WHO-EM/VBC/110/E

Report on the

Second meeting of the regional Scientific and Technical Advisory Committee of the WHO/UNEP project supported by the Global Environmental Facility

Cairo, Egypt
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EXECUTIVE SUMMARY

The year 2009 marks the formal start of a five-year project entitled "*Demonstration of sustainable alternatives to DDT and strengthening of vector control capabilities in Middle East and North Africa*". This project is being implemented by the World Health Organization's Regional Office for the Eastern Mediterranean (WHO EMRO) and the United Nations Environment Programme (UNEP), with financial support from the Global Environmental Facility (GEF), in partnership with 8 countries of the WHO Eastern Mediterranean Region: Djibouti, Egypt, Jordan, Islamic Republic of Iran, Morocco, Sudan, Syrian Arab Republic and Yemen.

The second meeting of the project's Scientific and Technical Advisory Committee (STAC) was convened in Cairo on 1–3 July 2009 in order to review the progress of project activities, focusing in particular on the demonstration projects countries had committed to implement under the GEF arrangements. The meeting was attended by representatives from 7 of the 8 countries implementing the project, 8 of the 13 STAC members and WHO staff from headquarters, Regional Office and several country offices, as well as representatives of the Food and Agriculture Organization of the United Nations (FAO) and UNEP/GEF.

During the meeting, the STAC reviewed the individual country activities under the project as well as the regional activities coordinated by the WHO Regional Office in Cairo and it concluded that satisfactory progress had been made. It identified a number of constraints which it addressed in the meeting's recommendations. Clearly national policy frameworks for integrated vector management (IVM) and for the sound management of pesticides need strengthening, but this should be done in parallel with other capacity strengthening so that professionals would actually be able to use the new policy framework to their maximum potential.

There was concern over the speed of disbursement of funds and the STAC expressed apprehension over the impact of the forthcoming administrative changes at the WHO Regional Office. Incorporating its administration into the WHO Global Management System implied that administrative activities would be frozen between 15 October 2009 and 1 January 2010, and this should be taken into consideration in project planning.

The growing collaboration between WHO and FAO in the area of sound management of pesticides and in the disposal of obsolete pesticides was seen as a positive development that needs further enhancement. Concrete action is expected to follow in the immediate wake of the meeting.

Countries which were to implement a demonstration project used the presence of the STAC members to upgrade the objectives, design and proposed activities for such projects – yet, they will all need additional support from a visiting expert to finish their protocols.

There was a feeling among the STAC members that in this initial stage of the project it would be beneficial to have STAC meetings with a greater frequency than foreseen in the original project framework, but decisions on this issue were left to the Secretariat.

Recommendations

1. Recognizing that sound management of pesticides is a key approach towards the implementation of IVM, and noting that the capacity for essential function for the sound management of pesticides is inadequate in most Member States, the subject should be brought to the attention of the WHO Regional Committee for the Eastern Mediterranean for its consideration and appropriate action.

2. Stakeholders in the WHO/UNEP/GEF project should be invited to provide inputs into the process of strengthening the international policy framework for integrated vector management.

3. The WHO Regional Office should reiterate the terms of reference for national project coordinators and request Member States to confirm formally the appointment of the project coordinator in each country and to keep the Regional Office informed of any changes in this appointment.

4. National project coordinators should ensure timely and comprehensive submission of progress reports, which should reach the WHO Regional Office no later than four weeks prior to any STAC meeting. Attendance of the STAC meetings by national project coordinators should be ensured unless exceptional circumstances prevail.

5. Noting the urgent need for additional project staff, STAC members suggested that the Regional Office explore ways to fund such staff at the Regional Office, such as secondment from Member States, supplemented as necessary by project funds.

6. Noting the financial resources available under the project (US$ 3.9 million) and the workplans proposed by the countries, the following actions were recommended.

- Focus demonstration activities on five project countries (Islamic Republic of Iran, Morocco, Sudan, Syrian Arab Republic and Yemen).
- Limit the activities that address the disposal of stocks of obsolete DDT to three countries (Islamic Republic of Iran, Jordan and Morocco). This takes into account the fact that disposal in non-African project countries (Syrian Arab Republic and Yemen) has already been addressed or is currently being addressed.

- Strengthen capacity in epidemiology, entomology and vector control – including increased funding for countries that lack this capacity, particularly Djibouti.

7. Issues requiring further capacity building and that are most efficiently addressed at the regional level, such as cost-effectiveness, sound management of pesticides and environmental management, should be identified and workshops on these topics should be organized back-to-back with future STAC meetings.

8. The STAC noted with satisfaction the active involvement of FAO in the implementation of component 3 of the project and recommended further strengthening of collaboration in all aspects of pesticide management in the Region.

9. The Regional Office should undertake next steps in providing support to the individual countries, in accordance with needs expressed at the meeting, to complete the formulation of their demonstration project protocols no later than 15 October 2009, ensuring the achieved harmonization is maintained and objectives are clearly linked to realistic indicators and overall project-expected outputs.

10. National project managers should make an effort to mobilize additional resources to supplement the project funding for activities under the different components, and inform the Regional Office about any such additional funding.

11. WHO EMRO and FAO should conclude a Memorandum of Understanding, including a detailed workplan and budget, whereby FAO is engaged to implement component 3, the collection, repackaging and disposal of obsolete persistent organic pollutants (POPs) in the Islamic Republic of Iran, Jordan and Morocco, and associated capacity-building activities in the entire Region.

12. Noting that the disposal of obsolete pesticides and improved pest and pesticide management capacity are deemed priority issues by the Governments of Djibouti and Sudan, each country should make an official request to FAO, through the appropriate channels, for assistance with a view to obtaining access to funding from the Africa Stockpiles Programme for the disposal of stockpiles of obsolete POPs. For Egypt, it is recommended that WHO EMRO coordinate with FAO on the follow-up with the World Bank to ensure that the issue of obsolete stocks is addressed.

13. The STAC noted progress made to improve country workplans and demonstration activities during the meeting. Of the five countries earmarked for demonstration activities, four still need expert support to further refine the protocols, especially in the area of study design. STAC members recommended that this support be expedited to ensure timely completion of the protocols and a rapid initiation of activities.

1. INTRODUCTION

A project entitled "Demonstration of sustainable alternatives to DDT and strengthening of vector control capabilities in Middle East and North Africa" is being implemented by the World Health Organization's Regional Office for the Eastern Mediterranean (WHO EMRO) and the United Nations Environment Programme (UNEP), with financial support from the Global Environmental Facility (GEF), in partnership with 8 countries of the WHO Eastern Mediterranean Region: Djibouti, Egypt, Jordan, Islamic Republic of Iran, Morocco, Sudan, Syrian Arab Republic and Yemen. A total of US$ 3.9 million has been made available to support the components of the project at national and regional level.

The second meeting of the Scientific and Technical Advisory Committee (STAC) for the project was held in Cairo, Egypt from 1 to 3 July 2009. The meeting built on the recommendations of the first STAC meeting in Amman, Jordan in November 2008 and aimed to achieve the following objectives:

- Review the present status of the regional project
- Harmonize protocols for demonstration projects
- Endorse national and regional workplans
- Approve budgets for the activities under the five components
- Assign experts to backstop and support project countries.

Eight members of the STAC were in attendance; five members were unable to attend. Ten representatives from 7 of the 8 countries implementing the project were in attendance; only the project coordinator from Djibouti was unable to attend.

The meeting was opened by Dr E. Mohsni, Coordinator DCD, who delivered a message from Dr Hussein A. Gezairy, WHO Regional Director for the Eastern Mediterranean. He noted that 9 out of 12 countries in the Region were now implementing integrated vector management. In further efforts to reduce reliance on DDT, some 25 million people in the Region had gained access to insecticide-treated nets. But there were also new challenges, such as the emerging resistance to pyrethroids in some countries in the Region. While these new issues were adequately addressed, efforts continued to make headway on others, such as the disposal of obsolete pesticides and the sound management of pesticides. On behalf of UNEP/GEF, Jan Betlem, Task Manager, Division of GEF Coordination, United Nations Environment Programme (UNEP), Nairobi made a statement that underlined the continued support of GEF to activities related to the implementation of the Stockholm Convention, with possible increases for the next GEF period.

The meeting elected Dr Ahmed Raesi (Islamic Republic of Iran) as Chair. Mr Robert Bos, WHO headquarters, was elected as Rapporteur. Participants approved the annotated agenda and programme. The programme and list of participants are attached as Annexes 1 and 2, respectively.

2. TECHNICAL PRESENTATIONS

2.1 Progress report

Dr A. Mnzava, WHO EMRO

Dr Abraham Mnzava has the day-to-day responsibility for project implementation. He presented the progress report 2008-2009 of the project in pursuance of its objectives: reducing reliance on DDT use during vector-borne disease outbreaks through the use of sustainable, cost-effective and environmentally friendly alternatives. The project actions primarily aim to minimize the potential in Member States to revert to DDT for prevention and control of vector-borne diseases. This will be achieved through establishing an integrated vector management (IVM) framework, criteria and procedures for optimization of vector control resources, tools and interventions; strengthened intersectoral and intrasectoral coordination, partnerships and community empowerment; and building national capacities for IVM and for sound management of pesticides in line with the Stockholm Convention.

Participants were reminded of the anticipated outcomes of the project which include: sustainable and cost-effective DDT alternatives demonstrated; capacity built to implement DDT alternatives based on IVM principles; pesticides with persistent organic pollutants (POPs) collected, repackaged and disposed of; good practices on sustainable alternatives shared; and trans-boundary and national coordination, information sharing to promote IVM without any reliance on DDT. Recommendations of the last meeting in Amman were recalled, where key strategies and actions for timely and successful implementation of the project were agreed. Achievements and outputs since that meeting were communicated to the STAC and the national project coordinators.

Since the last meeting of the STAC the following activities have been accomplished: the contract between UNEP/GEF and WHO/EMRO was signed in January 2009; funds were transferred to WHO/EMRO in March 2009 (US$ 500 000 of which US$ 45 455 (10%) was WHO programme support costs); and these funds were reflected in the workplan in May 2009. The funds received were used to support country requests for protocol development; revised regional course curriculum for vector control and entomology; and for holding the current regional STAC meeting. The balance of funds available is US$ 360 000. To accommodate the increase in programme support costs from 8% to 10% and the cost for independent project evaluation, Activity 1.4 was reduced from US$ 1 311 600 to US$ 1 166 433. The proposed changes were endorsed by STAC for UNEP/GEF consideration.

The complete programme and budget for the five-year project period is presented in Annex 3.

The working modalities for this STAC meeting were reviewed and agreed: a sequence of country presentations, and a discussion on general progress on project

implementation; preparation and review of detailed work-plans (activities, budgets and timelines); detailed planned demonstration activities. There were concerns in some areas of project implementation for STAC members to consider. These include slow progress by some countries; the lack of ability to measure impact by some countries; and demonstration activities to provide answers to national rather than project priorities, e.g. the issue of vector resistance in Sudan.

2.2 Development of technical guidelines for the sound management of pesticides in the framework of IVM

Dr M. Zaim, WHO HQ (STAC member)

Dr Zaim briefed the meeting on progress made in development of guiding documents for sound management of pesticides.

These documents are available on the webpage of the WHO Pesticide Evaluation Scheme (WHOPES) www.who.int/whopes/recommendations and are classified under the following general headings for ease of access: 1) policy frameworks and guidelines; 2) registration; 3) enforcement; 4) distribution and sale; 5) use/application; 6) training and awareness raising; 6) safe disposal of obsolete stocks and waste. These guidelines are intended to support the Member States and other stakeholders in management of public health pesticides throughout their life cycle and have been developed by FAO or WHO. A number of new FAO/WHO joint guidelines for management of pesticides have been published or are in the pipeline. These products were the outcome of a joint programme on management of pesticides under the Memorandum of Understanding between the two organizations signed in March 2007.

WHO gives high priority to supporting Member States in activities related to the sound management of pesticides. The development of the above-mentioned guidelines and the activities relating to WHOPES/Gates Foundation Project in the region should be considered an important contribution of the Organization to the implementation of the EMRO/GEF Project. Participants were invited to advise WHO about additional guidelines that are needed to support their relevant activities at national level. WHO has a strong interest in working with the Member States on the implementation of the above-mentioned guidelines.

The conclusions and recommendations of the regional meeting of national vector control focal points, held in Amman, Jordan, in November 2008 and the results of the vector control needs assessment carried out in some countries provided important benchmarks for the project, in particular where they draw attention to inadequate capacity of most countries for management of public health pesticides. WHOPES is in a position to provide support for development of relevant documents for the consideration by the Regional Committee for the Eastern Mediterranean, should it address sound management of pesticides on its agenda.

2.3 Coordination of the disposal of obsolete pesticides in project countries

Dr R. Thompson, FAO (STAC member)

The Food and Agriculture Organization of the United Nations (FAO) is keen to collaborate with WHO and UNEP in this project to assist countries in addressing weaknesses in pest control and pest management that adversely affect health and the environment and the cause an accumulation of obsolete pesticides. FAO and WHO already collaborate in a number of areas including the International Code of Conduct on the Distribution and Use of Pesticides, and the publication of guidelines.

The first STAC meeting (Amman 2008) recommended that FAO implement component 3 for the disposal of DDT and obsolete pesticide stocks and for capacity building in this area, with the Africa Stockpiles Programme (ASP) addressing the needs of four African countries and the EMRO/GEF project addressing those of countries in the WHO Eastern Mediterranean Region.

Currently, in the ASP, Morocco has completed its inventory and will shortly move to safeguarding and disposal; it is anticipated, however, that there will be a funding shortfall of US$ 900 000 in the ASP budget line for this activity. The phase II programme framework document has not yet been approved by GEF but individual regional and country project implementation frameworks are in the approval process. A project for Egypt is expected to be developed by the World Bank shortly. Djibouti and Sudan have yet to be scheduled for inclusion in the programme. In the Eastern Mediterranean, a GEF project has recently been approved for the Syrian Arab Republic. FAO's regional pesticide initiative includes Jordan and the Syrian Arab Republic, but due to a funding shortfall, activities in Jordan are currently suspended, awaiting confirmation of further resources. The obsolete pesticides in Yemen have been disposed of before 2004 under an FAO project.

In preparation for this meeting, countries provided information on their DDT and obsolete pesticide stocks. Although the data varied in accuracy and detail, it showed total DDT stocks to be 92 tonnes with over 7000 tonnes of other pesticides. The project cannot address all these stocks. The important issues for this second STAC meeting include:

- the selection of priority countries to be addressed by the project
- the transfer of GEF funds to FAO
- ensuring that government funding is mobilized
- identifying other funds that might be available for the other countries.

2.4 Issues of protocol design

Dr I. Kleinschmidt, WHO Temporary Adviser

The purpose of the studies that form the basis of the demonstration activities is to provide evidence of the effectiveness of sustainable alternatives to DDT. This often

takes the form of showing that one intervention is more effective than another, or that it is at least as effective as an existing proven intervention.

To begin with, it is essential that clear and measurable specific objectives are formulated. Objectives should be linked to indicators that are as specific as possible. The method of measuring the indicator should be well defined.

Since most vector control interventions are implemented at community level (not individual level), the community is the intervention unit. Therefore the sample size of the study is equal to the number of intervention units that are available for the study (not the number of individuals).

Clusters are eligible for the study, if it is possible for any one of the interventions being studied to be implemented in the cluster (intervention unit). Once eligible clusters have been identified, they should be randomly assigned to the intervention arms of the study in equal numbers. This ensures that any differences in the outcome can be ascribed, as far as possible, to differences in the interventions. If at baseline there are major differences between the clusters that are to be randomised, it may be necessary to stratify the clusters into more homogenous groups (strata) before randomisation.

Chance always plays a part in the effect that is observed and in small studies the outcome may be dominated by sampling variation. The number of clusters required for the study will depend on the magnitude of the difference between the study arms that needs to be detected; the smaller the difference, the more clusters will be needed. It will also depend on the amount of variation between intervention units: the more variable they are, the larger the sample that is needed. This is expressed as the coefficient of variation. Further details are available in the reference text below[1].

2.5 Developing and using tools to assess cost-effectiveness of DDT alternatives

Dr J. Yukich, Swiss Tropical Institute (STAC member)

In order to demonstrate the feasibility and cost-effectiveness of IVM projects it will be necessary to conduct economic evaluations of each planned demonstration activity. This document briefly outlines some of the main principles of these evaluations and points to other sources which can be consulted for more detailed advice.

The purpose of conducting the economic evaluations associated with these demonstration activities is twofold: 1) to provide information for priority setting for

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[1] Hayes RJ, Moulton LH. *Cluster randomised trials*. Boca Raton, FL, Chapman Hall/CRC Press, 2009.

the implementing countries and for other countries; and 2) to demonstrate that such interventions can operate in a cost-effective manner.

The process of economic analysis should start with the development of a specific question which defines the purpose, method, and types of costs which should be measured, as well as the final indicator of effectiveness.

The second step in this process should be a thorough description of the interventions whose costs are to be estimated. This process should be more detailed than a budget and involve consideration of all types of inputs including volunteer time, infrastructure, in-kind donations and other off-budget items. In other words it should pay attention to each input which is necessary to conduct the intervention. Finally, this exercise should also note the boundaries of the costing exercise, both geographic and in terms of levels of the health system.

This description should be used to guide the development of data collection tools which can be used either after or during the intervention to collect the necessary information on resource use, prices and expenditures. Particular attention should be paid to collecting information on resource use, as this is the primary information necessary to calculate economic costs.

Finally the data collected over the course of interventions deployment can be used in conjunction with the effectiveness measures collected during the intervention to calculate incremental cost-effectiveness ratios for each comparison of interventions.

Good sources of guidelines for economic evaluation include the following.

PEEM Guidelines 3: *Guidelines for the cost-effectiveness analysis of vector control*. Available at: http://www.who.int/water_sanitation_health/resources/peem3/en/index.html

Kolaczinski J, Hanson K. Costing the distribution of insecticide treated nets: a review of cost and cost-effectiveness studies to provide guidance on standardization of costing methodology. *Malaria journal*, 2006, 5:37. Available at: http://www.malariajournal.com/content/5/1/37

Creese A, Parker D. *Cost analysis in primary health care: a training manual for programme managers*. Geneva, World Health Organization, 1994.

Drummond M et al. *Methods for the economic evaluation of health care programmes*. Oxford University Press, 2005

2.6 Including IVM into the international policy framework

Dr R. Bos, WHO HQ (STAC member)

Some of the IVM principles, as enshrined in the working definition launched in 2001, include cost-effectiveness, intersectoral action and community involvement, sustainability, a balance between regulatory and operational activities and the need for an evidence-based decision-making process.

There are also a number of new attributes to be considered, including ecosystem analysis, the introduction of health-based targets and the hierarchical planning of interventions.

Ecosystem analysis or assessment implies that human communities be considered in the context of their local ecosystem. In addition to the links between parasites and vectors, and humans, the place of vector species in food webs also needs attention. Scenarios that may affect the steady state of the ecosystem should be developed. As well, research should be promoted on vector ecology, and the role of predators and parasites in vector population modulation.

The concept of health-based targets was developed, for example, to strengthen drinking-water quality management. Rather than setting rigid guidelines values, it allows for a contextual approach to health risk assessment and management. Applied to IVM it would require local authorities to set an acceptable, but realistic target for the reduction of the vector-borne disease burden and design the IVM approach in order to achieve this target by a certain time. The menu of IVM measures includes the following.

Measures to reduce population densities:

- Source reduction – different forms of environmental management (engineering, modification, manipulation)
- Predator–prey systems (fish, predator insects, amphibians)
- Microbial toxins
- Chemical larviciding
- Chemical adulticiding (e.g. fogging)

Measures to reduce vector longivity/vectorial capacity: indoor residual spraying

Personal/community protection: insecticide treated nets and materials (short and long lasting); housing improvement; zooprophylaxis

In the pipeline: genetically engineered mosquitoes

Programming of IVM measures from this menu in relation to health-based targets should follow incremental steps that follow a basic hierarchy, starting from

environmental interventions, through biological and personal protection measures, and with chemical control as the measure of last resort.

WHO has published a number of documents on IVM, including the Global Strategic Framework for IVM (2004) and the WHO Position Statement on Integrated Vector Management (2008), which contains the new reductionist definition of IVM: “a rational decision-making process for the optimal use of resources for vector control”.

The international policy framework for IVM had been initiated at the WHO regional level, including in a resolution of the Regional Committee for the Eastern Mediterranean (EM/RC52/R.6), a reference to IVM in a resolution of the Regional Committee for South-East Asia on dengue, and a broader vector-borne disease control resolution of the Regional Committee for Africa. Efforts are now under way to consolidate these regional initiatives into a global initiative at the World Health Assembly in 2010.

2.7 Discussion

Following the presentations a number of points were raised in the plenary discussions. First, with respect to the recommendations emanating from the Amman meeting, it was clarified that changes in the selected demonstration sites were possible but needed to be justified, that efforts were made to expand the project beyond the current eight participating countries in the Region and that at the country level integration of IVM into proposals for the Global Fund remained an important goal.

An important constraint was the lack of capacity in the Secretariat. It was a reality that the budget did not allow for a dedicated post on a permanent basis for the five year period. The Regional Office was exploring the option of recruiting an Associate Professional Officer. It was suggested that a secondment from within the Region (by one of the Member States) would be an option if the basic salary was covered from a national budget with a supplement to raise it to WHO salary scales from the available project funds. This option would be pursued by the Secretariat, with assistance from national project coordinators.

Other concerns included the need to better measure progress in the countries, the translation of outcomes of demonstration projects into generic information and messages and the nature of the supportive role by the STAC members.

Finally, still linked to the Amman recommendations, it was noted that the reconfirmation of the national project coordinators continued to be an important priority and that national authorities should be asked to notify WHO EMRO immediately of any changes in the status of these coordinators.

In the context of promoting the sound management of pesticides, the need for the formulation of national pesticide management policies was stressed. Promotional activities were carried out under the project funded by the Bill and Melinda Gates Foundation and implemented by WHO. The Regional Committees for Africa and for South-East Asia had positively responded to the need for such policy formulation, and a similar approach was suggested for the Eastern Mediterranean. The STAC member from Oman strongly supported this suggestion. WHO and FAO can develop and provide the guidance tools, but implementation is the responsibility of national authorities, ensuring effective coordination between the sectors. It was clarified that the funds available under the Gates project could be used to support experts assisting the Member States.

Djibouti was an example of a country that needed policy formulation in this area, with an emphasis on coordination between different stakeholders, both individuals and institutions. It would help if the guidance material were to be made available in the French and Arab languages. It was clarified by the FAO representative that for assistance in the area of disposal of obsolete pesticides a formal country request, through the correct channels, was needed. The availability of GEF funds for this type of activity in the mid-term was uncertain, but it had been decided that the next round of GEF support (GEF5) would allocate substantial resources to the POPs agenda.

In all countries, technical professionals had to step up their efforts to influence politicians and policy makers – and reliable risk assessment was the starting point. In some countries, there is a considerable history of successful environmental management, but the existing documentation (e.g. WHO Offset Publication 66 from 1982) needs urgent updating with the information gained over the past 25 years. Efforts should not finish with the deployment of measures, but there should be strong monitoring and evaluation components of an independent nature. It was pointed out by the Secretariat that the CD prepared for the meeting contained a practical framework for monitoring and evaluation.

The limitations on coordinating activities under this project with activities funded by the GFATM were discussed – the GFATM was limited to malaria, and did not address the other vector-borne diseases. However, there was a new trend towards looking at the target diseases from a health systems perspective, and this might open new opportunities. Such an entry point could even serve the promotion of sound management of pesticides, as long as the proposed actions were linked to the core GFATM activities in a logical manner.

The individual countries reported on the status of their projects. Djibouti had scaled down its demonstration projects from three to two sites, but there continued to be a concern whether it had the capacity to implement the study. The designation of the national coordinator had been a long process, and there had been regular turnover in the designated staff. Various questions were raised concerning the available

baseline data, the capacity to carry out basic entomological functions and the study design, including what was to be measured.

The development of a demonstration project in Egypt had stagnated: objectives needed to be strengthened, outputs had to be defined and indicators agreed on. While there was a clear vision on the need for improved institutional arrangements and procedures, it was unclear how these would develop and what criteria would be applied.

In the Islamic Republic of Iran all preparatory activities had been carried out. An important component had been the development of a malaria early warning system. While the STAC agreed that this was an important activity, it questioned its relevance in the context of this specific project. Three sites had been identified for demonstration projects, which would yield complementary information. The logic and criteria behind the selection of these sites were found to be in order, but the capacity to operate at the proposed scale needed review.

In Jordan two sites had been selected, with a focus on leishmaniasis vector control. Both were semi-tropical locations in the Jordan Valley, where schistosomiasis and leishmaniasis were real public health problems. The STAC advised that in such areas a focus on leishmaniasis was desirable and that schistosomiasis should not be considered in the context of this project. Both sites were ecologically very similar and the added value of having a second, similar site was to be assessed.

A general discussion ensued about the relative value of testing individual interventions in a specific setting as opposed to testing packages of interventions – and the outcome of this debate pointed to the need to look at packages, without too much concern about how the individual components contributed. At the same time, cost-effectiveness analysis should be included in this work and that required a more disaggregated approach. At the same time, project coordinators should bear in mind that these were not research projects but demonstration projects and that it should be clearly defined at the start what was to be demonstrated and by means of which indicators this would be done.

The Moroccan protocol had clear objectives and it was considered a good idea to focus on leishmaniasis as a growing problem in the country. The outcomes in Morocco would have relevance for other North African countries. The long-lasting insecticidal net (LLIN) component of the Moroccan demonstration project would be covered from another budget.

In Sudan, indoor residual spraying (IRS) and LLINs would be the interventions of choice and the question was raised whether environmental management approaches, with such a long history in the Gezira irrigation schemes, should not be given a higher profile. The protocols prepared for the Syrian Arab Republic and

Yemen both needed detailed review and strengthening, and their budgets needed rationalization.

It was stressed that harmonization of the protocols was key because the prevalence and even incidence rates of the diseases in question were low, and they therefore constituted poor indicators. Without proper and ongoing harmonization it would be impossible to synthesize a bigger, more generic picture on the usefulness of alternative interventions.

As a result of this discussion, it was decided that different countries should put the emphasis in their activities under this project differently. The agreement on this is reflected in Table 1 below.

Table 1. Summary of priority activities in project countries

Countries	Component 1 Demonstration activities	Component 2 Capacity building	Component 3 Obsolete pesticide disposal
Djibouti	X – insufficient capacity		X (ASP)
Egypt	X – insufficient capacity		X (WB)
Jordan	X – insufficient capacity		
Islamic Republic of Iran	Focus and objectives		
Morocco	Targeted intervention		PH POPs
Sudan	Process indicators and entomological surveillance		X (ASP)
Syrian Arab Republic			X
Yemen	Expert and streamlining		X

ASP – African Stockpile Programme
WB – World Bank

3. COUNTRY PROTOCOLS AND PLANS

On the third day of the meeting, the five countries earmarked for a demonstration project presented their objectives and protocol outline. The objectives are presented below:

Islamic Republic of Iran

General objective: to determine cost-effective, sustainable and alternative vector control methods for malaria elimination in southeastern Iran.

Specific objectives

- To determine the cost–effectiveness of IRS versus LLINs and LLINs combined with IRS in rural areas
- To determine the cost–effectiveness of environmental management of water reservoirs versus larviciding in the urban area of Chabhar

In Chabahar (population around 75,000) the API is 5–6 per 1000, with approximately 3000 water reservoirs in houses which serve as major vector breeding places. Currenly vector control interventions are chemical and/or biological – and the objective is to study the feasibility of environmental management approaches. This demonstration project will have a six-month start-up phase, one year of deployment of environmental management interventions and three years of impact observations.

The rural area is divided in two strata. The plains (API 13 per 1000) and the mountainous area (API 37 per 1000) with different vector species (*A. culicifacies* and *A. fluviatilis*) – in each stratum 30 villages will be randomly assigned to one of three interventions: IRS, LLINs and IRS plus LLINs). The current intervention is IRS; the timescale will be the same as for the urban project.

Morocco

Goal: to provide evidence based to prevent vector control activities to revert to reliance to DDT use

General objective: to demonstrate the feasibility of alternatives of vector control as a part of IVM approach to reduce transmission of vector-borne disease

Specific objectives

- To implement IVM in line with the Stockholm Convention dispositions
- To demonstrate the effectiveness of the IRS with pyrethroïds in anthroponotic leishmaniasis control (indicators: leishmaniasis cases /vector density).
- To demonstrate the effectiveness of the use of LLINs
- To demonstrate the effectiveness of the environmental management

Sudan

General objective: Assess the combined use of LLINs and IRS with LLINs alone and with IRS alone (with or without insecticide resistance), in an attempt to promote cost-effective and sustainable DDT alternatives for vector control.

Specific objectives

Epidemiological:

- Incidence of malaria episodes: to compare the incidence of confirmed cases of malaria in children under 5 in each of the three study arms through active case detection
- Leishmaniasis: to compare incidence of visceral leishmaniasis between study arms through passive reporting

Entomological:

- Malaria vectors: to compare entomological inoculation rates in main malaria vectors between the three study arms
- Visceral leishmaniasis vectors: to compare entomological inoculation rates in the main visceral leishmaniasis vectors between the three study arms

With respect to insecticide resistance management:

- Malaria vectors: to compare the proportions of *A. arabiensis* genotypes resistant to pyrethroid insecticide of the study arm using pyrethroid LLINs combined with bendiocarb IRS and of the study arm using pyrethroid nets only
- Leishmaniasis vectors: to determine susceptibility status of *Ph. orientalis* to insecticide in different study sites.

With respect to insecticide application:

- To compare the residual efficacy of insecticide-treated surfaces (walls and nets) using cone assays with known susceptible strains of vector species in the three study arms
- To assess through chemical assay the dosage of insecticide applied in IRS activities

With respect to coverage and cost of the project intervention:

- Cost: to calculate and compare the economic cost of the interventions per person covered and per clinical episode prevented between study arms
- Vector control coverage: to compare the proportion of children under 5 living either in an IRS treated house or sleeping under a LLIN or living in the LLIN+IRS

Syrian Arab Republic

General objective: compare the cost-effectiveness of IRS and LLINs on the control of cutaneous leishmaniasis transmission.

Specific objectives:

- To reduce leishmaniasis incidence in the demonstration sites at least to 50% after one year and 70% at the end of the intervention
- To determine the effectiveness of IRS in reducing the incidence of cutaneous leishmaniasis
- To determine the effectiveness of LLIN in reducing the incidence of cutaneous leishmaniasis
- To compare the cost-effectiveness of IRS and LLINs in reducing the incidence of cutaneous leishmaniasis.

Following these presentations, the ensuing discussion focused on the scope of the proposed demonstration projects, on the study design and on the indicators to be measured. It was concluded that all demonstration projects need an immediate follow-up through visits by consultants to work with the national project coordinators to further develop and complete the protocols, so that the activities under each of these four projects can start before the end of the year.

4. REPORT ON THE WORK PLAN FOR COMPONENT 3

DDT and other obsolete pesticide stocks

Prior to the meeting the participating countries circulated estimates of their obsolete pesticide stocks. In total these estimates amount to 92 tonnes of DDT, 474 tonnes of other POPs pesticides, 6473 tonnes of other pesticides, and 9378 tonnes of contaminated materials. It was clear that the quality of the inventory data varied significantly, with some countries having already completed detailed inventories and others presenting only indicative estimates.

Capacity building for updating POPs and obsolete pesticide inventories

Capacity building for inventory updating is only effective if countries are enabled to implement the newly acquired capacity. It was agreed that it would not be efficient to undertake activities to build capacity to update inventories in all countries, as project resources are insufficient for inventory activities to be implemented in each country.

It was decided that the capacity building activities would be limited to those countries for which funds would be made available for disposal. These countries are identified below.

Priorities for project activities

The meeting agreed that the quantities of DDT stocks and stocks of other obsolete pesticides were so large, that it will be necessary to target the finite project

funds at a limited number of countries. The selection criteria for the countries to be included in component 3:

- there are well-defined and documented DDT stocks
- there are no other sources of funds that could be mobilized for disposal.

The following countries were selected:

Islamic Republic of Iran: Iran has a well-defined stock of 17 tonnes of DDT distributed between approximately 20 stores. There are no other sources of funding to address the disposal of this stock. The country also has 52 tonnes of other POPs and obsolete pesticides in the agriculture sector. Although these stocks will not be disposed of by this project, the capacity built will assist the country to develop a detailed inventory and safeguarding strategy. .

Jordan: Jordan has a single central store containing 23 tonnes DDT. There are no other sources of funding to address the disposal of this stock. Jordan also has identified its need for capacity building in chemicals management.

Morocco: Morocco has completed its inventory under the ASP and has identified 50 tonnes of DDT which will be repacked and centralized using MoH and SAICM funds. In the event of an outbreak of a vector-borne disease, there is a high risk that the national health authorities would decide to use stocks. There is a funding shortfall in the budget of the Moroccan ASP project. Therefore, the project will fund the disposal of these DDT stocks to ensure their early elimination.

The rationale for not prioritizing the other five countries is outlined below:

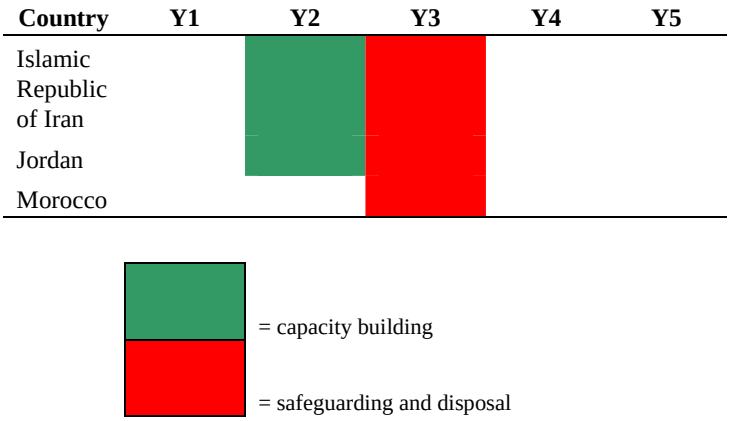
- The Syrian Arab Republic possesses only two tonnes of DDT whose disposal will be addressed under a separate GEF project. It will, however, benefit from capacity building in chemicals management under the FAO regional initiative.
- FAO has supported the disposal of all pesticide stocks in Yemen.
- It is anticipated that Egypt be included in ASP phase II with support from the World Bank.
- Djibouti and Sudan have indicative inventories that show large but undefined volumes of obsolete pesticide stocks. These volumes are too large to be adequately addressed by this project. Both countries are eligible for funding under the ASP and are encouraged to make an official request, through the appropriate channels, for assistance to FAO with a view to obtaining access to funding from the ASP for the disposal of stockpiles of obsolete POPs FAO for inclusion in the following phases of the programme.

The main activities in component 3 are:

- capacity building
- stakeholder analysis
- training/updating for inventory for DDT and other POPs
- implementation of pesticide stock management system
- safeguarding strategy development
- chemicals management
- safeguarding and disposal
- repackaging and centralization
- disposal tender

				Budget				
	DDT	**Empty containers**	**Total**	**Capacity building Inventory and safeguarding (US$)**	**Safeguarding and disposal (US$)**	**Total (US$)**	**Comment**	
Islamic Republic of Iran	17	1.7	18.7	35 000	75 000	110 000	20 sites	Pilot project: more capacity building and training.
Jordan	23	2.3	25.3	55 000	75 000	130 000	1 site	Capacity building in pesticides management following regional priorities
Morocco	50	5	55	0	137 500	137 500	1 site	Capacity already built by ASP. Ministry of Health with SAICM funding to centralize. This project repacks and disposes. Use ASP disposal contract if possible within 2 years
					Subtotal	377 500		
					Contingency	22 500		
Total	90	9	99			**400 000**		

Outline work plan



5. CONCLUSIONS

The STAC reviewed the individual country activities under the project as well as the regional activities coordinated by the WHO office in Cairo and it concluded that satisfactory progress had been made. It identified a number of constraints which are addressed in the recommendations below. Clearly national policy frameworks for IVM and for the sound management of pesticides need strengthening, but this should be done in parallel with other capacity strengthening so that professionals would actually be able to use the new policy framework to their maximum potential.

There was concern over the speed of disbursement of funds and the STAC expressed apprehension over the impact of the forthcoming administrative changes at the WHO Regional Office. Incorporating its administration into the WHO Global Management System implied that administrative activities would be frozen between 15 October 2009 and 1 January 2010, and this should be taken into consideration in project planning.

The growing collaboration between WHO and FAO in the area of sound management of pesticides and in the disposal of obsolete pesticides was seen as a positive development that needs further enhancement.

There was a feeling among the STAC members that in this initial stage of the project it would be beneficial to have STAC meetings with a greater frequency than foreseen in the original project framework, but decisions on this issue were left to the Secretariat.

6. RECOMMENDATIONS

Policy issues

1. Recognizing that sound management of pesticides is a key approach towards the implementation of IVM, and noting that the capacity for essential function for the sound management of pesticides is inadequate in most Member States, the subject should be brought to the attention of the WHO Regional Committee for the Eastern Mediterranean for its consideration and appropriate action.
2. Stakeholders in the WHO/UNEP/GEF project should be invited to provide inputs into the process of strengthening the international policy framework for integrated vector management.

Administrative and procedural issues

3. The WHO Regional Office should reiterate the terms of reference for national project coordinators and request Member States to confirm formally the appointment of the project coordinator in each country and to keep the Regional Office informed of any changes in this appointment.
4. National project coordinators should ensure timely and comprehensive submission of progress reports, which should reach the WHO Regional Office no later than four weeks prior to any STAC meeting. Attendance of the STAC meetings by national project coordinators should be ensured unless exceptional circumstances prevail.
5. Noting the urgent need for additional project staff at the Regional Office, STAC members suggested that the Regional Office explore ways to fund such staff, such as secondment from Member States, supplemented as necessary by project funds.

Programme and management issues

6. Noting the financial resources available under the project (US$ 3.9 million) and the workplans proposed by the countries, the following actions were recommended.

- Focus demonstration activities on five project countries (Islamic Republic of Iran, Morocco, Sudan, Syrian Arab Republic and Yemen).
- Limit the activities that address the disposal of stocks of obsolete DDT to three countries (Islamic Republic of Iran, Jordan and Morocco). This takes into account the fact that disposal in non-African project countries (Syrian Arab Republic and Yemen) has already been addressed or is currently being addressed.
- Strengthen capacity in epidemiology, entomology and vector control – including increased funding for countries that lack this capacity, particularly Djibouti.

7. Issues requiring further capacity building and that are most efficiently addressed at the regional level, such as cost-effectiveness, sound management of pesticides

and environmental management, should be identified and workshops on these topics should be organized back-to-back with future STAC meetings.

8. The STAC noted with satisfaction the active involvement of FAO in the implementation of component 3 of the project and recommended further strengthening of collaboration in all aspects of pesticide management in the Region.
9. The Regional Office should undertake next steps in providing support to the individual countries, in accordance with needs expressed at the meeting, to complete the formulation of their demonstration project protocols no later than 15 October 2009, ensuring the achieved harmonization is maintained and objectives are clearly linked to realistic indicators and overall project-expected outputs.
10. National project managers should make an effort to mobilize additional resources to supplement the project funding for activities under the different components, and inform the Regional Office about any such additional funding.
11. The Regional Office and FAO should conclude a Memorandum of Understanding, including a detailed workplan and budget, whereby FAO is engaged to implement component 3, the collection, repackaging and disposal of obsolete persistent organic pollutants (POPs) in the Islamic Republic of Iran, Jordan and Morocco, and associated capacity-building activities in the entire Region.

Country-specific recommendations

12. Noting that the disposal of obsolete pesticides and improved pest and pesticide management capacity are deemed priority issues by the Governments of Djibouti and Sudan, each country should make an official request to FAO, through the appropriate channels, for assistance with a view to obtaining access to funding from the Africa Stockpiles Programme for the disposal of stockpiles of obsolete POPs. For Egypt, it is recommended that the WHO Regional Office coordinate with FAO on the follow-up with the World Bank to ensure that the issue of obsolete stocks is addressed.
13. The STAC noted progress made to improve country workplans and demonstration activities during the meeting. Of the five countries earmarked for demonstration activities, four still need expert support to further refine the protocols, especially in the area of study design. STAC members recommended that this support be expedited to ensure timely completion of the protocols and a rapid initiation of activities.

Annex 1

PROGRAMME

Wednesday, 1 July 2009		
08:30–09:00	Registration	
09:00–09:30	Opening session Message from Dr Hussein A. Gezairy, Regional Director, WHO/EMRO (Dr E. Mohsni, Coordinator, WHO/EMRO) Message from Dr Jan Betlem, UNEP/GEF Introduction of participants	
09:30–09:40	Objectives of the workshop, method of work and nomination of officers	
09:40–10:00	Progress report and regional workplan	*Dr A. Mnzava*
10:30–11:00	Development of technical guidelines for pesticide management in the framework of IVM	*Dr M. Zaim*
11:00–11:20	Coordination for the disposal of obsolete pesticides in project countries	*Dr R. Thompson*
11:20–12:30	Discussion	
14:00–17:30	Country protocols and plans Djibouti Egypt Islamic Republic of Iran Jordan Morocco Sudan Syrian Arab Republic Yemen	*Plenary*
Thursday, 2 July 2009		
08:30–17:30	Group work to finalize project protocols and workplans	Group work
Friday, 3 July 2009		
08:30–09:30	Inclusion of integrated vector management in WHA 2010	*Dr R. Bos*
09:30–10:00	Presentation of tools for assessing cost-effectiveness of DDT alternatives	*Dr J. Yukich*
10:30–11:00	Summary of technical support need to project countries	*Plenary*
11:00–11:30	Reflections on the role of the Steering Committee in the further implementation of the project	*Plenary*
11:30–12:30	Conclusions and recommendations	*Plenary*
12:30	Closing session	

Annex 2

LIST OF PARTICIPANTS

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Mrs Sherine AbdelMalik, Secretary, Division of Communicable Disease Control, WHO/EMRO
Ms Heidi Rizk, Secretary, Division of Communicable Disease Control, WHO/EMRO

Annex 3

CONSOLIDATED AND BUDGETED WORKPLAN FOR COUNTRIES AND THE WHO REGIONAL OFFICE FOR THE EASTERN MEDITERRAENAN

Components: Activity and sub-activities	Budget allocated by GEF (US$)	Responsible for implementation	Year 1				Year 2				Year 3				Year 4				Year 5			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Component 1: Demonstration projects on DDT alternatives	**1,880,513**																					
1.1 Formulation of the draft national protocols for demonstration activities	*59,000*																					
Activity 1.1.1 Organize a multistakeholder meeting (including academia) to develop a draft protocol to be reviewed by the national steering committee for consensus before submission to WHO		Countries																				
Activity 1.1.2 Assign experts to provide on-site country visits		EMRO/STAC																				
1.2 Carry out any project-specific capacity building	59,000																					
Activity 1.2.1 Identify project-specific training needs (surveillance training, species identification (sand fly), insecticide resistance monitoring, planning operations, application, community advocacy)		Countries																				

Activity 1.2.2 Identify experts to provide the training		EMRO																					
Activity 1.2.3 Conduct project-specific training in countries		EMRO and countries																					
1.3 Organize a regional workshop for the harmonization the country protocols	48,880																						
Activity 1.3.1 Conduct a regional workshop for the harmonization of country protocols (invite neighboring countries)		EMRO																					
Activity 1.3.2 Produce a harmonized template for reporting mechanisms and format of results		EMRO and countries																					
1.4 Assist National Project Coordinators in project implementation	1,166,433																						
Activity 1.4.1 Provide technical and managerial support to countries for implementation of demonstration activities		EMRO																					

Activity 1.4.2 Countries to provide requests for specific supplies needed for project implementation		Countries																				
Activity 1.4.3 On-site visits by experts on specific areas such as cost-effectiveness analysis		EMRO and Countries																				
1.5 Monitor project activities	396,600																					
Activity 1.5.1 Establish baseline data on agreed set of indicators		Countries and EMRO																				
Activity 1.5.2 Monitor project activities		Countries and EMRO																				
Activity 1.5.3 Conduct country on-site visits		EMRO																				
Activity 1.5.4 Analyse data sets		Countries and EMRO																				
Activity 1.5.5 Produce and disseminate reports		Countries and EMRO																				

1.6 Technical support for the analysis of datasets and report writing	48,000																						
Activity 1.6.1 Develop a practical guiding document/tool on cost-effectiveness analysis (relative cost)		EMRO/STAC																					
Activity 1.6.2 Conduct a workshop to review, finalize and field-test the tool		EMRO and Countries																					
Activity 1.6.3 Train national vector control managers on how to use the cost-effectiveness tool		EMRO and Countries																					
Activity 1.6.4 Provide technical support for cost-effectiveness analysis		EMRO/STAC																					
Activity 1.6.5 Provide technical support for the preparation of final reports		EMRO/STAC																					
1.7 Organize regional STAC meetings and consolidated regional reports	42,600																						
Activity 1.7.1 Organize regional STAC meeting to review		EMRO																					

national reports																						
Activity 1.7.2 Provide a consolidated report by STAC		EMRO/STAC																				
Component 2: National capacity strengthening to implement and evaluate DDT alternatives using IVM principles	**946,000**																					
2.1 Review of policy, legal and regulatory frameworks	176,000																					
Activity 2.1.1 Organize high level meetings to raise awareness and support for IVM and pesticide management policy and regulations		Countries and EMRO																				
Activity 2.1.2 Develop draft national plans on policy, legal and regulatory frameworks for IVM and pesticide management		Countries																				
Activity 2.1.3 Provide consultants to harmonize the draft national action plan for implementation of principles of IVM and sound management of pesticides		EMRO																				
Activity 2.1.4 Conduct national stakeholder meeting to review the national action plan and to build consensus for its implementation		Countries and EMRO																				
Activity 2.1.5 Provide additional technical support for implementation of the national action plan e.g. support capacity		Countries and																				

for quality control facilities		EMRO																				
2.2 Produce promotional documents for successful institutional arrangements between the sectors	*160,000*																					
Activity 2.2.1 Develop and produce relevant promotional documents – including translation and distribution of existing documents (e.g. IVM position statements)		Countries and EMRO																				
Activity 2.2.2 Support countries to adapt available promotional documents		EMRO																				
Activity 2.2.3 Demonstrate successful case studies of institutional arrangements		EMRO																				
Activity 2.2.4 Organize national seminars on strengthening institutional arrangements between sectors		Countries and EMRO																				
2.3 Restructuring of national vector control units for IVM implementation	*160,000*																					
Activity 2.3.1 Write to ministries of health to inform them of the outcome of vector control needs assessment		EMRO																				

Activity 2.3.2 National Steering Committee initiates restructuring process at country level		Countries																					
Activity 2.3.3 Develop vision and mission statements of vector control units		Countries																					
Activity 2.3.4 Develop terms of reference and descriptions of staff posts and responsibilities		Countries																					
Activity 2.3.5 Strengthen existing vector control units and advocate for additional human and financial resources		Countries																					
Activity 2.3.6 Develop a concept paper on restructuring vector control units for adaptation by countries on their specific needs		EMRO and Countries																					
Activity 2.3.7 Provide technical support/cooperation by Regional Office and STAC		EMRO/STAC																					
2.4 Developing guidelines and organization of training courses on vector control professional	*450,000*																						
Activity 2.4.1 Develop, update and/or review guidelines and training materials on IVM, insecticide application, safety, monitoring insecticide resistance etc.		EMRO																					

Activity 2.4.2 Generate relevant case studies		EMRO																					
Activity 2.4.3 Organize regional workshops and training courses – including training of community leaders on IVM implementation		Countries and EMRO																					
Component 3: Collection, repackaging and disposal of obsolete POPs pesticides	**400,000**																						
3.1 Collection, repackaging and disposal of obsolete POPs pesticides	*400,000*																						
Activity 3.1.1 Carry out a stakeholder analysis on organizations involved in POPs		FAO/Countries																					
Activity 3.1.2 Train personnel in safe handling of obsolete POPs		FAO/EMRO																					
Activity 3.1.3 Undertake and update inventories on obsolete POPs		FAO/Countries																					
Activity 3.1.4 Compile, prioritize and analyse inventory data on obsolete POPs		FAO/Countries																					
Activity 3.1.5 Procure equipment and services to safeguard		FAO/Countries																					

obsolete POPs																						
Activity 3.1.6 Repackage and centralize obsolete stocks of obsolete POPs		FAO/Countries																				
Activity 3.1.7 Securely store repackaged obsolete stocks of obsolete POPs		FAO/Countries																				
Component 4: Demonstration of cost-effective and sustainable alternatives and provision of information and good practices	**166,500**																					
4.1 Dissemination of information	166,500																					
Activity 4.1.1 Publish two articles in peer-reviewed journals on best practices		EMRO																				
Activity 4.1.2 Translate reports on demonstration of alternatives		EMRO																				
Activity 4.1.3 Establish a roster of experts from the project countries		EMRO and Countries																				
Activity 4.1.4 Create dedicated web-pages to avail information through internet at Regional Office and linked to appropriate country links		EMRO and Countries																				

Activity 4.1.5 Use information collected to mobilize additional resources for project implementation and sustainability		EMRO and Countries																					
Component 5: Trans-boundary and national coordination, information sharing, monitoring and evaluation mechanisms to promote IVM without the use of DDT	**171,000**																						
5.1 Trans-boundary and national coordination, information sharing, monitoring and evaluation	*0*																						
Activity 5.1.1 Coordinate timely and efficiently proposed project activities		EMRO and Countries																					
Activity 5.1.2 Share information on the outcome of the implementation of the proposed project –especially with bordering countries		EMRO and Countries																					
Activity 5.1.3 Institutionalize border coordination as part of information sharing		EMRO and Countries																					
Activity 5.1.4 Conduct ongoing monitoring and evaluation of the proposed project activities		EMRO and Countries																					
5.2 Operation of National Steering Committees	*40,000*																						

Activity 5.2.1 Reconstitute where applicable the composition of the National Steering Committees		Countries																					
Activity 5.2.2 Conduct meetings of National Steering Committees twice a year		Countries																					
Activity 5.2.3 Support National Steering Committees to prepare and produce national reports		EMRO																					
5.3 Operation of Regional STAC + reports	40,000 + 91,000																						
Activity 5.3.1 Conduct meeting of the Regional Scientific and Technical Advisory Committee (STAC) twice a year		EMRO																					
Activity 5.3.2 Support the Regional Scientific and Technical Advisory Committee (STAC) to prepare and produce reports using the developed reporting template		EMRO																					
Component 6 Project management and WHO support costs	**396,001**																						
6.1 Project staff appointment, recruitment and functioning	0																						

Activity 6.1.1 Appoint a full-time Project Coordinator		EMRO																					
Activity 6.1.2 Recruit and appoint a full-time Assistant Technical Project Coordinator		EMRO																					
Activity 6.1.3 Appoint a full-time Programme Assistant (Secretary)		EMRO																					
Activity 6.1.4 Assign 8 national project coordinators		Countries																					
Activity 6.1.5 Support project staff																							
6.2 100% Project Coordinator and office support	0																						
Activity 6.2.1 Provide 100% Project Coordinator and office support		EMRO																					
6.3 WHO Programme Support cost (10%)	*396,001*																						
Activity 6.3.1 Provide 10% programme support cost to WHO	396,001	UNEP/GEF																					

Independent Project Evaluation	*60,000*																					
Activity 1. Conduct mid-term evaluation of project by executing agency (WHO)	30,000	WHO/EMRO																				
Activity 2. Conduct terminal independent project evaluation by UNEP on behalf of GEF	30,000	UNEP																				
Total project budget (GEF contribution)	**3,960,014**																					