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Preparations for the Conference of the Parties

WORLD HEALTH ORGANIZATION REPORT ON GUIDANCE AND INFORMATION NEEDED TO ASSIST THE CONFERENCE OF THE PARTIES IN EVALUATING THE CONTINUED NEED FOR DDT FOR DISEASE VECTOR CONTROL

Note by the secretariat

Attached to the present note is a report on guidance and information needed to assist the Conference of the Parties in evaluating the continued need for DDT for disease vector control. The attached text was provided by the secretariat of the World Health Organization and has not been formally edited.

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REPORT ON THE GUIDANCE AND INFORMATION NEEDED TO ASSIST THE CONFERENCE OF PARTIES IN EVALUATING THE CONTINUED NEED FOR DDT FOR DISEASE VECTOR CONTROL

Submitted to

The Seventh Meeting of the Inter-Governmental Negotiating Committee
Stockholm Convention on Persistent Organic Pollutants
July, 2003

WORLD HEALTH ORGANIZATION

INTRODUCTION

The Intergovernmental Negotiating Committee of the Stockholm Convention at its 6th Meeting (INC6) in Geneva, 17–21 June 2002, requested that:

1. The Secretariat of the Stockholm Convention, in cooperation with WHO, report on a possible format for reporting by Parties that use DDT on amounts used, conditions of use and the relevance of DDT to disease management strategies as required under paragraph 4 of Part II of Annex B of the Stockholm Convention.

2. The Secretariat, in cooperation with WHO, develop a report on the guidance and information needed to assist the Conference of Parties in evaluating the continued need for DDT in disease vector control as required under paragraph 6 of Part II of Annex B of the Stockholm Convention.

The Intergovernmental Negotiating Committee invited WHO to actively participate in the development of these reports, and requested that the Secretariat provide the above reports to INC7 (scheduled for July 2003).

The assignment was carried out by the Joint DDT Working Group of WHO and the Secretariat, and reported under documents UNEP/POPS.INC.7/3 and UNEP/POPS.INC.7/4.

Annexes I and III of document UNEP/POPS/INC.7/4 provide a summary list and matrix on the information needed from Parties to enable COP evaluation of the continued need for DDT in disease vector control. This report provides detailed explanation to the annexes.

Acronyms and concepts used in this report

COP	Conference of Parties - A formal meeting of Parties to the Stockholm Convention.
DDT register	A list of Parties who request and receive exemptions to use DDT for disease vector control under the Stockholm Convention.
DDT insecticide alternative	A non-POP insecticide with residual properties and proven effectiveness against malaria vectors.
Party	A State (country) or regional economic integration organization that has agreed to be bound by the Stockholm Convention and for which the Convention is in force.
POPs	Persistent organic pollutants.
Secretariat	In this document, Secretariat refers to the Secretariat of the Stockholm Convention on Persistent Organic Pollutants.
Stockholm Convention	The Stockholm Convention on Persistent Organic Pollutants
UNEP	United Nations Environmental Programme.
UNIDO	United Nations Industrial Development Organization.
UNDP	United Nations Development Project.

1. BASIC INFORMATION REQUIREMENTS

A list of basic information needed to assist the Conference of Parties in evaluating the continued need for DDT use in disease vector control, as required under Paragraph 6 of Part II of Annex B of the Stockholm Convention, is presented in Table 1.

The following sections review the scope of the data requirement (see Table 2).

Availability of DDT and alternative insecticides (including bio-insecticides)

Details of amounts and quality of DDT and alternative insecticides available to a Party will be needed.

(i) **Production and export:** Only two countries (China and India) currently produce DDT. The annual production levels for both the active DDT ingredient and its formulations must be ascertained for these countries. Information on production facilities and capacity will also be needed.

DDT-producing Parties should provide information on export destinations, and the annual amounts and formulations exported to those destinations.

Parties involved in major repackaging of DDT will also need to provide information on their facilities, as well as on the formulations and destinations of their repackaged products (i.e. for in-country distribution or export).

(ii) **Import:** Annual importation of the active DDT ingredient and its formulations should be reported. This information should corroborate the export reports submitted by the production/exporting Parties. Similarly, annual importation figures for the active ingredient of DDT alternative insecticides (including bio-insecticides) should be collected.

Stock and stock management

The adequacy or otherwise of existing stock management processes and capacity (manpower and other resources) of the Party needs evaluation. Data collection should cover current stocks of DDT and alternative insecticides, the condition of such stocks and information on storage facilities (location and capacity) as well as storage conditions.

Distribution system

Distribution is integral to insecticide management and crucial to any risk evaluation. Environmental and human health risks associated with insecticide distribution may be particularly high among Parties with inadequate infrastructure and insufficiently trained personnel. Risks are compounded when there are multi-staged distribution routes between an entry port and the final destination for insecticide application, or multi-staged decision-making processes for relocating insecticides.

Data collected on distribution systems should cover major modes of transportation, agencies undertaking distribution, decision-making processes, and relevant regulatory and control measures.

Annual use of DDT and alternative insecticides

The annual amounts used of the active ingredient of DDT and its alternatives should be measured and categorized according to targeted disease and geographical area covered. Annual data on intended population coverage, as well as actual coverage, should also be collected for each targeted disease.

The purpose is to assess the level of need for DDT and/or its alternatives by a Party (and the validity of that need). It is therefore important to collect data on institutional structures and decision-making processes (who decides, where and how such decisions are made), the application criteria (when, where and how the spraying is done), as well as the epidemiological profile of the targeted diseases in the application areas.

Data on insecticide use should also allow detailed accounting of DDT procured by Parties.

Effectiveness of existing vector control options

The effectiveness of a vector control option validates its continued use. When an existing control option is shown to be effective, a concurrent assessment of its implementation processes provides an opportunity for strengthening implementation and maximizing the option's impact on disease prevalence/incidence.

Effectiveness data should cover vector susceptibility to DDT and currently-used alternatives, monthly residual efficacy bioassays, entomological inoculation rates, disease prevalence and incidence rates (as appropriate), as well as descriptions on the components of the resistance monitoring mechanisms being applied. It is recommended that the annual vector susceptibility test follows the WHO test procedure (WHO test kits may have to be supplied to Parties).

Acceptability of existing vector control options

The acceptability of a control option by target populations is central to its sustainability. This is especially true in the case of residential application of insecticides with residual properties. Acceptability levels for residual application of DDT and alternative insecticides may best be assessed through rates of those refusing the service and re-plastering rates.

Acceptability levels for non-chemical control options may be assessed by their rate of use (end-use rate) in a targeted population. It should be remembered that acceptability levels may be related to the effectiveness of public awareness and advocacy strategies.

Human and environmental safety

An assessment of human and environmental safety allows the evaluation of measures for risk reduction, as well as the effectiveness of existing regulatory mechanisms.

(i) **Regulatory and control mechanisms:** A comprehensive evaluation of the effectiveness of existing regulatory and control mechanisms for the production, procurement, and use of insecticides is necessary to identify existing deficiencies, areas of priority corrective action and opportunities for implementing such action.

Regulatory efforts tend to be limited to the import and export of insecticides. Distribution of insecticide within countries (including transportation and temporary storage linked with distribution) and at the point of end use, are often inadequately controlled.

(ii) **Risk assessment:** Data should be collected on the components of the risk assessment and risk reduction strategy used by Parties. Details of previous incidents involving DDT and other insecticides used for vector control are also relevant, as are the remedial measures employed.

Disposal of DDT and alternative insecticides

Disposal methods employed by Parties need evaluation since good disposal practice is directly linked to human and environmental health. There are two major areas of concern: a) the disposal of small quantities of leftover chemicals and empty containers after an application and b) the disposal of obsolete stocks.

Misuse of insecticide containers presents significant human exposure risks. Empty containers are often used for domestic purposes (e.g. water or food storage). In the absence of effective, appropriate disposal mechanisms, normal rubbish disposal methods are often used for left over insecticides and containers. Liquids are usually poured into drains, ditches or hastily dug holes, from which they may then re-enter the general environment.

Inappropriate assessment of requirements and difficulties in forecasting epidemic outbreaks can lead to over-procurement, while inadequate application capacity may result in the accumulation of unwanted stockpiles, which may then become obsolete or time-expired. Also, there are a number of Parties who may not be using DDT at the moment but still keep significant stocks for epidemic outbreaks. Ensuring that obsolete stocks are disposed of with due regard to human and environmental health is a major concern.

Parties should therefore report on their disposal methods and capacity for a) small amounts of unused, unwanted chemicals, b) application containers, and c) obsolete stocks.

Cost analysis

A review of costs and a cost-effectiveness analysis will allow comparative evaluation of DDT and alternative vector control options, chemical and non-chemical. Cost is one of the primary reasons given by developing countries for low usage levels of insecticide alternatives to DDT. However, growing evidence suggests that significant savings could be made by streamlining procurement and programmes, and maximizing existing opportunities for implementation.

Data on cost should include annual budget allocations, as well as actual costs incurred by vector programmes using DDT and its alternatives (and how they relate to the Party's overall budget for vector control). Data should be classified by disease and should include programme cost per application cycle as well as cost per household (both to the programme and to individual families).

Cost analysis should also include operational costs (e.g. transport, remuneration of hired labour).

Non-chemical alternatives

This category reflects the ultimate goal and spirit of the Stockholm Convention, which promotes minimal reliance on chemical options for vector control through the evolution and implementation of affordable and effective non-chemical alternatives, without increasing local disease burdens.

A number of non-chemical options for vector control have proved effective. It should be possible to evaluate non-chemical alternatives in use, to identify opportunities to strengthen and increase the options available, and ultimately to reduce reliance on DDT and alternative insecticides.

The data collected should be evaluated along similar lines to those previously discussed for chemical options (see Table 2). These include the options being used; the sources, quality and quantity of related materials and products available to Parties; the effectiveness of these options; human safety issues and how they are being resolved, as well as cost analysis.

Vector control strategies

The overall objective of the analysis should be to assist in evaluating which vector control options work best, and what additional options have the potential to be introduced effectively. By collecting related budget and cost information, a comparative cost-effectiveness analysis can be made.

As well as evaluating vector control options currently used by a Party, any previous control option and the reasons for discontinuation need to be reviewed.

Disease management strategies

Current management strategies and options for the diseases for which DDT is used need evaluation. The data collected should give a broad overview of national disease programmes and provide insight into the institutional and programmatic framework within which the options discussed in the preceding sections relate to the Party's overall national targets for disease control.

Data should be collected on:

a. the list of disease management options and their related annual budgets (plus actual annual costs),
b. descriptions of delivery methods,
c. contributory impacts of the strategies on disease prevalence/incidence, and
d. overall objectives/goals of the national disease management strategy.

Resistance management strategies

Continued effectiveness of any chemical method of vector control is contingent on successfully preventing the development of resistance in its target vectors. The measures used to prevent resistance development must therefore be evaluated. Details of resistance management mechanisms and structures, including monitoring strategies, will be required.

Systems strengthening (needs assessments)

Achieving a sustainable reduction in current dependency on DDT rests on the successful implementation of realistic strategies that strengthen all related systems of national vector-borne disease management. Therefore, a thorough needs assessment should be undertaken to identify priority areas of action, in terms of needed resources and no-cost system-wide improvements. The needs assessment should include Parties' capacities to:

a) plan, implement, monitor and evaluate effective programmes,
b) undertake operational research to underpin and backstop programmes, and
c) develop regulatory, registration and control mechanisms to enable effective insecticide management.

Critical data requirements for this assessment should include current staffing levels for identified priority technical areas; training opportunities for those areas; vector control and disease management budget levels, sources and funding gaps; and programme gaps and implementation difficulties.

2. DATA COLLECTION AND REPORTING

Three main data collection methods have been identified:

(i) Questionnaire survey.

(ii) Annual routine country sector/ministry/programme reports, and United Nations (WHO, UNEP and UNIDO) data collection sources.

(iii) Direct in-depth assessment.

(i) Questionnaire survey

A questionnaire survey should allow routine but critical data to be collected from Parties in a structured format (see Table 2). A draft questionnaire protocol has been developed and needs field-testing and finalization.[1]

A guidance document, clearly outlining the survey's objectives, advising on appropriate ways of data collection, and giving instructions for submitting the completed questionnaire, should accompany the protocol.

At the start of each three-year reporting cycle, the Secretariat should make the questionnaire protocol and accompanying guidance document available to each Party on the DDT Register. Documents can be supplied in either electronic or hard copy form, although electronic submissions should be encouraged wherever possible.

At the end of each three-year reporting cycle, Parties should submit the completed questionnaires to the Secretariat, which will forward a copy to WHO.

[1] Documents INC.7/3 and INC.7/4

(ii) Annual routine country reports and other United Nations data collection processes

This category of data can supplement and possibly corroborate or validate the data collected through the questionnaire. It can also provide valuable additional background information for which a questionnaire may not be appropriate.

Data corroboration and validation serves to ensure that conclusions drawn by the Conference of Parties on a particular Party's progress in, or capacity for, reducing reliance on DDT, are based on complete and sound evidence.

Country reports: The Party, in collaboration with the Secretariat and WHO, should identify relevant annual country reports (programme, ministry and/or sector reports, as appropriate).
At the beginning of each year, two copies of the identified annual country reports for the preceding year should be submitted to the Secretariat, which should forward a copy of each report to WHO.

UN data sources: Several supplementary data sources exist within the United Nations system, including the data collected under the WHO Pesticide Evaluation Scheme (WHOPES), the UNEP Pesticides and POPs databases, as well as the UNIDO database on POPs.

(iii) Periodic Assessments

To study more complex issues, it is proposed that Parties receive assistance in carrying out detailed direct assessments. Table 2 lists areas that might be best evaluated by direct assessment. WHO, in collaboration with the Secretariat, should determine the need, scope and the timing of the study for each Party.

Where appropriate, such direct assessment studies should coincide with the last year of a Party's three-year reporting cycle, so that any findings and conclusions will be current and relevant to the evaluation of reporting cycle.

If it is determined that consultants are needed for direct assessments, then they should work under very clear, detailed terms of reference developed by the Secretariat in collaboration with WHO.
A standardized format should also be developed for reporting.

3. EVALUATION OF CONTINUED NEED FOR DDT

In accordance with Paragraph 6, Part II of the Convention, it is proposed that the Conference of Parties establishes a Technical Group, under the auspices of WHO, with clear terms of reference, to evaluate the information collected from individual Parties, and submit conclusions and recommendations to the Conference of Parties through the Secretariat. The timing of the submissions should be determined in consultation with the Secretariat.

Table 1: Basic information required for the evaluation of the continued need for DDT in disease vector control

A Production and use of DDT

1. Availability (source, quality)
2. Efficacy (entomological, including susceptibility and resistance management, epidemiological)
3. Acceptability
4. Annual use for disease control (in kg of active ingredient, by disease and target population)
5. Current stocks, including stock management
6. Human and environmental safety (risk assessment, regulatory measures)
7. Cost analysis

B DDT ALTERNATIVES (INSECTICIDES, METHODS AND STRATEGIES)

B1 Alternative insecticides, including bio-insecticides

1. Alternative insecticides and bio-insecticides options in use
2. Availability (source, quality)
3. Efficacy (entomological, including susceptibility and resistance management, epidemiological)
4. Acceptability
5. Annual use for disease control (in kg of active ingredient, by type of application, disease and target population)
6. Current stocks, including stock management
7. Human and environmental safety (risk assessment, regulatory measures)
8. Cost analysis

B2 Non-chemical Methods

1. Non-chemical options in use
2. Availability (source, quality)
3. Efficacy (entomological, epidemiological)
4. Acceptability
5. Annual use for disease control (by disease and target population)
6. Current stocks, including stock management
7. Human and environmental safety (risk assessment, regulatory measures)
8. Cost analysis

B3 Strategies

1. Disease management strategies
2. Vector control strategies
3. Resistance management strategies

C Systems strengthening

1. Institutional set-ups
2. Capacity for planning, implementing, monitoring and evaluation (financial, human resources, infrastructure)
3. Capacity for operational research (financial, human resources, infrastructure)
4. Capacity for insecticide management (regulatory: registration and control)
5. Targets and needs for reducing reliance on DDT

Basic information	Assessment intent (*Why* the basic information is needed)	Critical data needed (*What* minimum data is needed)	Collection method (*How* the data is to be collected)
A. PRODUCTION AND USE OF DDT			
Availability (source, quality)	▪ Information on how much DDT is available to a Party (sources and amount of production, export and import) and the formulations of DDT.	a. Annual production, export or import of active ingredient b. Formulations c. Production plant information (location and capacity) d. Import source(s) and repackaging information	(a–d) Questionnaire and/or review of country records (e.g. POPs Inventories, Ministry reports) Other collection supplements (e.g. WHOPES and UNIDO database on POPs).
Annual use for disease control	▪ Indicates need for DDT; criteria for application and coverage. ▪ Decision-making/institutional structures	a. Annual amount of active ingredient used, by disease: - application criteria - geographical areas - population coverage b. Disease profiles in application areas c. Decision-making process on use	(a–c) Questionnaire supplemented by review of country reports (c) Evaluation reports of periodic direct assessment
Current stocks, including stock management	Evaluation of current stock; the conditions of stocks and storage facilities, as well as the distribution systems utilized.	a. Annual stock in use and condition of stocks b. Storage (location/capacity of facilities and storage conditions) c. Distribution systems in use	(a & b) Questionnaire supplemented by review of country reports (e.g. Insecticide Inventories), as well as WHOPES records (b & c) Evaluation reports of periodic direct assessment
Disposal	▪ Evaluation of the disposal methods in use for (a) small amounts of unwanted chemicals, (b) application containers and (c) obsolete stocks ▪ Disposal capacity	a. Disposal methods for application containers and residuals of DDT b. Disposal methods for obsolete DDT c. Disposal facilities (location, capacity and annual amount disposed)	(a–c) Questionnaire (a–c) Evaluation reports of direct periodic assessment

Basic information	**Assessment intent** (*Why* the basic information is needed)	**Critical data needed** (*What* minimum data is needed)	**Collection method** (*How* the data is to be collected)
Efficacy (entomological, including susceptibility and resistance management, epidemiological)	To validate the assumptions underlying DDT application choices (epidemiological profile of disease, and vector ecology)	a. Annual susceptibility test b. DDT residual efficacy bioassays (monthly) c. Disease prevalence/incidence rates. d. Entomological inoculation rates e. Components of resistance monitoring mechanisms	(a–e) Questionnaire supplemented by review of country reports (e.g. ministry of health) (e) Evaluation reports of periodic direct assessment
Acceptability	Level of acceptance of DDT application; indication of public involvement in decision-making processes	a. Refusal and re-plaster rates (plus reasons given by targeted populations)	Questionnaire
Human and environmental safety (risk assessment, regulatory measures)	Provides insight into measures for promoting health and environmental protection. Evaluates regulatory mechanisms and efficacy of regulations	a. Components risk assessment strategy b. Descriptions of (plus efficacy of) regulatory mechanisms c. DDT incidents, if any	(a–c) Questionnaire supplemented by review of country reports
Cost analysis	Will enable comparative evaluation with other options currently employed and cost-effective analysis	a. Annual cost/budget for DDT application (by disease and to overall vector control) b. Cost per cycle and per household	(a & b) Questionnaire supplemented by review of country reports

Basic information	Assessment intent (*Why* the basic information is needed)	Critical data needed (*What* minimum data is needed)	Collection method (*How* the data is to be collected)
B1. ALTERNATIVE INSECTICIDES, INCLUDING BIO-INSECTICIDES			
Availability (source, quality)	Information on how many DDT insecticide alternatives are available to a Party, and the formulations in use.	a. Annual production, export or import of active ingredient b. Formulations c. Production plant information (location and capacity) d. Import source(s) and repackaging information	(a –d) Questionnaire and/or review of country records (e.g. POPs inventories, ministry reports) Other collection supplements (e.g. WHOPES)
Annual use for disease control	▪ Indicates need for insecticide; criteria for application; coverage etc. ▪ Decision-making/institutional structures ▪ Insecticide application processes This will aid the assessment of the validity of assumptions underlying use of chemical alternatives.	a. Annual amount of active ingredient used (by alternative and disease): - application criteria - geographical areas - population coverage b. Disease profiles in application areas (not covered under DDT) c. Decision-making process on use of insecticides	(a–c) Questionnaire supplemented by review of country reports (c) Evaluation reports of periodic direct assessment
Current stocks, including stock management	Evaluation of current stocks of alternative insecticides; the conditions of stocks and storage facilities, as well as the distribution systems utilized.	a. Annual stock in use and condition of stocks b. Storage (location/capacity of facilities and storage conditions) – if not covered under DDT c. Distribution systems in use	(a & b) Questionnaire supplemented by review of country reports (e.g. insecticide inventories), as well as WHOPES records (b & c) Evaluation reports of periodic direct assessment

Basic information	Assessment intent (*Why* the basic information is needed)	Critical data needed (*What* minimum data is needed)	Collection method (*How* the data is to be collected)
Efficacy (entomological, including susceptibility and resistance management, epidemiological)	To validate the assumptions underlying the use of the alternatives (epidemiological profile of disease, and vector ecology)	a. Annual susceptibility test b. Insecticide residual efficacy bioassays (monthly) c. Disease prevalence/incidence (if not covered under DDT) d. Entomological inoculation rates e. Components of resistance monitoring mechanisms (if not covered under DDT)	(a–e) Questionnaire supplemented by review of country reports (e.g. ministry of health) (e) Evaluation reports of periodic direct assessment
Disposal	▪ Evaluation of the disposal methods in use for (a) small amounts of unwanted chemicals, (b) application containers and (c) obsolete stocks ▪ Disposal capacity	a. Disposal methods for application containers and residuals of insecticides IF NOT COVERED UNDER DDT: Disposal methods for obsolete insecticides c. Disposal facilities (location, capacity and annual amount disposed)	(a–c) Questionnaire. (a–c) Evaluation reports of direct periodic assessment
Acceptability	Level of acceptance of DDT insecticide alternatives; indication of public involvement in decision-making processes	a. Acceptance and/or use rates (+ associated reasons given by targeted populations)	Questionnaire
Human and environmental safety (risk assessment, regulatory measures)	Provides insight into measures promoting health and environmental protection. Evaluation of regulatory mechanisms (including institutional structures) and efficacy of regulations; needs History of insecticide incidents (relating to vector control) Public awareness strategies Worker safety issues	d. Components of risk assessment strategy e. Descriptives on (plus efficacy of) regulatory mechanisms f. Insecticide incidents, if any g. Descriptions of worker safety and public awareness strategies	(a–c) Questionnaire supplemented by review of country reports

Basic information	Assessment intent (*Why* the basic information is needed)	Critical data needed (*What* minimum data is needed)	Collection method (*How* the data is to be collected)
Cost analysis	To make possible comparative evaluation with other options currently employed and cost-effectiveness analysis	c. Annual budget for alternative application (by disease and proportion of overall vector control) d. Cost per application cycle (and per household, as applicable)	(a & b) Questionnaire supplemented by review of country reports
B2. NON-CHEMICAL METHODS			
Availability (source, quality)	Evaluate alternative non-chemical options in use; sources and quality of related materials and products, as appropriate.	a. List of methods in use: b. Annual production, export or import of related materials and products (as appropriate) c. Production facility (capacity and location)	(a–c) Questionnaire and/or review of country records (e.g. POPs inventories, ministry reports) Other collection supplements (RBM-MAL sources)
Current stocks, including stock management	Current stock information; conditions of stocks and storage facilities	a. Annual stock of main materials and products (nets etc.) b. Storage (location/capacity of facilities and storage conditions) c. Technical and management personal (national/local areas) d. Distribution/delivery processes	(a - d) Questionnaire and/or review of country records (e.g. POPs inventories, ministry reports) (b–d) Evaluation reports periodic direct assessment
Annual use for disease control (by disease and target population)	Evaluation of the need for methods in use (by disease type and coverage).	Annual coverage (by method): - amount of main products/materials used - targeted diseases - geographical areas covered - population coverage by method (also as proportion of overall vector control)	(a–c) Questionnaire supplemented by review of country reports
Efficacy (entomological, epidemiological)	Validate assumptions underlying the use of methods employed	a. Contributory impact on disease prevalence (measurement of bite rates in relation to ITMs, impact on vector density etc. as appropriate)	Questionnaire supplemented by review of country reports (vector control programme reports)
Acceptability	Level of acceptance of DDT application; indication of public involvement in decision-	a. Use rate (plus reasons given by targeted	Questionnaire

Basic information	Assessment intent (*Why* the basic information is needed)	Critical data needed (*What* minimum data is needed)	Collection method (*How* the data is to be collected)
	making processes	populations)	
Human and environmental safety (risk assessment, regulatory measures)	Evaluation of risks posed by the use of methods, as well as regulatory structures and mechanisms ensuring appropriate use	Components of risk assessments strategy (by method) - major findings of risk assessment	Questionnaire supplemented by review of country reports
Cost analysis	Cost evaluation of the different methods in use to enable comparative assessment of cost-effectiveness etc.	Annual programme budget per method, including: - funding sources for related products and materials etc) - unit cost + annual recurrent cost or cost per application, as appropriate	Questionnaire supplemented by review of country reports (vector control programme reports)
B3. STRATEGIES			
Disease management strategies	Evaluation of disease management options and impact on disease incidences	List of disease management options (plus related budgets) Descriptions of delivery methods Impact on disease incidence	Questionnaire supplemented by review of country (sector) reports Also validated by the evaluation reports on direct periodic assessments
Vector control strategies	Evaluation of disease control strategies and impact on disease incidences	List of vector control options in use Vector control targets List of past options and reasons for termination Descriptions on delivery methods (institutional and programmatic) Impact on disease incidences (local and national, as appropriate)	Questionnaire supplemented by review of country (sector) reports Also, validated by the evaluation reports on direct periodic assessments

Basic information	Assessment intent (*Why* the basic information is needed)	Critical data needed (*What* minimum data is needed)	Collection method (*How* the data is to be collected)
Resistance management strategies	Assessment of mechanisms for preventing vector resistance to the options in use	Descriptives on plus efficacy of) resistance mechanisms/structures	Questionnaire supplemented by review of country reports Also, validated by the evaluation reports on direct periodic assessments
C. SYSTEMS STRENGTHENING			
Capacity for planning, implementing, monitoring and evaluation (financial, human resources, infrastructure)	Situational assessment to explore opportunities for strengthening (for both needed resources and no-cost improvements)	Trained management personnel (by technical area and distribution) Annual vector control budget (plus as a proportion of overall disease management) Sources of funding (local and external) List of relevant training institutions Regulatory mechanisms (plus efficacy)	Questionnaire supplemented by review of country reports Also, validated by the evaluation reports on direct periodic assessments
Capacity for operational research (financial, human resources, infrastructure)			
Capacity for insecticide management (regulatory: registration and control)			
TARGETS AND NEEDS FOR REDUCING RELIANCE ON DDT	Needs assessment	a. Programme gaps b. Policy, regulatory and institutional gaps c. Technical manpower gaps (by technical area) d. Training gaps e. Annual funding gaps	Questionnaire supplemented by review of country reports Also, validated by the evaluation reports on direct and detailed periodic assessments
SUPPLEMENTARY **Vector control methods used in the past (insecticides, bio-insecticides and non-chemical)**	Information on what methods have been applied in the past and the reasons for their discontinuation	List of options used in the past - length of time in use - reasons for discontinuation	Questionnaire