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Matters for consideration or action by the Conference of the Parties: measures to reduce or eliminate releases from intentional production and use: DDT

Report of the expert group on the assessment of the production and use of DDT and its alternatives for disease vector control**

Note by the Secretariat

1. At its second meeting, in paragraph 4 of its decision SC-2/2 on DDT, the Conference of the Parties adopted on an interim basis the process for the reporting assessment and the evaluation of the continued use of DDT for disease vector control outlined in the annex to the decision.

2. Pursuant to paragraph 4 of that text, an expert group was established to evaluate the information collected from individual Parties and other sources and submit conclusions and recommendations to the Conference of the Parties through the Secretariat.

3. In paragraph 7 of its decision SC-2/2, the Conference of the Parties requested the Secretariat to carry out activities related to the process for evaluating the continued need for DDT and to provide guidance for the Conference of the Parties to make an evaluation at its third meeting.

4. A meeting of the expert group to assess DDT production and use and its alternatives was held in Geneva from 21 to 23 November 2006. The expert group prepared the report on the assessment of the production and use of DDT and its alternatives for disease vector control which is set out in the annex to the present note. The report has not been formally edited.

* UNEP/POPS/COP.3/1.

** Report of the Conference of the Parties on the work of its second meeting (UNEP/POPS/COP.2/30), annex I, decision SC-2/2.

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Possible action by the Conference of Parties

5. The Conference may wish to take note of the expert group report on the assessment of the production and use of DDT and its alternatives for disease vector control.

Annex

Report of the expert group on the assessment of the production and use of DDT and its alternatives for disease vector control to the Conference of the Parties of the Stockholm Convention at its third meeting

I. Background

1. At its second meeting, the Conference of the Parties to the Stockholm Convention, in its decision SC-2/2: DDT, Item 7, requested 'the Secretariat in collaboration with the World Health Organization to support Parties in undertaking data collection and reporting activities and to carry out activities related to the process for evaluating the continued need for DDT and to provide guidance for the Conference of the Parties to make an evaluation at its third meeting.' Also at that second meeting, the Conference of the Parties adopted on an interim basis the process for the reporting assessment and the evaluation of the continued use of DDT for disease vector control contained in the annex to that decision. The process for assessment includes the establishment of an expert group. The expert group is to address the issues outlined in paragraphs 2-8 of decision SC-2/2 on DDT taken at the second Conference of the Parties.

2. In preparation for the expert group meeting, the Secretariat, as requested by the Conference of the Parties at its second meeting, distributed the electronic format of the DDT questionnaire to Party States and non-Party States alike and also made the questionnaire available on the Convention website. The expert group meeting was subsequently called by the Secretariat in collaboration with WHO with the overall objective to prepare a report to assist in the evaluation of the continued need for DDT by the Conference of the Parties at its third meeting in May 2007. Prior to the meeting, a preliminary analysis of the data from the responses to the questionnaire by 13 countries and from other available data sources was undertaken and presented to the meeting for its consideration.

3. Participants attending the expert group meeting included experts from China, Mexico, Zambia, Papua New Guinea, Morocco, South Africa along with experts from UNEP Chemicals and the World Health Organization. Three experts from Non Governmental Organizations also participated as observers.

4. During its deliberations, the expert group considered the issues that were outlined by the Conference of the Parties and provides a report within the following format:

(a) Situation analysis of the production and use of DDT;

(b) Assessment of actions by Parties to control and reduce release of DDT;

(c) Availability, relevance, cost-effectiveness and deployment of chemical and non-chemical alternatives;

(d) Analysis of country capacity to transfer safely to reliance on alternatives;

(e) Current WHO Policies and Guidelines and activities regarding DDT and disease vector control;

(f) Review of the information collection and assessment processes including responses from countries to the Questionnaire on DDT and its alternatives; and

(g) Conclusions and recommendations of the Expert Group.

II. Situation analysis of the production and use of DDT

A. Production and formulation of DDT

5. The first Expert Group assessment conducted in 2004 did not present precise data for production of DDT. Therefore, the current Expert Group was not able to determine trends in the production of the chemical. Based on response from the questionnaire and from reports from the Global Environment Facility, for 2005, the total production globally for DDT for vector control is estimated at 6,269t (a.i.).

DDT is currently being produced in two countries, India and China. In addition, there are unconfirmed reports that the production of DDT continues in DPR Korea and is estimated at 300 tons per year. The use of DDT was also reported to be in other sectors besides health. Production in India was 4,250t of active ingredient in 2005, which is based on information on the domestic use of DDT for vector-borne disease control alone. China has produced during the period 2003-2005 a total of 4,458t of DDT, 55% of which was used as intermediate in the production of dicofol and as an additive for the production of anti-fouling paint; the remaining 45% went for export to South Africa, Ethiopia, Eritrea, Namibia and Djibouti.

6. DDT is being formulated in Ethiopia and South Africa with ingredients imported from China. South Africa exports some of the formulated material to other African countries.

7. The transfer of DDT stocks between countries is not always documented nor reported and this poses a problem in tracking quantities of the chemical and to establish the quality of DDT being used.

B. Use patterns and trends

8. There are estimated to be 21 DDT-using countries in Asia and Pacific, Africa and the Middle East for disease vector control. From reporting countries and other sources, the Expert Group estimates a total 5,000t of DDT (a.i.) used in 2005 for disease vector control, most of which was used in India alone (data were not available for Bangladesh, Sudan, Yemen, Haiti, Dominican Republic and DPR Korea). Also, there are unsubstantiated reports from various workshops on DDT use for termite control and in agriculture. Besides use in the Dominican Republic for disease vector control, no other use of DDT has been reported from the rest of the Americas with Ecuador, Mexico and Venezuela being the last countries to have phased out DDT use in 2000. Ethiopia, Mozambique, Zambia and Zimbabwe reported recent increases in DDT use, while DDT use in Madagascar has declined with no use reported in 2005.

9. Parties that produce or use DDT for disease vector control are obliged to notify the Secretariat of such use. Of a total of twelve Parties that have notified the Secretariat, eight have confirmed use of DDT for disease vector control while four have reserved the option to use DDT in the future.

10. China has reported that no DDT has been used for disease vector control since 2003 and future use is reserved only for malaria outbreaks. Angola, Botswana, Ecuador, the Philippines and Senegal reported keeping stocks in the event of malaria outbreaks in those countries. This could result in such stocks becoming obsolete and of poor quality if not used within the normal shelf-life of the chemical.

11. It is the considered opinion of the Expert Group that Parties remain that have not yet notified the Secretariat of their use of DDT. Various sources indicate that at least seven additional countries are considering the re-introduction of DDT use for disease vector control. The use of indoor residual spraying of insecticides (IRS) is expanding in Africa. There are other countries that may be considering the introduction of IRS in the future. Pilot programmes for the introduction of IRS have already started in Uganda and preparatory work is being conducted in Malawi, Cameroon and Nigeria. While Cameroon, Tanzania and Uganda have decided to use DDT in their programmes, a decision has not been made in the other countries on the chemicals being used in their IRS programmes.

12. It is anticipated that this trend will continue over the next few years as a result of the implementation by countries of the renewed WHO policy recommendations for malaria vector control. The current WHO policies on IVM and malaria control advocate for the use of Insecticide Treated Nets (ITNs) and IRS in both stable and unstable transmission areas. Consequently, the use of DDT for malaria vector control may be increasing and may continue to do so, not only because new countries will introduce the use of DDT in their malaria control programs, but also because current DDT using countries are expanding their IRS programs.

13. Available workshop reports indicate that several countries supposedly have DDT available in their local markets. It is not confirmed if these packets of chemical being sold actually always contain DDT or some other substance being presented as DDT. Except for China, no country has officially reported use of DDT outside of the recommended use for disease vector control.

C. Vector resistance to DDT

14. The report from the African Network on Vector Resistance to insecticides (ANVR) on the current situation of vector resistance to insecticides in Africa and particularly DDT shows the widespread resistance to DDT particularly in Central and West Africa. This situation is confirmed by the latest surveys. It should be noted that resistance to DDT occurs mainly as a consequence of prior extensive use of DDT in agriculture and more recently of pyrethroids. This explains why resistance to DDT appears in countries where this chemical has never been used in disease vector control. It is well established that several insects, including malaria vectors, develop cross resistance to DDT and pyrethroids, i.e resistance to one of these insecticides does result in resistance to the other. This explains why resistance to DDT appears in countries where this chemical has never been used. For effective vector resistance management, there is a need for harmonized pesticide use policies between health and other sectors.

15. The ANVR has recently reported the results of tests from sentinel sites across the African continent. The major African vector *Anopheles gambiae s.s*. showed resistance to DDT in 64% of tests, one third of which indicated a high resistance level; resistance was concentrated in Western and Central Africa. Further, there is evidence of widespread resistance in *An. arabiensis* (reported as *An. gambiae s.l.*) in Ethiopia, which is the largest consumer of DDT on the continent. Additionally, there have recently been reports of DDT resistance in either *An. gambiae* or *An. arabiensis* in Cameroon, South Africa, Sudan and Uganda.

16. International vector resistance networks are absent in the other regions. In Asia, the resistance problem appears to be particularly serious in India in view of the large scale use of DDT and from the widespread resistance in the major vector *An. culicifacies* and *An. stephensi*. China has also reported resistance to DDT in *An. sinensis* and Vietnam in *An. epiroticus* (formerly named *An. sundaicus*).

III. Assessment of actions by Parties to control and reduce release of DDT

A. Regulation and enforcement for the control of DDT use

17. Legislation and good management practices specific to DDT are inadequate in most countries that use DDT. Moreover, illegal trafficking or unofficial use of DDT in the agricultural and domestic environment has been reported in workshops as a problem in countries in Asia and Africa. Long and porous borders hamper the enforcement of DDT regulation in many countries globally.

18. Data are lacking on quality of DDT, especially for old stocks being used or for export. There is evidence that some countries have or will be donating stocks of DDT to other countries and it is unclear if all of these stocks are suitable for use in disease vector control.

19. Currently, the implementation of IRS is associated with the establishment of regulation and enforcement of pesticide importation and use in some countries. Effective IRS implementation can only be ensured through management systems that meet recommended standards. WHO in collaborating with these countries that are implementing IRS has re-enforced the control and restriction of DDT for disease vector control.

20. Technical support and facilitation of partnerships and collaboration such as through the ANVR is currently playing a pivotal role in strengthening the commitment and capabilities of national malaria control programmes to work towards alternatives to reliance on DDT for malaria vector control.

21. It is apparent that functional mechanisms for inter-sectoral collaboration are weak or even absent in most countries. WHO has been requested to conduct an investigative analysis of the reporting mechanisms and to examine and promote linkages between the relevant government agencies that are involved in DDT control. This was requested by the Conference of the Parties and a report from this activity should give the COP some indication of the coordination that exists at the national level for DDT restriction and control.

B. Implementation of alternative strategies with vector resistance management

22. The revised policy on vector control for malaria from the WHO has highlighted the use of IRS as one of the three core interventions in management of the disease. IRS requires the use of insecticides and twelve are recommended for use by the WHO, including DDT. It is critical that countries following this policy monitor the level of resistance to guarantee continued cost-effectiveness of the intervention. In promoting the use of IRS, WHO has been working closely with countries to establish resistance control measures and to enforce the monitoring of resistance to insecticides used in IRS. It is important that continued effort be made to advise and support countries that use IRS as an intervention in resistance management for insecticides used.

C. Measures to strengthen health care

23. Malaria control efforts in endemic countries are resulting in increased resources for scaling up control interventions including surveillance, prevention and treatment with artemisinin based combination therapies (ACTs). The WHO recommendations are that any malaria case should be diagnosed and treated with ACTs within 24 hours. Progress is being made by countries with lower coverage of healthcare facilities to develop community based malaria treatment programmes, including diagnosis and adequate treatment of malaria at home (home based case management. It is also reported that an increasing number of countries are making malaria prevention and treatment free of charge in order to provide equitable access to malaria control interventions.

D. Environmentally sound storage and destruction of DDT stockpiles

24. From the responses received to the questionnaire, New Zealand, Japan, Trinidad and Tobago, Mauritius and Morocco have reported having obsolete stockpiles of DDT. There are still many countries in other regions of the globe with obsolete stockpiles of DDT, although a number of countries have not yet completed their inventories.

25. The Africa Stockpiles Programme (ASP) is a major exercise intended to eliminate large quantities of unwanted pesticides, including DDT, throughout Africa. Tanzania, Morocco, Mali, Tunisia, Ethiopia, Nigeria and South Africa are the countries earmarked for implementation during phase 1 of the project.

26. The ASP is intended to provide a process for clean-up of these obsolete pesticides and to prevent further accumulation in African countries through a coordinated, multi-stakeholder approach. Many countries do, however, keep limited stocks of DDT for emergency purposes and these could remain unused for too long and become obsolete. It would be meaningful to record and update the location and quantities of these stocks.

E. Human and environmental safety

27. The effects of DDT on the environment are well documented. However, the possibility of adverse effects on human health is still being debated. WHO, through the International Programme on Chemical Safety (IPCS) is currently completing an updated international risk assessment on the health effects of DDT which will be available for peer review early in 2007. In recent years there has been an increased amount of epidemiological literature concerning potential neurobehavioral and reproductive health effects of DDT. The activity will provide an internationally peer reviewed assessment of this literature and a risk characterization taking into consideration exposure levels resulting from DDT currently stored in the environment as well as exposure scenarios from remaining uses of DDT.

28. Considering the need to build and strengthen relevant capabilities to monitor and evaluate potential health impact of DDT resulting from malaria vector control interventions, the document will consider what models are available for assessing the level of exposure for spray operators and householders resulting from IRS. Due to the paucity of measured data, information so far relies to a large extent on modelling assumptions. Using this work to develop a generic exposure scenario for IRS may provide a useful tool that can be used in the risk assessment of DDT and alternative pesticides at the country level and also to ensure that the pesticides are being used in accordance with the WHO Guidelines on IRS. Such approaches will be important in protecting human health and the environment at national and global levels.

IV. Alternatives to DDT: Review of existing and new products, methods and strategies

29. IRS and the use of ITNs, including Long-Lasting Insecticidal mosquito Nets (LLINs), remain the two main interventions for malaria prevention in most malaria endemic areas of the world. WHO is further promoting the use of IRS for malaria control, including in high transmission areas, partly due to the difficulties encountered in scaling up ITN interventions especially in Africa. DDT is among the 12 insecticides currently recommended by WHO for IRS in malaria and also for leishmaniasis control.

30. Insecticide resistance in malaria vectors is already widespread. Given the problem of cross resistance, the range of available insecticides is limited to address the diversity of vectors having resistance patterns. Therefore, it is important to keep all insecticides currently available, including DDT, to be able to manage insecticide resistance until better tools are available or until effective IVM strategies are established.

31. Industry has recently taken steps to develop formulations of existing insecticides for IRS with longer residual activity for IRS and with improved cost effectiveness and so be able to reduce DDT use. It is anticipated that these products will be introduced to the market in 2008 or 2009.

32. Industry has responded to demand for LLINs and significantly increased production capacity. New LLINs containing pyrethroids have been submitted to the WHO for testing and evaluation. However, there is growing concern given the increasing resistance to pyrethroids in malaria vectors. Research has been initiated on the use of non-pyrethroid insecticides for treatment of mosquito nets to cope with the problem of pyrethroid resistance. No new ITN product based on such alternatives is expected in the market before 2010.

33. No new insecticide has been introduced into public health market since the last meeting of COP and no change has been made to the list of WHO recommended insecticides for IRS and treatment of mosquito nets. International initiatives are being taken to promote the development of alternative insecticide compounds and technologies for public health use with priority given to malaria control. The timeline for availability of such products at this early stage is not clear. Current initiatives that include the Innovative Vector Consortium launched by the Bill and Melinda Gates Foundation require coordination so that limited financial and technical resources will be effectively used to obtain timely development and deployment of alternative chemicals for malaria vector control.

34. It will be essential to identify partners and mechanisms that can be involved in the development of new alternative insecticides to DDT. Given the current status of insecticide resistance in major malaria vectors especially in Asia and Africa, new alternatives outside of the current resistance patterns are required to sustain effective vector control interventions using IRS or ITNs.

35. At the local level in many malaria endemic countries, the capacity to analyze local conditions, to carry out risk benefit analysis of insecticide use and the availability of tools and resources are generally inadequate to support evidence-based decision making on vector control activities.

36. During the last few years, accumulating experience originating from several initiatives in various countries and regions of the world has become available showing results of Integrated Vector Management (IVM). Experiences from specifically Mexico and Central America (a GEF assisted project), as well Eritrea and Zambia in Africa have confirmed the possibility to implement longer term and successful IVM initiatives on sub-regional and national scales. Recent efforts in Sri Lanka have shown success in reducing disease vectors in rice irrigated areas through synergistic linkages between the health, agriculture and irrigation sectors working with community-based participation.

37. Prospects for implementing non-chemical vector control methods largely depend on local situations and in particular, the epidemiological profile and intensity of transmission. In high transmission areas, vector control will continue to rely mainly on chemical based methods (IRS and ITNs). These interventions can be replaced by non-chemical interventions once endemicity levels have been reduced during an attack phase.

V. Analysis of country capacity to transfer safely to reliance on alternatives

A. The global outlook

38. The capacity of countries to use alternatives of DDT is dependent on the alternative being proposed. There is evidence that countries are having difficulties in reducing reliance on DDT due to increase in the incidence of malaria cases especially where parasite prevalence and transmission are still relatively high. However, there are success stories. Mexico, after using DDT through IRS for decades has now been able to significantly reduce malaria incidence and mortality to a minimum using other interventions within the context of IVM. This programme that was instituted in 1998 has the introduction of community environmental control and early case detection with prompt treatment as the centrepiece of reducing the proliferation of the vectors and the incidences of the disease. Along with the use of alternative insecticides and prompt case detection and treatment, this strategy has worked well in that country and is being expanded to other countries in Central America with similar epidemiological profiles.

39. However, there are many differences between the situation in Central America and that in parts of Africa, the Middle East, Asia and the Pacific. There are different species of vectors, endemicity levels and the environmental conditions are not the same. Additionally, the water control policies do not hold for some of these countries where monsoon type weather patterns make control impossible. Still, environmental control in combination with early case detection and treatment within communities should form part of any integrated disease management programme.

40. The National Implementation Plans (NIPs) of Parties will highlight the priorities for plans to eliminate the twelve POPs listed in the Convention. Many Parties have expressed a need to develop capacity to enable the assessment of alternatives within the local context, the monitoring of introduced options and the training to ensure correct implementation of such alternative strategies.

B. Current limitations for reducing reliance on DDT

41. Authorities in most countries are aware of the concept of IVM. However, not all recognize the full potential of IVM as a strategy for optimizing the use of available vector control tools and resources, and what is needed to implement IVM at a meaningful scale. There is inadequate capacity in most malaria endemic countries at all levels for planning and implementing IVM as well as for implementing sound management of DDT and alternative chemicals. This problem is compounded by the insufficient funding opportunities for long-term (>5 years) IVM related initiatives. Without such long-term commitment by both national governments and international funding partners, the development of truly integrated and decentralized IVM strategies is difficult to achieve. Current projects do not allow for long term monitoring and impact evaluation to demonstrate cost-effectiveness, sustainability and integration of project results into health policy after completion of the project.

42. During the decades of the 80's and 90's, many malaria endemic countries banned the use of DDT for disease vector control and turned to pyrethroids, organophosphates and carbamates within an IRS intervention to control mosquito vectors. In certain documented cases, these efforts did not have sustained success. In South Africa, the switch from DDT to pyrethroids in 1997 soon resulted in the return of *An. funestus*, a known mosquito malaria vector which was shown to be resistant to pyrethroids. This lead to malaria outbreaks. As a result, this prompted the reversal of the pesticide policy for the use of DDT in 2000. Several southern African countries followed suit and are currently using DDT. The operational cost of using DDT is low compared to that for pyrethroids, due, in particular, to the fewer annual spraying cycles needed for DDT. If these countries are successful in reducing malaria cases using DDT, it could trigger a wholescale transfer to this chemical by many other countries that are struggling to cope with increased morbidity and mortality from the malaria disease.

43. Weak capacity continues to be the main deficiency that countries face in attempting to reduce reliance on DDT. Improvement in capacity is required in the following areas:

(a) Capacity to develop locally tailored IVM action plans and to implement an IVM strategy at local levels;

(b) Capacity to monitor health and environment impacts of DDT and alternatives;

(c) Capacity to monitor vector behaviour and breeding sites;

(d) Capacity to implement chemical and non-chemical vector control methods;

(e) Capacity to facilitate the participation of local communities and other stakeholders in vector control activities;

(f) Capacity to undertake research on alternatives; and

(g) Capacity to carry out vector resistance surveillance and monitoring.

C. Current opportunities for the application of alternative practices

44. The main prospect for reducing reliance on DDT remains the implementation of vector control activities in the context of an IVM strategy. This strategy proved successful in many countries including Mexico. IVM strategies need to be locally tailored according to the local conditions and determinants of disease and according to the availability of local resources.

45. There are existing opportunities to be tapped. These include:

(a) International community investment in vector control and disease management;

(b) Collaboration between WHO/FAO/UNEP/UNDP in promoting IPM / IVM, including insecticide management practices and inter-sectoral collaboration and community participation;

(c) Increased awareness of the international community of sound management of chemicals;

(d) Increased awareness of the importance of regional and multi/bilateral initiatives and collaboration;

(e) Increased availability of successful IVM experiences from longer term initiatives that can be examined and adapted for implementation in other regions; and

(f) Availability of new and improved tools for vector management.

46. While many of these initiatives do collaborate, there is still opportunity for a global strategy to unite all the various projects, research efforts, initiatives on development of alternative products and IVM programmes to establish a singular repository of information and effort toward reducing the scourge of malaria and the use of DDT. Such a strategy would encompass a win/win situation on both fronts. This would mean commitment not only to develop alternatives to DDT but also to establish the resources to ensure successful deployment of these interventions. WHO, in collaboration with UNEP and the COP offer a unique alliance to promote such a strategy and to spearhead the development and implementation of alternative products and methods to DDT toward meaningful and sustainable reduction in the use of this chemical.

VI. Current WHO Policies and Guidelines and activities regarding DDT and disease vector control

47. The use of IRS with DDT should only be undertaken when it is demonstrated to be suitable to the local epidemiological situation. WHO has updated its guidelines on IRS including DDT use. These guidelines will support Parties to satisfy their obligations under the Convention. However, the emphasis on IRS use has been expanded to reflect recommended use not only in epidemic malaria areas but also within endemic areas. The WHO policy states: “Effective implementation of IRS with DDT or other recommended insecticides should be a central part of national malaria control strategies where this intervention is appropriate.” WHO GMP calls for use of effective interventions that are ITNs and IRS in areas of high transmission. Both interventions should be used and combined according to local epidemiological, logistical and economical situations. Many countries throughout the world that have successfully reduced malaria endemicity (Pacific, South East Asia, Americas…) are currently reducing or abandoning the use of IRS while adopting preferentially LLINs in the context of IVM programs.

48. WHO has developed the Global Strategic Framework for Integrated Vector Management (IVM). Several WHO Regions have adopted the IVM strategy and are in the process of, or have established, the regional frameworks and action plans for strengthening the capacity of the member states for IVM. The WHO Eastern Mediterranean Region has developed guidelines and a questionnaire for vector control needs assessment for implementation of IVM, which has successfully been tested in 10 countries of the Region.

49. WHO, in collaboration with UNEP and FAO has been promoting the sound management of pesticides, and has developed, in English and French, Guidelines for situation analysis for public health pesticide management; training package (in English and French) on Decision-making for judicious use of insecticides; and a resource tool on Sound management of pesticides and diagnosis and treatment of pesticide poisoning.

VII. Review of the information collection and assessment processes

A. Responses to the questionnaire

50. Thirteen responses to the questionnaire from Parties were received by the Secretariat. Of these, the People's Republic of China, Ethiopia, Mauritius, Morocco and Senegal are Parties that are listed in the DDT Register. Seven other Parties that are listed in the DDT Register did not complete the questionnaire. Little data was supplied in the areas of end use, resistance management, alternatives, disease management strategies, general human and environmental safety issues and systems strengthening in disease vector control.

51. It was difficult for the Group to analyze and to draw conclusions based on the data provided from the questionnaires. Some explanations offered by the Group for the poor response rate include:

(a) The questionnaire being too complex.

(b) Poor reporting systems on DDT use from village level to the national level;

(c) Weak institutional linkages between the Stockholm Convention Focal Points, Ministries of Environment ,Health and other ministries where the respective data resides;

(d) The electronic format of the questionnaire offered in English only; and

(e) Lack of time to complete the questionnaire;

52. In order to improve the response rate and the quality and quantity of the data, the Group proposes that the COP takes measures to ensure that:

(a) The questionnaire is simplified;

(b) Reporting systems in countries are strengthened;

(c) Formal institutional reporting mechanisms are established between relevant government agencies;

(d) The request for information is made every three years as obligated in the Convention;

(e) The electronic questionnaire and its guidance document is translated and made available in the six UN languages; and

(f) National Focal Points are given at least four months lead time to complete the questionnaire.

B. The revised process for assessment and evaluation of DDT

53. As requested by the Conference of the Parties at its second meeting, the Secretariat has reviewed the process for assessment and evaluation on the continued need of DDT for disease vector control. The Expert group considered the revised process developed by the Secretariat.

54. The revision highlights the lack of synchronization in reporting periods for Parties to report on DDT production and use (every three years) and the period for the evaluation by the COP (at least every three years). As the COP meets every two years, it is obliged to conduct an evaluation at each meeting. The revised process allows evaluations at each COP meeting but also has Parties reporting every three years. This process was considered the best practical solution that allows the obligations of the convention to be honoured by both the Parties and the COP.

55. The questionnaire to be completed by Parties will gather information on DDT. However, the Expert Group concluded that it would be useful for the COP to seek the support of WHO to obtain in-depth information from Parties that have limited capacity to report, in particular related to technical issues (e.g. resistance monitoring). The experience of the Group over the past two meetings shows that inadequate information obtained from the questionnaire has reduced the effectiveness of the analysis.

Given the activities of the WHO in malaria endemic countries and in those now using DDT, this organization is well placed to be the agent for divulging data from such countries.

C. Revision of the questionnaire

56. The revised questionnaire that was prepared by the Secretariat was reviewed by the Expert Group. The main directive that guided the review was paragraph 4, Part II of Annex B to the Convention which states: "….each Party that uses DDT shall provide to the Secretariat…..information on the amount used, the conditions of such use and its relevance to that Party's disease management strategy…." This request to Parties, coupled with the resulting use of the information in assisting the COP to evaluate the continued need for DDT formed the background in assessing the revised questionnaire.

57. The deliberation of the Expert Group concluded that questionnaire could be simplified without compromising the quality of the evaluation of the continued need for DDT by leaving out unnecessary detail and removing questions not directly relevant to the evaluation. For certain questions that require more detail, the questionnaire was not considered the best medium. The Secretariat and the WHO should be requested to obtain such detailed information through their direct engagement with the Parties concerned. Based on the review, the Expert Group endorses the revised questionnaire prepared by the Secretariat.

VIII. Conclusions of the Expert Group

A. The use of DDT and alternatives for disease vector control

58. Based on the available scientific, technical, environmental and economic information, there is a continued need of DDT for disease vector control under the WHO recommendations and guidelines until locally appropriate and cost effective alternatives are available for sustainable transition away from DDT.

59. Due to widespread vector resistance to DDT and other insecticides, it is essential that DDT use becomes better targeted and rotated with other insecticides until effective alternatives are found.

60. Given the expanding role of IRS for disease vector control which includes the use of DDT, it is critical that countries intending to implement this intervention be provided support to ensure adequate management capacity. Training of personnel involved with IRS along with necessary surveillance, monitoring and reporting activities must be improved.

61. Recently, a few more Parties have eliminated the use of DDT for disease vector control. However, other Parties have initiated the procedure of IRS including the use of DDT for disease vector control when technically and economically justified.

62. The monitoring and management of resistance to DDT continues to be a problematic issue in most countries where it is used. The capacities of Parties should be developed and procedures implemented to provide updated information on resistance to make informed decisions on the selection of insecticides or the use of alternative methods. Vector resistance networks in Asia-Pacific and the Middle East should be established similar to the ANVR in Africa.

63. As stated in the previous recommendations of the Expert Group, there continues to be a need for long-term investment in research and development of new insecticide products to address the issue of the dwindling arsenal of public health pesticides. This highlights the need for a unified, global approach involving all players including the chemical industry to undertake research to find safe cost-effective alternative, chemical and non-chemical products, methods and strategies and to have these deployed where appropriate.

64. IVM is a viable strategy for reducing the reliance on DDT and other insecticides, as it facilitates the evidence-based utilization of available vector control methods, including non-chemical methods. The creation of an appropriate enabling environment (including technical and institutional capacities) is critical to such a transition. On-going efforts to promote the adoption of IVM through routine WHO, UNEP, UNDP and FAO activities, as well as through the regional and country projects under the Convention's financial mechanism is commendable and should be accelerated. These initiatives should be extended to other countries currently using DDT and to others that are planning indoor residual spraying programs which could include DDT use in the future.

65. In order to ensure that the use of DDT is restricted to disease vector control, there is a need to support countries still using DDT to review and to continue improving their management practices, especially their regulatory and enforcement mechanisms. Ongoing NIP processes and GEF supported regional projects provide some opportunities in this regard.

B. The process of data collection and evaluation of DDT for disease vector control

66. The intervals for Parties to report on DDT use and for the COP to evaluate the continued need of DDT for disease vector control are different. The revised timetable proposed by the Secretariat addresses this anomaly but upholds the obligations entrenched in the Convention for Parties to report and the COP to evaluate the use of DDT.

67. The questionnaire, currently in use by Parties to report on DDT, requests more information than is required. The difficulty in providing such detailed information may be part of the reason that only a few Parties that use DDT have completed the questionnaire. The Secretariat has proposed a simplified version of the questionnaire and, if accepted by the COP and translated into the six UN languages, this version would provide a more user-friendly tool and still collect the necessary data for the evaluation of the continued need for DDT.

IX. Recommendations of the Expert Group

68. Based on the available scientific, technical, environmental and economic information, the COP, at its third meeting may conclude that there is currently a continued need of DDT for disease vector control in accordance with the WHO recommendations and guidelines.

69. Recognizing the obligations of the Convention and accepting that the revised questionnaire is intended to provide general information on DDT production and use, it is proposed that the information collected from the questionnaire be supplemented by periodic country-level analysis and needs assessment of the production, management and use of DDT. This additionally more detailed data will be used to support the assessment of the continued need for DDT by the Expert Group and subsequently allow a better informed decision by the Conference of the Parties.

70. Support for the development of long-term (> 5 years) regional initiatives on IVM which emphasizes the strengthening of local capacity to make evidence-based decisions in vector control activities. Such initiatives will involve inter-sectoral collaboration and community participation and includes evaluation of long-term sustainability after project implementation.

71. There is urgent need for further research to develop and deploy safe alternative products, methods and strategies to DDT. Support should be provided for the development of partnerships and business plans to promote and coordinate development and deployment of new alternative products to DDT. Additionally, further research should be implemented to clarify the health impact of the use of DDT in IRS.

72. The reporting process for information on DDT is weak in many countries. WHO is currently working with some countries on a pilot scale to establish formal inter-sectoral collaboration and to improve reporting capacities at all levels. This initiative will require more detailed activities to ensure sustainable data collection and data collation on DDT and expansion of the initiative to other countries that also use DDT for disease vector control.