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EXECUTIVE COMMITTEE
OF THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Twenty-seventh Meeting
Montreal, 24-26 March 1999

PROJECT PROPOSAL: ZIMBABWE

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

Fumigant

- Demonstration project: Alternatives to the use of methyl bromide on stacked bags of maize under gas proof PVC sheets and plastic cocoons — UNDP

PROJECT EVALUATION SHEET
ZIMBABWE

SECTOR: FUMIGANT ODS use in sector (1995): 90 ODP tonnes

Sub-sector cost-effectiveness thresholds: N/A

Project Title:

Demonstration project: Alternatives to the use of methyl bromide on stacked bags of maize under gas proof PVC sheets and plastic cocoons

Project Data	**Methyl Bromide**
	Ministry of Mines, Environment and Tourism
ODS phase-out (ODP tonnes)	-
Proposed project duration (months)	12
Incremental capital cost (US $)	217,092
- including contingency (%)	10
Incremental operational cost (US $)	217,092
Total project cost (US $)	217,092
Local ownership (%)	100
Export component (%)	-
Amount requested (US $) {Original}	217,092
{Revised}	212,850
Cost effectiveness (US $/kg)	-
National Coordinating Agency	Ministry of Mines, Environment and Tourism
Implementing Agency	UNDP
Technical review completed?	Yes

Secretariat s Recommendations:	
Amount recommended (US $)	212,850
Project impact (ODP tonnes)	N/A
Cost effectiveness (US $/kg)	N/A
Implementing Agency support cost (US $)	27,670
Total cost to Multilateral Fund (US $)	240,520

PROJECT DESCRIPTION

Demonstration project: Alternatives to the use of methyl bromide on stacked bags of maize under gas proof PVC sheets and plastic cocoons

1. In 1996, the total consumption of methyl bromide was estimated at 424.2 ODP tonnes (as reported to the Ozone Secretariat). Based on a recent survey (1998), methyl bromide is used in the country for soil fumigation for tobacco seedbeds and horticulture (cut flowers and nurseries), with a consumption estimated at 310 ODP tonnes; for storage of durable commodities (cereal grains, export tobacco, timber and timber products, furniture and artefacts, termite mounts), with a consumption estimated at 54 ODP tonnes; and for structural fumigation for flour mills and warehouses.

2. Methyl bromide used by the Grain Marketing Board is for treating bagged durable grains and to a small extent, empty sacks. Other storers of durable grains (millers, individual farmers, farmer's associations and private companies) do not fumigate with methyl bromide.

3. The project is to demonstrate the application of alternatives to methyl bromide in fumigation of durable grains, particularly maize which is the second largest consumer of methyl bromide in the country. The chosen alternatives are phosphine, nitrogen, hermetic storage and diatomaceous earth, all implemented in combination with integrated pest management/ commodity management techniques. Integrated pest management involves the prevention, monitoring and control of pest infestations, while integrated commodity management includes several practices such as control of commodity moisture, insect damage, bulk density and defective grains, hygiene of depot/store, handling equipment and proofing of storage structures against insects, rodents, birds and moisture/rain water ingress.

4. The project will be implemented in five-Grain Marketing Board depots situated where most of the maize is produced, stored and fumigated. At each depot, small stacks of maize (150 tonnes capacity) will be constructed. Gas sampling lines and bioassay insect cages will be placed in the stacks to be treated with phosphine, nitrogen and hermetic storage. Gas samples will be drawn hourly for the first four hours and every four hours thereafter. Results of gas readings and bioassay counts will be tabulated and analysed.

5. The expected results from project implementation are: (i) a technical and economic analysis of utilisation of proposed alternatives to methyl bromide, (ii) training of personnel in the alternative technologies used including study-tours and (iii) dissemination of the results of the demonstration project. The total costs of human resources is US $15,000, soil analysis and identification of biological control agents (US $27,000), nematode samples, design and implementation of the IPM system (US $120,000), equipment (US $143,857), a workshop (US $15,000) and study tours and national travel (US $23,500).

SECRETARIAT S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The Government of Zimbabwe ratified the Copenhagen Amendment on 3 June 1994.

2. The Executive Committee approved, at its 23rd Meeting, a demonstration project on two alternatives to the use of methyl bromide in the production of tobacco drought-resistant seedlings (soil fumigation) in Zimbabwe, and allocated US $370,700 for its implementation.

3. The Secretariat and UNDP discussed whether it would be technically feasible and economically viable to convert/retrofit the current storage facilities in the country for the proposed alternative technologies, namely nitrogen and hermetic storage. UNDP informed that hermetic storage has been used in a wide variety of storage facilities (warehouses with concrete floors, sheds with dust floors, flattened soil in the open air). A hermetic storage container can be constructed by sticking together airtight sheets with a special glue available in the country. This technology is feasible for the conditions of grain storage in the country. The small-capacity grain cocoons proposed for the demonstration can be scaled-up to accommodate full quantities of grain. The economic assessment of the proposed demonstration test will be able to calculate the full-scales costs using the demonstration data.

RECOMMENDATION

Taking into consideration the above comments, the Fund Secretariat recommends blanket approval of the project with associated support costs at the funding level shown in the table below:

Project Title	Project Cost US $	Support Cost US $	Implementing Agency
Demonstration project: Alternatives to the use of methyl bromide on stacked bags of maize under gas proof PVC sheets and plastic cocoons	212,850	27,670	UNDP