

# **Guidelines for Vector Control Needs Assessment**



**WHO REGIONAL OFFICE FOR AFRICA**  
DIVISION OF PREVENTION AND CONTROL OF  
COMMUNICABLE DISEASES  
VECTOR BIOLOGY AND CONTROL UNIT  
HARARE, ZIMBABWE

June 2003



# Table of Contents

<b>Acknowledgments</b> .....	iv
<b>Preface</b> .....	v
<b>Abbreviations and Acronyms</b> .....	vi
<b>1. Introduction</b> .....	1
1.1 Background .....	1
1.2 Scope and Outline of the Guideline .....	2
<b>2. Methods and Procedures</b> .....	3
2.1 Methods .....	3
2.2 Procedures .....	4
<b>3. Vector Control Situation Analysis Questionnaire</b> .....	9
Part 1 .....	9
Part 2 .....	21
<b>Annex: 1 Guide for conducting national stakeholders' meeting at country level</b> .....	23

## **Acknowledgments**

Several institutions and individuals have contributed to bringing this document into its present form. This document is a product of the generic VCNA guideline that was drafted during the expert meeting convened by Roll Back Malaria in Geneva. We would like to acknowledge the contributions made by participants during the meeting. Critical comments and contributions made by expert members of the steering committee of the DDT/ GEF project, intercountry team members and consultants are greatly appreciated.

## **Preface**

The World Health Assembly Resolution WHA 50.13 calls on Member States “to take steps to reduce reliance on insecticides for control of vector-borne diseases through promotion of integrated pest management approaches and adaptation of viable alternative methods of disease vector control.”

The Regional Committee for Africa also adopted Resolution AFR/RC50/R6 on the framework for implementation of Roll Back Malaria in the African Region, in which Member States are requested to promote personal and community-based preventive measures such as insecticide-treated nets and environmental management.

In February 2001, the Regional Office convened a workshop for policy makers to develop a framework for vector control in the African Region. Participants adopted Integrated Vector Management (IVM) as a strategic framework for vector control. The Regional Office subsequently outlined action plans and targets for implementation of IVM.

Implementation of IVM strategy requires evaluation of the technical and capacity needs of implementing countries. This Vector Control Needs Assessment guideline identifies barriers and gaps for improving vector control programs in view of implementing IVM in the African Region.

## **Abbreviations and Acronyms**

DDT	Dichloro Diphenyl Trichlorethane
DHMT	District Health Management Team
DMT	District Management Team
EIA	Environmental Impact Assessment
EM	Environmental Management
GEF	Global Environment Facility
HIA	Health Impact Assessment
IPM	Integrated Pest Management
ITM	Insecticide Treated Materials
ITN	Insecticide-treated Nets
IVM	Integrated Vector Management
MoH	Ministry of Health
NSM	National Stakeholders Meeting
POPs	Persistent Organic Pollutants
RBM	Roll Back Malaria
VCNA	Vector Control Needs Assessment
WHA	World Health Assembly
WHO	World Health Organization

# 1. Introduction

## 1.1 Background

Every year, there are millions of cases of vector-borne diseases in the population of the African Region. Malaria, filariasis, leishmaniasis, trypanosomiasis and schistosomiasis represent a significant public health problem. In sub-Saharan Africa, the range of malaria mortality in children is unacceptably high.

The economic repercussions of vector-borne diseases and the resulting impediment to social and economic development are evident. For instance, in young adults in Africa malaria is still one of the most common diseases, and it tends to strike when agricultural work is at its height.

Chemical pesticides used in vector-borne disease control programs have had varying success. Mounting concern about the risks posed by pesticides on human health and the environment resulted in a renewed interest in the use of alternative vector control methods. In the 1980s, new approaches in vector control methods other than the application of residual insecticides led to the emergence of Integrated Vector Management (IVM). The concept of IVM builds on selective vector control and uses a wide range of interventions, including environmental management and safe and judicious use of insecticides.

Implementation of IVM requires integration of a national IVM framework into the existing framework of national health policies. It involves consolidating vector control services in conjunction with:

1. the creation of an enabling policy framework for intersectoral collaboration;

2. building capacity of countries in trained manpower at district and national level;
3. developing capacity of operational research.

The guideline for vector control needs assessment (VCNA) assesses capacity needs of countries to implement IVM. The draft VCNA guideline was originally developed during an expert meeting of Roll Back Malaria (RBM) in February 2000. Subsequently, it was revised significantly based on critical comments received from program managers and during field tests.

## **1.2 Scope and outline of the guideline**

The VCNA guideline assists public health authorities to identify policy, managerial and human resource needs. Although, it was originally intended to assess specific needs that resulted from reduced reliance on DDT, the guideline has been adopted for implementation of IVM strategy in non DDT-using countries.

Vector control program personnel will be concerned with Part I of the questionnaire during data collection. Part II of the questionnaire, which deals with policies on environment and agriculture, has to be filled in by other sectors such as the ministries of environment and agriculture.



## **2. Methods and procedures**

### **2.1 Methods**

The VCNA encompasses three main stages in determining the needs linked to the establishment or improvement of a vector control program. These are:

- ★ Situation analysis
- ★ Problem analysis
- ★ Needs assessment

#### **Situation analysis**

The situation analysis describes the prevailing policy framework, management procedures and institutional arrangements that support vector control activities. The process of change should start with an analysis of national policies leading to the creation of an enabling policy framework.

The aim of the situation analysis is to evaluate the status of the vector-borne disease situation, the knowledge on vector species and the effectiveness and efficiency of vector control interventions.

#### **Problem analysis**

A problem analysis is an essential step in formulating the requirements of a vector control program. Based on data collected from the situation analysis, it identifies bottlenecks that constrain implementation of alternative strategies of vector control.

## **Needs assessment**

The assessment of the needs involved to improve vector control programs are categorized as follows:

1. Policy needs: providing an enabling environment for vector control;
2. Institution building needs: strengthening existing structures for an effective delivery of interventions;
3. Managerial needs: decision-making capacity to manage an effective vector control program;
4. Human resources: staff development program and performance-based career opportunities.

## **2.2 Procedures**

### **Stakeholder involvement**

Implementation of the IVM strategy is a concern to many stakeholders and requires the participation of a wide range of national and international organisations. Developmental activities such as irrigation schemes, dams and road construction may actually create suitable habitats for vectors and ultimately increase the incidence of vector-borne disease. In addition, safe and proper use of insecticides, including quality control and resistance management, requires intersectoral collaboration.

Vector control services need to work closely with sectors such as public works, environment, agriculture and municipalities to harmonize approaches for development in healthy environments. Communication and close collaboration must be established among institutions responsible for health, environment and agriculture to ensure policy and strategic support.

For a high level of participation throughout the process, stakeholders from the community at large should be identified. Although the list may not be exhaustive, stakeholders from the following sectors should be represented:

- ★ Ministry of Agriculture has an impact on vector control because of its activities related to irrigation schemes and enforcement of regulations on the use of pesticides banned for agriculture;
- ★ Ministry of Trade or Finance may have an impact on malaria control because of its import tax and tariff on nets and insecticides;
- ★ Ministry of Environment and Tourism has the authority to protect the environment from pesticide contamination;
- ★ Construction of energy plants and urban and rural infrastructure affect the incidence of vector-borne diseases;
- ★ Research institutions can assist in the evaluation of alternative control tools and various interventions;
- ★ In some countries, municipalities are responsible for vector control in urban areas.

Members of the broad stakeholder group should be identified immediately after the situation analysis is completed.

### **Steering committee**

After identifying the major stakeholders, a steering committee should be formed to guide the VCNA process. Key members of the stakeholders' group will be represented on the steering committee. The Ministry of Health is the secretariat of the steering committee, and additional members may be drawn from provincial or district level vector control programs, academia and other ministries. If

there is an operational vector control program, then the manager is not expected to be a member of the steering committee.

The steering committee has the following terms of reference:

- ★ Endorse the composition of the broad stakeholder group;
- ★ Agree on individuals or institutions who will carry out the assessment;
- ★ Identify regions or districts where the VCNA will be carried out;
- ★ Prepare an action plan for the needs assessment.
- ★ Appraise the assessment report and the recommendations.

### **Data collection on the situation analysis**

Evaluation of the capacity needs of countries requires collection of data on the prevailing situation. The VCNA is preceded by the situation analysis. The national vector-borne disease control program manager is a key informant on country vector control situation analysis.

While stakeholders from various sectors at national level are included in the data collection, replication of the exercise at regional and district levels enhances the comprehensiveness of the assessment.

The selection of the regions and districts depends on factors such as burden of vector-borne diseases and regional involvement in implementation of vector control activities. The number of districts selected is also influenced by the time available to carry out the VCNA exercise.

Data will be collected by interviewing stakeholders and program managers. The selection of individuals or institutions that will carry

out the assessment is an important part of the procedure as it determines to a considerable extent the quality of the assessment. At national level, the vector-borne disease control program manager provides information on the situation analysis

## **Data analysis and report writing**

### **Data analysis**

After the data collection exercise, the data needs to be analysed before writing the report.

Any assessment must start with a screening and scoping exercise. This will set the focus and the boundaries for the assessment, enhance its relevance and optimise its efficiency. Screening and scoping essentially refine and outline bottlenecks that need to be addressed for implementing IVM.

### **Report writing**

The report describes various components of the needs assessment, starting with the situation analysis. The draft VCNA report has to be structured so that it corresponds to the organisation of the questionnaire. The report should start with the prevailing situation and describe the gaps. For ease of discussion during the steering committee meeting, all the identified gaps should be compiled at the end section of the report.

The report will be presented to the steering committee. The committee will appraise the report and decide to:

- ★ Accept the report as adequate, credible and properly evidence-based;
- ★ Tentatively accept the report, but return it to the consultants for improvements;
- ★ Reject the report altogether as insufficient.

If the report is satisfactory, the steering committee will submit it to the Ministry of Health, which will discuss it with the stakeholders. The Ministry of Health will use the final report from the stakeholders' meeting to set action plans for capacity building activities. **Annex 1 explains the process for conducting a stakeholders' meeting following the needs assessment exercise.**

### **3. Vector control situation analysis questionnaire**

#### **Part I:**

To be filled in by national and regional vector control programs and research institutions.

#### **Background**

Country/ Region: \_\_\_\_\_

What is the estimated population size of the country/ region? \_\_\_\_\_

What is the main activity of the population in the country/ region? \_\_\_\_\_

What proportion of the population is within < 10 km from a health facility? \_\_\_\_\_

When was the vector control program established?

\_\_\_\_\_

## Vector-borne disease burden

What is the burden of the main vector-borne diseases?

Type of disease	Prevalence	Mortality/ morbidity

## Epidemiology of vector-borne diseases

What are the most common vector-borne diseases?

Type of disease	Peak transmission season	Endemicity	Risk population



## Vector bionomics and behaviour

What are the most important vector species?

Type of vector borne diseases	Primary and secondary vectors	Information on vectors species		
		Feeding behaviour	Resting behaviour	Adult/larval ecology

## Vector control

What chemical control methods are employed for vector control

Type of disease	Intervention	Quantity of chemicals used	Type of spraying	Frequency of application

## Biological control agents

What biological control methods are used for vector control?

\_\_\_\_\_

Are these control methods operational? \_\_\_\_\_

or at experimental stage? \_\_\_\_\_

## Environmental Management (EM)

Is EM employed for vector control? \_\_\_\_\_

If yes, is it an important component of the vector control program?

Minor \_\_\_\_\_

Medium \_\_\_\_\_

Major \_\_\_\_\_

List vector-borne diseases for which EM is employed

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

What proportion of the population at risk is protected by EM?

\_\_\_\_\_

Who implements EM?

Communities \_\_\_\_\_

Vector control staff \_\_\_\_\_

Other specify \_\_\_\_\_

What are the criteria for determining the use of EM?

\_\_\_\_\_

\_\_\_\_\_

Is EM coordinated with other sectors?

If yes, with which organization

Agriculture \_\_\_\_\_ Public works \_\_\_\_\_

Community groups \_\_\_\_\_ Other, specify \_\_\_\_\_

What types of supervision are carried out to monitor the efficacy of interventions?

Type of disease	Type of monitoring on the efficacy of intervention	Indicators

**Health sector policy**

Is there a vector control policy for the diseases described?

\_\_\_\_\_

Are there national vector control policy guidelines?

\_\_\_\_\_

Is there a policy on decentralization or health reforms?

\_\_\_\_\_

Is the vector control intervention decentralized?

\_\_\_\_\_

Are there gaps between what is stated in the policy and what is actually implemented? \_\_\_\_\_

What proportion of the national health budget is allocated for malaria and other vector control units? \_\_\_\_\_

Is the resource allocation for malaria control consistent with the national prioritisation? \_\_\_\_\_

Is there a policy of tax exemption of insecticides and nets for public health? \_\_\_\_\_

### **Organization of vector control**

Are vector-borne disease controls integrated in a single unit?

\_\_\_\_\_

Is there a national vector control core group or task force who can provide policy and technical support? \_\_\_\_\_

Is there a relationship between vector control and environmental health programs? \_\_\_\_\_

Is vector control represented in the DMT?

\_\_\_\_\_

How many districts have vector control staff in the DHMT?

\_\_\_\_\_

Are vector control decisions in the district made by the district vector control specialist? \_\_\_\_\_

Have the functions of the vector control program been defined?

\_\_\_\_\_

Is there a human resource development plan?

\_\_\_\_\_

Are there career opportunities for vector control staff?

\_\_\_\_\_

## **Resources**

### **National level**

What is the number and level of training of vector control personnel at the national level? \_\_\_\_\_

Are there units in the vector control program capable of planning, implementing and monitoring at national level? \_\_\_\_\_

Is there a unit to provide technical support for regional and district operations? \_\_\_\_\_

If yes, specify \_\_\_\_\_

What is the number of vector control specialists available for planning, implementation, monitoring and evaluation of vector control operations?

National \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Regional \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Regional and district level**

Please, specify the level of training of vector control officers at district level?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

At what level are resource decisions for districts made?

\_\_\_\_\_

What types of vector control equipment are needed for basic functioning of vector control program?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Are vector control guidelines available? \_\_\_\_\_

If yes, specify available manuals: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Are parasitological laboratory facilities available at?

Hospitals \_\_\_\_\_

Health centres \_\_\_\_\_

Clinics \_\_\_\_\_

What percentage of the malaria budget is allocated to?

Vector control \_\_\_\_\_

Case detection and management \_\_\_\_\_

Surveillance and research \_\_\_\_\_

Is the budget allocation for insecticides adequate?

Are insecticides purchased with national or donor/loan funds?

What is the status of availability of application equipment including transport?

Poor \_\_\_\_\_

Satisfactory \_\_\_\_\_

Very Good \_\_\_\_\_

### **Training facilities**

Is there a system for in-service training and upgrading of vector control personnel? \_\_\_\_\_

Are teaching materials and guidelines available for such training?

\_\_\_\_\_

Are there opportunities for university-level and postgraduate training on entomology or vector control within the country?

\_\_\_\_\_

What proportion of those who have trained in the past has been retained by the malaria/vector control program?

\_\_\_\_\_

## Research

List research institutions or universities involved in vector biology and control

---

---

---

Are they linked to the vector-borne disease program?

---

If yes, specify the type of research collaboration with the research institutions?

---

---

What is number of facilities are available in these institutions?

Entomology laboratory \_\_\_\_\_

Functional insectary \_\_\_\_\_

Insecticide resistance study facility \_\_\_\_\_

## Supervision, implementation and evaluation

Is there any systematic supervision on program implementation?

If yes, describe: \_\_\_\_\_

Is there effective performance appraisal for vector control staff?

---



Is there any effective supervision of vector control program at provincial and district levels? \_\_\_\_\_

Is surveillance being conducted on regular basis?

Entomological: \_\_\_\_\_

Epidemiological: \_\_\_\_\_

Are funds available for implementation of spray operations, ITM or environmental management? \_\_\_\_\_

Are funds available for monitoring and evaluation of vector control activities? \_\_\_\_\_

Are there regular communications and exchange of data between the central and district levels? \_\_\_\_\_

Are transport and funding available for supervision from the central level to districts? \_\_\_\_\_

Are funds available for travel and supervision from the district level to the communities? \_\_\_\_\_

### **Regulatory policies on pesticides**

Is there a national regulatory body for public health use of insecticides? \_\_\_\_\_

What are the registration requirements for public health insecticides?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Are there regulations about storage, distribution and sales of public health insecticides? \_\_\_\_\_

Are there facilities for ensuring quality of insecticides?

\_\_\_\_\_

Are there perceived problems with poor quality, counterfeit or obsolete pesticides? \_\_\_\_\_

Is there any quality control of nets and insecticides?

\_\_\_\_\_

### **Prevention of exposure to pesticides**

Are safe and adequate warehouse facilities available at central and districts levels? \_\_\_\_\_

Are there personnel with skills and qualifications for understanding and implementing a program for safe use and disposal of pesticides at?

National \_\_\_\_\_

Regional \_\_\_\_\_

District \_\_\_\_\_

Is this expertise within the MoH vector control unit or elsewhere?

\_\_\_\_\_

Do vector control personnel receive periodic training in the safe use of insecticides? \_\_\_\_\_

Are proper protective clothing and supplies available for vector control staff? \_\_\_\_\_

## **Part II**

To be filled in by Ministry of Environment, Tourism and Agriculture

### **Environmental policies**

Are there policies and regulations governing the production and safe use of pesticides? \_\_\_\_\_

Are there policies on Environmental Impact Assessment (EIA)/ Health Impact Assessment (HIA) of development projects?  
\_\_\_\_\_

Are vector control issues included in the EIA/HIA?  
\_\_\_\_\_

Are there mechanism for the monitoring and enforcing policies?  
\_\_\_\_\_

Are there municipal codes and enforcement related to vector control? \_\_\_\_\_

Is the national government a party to the POPs convention?  
\_\_\_\_\_

Is there a structure for developing plans to comply with the provisions of the convention? \_\_\_\_\_

### **Agriculture policies**

Is there a national policy for Integrated Pest Management (IPM) and rational use of pesticides? \_\_\_\_\_

Are there policies on promoting research on alternatives to pesticides including IPM? \_\_\_\_\_

Are there any pilot projects for IPM? \_\_\_\_\_

How does the Ministry of Agriculture deliver information on pest control to farmers? \_\_\_\_\_

Is there a legal instrument banning the use of DDT for agricultural purposes? \_\_\_\_\_

Is there capacity for monitoring and enforcing agricultural pesticides policies, especially concerning the use of DDT for agricultural purposes? \_\_\_\_\_

Are there policies restricting the use of pesticides for

\_\_\_\_\_

What groups of chemicals are promoted for use in Agriculture?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Is there a forum where the agricultural sector meets with the health sector to discuss policy issues relating to pesticides use?

# **Annex: 1 Guide for Conducting National Stakeholders' Meeting at Country Level**

## **1. Introduction**

This brief guide is intended to orient nationals and consultants on organizing and conducting national stakeholders meetings.

During the VCNA, data will be collected and analysed. The steering committee will discuss and endorse draft 1 of the report on the needs assessment, from which draft 2 will be produced. The list of stakeholders, provided in draft 2 of the national report, should be reviewed and updated. The Ministry of Health will send invitations to stakeholders.

## **2. Objectives of the stakeholders' meeting**

- ★ Review draft 2 Report on the VCNA
- ★ Agree on national framework on integrated vector management (IVM)
- ★ Agree on capacity requirements, including research for implementation of IVM nationally
- ★ Select districts for the project
- ★ Draft the project plan of action for the selected districts
- ★ Identify potential contributors

## **3. Expected outcomes of the stakeholders' meeting**

The National Stakeholders Meeting will conduct five activities. To accomplish the meeting objectives, the meeting should be schedule for between three and five days.

## **Final report on the VCNA**

Draft 2 of the VCNA report will be distributed to all participating stakeholders in advance for review. During the meeting, a member of the steering committee who participated in the VCNA process and preparation of the report, will present the key findings and recommendations of the VCNA. A discussion of the report will be held and contributions accepted.

## **National Framework on IVM**

Stakeholders adopt a national strategic framework for implementation of IVM, based on the national report on the VCNA and its recommendations and using the regional framework. *The WHO Regional Framework* is adapted to comply with the VCNA recommendations. An electronic version of the *WHO Regional Framework* is made available to the country.

## **Identification of districts to initiate the implementation of IVM interventions**

Given the epidemiological situation of the country, stakeholders should indicate which districts are most suitable to initiate IVM interventions. The main criterion for district selection is the existence of malaria and at least one other vector-borne disease.

## **Capacity building and research needs**

Based on the conclusions and recommendations of the VCNA, participants agree on quantified capacity needs (technical, financial and human resources) and identify priority areas for implementation research.

## **Drafting a 4-year action plan for selected districts**

In those districts IVM schemes will be introduced. Action plans prepared for the districts should include the following components.

### **Epidemiological Surveillance**

- ★ Developing/strengthening national capacities in epidemiological surveillance to ensure that residual house spraying of insecticides is conducted where and when appropriate.

The collection and analysis of information on the behaviour and characteristics of the primary vectors and their impact on malaria transmission will help target vector control interventions.

### **Vector Control**

- ★ Strengthening national vector control programs in expertise and equipment in collecting and evaluating information on the local vector dynamics and epidemiological situation.

This will involve training vector control program staff on the appropriate timing and application of insecticides for indoor residual spraying based on reliable epidemiological and entomological information.

- ★ Development and operational testing of alternative malaria control methods, including non-chemical approaches (e.g. traditional repellents, biological control, environmental management).

A number of pilot demonstrations will be conducted in the field to determine the applicability and viability of alternatives under local conditions, which will take into account *inter alia* cost-effectiveness and impact on human health and the environment.

## **Health Systems**

- ★ Strengthening targeted elements of the health systems will specifically enable rapid diagnosis and treatment of malaria cases at the household, community, and health facility levels; this includes training medical professionals;
- ★ Awareness raising at community level to mobilize support and action to reduce malaria transmission, through information, education and communication on malaria, its causes, mechanisms of transmission, symptoms, treatment methods, and general health risks.

## **Management of insecticide and disposal of obsolete stockpile**

- ★ Strengthening regulation on importation, distribution, storage and disposal of insecticides according to the WHO pesticide evaluation scheme;
- ★ Construction of secure and environmentally sound storage facility;
- ★ Developing capacity in safe use and disposal of insecticides for public health purposes to minimize human exposure and environment contamination;
- ★ Strengthening the capacity to evaluate the quality of insecticides and nets.

## **Budget**

All planned activities are budgeted. The plan should indicate

- a) the resources available at country level, including staff and financial resources;
- b) the gap that the Global Environment Facility will be required to finance.