FRAMEWORK FOR INTEGRATED VECTOR CONTROL STRATEGY FOR MALARIA CONTROL

SECOND EDITION

U.S. PRESIDENT'S MALARIA INITIATIVE
VECTORLINK PROJECT

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FOREWORD

Include the need for updating the country's integrated vector control strategy (IVCS) given new tools and products now available, the trends in malaria transmission and morbidity, the changing funding landscape, and new challenges in vector control, which will require different approaches from previous plans.

ACKNOWLEDGMENTS

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ACRONYMS

ANC	Antenatal care
CDC	Centers for Disease Prevention and Control
EPI	Extended program on immunization
IRM	Insecticide resistance management
IRS	Indoor residual spraying
ITN	Insecticide-treated net
IVCS	Integrated vector control strategy
LSM	Larval source management
NMCP	National Malaria Control Program
PBO	Piperonyl butoxide
PMI	President's Malaria Initiative
SOP	Standard operating procedure
USAID	United States Agency for International Development
WHO	World Health Organization

Note: This is a list of commonly used acronyms, but it should be revised as necessary.

EXECUTIVE SUMMARY

Summarize the main sections in short paragraphs. Include a short introduction; overview of the situation analysis section focusing on the malaria situation, distribution of the major vectors and insecticide resistance, coverage of interventions, and challenges; principles of prioritization and targeting of vector control interventions in the country; goal and objectives of this strategic plan; major approaches and activities planned to be implemented over the duration of the strategy; plans for entomological monitoring and insecticide resistance management; and the vector control programme structure and responsibilities for its successful implementation.

1 page

I. INTRODUCTION

Under this section, summarize the following:

- The malaria problem in the country (number of cases reported in the past 3-5 years, rank of malaria in terms of morbidity and mortality among the top diseases)
- The malaria control strategy and associated goals and objectives
- The previous integrated vector control strategic plan, the period covered, achievements and challenges
- Description of the contents of this document and how it should be used

1 page

2. GOAL AND OBJECTIVES

2.1 GOAL

State the overall goal of the integrated vector control strategic plan (e.g. "To contribute to the reduction of malaria morbidity and mortality in [country] through implementation of cost-effective and locally appropriate integrated vector control."

¼ page

2.2 OBJECTIVES

List 4-6 objectives of the integrated vector control strategic plan. These should be in line with the current malaria strategic plan. The objectives must be SMART (=specific, measurable, achievable, relevant and time-bound). (e.g. By 20xx, at least 90% of populations in households in malaria-endemic areas with access to insecticide-treated nets use them regularly.")

½ page

3. SITUATION ANALYSIS

3.1 CLIMATIC AND DEMOGRAPHIC PROFILES

Describe the main climatic features of the country, especially those relevant to malaria transmission and control. Present population size projection for the current year, annual population growth rate, proportion of children under 5 years old, proportion of pregnant women, and the proportions of urban and rural populations. Include a topographical map (showing altitudinal and climatic variations relevant to malaria control), with major water bodies such as large rivers and lakes and regional/state/provincial and district boundaries. Provide information on annual rainfall and temperature, altitudinal ranges, natural land cover (forests, swamps, etc.), primary occupation of population in rural areas, and areas with mechanized agriculture, including irrigation schemes. Include a chart with monthly rainfall and temperature data, averaged over the most recent 5-10 years to show seasonal climatic fluctuations in different parts of the country. Present 3-5 separate charts that are representative of different parts of the country divided according to amounts of annual rainfall received. Each chart should depict monthly rainfall (bar chart) overlaid by temperature (line charts).

1 ¼ pages

3.2 EPIDEMIOLOGICAL SITUATION OF MALARIA

Discuss malaria morbidity and mortality trends, prevalence of parasite species in different parts of the country, determinants of transmission and morbidity, factors that may be contributing to observed epidemiological trends, and impacts of interventions. Include data from the most recent Malaria Indicator Survey or relevant data from the most recent Demographic and Health Survey. Where possible, include a map of estimated malaria infection prevalence as determined by the most recent survey.

Describe the transmission season(s) in different parts of the country, especially specifying the start/end months of the main transmission season and its duration. Include charts depicting reported monthly malaria cases for different parts of the country to demonstrate the degree of seasonality of disease incidence.

Provide data on variations in malaria disease incidence and/or infection prevalence by age group, sex, and geographical area, if such data is available. Include information on population displacement, refugee camps, cross-border transmission risks, areas affected by floods and other natural disasters, etc., where applicable, using maps or tables. Where there is population movement or migration (such as for seasonal labor or pastoral activities) between areas with varying transmission levels, present the estimated population this involves. Provide contextual information on the relevant areas and the seasons during which such population movements occur and the implications for malaria transmission and control. If migration or population movement is not seasonal but occurs year-round, describe routes of movement.

Describe transmission hotspots in the country and areas and/or populations requiring priority attention for deployment of vector control interventions. If available include epidemiological stratification maps.

2 pages

3.3 MALARIA VECTORS IN THE COUNTRY

3.3.1 VECTOR SPECIES DISTRIBUTION AND ABUNDANCE

Include historical data on the distribution of different vector species or species complexes (if molecular analyses have not been carried out) in the country and recent trends or changes in composition and distribution. Include a map of the country with recent data (shown as pie charts indicating both species composition and relative densities) based on data from research projects (published or unpublished) and/or entomological surveillance sites. Include maps to show distribution of malaria vectors (if available) and charts to show seasonality of abundance of the main vector species, and discuss the patterns in relation to (seasonal) climatic determinants. Provide the main preferred larval habitats for each vector species, and the most recent biting and resting habits and any deviations from historical behavioral patterns. Include the following table.

TABLE X: MALARIA VECTORS AND THEIR DISTRIBUTION AND HABITS AS OF 20XX

Species	Vector status (main or secondary)	Geographical distribution in the country	Biting and resting habits	Key larval habitats*	Seasonality (or peak abundance timing)

* ***List of larval habitats:*** *1–Rain pools/puddles, 2–Foot/hoof prints, 3–Swamps, 4–Lake shores, 5–Ponds, 6–Burrow pits, 7–Manmade water pools for brick-making and construction, 8–Drainage, 9–Seepages, 10–Rice fields, 11–Irrigated surface, 12–Small irrigation water canals, 13–Stream/river beds, 14–Pools on river banks, 15–Brackish water pools with vegetation/mangroves, 16–Water reservoirs/cisterns/wells/drinking water containers, 17–Tyres, 18–Discarded containers/flower vases, 19–Rock holes/tree holes, 20–Other(s) (specify)*

1 page

3.3.2 VECTOR BITING AND RESTING HABITS AND ENTOMOLOGICAL INOCULATION RATES

Describe briefly the entomological monitoring that is in place in the country, including number and distribution of sites and collection methods used (details of the sites and type of data are given under section 4.4, so keep the description here to the minimum required to contextualize the results under this and the next sections). For each vector species, provide the most recent information on indoor and outdoor biting preference (endophagic or exophagic) and peak indoor and outdoor biting times, and the proportion of human-vector contact occurring indoors (taking into account both biting times and night time habits of humans on average in parts of the country where the vector species is most prevalent).

Describe any changes in biting habits that have been observed in the most recent collections compared to historical patterns. Provide trends in indoor/outdoor feeding and peak biting times if data is available. Include data on longitudinal changes in human blood index for the major vector species if available. Also provide indoor and outdoor resting habits of each vector species (endophilic and exophilic habits) if available. For major vector species and representative sites, include line charts to show indoor and outdoor biting times. If available, include data for extended collection times before dusk and after dawn in the morning hours, when residents are expected to be outside the protection of ITNs. Describe the extent of residual/outdoor transmission in the country and areas affected, if applicable.

Provide any recent information on the human blood index data. Provide data on sporozoite rates and entomological inoculation rates by species, month and year, if available. Discuss the likely impacts of observed biting and resting habits on the effectiveness of insecticide-treated nets (ITNs) and IRS.

½ page

3.3.3 INSECTICIDE RESISTANCE

Describe the magnitude of insecticide resistance in the major vectors focusing on recent data. Use maps to display distribution of resistance in the country by vector species (WHO test tubes and CDC bottle assays) together with mortality figures where possible. Present data on any target site gene frequencies and metabolic resistance test results (from synergist assays or biochemical and molecular assays). Include intensity of resistance data, if available. Include any available larvicide susceptibility monitoring results.

For synergist assays, present results for different pyrethroid chemicals and describe the implications for potential effectiveness of different types of ITNs containing piperonyl butoxide (PBO).

Include maps to show the most recent resistance data in different parts of the country, for each major vector species, grouped by insecticide classes: pyrethroids, organochlorines, organophosphates, carbamates, neonicotinoids and pyrroles.

Present any relevant data on evidence of impact of pyrethroid resistance on effectiveness of ITNs in the context of the country or neighboring countries with similar malaria transmission intensity and vector species. This evidence may be from cone bioassays on treated walls or ITNs using wild mosquito vectors, entomological monitoring data or epidemiological studies if available. Describe comparative effectiveness of different ITNs in general as well as in the country's context.

TABLE X: INSECTICIDE SUSCEPTIBILITY BIOASSAY DATA

State/ region/ province	District	Month and year	Vector species	Test method	Insecticide and concentration (%)*	Number of mosquitoes exposed	% mortality	Resistance status

* Indicate assays using synergist + insecticide.

2 pages

3.4 EXISTING STRATEGIC PLANS

3.4.1 NATIONAL MALARIA STRATEGIC PLAN

Summarize the current national malaria control strategic plan, including its goal, objectives, strategies, and key activities. Describe how the integrated vector control strategy (IVCS) is expected to contribute to and be aligned with the national malaria control strategic plan.

½ page

3.4.2 REVIEW OF THE PREVIOUS VECTOR CONTROL STRATEGIC PLAN AND THE INSECTICIDE RESISTANCE MANAGEMENT PLAN

Summarize the previous vector control strategic plan and the insecticide resistance management (IRM) plan. Describe the achievements and challenges of the plans, including lessons learnt that will be useful in the planning and implementation of the current IVCS plan. Describe how the current IVCS plan is expected to interface or be aligned with the IRM plan.

½ page

3.5 EXISTING (CURRENT) SITUATION OF VECTOR CONTROL INTERVENTIONS

This section is about the existing situation of vector control in the country implemented by all partners (coverage by type of intervention in the past 3-5 years). Include a summary of historical context on use of malaria vector control interventions in the country. (NB: Do not describe *planned* outputs or interventions which should be presented under section 4 without repeating information provided under this section.)

¾ page

3.5.1 INSECTICIDE TREATED NETS

Present data on number and type of ITNs distributed in the most recent universal coverage campaign and nets distributed through continuous channels (by year) in the past three years. Use a table of nets distributed by region, state or province. In addition, use maps showing per capita and total number of nets of each type (standard ITNs, PBO ITNs, and dual insecticide ITNs) distributed by district. Include coverage and use levels from survey data in recent years (using WHO recommended indicators).

Describe whether universal coverage of vector control interventions has been achieved (i.e. whether all areas at risk of transmission have been covered with the core interventions, either IRS or ITNs or their combination). Include information about combined use of the core interventions, or whether areas covered by IRS are not prioritized for ITN distribution. Describe the rationale for intervention mix in different parts of the country, including why some areas are allocated certain types of ITNs.

Summarize achievements and challenges of recent ITN distribution campaigns and lessons learned.

If available, present recent data from ITN durability monitoring studies in the country and describe the implications of the findings. Discuss the information for different types of ITNs, including standard ITNs, PBO ITNs and dual insecticide ITNs.

Use the following tables to summarize ITN distribution data (separately presented for campaign and routine channels). Include totals as necessary. However, it is important to compile the data by district or equivalent if possible. The district specific data could then be used to develop two maps to visualize the number of ITNs distributed (per capita) in each district through campaigns and routine channels (Note: show areas covered by the most recent IRS within the campaign ITN map; see the IRS section below).

TABLE X: NUMBER OF ITNS DISTRIBUTED THROUGH UNIVERSAL COVERAGE CAMPAIGNS IN THE LAST THREE YEARS (20XX – 20XX)

Month and year	State/ region/ province	Number of districts covered	Population covered	Standard (pyrethroid-only) ITNs distributed	PBO ITNs distributed	Dual insecticide ITNs distributed	Funder(s) (use separate rows for each funder/donor if data is available

TABLE X: NUMBER OF ITNS DISTRIBUTED THROUGH CONTINUOUS DISTRIBUTION CHANNELS IN THE LAST THREE YEARS (20XX – 20XX)

Month and year	State/ region/ province	No. of districts covered	Standard (pyrethroid-only) ITNs distributed				PBO ITNs distributed				Dual insecticide ITNs distributed				Funder(s)
			ANC	EPI	School	Community	ANC	EPI	School	Community	ANC	EPI	School	Community	

1 ½ pages

3.5.2 INDOOR RESIDUAL SPRAYING

Include a table with insecticides used in the country for IRS in the last five years, with data on populations protected. Indicate whether the IRS program is targeted (sub-district level) or a blanket coverage. Show areas covered by the most recent IRS within the ITN campaign map proposed above. Include insecticide residual efficacy and insecticide resistance data and how they helped shape selection of insecticide for IRS.

Include a chart to show trends of reported malaria cases in representative sprayed and unsprayed districts (or equivalent), indicating months when IRS campaigns were implemented. Include rainfall data to the charts to show the timing of IRS in relation to the wet season.

Describe the challenges experienced in relation to IRS implementation in the country, lessons learned and recommendations.

TABLE X: IRS COVERAGE DATA IN THE PAST FIVE YEARS (20XX – 20XX)

Month and year	State/ region/ province	District	Structures sprayed	Population protected	Insecticide used, including formulation

1 page

3.5.3 LARVAL SOURCE MANAGEMENT

Describe any areas or locations where larval source management (LSM) has been implemented in recent years as a malaria vector control intervention, and the specific intervention used (larviciding, environmental management, etc.) and the type of settings in which it was used. For larviciding indicate the type used and the duration it was applied for. If data are available, describe effectiveness of the intervention and any challenges. Include an estimate of funds expended for LSM annually together with population covered in recent years and the source of funding. Include recommendations related to LSM target areas and situations, in the context of the country. State if LSM is part of the existing national vector control strategy, and if not, the reason. If LSM is part of the strategy, indicate whether the country has standard operating procedures (SOPs) or guidelines for LSM implementation and the current practice on targeting.

½ page

3.5.4 OTHER VECTOR CONTROL INTERVENTIONS

Describe other vector control interventions that have been implemented either as a routine intervention or for trial or piloting, if any. Include why and how they were implemented. Include data on the efficacy/effectiveness and cost-effectiveness of the interventions, if available. Where applicable, also include data on the use of individual protection measures such as repellents or coils and the volume of import and/or local production of these products, if available.

½ page

3.6 INSECTICIDES REGISTERED FOR PUBLIC HEALTH USE

Provide a list of all insecticides registered for public health use in the country, specifying chemicals recommended for malaria control. The list is usually maintained at a unit responsible for pesticides control under the ministry of agriculture. Include insecticide class, product (trade) name, active ingredient, formulation, intended use, and year of registration. Most countries require insecticides to be registered before operational use. Describe briefly the country's insecticide registration requirements and processes involved.

TABLE X: LIST OF RELEVANT PUBLIC HEALTH INSECTICIDES REGISTERED IN THE COUNTRY AS OF 20XX

Insecticide class	Product (trade) name	Active ingredient	Formulation	If used in malaria control, indicate the use (IRS, ITN, larvicide)	Date of registration	WHO pre-qualified? (Yes/No)

½ page

3.7 USE OF AGROCHEMICALS

Describe the extent of use of agricultural chemicals in the country, including veterinary insecticides and acaricides. Gather relevant data from agricultural ministry and other sources on quantities of agricultural pesticides delivered to different regions/provinces/districts of the country over the past 3-5 years. Develop maps for different classes of insecticides to show aggregate quantities delivered by district (or equivalent) (one map per insecticide class) for the following classes: pyrethroids, organochlorines, carbamates, organophosphates, neonicotinoids and pyrroles. Include an annex with a list of agrochemicals delivered (using generic names only) and their quantities and pesticide classes.

3.8 SWOT AND PROBLEM ANALYSES

Describe the strengths, weaknesses, opportunities and threats (SWOT) related to malaria vector control in the country. Discuss the main challenges or problems, their root causes, and any recommendations to overcome them. List risks and required actions to mitigate or minimize their impacts. List the key assumptions to implement this plan.

1 page

3.9 STAKEHOLDER ANALYSIS

List all key stakeholders (organizations whose activities will contribute to or have impacts on malaria vector control in the country). For each stakeholder, describe its roles in the vector control efforts and the mechanisms of involvement or coordination of work. Describe briefly which of the stakeholders participate in regular meetings of the vector control working group or advisory committee or a similar forum (details of the committee and the meetings should be provided in section 5.3).

1 page

4. IMPLEMENTATION OF THE INTEGRATED VECTOR CONTROL STRATEGY

The details of key activities and strategies that will enable achievement of each objective of the strategic plan should be provided under this section. Here, provide a brief introduction to the sub-sections below.

¼ page

4.1 OVERARCHING PRINCIPLES AND CONTEXTS

4.1.1 EPIDEMIOLOGICAL STRATIFICATION FOR VECTOR CONTROL

List the criteria on which epidemiological stratification for vector control should be based under this plan. Then create strata based on the criteria, including descriptions. Create maps (showing state/regional/provincial and district boundaries) with the required strata. Stratification of the country may be depicted using a single map or it may be multi-dimensional, in which case different maps should be developed for different purposes. For example, a map of epidemiological strata based on malaria transmission intensity may be different from stratification of the country based on distribution of different vector species or their insecticide resistance patterns or mechanisms. Factors to be used for stratification should be carefully selected in relation to their practical importance for vector control decision-making and planning of interventions appropriate for each geographic area or situation.

1 ¼ pages

4.1.2 PRIORITIZATION AND TARGETING PRINCIPLES

Discuss the principles on which the selection of priority vector control interventions and their geographic targeting are based. Specify prioritized interventions and indicate the characteristics of target areas, populations or situations. Provide information on the vector control coverage needs within the different strata, type of vector control tools recommended in different strata (e.g. ITNs and types of ITNs, IRS with specific chemicals), and implementation mechanisms (e.g. in the case of ITNs, the type of distribution channels).

Describe areas to be targeted by PBO ITNs and dual insecticide ITNs, and the criteria for selection of the areas. Include a map showing areas recommended (under this plan) to be targeted for the distribution of different types of ITNs, including standard (pyrethroid-only) ITNs.

Describe areas to be targeted with IRS during the period covered by the current plan and the criteria for selection of target areas, insecticide classes and the rotation schedule. Describe criteria for timing of IRS operations based on seasonality of rainfall, vector density, etc. in different strata. Describe how the insecticide resistance profiles presented under the situation analysis section are used to shape the criteria for insecticide selection. Include a map showing IRS and ITN target areas during the period covered by the current plan.

If IRS is implemented, show the annual rotation schedule for different insecticide classes in different areas based on resistance data, ensuring that the same class is not used consecutively in the same area.

Avoid use of an insecticide in consecutive years even if it is part of a mixture of two insecticides. Develop the schedule in such a way that different areas will be sprayed with different classes of insecticides in a particular year. Use the following table as an example (in this example, it is assumed that IRS will be introduced in district 3 in year 2 and in district 4 in year 3).

TABLE X: ROTATION SCHEDULE OF INSECTICIDE CLASSES FOR USE IN IRS IN [COUNTRY] (20XX–20XX)

Year	District 1	District 2	District 3	District 4
20xx	Insecticide class 1	Insecticide class 2		
20xx	Insecticide class 2	Insecticide class 1	Insecticide class 2	
20xx	Insecticide class 1	Insecticide class 2	Insecticide class 1	Insecticide class 2
20xx	Insecticide class 2	Insecticide class 1	Insecticide class 2	Insecticide class 1
20xx	Insecticide class 1	Insecticide class 2	Insecticide class 1	Insecticide class 2

1 ½ pages

4.2 Details of Strategies and Activities

Include here a short paragraph that introduces the approaches and key activities of the plan and how these are structured under various sub-sections.

¼ page

4.2.1 Objective 1

State the objective. List 2-4 strategies that will contribute to achievement of the objective. Under each strategy, list 2-4 key activities.

Example:

Objective: "By 2025, at least 90% of populations in malaria endemic areas will sleep under insecticide-treated nets (ITNs)".

Under each strategy, describe the scope of the strategy and a brief background including its relevance to this plan and what it intends to achieve. Include how it should be implemented and indicate responsible stakeholders. This description should precede the itemized list of key activities.

Each key activity should be listed clearly with a specific, measurable target. Add sufficient descriptions of each activity as necessary.

Examples:

Strategy 1: Increase household ownership of appropriate ITN types according to insecticide resistance profiles, transmission intensity and other criteria.

The reduction in the number of malaria cases observed between 20xx and 20xx is attributed to the scale-up of ITNs. Ownership of ITNs has substantially increased in [country] over the past xx years. High ITN

coverage should be accompanied by high use rates for the strategy to have an impact on malaria. The ITN use to access ratio in [country] has been consistently high over the past xx years, ranging from xx to xx. There is [little or no variation/variation] in this ratio among urban and rural residents, and among the various socio-economic status groups.

Key activity 1.1 Determine target areas for ITN distribution by type of net (standard, PBO or dual insecticide ITNs) (Add further description of the activity as necessary)

Key activity 1.2 Distribute xx million standard ITNs, xx million PBO ITNs, and xx million dual insecticide ITNs through universal coverage campaign in 20xx and 20xx.

Key activity 1.3 Distribute xx million PBO ITNs through antenatal care clinics

Strategy 2: Strengthen social and behavioural change communication.

Key activity 2.1 Produce xx thousand educational leaflets and distribute in malaria endemic areas

Key activity 2.2 etc.

½ page

4.2.2 OBJECTIVE 2

As above

½ page

4.2.3 OBJECTIVE 3

As above

½ page

4.2.4 OBJECTIVE 4

Include additional objectives as necessary.

½ page

4.3 TIMELINES OF ACTIVITIES

Summarize briefly the timelines for implementation of the strategies (and major activities). Refer to Annex 1 for a detailed Gantt chart. Mention the need to be flexible in timing of activities such as IRS depending on local situations including changes in transmission season in relation to residual efficacy of chemicals, and other factors that might necessitate changes.

1 page

4.4 PLAN FOR ENTOMOLOGICAL SURVEILLANCE

Describe briefly an introduction to the type of planned entomological surveillance, including distribution and densities of vector species, seasonality, vector habits, and insecticide resistance. Describe how entomological data will be integrated and used with epidemiological or disease incidence data, vector control coverage and use data, and any other relevant data for decision-making. Describe who has the authoritative decision-making power. Include details of who owns the data and where it is stored.

¼ page

A) ENTOMOLOGICAL SURVEILLANCE SITES

List the planned entomological monitoring (or surveillance) sites, including location, type of monitoring activities in each site, frequency and criteria for site selection. Use a map showing locations of existing and potential additional entomological surveillance sites.

TABLE X: EXISTING AND PROPOSED ENTOMOLOGICAL SURVEILLANCE SITES AND DATA COLLECTION FREQUENCY

State/ region/ province	District	Name of site	Existing or proposed	Date established if existing	Type of monitoring/study (vector density, biting rates, susceptibility tests, etc.)	Type of collection	Frequency

¾ page

B) MONITORING VECTOR BIONOMICS

Describe the entomological indicators that will be monitored and the rationale for their use. Explain how data from monitoring vector composition such as biting and resting behavior, longevity, and entomological inoculation rates will be used in the country's context, especially in relation to evaluation of the effectiveness of interventions. Provide some details of the required work and the anticipated analysis. Include information on responsibilities of various stakeholders in field entomological monitoring and laboratory analysis of mosquito samples.

½ page

C) INSECTICIDE RESISTANCE MONITORING

Provide details of the type of insecticide resistance monitoring required in different sites, and responsibilities of organizations or partners involved in the work. Include details of laboratories where further analysis of entomological samples will be carried out and the funding and technical support required from stakeholders. Include locations of the laboratories in the map showing entomological surveillance sites (see 4.4 A above).

½ page

D) INSECTICIDE RESISTANCE MANAGEMENT

Describe the recommended insecticide resistance management strategy in the country in relation to the core interventions, i.e. IRS and ITNs. Describe data from entomological surveillance will be used to inform the IRM strategy and any required changes. Include the decision-making process and mechanisms, insecticide selection criteria for IRS, and the roles of technical working groups advising the national malaria control program. This section and any existing IRM plan should be aligned, if applicable.

1 page

E) QUALITY CONTROL OF VECTOR CONTROL PRODUCTS AND INTERVENTIONS

Describe quality control mechanisms to ensure that interventions are implemented according to national guidelines, and that vector control products to be procured fulfill minimum WHO specifications. Provide the main quality control systems and responsibilities. Specify the main activities in relation to pre-import product tests (pre-intervention tests), post-implementation wall bioassay tests to ensure spray qualities and residual efficacy, and ITN durability monitoring.

½ page

4.5 COMMUNICATION STRATEGY

Describe the communication strategy in relation to vector control, including social and behavioral change (SBC) approaches to be implemented to promote uptake and use of interventions.

½ page

5. VECTOR CONTROL PROGRAM MANAGEMENT

Briefly summarize the vector control program structure under the national malaria control program (NMCP), human resource capacity and vector control advisory support available to the program.

5.1 MANAGEMENT STRUCTURE AND RESPONSIBILITIES

Present an organogram of the NMCP and other institutions involved in vector control and highlight roles related to vector control. Indicate the relationships of the various roles within the program and with regional/state/provincial and district roles.

½ page

5.2 HUMAN RESOURCE CAPACITY

Summarize the vector control human resource capacity at the national, state/regional/provincial, and district levels. Use a table to show total required staff and gaps, categorized by roles and educational qualifications. Describe the main human resource gaps and the reasons why they have not been filled. Include plans to address the gaps and other capacity strengthening needs.

TABLE X: HUMAN RESOURCES FOR VECTOR CONTROL AT NATIONAL AND SUB-NATIONAL LEVELS

Administrative level (national or sub-national)	Role	Qualification	Number available	Total required	Gap

5.3 VECTOR CONTROL TECHNICAL WORKING GROUP OR ADVISORY COMMITTEE

Include a list of regular members of the national multi-sectoral vector control advisory committee or working group and frequency of its regular meetings. Indicate responsibilities within the committee or group, including the roles of convening and coordinating the meetings and its other functions.

½ page

6. OPERATIONAL RESEARCH

Under different sub-sections, describe: knowledge gaps or operational research needs (required evidence), including general topics, priority research questions, mechanisms of implementation, and responsible partners. Show potential sources of funding if possible.

1 ½ pages

7. MONITORING AND EVALUATION

Summarize the monitoring and evaluation (M&E) component of the strategic plan by providing responsibilities. Describe the M&E system in use in relation to malaria vectors and vector control, including any available electronic data management systems. This should be followed by a list of performance/program indicators for each of the strategic objectives, strategies and key activities, together with frequency of data collection, sources of data and responsible bodies (see Annex 3).

½ page

8. BUDGET

Provide a summary table of the budget needed to implement the strategy, disaggregated by year and partners providing the funding, including domestic (government) contributions. Describe an overview of the justifications for the main budget components, and a summary of the potential sources of funding. Provide details of the budget in Annex 2, indicating budget required, budget available by source, gaps, and potential sources to fill the gaps. Budget estimates for an activity may be different according to funds provided by the government and partners implementing the activity. The methodology used to estimate the budget and assumptions should be included for each major activity.

¾ page

9. REFERENCES

List all documents (published papers, online resources, reports) referred to in the strategic plan. Use a reference manager software.

1 page

10. ANNEXES

Include large tables and detailed information in separate, numbered annexes, with descriptive titles.

ANNEX 1: ACTIVITIES AND TIMELINES

Objective	Strategy or approach	Key activity	Responsible body	Year 1				Year 2				Year 3				Year 4				Year 5			
				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4

ANNEX 2: BUDGET (USD)

Key activity	Year 1	Year 2	Year 3	Year 4	Year 5	Total needed	Available		Gap		Assumptions and other remarks
							Amount	Source	Amount	Potential source	

ANNEX 3: MONITORING AND EVALUATION

Goal/strategy	Impact/performance indicators	Frequency of data collection	Data source	Responsible bodies
Goal:				
	Impact			
Objective 1:				
Strategy 1.1	**Input**			
	Process			
	Output			
	Outcome			