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EXECUTIVE COMMITTEE OF
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PROJECT PROPOSAL: ZIMBABWE

This document consists of the comments and recommendations from the Fund Secretariat on the following project proposal:

Fumigant

- Phase-out of methyl bromide in cut flowers

UNIDO

**PROJECT EVALUATION SHEET
ZIMBABWE**

SECTOR: Fumigant ODS use in sector (1999): 132 ODP tonnes

Sub-sector cost-effectiveness thresholds: N/A

Project Titles:

(a) Phase-out of methyl bromide in cut flowers

Project Data	Methyl bromide
	Cut flowers
Enterprise consumption (ODP tonnes)	132.00
Project impact (ODP tonnes)	132.00
Project duration (months)	48
Initial amount requested (US \$)	1,278,737
Final project cost (US \$):	
Incremental capital cost (a)	822,000
Contingency cost (b)	82,200
Incremental operating cost (c)	0
Total project cost (a+b+c)	904,200
Local ownership (%)	100%
Export component (%)	0%
Amount requested (US \$)	904,200
Cost effectiveness (US \$/kg.)	6.85
Counterpart funding confirmed?	N/A
National coordinating agency	Ministry of the Environment and Tourism
Implementing agency	UNIDO

<i>Secretariat's Recommendations</i>	
Amount recommended (US \$)	
Project impact (ODP tonnes)	
Cost effectiveness (US \$/kg)	
Implementing agency support cost (US \$)	
Total cost to Multilateral Fund (US \$)	

PROJECT DESCRIPTION

Phase-out of methyl bromide in cut flowers

Background

1. The Government of Zimbabwe is submitting a project to phase out the entire consumption (132 ODP tonnes) of methyl bromide (MB) used for soil disinfestation in cut flowers. Flowers are grown on 440 ha of land and are replanted on an average of every six years. Thus, approximately 66.5 ha per year are disinfested every year with MB.

2. Flowers are planted directly into the soil. The use of a substrate as a growing medium is not feasible because it has to be imported at a high price (no local substrates have been found yet).

MB consumption

3. In 1999, the estimated consumption of MB in Zimbabwe totalled 598 ODP tonnes. Its primary use in Zimbabwe is for tobacco seedbeds (with a total consumption of 443 ODP tonnes), followed by cut flowers (22 per cent of the total MB consumption). The remaining 23 ODP tonnes are for other horticultural products and durable commodities.

4. At present, 65 growers are registered in the Dutch MPS flower-labeling programme and 11 growers in the German FLP programme, both of whom have banned the use of MB and any other chemicals (metam natrium, carbosulfan, dichlorovos, endosulfan) in the production of flowers.

Export

5. Zimbabwe is the second largest exporter of cut flowers in Africa. All the flowers grown in Zimbabwe are produced for export to overseas markets. In the 1998-1999 growing season, 19,228 tonnes of flowers were exported to Europe (65 per cent of total production), South Africa (5 per cent), Australia and the USA (7 per cent) and the remainder to the Far East. For the 1999-2000 growing season, it is expected that a total of 25,643 tonnes of flowers will be exported, and 28,226 tonnes in the 2000-2001 season.

Alternatives selected

6. The alternatives selected for phasing out MB are steam pasteurisation for controlling weeds, nematodes and roots and stem roots in combination with an integrated pest management (IPM) programme.

7. The application of the steam technology requires the use of 20 mobile steam generators, 14 units with a capacity of 400-600 kg/h (at a cost of US \$35,000 per unit) and 6 units with a capacity of 1,800-2,000 kg/h (at a cost of US \$50,000 per unit). The steam generators will be

distributed to about 270 farmers through the main flower growers association, the Export Flower Growers Association of Zimbabwe (EFGAZ). During the first phase of the project, 2 to 3 steam generators will be purchased in order to determine treatment conditions for particular pests and soil types in the different growing areas.

Training programme

8. The project includes training programmes in the use of the alternative technologies. They will be implemented using extension personnel from EFGAZ in conjunction with the Blackfordby Agricultural Training Institute. The Institute has facilities for training and field practices, two small greenhouses (0.5 ha each), a grading shed with capacity to handle at least 3 ha of flower production, with a cold room and storage facilities. It also acts as a training college for tobacco.

9. During the first year, two or three boilers with different specifications (operating pressure, mobility, capacity) will be purchased. One unit will be used in the Blackfordby Agriculture Institute for testing and training purposes. Growers from different parts of the country would attend training sessions at the Institute on the use of steam combined with courses on IPM. A second unit will be installed in a large growing area East of Harare, which will provide growers with access to the proposed technology without extensive travel.

Policy measures

10. The Government of Zimbabwe has agreed to (i) prevent the increase in the use of MB in the cut-flower sector by establishing an import licence system for MB; (ii) work closely with EFGAZ to ascertain the phase-out of MB according to the following phase out schedule: 26.4 ODP tonnes during the second year of the project, 39.6 ODP tonnes during the third year and complete phase out (66 additional ODP tonnes) during the fourth year of the project; and (iii) enactment of a regulation banning the use of MB in the production of cut flowers once the project is completed.

Implementation modalities

11. The project will be implemented by UNIDO under national coordination by the Ozone Office, in close cooperation with EFGAZ. UNIDO will monitor the phase-out of MB according to the established phase-out schedule as well as the operational costs resulting from the substitution of MB.

12. UNIDO will inform the Executive Committee about the progress achieved (through annual reports) indicating phase out achievements and costs involved. UNIDO will also inform the Committee on cases of unjustified project delays, which could potentially result in cancellation of the project.

13. The estimated time for the implementation of the project is 4 years.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The Executive Committee approved at its 23rd Meeting a project to demonstrate the technical and economical feasibility of non-soil cultivation and low-dose chemical alternative technologies to the use of MB in the production of drought-resistant tobacco seedlings and allocated US \$370,700 to UNIDO for its implementation. The Committee also approved at its 27th Meeting a demonstration project on alternatives to MB (phosphine, nitrogen, hermetic storage and diatomaceous earth, in combination with integrated pest commodity management programme) on stacked bags of maize under gas-proof PVC sheets and plastic cocoons (storage), and allocated US \$212,850 to UNIDO for its implementation.

Export component

2. UNIDO informed the Secretariat that the majority of the growers export their flowers through local commercial agencies, and two or three of the large growers export the flowers directly. According to the current strategy and guidelines for projects in the MB sector, “the size of the eligible grant could be reduced depending on the degree of export to non Article 5 countries of the finished product or the participation of multinational corporations”. The Secretariat pointed out that the export component has not been considered in the calculation of the eligible cost of the project.

Selection of alternatives

3. The Secretariat sought clarification from UNIDO on some growers who are producing cut flowers without using MB and the comparative cost of production using MB. UNIDO stated that most of the growers in the labeling programmes still use MB since they have not yet found a viable alternative that can sustain their production and maintain quality and yields, and are subject to penalization by the labeling programmes for doing so (many growers had to pull out of the labeling programmes). Several growers participating in labeling programmes who are not applying MB, currently use ethylene dibromide (EDB) in combination with nematicides. However, EDB is not as effective as MB, it is to be eventually prohibited in many countries in the world; control of nematode, which is a very common problem in Zimbabwean soil, is done through frequent applications of nematicides (every six weeks instead of every six months); and growers have experienced considerable losses in production yields and an increased consumption of active ingredients.

Capital costs

4. The project proposes the use of 20 steam boilers, which will be distributed according to the surface area to be treated and the number of farmers involved. The Secretariat pointed out that the number of steam boilers could be reduced if its distribution was based only on the surface area to be treated instead of the number of growers. In this regard, UNIDO informed the Secretariat that the criteria used for the distribution of the steam units in the region was based

first on the number of growers, the surface area covered, the type of flowers, the distance between farms, and the infrastructure available. By distributing the steam units as proposed, all growers will be able to use a boiler without crop cycles being affected.

5. The Secretariat also questioned the cost of steam generators taking into account that the cost of small self-contained steam generators for small greenhouses in the United States is US \$6,000. During project preparation, UNIDO considered using a small-capacity unit proposed by the Secretariat. However, it was discarded since it operates with electricity (not appropriate for the conditions in Zimbabwe) and the production capacity of vapour was very low, requiring a longer time for any given application (214 work-hours would be required for fumigating a surface of 500 m²). Therefore, the use of 14 units with a capacity of 400-600 kg/h and 6 units with a capacity of 1,800-2,000 kg/h was proposed to ensure treatment of all the area in the time available.

6. The Secretariat and UNIDO also discussed issues associated with the price of fuel which represents 91.6% of the total operating costs of the project (US \$231,537). UNIDO agreed not to claim incremental operating costs.

Training programmes and farm associations

7. The Secretariat and UNIDO agreed that the cost of the training programme should be adjusted to US \$130,000 considering the fact that about 95 per cent of the growers belong to EFGAZ, and the availability of local staff at the Blackfordby Agricultural Training Institute.

Policy measures

8. Upon a suggestion by the Secretariat UNIDO will prepare an agreement between the Executive Committee and the Government of Zimbabwe with the commitments proposed and action plan for the phase out of MB in the cut flower sector in Zimbabwe.

Current situation in Zimbabwe

9. Taking into consideration the current situation in Zimbabwe, the Secretariat sought clarification from UNIDO if it would be able to implement the project without delay, and if the viability of the farmers involved had been re-evaluated. UNIDO stated that according to their contacts in the country, the current situation in Zimbabwe has not affected the production of flowers by growers associated to EFGAZ (they have to maintain production of flowers as this is their livelihood). UNIDO strongly believe that it would be able to implement the project without delay.

RECOMMENDATIONS

1. The Fund Secretariat and UNIDO have agreed on the total cost of the project (US \$904,200). The export component has not been taken into consideration. Based on the above

considerations, the Executive Committee may wish to consider the level of funding of the project.

2. If the project is approved, the Executive Committee may also wish to request UNIDO to disburse the funds allocated in tranches according to the proposed MB phase out schedule indicated in the project proposal; if Zimbabwe does not meet the reduction requirements outlined in the proposal, the Multilateral Fund, through UNIDO, will withhold funding for the subsequent tranche of funding until such time as the required reduction has been met.

3. The Executive Committee may also wish to request UNIDO to submit an annual progress report on the implementation of the project to the Fund Secretariat.