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EXECUTIVE COMMITTEE OF
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**IDENTIFICATION OF GAPS IN REGIONAL METHYL BROMIDE PROJECTS IN AFRICA
(DECISION 57/9(d))**

(SUBMITTED BY UNEP)

**RESPONSE TO EXECUTIVE COMMITTEE DECISION 57/9:
IDENTIFICATION OF GAPS IN REGIONAL METHYL BROMIDE
PROJECTS IN AFRICA**

26 October 2009



A. Background

1. Following Decision 57/9 (d), “*To remove the regional workshops on preventing new uses of methyl bromide (MB) from UNEP’s business plan and to request UNEP to work with other implementing agencies to identify gaps in regional MB projects in Africa for consideration in future business plan activities*”, as contained in UNEP/OzL.Pro/ExCom/57/69, UNEP is submitting this response (which has been developed in consultation with UNDP and UNIDO), which seeks to identify and analyze the gaps in the regional MB projects in Africa. The report of the 57th Executive Committee meeting states *inter alia*:

- *Paragraph 76: “Some Members expressed support for the regional workshops in Africa, emphasizing that they would be important for raising awareness of MB use in the region. Also, although the amounts used were low, it was the critical nature of that use and its affordability that made MB an important issue for the region. Moreover, such workshops could help identify alternatives”*
- *Paragraph 77: “Other Members considered that there was not sufficient justification to support the regional workshops in Africa on preventing new uses of MB and the activity should be removed from the business plan, particularly as it was not considered to be related to compliance. It could be removed pending further coordination, and an activity could be brought forward at a future date under the Compliance Assistance Programme (CAP) as an MB awareness-raising project. One Member said that it would be useful if the implementing agencies were to identify gaps with respect to MB use in Africa”.*
- *Paragraph 83 subparagraph (d): “The ExCom decided to remove the regional workshops on preventing new uses of methyl bromide (MB) from UNEP’s business plan and to request UNEP to work with other implementing agencies to identify gaps in regional MB projects in Africa for consideration in future business plan activities”.*

2. The discussion of the Executive Committee highlighted the unique issues of MB phase-out in the African region. For example, in Africa technical capacity for successful and sustainable implementation of MB phase-out is extremely low. Literacy and consequently MB awareness levels are also low, and therefore, MB issues must be communicated in ‘a language’ that the population understands. The most promising alternative to MB, soilless culture, is both knowledge- and capital-dependent. Technological and economic information regarding the sustainability in disinfections, recycling during change of cropping cycle and reuse of substrates used in soilless culture is lacking. Whereas the successful MB reductions/phase-out in many African countries was achieved through alternative technology transfer using foreign experts, there are too few local experts to sustain the phase-out. For example, a soilless culture technology that had been commercially adopted in one African country leading to accelerated phase-out of MB, has recently stalled owing to exhaustion of the substrate material initially identified by foreign experts. Local experts have tried to test other substrate materials, but they have not identified any effective materials. The growers are giving up on the once successful soilless culture method and could result to methyl bromide as the situation is now desperate.

3. UNEP has always continued to promote creation of new laws, policies, and institutions for addressing the control of ozone depleting substances (ODS) such as methyl bromide in Africa over the years with great success. However, considering the level of poverty in Africa, a legal approach alone is not sufficient to control methyl bromide. It is important to ensure as much as possible the phase-out efforts are not injurious to the existing industries, which unlike many regions, are not geared towards huge profits (to justify use of force – legislation) but for basic survival. For example, in one African country where the use of a technically viable MB alternative (soilless culture) without accompanying economic feasibility, has driven the growers to include stones in the produce to increase weight at the auction markets in an effort to break even. These growers have complied with the efforts of institutionalizing the MB phase-out, however, they are desperately in need of urgent help for their basic survival.

4. Furthermore, effective technology transfer among large-scale farms and between large-scale and small-scale growers is hindered since successful technologies are considered to be **trade secrets**. This scenario is further worsened by the fact that viable MB alternatives were only piloted on few farms and the results have not been effectively disseminated to a wide spectrum of farmers.

5. This clearly points out that, the overarching gap in MB phase-out in Africa, which is ‘sustainability of MB phase-out, through identification of technologically and economically/commercially viable MB alternatives and creation of local MB alternatives technical capacity’, is not yet widely understood. This claim is consistent with the evaluation reports on MB projects, Analysis of Regional Methyl Bromide Projects in Africa (Annex 1) and Analysis of Multilateral Fund Evaluations on Methyl Bromide projects (Annex 2). For example, the Extended Desk Study on Low Volume Methyl Bromide Projects (UNEP/OzL.Pro/ExCom/53/8) states *inter alia*:

Para 14: *The main evaluation issues analysed are the following:*

c) ... *The main objective of CAP is to enable Article 5 countries to comply with the 2005, 2007 and 2010 control measures and to ensure long term **sustainability** of compliance.*

d) *The key issue is the **sustainability** of the phase-out achieved so far through the projects undertaken in MB-LVC countries, which covers the technical and economical feasibility of alternatives...*

Para 33: ... *Bolivia, where a possible consumption increase was efficiently prevented with the aid of an investment project implemented by UNDP that facilitated the adoption of technically and economically feasible alternatives for potato and vegetable production. The fact that equipment and **know-how** are locally sourced has proven essential to the **sustainability** of those alternatives.*

Para 44: ... ***Specific areas where work is much needed** include **tracking MB use** once it enters a country (to avoid diversion of QPS intended MB to controlled uses), preventing illegal trade, and consolidating regional information on activities*

undertaken. Consolidating case studies on alternatives to MB suited to particular regions and sectors was suggested on several occasions. Technical workshops at the regional level, to share experiences in the identification, implementation and adoption of alternatives for particular sectors (i.e., flowers, tomatoes, strawberries) are still needed. Such activities could be implemented by regional CAP officers, coordinated with activities already undertaken by the IAs...

Para 46: ... *Specific interaction with the International Plant Protection Convention (IPPC) should be encouraged. If only one particular formulation of MB would be authorized for QPS use, different to those permitted for soil or postharvest applications, monitoring of MB use for QPS purposes would be made easier...Further, improving linkages between local Universities and/or agricultural research institutions and key stakeholders, particularly growers is essential to reinforce technology transfer and sustain phase-out.*

6. These reports clearly indicate that the sustainability of achieved MB phase-out is key in addressing non-compliance and/or potential non-compliance to the MB phase-out targets. The sustainability of MB alternatives is a two-front battle comprising of the technical feasibility on one front and the economic/commercial feasibility on the other. As indicated in the case of Bolivia highlighted above (UNEP/OzL.Pro/ExCom/53/8 Para 33), locally sourced know-how is essential for winning in both the technical and economic/commercial feasibility battle fronts. The case in Africa is different from that of Bolivia in that the locally sourced know-how capacity in MB alternatives is almost below threshold levels. This calls for urgent capacity building measures in MB alternative technologies in Africa. The specific interaction with international policy organizations such as International Plant Protection Convention (IPPC), market-based standardization organizations such as Global-GAP/Kenya-GAP¹, as well as engaging local universities, research institutions, are pivotal in winning in both battle fronts, thus ensuring sustainability of MB alternatives. The need for documentation of the hard-earned commercially validated MB alternative technologies cannot be overemphasized.

7. Overall, it is concluded that, though Africa is currently compliant with the Montreal Protocols MB phase-out schedule, it is necessary to lay the stepping stones to enable achievement of future phase-out targets (to prevent non-compliance and/or potential non-compliance) of MB as well as to enable sustainability of the achieved phase-out (UNEP/OzL.Pro/ExCom/57/69: Para 76). Sustainability of the MB phase-out in Africa is a major issue due to the extremely low technical capacity in MB alternative technologies, non-viability of MB alternatives in terms of affordability, and technological, economic and commercial factors which, combined, force some growers to roll back (i.e. reverted) to ‘critical-in-nature’ uses of MB (UNEP/OzL.Pro/ExCom/57/69: Para 76).

¹ GLOBALGAP is a private sector body that sets voluntary standards for the certification of agricultural products around the globe. Kenya GAP is the Good Agricultural Practice standard which was developed by the Fresh Produce Exporters Association of Kenya (FPEAK) for fruit, vegetables and flowers. See <http://www.globalgap.org>.

B. Gaps on Methyl Bromide Phase-out in Africa

8. Following the request by the Executive Committee at its 57th Meeting for UNEP to work with other implementing agencies to identify gaps in regional MB projects in Africa for consideration in future business plans, UNEP received from UNDP the report on its MB regional project for Africa. That report shows that MB phase-out has been achieved via the policy and technical assistance offered for most countries. The report points out that, some countries failed to cooperate due to the low funding of the projects.

9. However, owing to various difficulties, MB use in some countries is difficult to document. Some countries, which had phased out MB, have reverted to the use of MB, this is probably due to technologically and/or economic/commercial non-viability of the initially adopted and adapted MB alternatives. In addition, consumption of MB particularly for Sudan and Mozambique, need to be addressed at the national level. However, the resurgence of MB use is a clear example of the lack of guaranteed sustainability of MB phase-out by regulatory measures alone without addressing the technical and commercial/economic feasibility of MB alternatives.

10. The case of potential non-compliance for Mozambique is partly associated with migration of growers of intensive horticulture/floriculture from Zimbabwe. As for the Sudan, the security situation has partly hampered intervention and compliance is not guaranteed if nothing is done. However, Sudan has recently ratified all the remaining amendments to the Montreal Protocol and thus indicated some willingness of compliance. Nevertheless, technological intervention in terms of technically and commercially/economically feasible MB alternative technologies is needed to ensure compliance.

11. At the regional level, substantive work is left to be done. Some of this was highlighted and recommended by the 15th Meeting of Ozone Officers' Network for English-speaking Africa, held from 11-14 May, 2009 in Kigali, Rwanda and the 13th Joint Meeting of ODSNET African countries held from 17-20 August, 2009 in Abuja, Nigeria. The following are the regional gaps that need to be addressed:

- Documentation of case studies, toolkits, and technical manuals on successful adoption of MB alternatives in the region.
- Improving linkages between local universities and /or agricultural research institution and key stakeholders to reinforce technology transfer and sustain phase-out.
- Regional Technical workshop to share experiences in the identification, implementation and adoption of MB alternatives in the region; and to promote south-south cooperation.
- Technical capacity development of local experts to avoid over-reliance on foreign experts.
- Awareness raising on dangers of MB and availability of commercially validated MB alternatives.

- Surveys to determine volumes of MB used in various QPS sectors in the region.
- Main-streaming MB issues in the educational curricula via building strong collaboration with local universities and education line ministries.
- In-depth training of growers and other key stakeholders on the processes involved in MB alternative technologies to minimize unnecessary costs, while ensuring that all key steps in the installation and use of MB alternatives are understood for sustainable adoption and successful adaptation.
- Improving liaison with key stakeholders such as market-based standardization organizations, which include Kenya-GAP and Global-GAP, to promote better prices at the market for environmentally friendly products such as MB alternative-dependent products vis-a-vis MB-dependent products.
- The overarching gap in MB phase-out projects in Africa is the sustainability of the MB phase-out.

12. These gaps have been identified in consultation with UNDP and UNIDO. Other Implementing Agencies (IAs) such as UNDP have applauded the approach taken to address these gaps and have suggested that UNEP be the lead IA.

C. Justifications for addressing the identified gaps

13. The justification for addressing the gaps lies in the need to sustain MB phase-out already achieved under the Multilateral Fund; and building stepping stones for meeting future phase-out targets. The relevance of addressing the gaps, especially at this point in time when many African countries have identified region-specific commercially-viable alternatives to MB for some crops, cannot be overemphasized. The commercial/economic viability of MB alternative technologies is critical in convincing growers to change from the low cost MB-dependent production to other technically viable MB alternatives. This view is supported by MB projects evaluation reports such as the Extended Desk Study on Low Volume Methyl Bromide Projects (UNEP/OzL.Pro/ExCom/53/8), which states *inter alia*:

Para 39: Very few project reports include economic analyses to evaluate the feasibility of alternatives to MB. Although such an analyzing normally lies outside the scope of technical assistance (TAS) projects, it is nevertheless an important issue when it comes to convincing users of the long-term suitability of alternatives. Addressing this issue through the preparation of case studies on alternatives for specific MB uses, regions and sectors could be a useful contribution to this end...

14. This clearly shows that, of the two fronts namely, technical feasibility and commercial/economic feasibility of MB alternative technologies; the latter has not received much attention by both technical assistance (TAS) projects. The goal to eliminate MB cannot be achieved by addressing the technical feasibility front alone. Unlike the ODS phase-out in the

industrial sectors such as refrigeration, the sustainability of MB phase-out is not guaranteed by changing the equipment. Furthermore MB production continues for QPS purpose making it readily available unlike the industrial ODS. This view is supported by MB projects evaluation reports such as the Extended Desk Study on Low Volume Methyl Bromide Projects (UNEP/OzL.Pro/ExCom/53/8), which states *inter alia*:

Para 11: *Methyl bromide projects are complex and unique in the sense that their success depends on many stakeholders and factors. Unlike the industrial sector, their sustainability is not guaranteed by changing the equipment used but depends on the technical and commercial viability of alternatives and the enforcement of production, import and use restrictions. Farmers could always, even for one season, go back to using MB if this seemed more advantageous to them.*

15. The lack of a guaranteed sustainability of MB alternative technologies and continuous availability of the cheap MB in Africa is further complicated by the perennial food insecurity of the continent, especially at this point in time owing to the global food and economic crises. The adverse effects of climate change coupled with poor planning and governance in many African countries could quickly negate all the gains made in MB phase-out, especially when their populations are threatened by famine. It is therefore evident that, the issue of sustainability of MB phase-out not only depends on stringent enforcing of regulations on MB usage, but also on ensuring technical viability of MB technologies is equally matched with commercial/economic viability. This approach will completely eliminate any demand for the seemingly cheap MB by ensuring much more profitable MB alternatives vis-à-vis MB-dependent production.

16. Addressing the overarching gap -- the sustainability of the MB phase-out -- needs an appropriate strategy. A three-pronged strategy has been developed by the CAP team and is being proposed for implementation, in collaboration with other Implementing Agencies. This strategy involves:

i) Documentation of the current commercially viable MB alternative in toolkits and case studies, thus securing the hard-earned MB alternatives for specific sectors;

ii) Technical capacity development via entrenchment of MB issues in the educational curricula as well as enhanced collaboration with local universities and research organizations for stimulation of MB alternatives research by staff and students, thus overcoming over-reliance on foreign experts; and,

iii) Improved engagement of stakeholders to agree on the best way forward, thus gathering the necessary support.

17. The latter element of the strategy could enable the region to circumvent the threat posed by the low cost of MB relative to promising MB alternative technologies, via engagement of market-based standardization organizations such as Kenya-GAP and Global-GAP by stakeholders to promote better prices for environment-friendly MB alternative-dependent products vis-à-vis MB-dependent products. This is a powerful tool for turning-around the economic/commercial viability of MB alternatives.

18. The implementation of this three-pronged strategy will require a regional forum for interaction between the stakeholders. This will ensure:

- Technology transfer/diffusion through sharing of experiences from various countries on both the successful and unsuccessful experiences in adopting and adapting MB alternatives. This will enable transfer of commercially viable alternative technologies to the countries left behind, while avoiding reinventing the wheel.
- Identification of new technologically and economically viable MB alternatives via stakeholders-guided research by local universities and research institutions. The local universities and research institutions will be mandated by the other MB phase-out stakeholders to carry out research for technologically, economically and socially viable MB alternatives, since they understand local situation better.
- Stakeholders-guided technical capacity development by local universities and other educational institutions.
- Awareness raising of MB use in the region. Participants will perform a peer review mechanism of what is critical usage, depending on the available commercially validated alternative technologies applicable in the various agro-climatic zones within the continent.
- Provision of a one-stop resource center for MB alternative technologies. This will provide practicable solutions to growers who are actively looking for information on MB alternatives.
- Stakeholders-guided self-audit system for evaluating the environmental friendliness and economic/commercial viability of newly identified alternative technologies
- Create a regional think-tank for spearheading and guiding research for sustainable MB phase-out in Africa, thus avoiding the over-reliance on foreign experts/think-tanks, many of which have limited first-hand experience of the African situation.

19. There is urgent need for sharing of on-farm experiences on commercially-validated MB alternatives, which now exist. The justification of this need lies in the fact that, effective technology transfer among large-scale farms and between large-scale and small-scale growers is hindered since successful technologies are considered **a trade secret**. This need is further emphasized by the fact that viable MB alternatives were only piloted on few farms and the results have not been effectively disseminated to a wide spectrum of farmers. Technological and economic information regarding the sustainability (disinfestation, recycling during change of cropping cycle and reuse) of substrates used in soilless culture is lacking. The **urgent felt need for information dissemination** on commercially validated MB alternatives would be effectively addressed via the documentation of case studies, toolkits, technical manuals and technical

workshops for sharing of on-farm experiences between a wide spectrum of growers, researchers and policy makers. The technical workshops would document the commercially successful technologies as well as unsuccessful cases via proceedings to disseminate information to growers as well as guide researchers on technological needs.

D. Level of Achievements of MB phase-out in Africa

20. Most African countries have created new laws, policies, plans and institutions to guide implementation of methyl bromide phase-out. This institutional approach by African countries is a strong indicator of their political commitment to the sustainable phase-out of methyl bromide. Recently, most African countries that were lagging behind ratified the remaining amendments to the Montreal Protocol, thus stating their commitment to compliance.

21. Most African countries are compliant with the MB phase-out schedule as stipulated by the Montreal Protocol. However, the sustainability of the achieved phase-out is currently uncertain and needs to be addressed as an overarching gap in the MB phase-out in Africa. An analysis of the phase-out schedule of MB reveals that, most African countries have reported zero MB consumption since early 2000s. However, many African countries though compliant to the freeze by 2002 and the 20% reduction by 2005 are still persistently using MB. It is evident from most persistent users that abrupt reductions were made just to beat the milestones and thereafter resume normal consumption. This trend probably reflects forced phase-out of MB without regard to technical feasibility being matched with commercial/economic feasibility. This behavior paints a picture of potential non-compliance for most currently MB consuming countries. Though significant phase-out has been achieved, the remaining persistent MB use seems to be for crops without known technically and commercially/economically feasible alternative technologies. Intervention especially in addressing the commercial/economic feasibility of MB alternatives is urgently needed to ensure continued compliance and sustainable phase-out of MB.

22. Initially, demonstration projects were funded by the Multilateral Fund to identify MB alternatives. These were followed by investment projects meant to pilot the viable alternatives. However, the information generated from these projects is still scattered and even some of the technologies currently in use among farmers are undocumented. Also, there are some MB alternative technologies developed on-farm (hypericum, etc) which have not been documented.

E. Conclusion

23. In conclusion, it is absolutely essential to address both the technical feasibility as well as the commercial/economic feasibility battle fronts of MB alternative technologies. This would specifically be done via documentation of the hard-earned commercially/economically viable alternatives to methyl bromide through case studies and toolkits, thus securing the technological gains. Local universities and agricultural research institutions need to be engaged and facilitated to bridge the technological gaps such as crops without known alternatives (e.g. lisianthus, chrysanthemum mother plants), new challenges of alternative technology by-products disposal (e.g. spent pumice, used floating trays, etc), lack of technical information on sustainability (disinfestation, recycling and reuse) of substrates used in soilless culture, economic/commercial

feasibility of technically viable MB alternatives, local technical capacity building in MB alternative technologies and technology transfer to the communities.

24. The regional stakeholders forums/technical workshops will enable sharing successful experiences on MB alternatives; dissemination of information on MB alternatives and play a local leadership role (think tank) in guiding further development of sound, sustainable MB alternative technologies as well as engaging the market-based standardization organizations such as Kenya-GAP and Global-GAP on favorable pricing of MB alternative-dependent products to ensure economic/commercial viability of promising MB alternatives. The regional technical workshops would effectively circumvent the grower-to-grower technology transfer barrier that is imposed by the treatment of successful MB alternatives as a trade secret. These technical workshops as well as the documentation of the case studies, technical manuals and toolkits are essential in the much-needed dissemination of MB alternative technologies to the wider spectrum of farmers as well as availing the much needed literature as a stepping stone for entrenching MB issues in the educational curricula of universities and other educational institutions. These needs/gaps are unprecedented and are founded on: the recommendations of the three main evaluations on methyl bromide, specifically, the Desk Study on Methyl Bromide Projects, Final Report on the Evaluation of Methyl Bromide Projects and Extended Desk Study on Low Volume Methyl Bromide Projects; and the recommendations of the 15th Meeting of Ozone Officers' Network for English-speaking Africa and the 13th Joint Meeting of the ODSNET African countries.

Annexes

Annex I: Analysis of Regional Methyl Bromide Projects in Africa

1. The Multilateral Fund has so far funded 9 regional projects for methyl bromide in Africa, for a total of US\$1,740,558. Out of these projects, UNDP implemented two projects with a funding of US\$729,850; UNEP implemented five projects with a funding of US\$665,000; UNIDO implemented one project with a funding of 306,812; and Australia implemented one project with a funding of USD\$38,896. The following are the regional projects approved so far:

i. AFR/FUM/16/TRA/10 – UNEP -Regional workshop on methyl bromide for English-speaking African countries. *To raise awareness concerning the role of methyl bromide in ozone layer depletion, control measures and definitions, implications of control measures, current methods to control emissions, and alternative uses.* (USD \$100,000), approved in March 1995, completed in March 1996

ii. AFR/FUM/17/TAS/14 – Australia - Replacement of methyl bromide with non-ozone depleting alternative in grain storage. *To demonstrate commodity fumigation techniques that are not dependent on methyl bromide. It will include the transfer of the improved and permanent sheeting systems of disinfection and protection of bagged grain to Southern Africa. Target countries for the demonstration activity are Kenya, Malawi, Zambia and Zimbabwe.* (USD\$38,896), approved in July 1995, completed Oct 1995

iii. AFR/FUM/17/TAS/15 – UNDP- Methyl bromide data collection for Africa. *Investigate and determine the exact usage of methyl bromide and develop regional and/or country-specific plans that outline cost-effective substitution possibilities that could be used to reduce use of methyl bromide.* (USD\$179,850), approved Jul-1995, completed Apr-1998.

iv. AFR/FUM/21/TRA/18 – UNEP - Regional survey and workshop on methyl bromide for French-speaking African countries. *The workshop will focus on the following aspects: related control measures and definitions under the Montreal Protocol, and their implications for the region; methodologies to control emissions into the atmosphere from the various current uses of methyl bromide; alternatives to methyl bromide uses (fumigation of soils, perishables, and structures); and cost effectiveness of the different alternatives.* (USD \$ 275,000), approved Feb 1997, completed Feb 1998

v. AFR/FUM/27/TRA/23 – UNEP - Regional training of trainer courses for extension workers. *UNEP/FAO will implement a regional training course for extension workers through 4-week courses focused on building facilitation skills and group dynamic/group building methods, methods for participatory approach, farmer-to-farmer methods, cultural sensitivity, and communication, including increased coordination and systems training.* (USD\$80,000), approved March 1999, completed Dec 2001

vi. AFR/FUM/27/TRA/24 – UNEP -Regional training workshops on policy development. *To provide countries with tools and information necessary to develop short*

and long term policies for meeting the 2002 freeze, reductions and phase out and to promote the use of alternatives; encourage countries to develop action plans for methyl bromide phase out that will ensure a coordinated and effective approach for replacing methyl bromide; and raise awareness among policymakers in ozone units, agricultural ministries and pesticide control authorities about the importance of developing strong national policies to phase out methyl bromide and implement effective alternatives. (USD\$130000), approved in March 1999, completed in Dec 1999

vii. AFR/FUM/34/TRA/28 - UNEP-Regional workshop on the experiences of use of methyl bromide alternatives evaluated under the Multilateral Fund. *Regional workshop on the experiences of use of MB alternatives evaluation under the Fund to exchange experiences and lessons learned from demonstration projects in one country to other countries in the region; promote the adoption of MB alternatives that have been identified in the demonstration projects to enable countries to meet the 2002 freeze and 20 per cent reduction by 2005 and to prevent future usage; identify new or unrecognized barriers to the rapid adoption of alternative technologies and develop strategies for addressing these barriers; raise awareness about effective alternatives to MB; promote ratification of the Copenhagen Amendment in countries that have not done so; and clarify definition of quarantine and pre-shipment applications as outlined in the Montreal Protocol to assist countries in accurately reporting MB consumption data. (USD\$80,000), approved Jul-2001, completed March 2004*

viii. AFR/FUM/38/TAS/32 -UNDP -Technical assistance for methyl bromide reductions and formulation of regional phase out strategies for low volume consuming countries. *The project is to provide technical assistance to achieve MB reductions to meet the 20 per cent reduction step in Congo, Congo DR, Nigeria, Sudan, Swaziland. It will begin by developing national and regional strategies which will identify the most effective activities, timetables for action steps, and responsible organizations. The project will also provide assistance to 24 countries that have no reported MB consumption to prevent the introduction and use of MB (Angola, Benin, Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Djibouti, Eritrea, Gabon, Gambia, Guinea, Mali, Mauritania, Mozambique, Niger, Rwanda, Sao Tomé and Príncipe, Seychelles, Sierra Leone, Somalia, Tanzania and Togo). (USD\$550,000), approved Nov 2002. ONG*

ix. AFR/FUM/54/DEM/40 – UNIDO -Regional demonstration project on alternatives to the use of methyl bromide for treatment of high moisture dates (Algeria and Tunisia). *To demonstrate the technical and economic feasibility of the following alternatives for disinfestation of high moisture palm dates: modified atmosphere; heating treatment; and alternative chemicals, including ethyl formate in combination with CO₂, phosphine in combination with CO₂, sulphur dioxide and sulphuryl fluoride, incorporated within an IPM programme. It will be implemented in four phases: a technical evaluation based on a small-scale test of the alternatives; an expert discussion of results obtained from the first year of activity, aimed at selecting the most promising alternatives and compiling results of the trials performed under commercial conditions in varieties with different levels of humidity; a full-scale commercial evaluation including economic evaluation of the technically feasible alternatives; and a final workshop to demonstrate the results*

obtained during the two years of trials with alternatives. (USD\$306,812), approved April 2008, ONG

Annex 2: Analysis of Multilateral Fund Evaluations on Methyl Bromide projects

1. The Multilateral Fund has conducted so far three main evaluations on methyl bromide, namely, the Desk Study on Methyl Bromide Projects (UNEP/OzL.Pro/ExCom/43/8); Final Report on the evaluation of Methyl Bromide Projects (UNEP/OzL.Pro/ExCom/50/9); and the Extended Desk Study on Low Volume Methyl Bromide Projects (UNEP/OzL.Pro/ExCom/53/8).

2. The *Final Report on the evaluation of Methyl Bromide Projects* (UNEP/OzL.Pro/ExCom/50/9) stated that the results at the time of conducting the field visits were often preliminary, highlighting that the economic feasibility of alternatives needs to be further validated. That document further states *inter alia that*

- Para 10: *“the fact that some commercial adoption of alternatives has occurred in countries visited offers a very good opportunity to document case studies that include economic information”*.
- Para 17: *“strong emphasis should continue to be given to awareness raising, information transfer and training, not only within one country and sector but also with other projects, regions and sectors.*
- Para: 49 *“the institutional sustainability of the evaluated projects depends to a large extent on intensive training of trainers and broad dissemination of project results”*.
- Para 50: *“In Article 5 countries extension services are often weak or non-existent, but involving local universities and research centers proves useful”*.
- Para: 51 *“the most important contribution that projects can make towards institutional sustainability is solid training of trainers who can provide continuity and multiply the knowledge received. The need for robust training programs and appropriate technology transfer is further reinforced by the fact that actual achievements of training activities, which are a substantial component of all projects evaluated often fall below expectations. A major consequence of delays and deficits in training is the fact that MB users are insufficiently prepared to apply alternatives. As stated above, the message that a single, in kind alternative to MB does not exist needs to be disseminated as much as possible and training plays a major role in getting this point across.*
- Para: 61 *“best diffusion occurs when research and extension collaborate on technology generation and diffusion in the framework of adaptive research and development plots. Besides the development of technologies per se, the projects play a unique role in the constitution of a sustainable research and extension base in the project countries. These capabilities will enable the countries to cope in the future with the new technical problems arising from the large- scale adoption of alternative technologies in the field. Adaptive research and development are not only a way to screen, fine-tune, monitor and recommend new alternatives. They act as training sites for young researchers and extension staff who could acquire first-hand field experience and gain subsequently their clientele’s trust”*.

3. The 2007 *Extended Desk Study On Low Volume Methyl Bromide Projects* (UNEP/OzL.Pro/ExCom/53/8), highlights the importance of sustaining the methyl bromide phase out in LVCs in particular. That document states *inter alia* that (emphasis added):

- Para 44: “In spite of the above, certain regional or sub-regional activities still seem appropriate for initiatives such as information sharing and dissemination, training efforts and awareness raising activities. *Specific areas where work is much needed include tracking MB use once it enters a country (to avoid diversion of QPS intended MB to controlled uses), preventing illegal trade, and consolidating regional information on activities undertaken. Consolidating case studies on alternatives to MB suited to particular regions and sectors was suggested on several occasions. Technical workshops at the regional level, to share experiences in the identification, implementation and adoption of alternatives for particular sectors (i.e., flowers, tomatoes, strawberries) are still needed.* Such activities could be implemented by regional CAP officers, coordinated with activities already undertaken by the IAs in order to avoid overlaps and friction, which have been reported to exist in some instances.
- Para 46: “Further, *improving linkages between local universities and/or agricultural research institutions and key stakeholders, particularly growers is essential to reinforce technology transfer and sustain phase-out.*”
- Para 47: “A number of interviews were conducted during the Nineteenth Meeting of the Parties with ozone officers from different countries, CAP officers, one project consultant and representatives of the IAs, as well as by phone and e-mail...revealed that the circumstances in each country vary widely as different sectors, stakeholders, legislative and political issues are involved. In view of this, *information about experiences made in a relatively large number of countries need to be collected.*”
- Para 48: “Discussions in regional network meetings combined with field visits to selected countries are suggested. *Such a study will not only help to confirm that recommendations in the desk study are well targeted, but will also generate lessons learned on the best ways forward at a time when most remaining projects proposed are likely to be in MB-LVC.*”