (such as co-endemicity with loiasis) and countries in which MDA programmes have been disrupted by conflict. These programmes will include the development of a multi-year remedial plan including full time technical assistance where necessary.

**Evidence for Elimination**

A major effort will be made to strengthen evidence-based decisions in elimination and solve country-specific operational problems. Evidence is needed to develop new integrated tools and optimise programmes. The way in which programmes are planned, administered and monitored, will be harmonised so that reliable data on both diseases is available. Operational research will address key constraints (such as the presence of loiasis) and will focus on the need for new technologies needed to simplify interventions, as well as looking in depth at issues such as treatment compliance and coverage (including the collection of gender disaggregated data to monitor equity of access, and other participation and gender related effects). A Strategic Information Unit will support evidence-based problem solving.

**Capacity building**

The central focus of the programme is the elimination of onchocerciasis and lymphatic filariasis. However the programme is built upon the key hypothesis that elimination will be achieved by strengthening the capacity of communities and health workers to plan organise and implement interventions. Strengthening the capacity of national NTD teams, and communities, is prerequisite to achieving elimination and should not be approached with a narrow disease focus but rather with the idea that strong national NTD programmes will result in wider benefits for community health systems and the
broad range of NTDs. Capacity building is an important element of the Strategic Plan of Action.

Regional coordination

Acknowledging the increasing regional and national momentum to control and eliminate NTDs and in line with the WHA resolution 66.12, Regional Strategy on Neglected Tropical Diseases (NTD) in the WHO African Region and the related Regional NTD strategic plan 2014-2020, PENDA will work in collaboration with WHO AFRO NTD programme in resource mobilisation, advocacy, surveillance, generation of evidence on NTD elimination, promotion of cross-border activities, support and coordination of National NTD programs.

In addition, PENDA will maintain an overview of financing, and financing gaps, and will mobilise resources for its direct programme activities, as well as playing a role in resource mobilisation for the wider elimination agenda. It will be an outspoken advocate for the elimination of onchocerciasis, and lymphatic filariasis and other NTDs. It will service regional surveillance needs and facilitate cross-border working groups and consultations.

Strategic Information Unit

What? A group of technical experts with background in a range of disciplines relevant for accelerated implementation towards elimination

For what? To:

I. gather information to create in-depth knowledge of the country epidemiological situation, programme context and performance so that timely and effective technical and programmatic advice for improved performance can be provided;

II. provide direct support to countries in the planning, implementation and monitoring and evaluation of interventions;

III. propose technical strategic re-alignment conducive to better programme performance;

IV. promote regional exchange of experiences

Where? At PENDA headquarters, but drawing on much wider expertise and with a number of countries assigned for each group of experts so that in-depth knowledge of those countries is readily available. Technical support trips will be made to countries according to need.
6. Plan of Action

This section discusses the specific objectives and gives a general description of the main activity areas which will be implemented in order to realise the objectives. This will form the basis for further development of a more detailed biennial workplans with tasks, targets and key indicators.

OBJECTIVE 1
Complete and maintain full geographic and therapeutic coverage ensuring access to interventions, for onchocerciasis and lymphatic filariasis, to achieve elimination of both diseases.

In principle, coverage should be complete by 2016 for both onchocerciasis and lymphatic filariasis, so that target populations are under treatment and all have equitable access to essential interventions. An important assumption for success in reaching this objective is that mapping of lymphatic filariasis and of onchocerciasis hypo-endemic areas has been completed, treatment initiated, and that IUs for onchocerciasis and lymphatic filariasis have been harmonised to ensure that no treatment communities are missed or double counted.

Work under this objective is to ensure that adequate coverage is complete and is maintained for the necessary period. The emphasis will be on country-led approaches aligned with NTD programmes with support delivered according to need.

Working with each country programme a detailed analysis of progress to date will be completed. This will be the basis for a classification of countries according to their progress and needs. Country specific plans will be made on the basis of this analysis. PENDA will give the highest priority to countries facing the biggest challenges and will systematically analyse barriers to treatment and identify remedial actions.

ACTIVITY 1
Support countries facing major challenges problems by providing tailor-made intensive intervention support to address specific major problems.

Activities under this heading are a major and critical component of the Strategic Plan of Action. In selected countries PENDA will (with country programme managers) design tailor-made plans to accelerate programme progress, including the development of alternative special treatment schedules, management support and technical assistance. These plans will be based on a truly integrated strategy for the two
diseases within the framework of each country’s NTD master plan. An integrated approach, together with the guidelines to support it, will ensure that interventions for the two diseases are designed, as simply and effectively as possible, even in areas where achieving coverage has been challenging.

Challenging treatment situations such as conflict, post-conflict and the presence of loiasis will be identified and closely monitored. A Strategic Information Unit will analyse and share information and monitor progress where specific problems have been identified. Alternative treatment strategies and special support programmes will be implemented to tackle problems that might undermine general progress towards implementation. This intervention support programme will include technical assistance teams to give on-the-spot support in some of the most problematic regions/countries and to advise on the need to introduce twice-yearly treatment or other “catch-up” strategies, integrated vector management will be included in the range of strategies to be adopted.

In areas co-endemic for onchocerciasis and/or lymphatic filariasis with loiasis, additional mapping will be undertaken to further define hyper-endemic areas at high risk of severe adverse events (SAE). A variety of alternative treatment options (such as test and treat) will be implemented and closely monitored, to identify the best way forward as quickly as possible.

In large high-burden countries, and in conflict and post-conflict countries, an intensive support strategy will be developed with country partners and implemented with support from PENDA. Cross-border issues relating to coverage and transmission of onchocerciasis and lymphatic filariasis will be addressed within this objective and also within objective 4.

**ACTIVITY AREA 1.2**

**Support countries to maintain adequate treatment coverage in all implementation units**

In addition to the specific intervention support programmes described above, PENDA will provide advice and support at a more general level at the request of country NTD programmes. Support will be given to countries in maintaining adequate treatment coverage in all implementation units. This will consist of a) specific technical advice on operational problems arising and b) capacity building in national NTD programmes and, more generally, strengthen the NTD taskforce and national NTD programmes.

PENDA and WHO/AFRO will work together to engage various constituents at the country, regional and global level and develop a harmonised approach to address lymphatic filariasis, onchocerciasis and other targeted PC NTDs. PENDA will facilitate expert advice to support elimination efforts and support to ensure adequate treatment coverage in all operational units of the programme.
**OBJECTIVE 2**

Safely scale down and stop interventions for lymphatic filariasis and onchocerciasis and support countries to verify elimination

Achieving elimination of both diseases is the main goal of the programme and will bring lasting benefits. Experiences with other diseases (and with onchocerciasis in Latin America) have taught that the final steps towards elimination can be the hardest and most labour intensive. Motivation has to be maintained even after the main health burden has been addressed and communication is essential to explain to people and health workers why treatment is being stopped, sometimes after many years. Guidelines exist for the decision-making process to start and stop MDA in endemic areas for each disease. However, there is a need to integrate and harmonize those guidelines for a joint approach. The length of time will depend on the patterns of co-endemicity and duration of treatment for each of the diseases. PENDA will contribute to the efforts of WHO and partners in the dissemination and uptake of the essential guidelines.

**ACTIVITY AREA 2.1**

Support countries with the development of strategies and steps to stop MDA (with one integrated approach where both onchocerciasis and lymphatic filariasis are co-endemic) and to verify elimination.

The programme will actively work to ensure that the integrated guidelines developed prior to implementation are made available and used by countries. Countries will need support and guidance in going through a step-by-step approach that includes:

- How to gather the evidence to take the decision to stop treatment;
- How to communicate with health workers and community members about cessation of treatment;
- How to carry out post-treatment surveillance and documentation;
- How to prepare a national elimination dossier for verification; and,
- How to manage the formalities of the verification process.

PENDA will coordinate the development of the step by step-by-step approach and support its implementation. In doing this, PENDA will work closely with countries and with WHO, which is the normative body responsible for the review of country verification dossiers.

For both diseases xeno-monitoring can also play an important role in evaluating progress towards elimination and for post-MDA surveillance. Current guidelines for verification of elimination of onchocerciasis include xeno-monitoring as an essential component of the process. PENDA will support country capacity building for entomological surveillance and laboratory strengthening as part of its efforts to eliminate the disease.

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**OBJECTIVE 3**

Strengthen capacity of national NTD programmes to sustain progress towards ending onchocerciasis and lymphatic filariasis.

**ACTIVITY AREA 3.1**

*Build country capacity for planning, implementation and Post Treatment Surveillance*

Tools for co-implementation of interventions will be developed to assist in planning and to capture the results of the joint approach to the two diseases. PENDA will pursue a rolling capacity building programme which encourages the identification of good practice and sharing between countries and involves members of the broader partnership in strengthening the overall NTD effort. Where necessary, PENDA will help to ensure that planning and reporting capacity are sustainably built in national NTD programmes within the framework of the country’s NTD master plans. Attention will be given to:

- strengthen information and financial management systems;
- promoting the inclusion of NTD budget lines in health budgets and NTD indicators in national health information systems;
- trouble-shoot in relation to medicines supply chain mechanisms;
- support the establishment and/or operation of a National NTD Task Force;
- build capacity in epidemiological and entomological surveillance;
- strengthening laboratory capacity;
- integrate capacity for morbidity management and disability prevention;
- strengthen synergies with integrated vector management.

**ACTIVITY AREA 3.2**

*Build country capacity for resource mobilisation and advocacy*

A major effort will be needed to mobilise the necessary resources to support elimination efforts. PENDA, with partners, will develop a ten-year plan for resource mobilisation for the elimination effort. As part of this plan PENDA will work to strengthen the financial sustainability of country NTD programmes. It will undertake advocacy visits to countries to endemic countries to mobilise government support and improve the visibility of NTDs and the NTD Taskforce. It will coordinate the training of national level advocates and fundraisers, and encourage information sharing about how to strengthen government awareness and commitment to the fight against NTDs, and how to identify additional sources of funding at national level.
**OBJECTIVE 4**

Contribute to regional capacity to free Africa of onchocerciasis and lymphatic filariasis.

PENDA will coordinate and provide regional leadership on the elimination of onchocerciasis and lymphatic filariasis on issues where it is necessary. It will work where it can provide added value and comparative advantage in a broad NTD partnership which supports country efforts. PENDA will participate in public fora and organise high-level advocacy events to maintain global commitment to the elimination goals. It will regularly publish progress reports and publicise evidence of success and cost benefit.

A financing strategy will cover the duration of the programme and will be regularly updated. To the extent possible, PENDA will develop and maintain an overview of funding needed, and funding available, for the implementation effort (including contributions direct to countries and countries’ own contributions). PENDA will have a focus on mobilising funds for the activities in the Strategic Plan of Action and will also promote and support fundraising for the broader NTD elimination effort at all levels.

**ACTIVITY AREA 4.1**

Establish a regional Strategic Information Unit to analyse and share information on progress towards elimination

At the regional level PENDA will promote evidence-based decision-making and ensure that key data sets are up-to-date and that progress towards elimination is transparent. It will ensure that advocacy efforts are informed by reliable data and that country successes and good practices are shared. It will proactively identify challenges so that timely solutions can be identified. It will advocate for data sharing and publication. PENDA will publish regular briefings on results for dissemination to policy makers, partners and donors.

**ACTIVITY AREA 4.2**

Strengthen capacity for resource mobilization for elimination and effective resource use

Endemic country governments have asked for updated information about contributions to elimination efforts. PENDA will work with WHO/AFRO and partners to develop an overview of the funding landscape in relation to elimination of onchocerciasis and lymphatic filariasis and will analyse needs as well as potential sources of funds. It will encourage transparency about country and donor contributions to anticipate gaps. PENDA will be an outspoken advocate of funding for elimination and will seek new donors and new opportunities to put existing funds to better use. In addition PENDA will play a coordinating role in setting priorities and channelling funds to where they are most needed. The programme will work with country programmes to meet specific training needs in relation to the management of resources so that the impact of the expected increase in funding for elimination can be maximized.
**ACTIVITY AREA 4.3**

**Support and convene regional expert and programme managers meetings**

Programme managers meetings provide an important forum in which to consult on plans, exchange information on challenges and successes, plan to ensure that the human resource needs of the elimination effort can be met, and to strengthen capacity where necessary. PENDA will coordinate with WHO/AFRO to how best to use these meetings to increase country ownership and to build the knowledge and skills of programme managers.

**ACTIVITY AREA 4.4**

**Establish regional coordination to support cross-border collaboration**

Cross-border collaboration often requires bilateral or trilateral discussions between countries and PENDA will facilitate these, when requested, on a case-by-case basis. In addition the programme will organise a regular cross-border coordination meeting at which an overview of cross-border issues will be discussed and new issues, requiring attention, identified.

**ACTIVITY AREA 4.5**

**Regional advocacy for elimination**

PENDA will organise high-level advocacy events to maintain global commitment. It will draw on country experiences and regularly publish progress reports and briefings. It will be sure that lessons are shared and actively publicise evidence of success and cost-benefit.
**OBJECTIVE 5**
Reduce suffering and disability through morbidity management and disability prevention

Based on a continuum of care (COC), morbidity management and disability prevention, stigma reduction, and support for mental health care and livelihoods are integral and essential components of a comprehensive strategy to eliminate lymphatic filariasis and its consequences and alleviate the suffering caused by the disease. Lymphatic filariasis related impairments require early and continued careful home management and surgery is sometimes required. Access to materials for care and surgery is often very limited. Capacity building is needed to ensure that skills are available and upgraded for lymphatic filariasis morbidity management in endemic countries for those suffering from complications of the disease. People with lymphoedema and elephantiasis or hydrocele need to be identified at the community level and managed within the communities. People with hydrocele are provided with surgery and monitored and evaluated at regular intervals. There are opportunities for integrated or coordinated (self-) care approaches such as integrated lymphoedema management, or integrated chronic wound management and protective footwear.

**ACTIVITY AREA 5.1**
Establish or strengthen community structures to support morbidity management

Resources for careful home management and timely identification of persons with impairments can significantly reduce morbidity and prevent long-term disability. Knowledge and skills can be strengthened at community level through self-care and self-help groups for persons affected by these conditions and their families. The involvement and collaboration of patients and their families, community volunteers and community health workers is essential.

Training, learning from best practices, development of preferred practices, resource materials and advocacy for funding for morbidity management and disability prevention will be included in programme planning and activities.

**ACTIVITY AREA 5.2**
Coordinate and collaborate with expert partners to include morbidity management as an essential part of continuum of care

PENDA will cooperate closely with WHO, NGDOs and other stakeholders who can play a critical role in advocacy and in providing expertise for the successful integration of morbidity management and disability prevention into integrated programmes.
OBJECTIVE 6
Maximizing the effectiveness of interventions and strategies by using and developing state of the art evidence through operational research

There are two main aspects to work within this objective. One is to generate innovation and new technologies and the other is to address key implementation questions arising in programmes activities through operational research. There is of course some overlap but the dynamics differ.

ACTIVITY AREA 6.1
Contribution to broad scientific partnership, identifying innovations to support elimination

The first aspect is generating new knowledge and ideas to address challenges and identify interesting innovations that could speed up progress towards elimination. Examples of this category include innovative research into a potential macrofilaricidal and new and efficient alternative treatments in areas co-endemic for loiasis. There is a broad community of scientists and potential funders who contribute to answering these questions. PENDA will participate in this broader partnership. It will participate in agenda setting, it may sometimes be able to contribute to specific trials or studies, and it will ensure that there is an effective channel for data sharing and dissemination of results.

ACTIVITY AREA 6.2
Supporting countries in identifying key operational research questions emerging in NTD programmes and building capacity to address them

The second aspect is ensuring that country programmes, that identify questions or constraints which may require operational research, have access to support in framing these questions and undertaking necessary research.

ACTIVITY AREA 6.3
Ensuring reliable data is available and shared on both diseases and on joint approaches

PENDA will build on existing systems to develop a Strategic Information Unit that will generate timely reports and proactively follow key developments. It will aid the timely identification of challenges, the sharing of information and ensure that epidemiological and entomological data are available, analysed and used to make evidence-based decisions. It will work closely with partners to facilitate scientific study and improve the quality of results.
OBJECTIVE 7
Contribute to the broader PC NTD agenda on the basis of clear comparative advantage, country demand and available resources

This Strategic Plan of Action is developed in alignment with the WHO/AFRO Regional Strategy to Eliminate NTDs and aims to make a major contribution to achieving the key goals of that strategy. The main focus of PENDA will be acceleration of the elimination of onchocerciasis and lymphatic filariasis. PENDA will work closely with WHO/AFRO and guard against duplication. PENDA will contribute to the broader goals of the Regional Strategy (particularly in relation to the other PC NTD diseases) on which the Regional Office leads.

ACTIVITY AREA 7.1
Sharing expertise and lessons with other NTD programmes,

PENDA will ensure that the broader NTD agenda is kept in mind while carrying out the strategic plan. From the start of its operations PENDA will contribute to regional policy and advocacy for NTD elimination. PENDA will proactively share data and lessons learnt with the broader NTD community and will share expertise and capacity in relation to the areas of work in which it has a clear comparative advantage. Examples of these areas include: capacity building in mapping and surveillance, and training and advocacy in relation to community directed interventions. At country level PENDA will promote integrated NTD programmes as the most effective option to achieve elimination goals. PENDA will carry out and publish operational research, to quantify the positive “collateral” effects of MDA with ivermectin and albendazole on other PC NTDs particularly STH and scabies. It will also investigate the effects of stopping MDA on these diseases.

ACTIVITY AREA 7.2
Strengthen integrated vector management in collaboration with other disease control programmes.

Opportunities to work with malaria control programmes to promote the use of insecticide treated bed nets and integrated vector control can be important in strengthening efforts to eliminate lymphatic filariasis. Ground larviciding can be a useful strategy to augment elimination of onchocerciasis transmission in specific areas.

ACTIVITY AREA 7.3
Support co-implementation of interventions for other PC NTDs

Co-implementation with other PC NTDs will introduce greater efficiency and cost-effectiveness in the programme. Expertise brought together for the elimination of onchocerciasis and lymphatic filariasis will be shared to strengthen capacity in epidemiological mapping, drug distribution and monitoring, and surveillance for schistosomiasis, soil transmitted helminthiasis and trachoma. This will depend on country needs, capacity and endemicity.

As PENDA progresses with the elimination of lymphatic filariasis, opportunities to make a more significant contribution, by including other areas of implementation for NTD PC programmes will be pursued.
These additional activities are not fully budgeted in the Indicative Budget as the scope is not yet clear. During the first three-year period lessons will be learnt and demand assessed. On the basis of this learning period, additional activities will be planned and, if necessary, resources mobilised. A nominal amount for these second stage activities has been included in the budget from the beginning of 2019.
7. Monitoring and Evaluation

M&E systems will make maximum use of existing frameworks and national health information systems. Resources for elimination will be monitored to enable PENDA to identify priorities and major funding gaps.

The PENDA Strategic Plan of Action will be the subject of a post commencement review in 2018 to assess early progress and the pace of start-up. Further programme evaluations should take place in 2020 and 2025 to coincide with the elimination milestones.

The PENDA Strategic Plan of Action will be monitored using agreed indicators for key objectives and activities and by ensuring reliable measurements, transparency about results and wide dissemination of findings. The starting point will be to draw on the framework developed for the WHO/AFRO Regional Strategy to ensure complementarity and consistency wherever possible. Operational research and surveillance activities will be conducted to enhance programme delivery and determine impact towards elimination.

The periods 2016–2020 and 2020–2025 have been identified as important phases of the programme because of the elimination targets set for 2020 and 2025. The programme, in collaboration with its partners, will monitor progress towards these milestones. One programme review and two evaluations are planned. An initial programme review will be conducted in 2018 after two years of programme operations to assess early progress and identify if the programme is on track and start up issues have been addressed. In 2020 and 2025, evaluations are planned to assess the programme and the achievement of major elimination targets. All major routine activities of the programme at the regional and country level will be monitored through annual AFRO reports, PENDA annual reports and annual country programme reports.

Several activities have been identified under this plan to strengthen M&E and also enhance operational research and surveillance. Support for impact assessments will be provided where needed. Technical assistance will be provided to strengthen country teams and assist with independent evaluation. Support for the last stages before elimination will be provided through integrated guidelines for co-endemic areas.

Programme reviews undertaken in collaboration with countries will help to identify and address operational research issues. Collaboration with countries on operational research projects and development of strategies and guidelines particularly for co-endemic areas will be monitored. Results of operational research conducted will be published and disseminated widely.

Annual country reports will be the basis for annual geographic and therapeutic coverage monitoring while further support will be provided to countries for routine monitoring of MDA and treatment compliance. Existing or new guidelines will be harmonized, tested and monitored for performance.
PENDA will also respond to country requests for assistance in assessing resource needs, commitments and gaps for future implementation, as well as value for money. To this end, PENDA will support WHO in the roll out of existing tools and efforts on budgeting, and economic and impact evaluation. It will have a particularly useful role to play in assessing the value of integrated onchocerciasis and LF elimination, and scope for further integration with other PC NTDs.

The capacity of PENDA to deliver intensive country support programmes to help overcome the major challenges (discussed in section 2.2) will be critical in the overall success of the elimination effort. For each of these intensive support programmes clear targets will be set and progress monitored on an annual basis.

Harmonized integrated M&E systems to monitor progress towards elimination will be conducted for the post-treatment surveillance phase of the programme. The long term impact of previous MDA on lymphatic filariasis and onchocerciasis transmission and other PC diseases will be evaluated to help promote decision making on MDA in lymphatic filariasis and onchocerciasis co-endemic areas to enhance disease elimination.

Drugs for distribution and treatment for lymphatic filariasis and onchocerciasis form a huge and expensive resource for programme delivery. Utilization of the virtual drug application process and reporting will be encouraged.

The capacity of countries to apply the WHO online tools and resources available for applying, managing and reporting on drug use will be monitored and capacity built where there is a need. The extent to which cost savings are realized by integration will also be assessed.

Shared country information will inform regular programme evaluation. Country programme reports will serve as a main resource for M&E of the programme.

The JAF requested that investments in NTD elimination be monitored and information on this will be made available to partners at the JAF. Indicators will be included to monitor progress in resource mobilization to see whether PENDA is able to address issues of equity in financing and channel funds to meet priority needs.
8. Risks and risk mitigation

The WHO elimination targets are ambitious and the timelines for the PENDA programme of accelerated support are critical. In setting the level of ambition, risks need to be anticipated and, wherever possible, minimized.

The pre-commencement risks need to be addressed with urgency in the lead-up to 2016. This is not a process that starts then. **Preparation now is critical to success.**

**8.1. The lead-up to 2016 – Continued scale up is essential**

As stated earlier, one risk which is of major importance is that the present up-scaling of MDA for lymphatic filariasis, and the inclusion of hypo-endemic onchocerciasis areas will not be completed by 2016. Meeting the target for elimination of LF by 2020 is conditional on completion of mapping by 2015 and treatment commencement in time for elimination targets to be met. Progress also needs to continue in developing integrated elimination guidelines for both diseases.

**8.2. Finance and structures need to be in place**

Landmark decisions have been taken, and initial agreements reached about the strategies and actions necessary to achieve the elimination targets for lymphatic filariasis and onchocerciasis. Implementation will depend on the support of a new regional entity that will be built on a transformed APOC and will combine the energy, expertise and commitment of partners working on lymphatic filariasis and onchocerciasis.

For the implementation of the Strategic Plan of Action a number of key issues must be addressed and in place by 2016 when APOC ends and the work plan of PENDA begins. The success of this Strategic Plan of Action will depend on the ability of partners to build and reinforce country leadership and build trust and consensus around the partnership, creating a buy-in from all partners. Technical competence must be translated into workable and agreed guidelines and plans on key issues for elimination. Data should be shared and analysed to develop evidence-based tools and guidelines. Effective governance mechanisms should be developed from those that exist already and these should reflect and promote trust. In addition, the success of the Strategic Plan of Action will depend on the ability to attract sufficient resources and a continued flow of donated drugs and the capacity to deliver them in-country. The strengths of both programmes must be brought together to work as one. The new entity needs to be designed by future partners and they need to fully participate in designing the architecture and in preparing the ground for a successful launch in 2016. The expanded CSA will oversee this process. It is suggested that a number of specific task forces are established to ensure progress, and full participation moving forward in a number of critical areas. These are briefly outlined in Annex 3.
<table>
<thead>
<tr>
<th>Key risk</th>
<th>Ways to mitigate the risk</th>
</tr>
</thead>
</table>
| **Pre commencement risks**                                                                      | • These risks have been analyzed (see Annex 3 for overview) and the Temporary Task Force of the expanded CSA will oversee progress. Where necessary they will establish working groups to ensure that sufficient progress is made before programme commencement.  
• Mapping is progressing and should be completed by 2015.  
• Advocacy to ensure that countries and key partners are aware of critical need to continue major scale-up in 2014 and 2015                                                                                                                                                            |
| Programme preparation should be completed by 2016 including the development of new structures, and the implementation of changes to management and administration. Finance should be secured in time to launch the programme at the start of 2016.  
Sufficient progress in mapping and up-scaling onchocerciasis and lymphatic filariasis treatment must be achieved to ensure that the baseline position is as projected and starts from a baseline of fully scaled-up intervention. |                                                                                                                                                                                                                                                                                                                                                     |
| **Endemic countries do not maintain/increase contributions to NTD elimination**                  | • PENDA is an African Programme and the Partner Forum will play a critical role in maintaining government commitment and ownership. PENDA will track financing gaps and act as advocate in addressing them.  
• Publishing evidence of success, of gradually diminishing and of the economic returns to countries resulting from the elimination of NTDs will be critical                                                                                                                                                     |
| The programme is predicated on long term government commitment to elimination including post-treatment surveillance. |                                                                                                                                                                                                                                                                                                                                                     |
| **CDD motivation to work on a voluntary basis is difficult to maintain over the extended period** | • Countries address this risk as they think fit. Some by offering incentives, some by seeking synergies with other programmes that offer incentives to create a common platform for CDD engagement.                                                                                                                                                                          |
| **Maintaining adequate coverage throughout the treatment period is essential.**                  | • Developing alternative strategies such as working with smaller units, improving community education and adopting innovative social mobilization strategies.                                                                                                                                                                                                  |
| Maintaining adequate coverage in urban areas is especially challenging.                            |                                                                                                                                                                                                                                                                                                                                                     |
| **Donor funding inadequate to maintain level of support and intervention needed**                | • The business case will be strongly presented and results demonstrated from an early stage of the programme.  
• A multi-faceted financing strategy will be pursued including the identification of new donors. As countries achieve elimination this should motivate all partners to “stay the course” and be part of the success.                                                                                                                 |
| A group of committed donors has been prepared to support NTD control and elimination for many years but donor priorities change and economic insecurity may make it increasingly difficult to maintain donor commitment and identify new donors. |                                                                                                                                                                                                                                                                                                                                                     |
| **Pharmaceutical companies less willing to donate or cannot maintain supply**                    | • Merck & Co. Inc. & GSK have recently reaffirmed their commitment to donate ivermectin and albendazole for as long as needed. The prospect of an eventual end point for the donation may strengthen their motivation.  
• Joining efforts for onchocerciasis and lymphatic filariasis will improve information on target population numbers and enable more efficient medicine forecasting and supply chain management.                                                                                         |
| MDA is dependent on donated medicines which make it possible to treat large numbers. Without these free medicines the costs would be considerably higher. |                                                                                                                                                                                                                                                                                                                                                     |
| **An increase of conflict or insecurity in endemic countries will interrupt interventions**      | • This risk is difficult to entirely circumvent. PENDA will pay special attention to displaced populations or nomadic groups when developing country specific plans.  
• Cross-border collaboration can mitigate this risk.  
• Working with a broad range of partners, including NGDOs can help in problem solving during conflict situations.                                                                                                                                  |
| MDA requires consistent therapeutic and geographic coverage. This becomes very difficult to maintain if people cannot move freely or if populations are displaced as a result of conflict. |                                                                                                                                                                                                                                                                                                                                                     |
9. Value for money

The interventions central to elimination of the two diseases use MDA and their cost-effectiveness is well established. Significant savings can be expected from integration of the two programmes and this will strengthen cost-effectiveness and may yield savings of 15-20% or up to US$ 320 million. This does not include the costs of regional coordination but regional coordination will itself provide added value and increase the efficiency of the elimination effort by providing support in areas where country programmes may not have a comparative advantage and reducing the risk of failure in the most challenged countries.

9.1. Mass drug administration is highly cost-effective

The cost-effectiveness of MDA by standalone onchocerciasis and lymphatic filariasis programmes is well documented. A summary of results from the influential Disease Control Priorities Project (2nd edition) is given in Table 2. At less than US$ 30 per disability-adjusted life year (DALY) averted, much less than the gross domestic product (GDP) per capita of even the poorest endemic countries, these interventions can be considered very cost-effective by WHO benchmarks.

Table 2: Cost-effectiveness of MDA for onchocerciasis and lymphatic filariasis

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Cost per DALY averted (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDA for lymphatic filariasis</td>
<td>4–29</td>
</tr>
<tr>
<td>MDA for onchocerciasis</td>
<td>7</td>
</tr>
</tbody>
</table>

Drugs required for onchocerciasis and lymphatic filariasis MDA are already donated by pharmaceutical companies. The approach outlined in this Strategic Plan of Action promises to deliver those drugs in the most efficient way possible to the people that need them most.

9.2. Integrated delivery promises to deliver even more value for money

Integrated delivery of donated drugs for both onchocerciasis and lymphatic filariasis should strengthen the cost effectiveness of MDA through a reduction in the number of deliveries required and the sharing of fixed costs. Integrated post-MDA surveillance for both diseases should result in similar efficiency gains. Preliminary estimates of the potential savings are summarized here, with technical details provided in Annex 1.

Preliminary estimates suggest that the investment required for MDA and post-MDA surveillance in two standalone onchocerciasis and lymphatic filariasis elimination programmes is circa US$ 823 million in the years 2016–2025. Assuming that full economies of scale and scope can be achieved, the
investment that would be required in an integrated programme is estimated at about US$ 500 million in the same period. The savings could be as much as US$ 320 million, or 40%. This is in line with projections suggesting savings of 26–47% for integrated versus stand-alone NTD programmes.\(^{21}\)

In practice, some of these efficiency gains are already being realised. Furthermore, there will be some costs associated with increased coordination. On the other hand, gains need not be limited to cost-sharing and a reduction in the number of deliveries – there should also be savings associated with the sharing of good practices. A study based on actual expenditures (not projections) found that an integrated NTD programme in Niger resulted in savings of 16–21%.\(^{22}\) An assumption of the calculation of the total investment required (below) is that savings are likely to fall within the range of 15–40%.

9.3. Regional coordination will ensure money goes where it is needed most

In addition to providing value by supporting integrated delivery within individual countries, PENDA can contribute to the efficiency of the overall Africa-wide elimination programme by:

- providing direct and intensive support to the countries facing the biggest challenges in relation to elimination, such as post-conflict countries;
- promoting cross-border collaboration to enhance cost effectiveness and reduce the risk of failed elimination due to recrudescence;
- providing a regional knowledge hub with special attention to overcoming common challenges such as the co-endemicity with loiasis;
- advising all countries on when to stop treatment and on how to proceed through to verification of elimination according to scientific protocols;
- maintaining an overview of financing so that major gaps are identified in a timely fashion and inequitable access to resources by aid-orphan countries is addressed.

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10. Preliminary investment benchmarks for elimination and indicative budget for PENDA

US$ 800 million – 1 billion is a preliminary estimate of the investment required to eliminate onchocerciasis and lymphatic filariasis. It is not an estimate of the funding gap and it is not an estimate of the funding that will be channelled through PENDA. The PENDA budget will be made up of the costs of running the Secretariat, the costs of human resources and a proportion of the costs of MDA, post-treatment surveillance and the other investments in support of elimination.

10.1. Preliminary investment benchmarks for MDA and post-MDA surveillance in countries

These estimates are based on estimates of the target population receiving MDA and of the population to be sampled in post-MDA surveillance. See Annex 1 for further details, including assumptions about unit costs.

**MDA: US$ 400–600 million (about 53% of total)**

This is the estimated cost of delivering approximately two billion treatments during the programme duration for elimination of both diseases. The current scenario of funding for MDA throughout the continent shows that several partners are already contributing or considering contributing directly to the country costs of delivering the drugs. Likewise, it is expected that there will be an increase in contributions from countries themselves. However, the current or future size of those budget contributions remains unknown, therefore, the estimated PENDA specific budget has to be estimated taking that into consideration. Priority will be given to supporting MDA where there are the greatest challenges and developing country specific approaches to these challenges.

**Post-MDA Surveillance: US$ 100–150 million (about 14% of total)**

Post MDA surveillance is a critical activity to ensure that transmission of the two diseases has been achieved and to deal with cases of recrudescence. It is also an essential component of the process of gathering the information to build the dossier for certification of elimination. Despite its recognized high per-unit cost, surveillance is conducted only in a sample of the MDA target population, estimated here to be around 38 million individuals. Therefore, its overall cost is lower than that of the MDA.
10.2. Other investment to support MDA and post-MDA surveillance in countries

The following activities are not typically included in unit costs for MDA and post-MDA surveillance activities: capacity building, advocacy and resource mobilization, operational research, M&E, morbidity management, support for efforts to combat other NTDs, and gender mainstreaming. These are assumed to total circa 10–15% of the investment required.

**Capacity Building: US$ 24 million (3%)**

Capacity building will be an important component for building countries’ capacity to deliver the interventions, monitor and evaluate the progress and conducted quality surveillance to sustain the gains. Capacity has also to be built in programme and financial, and to reinforce the function of the national NTD task forces to achieve increased synergies in the integrated approach to control and eliminate NTDs.

**Advocacy & Resource Mobilization: US$ 24 million (3%)**

Advocacy at country, regional and global level will be conducted to ensure adequate financial and structural support to complete the task of eliminating both diseases and to build and maintain the foundations to sustain the gains post-elimination. A significant proportion of this budget should be allocated to in-country capacity building on advocacy and resource management to strengthen NTD programme sustainability.

**Operational Research and M&E: US$ 24 million (3%)**

The implementation of an integrated effort to eliminate lymphatic filariasis and onchocerciasis will certainly raise unforeseen operational challenges at the country and regional levels. The identification of operational issues impeding progress will be encouraged and undertaken through country progress analysis and research to find solutions to overcome such obstacles will be provided by the programme. The implementation of global and regional guidelines often brings with it specific local challenges that must be addressed through operations research. Furthermore, efficient programme implementation must be based on evidence generated by reliable integrated data sets and strong M&E frameworks that can guide decision making to maximize programme performance.

**Morbidity Management: US$ 13 million (2%)**

While the elimination of both diseases is achieved by interrupting transmission through preventive chemotherapy, the burden of active disease remains an issue both before and after the target is achieved. This is an area often neglected in programme implementation and an issue of major concern for the populations targeted by the drug interventions. Therefore, the programme will provide support to countries to establish and advocate for morbidity management programmes that will benefit not only the affected individuals but will also increase acceptability of the PC activities.

**Support for other efforts to combat other NTDs: US$ 13 million (2%)**

The efforts to eliminate onchocerciasis and lymphatic filariasis are an integral part of the regional effort to control and eliminate NTDs in general. Countries are increasingly adopting integrated programmes to tackle NTDs. As part of the support to country programmes PENDA will provide support to promote co-implementation and integration in implementation and M&E. Support for other PC NTDs control efforts may be increased after the initial
years but this is not yet reflected in the overall indicative budget calculations.

**Gender Mainstreaming:**

**US$ 7 million (1%)**

Appropriate gender balance is an important component in the success of programme implementation at the community level. PENDA will support country activities to promote the participation of women in advocacy, mobilization and implementation of drug delivery, morbidity management and other components of the programme.

10.3. **Indicative budget for PENDA’s basic operating costs**

Human resource and miscellaneous costs incurred by PENDA, at regional and country levels, were estimated based on APOC’s current costs and expansion to reflect the shift from control to elimination of onchocerciasis jointly with that of lymphatic filariasis. In particular additional experts have been included for special intensive country support programmes.

This part of the indicative budget does not include the cost to PENDA of providing support to country programmes for items listed under 10.1 and 10.2.

**Human resources: US$ 151 million (19%)**

PENDA requires adequate human resources. The expanded mandate to include the elimination of both diseases within short timelines will require a highly qualified workforce and a special team of experts to assist in countries.

**Office costs and miscellaneous costs: US$ 10 million (1%)**

These include the costs related to running the organization at the headquarters level and does not include costs which are allocated to specific objectives.

10.4. **Preliminary estimate of total investment required for elimination**

Taking into account some of the uncertainties about projected savings from integrated MDA and post-MDA surveillance (see section on Value for Money), the total investment required is estimated at between US$ 800 million and US$ 1 billion.
<table>
<thead>
<tr>
<th>YEAR</th>
<th>2016–2020</th>
<th>2021–2025</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target population for MDA</td>
<td>418,462,120</td>
<td>383,748,614</td>
<td>356,576,841</td>
</tr>
<tr>
<td>Mass drug administration</td>
<td>94,154,000</td>
<td>86,344,000</td>
<td>80,230,000</td>
</tr>
<tr>
<td>Post MDA surveillance</td>
<td>11,990,000</td>
<td>11,990,000</td>
<td>11,990,000</td>
</tr>
<tr>
<td>Capacity building</td>
<td>4,185,000</td>
<td>3,838,000</td>
<td>3,566,000</td>
</tr>
<tr>
<td>Advocacy &amp; resource mobilization</td>
<td>4,185,000</td>
<td>3,838,000</td>
<td>3,566,000</td>
</tr>
<tr>
<td>Operational research and M&amp;E</td>
<td>4,185,000</td>
<td>3,838,000</td>
<td>3,566,000</td>
</tr>
<tr>
<td>Morbidity management</td>
<td>2,094,000</td>
<td>1,919,000</td>
<td>1,783,000</td>
</tr>
<tr>
<td>Support for other NTDs</td>
<td>2,094,000</td>
<td>1,919,000</td>
<td>1,783,000</td>
</tr>
<tr>
<td>Gender mainstreaming</td>
<td>1,047,000</td>
<td>960,000</td>
<td>892,000</td>
</tr>
<tr>
<td>Miscellaneous costs</td>
<td>660,000</td>
<td>726,000</td>
<td>880,000</td>
</tr>
<tr>
<td>Human resources</td>
<td>18,322,000</td>
<td>18,322,000</td>
<td>16,656,000</td>
</tr>
<tr>
<td>Total</td>
<td>142,916,000</td>
<td>133,694,000</td>
<td>124,912,000</td>
</tr>
<tr>
<td>Grand total</td>
<td>626,023,000</td>
<td>187,937,000</td>
<td>626,023,000</td>
</tr>
</tbody>
</table>
11. Financing elimination and budgeting for regional support

The preliminary estimate of US$ 800 million – US$ 1 billion includes funding that one might expect to be channelled from bilateral, multilateral and philanthropic donors to NGOs, to endemic country governments, to regional entities such as PENDA, and from domestic sources directly to country programmes. There is a need to better understand current levels of investment in onchocerciasis and lymphatic filariasis programmes and of the future funding commitments before determining what share of the total investment should be channelled through PENDA. The numbers should become clearer by 2016, as partners and countries define their resource needs and commitments. In any event, most of the funding required will be needed in the first five years of the ten-year plan (See Table 3). Resource mobilization efforts must begin well in advance of the official start of the elimination programme in 2016. (This is discussed under Risks and Risk Mitigation and again in Annex 3.)

11.1. Working within a complex funding landscape

The funding landscape is complex and a large number of partners are involved in mobilising and providing funds for the elimination of NTDs. The contributions from country budgets have increased and are an important component of the necessary funding. Historically much of the donor funding for onchocerciasis programmes has been channelled through the World Bank Trust Fund and this has enabled APOC to select priorities on the basis of the needs of the overall effort. To date the Trust Fund has channelled US$ 1.25 billion to support onchocerciasis control and elimination efforts. A committed donor group coordinate and consult on priorities. Increasingly funds are being granted directly to country ministries of health or to NGDOs as some donors make a clear choice to channel funds directly. In particular, the funds for the elimination of lymphatic filariasis have often gone directly to country programmes. This funding route has tended to consolidate country ownership, but makes coordination of overall regional elimination priorities more difficult. NGDOs continue to make important and regular contributions and often support priorities not supported by other donors.

The financing of the programme has different facets. PENDA needs to finance the activities which it directly supports (including the activities of the regional support centre and the direct intensive support and technical assistance it delivers for implementation in endemic countries). Of equal importance in achieving the elimination goal, is finance for interventions and activities for the elimination effort that are either paid for by the endemic countries or by others in the partnership. Direct financing of national activities will become increasingly important and partners make major contributions that are crucial for elimination but outside the immediate range of PENDA activi-
ties. For instance bilateral donors such as DFID and USAID make major contributions to NGDOs active in the countries and to research institutes which work with, and in, endemic countries, important operational research is funded by the Bill & Melinda Gates Foundation and others including NGDOs. NGDOs directly support implementation in many endemic countries. It is important that PENDA maintains an overall picture of how financing for elimination works and which donors and partners are involved. This will enable PENDA to identify important gaps that may need to be covered and to spot potential new donors or financing possibilities.

The reality of different channels and different levels is going to remain and the trend to give directly to countries may well increase. Complexity is here to stay and filling the estimated “funding gap” will be something like designing a patchwork quilt.

11.2. A financial strategy to underpin elimination planning

An overall strategy is needed to finance the programme in the context of the financing of the wider elimination effort. This will need to involve a greater diversity of funding options and its overall success will hinge on maintaining endemic government commitment, demonstrating value for money and advocating the importance of future social and economic returns when elimination is achieved. This strategy will be developed in the lead-up to programme commencement and will consider established and new financing models.

The main elements for such a strategy will be:

- Advocacy to increase endemic country contributions to strengthen health systems delivery of NTD interventions, thus demonstrating government commitment;
- Re-allocation and efficient use of existing financial contributions from (national, donor and NGDO funds) to ensure that the efficiencies of delivering joint interventions are realised;
- Maintaining the commitment of existing donors to finish the work in progress and realising the long term savings that can be achieved through elimination;
- Stressing value for money and in particular the value of the medicines which are donated which makes interventions so cost-effective;
- Using the Trust Fund and the contributions from regional development banks and bilateral donors to leverage new funds;
- Identifying funds that are channelled directly to endemic countries and ensuring that synergies are achieved and duplication avoided;
- Identifying new donors through active advocacy campaigns to demonstrate possible gains and successes. These new donors will be sought in both private and public sectors and advocacy campaigns will target African philanthropists and funds.
11.3. The PENDA budget – secretariat costs and funds to deliver programme activities

The financing of the Programme in the new policy context will be complex, but it will remain very important for PENDA to maintain a position in which it can determine key priorities and channel funds to areas where they are most needed to meet elimination targets. The countries that will need the most support are, generally speaking, not the countries that attract donor support most easily. So one of the functions of PENDA will be to mobilise resources and channel them to the countries facing the greatest challenges through the mechanism of the renewed Trust Fund.

The PENDA programme plan will cover a period of ten years and includes regional support, general support to national programmes in achieving elimination, and intensified support to countries facing the most serious challenges as well as operational research and activities, capacity building for NTD programmes and morbidity management/disability prevention for lymphatic filariasis. A proportion of the overall cost estimates for these activities will go through the Trust Fund and be used for PENDA delivered regional support and country support. PENDA will work with partners to develop an overview of funding needs and resources and will use this information to channel funds to the areas and countries where it is most needed to achieve elimination goals.
12. Human resources

A full human resource plan will be made after a management review scheduled for early 2014. Some preliminary estimates have been included in the planning now to reflect major elements of the plan.

In particular the capacity to provide medium-term intensive technical assistance in country will be increased.

The development of the Strategic Information Unit will involve a strengthening of capacity to deal with synthesising data to inform elimination decisions.

Communications and advocacy capacity needs to be built.

Where possible existing capacity in countries and in partner organisations will be used creatively but there does need to be a critical mass of expertise in the Secretariat. Timely and high quality support will be critical in meeting elimination targets.

Currently APOC has provision for 28 professional staff positions of which 21 are filled. (Budget restrictions led to some positions being frozen in the current biennium, others are in the process of being filled.) Of the 21 positions 16 are filled by scientists, 10 (including the Director and Coordinator), are based at headquarters in Ouagadougou.

This human resource cadre will need to grow to meet the demands of the elimination goal. Lymphatic filariasis expertise to reinforce the headquarters team will be drawn from the pool of experts built, over the past twenty years, of implementing the regional elimination programme. The strengthening will be in areas ranging from epidemiology, entomology and M&E. In addition, this plan envisages the need for improved, combined data management and the development of a Strategic Information Unit that will provide timely and good quality data and work pro-actively to identify successes and challenges. The programme will also need specialised advocates and a fundraising/public relations expert.

Administrative and support staff may need to be augmented to meet the increased workload and more IT and financial skills may need be needed to work with new and harmonised programmes.

In addition the programme will be providing flexible and specialised in-country support and the ability to provide technical assistance in the field needs to be considerably strengthened. External technical assistance will be the last option after a thorough audit of the country available capacity and potential capacity building is done so that local capacity is fully used and promoted for improved country ownership. It is suggested that a management review planned for early 2014 makes recommendations that will help to clarify the human resources picture. This should include a plan to gradually replace the expertise of key experts who are approaching retirement and who carry much of the current knowledge and institutional memory with them. Continuity will be important for both diseases and the team should strive
for a good gender balance throughout programme levels.

For the purposes of the preliminary budget calculations the costs of human resources included are based on preliminary thinking about human resource needs. This will need to be revisited in the light of the review and more detailed planning. Every effort will be made to make optimal use of existing expertise in country and in existing programmes and support networks.

13. Management

The programme will need strong and dynamic management to maintain the energy and level of work to meet elimination targets and to coordinate and work within the complex arena of countries, donors and other partners. The management review suggested for 2014 should make recommendations about whether the current structures are appropriate for the new organisation and how best to manage the complex processes of change that will be required.

Having the necessary management information and regular relevant outputs from M&E systems are pre-requisite and need to be developed before the launch of the programme.
# Strategic framework overview

<table>
<thead>
<tr>
<th>Narrative summary</th>
<th>Expected results</th>
<th>Timelines</th>
<th>Means of Verification</th>
<th>Important assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal:</strong> To achieve elimination (in Africa) of lymphatic filariasis by 2020 and onchocerciasis by 2025, and contribute to the broader PC NTDs Agenda</td>
<td><strong>Impact</strong></td>
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<td></td>
<td><strong>Baseline</strong></td>
<td>2016</td>
<td>WHO/AFRO targets</td>
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<td></td>
<td><strong>Target</strong></td>
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<td><strong>SPECIFIC OBJECTIVE 1:</strong> Complete and maintain full geographic and therapeutic coverage ensuring access to interventions for onchocerciasis and LF to achieve elimination of both diseases</td>
<td><strong>Outcome 1</strong></td>
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<td><strong>Baseline</strong></td>
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<td><strong>SPECIFIC OBJECTIVE 2:</strong> Safely scale down and stop LF and onchocerciasis interventions and support countries to verify elimination</td>
<td><strong>Outcome 2</strong></td>
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<td></td>
<td><strong>Baseline</strong></td>
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<tr>
<td><strong>SPECIFIC OBJECTIVE 3:</strong> Strengthen capacity of national NTD programmes to sustain progress towards ending LF and onchocerciasis</td>
<td><strong>Outcome 3</strong></td>
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<td></td>
<td><strong>Baseline</strong></td>
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</tbody>
</table>
| | **Target** | | | | • National NTD Programmes retain trained staff • National governments have increased their support to NTD programmes.
<table>
<thead>
<tr>
<th>Narrative summary</th>
<th>Expected results</th>
<th>Timelines</th>
<th>Means of Verification</th>
<th>Important assumptions</th>
</tr>
</thead>
</table>
| **SPECIFIC OBJECTIVE 4:** Contribute to regional capacity to free Africa of onchocerciasis and LF | **Outcome 4**  
- Cross border issues identified and addressed  
- # of consultative meetings  
- Equity in funding advanced  
- # of countries with major challenges identified and resources prioritized | Baseline | Target |  
- AFRO Reports  
- PENDA Annual Reports |  
- All NTDs regional entities work on basis of good intelligence  
- WHO/AFRO and PENDA work together to enhance regional NTD agenda |
| **SPECIFIC OBJECTIVE 5:** Reduce suffering and disability through disability prevention and morbidity management | **Outcome 5**  
- Adoption and implementation of morbidity management policies  
- # of new policies  
- Increase in community support networks  
- Increase in hydrocele surgery  
- Increase in number of people receiving support  
- # of cases identified at community level receiving help | Baseline | Target |  
- National NTD Programme Periodic Reports  
- PENDA Annual Reports |  
- Endemic countries establish and maintain effective morbidity management facilities  
- Adequate resources allocated to sensitization campaigns |
| **SPECIFIC OBJECTIVE 6:** Maximizing the effectiveness of interventions and strategies by using and developing state of the art evidence | **Outcome 6**  
- Common agenda developed and scientific challenges answered and introduced.  
- # of key challenges identified and progress made  
- Countries have capacity to formulate and address operational problems.  
- # of operational research questions supported | Baseline | Target |  
- PENDA Periodic and Reports |  
- National governments collaborate with PENDA on operational research projects |
| **SPECIFIC OBJECTIVE 7:** Contributing to the broader NTD agenda | **Outcome 7**  
- Number of countries/IUs delivering MDA for LF/Oncho combined with other services for other PC NTDs  
- Stress impact on STH | Baseline | Target |  
- National NTDs Programme Periodic Reports  
- PENDA Reports |  
- National governments increased Support to delivery of other PC NTDs services  
- Countries have integrated plans. |
### Activity areas for each objective

#### ACTIVITY AREAS OBJECTIVE 1
Activity Area 1.2. Support countries to maintain adequate treatment coverage in all implementation units

Support countries with specific problems by providing tailor-made intensive intervention support to address problems such as:
- Co-endemicity with loaisis
- Cross-border issues
- Post-conflict countries
- High burden countries
- Late starters
- Ivermectin sub-optimal response and potential resistance to albendazole

These special interventions with a variety of strategies such as: twice a year treatment, alternative therapeutic regimes, follow-up on coverage, vector management and specialized additional technical assistance/additional technical capacity

#### ACTIVITY AREAS OBJECTIVE 2
Support countries with the development of strategies and steps to stop MDA (with an integrated approach where both oncho/LF co-endemic) and to verify elimination including support to the following steps:
- Evidence-based decision to stop treatment
- Communication around plan
- Post-treatment surveillance and documentation
- Prepare national elimination dossier for verification
- Assist countries through verification process

#### ACTIVITY AREAS OBJECTIVE 3
- Build country capacity for planning
- Build country capacity for resource mobilisation
- Strengthen capacity to use integrated planning tools
- Support development appropriate skills in integrated teams in:
  - resource mobilization
  - information and financial management systems
  - trouble shooting in relation to medicines supply chain mechanisms
  - support the establishment/and or operation of national task forces
  - strengthen advocacy capacity in teams
  - strengthen human resources cadre with secondment and training

#### ACTIVITY AREAS OBJECTIVE 4
- Establish capacity to track resources available through different channels for NTD elimination
- Strengthen capacity for resource mobilization for elimination
- Establish regional Strategic Information Unit on progress towards elimination
- Establish regional coordination to support cross-border collaboration
- Strengthen advocacy for the programme – with national ministries
- Organise Regional expert and programme managers meetings together with WHO/AFRO
- Provide opportunities for sharing and dissemination

#### ACTIVITY AREAS OBJECTIVE 5
- Build capacity for use of new WHO guidelines for morbidity management
- Build in integrated community case identification
- Support hydrocele surgery

#### ACTIVITY AREAS OBJECTIVE 6
- Facilitate country capacity to undertake operational research
- Promote identification of operational research issues
- Write proposals with budgets
- Fund project proposals
- Use and disseminate results
- Monitor and evaluate process
- Participate in global and regional research agenda setting and result sharing

#### ACTIVITY OBJECTIVE 7
- Establish MDA as an equitable and sustainable community mechanism contributing to universal coverage of health programmes
- Co-implementation with other public health interventions
- Implement community-based MDAs with delivery of other public health interventions
- Conduct integrated monitoring with other PC and public health programmes
Annex 1
Investment benchmarks

Preliminary investment benchmarks for the elimination of onchocerciasis and lymphatic filariasis in Africa

**Purpose**

We estimate the total investment needed at country level for the elimination of onchocerciasis (river blindness) and lymphatic filariasis (elephantiasis) in all endemic countries of Africa over the period 2016–2025. We include the cost of both mass drug administration (MDA) and post-MDA surveillance.

For comparison, we estimate the investment that would be required for two standalone programmes. We also compare the investment required in all countries to that required in six post-conflict countries (Burundi, Central African Republic, Chad, Democratic Republic of the Congo, Liberia and Sudan).

**Methods**

Populations at risk in the year 2013 for onchocerciasis, lymphatic filariasis (LF) and/or loaisis were available from the African Programme for Onchocerciasis Control (APOC). We projected forward to the year 2025 using demographic projections.

Some districts have still not been mapped for LF. We assumed that the percentage of the population at risk for LF in mapped districts is a good proxy for the percentage at risk in unmapped districts. We also assumed that the percentage of the population at risk for both onchocerciasis and LF in mapped districts is a good proxy for the percentage of at risk in unmapped districts. If no districts had been mapped for LF, we assumed (conservatively) that there was no co-endemicity. This assumption will need to be revisited as the last remaining districts are mapped in the coming years.

Endemicity for loaisis was only available in terms of the number of districts (not population). We assumed that the percentage of districts with loaisis is a good proxy for the percentage of the population that is at risk for loaisis.

We assumed that the treatment regimen would be determined at the district level. Districts co-endemic for onchocerciasis and LF or endemic for LF would receive once-yearly ivermectin (IVM) and albendazole (ALB). Districts with only onchocerciasis would receive once-yearly IVM. In areas with loaisis and onchocerciasis co-endemicity, we assumed a test and treat strategy whereby up to 10% of the population at risk would receive doxycycline (under observation for six weeks). In areas with loaisis and LF co-endemicity, we assumed twice annual administration of ALB.

We assumed that treatment for onchocerciasis would be stopped by the target year outlined in APOC’s Strategic Plan of Action and Budget 2016–2025, or after about 10–12 years of 100% geographic coverage and 80–100% therapeutic coverage with ivermectin (IVM). We assumed treatment for LF would be stopped in 2020, after 5 years of 100% geographic coverage and 65–100% therapeutic coverage with IVM and albendazole (ALB).

We reviewed the literature for the cost of MDA excluding medicines and synthe-
sized the results in a statistical analysis. Controlling for the number of people treated (economies of scale) we predicted the cost of delivering a package of medicines to each person at risk at different scales of implementation. Unit costs as reported in these studies did not typically include an estimate for the economic cost of volunteer time, but did include the cost of severe adverse events. We did not estimate the cost of vector control (in areas of loaisis), assuming that the distribution of bednets would be undertaken by malaria programmes.

We estimated the cost of post-MDA surveillance in the three years following MDA by applying the unit cost of MDA (excluding medicines) to the population at risk for either onchocerciasis or LF. The assumption is that post-MDA surveillance is about as resource-intensive as MDA itself. The MDA unit cost is consistent with integrated disease surveillance costs of between US$ 0.03 and US$ 0.88 per capita in Africa (Somda et al, 2009). To check the robustness of this assumption, however, we considered an alternative approach in which the per unit cost of the sampled population was US$ 3. The sampled population was in turn estimated at 6% of school aged children who make up about 25% of the population in Africa. The results were largely unaffected.

To these results should be added (but have not been added in this annex) the investment needed in regional coordination, mobilization of resources and partnerships, and targeted implementation support to ensure that: 1) resources are channeled efficiently to under-served countries and vulnerable populations; 2) implementation is handled effectively, especially with regard to cross-border and loaisis co-endemicity issues; 3) synergies are obtained with malaria programmes for integrated vector management; 4) health systems are sufficiently resourced to deal with morbidity management and disability prevention (MMDP); and 4) that disease surveillance is maintained right through to verification of elimination.

Results

In all countries of the WHO African region and Sudan

Under the above assumptions, the total population at risk for LF is about 447 million in 2016. The total population at risk for onchocerciasis is about 253 million in 2016. The total population at risk for both onchocerciasis and LF is about 190 million in 2016. The total population at risk for either LF or onchocerciasis is about 510 million in 2016.

The number of deliveries of MDA that would be required for two standalone onchocerciasis and LF programmes is about 2,790 million in the period 2016–2025. The number of deliveries of MDA that would be required for integrated onchocerciasis and LF programmes is about 2,180 million in the period 2016–2025.

The cost of drugs for MDA are donated by pharmaceutical companies. That the unit cost of a delivery of drugs would be about US$ 0.17 when the number of people being treated is about 1 million. Due to decreased economies of scale, the unit cost increases to about US$ 0.61 when the number of people being treated is less than 100 thousand, and exceeds US$ 2.30 when the number of people being treated is less than 10 thousand.

At those unit costs, the remaining (non-drug) investment that would be required for MDA and post-MDA surveillance for two standalone onchocerciasis and LF programmes is about US$ 823 million in the period 2016–2025.

Assuming that full economies of scale and scope can be achieved, the investment that would be required for integrated MDA and post-MDA surveillance for onchocerciasis and LF is about US$ 497 million in the
period 2016–2025. The savings may be as much as US$ 326 million, or 40%.

The estimate of savings is in line with projections suggesting savings of 26–47% compared to standalone programmes (Molly et al, 2009). In practice, some of these savings are already being realised and there will be some costs to increased coordination. A study based on actual expenditures (not projections) found that an integrated NTD programme in Niger resulted in savings of 16–21% (Leslie et al, 2013).

In 6 post-conflict countries only
The total population at risk for LF is about 69.2 million in 2016. The total population at risk for onchocerciasis is about 53.9 million in 2016. The total population at risk for both onchocerciasis and LF is about 38.6 million in 2016. The total population at risk for either LF or onchocerciasis is about 84.5 million in 2016.

The number of deliveries of MDA that would be required for two standalone onchocerciasis and LF programmes is about 826 million in the period 2016–2025. The number of deliveries of MDA that would be required for integrated onchocerciasis and LF programmes is about 548 million in the period 2016–2025.

The investment that would be required for MDA and post-MDA surveillance for two standalone onchocerciasis and LF programmes is about US$ 153 million in the period 2016–2025.

With full economies of scale and scope, the investment that would be required for integrated MDA and post-MDA surveillance for onchocerciasis and LF is about US$ 101 million in the period 2016–2025. The savings may be as much as US$ 52 million, or 34%.

Figure A1: Estimated population at risk and number of deliveries required, all countries, 2016–2025

Figure A2: Estimated population at risk and number of deliveries required, 6 post-conflict countries, 2016–2025
Figure A3: Investment required, standalone versus integrated, total (MDA+post-MDA) and MDA (only), all countries, 2016–2025*

Figure A4: Investment required, standalone versus integrated, total (MDA+post-MDA) and MDA (only), 6 post-conflict countries, 2016–2025*

* Note that in Figures 4 and 5, the total investment decreases steadily to 2024 not because costs are decreasing, but because some countries are expected to complete MDA and post-MDA surveillance sometime before 2025.

References


Annex 2
Additional visuals to illustrate indicative budget information

**Figure A2.1:** Proportional distribution of costs for the elimination of onchocerciasis and lymphatic filariasis in Africa (2016–2025)

**Figure A2.2:** Trend of estimated costs for the elimination of onchocerciasis and lymphatic filariasis in Africa (2016–2025)
Figure A2.3: Proportion of costs by programme period 2016–2020 and 2021–2025

- 2016-2020: 77%
- 2021-2025: 23%
Annex 3
What needs to be in place before the programme starts?

A new governance structure
APOC has an established governance structure which has served it well and ensured that the programme is country-owned, that there is a high degree of political commitment to programme goals and that partners have a voice in shared decision-making and in planning through the JAF and the CSA. This structure was established for a partnership for long-term onchocerciasis control and, although other NTD partners increasingly participate, its core business is still onchocerciasis. Lymphatic filariasis does not have a comparable regional programme or governance structure but has a stronger focus at the country level. The new governance structure must be in place by 2016.

Management and organisation
The current organisation and management arrangements will need review and realignment to allow for a smooth transition and to ensure that the new entity is fit for the new purpose and that roles and responsibilities are clear. A management review of APOC is planned for early 2014 and it is recommended that this should assess, in the light of the Strategic Plan of Action, what changes need to be made in the area of management, organisation and financial management. This audit should also assess the human resource needs of the new entity (although some initial ideas are included in this plan). This organisational audit will make recommendations to the APOC Director and the expanded CSA. Agreed changes will be implemented before the end of 2015.

Essential questions to be answered in the organisational audit include
• What changes are needed to the management and administrative arrangements?
• Are management roles and mandates clear?
• What is the current HR capacity in relation to the needs of the new entity? (this needs to include replenishment of expertise as people retire and need for lymphatic filariasis expertise and to maintain a critical mass of epidemiological and entomological expertise);
• What additional HR requirements are there, including in-country TA?

Technical Issues
Before the start of the new Strategic Plan of Action a number of on-going technical areas of work should be completed. The completion of the mapping of the endemcity of lymphatic filariasis in all African countries is essential as is the completed mapping of areas hypo-endemic for onchocerciasis. These two exercises will clarify more precisely the population remaining to be treated.

Currently APOC and lymphatic filariasis programmes use different geographical units to define treatment areas. APOC works in “project areas” and lymphatic filariasis programmes use the concept of entire districts as IUs”. In principle it has been agreed that IUs are the appropriate unit to achieve elimination but work has to be undertaken to achieve a harmonised system.
On-going work on protocols for stopping and starting treatment and for alternative treatment in hypo-endemic areas co-endemic for loiasis should lead to clear guidelines for both diseases. In addition current work to up-scale and accelerate treatment must be maintained.

Resource Mobilisation ahead of 2016

The deadlines which drive the new plan are the elimination goals of 2020 and 2025. For these to be met the Strategic Plan of Action needs to take over, at full strength, when APOC’s current programme of work ends in 2015 and PENDA is launched. A vigorous fundraising effort will be necessary. This should start now.

The table below gives an overview of the key processes that have to be achieved in 2014 and 2015 for PENDA to start at the beginning of 2016.

### Table A3.1: An overview of technical areas in which rapid progress should be made in the lead up to 2016

<table>
<thead>
<tr>
<th>Item</th>
<th>Activity</th>
<th>Tasks</th>
</tr>
</thead>
</table>
| 1.   | Mapping and harmonization of implementation units | • Complete lymphatic filariasis mapping in Africa  
• Redefine/delineate onchocerciasis hypo-endemic areas for treatment in all countries  
• Harmonize implementation units between lymphatic filariasis and onchocerciasis  
Prepare disease overlap maps and assess the status and impact of treatment for one disease on the other in co-endemic areas |
| 2.   | Transmission assessments and surveillance | • Identify all lymphatic filariasis implementation units that have completed six rounds of adequate MDA  
• Identify all onchocerciasis projects that have completed 12 rounds of adequate MDA  
• Assess transmission status through surveys or epidemiological evaluations to identify areas where MDA should potentially be stopped  
• Assess epidemiological pertinence of stopping MDA considering the transmission status of both diseases in the implementation unit and surrounding areas.  
• Stop MDA in IUs where there is evidence that transmission interruption of both diseases has been achieved. |
| 3.   | Defining intervention strategies for complex epidemiological situations | • Characterize countries and group them according to epidemiological context: post-conflict countries; high disease burden; co-endemicity with loiasis; low treatment coverage; sub-optimal response to ivermectin; late MDA starters;  
• large urban MDA targets.  
• Support the development of suitable intervention packages for different scenarios |
Table A3.2

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<td>Governance</td>
<td>Go ahead</td>
<td>Draft structures, mandate and roles discussed with countries and partners. WHO drafts and consults</td>
<td>JAF decision</td>
<td>Details finalised. Country signatures organised. Transition period used to ensure all paper work, ToR, etc in order</td>
<td>Structures finalised and signed</td>
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<tr>
<td>Resource mobilisation</td>
<td>Initial discussions with donor group</td>
<td>Financing instruments adapted – drafts completed in 2014; Inventory of current contributions and channels and potential new sources (including country level); Financial plan further finalised and fundraising underway.</td>
<td>JAF decision</td>
<td>Concerted resource mobilisation</td>
<td>Donor commitments assessed and plan adjusted if necessary</td>
<td>Funding secured and funding instruments in place</td>
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<td>Technical issues (see Table A3.1 of Annex 3 for details)</td>
<td>Ongoing</td>
<td>Completion of mapping; Continued upscaling LF and oncho; Work for integrated map and target population known;</td>
<td>Harmonisation implementation units</td>
<td>Contribute to work on protocols for stopping and starting MDA for both Integrated loiasis guidelines – also for hypo areas</td>
<td>Work on alternative treatments for loiasis hypo areas</td>
<td>Key priorities for Strategic Information Unit agreed</td>
<td>OR agenda clear</td>
<td>Integrated protocols available</td>
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</tbody>
</table>

APOC • Programme for the elimination of neglected diseases in Africa (Penda) • Strategic Plan of Action and Indicative Budget 2016-2025
## Annex 4

### WHO/AFRO Region and Sudan – endemicity status overview

Table A4.1: Endemicity status in Africa.

(Latest information from APOC and WHO/AFRO – subject to verification)

<table>
<thead>
<tr>
<th>Country</th>
<th>Oncho endemic / LF endemic</th>
<th>Oncho endemic, /LF non endemic</th>
<th>Oncho endemic /LF not mapped</th>
<th>Oncho non endemic /LF endemic</th>
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### Table A4.1: Endemicity status in Africa.
(Latest information from APOC and WHO/AFRO – subject to verification)

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<th>Oncho endemic, LF not mapped</th>
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<td><strong>441</strong></td>
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<th>Total number of existing districts</th>
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<th>% of all districts</th>
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<td>Oncho only endemic districts</td>
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<td>Co-endemic districts</td>
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<td>Districts endemic for at least one disease</td>
<td>2,631</td>
<td>55.5%</td>
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Annex 5
Contributors to the Strategic Plan of Action

Development of this PENDA Strategic Plan of Action has been through a consultative process initiated by the WHO/AFRO and the management of APOC and its partners. A concept note was first developed with the support of an APOC transition task force and a draft Strategic Plan of Action and Indicative Budget for the period 2016 to 2025 with support and contributions from all stakeholders.

In finalising this document there have been a number of consultations and meetings at which stakeholders were invited to discuss the plans. There were meetings of the expanded CSA in Tunisia and France. The draft Strategic Plan of Action was discussed at the National Onchocerciasis Coordinators meeting in Ouagadougou. A stakeholders meeting involving high ranking participants from ministries of health of endemic countries was held in Ouagadougou to review this document. Several conference calls have been held with representatives of all APOC transition task force members, the NTD NGDOs Network and with representatives from institutions, organizations, and bilateral and multi-lateral organizations working on NTDs. The document was widely circulated electronically for inputs from a wide group of stakeholders and also from countries, WHO AFRO, headquarters, countries, donors, NGDOs, academic institutions and organizations among others.

List of contributors

- Representatives from endemic countries in Africa
- WHO headquarters, AFRO, APOC and country offices
- World Bank
- African Development Bank
- US Agency for International Development
- Department for International Development
- Mectizan Donation Program
- GlaxoSmithKline
- Merck and Co. Inc.
- CNTD, Liverpool School of Tropical Medicine
- Carter Center
- Bill & Melinda Gates Foundation
- Centers for Disease Control
- Sightsavers International
- IMA World Health
- MITOSATH
- Sabin Vaccine Institute/Global Network for Neglected Tropical Diseases
- NGDO Group for Onchocerciasis Elimination
- LF NGDO Network
- NTD NGDO Network
Acknowledgements

Many people have contributed their ideas, expertise and time in the consultations and drafting of the Strategic Plan of Action and Indicative Budget. Their dedication, commitment and willingness to explore change in order to achieve the elimination of neglected tropical diseases, has made it possible to move forward and develop this plan. A list of key contributors is included in Annex 5.