



**Stockholm Convention
on Persistent Organic
Pollutants**

English only

**Stakeholders' Meeting to review the interim
report for the establishment of a global
partnership to develop alternatives to DDT**
Geneva, 3–5 November 2008

**Report of the Stakeholders' Meeting to review the interim report
for the establishment of a global partnership to develop
alternatives to DDT**

Introduction

1. The Stockholm Convention includes DDT as one of the twelve man-made chemicals under the Convention that is to be eliminated from production and use. It is a persistent organic pollutant that bio-accumulates and is carried through long-range transport to areas far from where it is released. It is toxic to humans and wildlife and persists in the environment for several decades. Currently, the Stockholm Convention allows the use of DDT for disease vector control and in particular, to control the mosquito vector that carries the malaria parasite.
2. By paragraph 10 of decision SC-3/2, the Conference of the Parties to the Stockholm Convention at its third meeting in Dakar, Senegal in 2007, requested its Secretariat, in coordination with the World Health Organization and the Parties of the Stockholm Convention, to prepare a plan to enhance the establishment of a Global Partnership to develop and deploy, alternative products, methods and strategies to DDT for disease vector control for consideration by the Conference at its fourth meeting in May 2009. This partnership would establish a joint approach towards concomitantly reducing DDT use and the malaria burden, fostering collaboration, improving efficiency, and attracting financial support. The initiative is expected to assist in the implementation of future plans to build capacities, monitor and report on DDT use, stimulate development and deployment of alternatives and to eventually reduce and ultimately eliminate the use of DDT for disease vector control.
3. The definition of options for creating a Global Partnership is the first step to examine and promote cohesion of all stakeholders to develop and distribute alternative products, methods and strategies to DDT for use that are cost-effective and locally appropriate. The analysis of options will include a set of milestones through which monitoring of the implementation may be undertaken, roles and incentives for the various stakeholders in the implementation and an analysis of the relative costs involved. Additionally, a paper on the global status of DDT for vector control has been prepared to provide a measure

of understanding of the current situation, including the introduction of alternatives.

4. The meeting is expected to provide a forum for the review of the draft business plan and to gain input on the feasibility of the options presented in the plan, the roles and responsibilities of the various stakeholders and the structure and implementation of the plan for a global partnership. The expected outputs would be conditional commitment to support an option presented in the plan and recommendations for improving the plan as deemed necessary.

I. Opening of the meeting

5. The stakeholders' meeting to review the interim report for the establishment of a global partnership to develop alternatives to DDT was held at the International Conference Centre in Geneva, Switzerland, from 3 to 5 November 2008. Ms. Fatoumata Keita-Ouane, Senior Scientific Officer, Secretariat of the Stockholm Convention on Persistent Organic Pollutants declared the meeting open at 9.00 a.m. on Monday, 3 November. Opening remarks were made by Mr. Donald Cooper, Executive Secretary of the Stockholm Convention, Ms. Maria Neira, Director, Department of Public Health and Environment, World Health Organization and Ms. Agneta Sunden-Bylehn, Senior Scientific Affairs Officer, Chemicals Branch, UNEP-DTIE (Division of Technology, Industry and Economics).
6. Mr. Cooper welcomed participants to Geneva and said that, at recent meetings, Parties had indicated their wish to take control of their conventions and expressed their need for strong tools and support to make key decisions. Chemicals in the Stockholm Convention fell into three categories, those no longer traded, those that would shortly be taken out of commerce and those, such as DDT, which were actively traded and for which there remained a strong need. There was significant work to be done on DDT. It was not a matter of whether malaria could be eradicated tomorrow or whether there were many alternatives or whether we could cease the use of DDT; the solution, rather, lay in a combination of all three. Working with all partners who each have their own agenda, the challenge was to find a common path and common direction to stimulate the development of alternatives, prevent malaria, minimize the impact of DDT and establish an appropriate implementation plan with a committed buy-in from all stakeholder groups and endorsement by the Conference of the Parties. This was not the end, he said, but the beginning.
7. Ms. Neira expressed her pleasure to be present at a meeting where such different partners were rising to the challenge. While there was an urgent need to provide alternatives to DDT, she highlighted the danger of too much speed in reaching consensus; poor management of chemicals was what was placing the public at risk. She said WHO was committed to joining forces with all stakeholders to ensure public health was at the top of political agendas and public health was a driving force that could be used to move the Conventions forward. Echoing Mr. Cooper's words on the development of a plan, she expressed her hope that it would have a solid, scientific basis, be locally adaptable, and would generate results in a short period of time and facilitate quick departure from the use of DDT for disease vector control. WHO was supporting countries on integrated vector management (IVM), chemical and non-chemical alternatives to DDT and on management of chemicals used in vector control. WHO was also assisting countries to comply with the Convention obligations and to work within the WHO guidelines. She also noted that for the present there was no change on WHO recommendations for DDT in indoor residual spraying but that continuous monitoring should be undertaken and appropriate mechanisms put in place to reduce adverse effects.
8. Ms. Sunden-Bylehn applauded the move to bring health and the environment together. Recalling ten years of joint work between UNEP and WHO she said that while their objectives might be slightly different, to reduce malaria incidences and reduce the risks

of persistent organic pollutants such as DDT to human health and the environment, worked together to create a win-win situation: to strengthen disease vector control and to reduce reliance on DDT. Among other activities, there was an agreement to promote IVM, to hold awareness raising workshops and, in collaboration with the WHO regional offices, to undertake demonstration projects to assist countries to implement IVM approaches. Noting past problems with mosquito resistance to DDT she emphasised that any new products must be used carefully to avoid development of resistance. There should be complementary efforts to reduce incidences of malaria, not just through disease vector control but also strengthening of public health itself. Whatever was done with vector control it was necessary to ensure that implementation of alternatives was sustainable, taking into account possible adverse effects on health and the environment and ensure the long term effectiveness of the alternatives.

9. Ms. Keita-Ouane reminded the meeting of the millennium development goals which had impact on the objectives of the current meeting. Goal number four on reducing child mortality, goal number 6 on combating HIV/AIDS (human immunodeficiency virus/acquired immunodeficiency syndrome), malaria and other diseases, goal number seven on ensuring environmental sustainability and, in particular, goal number eight on developing global partnerships for development. She said the latter highlighted the move to bring together interested parties from different horizons, to work together to place human health, environment and development on the same agenda.

II. Organizational matters

A. Adoption of the agenda

10. The Committee adopted the agenda set out below, on the basis of the provisional agenda which had been circulated in document UNEP/POPS/DDTB.1/1:
 1. Opening session.
 2. Organizational matters:
 - (a) Adoption of the agenda;
 - (b) Organization of work.
 3. Experiences on alternatives to DDT.
 4. Contributions to current activities related to DDT alternatives
 5. Presentations on the background paper on DDT and the interim report for establishing a global partnership
 6. Deliberation on the draft business plan.
 7. Results of deliberations and recommendations.
 8. Closure of the meeting.

B. Organization of work

11. The meeting agreed that Mr. Momodou Cante (Gambia) would serve as chair.

C. Attendance

12. The meeting was attended by the following government representatives: Mr. Gonzalo Jordán (Argentina), Ms Miriam Serrut (Belize), Mr. Juan Carlos Arraya (Bolivia), Mr. Sokhan Long (Cambodia), Mr. Gedeon Jaramillo (Colombia), Mr. Mohammed Ismail Ibrahim El Sehamy (Egypt), Mr. Dessalegne Mesfin Fanta (Ethiopia), Mr. Ohri Yamada (France), Mr. Momodou B. S. Cante (Gambia), Mr. Jürgen Hannak (Germany), Mr. Rajander Sharma (India), Mr. Francis N. Kihumba (Kenya), Mr. Kiambo Njagi (Kenya), Ms. Rakotoarisetra Haritiana (Madagascar), Mr. Sivalingum Ramen (Mauritius), Ms.

Dalia Núñez (Mexico), Ms. Victoria Romero (Mexico), Mr. Joseph Costans John Gungunhana (Mozambique), Mr. Oludayo Olusegun Dada (Nigeria), Ms. Noluzuko Gwayi (South Africa), Mr. Peter Müller (Switzerland), Mr. Alexander Mahemba Mwita (United Republic of Tanzania), Mr. Yaşar Özbek (Turkey), Mr. Sam Zaramba (Uganda), Mr. Michael MacDonald (United States of America), Mr. Kevin J. Sweeney (United States of America), Mr. Robert A. Wirtz (United States of America), Ms. Victoria Mupwaya (Zambia)

13. The meeting was also attended by representatives of the following intergovernmental organizations: Global Environment Fund (GEF) Secretariat, UNEP Division of GEF Coordination, UNEP Division of Technology, Industry and Economics and the World Health Organization.
14. The meeting was also attended by representatives of the following non-governmental organizations, researchers and the private sector: Africa Fighting Malaria, Biovision, Global Business Coalition for HIV/AIDS, Tuberculosis and Malaria, International Centre of Insect Physiology and Ecology (ICIPE), IPEN Mexico, Millennium Institute, Pesticide Action Network (PAN) International, Physicians for Social Responsibility (PSR), Duke University, Gothenburg University, International Centre for Diarrhoeal Disease Research (ICDDR), Jiansgu Institute of Parasitic Diseases (JIPD), John Hopkins Bloomberg School of Public Health, North West University, University of Illinois at Chicago, University of Pretoria, CropLife International, Innovative Vector Control Consortium, Research Triangle Institute (RTI) International, Sumitomo Chemical and Vestergaard Frandsen.
15. A complete list of participants is set out in document UNEP/POPS/DDTBP.1/11.

III. Experience on alternatives to DDT

16. The Secretariat made a presentation on DDT and the Stockholm Convention, outlining the history and background that had led to the current meeting and describing the proposed way forward and the goal of achieving elimination of DDT use by 2020. He expressed the importance of establishing a global alliance to help attain that goal and explained that the development of cost-effective and locally appropriate alternatives was a critical hurdle to overcome in that respect.
17. The introductory presentation was followed by presentations from Mr. Rajander Sharma (India), on a case study: DDT alternatives for malaria control in India; Mr. Michael MacDonald (United States Agency for International Development) on a review of available interventions for malaria control; and Mr. Barry Solomon (Gothenburg University) on alternative products, methods and strategies to DDT for disease vector control: toward a cost-benefit analysis.
18. During the discussion that followed each of the presentations some principle concerns were raised. While keeping in mind the risks associated with use of DDT, it was important not lose sight of the risks of increased incidences of malaria. There was a need to balance the health effects against the gains. There was a request to obtain additional reports and evaluations on the impact of locally driven alternatives as well as in areas where DDT was being re-introduced or where there was continued use of DDT and where work was underway on availability and suitability of non-chemical and other alternatives. Globally, there was a need to increase monitoring of malarial incidences and of the impacts of control efforts. It was also important to look at resistance management in agriculture as well as in disease vector control. Additional studies were needed on the impact on incidences of disease and on health in general of using larvivorous fish to control malaria. Training and capacity building to create a critical mass of national environmental health and vector management experts was essential. There was emphasis on the need to increase funds for research and development of alternatives and a need to strategize elimination of DDT. The question was raised as to

what incentives existed to find non-chemical alternatives as there might not be the same driving force for certain stakeholders. Collaboration with local stakeholders was urged. Undertaking cost benefit analyses was complex and required assistance and user-friendly tools.

IV. Contribution to current activities related to DDT alternatives

19. Under the agenda item, presentations were made by Mr. Laurent Granier (Global Environment Facility) on financial support for the development of DDT alternatives; Mr. Thomas McLean (Liverpool School of Tropical Medicine) on a review of current research in vector control for malaria; Mr. Paul Saoko (Physicians for Social Responsibility, Kenya) on viable DDT alternatives for vector control – the Kenya case; and Mr. Frederic Baur (CropLife International - Syngenta) on development and deployment of alternative products to DDT – an industry perspective.
20. It was noted that malaria management had taken a long time to get attention. With HIV and tuberculosis, malaria had the highest mortality rates. Looking for alternatives was a welcome move but not at the expense of managing the disease. Reducing the case load was crucial to bring malaria under control. Diagnosis and treatment of malaria was important but expensive. The need for training and capacity building was again emphasized. The need for alternatives that operated in the same manner as the chemical they were expected to replace was vital. There was also need expressed for robust risk assessment. It was suggested that future interventions be held to the same standards as indoor residual spraying and insecticide treated nets where there was strong evidence for control of malaria incidence.

V. Presentations on the background paper on DDT and the interim report for establishing a global partnership

21. The representative of the Secretariat, Mr. Henk Van den Berg, presented the background paper on the global status of DDT (UNEP/POPS/DDTBP.1/12). Mr. Van den Berg described the production, use and stocks; legislation and policies; cost and cost-effectiveness; health and environmental effects and vector resistance. He said that currently there were approximately 5000 tonnes of DDT used per annum, the majority of both the production and use being in India. While several countries in Africa were in the process of re-introducing DDT for disease vector control there were also obsolete stocks that required efforts for clean-up. Many countries had inadequate legislation or policies governing the use of DDT and little or no monitoring programmes. The cost effectiveness of the use of alternatives was dependent on local conditions. There were currently 17 alternative methods of which IRS and ITN were implemented on a large scale. Cost-effective methods for vector control included those two as well as non-chemicals methods. However information on the latter was scarce and depended on local situations. He noted that it was critical that malaria control interventions were implemented in the context of IVM by being evidence-based, and by integrating all available resources and methods in a cost-effective and ecologically sound manner. He concluded by saying there was need for a long-term integrated and multi-partner strategy for vector control.
22. The consultant from Dalberg Global Advisers, Ms. Magali Cubier, presented the draft business plan (UNEP/POPS/DDTBP.1/3) describing the study approach whereby the feedback she had received from interviews with the stakeholders were instrumental in shaping the report. The report included the urgency and challenges, the analysis of the gaps and interim recommendations, and potential ways forward. She recalled the status of DDT in respect of decisions of the Conference of the Parties and said that alternatives to DDT were being examined by governments, international institutions, non-governmental organizations, research institutions, private sector companies, product

development partnerships, philanthropic organizations and donors, and that all those stakeholders had different objectives. Following the preparation of the interim report and the convening of the current meeting a plan would have to be prepared for consideration by the Conference of the Parties to the Stockholm Convention at its fourth meeting. She recalled the four principal goals of the plan: to develop a fact base to inform policy formulation and decision-making, to overcome complexity and cost of implementing alternatives to DDT, to bring new alternative pesticides to market, and to develop non-chemical products and approaches. She said the outcome should be a business plan to reduce the use of DDT taking into account cost-effective and locally appropriate alternatives.

23. In the ensuing discussion caution was again urged on the speed at which DDT was being controlled. There was a need to ensure appropriate alternatives to avoid the incidence of malaria increasing again. The question of whether DDT should be replaced by a new chemical or by integrated vector management was again raised which introduced the issue of the cost of interventions. It was noted that while the use of long-lasting insecticide treated nets (LLINT) reduced child mortality it did not reduce the malaria vector itself. It was suggested that currently nothing permitted the elimination of malaria in Africa. It was further suggested that cost-effectiveness was a concern both for companies developing new chemicals as well as for parties. It was important to look at such criteria, in particular based on local conditions to ensure sustainability of alternative products or methods.

V. Deliberation on the draft business plan

24. The meeting established four working groups to discuss the different goals set out in the interim report on the development and deployment of alternatives to DDT for disease vector control. Group one was chaired by Mr. Mohammed Ismail El Sehamy (Egypt) and discussed the development of a fact base to inform policy formulation and decision-making. Group two was chaired by Mr. Peter Müller (Switzerland) and discussed ways in which to overcome the complexity and cost of implementing alternatives to DDT. Group three was chaired by Ms. Victoria Mupwaya (Zambia) and examined how to bring new alternative pesticides to market. Group four was chaired by Mr. Francis Kihumba (Kenya) and discussed development of non-chemical products and approaches. The four groups were provided with indicative questions linked to developing a draft business plan and requested to address those questions with each goal and challenge in mind and also by addressing the linkages and priorities between goals as well as the potential way forward.
25. Participants discussed the main and common outcomes of the working group deliberations. All groups stressed the importance of national capacity building and, in particular, training at the national level. Currently there was an urgent need for local expertise, for example in the fields of toxicology, entomology or pesticide management, for which sustainable training programmes with long-term funding must be established. It was suggested that, to initiate an implementation plan, the possibility to establish a start-up programme such as was developed with the Quick Start Programme of SAICM might be examined. The need to develop and deploy both chemical and non-chemical alternatives to DDT was stressed. It was recognized that while there was a need to improve the fact base as well as to undertake further work on such subjects as resistance, short-term action was essential to reduce the reliance on DDT. It was vital to provide data to decision-makers to enable them to take science based and informed decisions. No one was questioning the efficiency of DDT, rather the fact that it was a persistent organic pollutant required action to minimize human health and environmental effects. It was essential to examine the issue in a holistic way and look at all issues related to pesticide management.

26. Most groups concluded that a declaration was not an essential option to mobilize the international community on DDT alternatives but rather a combination of an agreement, a global initiative and partnerships within elements of individual action plans would be the most beneficial solution. While some participants considered that a recommendation by the Conference of the Parties would bring sufficient pressure to bear on decision makers, others suggested that such a recommendation would not reach the attention of all stakeholders.
27. The following suggestions were made for future action: the secretariat should coordinate initiatives and activities on alternatives including looking at local and indigenous options; the profile of DDT alternatives should be raised to ensure political will and to encourage the development of effective legislation; existing partnerships should be examined and a future partnership developed to avoid duplication of on-going efforts; with WHO taking the lead, there should be joint work undertaken by WHO and the Stockholm Convention to confirm baseline information on the cost effectiveness of DDT and other insecticides; the importance of IRS and ITN that had dramatically reduced incidence of malaria in selected areas should be recognized.
28. With regard to the interim report itself, some participants suggested that the goals as currently laid out should be prioritized while others suggested that all the goals should be considered concurrently.
29. The meeting agreed that the establishment of a business plan to develop and deploy alternatives to DDT should be promoted. The Conference of the Parties had made it clear that reduction and control of malaria was a priority and, in proceeding towards the elimination of DDT, there hence remained a need for continued use of DDT for certain countries. The current exercise was not an attempt to compete with organisations responsible for malaria control but rather to work with them while aiming to eliminate DDT. The existing gaps to address the issue needed to be identified and filled at the same time as identifying the corresponding funding to fill those gaps and to develop and deploy alternatives to DDT.
30. The results of the working group deliberations are attached to the current report as Annex I.

VI. Results of deliberations and recommendations

31. It was suggested that the United Nations Development Programme be invited to join in any partnership established, especially in respect of urban malaria and urban sanitation programmes and corresponding environmental management programmes in urban areas. The representative of GEF urged that there be a distinction between those activities that required short term immediate financing and those that needed longer term sustainable sources of funding. He said that GEF might be the source to provide seed money to overcome barriers to implementing programmes.
32. The Secretariat was requested to identify means to raise the visibility of the current meeting and its recommendations. It was suggested that the main recommendations of the meeting should be submitted for information to other working groups including malaria teams as possible input to discussions on plans of action for malaria programmes. It was agreed that the outcome of the current meeting would be communicated to the third Expert Group Meeting on the assessment of the production and use of DDT and its alternatives for disease vector control, scheduled to be held from 18 to 20 November 2008 and to the IVM working group to be held from 1 to 3 December 2008. Participants were encouraged to continue to present the outcome of the meeting to any future relevant meetings.
33. Several participants expressed their regret that a representative from the Global Malaria Programme of WHO had not been present at the meeting. The representative of the Secretariat explained that unfortunately, priority activities had prevented their

attendance at the current meeting but assured the meeting that the draft interim report and recommendations would be circulated to WHO for their comments and input.

34. The meeting fully recognized the priority of malaria control, stressed the value of on-going initiatives and reiterated the importance of avoiding duplication with such initiatives. They noted that the way forward was an overarching understanding among the different stakeholders and a joint commitment to maintain and promote on-going initiatives, to identify and address gaps in the work on malaria control and reduction in the use of DDT and, to the extent feasible, develop work plans including financing options to fill those gaps. The meeting agreed to undertake further consultation by teleconference.
35. The meeting agreed that the interim report on the development and deployment of alternatives to DDT for disease vector control would be revised, taking into account comments made at the current meeting, reviewed by the Secretariat and circulated to sector representatives for further comments and amendment before being finalized. The final document would be submitted for consideration to the Conference of the Parties at its fourth meeting.
36. Finally, the meeting agreed that a set of recommendations based on the outcome of the current discussions would be developed for submission to the Conference of the Parties at its fourth session. Those recommendations are attached to the current report as Annex II.

VII. Closure of the meeting

37. The representative of the Secretariat expressed his appreciation to the governments of Germany, New Zealand, Norway and the United States of America for their contribution towards the convening of the meeting.
38. Following the customary exchange of courtesies, the meeting was closed at 3.30 pm on Wednesday 5 November 2008.

Annex I. Reports from Working Groups 1, 2, 3 and 4

WORKING GROUP 1

1. Goal 1 – Develop a strong fact base to inform policy formulation and decision making

Challenge 1: Understand and establish the cost effectiveness of alternatives compared to DDT

Challenge 2: Monitor vector resistance patterns across regions and understand vector resistance mechanisms

Short-term – 2 years; Mid-term - 5 years; Long-term – 10 years

- **How do you think that establishing the cost effectiveness of alternatives compared to DDT (challenge 1) would contribute to the development and deployment of alternatives to DDT?**
 - ✓ Cost-effectiveness of DDT (lifecycle costs) and its alternatives as a criteria is useful but is time bound –what may be cost effective now may not be cost effective in the future. Therefore, there is need for a comprehensive approach to guide policy on DDT alternatives
 - ✓ National focal points are not treating the issue of DDT and the need for the development of its alternatives as a priority;
 - ✓ Overlap of mandates among ministries such as the ministry of health, agriculture and environment;
 - ✓ Information gap on DDT regarding the cost effectiveness, environment and health concerns;
- **Would this be a realistic and effective way to support policy formulation and decision making regarding the use of DDT?**
 - ✓ Yes and this will clarify on the cost effectiveness for DDT and its alternatives because there are direct and indirect costs that need to be revealed. Presently this information is lacking.
- **How could this information be used? What kind of decisions could be taken regarding the use of DDT based on this information? What kind of decisions could be taken regarding the development of alternatives based on this information?**
 - ✓ The information could be used to establish direct and indirect costs such as cost of transportation of insecticides, training and operations, awareness and monitoring, insecticide resistance, health and environmental effects costs, safe storage and disposal. Information on indirect costs related to research and risk assessment and exposure could also be generated
- **Should the priority be set on comparing the cost effectiveness of DDT with direct alternatives (other pesticides available for IRS interventions) or on comparing the cost effectiveness of various vector control intervention (e.g. IRS, ITN, larviciding, environmental management)?**
 - ✓ Yes but there is need for a comprehensive approach that should include all the associated costs for each alternative. The consideration of cost effectiveness should be undertaken at national, regional or global level.
- **What would be the main steps required to address challenge 1?**
 - ✓ Research, data collected, data analysis, capacity building, engagement of a cadre of environmental health professionals, environmental and health effects, collaboration through an inter-ministerial agency at higher level to coordinate policy on DDT related alternatives, dissemination of information, risk analysis and exposure, evaluation and reporting
- **What would be the milestones to complete the existing research on cost-effectiveness for alternatives to DDT?**
 - ✓ WHO could collect information (may have available) on comparative cost effectiveness of DDT and other insecticides;
 - ✓ Promote and encourage publication and availability of information;

- ✓ Recommend a joint (WHO and Stockholm Convention) expert work to confirm the baseline information on the cost effectiveness of DDT and other insecticides;
 - ✓ Need for local research (health and environmental impact, timeframe, monitoring) on a country specific context through the National Implementation Plan (NIP) to generate data to guide policy making and implementation on DDT related issues;
- **How long would it take for these to be achieved?**
 - ✓ Five years is the earliest possible to generate this information. However possibilities exist for early mining of data. WHO has the capacity to make widely available harmonised research and data reporting protocols once they are approved and WHO could also contribute to capacity building programs:
- **What would be the main steps required to establish the cost effectiveness of various vector control interventions?**
 - ✓ Invite researchers and publishers to make information available to government officials, WHO and other relevant sectors and continually update;
 - ✓ Establishment of a baseline cost for DDT use (cost per house per year) compared with other WHOPEs available and approved insecticides;
 - ✓ Promote a clearing house for information sharing;
 - ✓ Political commitment through a regional or national declaration.
- **What is your estimate of the funding requirements to address this challenge?**
 - ✓ Not possible to answer this question as information not available
- **How could a collective action contribute to address challenge 1?**
 - ✓ Joint (WHO and Stockholm Convention) expert work to confirm the baseline information on the cost effectiveness of DDT and other insecticides
- **What would be the main benefits of a collective action on this challenge compared to existing initiatives?**
 - ✓ Give governments and other stakeholders the information they need to make evidence based decisions on IRS
- **Who should be involved in this collective action? Why?**
 - ✓ WHO, Stockholm Convention, RTI, other experts
- **Who could/ should take a leadership role in this collective action? At the global level? At the regional level?**
 - ✓ WHO
- **What is the best option for establishing a collective action to overcome challenge 1?**
 - ✓ Joint (WHO and Stockholm Convention) expert work to confirm the baseline information on the cost effectiveness of DDT and other insecticides
- **How do you think that monitoring vector resistance patterns and understanding vector resistance mechanisms (challenge 2) would contribute to the development and deployment of alternatives to DDT?**
 - **How could this information be used?**
 - ✓ To make evidence-based decisions on managing resistance;
 - ✓ To update resistance maps;
 - ✓ To support the research on new alternatives.
 - **What kind of decisions could be taken regarding the use of DDT based on this information?**
 - ✓ Where to use DDT;
 - ✓ When to stop using DDT;
 - ✓ When to change to another class of insecticide.
 - **What kind of decisions could be taken regarding the development of alternatives based on this information?**
 - ✓ To select alternatives with a different mode of action; Motivate funding agencies to support research and deployment of alternatives;
 - ✓ Motivate the development and deployment of innovative alternatives.
 - **Is it realistic to think that this challenge could be addressed in the short term?**
 - ✓ Yes!! It has to be addressed.
 - ✓ Need for training required personnel on resistance monitoring.

- **What would be the main steps required to address challenge 2?**
 - **What would be the milestones to complete the establishment of monitoring networks and how long would it take for these to be achieved?**
 - ✓ Completing the training of required personnel (5yrs.);
 - ✓ Establishing the required infrastructure (5 yrs.);
 - ✓ Established lines of communication between networks (2yrs.)
 - ✓ Completion of systematic and regular resistance monitoring stations (5yrs.).
 - **What would be the main steps required to understand vector resistance patterns and mechanisms?**
 - ✓ Develop standardized protocols;
 - ✓ Train relevant personnel;
 - ✓ Develop a global database based on regional mechanisms with real-time of updating of resistance maps;
 - ✓ Disseminate results;
 - ✓ Identify priority geographic areas;
 - ✓ Access to standardized testing equipment and supplies;
 - **What is your estimate of the funding requirements to address this challenge?**
 - ✓ Cost should be based on 2% of the cost of the intervention. Globally, US\$12M suggested as an initial cost.
- **How could a collective action contribute to address challenge 2?**
 - **What would be the main benefits of a collective action on this challenge compared to existing initiatives?**
 - ✓ Sharing information;
 - ✓ More cost-effective
 - ✓ Reduce duplication;
 - ✓ More efficient;
 - ✓ Increase in capacity at the local level.
 - **Who should be involved in this collective action?**
 - ✓ Governments, NGOs, Funding agencies WHO, Private sector (IRAC).
 - **Why?**
 - ✓ These are all involved in insecticide use aimed at public environmental and human health
 - ✓ These entities have the responsibility and the means to carry-out the activities
 - **Who could/ should take a leadership role in this collective action? At the global level?**
 - ✓ WHO;
 - **At the regional level?**
 - ✓ WHO regional offices.

2. Comparing goals and challenges

- **How would you compare the 4 goals or 9 challenges in terms of potential impact on the development and deployment of alternatives to DDT?**
 - **Which of the 4 goals or 9 challenges would have the highest impact in the short term?**
 - ✓ Goal 1; Challenge 1;
 - **Which of the 4 goals or 9 challenges would have the highest impact in the long term?**
 - ✓ Goal 4; Challenge 8
 - **For which of the 4 goals do you see the highest urgency for collective action?**
 - ✓ Goal 1
 - **Why?**
 - ✓ Greater efficiency and possibility for success;
 - ✓ Attract funding;
 - ✓ Required by all stakeholders;
 - ✓ Improve networking.

- **How would you compare the 4 goals and 9 challenges in terms of difficulty to address?**
 - **Which of the 4 goals or 9 challenges would be the most difficult to address in the short term?**
 - ✓ Goal 4;
 - **Why?**
 - ✓ Requires extensive research and training
 - ✓ Requires more coordination between the sectors
 - ✓ Requires long-term to achieve sustainability
 - ✓ Requires strong political will
 - ✓ Has limited stakeholder support
 - ✓ Challenge 8
 - **Why?**
 - ✓ Requires extensive research and training
 - ✓ Requires more coordination between the sectors
 - ✓ Requires long-term to achieve sustainability
 - ✓ Requires strong political will
 - ✓ Has limited stakeholder support
 - ✓
 - **Which of the 4 goals or 9 challenges would be the most difficult to address in the long term?**
 - ✓ Goal 2
 - ✓ Challenge 5
 - **Why?**
 - ✓ The establishment of sustainable capacity offers a serious hurdle for the implementation of IVM even with added information available
 - **Which of the 4 goals or 9 challenges could be easily addressed in the short term with additional financing?**
 - ✓ Goal 1; Challenge 1

3. Potential ways forward

- **How should the 4 goals or 9 challenges be prioritised in the ways they are addressed?**
 - **-Do you think there should be priorities set between the 4 goals or 9 challenges?**
 - ✓ Yes.
 - **Are there goals or challenges that need to be addressed before others?**
 - ✓ No
 - **Why?**
 - The tasks are not reserved to any single entity and can be divided between sectors. All can be initiated at the same time even though the timeframe for results may be different.
 - ✓ However, some goals could impact on the successful implementation of others
- **Do you think the goals and challenges should be addressed as a whole or could be looked at independently?**
 - ✓ Independently but within a common framework
 - **Which of the 3 options would you support?**
 - ✓ Option 1 with option 2 attached post declaration conference
 - **Why?**
 - ✓ The establishment of a declaration will allow protocol and political will to be instituted but is not sustainable on its own. Adding option 2 thereafter will then allow individual stakeholders to join on to individual challenges and goals as seen fit for further action.
- **Which of the 3 options would you not support?**
 - ✓ Option 1 and Option 3 individually.

- **Why?**
 - ✓ Option 1 alone is not effective in the long-term.
 - ✓ Option 3 would duplicate partnerships already established and would not be attractive to many stakeholders
- **Which other option should be considered to address the 4 goals or 9 challenges?**
 - ✓ None.

Other comments

- **What changes would you suggest to the conceptual format used in the interim report?**
 - ✓ To have provision to send generalised comments by COB November 17
 - ✓ To re-organize the goals and challenges. For instance: Challenge 4 could be linked to goal 1; Challenge 8/9 are unclear; The use of “Make the case” stops short of implementation; Need to re-visit the options to avoid any conflict or overlap with ongoing initiatives
- **Are there any factual errors that need to be corrected before preparing the plan to be submitted to the COP?**
 - ✓ To have provision to send generalised comments by COB November 17 including information to be provided for the paper on the global status of DDT

WORKING GROUP 2

1. Goal 2 – overcome the complexity and cost of implementing alternatives to DDT**Challenge 3:** Finance the use of alternatives to DDT for disease vector control**Challenge 4:** Develop and implement tools, guidelines and strategies to support in-country **decisions** regarding the choice of alternatives for disease vector control**Challenge 5:** Develop in-country capacity and cross-sector coordination to implement Integrated Vector Management programs**1-1. Challenge 3: finance the use of alternatives to DDT for disease vector control**

- **Would financing the use of alternatives to DDT contribute to their further deployment (challenge 3)?**
 - **Would this be an effective and sustainable way to support the deployment of direct alternatives to DDT (e.g. alternative pesticides to be used of IRS interventions)?**
 - ✓ Yes, but!!
 - ✓ Sustainability has to be based on stable career opportunities. What is required to apply IVM at the local level is career obligation. Trained personnel are needed.
 - ✓ Financing has to be long/mid term.
 - ✓ In the future the approach has to be self-sustainable.
 - **Different points of view have to be taken into account, otherwise we are not able to replace in sustainable manner.**
 - ✓ Need to put resources in the development of alternatives beyond the four classes of pesticides and beyond the spraying.
 - ✓ Local has to be considered.
 - ✓ Issues to be addressed:
 - Financing is important but not sufficient,
 - bottom up approach (demand has to come from the user countries)
 - Enabling environment should be created at the global and at the local level.
 - **Would decision makers switch to alternatives to DDT if the cost of doing so is supported by such a mechanism or would there be reasons to still use DDT?**
 - ✓ The cost effective availability alone would be insufficient. (Financing is important but not sufficient.)
 - ✓ Control of resistant vectors
 - ✓ Effectiveness and safety of the alternatives has to be proved.
 - ✓ Commercial pressure to still use DDT.
 - ✓ Political pressure to still use DDT.
 - ✓ Cost of changing the existing infrastructure.
 - ✓ Public awareness and acceptability for end-users of alternatives in the different countries.
 - **What could be the unwanted effects of such a financing mechanism (Local as well as international funding)?**
 - ✓ Selective international funding may lead to some countries reverting use of DDT
 - ✓ Dependency of countries
 - ✓ Risk of stockpile of alternatives due to a lack of expertise to use them.
 - ✓ Intervening supply side.
 - **Is it realistic to think that such a financing could be implemented in the short term (1 to 2 years)?**
 - ✓ Result of voting: Short term is realistic: 0; Short term is not realistic: all
 - ✓ Already existing mechanism should be exploited.

- **What would be the main steps required to address challenge 3?**
 - **Which existing mechanism could be considered to address challenge 3?**
 - ✓ All possible major mechanisms to be considered:
 - ✓ GEF (Stockholm related and eventually other windows)
 - ✓ Global Fund ATM
 - ✓ Cooperation between Parties promoted through the COP
 - ✓ Individual action by the Parties to the Convention
 - ✓ Other stakeholders: e.g. FAO, World Bank, UNIDO, WHO, IVCC, Gates Foundation, etc.
 - ✓ Donor countries such as Canadian POPs Fund.
 - **What would be the milestones to set up a financing mechanism to support the use of alternatives to DDT and how long would it take for these to be achieved?**
 - ✓ Establishment /corroboration of strategy (compare above)
 - Can be done by **COP4** (May 2009)
 - ✓ Fostering synergies between different stakeholders (government agencies e.g. JICA, USAID)
 - Longer term task
 - ✓ Secretariat's schedule for phase-out
 - Exists
 - ✓ Needs assessment, estimate of funds required
 - ✓ Partially included in NIPs but the analysis will take time. It is a complex task and may need a lot of effort.
 - ✓ COP should give the Secretariat task to analyze the financial needs based on the NIPs.
 - **What is your estimate of the funding requirements to address this challenge on a yearly basis?**
 - ✓ Interim report, 3.1. Magnitude of challenges
 - ✓ This is a first step:
 - ✓ Identify stakeholders that are able to provide safer figures. This includes organizations and countries
- **How could a collective action contribute to address challenge 3?**
 - **What would be the main benefits of a collective action on this challenge compared to existing initiatives?**
 - ✓ Mutually agreed principles to provide career opportunities for appropriately trained personnel.
 - ✓ Benefit is that it avoids overlaps of programs, that it identifies gaps, more efficient use of limited resource...
 - ✓ Economic synergies can be achieved.
 - ✓ The mechanisms must have rules which are clear, sufficiently transparent, stable, and allow for flexibility.
 - **Who should be involved in defining the modalities of such a financial mechanism?**
 - ✓ Funders, recipients, GEF, appropriate international agencies, COP
 - ✓ COP should endorse the mechanisms.
 - **Who could/ should take a leadership role in doing so?**
 - ✓ **COP** to decide on the Quick-start fund
 - **What are the best options for establishing a collective action to overcome challenge 3?**
 - ✓ Having shared vision and reaching consensus among stakeholders.
 - ✓ Conflicting priorities have to be addressed and common denominators have to be found regarding:

1. Mitigating use of DDT
2. Fighting malaria

1-2. Challenge 4: Develop and implement tools, guidelines and strategies to support in-country decisions regarding the choice of alternatives for disease vector control

- **How do you think that developing and implementing tools, guidelines and strategies to support in-country decision-making (challenge 4) would contribute to the deployment of alternatives to DDT?**
 - **Would this be a realistic and effective way to support the deployment of alternatives to DDT?**
 - ✓ Yes, with understanding that:
 - ✓ Pilot projects/pilot countries
 - ✓ Public education tools
 - ✓ Evidence based decisions
 - **How would these tools, guidelines or strategies be used? What kind of decision could be taken differently regarding the use of DDT based on these tools?**
 - ✓ More centralized level: basic decisions
 - ✓ Local level: implementation and technical decisions, Guidelines have to be interpreted at the local level, Local budgets are prerequisite.
 - ✓ To assess the budget requirement, serve as the educational tools, quality assurance.
- **What would be the main steps required to address challenge 4?**
 - **What would be the milestones to develop tools? To develop guidelines? To develop strategies? And how long would it take for these to be achieved?**
 - ✓ Implementation of the coordinating activities, training, educational activities
 - ✓ Link to database, compare with goal 1.
 - ✓ Needs assessment and ensuring the relevance to users
 - **Which of those three should be addressed first?**
 - ✓ Strategies, guidelines, tools
 - ✓ (Tools are important to find strategies.)
 - **What is your estimate of the funding requirements to address this challenge 4?**
 - ✓ Development of the tools is the most expensive. (*Tools to support decision making.)
 - ✓ The funding requirements depend on countries.
- **How could a collective action contribute to address challenge 4?**
 - **What would be the main benefits of a collective action on this challenge compared to existing initiatives?**
 - ✓ At global/regional level:
 - ✓ Exchange of appropriate information
 - ✓ Guidance
 - ✓ Design and sharing of tools, adaptation of the tool
 - ✓ Harmonized system for decision taking and quality assurance
 - ✓ Assess the validity of the global tools at regional/local level.
 - **Who should be involved in this collective action? Why?**
 - ✓ These three levels should be involved. They have to collaborate with the different sectors of society: agriculture, industry, transport, etc. that may have impact on disease vectors and efficiency of control measures.
 - ✓ Training and research institutions
 - ✓ Civil society (Community and environment)
 - ✓ Government offices

- ✓ UN groups as well as donors and development agencies, etc. (Coordinated and focused efforts)
- **Who could/ should take a leadership role in doing so? At the global level? At the regional level?**
 - ✓ At the regional level,
 - It has to be knowhow and experience driven.
 - It should be built on the existing regional UN and other structures (GEF, UNEP WHO POPs Projects)
 - ✓ At the global level,
 - The Secretariat in contact with the corresponding WHO representatives etc, may contact other influential organizations.
- **What is the best option for establishing a collective action to overcome challenge 4?**

1-3. Challenge 5: develop in-country capacity and cross-sector coordination to implement Integrated Vector Management programs and other related issues

- **How would you prioritize the type of interventions mentioned to address challenge 5 (articulating needs and benefits of IVM and mobilizing stakeholders [stakeholders includes the citizens] around building IVM capacity/ train in-country vector control specialists and medical entomologists/ support cross sector collaboration)?**
 - ✓ Include the following in addition to the bracket:
 - ✓ Train and support the careers of appropriate scientific staffs, as well as corresponding programs.
 - ✓ Adequate quality assurance, (e.g. quality of spraying, safety, and health).
 - ✓ Give mandate regarding cross-sector collaboration.
 - ✓ **Urgent:** articulating needs and benefits of IVM and mobilizing [stakeholders includes the citizens] around building IVM capacity
 - ✓ **Important:** train in-country vector control specialists and medical entomologists, train and support the careers of appropriate scientific staffs
- **Would these interventions be a realistic and effective way to address the complexity of implementing alternatives to DDT?**
 - ✓ Yes.
- **What would be the main steps required to address challenge 5?**
 - **What would be the milestones to foster the deployment of IVM and how long would it take for these to be achieved?**
 - ✓ Rational study of the program to be implemented, series of recommendations on the services required within the effect of organization
 - ✓ Training program
 - ✓ Establishment of career orientated service including funding
 - ✓ What would be the milestones to support the training of in-country vector control specialists and how long would it take for these to be achieved?
 - ✓ Establishment of policy framework
 - ✓ Granting of financial support and supervision
 - ✓ Recruitment and training of scientific and professional staff
 - **What would be the milestones to support cross sector collaboration and how long would it take for these to be achieved?**
 - ✓ Establishment of policy framework (How the structure is going to look like.)
 - ✓ In six months if the country is ready.
 - ✓ Undertaking mandate analysis of public agencies as well as factual needs.

- ✓ Granting of financial support and supervision
- ✓ Recruitment and training of scientific and professional staff
- **Which of those three should be addressed first?**
 - ✓ **Urgent:** articulating needs and benefits of IVM and mobilizing [stakeholders includes the citizens] around building IVM capacity
 - ✓ **Important:** train in-country vector control specialists and medical entomologists, train and support the careers of appropriate scientific staffs
- **What is your estimate of the funding requirements to address this challenge 5?**
 - ✓ Articulating needs and benefits and mobilizing stakeholders: relatively cheap
 - ✓ Train in-country vector control specialists and medical entomologists: relatively expensive
 - ✓ Support cross sector collaboration: relatively cheap
 - ✓ Studies in some pilot countries could be valuable here.
- **How would a collective action contribute to address challenge 5?**
 - **What would be the main benefits of a collective action on this challenge compared to existing approaches and initiatives?**
 - ✓ Success!!
 - ✓ Sustainability, effectiveness.
 - ✓ (Coordinated and focused efforts)
 - **Who should be involved in this collective action? Why?**
 - ✓ Training and research institutions
 - ✓ Civil society (Community and environment)
 - ✓ Government offices
 - ✓ UN groups as well as donors and development agencies, etc. (Coordinated and focused efforts)
 - **Who could/ should take a leadership role in this collective action? At the global level? At the regional level?**
 - ✓ At the regional level,
 - It has to be knowhow and experience driven.
 - It should be built on the existing regional UN and other structures (GEF, UNEP WHO POPs Projects)
 - ✓ At the global level,
 - The Secretariat in contact with the corresponding WHO representatives etc, may contact other influential organizations.
 - **What is the best option for establishing a collective action to overcome challenge 5?**
 - ✓ Implementation of the points discussed above.
 - ✓ Trained/skilled human resources (getting critical mass).

2. Comparing goals and challenges

- **How would you compare the 4 goals or 9 challenges in terms of potential impact on the development and deployment of alternatives to DDT is concerned?**
 - **Which of the 4 goals or 9 challenges would have the highest impact in the short term?**
 - ✓ All four goals are important and are meaningful only in conjunction.
 - ✓ Goals 1 and 2 are prerequisite for the others.
 - ✓ Goal 1 is already addressed.
 - ✓ Goal 2 has the highest actual priority.
 - ✓ Goal 3 should be amended (to include other possible chemical solutions such as olfactory traps).

- ✓ Goal 4 (non-chemical approach) is important.
 - **Which of the 4 goals or 9 challenges would have the highest impact in the long term?**
 - ✓ Goals 2 to 4 have high impact.
 - **For which of the 4 goals do you see the highest urgency for collective action? Why?**
 - ✓ Goal 2 has the highest urgency.
- **How would you compare the 4 goals and 9 challenges in terms of difficulty to address?**
 - **Which of the 4 goals or 9 challenges would be the most difficult to address in the short term? Why?**
 - ✓ Goal 2 is difficult because it is social/political.
 - ✓ Other goals are difficult because of technical and ecological aspects.
 - **Which of the 4 goals or 9 challenges would be the most difficult to address also in the long term? Why?**
 - ✓ Goal 3, it implies the most dramatic change.
 - **Which of the 4 goals or 9 challenges could be easily addressed in the short term with additional financing?**
 - ✓ None, but
 - Goal 1 could be most easily addressed in the addressed even without a lot of money.
 - Goal 2 should be prioritized for funding support in the short term.

3. Potential ways forward

- **How should the 4 goals or 9 challenges be prioritised in the ways they are addressed?**
 - **Do you think there should be priorities set between the 4 goals or 9 challenges?**
 - ✓ Yes.
 - **Are there goals or challenges that need to be addressed before others? Why?**
 - ✓ Yes, because of differing chances of success, time horizon, urgency, etc.
- **Do you think the goals and challenges should be addressed as a whole or could be addressed independently?**
 - ✓ They can not be addressed completely independently to achieve an optimal result.
- **Which of the 3 options (interim document section 4: declaration, global initiative to develop strategies..., partnership platform for DDT alternatives) would you support? Why?**
 - ✓ The three options should not be seen as mutually exclusive but they should rather complement each other.
- **Which of the 3 options would you not support? Why?**
 - ✓ The three options should not be seen as mutually exclusive but they should rather complement each other.
- **Which other option should be considered to address the 4 goals or 9 challenges?**
 - ✓ We do not want to fix the organizational approach at this point in time as the process is ongoing and the data are still being collected.

4. Other comments

- **What changes would you suggest to the conceptual format used in the interim report?**
 - ✓ Discuss complementary actions...strengthening public health, public awareness and participation...
 - ✓ Chapter on broader environment of the programme outside of the Stockholm Convention is missing.
- **Are there any factual errors that need to be corrected in the report?** No

5. Remarks

- ✓ IVM is not applicable in Africa today. Measure levels are dependent upon career opportunities specifically in African countries.
 - ⇒ IVM concept is quite vague/complicated (complexity!). The human, social and environmental component is not stressed yet.
 - ⇒ IVM is still appropriate as a long term target. Numerous IVM approaches on their ways in Africa.
 - ⇒ Capacity building is prerequisite. (Provide capacity at the local level. Analyze the local level capacity for vector control.)
 - ⇒ Capacity building projects are already there in some countries (Mauritius).
- ✓ Addressing financial issues is difficult for this kind of working group. Estimating funding requirements may be difficult to answer. (The Funding community is not completely represented.)
- ✓ Discussion on non-pesticide type alternatives is not sufficiently addressed in the draft paper. There is more in the literature.
- ✓ Three alternatives ways forward proposed in the paper could be integrated/melted.
- ✓ The pesticide management today, there are ways to use pesticides more safely and judiciously.
- ✓ It is crucial to further define the term partnership on our way forward.
 - ⇒ Partnership may not always work on our favour.
 - ⇒ Partnership is voluntary
- ✓ Indoor residue spraying is the concept to vector control. The enemy is when it is used wrongly.
- ✓ The role of the health sector is crucial.
- ✓ Social awareness and social perspective need to be included, public awareness has to be stressed.

WORKING GROUP 3

1. Goal 3 – Bring new alternative pesticides to market

Challenge 6: Bring to market new formulations of existing pesticide classes equally vector control effective as DDT

Challenge 7: Address the issue of the barriers to discovery and commercialization of the public health pesticide market and bring to market new active ingredient classes

- **Given resistance issues linked with existing classes of pesticides (including attractants, repellents and biologically derived chemicals: vector control chemicals), is the development of new formulations a realistic and effective way to develop alternatives to DDT?**

Definition of new chemicals:

Short term objective:

- ✓ New to public health but registered in the agriculture and/or animal health
- ✓ New, already in WHOPES, but not used in vector control (reformulation of a known pesticide necessary)
- ✓ Long-term objective (to be prepared for the potential resistance crisis):
- ✓ New not yet registered
- ✓ Yes, if the alternatives are at least as effective as DDT and don't have the harmful effects.
- **How could development efforts to bring new formulations to market be reinforced (challenge 6)?**
 - **What incentives could be used to stimulate the development of new formulations?**
 - ✓ Reliable information about market size, profitability, and sustainability (incl. data protection)
 - ✓ Partnership between potential users (incl. the end users) producers and donors
 - ✓ Facilitate research on existing indigenous products
 - ✓ Feedback from the end users- reliable market research
 - ✓ Flexibility in the WHOPES process for re-formulated pesticides for vector control
 - ✓ Harmonization and coordination of national, international (e.g. EU) and WHO registration schemes for pesticides to be used in vector control (possible partnership: a standardized registration scheme (set up parameters-standard set of criteria the new pesticide has to fulfil) it is an urgent global problem therefore can not be solved locally)
 - ✓ Need for strengthening of technical capability in user countries to choose, manage (incl. resistance management) and use the new pesticides formulations
 - **What would be the milestones to reinforce the development of new formulations and how long would it take for these to be achieved?**
 - ✓ Sustainable partnership between potential users (incl. the end users) producers and donors established (building on already existing initiatives)
T: 12-18 months (existing)
T: 3 years (new partnership)
 - ✓ Donors (GF, World Bank, PMI, DFID, UNICEF, etc.) have to commit themselves to sustainable support also IRS as sustainable control method (donor money is currently going mostly to ITN). A letter from this meeting could initiate this.
T: 6-12 months
 - ✓ Harmonization of the regulatory schemes, including WHOPES, so that they are fast and efficient (malaria is an emergency situation). Major players: national governments, WHO, EU, US-EPA, Industry, etc.
T start: now

T available: 3 years

T implementation: +3 years

- **What is your estimate of the funding requirements to address this challenge?**
 - ✓ New not yet registered
 - 200 mil. US\$ per active ingredient
 - T product on the market: 10 years
 - ✓ New to public health but registered in the agriculture and/or animal health (reformulation of a known pesticide necessary)
 - 1-5 mil. US\$
 - ✓ New, already WHOPES approved, but not deployed in vector control
 - <1 mil. US\$ (only marketing cost and registration in countries)
- **How could a collective action contribute to addressing challenge 6?**
 - **What would be the main benefits of a collective action on this challenge compared to existing approaches and initiatives?**
 - ✓ Strengthening and broadening of the already existing communication between user countries and developers would improve acceptability of new products
 - NOTE: While industry can participate in collective actions, it is not anticipated that industry act collectively
 - **Who should be involved in this collective action? Why?**
 - ✓ User countries (to provide information about the potential markets; national regulatory bodies)
 - ✓ Multi-national environmental agreements, regional inter-governmental organizations (e.g. EU) (Coordinate, align, and accelerate regulatory policy)
 - ✓ Industry (to develop and produce new formulations)
 - ✓ Product development partnerships (Executing of development projects)
 - ✓ Donors (to provide sustainable funding)
 - **Who could/ should take a leadership role in this collective action?**
 - ✓ User countries- RBM (Roll Back Malaria)
 - ✓ Regulatory issues WHO
 - ✓ Product development partnership- IVCC
 - ✓ Industry – CropLife International/public health group
 - ✓ Donors- GFATM
 - ✓ Overarching coordination UNEP
 - **What is the best option for establishing a collective action to overcome challenge 6?**
- **How could development efforts to bring new active ingredients to market be reinforced (challenge 7)?**
 - **What incentives could be used for the private sector companies and research institutions to invest time and resources in developing new active ingredients?**
 - ✓ Reliable information about market size, profitability, and sustainability (incl. data protection)
 - ✓ Partnership between potential users (incl. the end users) producers and donors
 - ✓ Funding for discovery of new active ingredients with new mode of action
 - ✓ Facilitate research on existing indigenous products
 - ✓ Feedback from the end users- reliable market research
 - ✓ Flexibility in the WHOPES process for new pesticides for vector control
 - ✓ Harmonization and coordination of national, international (e.g. EU) and WHO registration schemes for pesticides to be used in vector control (possible partnership: a

- standardized registration scheme (set up parameters-standard set of criteria the new pesticide has to fulfil) it is an urgent global problem therefore can not be solved locally
- ✓ Need for strengthening of technical capability in user countries to choose, manage (incl. resistance management) and use the new pesticides
- **How could the sense of uncertainty on the public health pesticides market be reduced?**
- ✓ For development of new active ingredients, uncertainty is not the major issue, but the market size
 - ✓ The market is and will stay small, donor funding is necessary to support product development
 - ✓ Regulatory requirements should be harmonized and speeded up
 - ✓ Introduction of new products to the market (proper consultation with the end users at the beginning of product development)
- **What would be the milestones to reinforce the development of new active ingredients and how long would it take for these to be achieved?**
- ✓ Sustainable partnership between potential users (incl. the end users) producers and donors established (building on already existing initiatives)
T: 12-18 months (existing)
T: 3 years (new partnership)
 - ✓ Donors (GF, World Bank, PMI, DFID, UNICEF, etc.) have to commit themselves to sustainable support also IRS as sustainable control method (donor money is currently going mostly to ITN). A letter from this meeting could initiate this.
T: 6-12 months
 - ✓ Harmonization of the regulatory schemes, including WHOPES, so that they are fast and efficient (malaria is an emergency situation). Major players: national governments, WHO, EU, US-EPA, Industry, etc.
T start: now
T available: 3 years
T implementation: +3 years
 - ✓ Establishment of the fund and resource mobilization to finance development of a new active ingredient (fund managed through e.g. IVCC)
T: establishment: 12 months
 - ✓ T resource mobilization: ongoing
 - ✓ Identification of key candidate molecular classes
T the first: 3 years
T: ongoing
- **What is your estimate of the funding requirements to address this challenge?**
- ✓ New not yet registered
 - 200 mil. US\$ per active ingredient
 - T product on the market: 10 years
 - ✓ New to public health but registered in the agriculture and/or animal health (reformulation of a known pesticide necessary)
 - 1-5 mil. US\$
 - ✓ New, already WHOPES approved, but not deployed in vector control
 - <1 mil. US\$ (only marketing cost and registration in countries)

- **How could a collective action contribute to addressing challenge 7?**
 - **Do you think there is a need for additional Product Development Partnerships (needs to be clearly defined) to address this challenge?**
 - ✓ [Yes/no]; however, other partnerships on specific issues outside the scope of IVCC (awareness raising, capacity strengthening, etc.) may be useful
 - ✓ The IVCC Product Development Partnership is already in place and of the view that three new active ingredients for vector control are necessary. The capacity of IVCC is sufficient to manage their development and could be expanded if development of more active ingredients would be necessary
 - ✓ Industry can not enter into discovery and development of new active ingredient for vector control without external funding
 - **What would be the main benefits of a collective action on this challenge compared to existing approaches and initiatives?**
 - ✓ Collective actions will enable bringing new products to the market; expanding on recently established partnerships (e.g. IVCC) to include the broad range of stakeholders described below would accelerate the process
 - **Who should be involved in this collective action? Why?**
 - ✓ User countries (provide feedback on the resistance evolution and management issues; national regulatory bodies)
 - ✓ Multi-national environmental agreements, regional inter-governmental organizations (e.g. EU) (Coordinate, align, and accelerate regulatory policy)
 - ✓ Industry (to develop and produce new active ingredients)
 - ✓ Product development partnerships (Executing of development projects)
 - ✓ Donors (to provide sustainable funding)
 - **Who could/ should take a leadership role in this collective action?**
 - ✓ User countries (resistance issues)- ANVR
 - ✓ Regulatory issues WHO
 - ✓ Product development partnership- IVCC
 - ✓ Industry – CropLife International/public health group
 - ✓ Donors-Wellcome Trust
 - ✓ Overarching coordination-UNEP
 - **What is the best option for establishing a collective action to overcome challenge 7?**

2. Comparing goals and challenges?

- **How would you compare the 4 goals or 9 challenges in terms of potential impact on the development and deployment of alternatives to DDT is concerned?**
 - **Which of the 4 goals or 9 challenges would have the highest impact in the short term (1-5 years)?**
 - Goal 3/challenge 6
 - Goal 1/challenge 1
 - Goal 2/challenge 3
 - **Which of the 4 goals or 9 challenges would have the highest impact in the long term (long term 5-10) ?**
 - Goal 3/ challenge 7
 - Goal 1/ challenge 2
 - Goal 2/challenge 5 (WHO definition of IVM)

- **For which of the 4 goals do you see the highest urgency for collective action? Why?**
Goal 2, because it is complex and coordinated collective action will have a stronger impact; because it considers chemical as well as non-chemical control measures (IVM); it is urgent, because the other goals follow on it and supports in-country implementation
- **How would you compare the 4 goals and 9 challenges in terms of difficulty to address?**
 - **Which of the 4 goals or 9 challenges would be the most difficult to address in the short term? Why?**
All goals are difficult in different ways
Goal 3 would be the most difficult, but is long term by definition
Goal 2/5: in country capacity is a prerequisite for implementation of vector control measures; it is difficult to establish in short term if such capacity is lacking (e.g. entomologists)
 - **Which of the 4 goals or 9 challenges would be the most difficult to address in the long term? Why?**
If implementation is effective, there should be no malaria problem in the future
Goal 2/3 : it is essential to sustain the funding in long term
 - **Which of the 4 goals or 9 challenges could be easily addressed in the short term with additional financing?**
Goal 2/3

3. Potential ways forward

- **How should the 4 goals or 9 challenges be prioritised in the ways they are addressed?**
 - **Do you think there should be priorities set between the 4 goals or 9 challenges?**
No: All goals basically need to start in parallel; different stakeholders will be involved in particular actions and may get involved in different time;
 - **Are there goals or challenges that need to be addressed before others? Why?**
Goals 1-4 have to start in parallel (the goals are interactive and can not be separated in time)
- **Do you think the goals and challenges should be addressed as a whole or could be looked at independently?**
 - ✓ The challenges should be addressed as a whole and the process should be coordinated by the overarching coordinator (UNEP)
- **Which of the 3 options would you support? Why?**
 - ✓ Option 2: Describes well the current situation; avoids duplication; some aspects are missing, which are included in Option 3
this is the best option, but should be extended by some elements of Option 3; dedicated coordinator under the Stockholm Convention (full time) is necessary (define role, tasks and budget)
 - ✓ Option 3: Does not consider already ongoing activities
- **Which of the 3 options would you not support? Why?**
 - ✓ Option 1: clear mandate was given by the Conference of the Parties, a declaration is not necessary
- **Which other option should be considered to address the 4 goals or 9 challenges?**
 - ✓ Option 4: Global action for DDT alternatives
 - ✓ Establishment a coordinating body under the Stockholm Convention and be endorsed by the COP; avoiding duplication / competing with existing vector control bodies (e.g. RBM); coordinate the agreed goals and challenges and report back to the COP

WORKING GROUP 4**1. Goal 4 – Make the case for the development of non-chemical products and approaches**

Challenge 8: Make the case for the development of environmental management and set the agenda for research;

Challenge 9: Make the case for the development of other non-chemical alternatives to DDT and set the agenda for research.

- **Given the current status of vector control interventions and in-country capacity, would environmental management be a realistic way to develop and deploy alternatives to the use of DDT in the short term? In the long term?**
 - ✓ Environmental management (EM) can be considered as attainable in the short-term 5 years given success in certain regions. Instances do exist where EM has been successfully implemented. Therefore, efforts initiated with local factors considered can be successful. Such local factors may inhibit short-term success in some situations. Generally, 10 years is accepted as being the long-term period to implement environmental management for a locality.
- **What would be an effective way to make the case for environmental management?**
 - **What incentives could be used for stakeholders to invest time and resources in strengthening environmental management approaches?**
 - ✓ Recognition and income;
 - ✓ Increase awareness by providing information;
 - ✓ Cross-benefits - combine environmental management with income generation activities (e.g. agricultural enterprises);
 - **Which stakeholders should be involved?**
 - ✓ Health authorities;
 - ✓ Environmental authorities;
 - ✓ Other authorities at different levels;
 - ✓ Agricultural sector – farmers;
 - ✓ Community leaders;
 - ✓ Faith-based organizations;
 - ✓ Civil society organizations.
 - ✓ Universities and other educational institutions;
 - **What would be the milestones required to foster the development and deployment of environmental management approaches and how long would it take for these to be achieved?**
 - ✓ EM recognized in national malaria action plan;
 - ✓ Evidence or demonstration of success;
 - ✓ All sectors sensitized;
 - ✓ Capacity established to implement EM;
 - ✓ Recognition of EM as a priority by financial institution;
 - ✓ A strategy for prioritization at the political level.
 - **Is there a need for a common research agenda?**
 - ✓ Yes – with local issues taken into consideration;
 - ✓ Sharing of successes and failures.
 - **What is your estimate of the funding requirements to address challenge 8?**
 - ✓ Define scale; scope; initiation; and sustainable, long-term costs;
 - ✓ The cost must consider the benefits gained outside of malaria control
 - ✓ US\$2 per person/yr – initially

- **How will EM contribute beneficially at the country level?**
 - ✓ Each person at the community level takes ownership of action;
 - ✓ Many beneficial changes through political action;
 - ✓ Establishment of cadre of scientists for malaria control;
- **How could a collective action contribute to addressing challenge 8?**
 - **What would be the main benefits of a collective action on this challenge compared to existing approaches and initiatives?**
 - ✓ Countries can gain from information sharing of results;
 - **Who should be involved in this collective action? Why?**
 - ✓ Governments, NGOs, IGOs, Researchers, Private sector (WHO; RBM; CDC; IVCC; GF; GEF; FAO; UNEP; SC; Researchers; NGOs; CROPLIFE; etc.); WHY? Some involved in malaria control while others can make the case for EM.
 - **Who could/ should take a leadership role in this collective action? At the global level? At the regional level?**
 - ✓ Global level – UNEP /SC/WHO
 - ✓ Regional level - WHO regional offices
- **Given the current status of vector control interventions and in-country capacity, would the focus on non chemical alternatives be a realistic and effective way to develop alternatives to the use of DDT?**
 - ✓ No – no evidence; Yes for urban communities, for rural – more data required
- **What would be an effective way to make the case for non chemical alternatives?**
 - **What incentives could be used for stakeholders to invest time and resources in developing non chemical alternatives to DDT or non chemical approaches to vector control?**
 - ✓ Evidence that these strategies will be successful
 - ✓ Financial resources are available;
 - ✓ Removal of toxic concerns;
 - **Which stakeholders should be involved?**
 - ✓ WHO
 - ✓ Professional organizations involved in building;
 - ✓ Health authorities;
 - ✓ Environmental authorities;
 - ✓ Other authorities at different levels;
 - ✓ Agricultural sector – farmers;
 - ✓ Community leaders;
 - ✓ Civil society organizations;
 - ✓ Universities and other educational institutions;
 - ✓ Industry
 - **What would be the milestones to foster the development and deployment of such alternatives and how long would it take for these to be achieved?**
 - ✓ Non-chemical approaches recognized in national malaria action plan;
 - ✓ Evidence or demonstration of success in contributing to the reduction of the malaria burden;
 - ✓ All sectors sensitized;
 - ✓ Capacity established to implement non-chemical approaches;
 - ✓ Non-chemical approaches introduced at the local level;
 - ✓ Recognition of non-chemical approaches as a priority by financial institution;
 - ✓ A strategy for prioritization at the political level.

- **Is there a need for a common research agenda?**
 - ✓ Yes – with local issues taken into consideration;
 - ✓ Sharing of successes and failures.
 - **What is your estimate of the funding requirements to address challenge 9?**
 - ✓ Define scale; scope; initiation; and sustainable, long-term costs;
 - ✓ The cost must consider the benefits gained outside of malaria control;
 - ✓ ~US\$100m
 - **How could a collective action contribute to addressing challenge 9?**
 - **What would be the main benefits of a collective action on this challenge compared to existing approaches and initiatives?**
 - ✓ Sharing of information;
 - ✓ Removal of duplication
 - ✓ Accelerate the pace of development of alternatives
 - ✓ Increased promotion for development of non-chemical approaches;
 - ✓ Increase community motivation.
 - **Who should be involved in this collective action? Why?**
 - ✓ Who? – Researchers, NGOs, Governments, Private sector, Philanthropic organizations, Funding agencies, WHO. Why? Obligation, motivation, capacity, Financial resources available
 - **Who could/ should take a leadership role in this collective action?**
 - ✓ At the global level? UNEP /SC/WHO (TDR) working with a research consortium
 - ✓ At the regional level? WHO regional offices and other regional institutions
- 2. Comparing goals and challenges**
- **How would you compare the 4 goals or 9 challenges in terms of potential impact on the development and deployment of alternatives to DDT is concerned?**
 - **Which of the 4 goals or 9 challenges would have the highest impact in the short term?**
 - ✓ Goal 1- Develop a strong fact base to inform policy formulation and decision making
 - ✓ Goal 2- Overcome the complexity and cost of implementing alternatives to DDT
 - **Which of the 4 goals or 9 challenges would have the highest impact in the long term?**
 - ✓ Goal 4 – The development of non chemical products and approaches
 - ✓ Goal 3 – Bring new alternative pesticides to market For which of the 4 goals do you see the highest urgency for collective action? Why?
 - ✓ Goal 3 – Bring new alternative pesticides to market is the priority and requires to be urgently addressed:
 - ✓ Because insects have developed resistance, alternatives should have been brought to market long ago
 - ✓ Urgency for regulatory reform
 - ✓ Resistance has to be closely monitored
 - ✓ Participation of all stakeholders is crucial
 - ✓ However, more efforts need to be made on goal 2- to overcome the complexity and cost of implementing alternatives to DDT, as it has to be taken into account for addressing goal 3

- **How would you compare the 4 goals and 9 challenges in terms of difficulty to address?**
 - **Which of the 4 goals or 9 challenges would be the most difficult to address in the short term?**
Why?
 - ✓ Goal 3 is the most difficult in the short and long term however some participants felt that challenge – 2 is especially difficult.
 - ✓ To implement goal three especially for Africa:
 - ✓ We need further information to fully understand goal 3
 - ✓ We need a cadre of experts to be fully engaged monitoring insect resistance
 - ✓ Networking and information exchange is required
 - **Which of the 4 goals or 9 challenges would be the most difficult to address in the long term?**
Why?
 - ✓ Goal 3 is the most difficult and requires more effort, resources and time especially for new alternative chemicals. There is need for collection of additional data to help fully understand how the interactions are within the spectrum of the IVM. However, other members felt that goal 4 is the most difficult because there is need for better control of parameters of IVM strategy .
 - ✓ *(This item elicited intense discussion as transmission of malaria is not a random event but follows a predimined environment and ecological circumstances and specific responses may be needed such as elimination of the paracites ,the gametses and their habitat)*
 - ✓ Which of the 4 goals or 9 challenges could be easily addressed in the short term with additional financing?
 - ✓ On the surface Challenge 1 in Goal 1 would be easier to implement but overall goal 2 will be the easiest to implement with additional finance

3. **Potential ways forward**

- **How should the 4 goals or 9 challenges be prioritised in the ways they are addressed?**
 - ✓ Do you think there should be priorities set between the 4 goals or 9 challenges?
 - ✓ Prioritisation for the goals remains the same i.e Goals 1,2,4,3
 - ✓ Are there goals or challenges that need to be addressed before others? Why?
 - ✓ Priority 1: Goal 2 and challenge 8 can be integrated as they can easily dovetail into the current ongoing programs thus strengthen them.
 - ✓ Priority 2: Goal 1 and goal 3 including their challenges
 - ✓ Priority 3: Challenge 9 (in Goal 4)
- **Do you think the goals and challenges should be addressed as a whole or could be looked at independently?**
 - ✓ Each challenge could be addressed independently but addressing them altogether would be better
- **Which of the 3 options would you support? Why?**
 - ✓ Option 3 however, there are reservations associated with this option because of the potential for setting up a new and efficient bureaucracy , conflict with other competing bureaucracies, creation of new entities and funding concerns
- **Which of the 3 options would you not support? Why?**
 - ✓ Option 1 because a Declaration would not accelerate the process
- **Which other option should be considered to address the 4 goals or 9 challenges?**
 - ✓ No new options were proposed

4. Other comments

The following shortcomings of the interim report were highlighted:

- ✓ Report does not address the modes of action of DDT especially if we are considering the chemical alternatives to DDT
- ✓ The term “Sustainable malaria control” approach needs to be clarified and defined
- ✓ There was a strong presentation against the following sentence in section 2.2.1. of the interim report(
- ✓ Under goal 1, challenge 1: the sentence 2 starting with `this makes rational choices between alternatives difficult and encourages the use of DDT DDT based on reputation and advocacy rather than on a fact based analysis` (needs to be rewritten) and the sentence before that(*Secretariat please refer to relevant page*)
- ✓ The sentence beginning with clear guidance..... and ending with.... interventions needs to be re written)
- ✓ Impartiality in the presentation of the information in the document
- ✓ Page 32, para 1 of chapter 5 sentence starting with plan to endorse (needs to be more compelling with a time table)
- **What changes would you suggest to the conceptual format used in the interim report?**
 - ✓ Set tasks for the stakeholders, clearly show the advantages and disadvantages of certain IRS interventions and compare with the different approaches
 - ✓ Risks of malaria
 - ✓ Refer to the Stockholm convention and capture the language
- **Are there any factual errors that need to be corrected before preparing the plan to be submitted to the COP?**
 - ✓ No other errors were highlighted

Annex II. Key recommendations

After three days of deliberations including discussions in four working groups that considered respectively, the four goals presented in the interim report, the following recommendations reflect the main views of the participants on the way forward:

1. The concept of a global partnership for developing and deploying alternatives to DDT is encouraged as collective action will enhance the efforts being made to develop and deploy suitable alternatives to DDT for disease vector control;
2. Careful consideration should be given to form and format of any proposed partnership to avoid duplication.
3. There is need to address the partnership with a wider scope than the mandate of the Stockholm Convention to include the private sector, NGOs, IGOs, researchers and philanthropic organizations with room for partners to select areas of interest for engagement;
4. Any proposed partnership should be voluntary and therefore set in a manner to be attractive to all stakeholders,
5. It must be clear that malaria control is the priority in establishing a partnership to develop and deploy alternatives to DDT.
6. The World Health Organization has a critical and major role to play in any collective action being implemented especially regarding the efforts to overcome the challenges proposed;
7. The document should be carefully written to avoid a show of partiality given the sensitive nature of the issue of DDT use.
8. Activities to achieve all the individual goals presented in the report should be initiated immediately where possible and without prioritization;
9. There is need to re-visit the wording of the goals and challenges as these are at times confusing and may even overlap;
10. Any proposal should be careful when addressing financial requirements as such estimates require detailed analysis and planning and may not be appropriate at this stage;
11. The results of the working groups are to be assessed and common suggestions considered for inclusion into the business plan
12. Further consultation during the final preparation of the business plan with the participants should be undertaken to ensure views and comments are taken on board.