Yaws Eradication in the South-East Asia Region

Report of an Intercountry Workshop
Bali, Indonesia, 19-21 July 2006
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Yaws, caused by the spiral-shaped bacterium (spirochete) *Treponema pertenue* is a contagious, non-venereal infection in humans that presents mainly in children below 15 years. The disease occurs primarily in poor, rural and marginalized populations in parts of Africa, Asia and South America, where conditions of overcrowding, poor water supply, and lack of sanitation and hygiene prevail. Thus, it is a poverty-related disease. It is aptly said that, “Yaws begins where the road ends”.

In the South-East Asia Region, Yaws remains a focalized problem in only three countries – India, Indonesia and Timor-Leste. The persistent foci of Yaws in this 21st century should be considered unacceptable in view of the availability of a simple, safe and cost-effective intervention – a single intra-muscular injection of long-acting Benzathine Penicillin that needs to be given to the patient and all his/her close contacts. Thus, Yaws is amenable to eradication if sufficient efforts are directed towards case detection, treatment and surveillance, along with community awareness. This can be achieved in a definite time-frame through political commitment, allocation of the required resources and effective implementation of the strategy and activities. This will result in significant economic benefits to the affected communities. Thus, there are weighty economic, and ethical considerations to intensify efforts towards Yaws eradication.

With the above aims in view, an intercountry workshop on “Treponematoses including Yaws” was organized by the WHO Regional Office for South-East Asia in Jakarta, Indonesia, 14-16 December 2004. At this workshop the draft framework of a Regional Strategic Plan and an Advocacy and Resource Mobilization plan was developed. In order to review the progress of Yaws eradication in the Region and to finalize
the Regional Strategic Plan for 2006-2010, an intercountry meeting was organized at Bali, Indonesia on 19-21 July 2006.

The meeting was attended by representatives from India, Indonesia and Timor-Leste, as well as representatives from three partner agencies – GTZ-Indonesia, the Netherlands Leprosy Relief and The Leprosy Mission International.

The following were the objectives of the meeting:

(a) To review the progress of Yaws eradication in the Region, identify constraints and possible solutions;

(b) To finalize the Regional Strategic Plan and develop the framework for country-specific plans of action, and

(c) To identify mechanisms for resource mobilization.

The meeting was chaired by Dr Hernani, National Programme Manager for Leprosy and Yaws, Indonesia, and co-chaired by Dr B.P. Malani, State Nodal Officer, Yaws Eradication Programme, Chattisgarh State, India. Dr Fernando Freitas de Jesus Bonapate do Rogo, Acting Head of Communicable Disease Control, Ministry of Health, Timor-Leste was nominated as rapporteur.
Dr Georg Petersen, the WHO Representative to Indonesia opened the meeting and read out the address of Dr Samlee Plianbangchang, Regional Director, WHO South-East Asia Region. In his address the Regional Director stated that Yaws remains a focalized public health problem in only three countries – India, Indonesia and Timor-Leste and simple cost-effective tools are available to detect and cure the disease. Hence, Yaws is amenable to eradication and he had taken the initiative to declare it as a regional priority. India has been carrying out a successful Yaws eradication programme since 1997, which resulted in a dramatic decline of Yaws from a peak of 3 571 cases in 1996 to nil cases since 2004. He called upon Indonesia and Timor-Leste to draw lessons from the India programme and further strengthen the Yaws programme in their respective countries. Some of the main issues and challenges include the need for establishing effective surveillance, capacity building of general health staff, improving active case detection, providing prompt treatment, creating community awareness and mobilizing political commitment and adequate resources. The continued occurrence of Yaws, a disease predominantly affecting the most marginalized groups in remote communities should be considered a sign of backwardness. He said “All of us need to gear ourselves to take up this challenge and implement vigorous and sustained activities in order to achieve the eradication goal by 2010”.

- Dr T.Indriano, Secretary to Director-General, Disease Control and Environmental Health, Ministry of Health, Indonesia inaugurated the workshop on behalf of Dr I. Nyoman Kandun, Director-General, Communicable Diseases Control & Environmental Health, Indonesia. Presenting the salient features of the Yaws control programme in Indonesia, he assured WHO and the participants that the Government of Indonesia is fully committed to the eradication of Yaws and requested the support of WHO and other partners in strengthening national efforts.
Yaws remains a significant health problem in three countries, namely, India, Indonesia and Timor-Leste, where it primarily affects people living in remote areas. Thanks to an effective Yaws eradication programme launched in 1997, Yaws cases in India declined from a peak of 3571 cases in 1996 to only 46 cases in 2003 and nil cases from 2004 till date. With 4015 cases reported in 2004 and 2560 cases reported in 2005, Indonesia is the country with the highest burden of Yaws in the Region. Reliable data are not available from Timor-Leste but about 500-1 000 cases are estimated annually.

However, Yaws is immensely amenable to eradication due to a number of favorable factors – there is no animal reservoir, only a few localized foci of infection remain, a single intra-muscular injection of long-acting penicillin completely cures the disease and the diagnosis of Yaws can be done clinically with minimum training of staff and through community education.

The eradication goal can be achieved since the strategy is simple – early case detection and prompt treatment. The key elements of the strategy are:

- Active case detection in affected areas;
- Prompt treatment of cases and their close contacts;
- Creating community awareness and capacity building of health staff.

Some of the issues and challenges that have hampered Yaws eradication historically include the lack of an effective mechanism for surveillance and case detection, limited political commitment and
resources, limited capacity of general health staff to recognize and treat Yaws, ensuring drug supply and logistics management, creating community awareness through appropriate advocacy/IEC campaigns and extending the services to remote and hard-to-reach areas.

India has provided evidence that focussed, systematic and accelerated activities for a few years can result in eradicating Yaws. Indonesia and Timor-Leste need to accord high priority to Yaws and take steps to strengthen the programmes so that Yaws can be eradicated from the Region. The meeting of partners on ‘Tropical Diseases Targeted for Elimination/Eradication’ organized by WHO in Bangalore, India in November 2005 was useful in generating interest among some donors. The “Regional Initiatives for Tropical Diseases Targeted for Eradication/Elimination” is an agenda item at the Regional Committee meeting scheduled in Dhaka, Bangladesh on 22-25 August 2006.
Control of endemic treponematoses including Yaws was one of the first programmes launched by WHO soon after its establishment in 1948. A successful Global Control of Treponematoses (TCP) programme was jointly supported by WHO and UNICEF from 1952-1964. During this 12-year period, >50 million people in 46 countries were treated resulting in a 95% decrease in prevalence. However, the thrust was decelerated thereafter by poor integration of the vertical programme with the basic health services that resulted in continuation of Yaws in many countries and its resurgence in a few countries.

There are several factors favouring eradication of Yaws such as the absence of animal reservoir, a highly effective intervention – a single injection of long-acting penicillin, feasible and well-validated serological tests and no proven microbial resistance except in rare cases. Some of the obstacles to achieving eradication are the latent stage of infection that can cause relapses, asymptomatic or low symptomatics in low prevalence areas, the fact that the disease is non-fatal and hence does not receive adequate attention and the fact that the disease is primarily remaining in remote areas among neglected communities.

The meeting noted that Yaws eradication has been identified as a priority in the South-East Asia Region and suggested the following actions in addition to routine activities like capacity building, case detection, treatment, supervision and monitoring:

(a) precise mapping of affected areas;
(b) to advocate Yaws eradication as an indicator of PHC effectiveness;
(c) plan for a Yaws eradication programme as part of health system development;
(d) obtain better data on Yaws through integrated disease surveillance mechanisms;
(e) joint/integrated activities with other programmes;
(f) better coordination with health development agencies working in poor and remote areas, and
(g) include operational research as a component.
5.1 India

In India, eradication of Yaws was one of the goals to be achieved as per the National Health Policy, 2002. The Yaws control programme was converted and upgraded as an eradication programme in 1997 with intensified activities in 49 endemic districts of 10 states. The strategy included active “case search” campaigns twice a year, house-to-house visits by trained multi-purpose workers and examination and treatment of reported cases by medical officers. The population coverage of the search campaigns was >80%. This resulted in a dramatic decline of Yaws as shown in Figure 1 below.

Figure 1: Trends of reported Yaws cases in India, 1996-2005

Source: India, National Institute of Communicable Diseases

Thus, India has not reported any new case of Yaws since the beginning of 2004. The zero-incidence has been validated through annual appraisals in the endemic states/districts.
The progress of Yaws eradication was periodically reviewed by the National Task Force and at regular review meetings convened by State Programme Officers. Three independent appraisals have been conducted in the last five years.

India has achieved Yaws elimination i.e. no new infectious case and is aiming at Yaws eradication by 2008 i.e. zero-incidence+no evidence of sero-positivity in children less than 5 years of age.

5.2 Indonesia

In Indonesia, the Treponematoses Control Programme (TCP) was launched during 1950-1952 and the Treponematoses Control Programme Simplified (TCPS) from 1952-1980. A “Crash” Yaws Control Programme was implemented from 1980-2000. Thereafter, Yaws control was integrated with the leprosy programme and in 2003 further integrated with the water and sanitation programme.

However, the programme suffered due to lack of focus and insufficient resources. During the last five years, the cases reported country-wide fluctuated between 2000 – 4500, but there are deficiencies in the reporting system. Hence, there is a possibility of under-reporting.

The following are some of the operational problems – inadequate knowledge/skills of doctors/health workers, weak programme management skills, inadequate data flow from the periphery, non-accessibility of services by patients living in remote areas, unhygienic living conditions and insufficient political commitment and budget provisions. It was mentioned that the decentralized health reform system in the country had posed some problems such as lack of attention to diseases like Yaws from the local government.

The government is giving increasing attention and priority to Yaws and has requested WHO to advocate for enhanced political commitment and allocation of resources. It is felt that the future lies in integrating Yaws eradication with leprosy and other neglected tropical diseases through integrated activities like advocacy, IEC, training and integrated surveillance and monitoring.
The national programme has developed a draft plan of action for 2006-2010.

The national presentation of Indonesia was supplemented by presentation from the South-East Sulewasi and Papua provinces.

**South-East Sulawesi** accounts for the second highest burden of Yaws in Indonesia. It reported 173 new infectious cases in 2005, 378 cases in 2004 and 83 cases in 2003. The province also has a substantial number of non-infectious cases reported each year. The Yaws programme is constrained due to insufficient funds.

**Papua** is Yaws-endemic and annually reports cases but unfortunately the data are incomplete since nearly 60% of the districts did not send reports in 2005. The programme is integrated into the health centre and drugs are available. However, improving the recording and reporting system is a high priority.

### 5.3 Timor-Leste

Reliable data on Yaws are not available though the disease is being reported from at least six of the 13 districts. About 500 cases are estimated to occur annually.

WHO supported a study on screening of 280 pregnant women who were tested for VDRL. Of the 280, 70 were positive for VDRL but only three were associated with syphilis. This would suggest the possibility of Yaws infection at least in a proportion of the remaining positives.

Being a new country which is in the process of building its health infra-structure and manpower, Timor-Leste has not be able to give the required priority to Yaws compared to other diseases. However, Yaws has been included in an integrated project along with leprosy, lymphatic filariasis, and soil-transmitted helminthiasis. With assistance from WHO, a draft national plan for Yaws eradication has been developed.
6
Other Issues Pertinent to Yaws Eradication

6.1 Experiences of Papua New Guinea (PNG)

The Yaws control programme in Karkar island was started in 1955 on a small scale and from 1962-1977, selective treatment campaigns were conducted. In 1978, a serological survey showed a prevalence of 2-22%.

In late 1978, mass treatment campaigns were conducted and >95% of the population treated. However, in 1988, an outbreak of Yaws occurred in Marup village and this prompted a special study of this village with two objectives:

- To document the response of children to treatment through pre-treatment clinical examination, serological profile and post-treatment reviews, and
- To identify factors which may contribute to the persistence of Yaws.

The study methods included Dark Field Microscopy and serology using various tests, treatment success score and evidence of relapse.

The pre-treatment results showed that 32 of 35 cases were positive with Dark Field Microscopy (DFM). Out of 39 cases subjected to serology tests, 26 were VDRL positive, 30 were Treponema Pallidum Hemagglutination Test (TPHA) positive, 35 were Florescent Treponema Antibody Absorbtion (FTA-ABS) positive.

All the villagers were treated with WHO-recommended Benzathine Penicillin injections. The post-treatment results showed that 11 of the 39 children had serological relapse or re-infection. Follow-
up studies done in 1990 showed that seven of the original 39 cohorts had clinical Yaws and four of the 11 showing serological relapse developed clinical relapse.

In this small study, the initial investigation confirmed reduced penicillin sensitivity and the risk of Yaws relapses. The causes for this need to be investigated and the programmes should be aware of this risk.

6.2 Partnerships for Yaws control: some examples

GTZ-Indonesia is supporting a pilot project in Alor district of East Nusa Tenggara (NTT) province integrating Yaws control with neglected tropical diseases. The project is called ‘GTZ SISKES PLUS’ - Phase-3 / 2006-2009.

The project aims at the following outputs (1) improved clinical training and better services at Puskesmas (Primary Health Centre) and hospital levels; (2) strengthened clinical standards and norms; (3) Review of IEC strategies; (4) conducting research on human reproductive rights, and (5) communicable disease control with the focus on neglected diseases; Under this, the focus will be on Elimination of Lymphatic filariasis and Eradication of Yaws. It is proposed to roll-out the experiences of Alor district on LF elimination to other districts of NTT and include Yaws detection/treatment in the province.

The rationale behind the decision of GTZ to include Yaws is that NTT is the province accounting for the highest burden of Yaws in the country, with eight of the 16 districts and 129 of the 27617 villages reporting Yaws. In 2005, NTT reported 1908 new infectious cases of Yaws. Since there is insufficient funding for Yaws and there are no external agencies supporting Yaws, GTZ decided to provide support in the following areas (a) integration of LF and Yaws; (b) Training on Yaws detection/treatment; (c) health promotion; (d) advocacy and social mobilization; (e) monitoring, and (f) assistance in the development of strategies and guidelines to integrate neglected diseases, namely leprosy, LF, STH and Yaws.
6.3 Experiences of the Buruli Ulcer Initiative in mobilizing resources

Buruli ulcer is caused by Mycobacterium ulcerans. Like Yaws, it affects the skin and bones, primarily affects children, has low mortality but a high disability rate. However, unlike Yaws which has a simple and cheap treatment, the treatment of buruli ulcer is complex involving a combination of antibiotics, and surgery. The disease is endemic in about 30 countries of the world, mainly in Africa.

WHO initiatives related to Buruli ulcer advocacy and resource mobilization include (a) Organization of an international conference on buruli ulcer control and research in 1998; (b) An annual meeting of endemic countries and partners is held in Geneva in March every year; (c) Organization of regional and inter-country meetings at country level, and (d) The World Health Assembly adopted a resolution on the subject in 2004.

With regard to mobilization of resources, the Buruli ulcer initiative receives direct funding from the Nippon Foundation of Japan through WHO. At country level, other NGOs support specific activities like training and development of information materials. Indirect mobilization is mainly through advocacy with national governments, development partners, NGOs and Researchers.

Over the years, buruli ulcer has attracted much attention as highlighted by the fact that between 1950-1980, there were a number of publications on Yaws and Buruli ulcer.

Figure 2: PubMed Publications on Yaws and Buruli ulcer

![PubMed Publications on Yaws and Buruli ulcer](image-url)
of publications on Yaws and very few on buruli ulcer. However, since 1990, the number of publications on buruli ulcer are far more than on Yaws. This clearly reflects the relative priority and attention given to the two diseases during these periods. The graph above (Figure 2) provides useful lessons for Yaws eradication – the need for increased advocacy and generation of interest, the need for creation of global and regional awareness and information that Yaws is fully curable and potentially eradicable, and the need to explore the possibility of piggy-backing with other programmes like leprosy and LF elimination.

6.4 Independent appraisals of Yaws elimination/eradication in India

Elimination of Yaws is defined in India as nil reporting of new infectious cases and eradication of Yaws is defined as no-seroactivity to Rapid Plasma Reagent (RPR)/VDRL in <5 years children, after achieving ‘nil’ reporting for three years.

Yaws eradication in India has followed a three-phase approach (a) Attack phase which included an active case detection and treatment strategy covering >85% population in endemic areas; (b) Maintainance phase where annual validation appraisals were conducted to confirm nil reporting, and (c) Elimination/Eradication phase where the emphasis will be on routine surveillance, sero-surveys and independent appraisals.

Four independent appraisals have been conducted in 2000, 2002, 2004 and 2006. Each appraisal team consisted of one public health expert, one dermatologist and one microbiologist. Each team visited the state headquarters, one district in each state, two PHCs in each district, one sub-centre in each PHC and two villages per sub-centre and in each village 20 community members were interviewed. The team reviewed all reports, examined cases among children/adults in the community, examined suspect cases, collected clinical material and confirmed availability of penicillin, IEC materials etc.

It is proposed to conduct a sero-survey in the 1-5 years age-groups. The sample size determined is 5 662 children and the test selected is RPR. The survey will commence in 2006 and continue until 2008. If there is no sero-positivity in the sample by 2008, India proposes to declare eradication of Yaws.
7

The Strategic Plans for
Yaws Eradication (2006-2010)

7.1 Regional Strategy

The draft Regional Strategic Plan for Yaws Eradication 2006-2010, lists the factors favouring Yaws eradication – there is no animal reservoir, the disease occurs only in humans; only a few localized foci of infection remain in the Region; availability of a potent cost-effective intervention and the diagnosis can be made on clinical grounds with minimum training of health staff.

The plan aims at the goal of eradication of Yaws in the Region by 2012. Eradication is defined as absence of new cases and certification three years after achieving nil cases. The objectives are (1) to detect and treat all Yaws cases and their contacts; (2) to interrupt transmission and (3) to prevent disability and minimize the suffering and economic impact on the affected populations. The key elements of the strategy include active case-finding and treatment of cases/contacts, mobilization of community support through IEC campaigns, capacity building of health staff, surveillance, operational research and monitoring/evaluation.

7.2 National Strategies

The National Strategic Plan of Indonesia will focus on the following activities: Collection of surveillance reports and mapping of cases from areas currently reporting and those that have reported Yaws during the past three years; development of appropriate advocacy materials for policy makers; building partnerships; establishment of National Task Force for Yaws; capacity building of health staff in affected provinces; carrying out active case-finding and ensuring prompt treatment of cases.
and contacts; close supervision and monitoring, and conducting operational research.

The **National Strategic Plan of Timor-Leste** will focus on the following activities: Identification of Yaws-affected districts through community based surveillance; advocacy targeting policy makers and others like health staff, religious leaders, NGOs and media; capacity building of health staff and orientation of key groups like teachers, religious leaders and community leaders; development of a logistics plan, including review of current stocks of Injection Benzathine Penicillin and procurement plan; preparation of health promotion materials and community mobilization.

The activity plans of Indonesia and Timor-Leste are at Annex 3 and 4 respectively.
Dr Yudista Nita from GTZ thanked WHO for inviting GTZ and informed that GTZ will closely collaborate with WHO and national/provincial health authorities in NTT in order to intensify Yaws eradication efforts. GTZ will extend their support from Alor to other districts in phases through integration of Yaws with LF elimination activities.

Dr Hasibul Yamin, Representative of the Netherlands Leprosy Relief (NLR), said that this workshop was a learning and information provider and he saw that the disability prevention/care for Yaws was similar to leprosy. He assured that he will brief the NLR Country Director about the Yaws problem in Indonesia since the decision regarding support has to be taken at that level.

Mr Alex Frans, representative of The Leprosy Mission International (TLMI) spoke on similar lines like NLR and felt that some Yaws-related activities like training and disability care can be easily combined with leprosy. He also assured that he will brief his superiors in Indonesia and Timor-Leste and request them to explore supporting Yaws activities along with leprosy.
Conclusions and Recommendations

The following were the recommendations of the workshop:

(1) The Regional Office to finalize the Regional Strategy for Yaws Eradication 2006-2010 and distribute it to the national authorities of India, Indonesia and Timor-Leste.

(2) Indonesia and Timor-Leste to finalize their respective National Strategic Plans, obtain formal approval and commence implementation at the earliest.

(3) WHO to contact prospective partners and explore additional resources for implementation of the Yaws eradication activities.
Dr I. Nyoman Kandun, Director-General, Disease Control and Environmental Health, Ministry of Health, Indonesia, was the Chief Guest at the concluding session.

The Regional Strategy for Yaws eradication 2006-2010 as finalized at the meeting was presented and was duly adopted.

The framework of the National Five-Year Strategic Plans as discussed and finalized during group work were presented and duly endorsed.

Dr I. Nyoman Kandun in his concluding remarks said that the presence of neonatal tetanus and Yaws in Indonesia or anywhere else is a sign of the failure of the health systems. He assured that Indonesia will take up the Yaws Eradication Programme with all vigour and sincerity and requested the support of WHO, GTZ and other partners.

Dr Jai Narain, Director, Department of Communicable Diseases, WHO/SEARO expressed that this was one of the most productive workshops he had attended and thanked all the participants from the three countries and also representatives from GTZ, NLR and TLMI for their active participation and interest in supporting Yaws eradication.

Dr Derek Lobo, Regional Adviser, WHO/SEARO proposed a vote of thanks.
Annex 1

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### Programme

**Wednesday, 19 July 2006**

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<td>Perspectives on Yaws Eradication: Lessons from the Past – Prof. André Z. Meheus, Chairman, Epidemiology and Community Medicine, University of Antwerp, Belgium</td>
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**Thursday, 20 July 2006**

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<td>09.00-10.00</td>
<td>Presentation of the Draft Regional Strategic Plan for Yaws Eradication: 2006-2010</td>
</tr>
<tr>
<td>10.30-12.30</td>
<td>Group Work - Preparation of the Framework of 5-year National Strategic Plans</td>
</tr>
<tr>
<td>14.00-15.00</td>
<td>Group Work Continued</td>
</tr>
<tr>
<td>15.00-17.00</td>
<td>Field Visit</td>
</tr>
</tbody>
</table>

**Friday, 21 July 2006**

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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</thead>
<tbody>
<tr>
<td>09.00-09.30</td>
<td>Validation and Certification of Yaws Elimination/Eradication: India Report - Dr A.C. Dhariwal, Joint Director, NICD-India</td>
</tr>
<tr>
<td>09.30-10.30</td>
<td>Adoption of Draft Regional Strategic Plan</td>
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<tr>
<td></td>
<td>Presentations of the Framework of Country Specific Strategic Plans: 2006-2010</td>
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<tr>
<td>11.00-12.00</td>
<td>Conclusions/Recommendations/Follow-up Action</td>
</tr>
<tr>
<td>12.00-12.30</td>
<td>Closing</td>
</tr>
</tbody>
</table>
### Activity Plan under National Strategic Plan 2006-2010, Indonesia

#### Annex 3

**Activity planning**

<table>
<thead>
<tr>
<th>SN</th>
<th>Activity</th>
<th>Tasks</th>
</tr>
</thead>
</table>
| 1  | Identification of affected area in focus which is currently reporting new cases | a. Collection of routine and surveillance reports.  
b. Province, district and sub-district wise mapping (cases) |
| 2  | Identification of previously affected areas which have not reported new cases in the last three years | a. Collection of routine and surveillance reports.  
b. Province, district and sub-district wise mapping (cases) |
| 3  | Increase political commitment at various levels and mobilize/ensure resources | a. Developing appropriate advocacy materials for politicians and decision makers.  
b. Advocacy |
| 4  | Build partnerships and intersectoral collaboration                        | a. Identify stakeholders  
b. Establish National Task Force  
c. Conduct advocacy meeting  
d. Conduct technical meeting |
| 5  | Build capacity of health workers (in case management, community mobilization, programme management) | a. Review the existing training materials and adapt as needed or develop new materials  
b. Conduct training |
| 6  | Increase community awareness (Advocacy and IEC activities)               | a. Review the existing IEC materials and adapt as needed or develop new materials  
b. Conduct IEC through different channels |
| 7  | Plan and carry out active case finding and treatment campaigns (“search and treat” missions), at least once annually | a. Build a team including village health workers, staff at health centre and district level  
b. Conduct case finding  
c. Do treatment |
<table>
<thead>
<tr>
<th>SN</th>
<th>Activity</th>
<th>Tasks</th>
</tr>
</thead>
</table>
| 8  | Provide supportive supervision and monitoring | a. Develop checklist for supervision  
|    |                                              | b. Conduct supervision                                               |
| 9  | Carry out surveillance                       | a. Improve the integrated surveillance system                        |
|    |                                              | b. Collect and analyze the report from the intervention team         |
| 10 | Conduct Operational Research                 | a. Identify areas/issues for operational research                    |
|    |                                              | b. Conduct operational research in collaboration with other research |
|    |                                              |     institutions                                                      |
| 11 | Organize external appraisal, validation      | a. Establish national task force                                      |
|    | missions, followed by certification          | b. Undertake external appraisal, validation missions                  |
|    |                                              | c. Certification organized once elimination reached                  |
### Budget and timeline for five years

<table>
<thead>
<tr>
<th>SN</th>
<th>Activity</th>
<th>Budget (Rp. ‘000,000)</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
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<tbody>
<tr>
<td>1</td>
<td>Mapping</td>
<td>Rp. 760</td>
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<td>2</td>
<td>Advocay</td>
<td>Rp. 6,400</td>
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<td>3</td>
<td>Training</td>
<td>Rp. 3,040</td>
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<td>4</td>
<td>ACD and Treatment</td>
<td>Rp. 6,540</td>
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<td>5</td>
<td>Coordination meeting</td>
<td>Rp. 15,200</td>
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<td>6</td>
<td>IEC</td>
<td>Rp. 5,400</td>
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<td>7</td>
<td>Drugs</td>
<td>Rp. 3,750</td>
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<td>8</td>
<td>Serological surveillance</td>
<td>Rp. 5,900</td>
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<td>9</td>
<td>Supervision</td>
<td>Rp. 1,900</td>
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<td>10</td>
<td>Operational costs</td>
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<td>Operational research</td>
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<td><strong>Sub-total for 5 years</strong></td>
<td><strong>Rp. 52,040</strong></td>
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<td></td>
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<td><strong>US$ 5,586,900</strong></td>
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<td>12</td>
<td>Technical support</td>
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<tr>
<td></td>
<td>• National (22 months)</td>
<td><strong>US$ 220,000</strong></td>
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<td></td>
<td>• International (12 months)</td>
<td><strong>US$ 120,000</strong></td>
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<td></td>
<td><strong>Total budget for 5 years</strong></td>
<td><strong>US$ 5,926,900</strong></td>
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## Annex 4

### Activity Plan under National Strategic Plan, Timor-Leste

<table>
<thead>
<tr>
<th>SN</th>
<th>Activity</th>
<th>5-year budget (US$)</th>
<th>Tasks</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Identification of Yaws-affected districts</td>
<td>-</td>
<td>Six districts with history of Yaws</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Identify Yaws cases through community based surveillance</td>
<td></td>
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<tr>
<td>2</td>
<td>Mobilize political commitment at various levels and mobilize resources</td>
<td>25,000</td>
<td>Advocacy to decision makers at all levels within MoH</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Advocacy to the other sectors related to health, community and religious leader, NGOs and media</td>
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<tr>
<td>3</td>
<td>Build capacity</td>
<td>150,000</td>
<td>Identify officer responsible for Yaws eradication at national and district levels</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Prepare training materials</td>
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<td></td>
<td></td>
<td></td>
<td>Organize training program for HW</td>
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<td></td>
<td></td>
<td></td>
<td>Conduct refresher training</td>
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<tr>
<td>4</td>
<td>Logistic preparation</td>
<td>-</td>
<td>Review the current available penicillin, supporting drugs, and emergency kits for the treatment of Yaws</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Procurement of penicillin and supporting drugs as necessary</td>
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<td></td>
<td></td>
<td></td>
<td>Distribution of drugs to the health services and hospitals</td>
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<tr>
<td>SN</td>
<td>Activity</td>
<td>5-year budget (US$)</td>
<td>Tasks</td>
<td>Year 1</td>
<td>Year 2</td>
<td>Year 3</td>
<td>Year 4</td>
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<tr>
<td>5</td>
<td>Community mobilization</td>
<td>100,000</td>
<td>Prepare health promotion materials</td>
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<td></td>
<td></td>
<td></td>
<td>Organize training programme for community and religious leaders, teachers and NGOs</td>
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<tr>
<td>6</td>
<td>Case finding and treatment</td>
<td>400,000</td>
<td>House-to-house visits by health volunteer</td>
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<td></td>
<td></td>
<td></td>
<td>Refer Yaws cases and contacts for treatment</td>
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<tr>
<td>7</td>
<td>Surveillance</td>
<td>25,000</td>
<td>Develop recording system</td>
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<td></td>
<td></td>
<td></td>
<td>Integrate Yaws reporting with IDS</td>
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<td></td>
<td></td>
<td></td>
<td>Train DPHO-CDC and health centre staff on the integration of the system</td>
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<tr>
<td>8</td>
<td>Monitoring</td>
<td>15,000</td>
<td>Prepare checklist</td>
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<td></td>
<td></td>
<td></td>
<td>Field visit by national officer to the district on a quarterly basis</td>
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<td></td>
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<td></td>
<td>Field visit by DPHO-CDC every month</td>
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<tr>
<td>9</td>
<td>Evaluation</td>
<td>20,000</td>
<td>Internal evaluation twice a year</td>
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<td>External evaluation every two years</td>
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<td></td>
<td><strong>Total</strong></td>
<td><strong>735,000</strong></td>
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</table>