WHO-EM/VBC/105/E

Report on the

First meeting of the Regional Scientific and Technical Advisory Committee (STAC) of the WHO/EMR/UNEP/GEF-supported project

Amman, Jordan
2–3 November 2008

World Health Organization
Regional Office for the Eastern Mediterranean

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EXECUTIVE SUMMARY

With the support from the Global Environment Facility (through a PDF-B grant) the World Health Organization (WHO) Regional Office for the Eastern Mediterranean (EMRO), in consultation with eight Member States developed a project entitled: *Demonstration of Sustainable Alternatives to DDT and Strengthening of National Vector Control Capabilities in the Middle East and North Africa*. The eight countries include: Djibouti, Egypt, Islamic Republic of Iran, Jordan, Morocco, Sudan, Syrian Arab Republic and Yemen. To oversee the successful implementation of the project, it was recommended by the Project Steering Committee during the PDF-B funding (preparatory phase) that the Regional Director, WHO/EMRO establish a Regional Scientific and Technical Advisory Committee (STAC). This committee, in addition to meeting regularly, would also be expected to provide onsite visits to project countries.

The first meeting of the Regional Scientific and Technical Advisory Committee (STAC) was held in Amman, Jordan from 2–3 November 2008. The meeting was attended by a total of 27 participants, of whom 12 were representatives from the project countries, 8 were STAC members and 7 were from the WHO Secretariat. Djibouti was unable to send a representative.

The participants in the meeting were able to review the status and progress of vector control implementation in project countries; orient the regional STAC members on the WHO/EMRO/UNEP/GEF project; propose key strategies and actions for timely and successful implementation of the project which included the identification and development of a template for national protocols, identification of technical support needs and proposed actions, timelines and budgets.

This very important project in the Region is great opportunity to build the capacity of countries in implementing principles of integrated vector management and sound management of pesticides as alternatives to the use of DDT. The project may also contribute to reducing reliance on the use of pesticides and to minimizing the potential to revert to DDT for the prevention and control of vector-borne diseases in the participating countries.

Recommendations

To countries

1. Member States should modify the selection of sites for demonstration activities as agreed in the meeting and, where applicable, provide justification for such modifications in the study protocol.

2. WHO and Member States should mobilize additional resources to consider expanding capacity and support to other countries in the Region. Countries should include in GFATM proposals (where applicable) some key activity components of this project to ensure its sustainability.

To UNEP/GEF

3. UNEP/GEF should expedite the formal signing of the contract with WHO/EMRO so that transfer of funds can be effected as soon as possible for the implementation of the project.

4. UNEP/GEF should contact FAO and explore the acceleration of the implementation of the African Stockpile Programme (ASP) in Djibouti and Sudan to address the disposal of obsolete pesticides as outlined in component 3 of this project.

To WHO/EMRO

5. WHO/EMRO should develop a guidance document and tool for cost–effectiveness analysis of vector control interventions for demonstration activities within the project before field implementation begins.

6. WHO/EMRO should consider the invitation of the Islamic Republic of Iran to host the next meeting and take the necessary actions. The next meeting in principle is scheduled for June 2009 and should include sufficient time for field visits by participants.

7. WHO/EMRO should invite the regional offices of FAO and UNEP to participate actively in the project and should expedite the development of the agreement with FAO/HQ on the execution of component 3 of this project.

8. WHO/EMRO should distribute the cost of hiring the assistant technical project coordinator from the allocated budget for activities, as UNEP/GEF only approved US$ 175 000. As the allocated budget is not enough to cover the salary for 5 years, other sources of funding should be sought in the long term.

9. WHO/EMRO should circulate the draft protocols from countries to STAC members 2 months prior to the planned regional harmonization workshop in June 2009. This will give STAC members adequate time to provide feedback to countries for modification as necessary.

10. WHO/EMRO should follow up with project countries on the confirmation of the country representatives to this meeting as the official national project coordinators or, if otherwise, propose names as appropriate.

1. INTRODUCTION

With the support from the Global Environment Facility (through a PDF-B grant) the World Health Organization's Regional Office for the Eastern Mediterranean (WHO/EMRO), in consultation with 8 countries of the Eastern Mediterranean Region, conducted a comprehensive vector control needs assessment (VCNA) using tools and guidelines developed by WHO for this purpose; identified needs, gaps and opportunities for implementing vector control in the framework of IVM; and developed a project entitled: *Demonstration of Sustainable Alternatives to DDT and Strengthening of National Vector Control Capabilities in the Middle East and North Africa*. The eight countries were Djibouti, Egypt, Islamic Republic of Iran, Jordan, Morocco, Sudan, Syrian Arab Republic and Yemen. To oversee the successful implementation of the project, it was recommended by the Project Steering Committee during the PDF-B funding (preparatory phase) that the Regional Director of WHO/EMRO establish a Regional Scientific and Technical Advisory Committee (STAC). This committee, in addition to meeting regularly, would also be expected to provide onsite visits to project countries.

The first meeting of the Regional Scientific and Technical Advisory Committee (STAC) was held in Amman, Jordan on 2–3 November 2008. A total of 27 participants attended the meeting, of whom 12 were representatives from the project countries, 8 were STAC members and 7 were from the WHO Secretariat. Djibouti was unable to send a representative. The objectives of the meeting were to: review the status and progress of vector control implementation in project countries; orient/familiarize regional STAC members to the WHO/EMRO/UNEP/GEF project; and propose key strategies and actions for timely and successful implementation of the project through the review and identification of activities to finalize national protocols and study design for project demonstration, identification of technical support needs and development and budgeting of country and regional office workplans for project implementation. The meeting programme can be found in Annex 1. The list of participants is included in Annex 2.

The meeting was opened by Dr Hashim Ali El-Zein El-Mousaad, WHO Representative, Jordan, who delivered a message from Dr Hussein A. Gezairy, WHO Regional Director for the Eastern Mediterranean. In his message Dr Gezairy thanked UNEP/GEF for their support and noted that the support had allowed project countries to implement the integrated vector management (IVM) as a national policy for the control and prevention of vector-borne diseases, strengthen national coordination mechanisms, infrastructural and institutional arrangements and scale up key vector control interventions. The promotion of DDT alternatives went hand in hand with the promotion of judicious use of public health pesticides.

In his welcome address, on behalf of H.E. Dr Salah Mawajdeh, the Minister of Health, Jordan, Dr Adel Belbeisi, Director Primary Health Care Administration, Ministry of Health, noted that although Jordan had eliminated malaria, leishmaniasis and schistosomiasis were still a public health problem in certain parts of the country. The country also still had a problem of obsolete pesticides – including those of DDT. Noting that elimination of obsolete pesticides was one of the project objectives, Jordan committed itself to ensuring that this

objective was achieved and that the capacity to prevent future obsolete pesticides was strengthened in the country.

Dr Jan Betlem, representing UNEP/GEF as well as a STAC Member for the project, highlighted how the implementation of IVM by Member States was critical to the work of UNEP/GEF. When Member States implemented sustainable and cost-effective alternatives to DDT for vector control, therefore reducing their reliance on the use of DDT, they complemented the work of UNEP/GEF. It was for this reason that UNEP/GEF was supporting a regional project that aimed at demonstrating cost-effective and sustainable DDT alternatives in the framework of IVM through strengthened national capabilities in vector control. The utilization of results from this study could be used in other countries of the Region, which were currently not part of this project.

Dr Abraham Mnzava, Regional Adviser, Vector Biology and Control, WHO/EMRO, briefed the participants on the objectives of the meeting, the method of work and the expected outcome of the meeting.

2. INTRODUCTION TO THE PROJECT TO DEMONSTRATE COST-EFFECTIVE AND SUSTAINABLE DDT ALTERNATIVES

2.1 A snapshot of the project – from project idea to implementation of cost-effective and sustainable DDT alternatives

Abraham Mnzava, WHO/EMRO

The idea of a regional project was conceived in Tunis, Tunisia in 2003 and in December 2003, a draft proposal for PDF-B funding was developed in Amman, Jordan. The proposal was revised and GEF approved US$ 650 000 for 8 countries, which undertook preparatory work for the implementation of the full project. Although the project was approved in November 2004, implementation only began in January 2006. With the support of a Project Steering Committee, national coordinating mechanisms were established; tools and guidelines for vector control needs assessment (VCNA) were finalized in Muscat, Oman in March 2006; countries were supported to undertake and analyse VCNAs and developed IVM plans and GEF proposals. These were reviewed in Damascus in November 2006; in January 2007 an expert committee drafted a full project proposal in Alexandria; the project proposal was endorsed in March 2007 in Damascus by the Project Steering Committee and letters of endorsement were received from all participating countries.

The main objective of the project is to reduce reliance on DDT by minimizing the potential to revert to DDT for prevention and control of vector-borne diseases through the use of sustainable, cost-effective and environment-friendly alternatives. This is expected to be achieved through: establishing an IVM framework, criteria and procedures for optimization of vector control resources/tools/interventions; strengthening inter- and intra-sectoral coordination, partnerships and community empowerment; and building national capacities for IVM and for sound management of pesticides in line with the Stockholm Convention.

The anticipated project outcomes include the following: Viability, availability, sustainability and cost-effectiveness of DDT alternatives demonstrated; capacity built in each country to plan, implement, monitor and evaluate the application of DDT alternatives based on the principles of IVM; collection, repackaging and disposal of persistent organic pollutants (POPs) pesticides used in public health and agriculture completed; information on good practices and demonstrated cost-effective and sustainable alternatives are taken up by national institutions and in planning processes; and transboundary and national coordination, information sharing and monitoring and evaluation mechanisms operational and effective in promoting IVM without the use of DDT. Under each outcome, a list of broad activities is available and will be used to develop budgeted country and Region-specific plans of actions over the 5 year project period.

Where are we now? The project has been approved for a total of US$ 3 960 014. Contracts between WHO and UNEP/GEF are in the process of being finalized and payment of first instalment is expected soon. The Regional STAC was established by the Regional Director of WHO/EMRO with very clear terms of reference (see Annex 3). Representatives from countries are expected to serve as the national project coordinators and that the multisectoral national IVM steering committees are to serve as project steering committees. By the end of this meeting, participants will have reviewed the status and progress of vector control implementation in project countries; oriented regional STAC members on the WHO/EMRO/UNEP/GEF project; proposed key strategies and actions for timely and successful implementation of the project by reviewing and drafting national protocols and study design for project demonstration; identified technical support needs and proposed actions for project implementation; and developed and budgeted country and regional workplans for project implementation.

2.2 Demonstrating and scaling-up sustainable alternatives to DDT in vector management

Jan Betlem, UNEP/GEF

The joint UNEP/WHO global programme Demonstrating and Scaling up Sustainable Alternatives to DDT in Vector Management (DSSA) aims at the protection of human health and the environment through the reduction of emission of DDT into the global environment by means of decreasing the use of DDT through introduction, demonstration and scaling-up of sustainable alternatives to DDT in disease vector management. The programme aims at doing this through the following interventions in various geographical, cultural, social, climatic, and eco-epidemiological regions in the world.

- Development, introduction, demonstration, and scale enlargement of various alternative approaches related to vector management. This includes not only alternatives to DDT through the replacement with other chemicals, but includes as well environmental measures to discourage the development of the vector population, increasing efforts to avoid human–vector contact, as well as improving the resistance of humans against relevant vector borne diseases.
- Strengthening of institutional structures related to vector management in actual and potential DDT using countries in order to encourage a sustainable way of vector

management based on integrated vector management (IVM), and decentralization of strategic government health intervention programmes related to vector management in order to obtain maximum community involvement and awareness, cost-effectiveness and sustainability.

- Demonstration of safeguarding and, depending on the specific project situation, disposal of stocks of DDT which, with new decentralized IVM strategies and alternative approaches in place, are no longer needed for vector control purposes. These stocks can consist of formal stocks as known and managed through the respective governments, but may include illegal stocks, and stocks without any proper management which act as resource base for DDT as well.

A programmatic approach is envisaged as it is expected that the related projects will yield valid basic information and experiences which can be applied (although adapted to the specific local circumstances) in other proposed project intervention areas. Through inter-linkage of the various projects in this global DSSA programme, the outcomes and experiences can easier be transferred and applied in new projects within the programme, and in replication efforts in both programme and non-programme countries. As such, the combination of achieved results under the DSSA programme will give documented evidence to the regional and global community on cost-effectiveness and sustainability of environmentally friendly interventions, providing basis for adapted global vector management strategies without the use of DDT, finally resulting in a total global elimination of DDT use.

The global DSSA programme will result in a yearly reduction of DDT application in vector management of about 4000 tons by the end of the Programme period (2014). Baseline estimates and indicators and targets for the global programme are considered from the start of the programme. Co-funding for the global DSSA programme will be received from the Global Environment Facility (GEF). The global DSSA programme consists of: 2 projects for US$ 11.3 million approved under GEF-3 (2002–2006). This includes the WHO/EMRO/UNEP project; 1 project for US$ 4.0 million approved under GEF-4 (2006–2010); 6 projects for US$ 16.7 million expected for future GEF-4 approval; and 1 project planned for approval during GEF-5 (2010–2014).

3. IDENTIFICATION OF RATIONALE, KEY ACTIVITIES, PROPOSED ACTIONS, TIMELINES AND BUDGETS FOR IMPLEMENTATION

This section in consultation with Annex 4 (the detailed work plan) outlines the seven project components with key proposed actions, timelines and budgets as identified by the regional STAC during the meeting for project implementation. The section also highlights some of the points that were discussed and agreed during the meeting. Only the most relevant ones are captured.

Component 1: Demonstration projects on DDT alternatives

Activity 1.1 Formulate the draft national protocols for demonstration activities

Rationale: During the PDF-B phase all participating countries prepared proposals outlining objectives, expected outputs and selection criteria for demonstration projects. These proposals will now have to be translated into protocols that contain the detailed methodology and activities, the inter-sectoral composition of national teams, indicators and mechanisms for monitoring and evaluation, and review and reporting approaches.

Activities: Each National Steering Committee will formulate a protocol based on the proposal they developed and following guidance from the WHO Regional Office, with on-site review by an international expert.

Implementation requires the following sub-activities:

1.1.1 Organize a multi-stakeholders meeting (including academia) to develop a draft protocol to be reviewed by the national steering committee for consensus before submission to WHO

1.1.2 Assign experts to provide on-site country visits

Discussion: A template for the development of a national draft protocol was presented and participants were given the opportunity to comment and to modify it. Discussion regarding the background information clarified the need for the protocols and the type of intervention(s) to be considered in developing the protocol by project countries. A concern was raised about the possibility of having more than one protocol per country in order to incorporate several diseases. The example of Morocco was given, in which the selected sites where malaria and leishmaniasis are found are clearly different. In such a case, the meeting agreed on the possibility to develop more than one national protocol while making sure that the specific objectives are clearly defined and spelt out.

The meeting also insisted on the need to evaluate interventions for each disease targeted. In the Islamic Republic of Iran, this is seen as an opportunity to involve other diseases other than malaria and therefore creating an IVM team; however, Jordan is faced with areas of overlapping diseases. In both cases the need to establish a strong IVM unit to implement the interventions in the framework of IVM was recommended. Yemen reported that the NMCP also covers vector control activities of other vector-borne diseases. Sudan reported having already established an IVM unit with a strong IVM multisectoral steering committee.

Due to the increase in the number of leishmaniasis cases in the Syrian Arab Republic, the country proposed to modify the list of selected sites to include areas with the largest number of cases. One of such areas was Aleppo, with a total of 17 500 reported cases in 2007. The meeting agreed that there would be no problem to change the sites as long as these were reflected in the protocols.

The importance of maximizing the use of current/alternative interventions to reduce the reliance on the use of pesticides was stressed as well as the need to build on and strengthen existing activities. The meeting also discussed which of vector-borne diseases were to be selected for the demonstration sites. Participants were reminded that this project intends to prevent the re-introduction of DDT and while some diseases present greater opportunity to demonstrate IVM (e.g. dengue), it was suggested to consider their inclusion very carefully to make sure that the objective of the project is not affected.

Below were some of the detailed points that were provided by STAC members on the different parts of the proposed protocol. For example the background information should include:

- Clear definition of objectives-detailed and precise objectives with adequate entomological and epidemiological information, including a list of proposed indicators
- Background information (include amount of DDT which could eventually be used to obtain baseline indicator for assessment of project outcome).

There was also discussion regarding the choice of indicators, highlighting the importance of distinguishing: 1) indicators specific for project component 1; and 2) indicators for the whole project. Furthermore, some indicators will have to be specific to country projects (such as Entomological Inoculation Rates [EIR]), while others will be common to all. See Annex 4 for details. Finally, a standard format for the development of national protocols was endorsed by the group and this is presented as Annex 5.

For activity 1.1.2, Morocco and Egypt indicated that they will assign national experts, while other countries will receive the support of international experts through WHO/EMRO.

Activity 1.2 Carry out any project-specific capacity building

Rationale: The regional capacity-building activities (Component 2) do not necessarily address some of the demonstration project-specific capacity building needs, such as project-specific (country or ecosystem specific) requirements, technical and managerial needs, etc. These need to be addressed through targeted capacity building on site.

Activities: Carry out any project-specific capacity building that may be required for successful project implementation, based on the needs identified in relation to the demonstration project protocol.

Implementation requires the following sub-activities:

1.2.1 Identify project-specific training needs
1.2.2 Identify experts to provide the training
1.2.3 Conduct project specific training in countries

Discussion: In discussing the above activities, participants noted the need to include training on entomological and epidemiological surveillance, species identification (e.g. sand

flies), insecticide resistance monitoring, operational planning, field application and safety of insecticides and community awareness. Yemen further requested training in strengthening intersectoral coordination for project and IVM implementation. In conducting this training, Jordan, Syrian Arab Republic and Yemen requested support from international experts, whereas the Islamic Republic of Iran did not require any specific training.

Activity 1.3 Organize a regional workshop for the harmonization of country protocols

Rationale: In order to generate conclusions that are applicable for varying ecological and epidemiological settings present in the region, methodologies and approaches need to be standardized so that the results derived from the project are comparable. This requires the harmonization of approaches and methodologies of the individual projects. Harmonization includes identifying complementarities, applying uniform techniques and methods and identifying and filling gaps.

Activities: Organize a four-day regional workshop for the harmonization of country protocols with effective follow-up for the completion of the protocols, and final review by the Scientific and Technical Advisory Committee (STAC, see component 5 below). The workshop will also produce a harmonized template for reporting mechanisms and formats.

Implementation requires the following sub-activities:

1.3.1 Conduct a regional workshop for the harmonization of country protocols (invite neighbouring countries

1.3.2 Produce a harmonized template for reporting mechanisms and format of results

Discussion: The participants agreed that country proposals using the protocol template developed be circulated to STAC members 2 months before the planned regional workshop in June 2009. This would allow time for STAC members to provide feedback to country project coordinators before the meeting so that they can provide additional information if needed.

Activity 1.4 Assist the national project coordinator in project implementation

Rationale: Country-specific activities will require support in terms of assistance in procurement, timely transfer of resources for their various activity phases, and the provision of technical experts in response to country requests.

Activities: Provide assistance to the National Project Coordinator for essential elements of demonstration project implementation in line with the agreed protocols. This may include the establishment of institutional arrangements, technical and managerial support and ensuring the resource base for the implementation of the protocols.

Implementation requires the following sub-activities:

1.4.1 Provide technical and managerial support to countries for implementation of demonstration activities

1.4.2 Provide requests for specific supplies needed for project implementation

1.4.3 Conduct onsite visits by experts on specific areas such as cost-effectiveness analysis

Discussion: During discussion, it was suggested that implementation of these activities will also include data collection, recording, analysis and reporting.

Activity 1.5 Monitor project activities

Rationale: Demonstration projects will need to be kept on track in terms of timelines and compliance with the protocol and agreed resource allocations. The value of the regional approach needs to be safeguarded and opportunities for synergies recognized at an early stage. This calls for an ongoing monitoring process, focusing on process indicators.

Activities: Monitoring of project activities, through screening of annual reports by the National Steering Committee and STAC and by on-site visits to demonstration projects by STAC members, and dissemination of observations and recommendations.

Implementation requires the following sub-activities:

1.5.1 Establish baseline data on agreed set of indicators
1.5.2 Monitor project activities
1.5.3 Conduct country on-site visits
1.5.4 Analyse data sets
1.5.5 Produce and disseminate reports

Activity 1.6 Provide technical support for the analysis of datasets and report writing

Rationale: The data generated by the demonstration projects need to be analysed and presented in information that will assist decision makers in the participating countries as well as in other countries in the Region. The results need to be reviewed independently, and a synthesis of the information at the regional level will allow generic lessons learned to be extrapolated for use in relevant settings in the region. The demonstration projects will also lead to the identification of new gaps in our knowledge, and their outcome forms the basis for recommendations on follow-up action, in research capacity building and IVM programme development.

Activities: Provide technical support, through consultancies, for the analysis of datasets, including cost-effectiveness and sustainability analysis, and the preparation of the final report. Organize a STAC meeting to review the national reports and draft the consolidated regional report, including lessons learned, for submission to relevant parties.

Implementation requires the following sub-activities:

1.6.1 Develop a practical guiding document/tool for cost-effectiveness analysis (including relative costs)

1.6.2 Conduct a workshop to review, finalize and field-test the tool
1.6.3 Train national vector control managers on how to use the cost-effectiveness tool
1.6.4 Provide technical support for cost-effectiveness analysis
1.6.5 Provide technical support for preparation of final reports

Discussion: The meeting discussed the need for reliable baseline data on demonstration activities and the need to develop a simple practical guiding document/tool for cost-effectiveness analysis. WHO/EMRO was requested to engage an expert to provide the draft document which will be reviewed by an expert group. A workshop will be held for project managers to understand the importance of accurate data collection (what and how to collect). It is also expected that the draft should be developed in not more than 2–3 weeks after engaging the consultant/expert. The possibility to develop a global tool was also discussed based on the experience from this project.

Activity 1.7 Organize STAC meetings and consolidated regional reports

Implementation requires the following sub-activities:

1.7.1 Organize a regional STAC meeting to review national reports
1.7.2 Provide consolidated report to STAC

Component 2: Capacity in each country to plan, implement and evaluate the application of alternatives to DDT based on the principles of IVM strengthened

Activity 2.1 Review policy and legal frameworks

Rationale: Enabling environments, in the form of policy, legal and regulatory frameworks, are of the essence to facilitate the establishment of an IVM programme. Without this capacity building component, the impact of other components will be considerably below its potential. The national vector control needs assessments, carried out during the PDF-B phase, without exception point to the weak frameworks within which IVM has to operate. The improvements foreseen contribute to the overall goals of good governance and are essential for the enforcement of regulations (see annex F of Project Brief).

Activities: Organize national seminars for the review of policy, legal and regulatory framework, including sound management of public health pesticides. Such seminars will produce action plans for detailed policy formulation and adjustment, legal improvements and the creation of an IVM policy framework. To implement these action plans following the first seminar, to support the process through consultation services, and to conclude the process with a second seminar. This will require political backing and endorsement at the end of the process.

Implementation requires the following sub-activities:

2.1.1 Organize high level meetings to raise political awareness and support for IVM and pesticide management policy and regulations

2.1.2 Develop draft national plans on policy, legal and regulatory frameworks for IVM and pesticide management
2.1.3 Provide consultants to support the development of a national action plans for implementation of principles of IVM and sound management of pesticides.
2.1.4 Conduct national stakeholder meeting to review the national action plan and to build consensus for its implementation
2.1.5 Provide additional technical support for implementation of the national action plan

Discussion: It was agreed by all countries to organize national seminars to review national policy, legal and regulatory frameworks for sound pesticide management in the context of IVM. Holding individual high level (ministerial level) multisectoral seminars, including national representatives of FAO and UNEP was proposed. It was noted that high level meetings are essential for impact on the legal framework for including public health pesticides in legislation. Some countries may consider individual meetings rather than national seminars with high level people depending on the local context.

In developing the national plans of action, the STAC recommended that countries make use of the results of the vector control needs assessments as starting point. The representative from the Islamic Republic of Iran pointed out that his country will identify and designate an appropriate focal point for this activity and that in Jordan, the Ministry of Health will write letters to all stakeholders inviting them to participate in the process. Both countries emphasized the need for the Ministry of Health to take the leadership. Jordan also mentioned that it will carefully review requirements for its registration process and capacity building for quality control laboratories as required.

The Representative of Morocco informed the meeting that his country has already reviewed the policy and legal frameworks through the implementation of IVM. However, awareness, appreciation and support by other departments/relevant sectors is still needed. In general it was proposed that national seminars be organized in each country to support the developed plan of action. The first meeting should be a very high level involving the Ministry of Health, Ministry of Environment, Ministry of Agriculture etc.) and should focus on pesticide management. The second meting should look at existing policies and make recommendations for actions to be taken at country level. In other words, the initial meeting is to review and develop a plan of action and the second seminar is to endorse the national plans.

The meeting agreed on key actions and steps to link IVM and sound management of public health pesticides. In the Islamic Republic of Iran, unlike in the other project countries, the GEF focal point is in the Ministry of Agriculture and not in the Ministry of Environment. In Sudan, institutional arrangements in relation to pesticides were much clearer but needed further enforcement. The meeting suggested that the assessment and responsibility for public health pesticides need to be within the Ministry of Health regardless of where the pesticides are used. It was also recommended that countries that have made good progress could use this activity as an opportunity to refine their policy and legal frameworks.

Activity 2.2 Produce promotional documents of successful institutional arrangements between the sectors

Rationale: Implementing vector control alternatives in an IVM context, and the sound management of pesticides, require inter-sectoral coordination and collaboration, with a focus on the health, environment and agriculture sectors. Clear agreements on the division of responsibilities and the sharing of resources, together with mechanisms to maintain a productive dialogue are main features of this collaboration. At the same time, communication channels and collaboration mechanisms within sectors need strengthening as well. The need for inter-sectoral action is greatest at the national level; at the other end of the spectrum, the involvement of local communities is a critical element in successful IVM and sound management of pesticides. The VCNA explicitly identified lack of inter-sectoral collaboration and community involvement as major obstacles that needed addressing through capacity building.

Activities: With an emphasis on advocacy, the activities include: the production of promotional documents, country visits, the organization of national seminars and the provision of examples and case studies of successful institutional arrangements between the sectors. In connection with community involvement, existing local health services, agricultural extension services and farmer field schools will be used to channels messages on IVM and sound management of pesticides to rural communities.

Implementation requires the following sub-activities:

2.2.1 Develop and produce relevant promotional documents. The meeting also proposed that the development and production of promotional materials will be done through:

- Strengthening communication through local network
- Developing and distributing IVM advocacy material including sound pesticide management
- Providing technical support to develop a communication plan on IVM for all levels
- Conducting orientation meetings on IVM principles
- Engaging all possible channels of communication with special emphasis on press and mass media
- Reviewing and monitoring results of educational activities
- Collaborating with existing educational sectors and communication experts

2.2.2 Support countries to adapt available promotional documents. It was proposed that the support to countries to adapt available promotional documents will include:

- The translation, publication and distribution of existing documents on IVM and pesticides safety (e.g. WHO Position Statement on IVM).
- Countries will provide specific proposals for public health communication experts within the Ministry of Health to develop these documents in local languages.
- Intrasectoral communication to be strengthened (e.g. malaria and communication departments)

- Workshops for communication officers from various sectors will be organized to develop specific key messages.
- Review existing advocacy documents from various sectors and adapt them to IVM principles
- Consultative meeting/workshops to finalize both messages and materials for advocacy will also be organized and materials be adapted for different audiences
- The need to engage creative people for the development of drama and other communication support tools was also highlighted. Documents shall be shared with school health programmes

2.2.3 Demonstrate successful case studies of institutional arrangements. Review experiences of successful institutional arrangements for the purpose of education and advocacy materials

2.2.4 Organize national seminars on strengthening institutional arrangements between sectors. Promote intersectoral collaboration through conducting of regular national and sub-national meetings/seminars

Discussion: In order to avoid providing confusing messages about pesticides management, it was recommended to review and harmonize messages given by various organizations such as WHO, FAO and UNEP). In the discussions, Yemen, Syrian Arab Republic and Egypt requested support on community mobilization and that this should be included in the respective country plan.

Activity 2.3 Restructuring of national vector control units for IVM implementation

Rationale: The establishment of a national vector control unit creates the structure for an optimized use of resources for vector control and the implementation of essential IVM functions. Building on existing vector control structures, and taking into account the VCNA reports, the changes will need to be agreed through a national consultation process that brings on board all stakeholders. Eliminating current levels of fragmentation between entities performing vector control activities, and between the health and other sectors on matters of vector control and pesticide management will need to be overcome. Promoting this process is, in fact, mandated by WHO Regional Committee resolution EMR52/R.6 Integrated vector management.

Activities: The WHO Regional Office informs national health authorities of the outcome and recommendations of the vector control needs assessments, in relation to IVM. Next, the National Steering committee starts a process of consultation leading to the restructuring of national vector control units, including vision and mission statements, clear terms of reference and a description of responsibilities, and the rationalization of posts to ensure all essential IVM functions are performed at all levels. Technical cooperation in the area of programme management is provided as required.

Implementation requires the following sub-activities:

2.3.1 WHO/EMRO to write to ministries of health to inform them of the outcome of the vector control needs assessment (VCNA)
2.3.2 National Steering Committee initiates restructuring process at country level
2.3.3 Develop vision and mission statements of vector control units
2.3.4 Develop terms of reference and descriptions of staff posts and responsibilities
2.3.5 Strengthen existing vector control units and advocate for additional human and financial resources
2.3.6 WHO to develop a concept paper on restructuring vector control units for adaptation by countries to their specific needs
2.3.7 Provide technical support/cooperation by the Regional Office and STAC

Activity 2.4 Develop/update guidelines and training materials

Rationale: Technical knowledge and skills will need to be developed for the effective implementation of IVM activities and the sound management of pesticides. These include technical strengthening and re-orientation in certain traditional area, and human resource development in new areas, such as principles and practice of IVM and economic evaluation. The capacity building in these areas is generic in nature and is therefore most efficiently carried out at the regional level for all participating countries. Such regional training events also provide opportunities for the exchange of experiences between the participants.

Activities: Developing, updating and/or reviewing of guidelines and training materials (e.g. the PEEM cost-effectiveness guidelines) for technical content and learning methodology; generation of relevant case study material (e.g. economic evaluations); organizing regional workshops and training courses for vector control professionals.

Implementation requires the following sub-activities:

2.4.1 Develop, update/or review and publish guidelines and training materials on IVM related training materials for implementation
2.4.2 Generate relevant case studies
2.4.3 Organize regional workshops and training courses – including training of community leaders on IVM

Discussion: The meeting agreed that priority areas for training should include: economic evaluation of interventions; sound management of pesticides; principles and practice of IVM; insecticide resistance monitoring and management; monitoring and evaluation of vector control interventions; biological control and where this intervention is applicable; epidemiological surveillance; and diagnosis and treatment of relevant vector-borne diseases. The meeting recommended the organization of inter-regional workshops on economic evaluation of interventions – alternatives to DDT.

Component 3: Collection, repackaging and disposal of obsolete POPs pesticides

Activity 3.1 Collection, repackaging and disposal of obsolete POPs pesticides

Rationale: All participating countries have identified the existence of obsolete public health pesticide stocks that include DDT and possibly other POPs pesticides. These POPs pesticides containing stocks pose health and environmental risks that increase with time. Prior to any action being taken to eliminate these stocks and remedy any environmental contamination that they may have caused, a detailed inventory of the quantities, locations and conditions of storage of these pesticides is required. It is imperative that such stocks are secured in order to prevent their further deterioration and leakage. Appropriate and timely action to safeguard POPs containing obsolete pesticides will immediately reduce the risks they pose and will prepare them for further action such as international shipment for destruction as envisaged in the Regional FAO led initiative.

Activities: Carry out a stakeholder analysis to determine which organizations should be informed and involved in the process of addressing POPs containing obsolete pesticides in the country; train personnel in safe and effective execution of updating the existing inventory of obsolete pesticides; update the field inventories concerning public health pesticides and other POPs pesticides stocks; compile and analyse data collected during the up-date of the field inventory data; procure equipment and services required to safeguard obsolete pesticides; carry out repackaging and centralization of obsolete stocks prioritized for action under expert supervision; securely store repackaged obsolete pesticides until further action for their elimination can be taken; export for final incineration in a dedicated hazardous waste incineration facility abroad.

Implementation requires the following sub-activities:

3.1.1 Carry out stakeholder analysis on organizations involved in POPs
3.1.2 Training personnel in safe handling of obsolete POPs
3.1.3 Undertake and update inventories on obsolete POPs
3.1.4 Compile, prioritize and analyse inventory data on obsolete POPs
3.1.5 Procure equipment and services to safeguard obsolete POPs
3.1.6 Repackage and centralize obsolete stocks of POPs
3.1.7 Securely store repackaged obsolete stocks of POPs

Discussion: The allocated budget covers the repackaging, transportation and destruction of about 100 tonnes of POPs. It was requested that FAO be fully involved in these activities. The project coordinator was requested to officially invite FAO to collaborate on the implementation of component 3 and formalize a contract. In this regard, it was expected that FAO will also involve the Stockholm Convention focal point, the project country and regional project coordinator. It was suggested that FAO should take full responsibility for the implementation of component 3. This should be possible as FAO, WHO and UNEP already have formal collaboration at global level. The meeting stressed the need to ensure this collaboration is also working at regional and country level. WHO/EMRO and UNEP/GEF were requested to determine the best way to avail these funds to FAO.

Under this activity, countries will provide a list of all POPs pesticides in the country and will prioritize. The meeting agreed that the project will focus on the Islamic Republic of Iran, Syrian Arab Republic and Jordan for this activity, as the other countries either fall under the African Stockpile Programme or do not have a major problem with obsolete POPs.

Component 4: Demonstration of cost-effective and sustainable alternatives and provision of information and good practices

Activity 4.1 Disseminate information

Rationale: Consistent, region-wide analyses of the cost-effectiveness and sustainability of alternative vector control methods, products and strategies are practically non-existent. The crux of this project is its regional dimension, pulling together the experiences and results of projects in the participating countries. Analysis and reporting are therefore critical components in order to achieve the ultimate goal of the project: the reduction of reliance on DDT and of the tendency to revert to DDT.

Activities: Prepare and publish a report and/or article for peer-reviewed literature to give wide dissemination to the outcome of the national studies, the regional analysis, and lessons learnt through consultants' services. Reports will be translated into English, French and Arabic. Provide support for the creation of dedicated web pages (in English, French and Arabic) to make information available through the internet.

Implementation requires the following sub-activities:

4.1.1 Publish 2 articles in peer-reviewed journals on best practices
4.1.2 Translate reports on demonstration of alternatives to DDT
4.1.3 Establish a roster of experts from the project countries
4.1.4 Create dedicated web pages to provide information through the internet at the Regional Office and link to appropriate country links
4.1.5 Use information collected to mobilize additional resources for project implementation and sustainability

Component 5: Trans-boundary and national coordination, information sharing and monitoring and evaluation mechanisms operational and effective in promoting integrated vector management without the use of DDT

Activity 5.1 Facilitate trans-boundary and national coordination, information sharing, monitoring and evaluation

Rationale: Successful implementation of the project requires the full-time assignment of a project coordinator and recruitment of a full time assistant technical project coordinator (a technical staff person) to assist the project coordinator, especially for technical issues and to ensure harmonization and coordination of project activities between the Regional Office of WHO and the participating countries.

In order to enable both coordinators to work properly, the provision of secretarial support is anticipated (budgeted through the Executing Agency fees budget-line)

Activities: Appointment of full-time project coordinator, appointment and recruitment of an assistant technical project coordinator; provision of secretarial support through the appointment of an office secretary, assignment of 8 national project coordinators, and mid-term and final evaluation through UNEP.

Implementation requires the following sub-activities:

5.1.1 Coordinate timely and efficiently proposed project activities
5.1.2 Share information on the outcome of the implementation of the proposed project-especially with bordering countries
5.1.3 Institutionalize border coordination as part of information sharing
5.1.4 Conduct ongoing monitoring and evaluation of the proposed project activities

Discussion: Trans-boundary collaboration needs to be facilitated through regional meetings. It was also felt that there was a need to institutionalize border coordination as part of information sharing. The meeting noted that border coordination for malaria activities already exists among neighbouring countries. The project should build and expand on such existing coordination.

Activity 5.2 Operate national steering committees

Rationale: Successful implementation of the project requires the establishment of National Steering Committees to oversee and guide the implementation, as well as monitoring and evaluation of the project on a national level.

Activities: Establishment of eight national steering committees (meeting once/twice a year)

Implementation requires the following sub-activities:

5.2.1 Reconstitute where applicable the composition of National Steering Committees
5.2.2 Conduct meetings of National Steering Committees twice a year
5.2.3 Support national steering committees to prepare and produce national reports

Activity 5.3 Operate the regional STAC and produce reports

Rationale: Successful implementation of the project requires the establishment of a Regional STAC, to oversee and guide the implementation, as well as monitoring and evaluation of the project on a regional level. Transboundary coordination of all project activities are ensured through the STAC.

Activities: Establishment of a regional STAC (with terms of reference including monitoring and evaluation as in Annex 3; meeting once/twice a year)

Implementation requires the following sub-activities:

5.3.1 Conduct meetings of the Regional Scientific and Technical Advisory Committee (STAC) twice a year
5.3.2 Support the Regional Scientific and Technical Advisory Committee to prepare and produce reports using the developed reporting template

Discussion: The STAC was requested by country representatives to produce a template for reporting under component 1 activities.

Component 6: Project management

6.1. Recruit and appoint project staff

Implementation requires the following sub-activities:

6.1.1 Appoint a full-time project coordinator
6.1.2 Recruit and appoint a full-time assistant technical project coordinator
6.1.3 Appoint a full-time programme assistant (secretary)
6.1.4 Assign 8 national project coordinators

Discussion: The meeting was informed that a full-time project coordinator (Regional Adviser VBC/EMRO) has already been assigned as WHO's in-kind contribution to the project. This also includes the services of a full-time programme assistant (secretary). The process to recruit a full-time assistant technical project coordinator is under way. Applicants have been short-listed and interviewed and are awaiting the decision of the regional selection committee. It is not possible to expedite this process in view of the fact that funds for the project have not yet been transferred to WHO/EMRO.

Given that GEF only approved US$ 175 000 for the recruitment of the assistant technical project coordinator and that the total cost is US$ 169 000 per year (US$ 845 000 for 5 years), the STAC and country representatives agreed that this amount will be covered proportionally across the project budget. It was proposed that the country representatives to this meeting would serve as the national project coordinators. The meeting also proposed and recommended that countries apply to the Global Fund to fight AIDS, Tuberculosis and Malaria for funding country project coordinators to ensure sustainability beyond the project life span.

6.2. Conduct independent project evaluation

6.2.1 Conduct mid-term evaluation of project by the executing agency (WHO)
6.2.2. Conduct terminal independent project evaluation by UNEP on behalf of GEF

4. CONCLUSIONS

This project provides a great opportunity to build the capacity of Member States to implement principles of integrated vector management and sound management of pesticides as alternatives to the use of DDT. The project can also contribute to reducing reliance on pesticides and minimizing the potential to revert to DDT for the prevention and control of vector-borne diseases in the participating countries.

5. RECOMMENDATIONS

To countries

11. Member States should modify the selection of sites for demonstration activities as agreed in the meeting and, where applicable, provide justification for such modifications in the study protocol.

12. WHO and Member States should mobilize additional resources to consider expanding capacity and support to other countries in the Region. Countries should include in GFATM proposals (where applicable) some key activity components of this project to ensure its sustainability.

To UNEP/GEF

13. UNEP/GEF should expedite the formal signing of the contract with WHO/EMRO so that transfer of funds can be effected as soon as possible for the implementation of the project.

14. UNEP/GEF should contact FAO and explore the acceleration of the implementation of the African Stockpile Programme (ASP) in Djibouti and Sudan to address the disposal of obsolete pesticides as outlined in component 3 of this project.

To WHO/EMRO

15. WHO/EMRO should develop a guidance document and tool for cost–effectiveness analysis of vector control interventions for demonstration activities within the project before field implementation begins.

16. WHO/EMRO should consider the invitation of the Islamic Republic of Iran to host the next meeting and take the necessary actions. The next meeting in principle is scheduled for June 2009 and should include sufficient time for field visits by participants.

17. WHO/EMRO should invite the regional offices of FAO and UNEP to participate actively in the project and should expedite the development of the agreement with FAO/HQ on the execution of component 3 of this project.

18. WHO/EMRO should distribute the cost of hiring the assistant technical project coordinator from the allocated budget for activities, as UNEP/GEF only approved US$ 175 000. As the allocated budget is not enough to cover the salary for 5 years, other sources of funding should be sought in the long term.

19. WHO/EMRO should circulate the draft protocols from countries to STAC members 2 months prior to the planned regional harmonization workshop in June 2009. This will give STAC members adequate time to provide feedback to countries for modification as necessary.

20. WHO/EMRO should follow up with project countries on the confirmation of the country representatives to this meeting as the official national project coordinators or, if otherwise, propose names as appropriate.

Annex 1

PROGRAMME

Sunday, 2 November 2008

08:30–09:00	Registration	
09:00–09:45	Opening Session Message from Dr Hussein A. Gezairy, Regional Director, WHO/EMRO Message from H.E. Minister of Health, Jordan Introduction of STAC Members and participants	
09:45–10:00	Objectives of the workshop, method of work and nomination of officers	
	Introduction to the project – demonstration of sustainable DDT alternatives	
10:30–11:00	A snapshot of the project	*Dr A. Mnzava* *J. Betlem*
11:00–11:30	Discussion	
	Viability and cost-effectiveness of DDT alternatives	
11:30–13:00	Protocol formulation Capacity building needs for protocol implementation	
14:00–15:40	Harmonization of protocol Technical support needed to implement protocol	
16:00–17:30	Monitoring and evaluation and dissemination of reports on demonstration activities	

Monday, 3 November 2008

	Capacity building for IVM implementation	
08:30–10:00	Conducting seminars for review of policy and legal frameworks for IVM Production of promotional documents Restructuring of vector control unit Development of guidelines and training materials on IVM	
	Collection, repackaging and disposal of POPs	
10:30–11:30	Collect, repackage and dispose POPs wastes	
11:30–12:30	Creation of web pages and publication of articles in scientific journals	
	Project management	
13:30–15:00	Recruitment of project coordinator and assistant coordinator Recruitment of national project coordinators	

	Establishment of National Steering Committees for project
	Establishment of a Regional Scientific Advisory and Technical Committee for project
15:20–16:45	Conclusions and recommendations
16:45–17:30	Closing session

Annex 2

LIST OF PARTICIPANTS

EGYPT
Dr Mohamed Ismail Soliman
Director
Research Institute of Medical Entomology
Ministry of Health and Population
Cairo
E-mail: rime@maktoob.com

ISLAMIC REPULBIC OF IRAN
Dr Ahmad Raeisi
Assistant Professor of Epidemiology (DCD/MOH &ME)
National Programme Manager for Malaria Control
Ministry of Health and Medical Education
Tehran
E-mail: raeisia@tums.ac.ir/ahmadraeisi@yahoo.com

JORDAN
Dr Adel Belbeisi
Director of Primary Health Care Administration
Ministry of Health
Amman
E-mail: epijor@wanadoo.jo

Dr Bassam Hijwai
Director of Communicable Diseases Control
Ministry of Health
Amman
E-mail: dcd@wanadoo.jo

Dr Khalil Abdul-Aziz Kanani
Head of Parasitic and Zoonotic Disease Department
Ministry of Health
Amman
E-mail: kh_kanani@yahoo.com

Eng. Alaa Rahahleh
Head of Vector Control
Great Amman Municipality
Amman
E-mail: alaa_elrahahleh@yahoo.com

Eng. Mohamad Abu-Ishmais
Great Amman Municipality
Amman
E-mail: abuishmais@yahoo.com

MOROCCO

Dr Btissam Ameur
Head of Vector Control Department
Directorate of Epidemiology and Diseases Control
Ministry of Health
Rabat
E-mail: btissama@gmail.com

SUDAN

Dr Hmooda Tuok Toto Kafy
Medical Entomologist – IVM Focal Point
National Malaria Control Programme
Federal Ministry of Health
Khartoum
E-mail: hmoodak@yahoo.com

SYRIAN ARAB REPUBLIC

Dr Hind Bakour
Manager of Malaria, Leishmaniasis and Schistosomiasis Control Programmes
Ministry of Health
Damascus
E-mail: h_bakour_750@yahoo.com

REPUBLIC OF YEMEN

Dr Shawki Almawri
Malaria Control Programme
Ministry of Public Health and Population
Sana'a
E-mail: shawkialmawri@yahoo.com

Dr Abdullah Amin Salem Owsh
Medical Entomologist
National Malaria Control Programme
Ministry of Public Health and Population
Sana'a
E-mail: owsh77@yahoo.com

MEMBERS OF THE REGIONAL AND SCIENTIFIC AND TECHNICAL ADVISORY COMMITTEE (STAC)

Mr Joshua Otto Yukich, Department of Public Health and Epidemiology, Swiss Tropical Institute, Socinstrasse 57 Postfach CH-4002, Basel, SWITZERLAND, Tel: + 15 049 142 524/41 764 562 791, Fax: E-mail: joshua.yukich@unibas.ch

Dr Lama Jalouk, Head of Aleppo Leishmaniasis Control Center, Aleppo, SYRIAN ARAB REPUBLIC, Tel: + 963 212 679 115, Fax: + 963 212 673 770, E-mail: lamajalouk@hotmail.com

Dr Salim Al Wahaibi, Director Department of Environmental and Occupational Health Ministry of Health, Muscat, Oman, Tel:+ 96 824 562 898, Fax:+ 96 824 563 121, E-mail: dir-env@moh.gov.om

Dr Mark William Rowland, Reader in Public Health Entomology and Malaria Control, London School of Hygiene and Tropical Medicine, Disease Control and Vector Biology Unit, London, United Kingdom, Tel: 02 072 994 719, Fax: 02 072 994 720, E-mail: mark.rowland@lshtm.ac.uk

Dr Jan Betlem, Task Manager POPs, UNEP Division of GEF Coordination, Nairobi, Kenya, Tel: + 254 207 624 607, Fax: + 254 207 624 041/4042, E-mail: jan.betlem@unep.org

Dr Morteza Zaim, Scientist, WHOPES, Control of Neglected Tropical Diseases, WHO/HQ

Avenue Appia 20, Geneva, SWITZERLAND, Tel:+ 410227 913 841, Fax:+ 410227 914 869, E-mail: zaimm@who.int

Dr Amal Bassili, TB Surveillance Officer and Focal Point, Tropical Disease Research, Division of Communicable Disease Control, WHO/EMRO, Abdul Razak El Sanhouri St., Cairo, Egypt. Tel: +20222 765 275, Fax: 002 022 765 414, E-mail: Bassilia@emro.who.int

Dr Abraham Mnzava, Regional Adviser, Vector Biology and Control, Communicable Disease Control, WHO/EMRO. Abdul Razak El Sanhouri St., Cairo, Egypt. Tel.: +20222 765 000. Fax: +20222 765 414. E-mail: vbc@emro.who.int

WHO SECRETARIAT

Dr Hashim Ali El-Zein El-Mousaad, WHO Representative, Jordan.
Dr Mohamed Elmi, Regional Adviser, Food and Chemical Safety
Ms Stephanie Guillaneux, Technical Officer, Global Malaria Programme, WHO/HQ
Dr Mohamoud Wais, Technical Officer, WHO Office, Sudan
Mr Hazem Sakr, Technical Assistant, Knowledge Management and Sharing, WHO/EMRO
Ms Nahla Ibrahim, Secretary, Division of Communicable Disease Control, WHO/EMRO
Ms Doaa AbdelRahman, Secretary, Division of Communicable Disease Control, WHO/EMRO

Annex 3

TERMS OF REFERENCE OF THE SCIENTIFIC AND TECHNICAL ADVISORY COMMITTEE

With support from the Global Environment Facility (through a PDF-B grant) the World Health Organization's Regional Office for the Eastern Mediterranean, in consultation with eight selected Member States, has developed a project entitled: *Demonstration of Sustainable Alternatives to DDT and Strengthening of National Vector Control Capabilities in the Middle East and North Africa*. The eight countries included in the project are: Djibouti, Egypt, Islamic Republic of Iran, Jordan, Morocco, Sudan, Syrian Arab Republic, and the Republic of Yemen.

The objectives of the project are as follows:

- To demonstrate the viability, availability, sustainability and cost-effectiveness of the alternatives to DDT;
- To strengthen national capacities for the planning, implementation and evaluation of the vector control alternatives to DDT, based on the principles of the integrated vector management (IVM);
- To strengthen national capacities for the sound management of DDT and other public health pesticides and safeguarding of POPs-containing pesticide wastes;
- To disseminate good practices, demonstrated alternatives and lessons learned in the participating countries.

The coordination and management structure of the project foresees, in each country, the designation of a national project coordinator and the establishment of a national steering committee. At the regional level, a regional project coordinator will be confirmed and an assistant regional project coordinator will be appointed; a regional Scientific and Technical Advisory Committee (STAC) will be established for the duration of the project.

The present document sets out the terms of reference of the STAC, it defines the criteria for the selection of STAC members and gives general guidance on its *modus operandi*

Following are the Terms of Reference for the members of the Scientific and Technical Advisory Committee of the project *Demonstration of Sustainable Alternatives to DDT and Strengthening of National Vector Control Capabilities in the Middle East and North Africa*:

- To review and comment on the national work plans and the harmonized protocols for the national demonstration projects for their relevance to the project objectives, their feasibility and technical soundness, and their completeness in addressing all elements required by the project.
- To give advice on all aspects of capacity building in the context of the project.
- To carry out an annual review of the progress reports of the demonstration projects, submitted by the National Coordinators, and to advise on scientific, technical and managerial aspects for the strengthening of the projects.

- To give advice on all challenges, constraints and problems encountered in the implementation of the national work plans including the implementation of the national demonstration project.
- To review the final reports of the demonstration projects and support the preparation of a consolidated regional report.
- To advise on ways and means to ensure that specific cross-cutting issues (cost-effectiveness analysis, sustainability) receive adequate attention in all relevant project activities.
- To advise on the mechanisms for inter-agency coordination and coordination between different sectors at the national level in support of the implementation of the project.
- To advise the WHO Regional Office, based on the national and regional experiences, about the steps needed to sustain the project's gains in the eight participating countries and to expand these gains to other countries in the Region.

Criteria for the selection of STAC members

Areas of expertise and technical background: The following areas of expertise must be represented in the STAC: vector control, epidemiology, environmental health and health economics. As integrated vector management is at the core of the project, vector control will be represented by two experts on the STAC. All members of the STAC should have a broad public health background. In addition to these areas of expertise, the following disciplines are specifically listed as they are expected to be acquired through co-opting STAC members for one or more meetings: social science, agricultural science and ecology. This does not exclude experts from other disciplines to be co-opted as the need arises.

Experience: Members of the STAC must have at least 15 years of experience in their area of expertise. They must have field experience in the region. They must have a sound academic background, with a post graduate degree in the area of expertise. It is an asset to have served on WHO or other UN Expert Panels.

Skills: Fluency in English

Modus operandi

The STAC will be composed of five core members, designated for the entire period of the project by the Regional Director of WHO EMRO. The Chair will be appointed by the Regional Director. The STAC has the possibility to co-opt members to address specific issues for which it feels attracting additional expertise is warranted.

Representing the Implementing Agency, a UNEP/GEF staff member will be a member of the STAC in order to monitor achievement of the incremental benefits of the project. Representatives of other UN sister organizations will be invited to the STAC meetings.

The official language for STAC meeting will be English.

The costs incurred by STAC activities will be covered from the project budget.

Annex 4

PROPOSED OUTCOME AND IMPACT INDICATORS FOR PROJECT AND DEMONSTRATION ACTIVITIES FOR DDT ALTERNATIVES

Outcome	**Impact**
Amount of DDT potentially used (Both) Amount of DDT actually used (Both) Amount of obsolete insecticides available (Both) The use of alternative insecticides (Both) (type/amount/sustainability) The use of alternative methods (Both) (Type/coverage) Surveillance system established including the establishment of sentinel sites with recording and reporting system (Demonstration sites) Additional number of vector control people trained in the country (Both) Number of publications on good practices/guidelines in vector control and insecticide management (Project) Presence of country legislation for public health pesticides (Project)	1. Entomological indicators – presence/ absence of vectors, changes in densities and EIRs where feasible (Demonstration) 2. Number of new cases (annual disease incidence) – where feasible 3. Prevalence of infection and/or disease 4. Number of deaths due to the vector-borne disease(s) 5. Cost and cost-effectiveness indicators: 5.1 Total cost of baseline intervention/IVM intervention 5.2 Cost per person protected baseline/IVM intervention 5.3 Cost of one additional prevented case 5.4 Cost of one additional prevented death due to the disease 5.5 Cost of one additional prevented infected bites where feasible Others ……

Annex 5

TEMPLATE PROTOCOL FOR PROJECT DEMONSTRATION ACTIVITIES

Background: (Instructions: literature review of previous studies on the subject; and justification of the study by stating the problem and its public health importance)

Objectives of the study:

General objective: (Instructions: state the goal you need to achieve)

Specific objectives: (Instructions: state the details of each objective that will finally lead to achievement of the goal)

Secondary objectives: (Instructions: these are subsidiary objectives that could be studied during the course of the project but are not the main objectives of the study, they are optional and vary according to the type of the study)

Materials and methods:

Study area/setting: (Instructions: describe the area or setting where the study will be conducted. This description should cover the details relevant to the study topic)

Study subjects: (Instructions: eligibility and exclusion criteria of the study subjects)

Inclusion criteria:

Exclusion criteria:

- **Study design:**
- **Sample size:** (Instructions: mention the input criteria for sample size estimation. This needs the expertise of an epidemiologist)
- **Sampling technique:** (Instructions: mention the sampling technique that will be used in order to obtain a representative sample for your target population. This needs the expertise of an epidemiologist)

Data collection tools and indicators: (Instructions: enclose the recording and reporting system that will be used to establish a surveillance system for the vector(s) and disease(s))

Bibliography/references: (Instructions: mention at least 10 recent articles relevant to the study subject and enumerated according to their order of appearance in the text)

Ethical Considerations:

Timelines

Tasks	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1.Study preparation																				
1.1 Selection of the field workers																				
1.2 Training																				
1.3 Field work preparation																				
2. Field work Implementation																				
2.1 Baseline survey and survey in the control sites																				
2.2 Establishment of surveillance system																				
3. Data collection, monitoring and evaluation																				

4. Data entry				
5. Data analysis				
6. Progress report (annual)				
7. Interim report				
8. Final report				