COVER PAGE

Message from the Hon. Minister of Healthcare & Nutrition,

The vision of the Government of Sri Lanka has been to eliminate malaria from Sri Lanka. I have personally been actively involved in the control of malaria in this country since the first time I assumed duties as Minister of Health. It is my pleasure to note that the Anti Malaria Campaign under my directions has been able to control the incidence of malaria in the country. Our programme has already achieved the Millennium Development Goals pertaining to malaria.

I am proud that the Ministry of Healthcare & Nutrition is now embarking on a strategy of phased elimination of malaria from Sri Lanka. I take this opportunity to wish the Anti Malaria Campaign & the Ministry of Healthcare & Nutrition success in its efforts to eliminate malaria from Sri Lanka. May I take this opportunity to reiterate my personal support and commitment to eliminate malaria from Sri Lanka and the support of the Government of Sri Lanka in this endeavor.

Hon. Nimal Siripala De Silva,
Minister of Healthcare & Nutrition.

Message from the Secretary, Ministry of Healthcare & Nutrition

The Strategic Plan for Phased Elimination of Malaria from Sri Lanka has been developed through the active participation of all stakeholders following detailed consultations. The successful implementation of this plan will result in the elimination of malaria from Sri Lanka. There is no doubt that this will be a singular achievement for the Ministry of Healthcare & Nutrition and will contribute to the realization of one of my own personal goals.

The elimination of malaria will contribute significantly to improvements in the health of people, particularly in the rural areas of this country and will significantly contribute to their economic prosperity. I have no doubt that this is a very challenging task and I request the cooperation of all to realize the objectives of this plan.

I take this opportunity to wish the Anti Malaria Campaign and the Provincial Malaria Control Programmes success in their efforts.

Dr. H. A. P. Kahandaliyanage,
Secretary,
Ministry of Healthcare & Nutrition.

Executive Summary

The Malaria Control Programme has achieved significant successes during the recent past. During the year 2007, the lowest number of malaria positive patients was reported after the success of the eradication campaign recorded in 1963. The number of reported malaria positive patients has continued decline since 2003. The decline in morbidity has been also accompanied by zero mortality reported from the disease over the last three years, excluding one malaria death in 2007. The unstable nature of disease seen in the country has resulted in the country experiencing many devastating epidemics from ancient times. However, the reduction in malaria reported from the country during the recent past has not been due to a sudden unstable decrease in malaria but due to a gradual reduction in both morbidity and mortality reported over several years.

In view of the positive achievements of the programme, it is felt that the programme should prepare a strategic plan for the period 2008 – 2012, which would facilitate the launching of a pre-elimination phase malaria control programme in the country resulting in the elimination of *P. falciparum* malaria from the entire country excluding the conflict affected districts, and the elimination of *P. vivax* malaria from nearly 75% of the land area of the non-conflict affected districts. Therefore, by the end of the five year period *P. vivax* malaria would be limited to 25% of the land area in non-conflict affected districts and both types of malaria would be seen in the conflict affected districts (see Annexure for districts). The success of such a pre-elimination phase programme in the country would eventually result in preparing the ground work necessary to launch a malaria elimination programme in the country after 2012.

The Strategic Plan will include the following key components;

- Introduction
- The Ministry of Healthcare & Nutrition
- Vision of the programme
- Mission of the programme
- Strategies
- Objectives
- Activities
- Plan of action & estimated budget
- Organizational structure

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Abbreviations

ACD	Active Case Detection
ACT	Artemisinin Combination Therapy
AIDS	Acquired Immunodeficiency Syndrome
AMC	Anti Malaria Campaign
APCD	Activated Passive Case Detection
CCP	Consultant Community Physician
CME	Continuing Medical Education
CM & PCU	Case Management & Parasite Control Unit
COMBI	Communication for Behavioral Impact

D/AMC	Director, Anti Malaria Campaign
DD/AMC	Deputy Director, Anti Malaria Campaign
DDT	dichloro diphenyl trichloroethane
DOTS	Directly Observed Treatment Short Course
EA	Entomological Assistant
GFATM	Global Fund to fight AIDS, Tuberculosis & Malaria
IDA	International Development Assistance
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Net
IVM	Integrated Vector Management
LLIN	Long Lasting Insecticidal Net
MBS	Mass Blood Survey
M & E	Monitoring & Evaluation
MO	Medical Officer
MOH	Medical Officer of Health
GIS	Geographical Information Systems
GN	Grama Niladhari
PCR	Polymerase Chain Reaction
RDT	Rapid Diagnostic Test
P.f or P. falciparum	Plasmodium falciparum
PHFO	Public Health Field Officer
PHI	Public Health Inspector
PHLT	Public Health Laboratory Technician
P. v or P. vivax	Plasmodium vivax
RMO	Regional Malaria Officer
RMO	Regional Medical Officer
SMO	Spray Machine Operator
TSG	Technical Support Group
TU	Training Unit
USAID	United States Agency for International Development
VCU	Vector Control Unit
WHO	World Health Organization

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Listed in alphabetical order

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The Anti Malaria Campaign wishes to acknowledge inputs and comments received from Drs. Kamini Mendis & Shiva Murugasampillay of the Global Malaria Programme and Dr. F. Laihad from SEARO in the preparation of this document.

Introduction

Sri Lanka is an island nation in the Indian Ocean, having a land area of approximately 65,940 square kilometers, and a population of approximately 21 million (Dept. of Census & Statistics, 2007), located close to the southern end of the Indian peninsula. It has a central mountainous zone surrounded by a plain, and experiences a mean temperature of 26ºC –28ºC in the low country, and from 14ºC - 24ºC in the central hill country. For purposes of administration the country is divided into 9 provinces, 25 districts and 321 Divisional Secretary areas. The smallest health administrative unit constitutes a Divisional Secretary Area. For healthcare administrative purposes a Divisional Secretary Area is known as a health area and a Medical Officer of Health is in charge of preventive healthcare in such an area.

Approximately 23% of the country's population inhabits urban areas. The country has a high population density of 298 persons per km^2. Life expectancy is around 75 years and the literacy rate is 96.9% of the population. Sri Lanka had an economic growth rate of 3.9% per year during the period 1981 – 1991 and a significantly higher growth rate of approximately 7 – 8% is currently experienced.

Distribution of malaria in the country

Malaria risk areas in the country are mainly located in the dry zone which occupys the plains located to the North and East of the central mountains and stretching from the South-East to the North-West of the island . The conflict that has affected civilian life in the country during the past two and a half decades has contributed to the conflict affected areas of the Northern and Eastern provinces and the bordering districts of the North Central and Uva provinces being the most malarious districts in the recent past. During the past couple of years, the most number of malaria cases have been reported from the districts of Trincomalee, Vavuniya and Anuradhapura. The most affected groups of people among the populations of these districts are internally displaced people, security forces personnel serving in the districts, construction workers working in rehabilitation projects and agricultural workers. A potential for possible outbreaks also still exists among persons engaged in "slash & burn" type cultivations, illegal gemming in dry zone areas and among people inhabiting conflict areas in the Northern Province.

Recent data has also shown the possibility of outbreaks occurring amongst construction workers engaged in the rehabilitation of areas recently liberated in the Eastern Province and engaged in tsunami reconstruction work. In addition the labour force engaged in the implementation of various development projects in the dry zone of the country could also be at increased risk. This is especially so amongst construction workers engaged in the improvement of infrastructure facilities such as roads, houses etc.

Ministry of Healthcare & Nutrition

Vision

A healthier nation that contributes to its economic, social, mental and spiritual development.

Mission

To contribute to social and economic development of Sri Lanka by achieving the highest attainable health status through promotive, preventive, curative and rehabilitative services of high quality made available and accessible to people of Sri Lanka.

Objectives

1. To empower communities to maintain and promote their health.
2. To improve comprehensive health services delivery and health actions.
3. To strengthen stewardship and management functions.
4. To improve the management of human resources for health.
5. To improve health finance, mobilization, allocation and utilization.

Healthcare provision is by both the public sector and private sector, nearly 60% of the population being provided for by the public sector. In the public sector the Department of Healthcare Services, represented by both the central and provincial healthcare services are responsible for the provision of the entire range of preventive, curative and rehabilitative healthcare services. Over 90% of indoor treatments according to some estimates are provided by the public sector.

The private sector is mainly responsible for the provision of curative services, and has until recently been largely concentrated in urban and suburban areas. In addition to western medicine, Ayurvedic, Unani, Siddha and Homeopathy systems of medicine are widely practiced in the country.

The broad aim of health policy of Sri Lanka is to *increase life expectancy and improve quality of life,* by control of preventable disease and by health promotion activities. Thus in the health system of Sri Lanka priority has been always given to the control and treatment of malaria. The country boasts of a unique healthcare and education system where all healthcare and education including higher education is free of charge. This has resulted in some of the country's health & education indices being among the best among developing nations.

The Sri Lankan Government has continued to provide food stuffs, medicines and other essentials to the population of the conflict-affected areas throughout the conflict that has now continued for twenty five years. In keeping with this policy the Anti Malaria Campaign has continued to provide laboratory items for diagnosis, anti malaria treatment, insecticides necessary for vector control, long lasting insecticidal nets and vehicles necessary for malaria control in these conflict-affected districts.

History and profile of the Anti Malaria Campaign of Sri Lanka.

The rulers of the country recognized the need for effective malaria control on the island even prior to independence. Organized malaria control activities commenced in 1911 when Sri Lanka was still a British Colony with the first Anti Malaria Campaign being set up in Kurunegala. Subsequently, several more units of the Anti Malaria Campaign were established in other highly malarious parts of the country. A major achievement was the dramatic reduction of the countrywide malaria incidence after the introduction of house spraying with DDT (dichloro diphenyl trichloroethane) in 1946. In the year 1958, the Government of the then independent Ceylon launched a malaria eradication programme, in keeping with the WHO recommendations at that time.

Remarkable gains were achieved during the "Attack Phase" of the eradication programme, a near eradication status being reached in 1963 (only 17 cases detected). However, during the subsequent "Consolidation Phase" a major setback was experienced which culminated in a massive malaria epidemic during the years 1967 – 1969. Several factors were thought to be contributory towards the failure. Persistence of several undetected foci of malaria transmission, extensive intra-country population movements particularly related to gem mining, and complacency on the part of many malaria control personnel rank high among these. It has also been reported that adequate financial support was not forthcoming from the authorities at the time when the incidence was extremely low, though concentrated control efforts had to be maintained by the Campaign. Undoubtedly, this factor would have contributed significantly towards the resurgence. The programme which continued on eradication principals for several years was subsequently, reoriented as a control programme which included many elements of the earlier eradication programme. During the past decade or more, the programme has been functioning as a control programme geared at achieving set objectives. Operationally, the Anti Malaria Campaign had a centralized structure till 1989 and functioned as a vertically run programme. However, in 1989 the programme was transformed into a decentralized campaign which was implemented by 9 provincial programmes under the technical guidance of National Anti Malaria Campaign Directorate. The Campaign Directorate is under the purview of the Line Ministry whereas the Provincial Programmes are run by the Provincial Health Authorities.

During the long documented history of malaria in Sri Lanka several major epidemics were experienced. The most devastating of these was the epidemic of 1934 – 1935 during which the districts in the wet zone and the intermediate zone suffered resulting in nearly 1.5 million patients and 80,000 deaths. In the last two decades major epidemics were encountered

during the years 1987 and 1990/92. Major natural determinants of malaria epidemics in Sri Lanka have been the monsoon rains especially the North East monsoon, and also unusually dry weather leading to pool formation in rivers and streams.

The on going conflict situation that has continued in the Northern and Eastern provinces during much of the last two and a half decades, and is presently limited to certain areas of the Northern Province has also emerged as a major determinant of malaria in the country. The conflict has resulted in an important change in the epidemiological pattern of malaria in Sri Lanka. The Northern and Eastern districts which previously had a very low incidence of malaria have shown a sharp increase in malaria incidence recorded particularly during the late nineties. In fact as much as two-thirds of the total malaria cases detected in the country during this period and to date continue to be reported from these Northern and Eastern districts.

Several technical and operational issues have contributed to delaying effective malaria control in the island over the years. Among these are limitations in the effective lifespan of insecticides used for malaria vector control and the spread of chloroquine-resistant *P. falciparum* malaria in the country. Strategies to overcome these issues have been introduced recently and have contributed to reducing the burden of malaria in the country. Among these are a resistance management strategy for residual insecticides through a rotational strategy, and the strict implementation of a strategy to control the use of second line antimalarial drugs. In addition the programme has recently introduced the use of artemisinin based combination therapy (ACT) for uncomplicated falciparum malaria as a strategy to prevent the introduction of multi-drug resistant falciparum malaria into the country.

Among operational issues of concern to the programme at present are the sustaining of political commitment for malaria control at national, provincial and district levels, maintaining adequate cadres in essential sectors to implement an effective nation wide malaria control programme, rehabilitation of primary care institutions in conflict affected areas of the Northern and Eastern Provinces, ensuring adequate infrastructure and logistical facilities for the implementation of an effective malaria elimination programme and effective reorientation of the programme from a successful control programme to a pre-elimination phase programme. Other important issues facing the programme are

1. Operational problems of the Indoor Residual Spraying Programme and Insecticide Treated Mosquito Nets Programme. Particularly
    a. Poor quality of spraying due to inadequate supervision, inadequacy of spraying equipments and spare parts and the need for motivation of spray teams

b. Inadequate vector surveillance due to shortage of skilled personnel, entomological supplies and inadequate number of field work days carried out.

2. Problems related to reducing man vector contact through the use of mosquito nets, particularly poor motivation and inadequate awareness of communities, inadequacy of resources for provision of nets to at risk populations and awareness among populations with regard to the use of mosquito nets.
3. Problems related to elimination of the parasite reservoir due to inadequate surveillance of clinical malaria in both the public and private healthcare sector, the need to sustain continued surveillance of risk populations in a low transmission situation and poor motivation of microscopists.
4. Problems relating to the existing surveillance system which caters primarily to a control strategy and not an elimination strategy.

Special projects to strengthen malaria control

The National Malaria Control Programme has been funded over the years by the USAID, IDA/ World Bank and the Roll Back Malaria Initiative at various times during the past two and a half decades. Presently the programme is funded by the WHO and the GFATM.

WHO

WHO assists the malaria control programme through the provision of technical assistance for capacity building, strengthening of the surveillance system and the provision of critical entomological supplies through the Country Budget. Annual assistance to the programme has amounted to approximately US $ 25000 during the past several years.

Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM)

The National Malaria Control Programme is presently supported by two GFATM Malaria Control Project Grants under the Round 1 & Round 4. The GFATM is committed to provide up to a maximum of US $ 10.9 Million for the period 2003 to 2012. The Projects are jointly implemented through a partnership between the Ministry of Healthcare & Nutrition and Lanka Jathika Sarvodaya Shramadana Sangamaya, an established non-governmental organization in Sri Lanka with the participation of the Lions Clubs International and the Independent Medical Practitioners Association of Sri Lanka. The GFATM Round 1 Malaria Control Project was started in year 2003 and the Round 4 project was started in 2005.

The Round 1 grant provides assistance for malaria control in twelve districts of the Northern & Eastern Provinces of the country and three neighboring districts from the North Central & Uva Provinces. Grant funds are utilized to strengthen active case surveillance through the conducting of mobile clinics in remote localities, to strengthen entomological surveillance in the districts, to provide training to cadres engaged in malaria control activities and medical practitioners on management of malaria patients, to employ essential cadres to carry out an effective control programme, to purchase essential equipment and supplies necessary for effective malaria control including vehicles, to strengthen monitoring and evaluation of the programme and to conduct community awareness programmes.

The Round 4 grant focuses on six districts whose mainly agricultural populations are at risk of epidemics. Grant funds are utilized to strengthen active case surveillance through the conducting of mobile clinics among vulnerable population groups, to strengthen entomological surveillance in the districts, to provide training to cadres engaged in malaria

control activities and medical practitioners on management of malaria patients, to purchase essential equipment and supplies necessary for effective malaria control including vehicles, to strengthen monitoring and evaluation of the programme and to conduct community awareness programmes.

Malaria Control in Sri Lanka 2008 - 2012

Since the establishment of the Anti Malaria Campaign in 1911 it has been responsible for the control of the disease in the country.

Currently the Anti Malaria Campaign, the equivalent of the National Malaria Control Programme is a Specialized Campaign of the Ministry of Healthcare & Nutrition, and comprises the Directorate and twenty district-level Regional Offices. It functions as a decentralized campaign, the Directorate coming under the purview of the Line Ministry of Healthcare & Nutrition (Central Ministry) and the Regional Offices belonging to the nine Provincial Health Administrations.

The Directorate of the Anti Malaria Campaign is responsible for prevention and control of malaria in Sri Lanka. Strategic planning for the National Programme is a function of the Directorate while the twenty two decentralized regional programs are expected to prepare plans of action based on the national Strategic Plan, for the respective districts. Since malaria transmission intensity and malariogenicity show variations within the country and even within the districts, preparation of annual action plans is a local responsibility.

The objectives of the previous Strategic Plan for the period 2005-2009 have been already achieved before the completion of the said period. In most of the 25 districts of the country malaria transmission rates are lower than those stipulated by the WHO as necessary for the launching of an elimination programme. In addition ad hoc surveys carried out by the programme have shown that private pharmacies in the country no longer stock anti malarial treatments as these treatments cannot be sold due to there being no demand for such medicines. A similar picture is reported by private practitioners working in many parts of the country. Hence, the present revised Strategic Plan for the period of 2008-2012 is a plan designed to restructure the National Malaria Programme from a successful control programme to a pre-elimination phase programme which will prepare the country to launch an elimination programme.

The malaria disease burden has come down significantly during the last few years and the country experiences mainly sporadic cases reported from some parts of the country and occasional outbreaks. The most difficult task faced by the programme is the early containment of these focal outbreaks through strengthened surveillance and implementation of a rapid response capacity. Presently outbreaks are recognized some time after their occurrence and in many instances too late for early remedial action. The present Strategic Plan attempts to address the most important issues, which need to be addressed to convert a successful control programme into a pre-elimination phase programme within the first two

years. The successful implementation of this pre-elimination programme, spelt out herein is expected to reorient and reorganize the National Malaria Programme into a programme capable of implementing a successful malaria elimination programme in the country.

The successful implementation of an elimination programme in the country is also dependent on the ongoing conflict situation in the Northern Province. Currently the conflict situation is limited to parts of four districts occupying the Wanni region of the Northern Province out of a total of twenty five districts in the country as a whole. The implementation of a successful elimination programme therefore will be more challenging and require additional resources. Taking this in to consideration the country will be divided into three zones (see figure 1) on district lines to facilitate a phased elimination of malaria from the country as follows;

a. **Stable (Non-conflict) districts**

This area will include the districts of Puttalum, Kurunegala, Matale, Anuradhapura, Polonnaruwa, Kandy, Nuwara Eliya, Badulla, Moneragala, Hambanthota, Matara, Galle, Kaluthara, Colombo, Gampaha, Ratnapura and Kegalle.

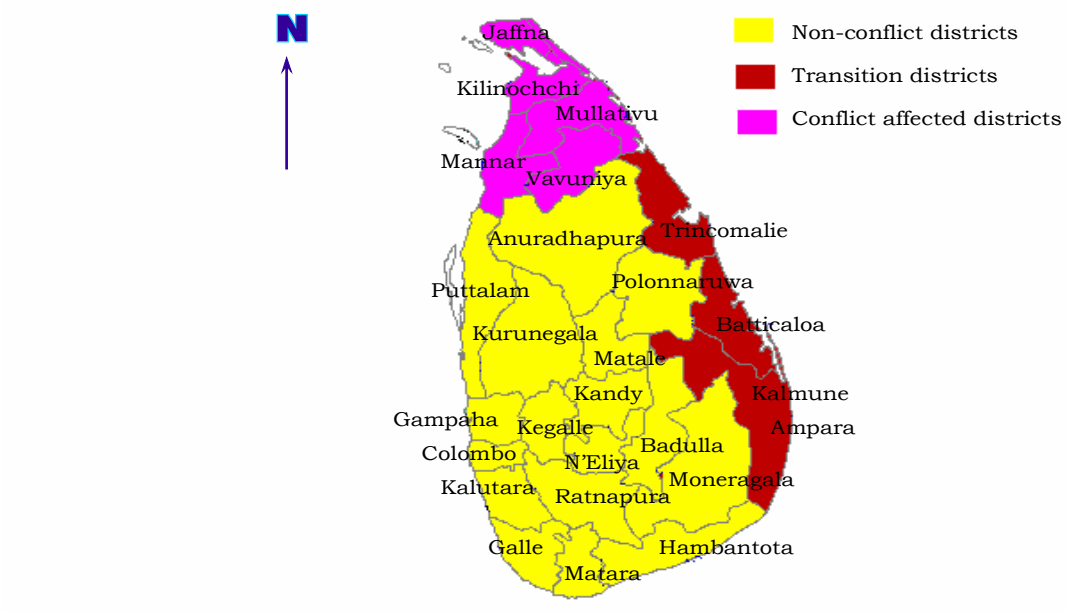
b. **Transition districts (recently cleared areas)**

This area will include the districts of Trincomalee, Batticaloa, Ampara and Kalmunai

c. **Conflict affected districts**

This area will include the districts of Jaffna, Mannar, Kilinochchi, Mulaithivu and Vavuniya.

Fig.1 Distribution of malaria districts in three zones



The districts included in the non-conflict zone of the country are areas which are least affected by the ongoing conflict in the Northern part of the country. In all of these districts it is possible to organize and carry out any activities relating to malaria control. As a result of implementing organized malaria control in these districts over the past several years it has become possible to decrease all of the malaria indices in these districts to levels below the WHO defined thresholds necessary for the launching of an elimination phase.

The districts included in the transitional zone are those areas which have been affected for a long period by the conflict, but have recently been liberated and civil administration restored. This zone is located mainly to the east of the country and includes the eastern districts of the country. It is believed that these districts will require more strengthening of infrastructure in preparation for the elimination phase. Hence, only a phased elimination of falciparum malaria is targeted during the five year period when a considerable strengthening of malaria surveillance and treatment facilities will be carried out.

In the districts located in the conflict zone at present also reasonable success in controlling malaria appears to have been achieved through the malaria control programmes launched among civilians, security forces personnel and rebel groups. Although, continuous supply of medicines and logistical requirements necessary for malaria control has not been possible, a relatively regular supply has been maintained. Importantly the field health services have continued to implement a malaria control programme in many parts of the conflict affected districts that has resulted in a decrease of malaria cases reported from in these districts. However the reliability of the data coming out of this area is questionable and considerable work remains to be done among the population living in this area.

Considering the above it is planned to carry out a phased elimination programme in these three groups of districts with the objective of reaching the following endpoints;

<table>
<tr><th></th><th colspan="3">Activities/Operations
(End-points/outcomes)</th></tr>
<tr><th>Period (Years)</th><th>Stable (non conflict) districts</th><th>Transitional districts</th><th>Conflict districts</th></tr>
<tr><td>Years 1 & 2 (2008 – 2009)</td><td>Pre-elimination phase operational in all the districts

(Pre-elimination phase completed)</td><td rowspan="2">Pre-elimination phase operational in all the districts

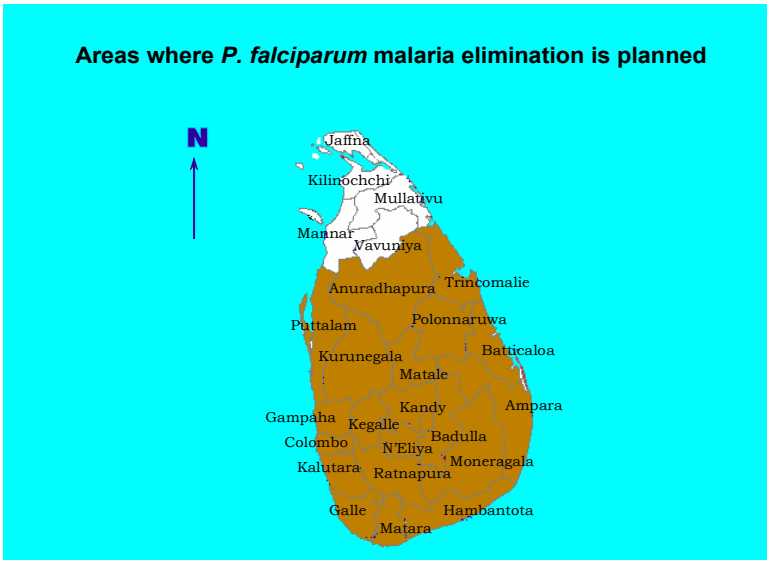
(Pre-elimination phase completed in all districts).</td><td rowspan="2">Intensified Malaria Control operations

(Malaria incidence reduced by 75% based on an enhanced reporting system)</td></tr>
<tr><td>Year 3 (2010)</td><td>Commencement of Elimination Phase for P. falciparum & P. vivax

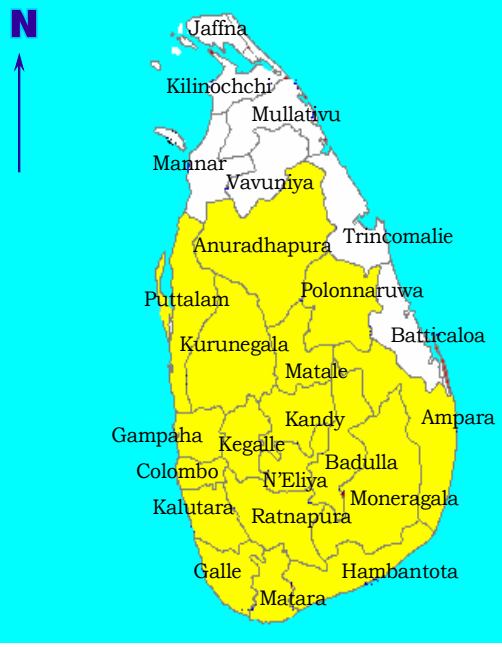
(Elimination phase</td></tr>
</table>

	operations underway in all stable districts)		
Year 4 & 5 (2011-2012)	Elimination phase operations for *P. falciparum* & *P .vivax* continued *(P. falciparum eliminated in all stable districts; and P. vivax. eliminated in 75% of stable districts)*	Commencement of Elimination phase for *P. falciparum* *(P. falciparum eliminated in all transition districts)*	Pre-elimination phase operations commenced in at least 2 of the 5 districts *(Pre-elimination phase operations established in at least 2 districts)*

For purposes of this Strategic Plan the above three areas will be considered as two large areas i. e. the Non-Conflict Area (includes districts from the non-conflict districts and transition districts) and the Conflict Area (includes the conflict affected districts of the Northern Province).



Areas where *P. vivax* malaria elimination is planned



VISION

Sri Lanka with no indigenous malaria

MISSION OF THE PROGRAMME

Plan and implement a comprehensive malaria control programme preventing the indigenous transmission of malaria in Sri Lanka

Objectives of the Anti Malaria Campaign

1. To eliminate indigenous *P. falciparum* malaria by the year 2012 in non-conflict & transitional areas of the country.

2. To eliminate indigenous *P. vivax* malaria by the year 2012 in 75% of non-conflict & transitional areas of the country

3. To reduce API in conflict affected areas to 75% of the API reported in 2007, by the year 2012.

4. To maintain zero mortality from malaria in Sri Lanka

Strategies for malaria elimination in non-conflict & transitional areas in Sri Lanka

- Ensure 100% case detection and confirmation by microscopy or RDT, notification and radical cure.

- Strengthening malaria surveillance system

- Implement radical treatment policy for all *P. vivax* infections

- Continue ACT and gametocyte treatment policy for *P. falciparum* malaria.

- Implementing a quality control and quality assurance for diagnostic and treatment services including anti malarial drugs.

- Ensure total indoor residual spray coverage in and around each malaria case and implementing an integrated vector management strategy including the distribution of LLINs/ITNs where appropriate to control vector densities and eliminate disease transmission.

- Implementation of an outbreak preparedness and rapid response strategy for early containment of outbreaks

- Prevention of malaria in travelers

- Re-orienting public and private health sector staff towards the new goals of malaria elimination.

- Advocacy for political commitment, partnerships and enhancing community participation

- Human resource development and capacity building

Strategies for malaria control in conflict-affected areas in Sri Lanka

- Strengthening case detection and confirmation by microscopy or RDT, notification and radical cure.

- Strengthening the malaria surveillance system

- Implement radical treatment policy for all *P. vivax* infections

- Continue ACT and gametocyte treatment policy for *P. falciparum* malaria.

- Increase IRS coverage and the distribution of LLINs/ITNs and other vector control measures based on an integrated vector management strategy in conflict-affected areas where feasible.
- -
- Advocacy for political commitment, partnerships and enhancing community participation
- Human resource development and capacity building
- Operational research

ACTIVITIES

This plan envisages re-orientation of the existing control programme to carry out elimination of *P. falciparum* malaria from the non-conflict affected areas and *P. vivax* malaria from 75% of the non-conflict affected areas by the end of this five year period, and thereafter establish the conditions for the elimination of both types of malaria from the country. Therefore based on the above strategies two groups of activities will be carried out as follows;

- In the non-conflict areas and transitional areas where a phased elimination of malaria is planned one set of activities will be implemented.
- In the conflict affected areas where an elimination programme is not feasible at present an intensified malaria control programme will be implemented.

During the first two years under review (2008 – 2009) a pre-elimination phase will be carried out in the non-conflict districts (including the transitional districts) followed by an elimination phase at the end of which falciparum malaria will be eliminated from these districts and vivax malaria will be eliminated from 75% of the areas in these districts.

In the conflict affected districts, an intensified malaria control programme with elements of a pre-elimination phase will be implemented during the five year period.

Specific activities for malaria elimination in non-conflict and transitional areas of Sri Lanka

<u>Ensure 100% case detection and confirmation by microscopy or RDT, notification and radical cure.</u>

- Strengthening diagnostic facilities to achieve 100% case confirmation by microscopy and/or RDT and ensuring the availability of such facilities.
- Follow up of all malaria positive cases for four weeks to ensure complete clearance of parasitaemia
- Implement radical treatment policy for all *P. vivax* infections
- Continue ACT and gametocyte treatment policy for *P. falciparum* malaria
- The banning of artemisinin mono therapy through appropriate legislative measures
- Strengthening of active case surveillance.
- Conducting ACD in selected localities during transmission season
- Ensure availability of all anti malarial drugs including ACTs.

- Introduction of a DOTS strategy for treatment of all *P. falciparum* infections through hospitalization for a minimum of three days. Introduction of a suitable DOTS strategy for management of *P. vivax* infections.
- Quality control and quality assurance of diagnostic services and anti malarial drugs
- Monitoring anti malarial drug resistance
- Ensuring availability of preventive therapy for people at risk traveling to malarious areas both in and outside the country.
- Elimination of parasite reservoir through active detection and treatment of carriers
- Establishment and maintenance of a Malaria Elimination Database
- Introduction of PCR for screening of Blood Bank samples
- COMBI for improving effective diagnosis, treatment and chemoprophylaxis
- Introduction of blister packaging of anti malarial drugs and treatment cards

<u>Strengthening the malaria surveillance system</u>

- APCD and selective ACD including MBS in transmission season
- Introduction of the internet based data management system and a website
- Enhance case investigation and follow up of malaria positives and clinical cases
- Screening, treatment and follow up of travelers and risk groups at ports of entry
- Enhance case notification in both public and private sectors
- Improve the epidemic forecasting capacity
- Enhance use of selective "indicator localities" for monitoring trends in vector dynamics
- Maintain a database on drug resistance to anti malarial drugs to guide national treatment policy
- Maintain a database on insecticide susceptibility status and insecticide usage for decision making

<u>Implementation of an epidemic preparedness and rapid response strategy</u>

- Introduction of real time monitoring of malaria cases through the strengthening of surveillance systems

- Establishment of a National Level and district level rapid response teams for rapid containment of outbreaks
- Ensure availability of buffer stocks of antimalarials including ACTs and insecticides for IRS
- Establishment and maintenance of a malaria elimination database

Ensure total indoor residual spray coverage in and around each malaria case and implementing an integrated vector management strategy including the distribution of LLINs/ITNs where appropriate to control vector densities and eliminate disease transmission.

- Total IRS coverage in around each malaria case and in foci. Application of IRS in at-risk situations/localities
- Expanding LLIN coverage and usage to protect risk populations
- Implementation of an IVM strategy where feasible
- COMBI for improving acceptance and usage of mosquito nets and other vector control interventions
- Selective application of eco friendly larval control measures and chemical larvicides
- Promotion of other personal protection methods (housing)
- Monitoring the impact of vector control interventions through entomological surveillance
- Monitoring bio-efficacy of insecticides on malaria vectors and its operational impact
- Monitoring the persistence of insecticides on applied surfaces
- Ensure availability and quality assurances of entomological equipments & supplies, spray equipments including protective gear, insecticides, biocides, LLINs
- Quality control of entomological surveillance and vector control activities
- Use of GIS for monitoring vector densities and implementation of selective vector control
- Ensuring safe storage, transport and handling of insecticides
- Advocacy measures to minimize mosquitogenic potential and human-vector contact in developmental activities
- Appropriate vector control measures in ports of entry to the country

Re-orienting public and private health sector staff towards the new goals of malaria elimination.

- Conducting awareness programmes for both public and private sector health staff on the new goals of malaria elimination
- Introduction of CME packages for health staff on radical treatment of malaria infections
- Introduction of in-service training for laboratory personnel engaged in malaria microscopy

Advocacy for political commitment, partnerships and enhancing community participation

- Establishment and sustaining high level National, Provincial and District working groups for malaria control with clear Plan of Action
- Establishment and strengthening of inter-sectoral partnerships including community based organizations
- Enhance use of target oriented advocacy instruments
- Increasing public awareness of malaria elimination intentions through "Malaria Day"
- Resource mobilization for the implementation of the programme

Human resource development & capacity building

- Ensuring adequate availability of essential cadres both at central level and in the regions
- Development and revision of duty lists for all cadres in keeping with re-orientation of programme objectives
- Provision of adequate job oriented training in keeping with the requirements of the programme, including basic and regular in-service training
- Providing identified cadres with needed foreign experience & training necessary to implement a successful programme
- Development of capacity of cadres to perform their scope of work through the provision of essential infrastructure facilities
- Seek necessary technical assistance
- Reorientation of programme structure, activities and staff according to the objectives and tasks
- Strengthening logistical management through procurements and improved management

Operational research

- Identification of evolving research needs in consultation with the Technical Support Group (TSG).
- Utilization of locally and internationally available expertise to carry out operational research

Activities for intensified malaria control in conflict-affected areas of Sri Lanka

Increasing case detection and confirmation by microscopy or RDT, notification and radical cure.

- Strengthening diagnostic facilities to maximize case confirmation by microscopy &/or RDT and ensuring the availability of such facilities.
- Follow up of all malaria positive cases where possible for four weeks to ensure complete clearance of parasitaemia
- Implement radical treatment policy for all *P. vivax* infections
- Continue ACT & gametocyte treatment policy for *P. falciparum* malaria
- The banning of artemisinin mono therapy through appropriate legislative measures
- Strengthening of active case surveillance through mobile malaria clinics.
- Ensure availability of all anti malarial drugs including ACTs.
- Introduction of a DOTS strategy for treatment of all *P. falciparum* infections through hospitalization for a minimum of three days.
- Elimination of parasite reservoir through active detection and treatment of carriers
- COMBI for improving effective diagnosis, treatment and chemoprophylaxis
- Introduction of blister packaging of anti malarial drugs and treatment cards

Strengthening the malaria surveillance system

- Strengthening APCD and mobile malaria clinics in the area
- Enhance case investigation and follow up of malaria positives and clinical cases

- Enhance case notification in both public and private sectors
- Improve the epidemic forecasting capacity
- Enhance use of selective "indicator localities" for monitoring trends in vector dynamics
- Maintain a database on drug resistance to anti malarial drugs to guide national treatment policy
- Maintain a database on insecticide susceptibility status and insecticide usage for decision making

Ensure high IRS coverage in transmission localities and the distribution of LLINs/ITNs and other vector control measures as complimentary measures in specific situations

- High IRS coverage in vulnerable localities and application of IRS in at-risk situations/localities
- Expanding LLIN coverage and usage to protect risk populations
- Implementation of an IVM strategy where feasible
- COMBI for improving acceptance and usage of mosquito nets and other vector control interventions
- Selective application of eco friendly larval control measures and chemical larvicides
- Monitoring the impact of vector control interventions through entomological surveillance where feasible
- Monitoring bio-efficacy of insecticides on malaria vectors and its operational impact where feasible
- Monitoring the persistence of insecticides on applied surfaces where feasible
- Ensure availability and quality assurances of entomological equipments & supplies, spray equipments including protective gear, insecticides, biocides, LLINs where feasible
- Ensuring safe storage, transport and handling of insecticides
- Advocacy measures to minimize human-vector contact

Implementation of an epidemic preparedness and rapid response strategy

- Introduction of monitoring of malaria cases through the strengthening of surveillance systems where feasible
- Establishment of district level rapid response teams to contain outbreaks

- Ensure availability of buffer stocks of antimalarials including ACTs and insecticides for IRS

Training of public & private health sector staff on intensified malaria control.

- Conducting awareness programmes for both public & private sector health staff on intensified malaria control
- Introduction of Continuous Medical Education (CME) packages in the form of distance education for health staff on appropriate management and treatment of malaria infections
- Introduction of in-service training for laboratory personnel engaged in malaria microscopy

Advocacy for political commitment, partnerships and enhancing community participation

- Establishment and sustaining provincial and district working groups for malaria control
- Establishment and strengthening of inter-sectoral partnerships including community based organizations
- Enhance use of target oriented advocacy instruments
- Increasing public awareness of malaria elimination intentions through "Malaria Day"
- Resource mobilization for the implementation of the programme

Human resource development and capacity building

- Ensuring adequate availability of essential cadres in the areas
- Provision of adequate job oriented training in keeping with the requirements of the programme, including basic and regular in-service training
- Providing identified cadres with needed foreign experience and training necessary to implement a successful programme
- Recruitment and training of cadres to fill vacancies in the public sector
- Provision of essential infrastructure facilities
- Strengthening logistical management through procurements and improved management

Operational research

- Project to increase malaria notification by public and private sector medical practitioners, including non-governmental organizations carrying out medical clinics in conflict-affected areas
- Project to strengthen entomological surveillance through the training and employment of volunteers in conflict-affected areas
- Identification of evolving research needs in consultation with the TSG
- Utilization of locally and internationally available expertise to carry out operational research

Plan of Action and Budget

a. Plan of action and budget for malaria elimination from non-conflict and transitional areas of Sri Lanka

No.	ACTIVITY	PERIOD	RESPONSIBLE OFFICER	COST (US $)
1. Ensure 100% case detection & confirmation by microscopy or RDT, notification and radical cure				
1.1	Strengthening diagnostic facilities to achieve 100% case confirmation	2008 - 2012	D/AMC	600,000
1.2	Follow up of all malaria positive cases to ensure complete clearance of parasitaemia	2008 - 2012	Regional Officers	150,000
1.3.1	Continuation of the implemented treatment policy change for uncomplicated *P. falciparum* malaria with ACT (artemisinin based combination therapy) & Primaquine	2008 - 2012	D/AMC	150,000
1.3.2	The banning of artemisinin mono therapy through appropriate legislative measures	2008 - 2012		
1.4.1	Strengthening active case surveillance	2008 - 2012	D/AMC	225,000
1.4.2	Conducting ACD in selected localities during transmission season	2008 - 2012		
1.5.1	Ensure availability of diagnostic facilities	2008 - 2012	D/AMC	1.1 above
1.5.2	Ensure availability of anti malarial drugs	2008 - 2012	D/AMC	250,000
1.6.1	Quality control & quality assurance of diagnostic services	2008 - 2012	Parasitologist	15,000
1.6.2	Quality control & quality assurance of anti malarial drugs	2008 - 2012	CCP	22,500
1.7	Monitoring anti malarial drug resistance	2008 - 2012		
1.8	Ensuring availability of preventive therapy for people at risk traveling to malarious areas both in and outside the country.	2008 - 2012	D/AMC	22,500
1.9	Elimination of parasite reservoir through active detection and treatment of carriers	2008 - 2012	Regional Officers	175,000
1.10	COMBI for improving effective diagnosis, treatment and chemoprophylaxis	2008 - 2012	D/AMC	600,000
1.10.1	Introduction of blister packaging of anti malarial drugs	2008 - 2009	D/AMC	25,000
1.10.2	Introduction of treatment cards	2008	Regional Officers	7,500
2. Total IRS coverage in foci and the distribution of LLIN/ITNs and other vector control measures				
2.1	Total IRS coverage in at-risk situations/localities	2008 - 2012	D/AMC & Regional Officers	9,500,000
2.2	Adherence to National Insecticide Policy for Public Health aimed at vector resistance management	2008 - 2012		
2.3	Expanding LLIN coverage and usage to protect risk populations	2008 - 2012	D/AMC	4,500,000

2.4	Implementation of an IVM strategy	2008 - 2012	D/AMC & Regional Officers	500,000
2.5	COMBI for improving acceptance and usage of mosquito nets and other vector control interventions	2008 - 2012	D/AMC & Regional Officers	700,000
2.6	Selective application of eco friendly larval control measures and chemical larvicides	2008 - 2012	D/AMC & Regional Officers	750,000
2.7	Promotion of other personal protection methods (housing)	2008 - 2012	Regional Officers	100,000
2.8	Monitoring the impact of vector control interventions through entomological surveillance	2008 - 2012	Entomologists & Regional Officers	450,000
2.9	Monitoring bio-efficacy of insecticides on malaria vectors and its operational impact	2008 - 2012		
2.10	Monitoring the persistence of insecticides on applied surfaces	2008 - 2012	Entomologists	225,000
2.11.1	Ensure availability and quality assurances of entomological equipments & supplies	2008 - 2012		
2.11.2	Ensure availability and quality assurances of spray equipments including protective gear, insecticides & biocides	2008 – 2012	D/AMC	250,000
2.11.3	Ensure availability and quality assurances of LLINs	2008 – 2012	D/AMC	See 2.3 above
2.12.1	Quality control of entomological surveillance	2008 - 2012	Entomologists	50,000
2.12.2	Quality control of vector control activities	2008 - 2012	D/AMC & Regional Officers	50,000
2.13	Use of GIS for monitoring vector densities and implementation of selective vector control	2008 - 2012	D/AMC	225,000
2.14	Ensuring safe storage, transport and handling of insecticides	2008 - 2012	D/AMC	100,000
2.15	Advocacy measures to minimize mosquito-genic potential and human-vector contact in developmental activities	2008 - 2012	D/AMC	30,000
2.16	Appropriate vector control measures in ports of entry to the country	2008 - 2012	D/AMC	60,000
3. Implementation of an epidemic preparedness and rapid response strategy				
3.1	Real time monitoring of cases through the implementation of a strengthened surveillance system	2008 - 2012	D/AMC	400,000
3.2	Establishment of a National Level & district level rapid response teams	2008 - 2012	D/AMC	700,000
3.3	Ensuring availability of buffer stocks of insecticide and anti malarials	2008 - 2012	D/AMC	See 1.5.2 and 2.1 above
3.4	Establishment & maintenance of a malaria elimination database	2008 - 2012	D/AMC	125,000
4. Strengthening the malaria surveillance system				
4.1	Development and maintenance of databases including GIS of malaria cases, entomological surveillance data and vector control	2008 - 2012	D/AMC	See 3.4 above
4.2	APCD and selective ACD including MBS where appropriate	2008 - 2012	D/AMC	See 1.4.1 & 1.4.2 above
4.3	Introduction of the internet based data management system and a website	2009	D/AMC	See 3.4 above
4.4	Enhance case investigation and follow up of malaria positives and clinical cases	2008 - 2012	D/AMC	175,000

4.5	Screening, treatment and follow up of travelers and risk groups at ports of entry	2008 - 2012	D/AMC	150,000
4.6	Enhance case notification in both public and private sectors	2008 - 2012	D/AMC	75,000
4.7	Improve the epidemic forecasting capacity	2008 - 2012	D/AMC	150,000
4.8	Enhance use of selective "indicator localities" for monitoring trends in vector dynamics	2008 - 2012	Entomologists	18,000
4.9	Maintain a database on drug resistance to anti malarial drugs to guide national treatment policy	2008 - 2012	CCP	See 3.4 above
4.10.1	Maintain a database on insecticide susceptibility status	2008 - 2012	Entomologists	See 3.4 above
4.10.2	Maintain a database on and insecticide usage for decision making	2008 - 2012	D/AMC	See 3.4 above
5. Re-orienting of public & private health sector staff towards the new goals of malaria elimination				
5.1	Conducting awareness programmes for public & private sector staff	2008 - 2012	D/AMC	175,000
5.2	Development of CME packages on radical treatment of malaria	2008 - 2012		
5.3	In-service training of laboratory staff	2008 - 2012		
6. Advocacy for political commitment, partnerships and enhancing community participation				
6.1	Establishment and sustaining high level National, Provincial and District working groups for malaria control with clear Plan of Action	2009 - 2010	D/AMC	150,000
6.2	Establishment and strengthening of inter-sectoral partnerships including community based organizations	2008 - 2012		
6.3	Enhance use of target oriented advocacy instruments	2008 - 2012	D/AMC	150,000
6.4	Increasing public awareness of malaria elimination intentions through "Malaria Day"	2008 - 2012		
6.5	Resource mobilization for the implementation of the programme	2008 - 2012		
7. Human resource development & capacity building				
7.1	Ensuring adequate availability of essential cadres both at central level and in the regions	2008 - 2012	D/AMC	250,000
7.2	Development and revision of duty lists for all cadres in keeping with re-orientation of programme objectives	2008 - 2009	D/AMC	7,500
7.3	Provision of adequate job oriented training in keeping with the requirements of the programme, including basic and regular in-service training	2008 - 2012	D/AMC	125,000
7.4	Providing identified cadres with needed foreign exposure & training necessary to implement a successful elimination programme	2008 - 2012	D/AMC	250,000
7.5	Development of capacity of cadres to perform their scope of work through the provision of essential infrastructure facilities	2008 - 2012	D/AMC	250,000
7.6	Seek necessary technical assistance	2008 - 2012	D/AMC	200,000
7.7	Reorientation of programme	2008 - 2012	D/AMC	50,000

	structure, activities and staff according to the objectives and tasks			
7.8	Strengthening logistical management through procurements and improved management	2008 - 2012	D/AMC	25,000
8. Operational research				
8.1	Identification of evolving research needs in consultation with the TSG	2008 - 2012	D/AMC	50,000
8.2	Utilization of locally and internationally available expertise to carry out operational research	2008 - 2012	D/AMC	50,000
9. Cross cutting requirements				
9.1	Quality assurance & quality control of interventions & products	2008 - 2012	D/AMC	250,000
9.2	Provision of transport requirements including vehicles & fuel	2008 - 2012	D/AMC	**To be estimated**
9.3	Provision of salary support to cadres	2008 - 2012	D/AMC	**To be estimated**
Total				**23,508,000**

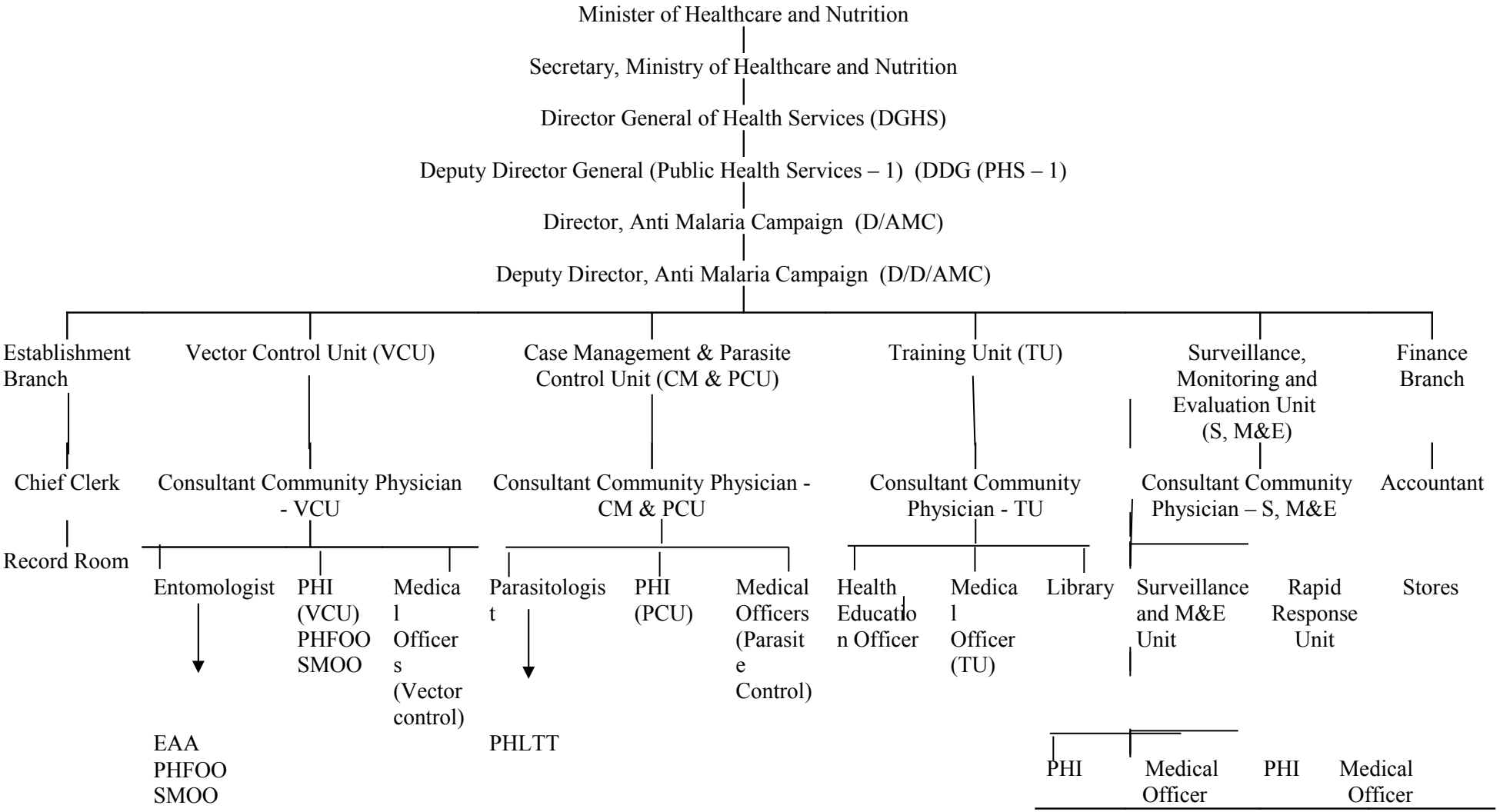
b. Plan of action and budget for intensified malaria control in conflict affected areas of Sri Lanka

No.	ACTIVITY	PERIOD	RESPONSIBLE OFFICER	COST (US $)
1. Increasing case detection & confirmation by microscopy or RDT, notification and radical cure				
1.1	Strengthening diagnostic facilities to achieve 100% case confirmation	2008 - 2012	D/AMC	200,000
1.2	Follow up of malaria positive cases to ensure complete clearance of parasitaemia where feasible	2008 - 2012	Regional Officers	25,000
1.3.1	Continuation of the implemented treatment policy change for uncomplicated *P. falciparum* malaria with ACT (artemisinin based combination therapy) & Primaquine	2008 - 2012	D/AMC	See 1.3.1 in section a above
1.3.2	The banning of artemisinin mono therapy through appropriate legislative measures	2008 - 2012	D/AMC	See 1.3.2 in section a above
1.4	Strengthening active case surveillance	2008 - 2012	D/AMC	250,000
1.5.1	Ensure availability of diagnostic facilities	2008 - 2012		
1.5.2	Ensure availability of anti malarial drugs	2008 - 2012		
1.6	Quality control & quality assurance of anti malarial drugs	2008 - 2012	CCP	See 1.6.2 in section a above
1.7	Elimination of parasite reservoir through active detection and treatment of carriers	2008 - 2012	Regional Officers	65,000
1.8	COMBI for improving effective diagnosis, treatment and chemoprophylaxis	2008 - 2012	D/AMC	See 1.10 in section a above
1.9	Introduction of blister packaging of anti malarial drugs	2008 - 2009	D/AMC	See 1.10.1 in section a above
1.10	Introduction of treatment cards	2008	D/AMC	See 1.10.2 in section a above
2. Ensuring high IRS coverage in transmission localities and the distribution of LLIN/ITNs and other vector control measures				
2.1	High IRS coverage in at-risk situations/localities	2008 - 2012	D/AMC	8,000,000
2.2	Adherence to National Insecticide Policy for Public Health aimed at vector resistance management	2008 - 2012	D/AMC	2.1 above
2.3	Expanding LLIN coverage and usage to protect risk populations	2008 - 2012	D/AMC & Regional Officers	9,000,000
2.4	Implementation of an IVM strategy	2008 - 2012	D/AMC & Regional Officers	75,000
2.5	COMBI for improving acceptance and usage of mosquito nets and other vector control interventions	2008 - 2012	D/AMC & Regional Officers	See section a 2.5 above
2.6	Selective application of eco friendly larval control measures and chemical larvicides	2008 - 2012	D/AMC & Regional Officers	50,000
2.7	Promotion of other personal protection methods (housing)	2008 - 2012	Regional Officers	40,000
2.8	Monitoring the impact of vector control interventions through entomological surveillance	2008 - 2012	Entomologists & Regional Officers	50,000
2.9	Monitoring bio-efficacy of insecticides on malaria vectors and its operational impact	2008 - 2012		

2.10	Monitoring the persistence of insecticides on applied surfaces	2008 - 2012	Entomologists	25,000
2.11.1	Ensure availability and quality assurances of entomological equipments & supplies	2008 - 2012		
2.11.2	Ensure availability and quality assurances of spray equipments including protective gear, insecticides & biocides	2008 – 2012	D/AMC	See section a 2.11.2 above
2.11.3	Ensure availability and quality assurances of LLINs	2008 – 2012	D/AMC	See 2.3 above
2.12	Ensuring safe storage, transport and handling of insecticides	2008 - 2012	D/AMC	See section a 2.14 above
2.13	Advocacy measures to minimize human-vector contact	2008 - 2012	D/AMC	25,000
3. Implementation of an epidemic preparedness and rapid response strategy				
3.1	Establishment of district level rapid response teams	2008 - 2012	D/AMC	150,000
3.2	Ensuring availability of buffer stocks of insecticide and anti malarials	2008 - 2012		
4. Strengthening the malaria surveillance system				
4.1	APCD and mobile malaria clinics	2008 - 2012	D/AMC	250,000
4.2	Enhance case investigation and follow up of malaria positives and clinical cases	2008 - 2012		
4.3	Enhance case notification in both public and private sectors	2008 - 2012		
4.4	Improve the epidemic forecasting capacity	2008 - 2012		
4.5	Enhance use of selective “indicator localities” for monitoring trends in vector dynamics	2008 - 2012	Entomologists	10,000
4.6	Maintain a database on drug resistance to anti malarial drugs to guide national treatment policy	2008 - 2012	CCP	Where feasible
4.7	Maintain a database on insecticide susceptibility status	2008 - 2012	Entomologists	Where feasible
4.8	Maintain a database on and insecticide usage for decision making	2008 - 2012	D/AMC	Where feasible
5. Re-orienting of public & private health sector staff towards the new goals of malaria elimination				
5.1	Conducting awareness programmes for public & private sector staff	2008 - 2012	D/AMC	75,000
5.2	Development of CME packages on radical treatment of malaria	2008 - 2012		
5.3	In-service training of laboratory staff	2008 - 2012		
6. Advocacy for political commitment, partnerships and enhancing community participation				
6.1	Establishment and sustaining high level National, Provincial and District working groups for malaria control with clear Plan of Action	2009 - 2010	D/AMC	As above in section a
6.2	Establishment and strengthening of inter-sectoral partnerships including community based organizations	2008 - 2012		
6.3	Enhance use of target oriented advocacy instruments	2008 - 2012		
6.4	Increasing public awareness of malaria elimination intentions through “Malaria Day”	2008 - 2012		
6.5	Resource mobilization for the	2008 - 2012		

	implementation of the programme			
7. Human resource development & capacity building				
7.1	Ensuring adequate availability of essential cadres both at central level and in the regions	2008 - 2012	D/AMC	200,000
7.2	Development and revision of duty lists for all cadres in keeping with re-orientation of programme objectives	2008 - 2009	D/AMC	As above in section a
7.3	Provision of adequate job oriented training in keeping with the requirements of the programme, including basic and regular in-service training	2008 - 2012		
7.4	Providing identified cadres with needed foreign exposure & training necessary to implement a successful elimination programme	2008 - 2012	D/AMC	25,000
7.5	Development of capacity of cadres to perform their scope of work through the provision of essential infrastructure facilities	2008 - 2012	D/AMC	As above in section a
7.6	Seek necessary technical assistance	2008 - 2012		
7.7	Reorientation of programme structure, activities and staff according to the objectives and tasks	2008 - 2012	D/AMC	75,000
7.8	Strengthening logistical management through procurements and improved management	2008 - 2012		
8. Operational research				
8.1	Project to increase notification of malaria from all sectors	2008 - 2012	D/AMC	250,000
8.2	Project for the training & recruitment of volunteers for entomological surveillance	2008 - 2012		
8.3	Identification of evolving research needs in consultation with the TSG	2008 - 2012		
8.4	Utilization of locally and internationally available expertise to carry out operational research	2008 - 2012		
9. Cross cutting requirements				
9.1	Quality assurance & quality control of interventions & products	2008 - 2012	D/AMC	100,000
9.2	Provision of transport requirements including vehicles & fuel	2008 - 2012	D/AMC	**To be estimated**
9.3	Provision of salary support to cadres	2008 - 2012	D/AMC	**To be estimated**
Total				**18,940,000**

The total estimated budget for the phased elimination of malaria and the strengthening of malaria control in the conflict areas is estimated at US $ 42,448,000 excluding resources necessary for the payment of salaries and transport costs.


Minister of Healthcare and Nutrition
Secretary, Ministry of Healthcare and Nutrition
Director General of Health Services (DGHS)
Deputy Director General (Public Health Services – 1) (DDG (PHS – 1)
Director, Anti Malaria Campaign (D/AMC)
Deputy Director, Anti Malaria Campaign (D/D/AMC)
Establishment Branch
Vector Control Unit (VCU)
Case Management & Parasite Control Unit (CM & PCU)
Training Unit (TU)
Surveillance, Monitoring and Evaluation Unit (S, M&E)
Finance Branch
Chief Clerk
Consultant Community Physician - VCU
Consultant Community Physician - CM & PCU
Consultant Community Physician - TU
Consultant Community Physician – S, M&E
Accountant
Record Room
Entomologist
PHI (VCU) PHFOO SMOO
Medical Officers (Vector control)
Parasitologist
PHI (PCU)
Medical Officers (Parasite Control)
Health Education Officer
Medical Officer (TU)
Library
Surveillance and M&E Unit
Rapid Response Unit
Stores
EAA PHFOO SMOO
PHLTT
PHI
Medical Officer
PHI
Medical Officer

Revised Organization Structure for Anti Malaria Campaign. QA & QC Unit will be cross cutting all units.