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Executive Committee of the
Interim Multilateral Fund for the
Implementation of the Montreal Protocol

Seventh Meeting
Montreal, 23-26 June 1992

PROJECT PROPOSAL: BRAZIL

MONTREAL PROTOCOL (MP) PROJECT FOR BRAZIL

INITIAL EXECUTIVE PROJECT SUMMARY

Country:	Brazil
Project Name:	MP ODS Elimination Project
Associated Bank Project:	None. Free Standing Project
Borrower:	None. MP Interim Trust Fund Grant
Grant Amount:	Drawn from multilateral Interim Trust Fund as national subprojects are approved by MP Exec. Comm. Initial pipeline approximately \$US 8 million.
Beneficiary:	Government of Brazil (GOB) for transfer to subproject beneficiaries.
Tentative Appraisal Date:	June 1992
RVP Approval Date:	September 1992
Board Presentation Date:	Not required per modified procedures for GEF and MP projects.
Environmental Category:	C

1. ODS Sector Background: The Montreal Protocol is an agreement ratified by 71 nations which calls for the international phase out by the year 2000 of chemicals which deplete the ozone layer (ODS's). The principal controlled ODS's are chlorofluorocarbons (CFC's), halons, carbon tetrachloride (CCl₄), and methyl chloroform (MCF). An Interim Multilateral Trust Fund (MPIMF) has been established to assist qualifying developing countries to finance the incremental costs associated with reducing the use of controlled substances. A sum of \$US 200 million is now available for the initial three year period (to end 1993) to be used by the 37 eligible beneficiary nations, approximately 20 of which have annual consumption levels of more than 500 tons. The World Bank is the implementing agency for the preparation of Country Programs for ODS phase out, and the financing of eligible investment projects with Fund resources. The UNDP and the UNEP are implementing agencies for national and international technical assistance programs respectively. Brazil signed the Montreal Protocol and acceded to ratification on March 19, 1990. As an Article 5 signatory (annual per capita ODS consumption of less than 0.3 kg.), Brazil is eligible for MPIMF support. The principal component of the proposed project will be a grant line operated by financial intermediaries for the financing of the incremental costs of investments or other activities which result in the reduction of ODS use, or substitution of ODS use by non-ODS's. Of Brazil's two CFC producers, one (Hoechst) will cease production by the end of 1995; du Pont has not yet taken a decision for its Brazil operation, although it is committed to phase out in the US in 1995.

2. Production and Consumption Patterns: Total worldwide production in 1986 of CFC's and halons, the more damaging of the ODS's, was 1,140,000 tons, of which 97% was CFC's. Estimated worldwide consumption for 1986, the base year for MP statistics, was 1,180,000 tons, of which total Latin American consumption was 30,000 tons. Brazilian consumption in 1986 was 9000 tons, less than 1% of the world total, but the third highest total of Article 5 countries, after India and China. Controlled substances are produced in six developing

nations, Argentina, Brazil, China, India, Mexico, and Venezuela. Total production of CFC's and MCF in these nations in 1989 was approximately 70,000 tons, of which Brazil's share was 20,500 tons, or 29%. Estimated CFC consumption in Brazil in 1989 was 10,000 tons, with the distribution by end use being air conditioning/refrigeration 47%; foaming agent 40%; solvents 7%; aerosols 1%; and other 5%. Of the AC/refrigeration share, an estimated 2800 tons was for aftermarket use, and the remainder, 1900 tons, for charging new units. Methyl chloroform consumption (12,800 tons/yr) by end use was metal cleaning 82%; electronic component cleaning 10%; aerosols, adhesives, and coatings 5%, and other 3%. Carbon tetrachloride (12,000 tons/yr) is used exclusively as a raw material for CFC and other chemical intermediate production. CFC production in the mother countries of Brazil's two CFC producers, du Pont and Hoechst, will cease at end 1995. The first commercial scale production of a CFC substitute in Brazil, HFC-134a, by Hoechst, is scheduled for start up in early 1994. A more detailed analysis of national data is found in Annex I. National Production and Consumption Patterns.

3. ODS Trade Patterns: Brazil is self sufficient in ODS production, except for halons (50 tons/yr), CFC-113 (approx. 2000 tons), and CFC-114 (small amounts), which are imported. Brazil exports CFC-11, CFC-12, and HCFC-22 to other Latin American countries. There are currently no quantitative restrictions against import of controlled substances. Brazil's position as a major industrial producer and exporter of CFC-user-industry consumer goods (refrigerator compressors, auto air conditioners, electronic components) implies that its ODS phase out strategy will in large measure be dictated by regulations in its export markets, rather than the delay accorded Article 5 signatories.

4. Institutional Organization: The Interministerial Technical Group (GTO) was established in October 1991 to: i) prepare the Country Program for MP implementation; ii) supervise national compliance with MP phase out norms; and iii) coordinate utilization of the MPIMF. The GTO is coordinated by the Economic Secretariat of the Min. of Economics, Finance and Planning (MEFP), and is composed of representatives of the National Planning Secretariat of MEFP, Environmental Secretariat of the Presidency (SEMA), Sec. of Science and Technology (SCT), and the Min. of External Relations (MRE). Participating in the work of the GTO as advisors, though not voting members are representatives of industry user groups (ABINEE, ABRAVA, and others), IBAMA, BNDES, FINEP, and other governmental and non-governmental groups, as required. The Executive Secretariat of the GTO (GTOES) is located in the Dept. of Industry and Commerce (DIC) of MEFP.

5. Country Program Priorities: Definition of priorities for a national ODS phase out program (Country Program) will be a function of: i) the current structure of domestic ODS consumption; ii) the availability and economics of commercial substitute technologies; iii) Brazil's position as a major exporter of CFC-user-industry consumer goods; and iv) the ODS regulatory environment. Consumption data indicate that significant spontaneous substitution for ODS's has already taken place in aerosol propellant, solvent cleaning, and flexible foaming agent applications, fields with already available, lower cost substitute technologies. Commercial, albeit more expensive, substitute technology has recently become available for central air conditioning systems (HCFC-123 for CFC-11); for auto air conditioners and refrigeration (HFC-134a for CFC-12); development work continues in the search for CFC free foaming

agents for insulation panels which will not require major modifications of refrigerator designs. Many Brazilian user industries, particularly exporters and refrigerator producers, are already carrying out in-house substitute technology development programs. The large aftermarket consumption of CFC's indicates a need for measures such as collection and recycling, and eventually chemical breakdown or incineration of the existing stock of CFC's. ODS phase out has not yet become a high legislative nor regulatory priority. Dialogue concerning a national ODS elimination strategy is in early stages, and consensus not yet at hand. MP operational guidelines do, however, permit, subproject financing even before Country Programs have been prepared or approved by the Bank and the MP Exec. Comm. (MPEC).

6. In consideration of the above, the immediate operational approach will be to proceed concurrently with: i) identification/preparation of obviously eligible substitution, technology development, and recycling initiatives; ii) continuation of a strategy dialogue and Country Program preparation; and iii) preparation of the proposed MP ODS Elimination Project. The GTO will, however, be required to develop a timetable for Country Program preparation prior to project appraisal.

7. Country Program Preparation: A diagnostic study, "The Costs to Brazil of Complying with the Montreal Protocol", prepared in 1990 by United States EPA consultants in conjunction with IBAMA and Brazilian industry ODS users, is serving as the base document for Country Program preparation. External consultants are being contracted to assist IBAMA and DIC/MEFP technicians to produce a draft Country Program document. It should be available for review by June 1992. The UNDP and UNEP are expected to participate in Country Program implementation through the provision of still to be defined technical assistance activities.

8. Project Objectives: The objective of the project will be to provide the GOB and ODS consumers and users with financial and technical support for eligible investment subprojects and other activities which reduce or eliminate ODS consumption; and which will facilitate implementation of the Country Program.

9. Project Description and Cost: The principal component of the project will be a Grant Fund for financing of incremental costs of: i) investments which result in the reduction or substitution of ODS use by non-ODS's; ii) CFC substituting applied research or process/product development technology; iii) training, technology dissemination, and other activities of an educational nature necessary to a CFC phase out program; iv) technical assistance to the GTOES for Country Program and subproject preparation and v) other actions consistent with MP Interim Trust Fund eligibility criteria. The initial group of seven subprojects which have already been identified and are in various stages of preparation are presented in Annex 2, "Subprojects Identified and/or Undergoing GTO Review for Eligibility". Included are: i) installation of atmospheric ozone monitoring stations (perhaps more appropriate for UNEP financing); ii) CFC-12 collection, recycling and conservation program for household refrigerator maintenance and repair shops; iii) assembly line refitting for HFC-134a refrigerator compressor production; iv) assembly line refitting for HFC-134a refrigerator production; v) research and product development for compressors, rigid foams and refrigerators/freezers; vi) basic research for high efficiency compressors for use with HFC-134a; and vii)

retrofitting of central chilling systems for conversion to HCFC-123 and HFC-134a refrigerants.

10. It is estimated that the identified subproject pipeline at the time of presentation to the MP Exec. Comm. will total approximately US\$ 8 million. Approval will be sought for an initial commitment of Interim Trust Fund resources of this amount for the project. Requests for supplementary commitments would be contingent upon presentation to the Bank by the GTO of additional eligible subprojects.

11. Project Implementation: The Ozone Technical Group (GTO) would have overall responsibility for project implementation policy and for coordination of ministries, government institutions, and private sector interests involved in the project. The GTO will also carry out preliminary screening of requests for use of project resources, and determine their eligibility for MP Trust Fund Financing. BNDES and FINEP will be the financial intermediaries for the Project. Financing requests whose eligibility has been approved by the GTO will be forwarded to BNDES or FINEP (see Para 13), for detailed evaluation. Internal Brazilian procedures for screening and processing of subprojects have already been established. They are shown in Annex 3, Tramatacao de Projetos. Private sector industry groups and individual enterprises will play a key role in subproject identification and preparation. Annex 4, Edital de Convocacao, et al is a notice to potential beneficiaries which has already received wide industrial and published distribution. The Bank's Environment Dept. (ENV) is developing investment project selection and evaluation criteria, and an operational definition of eligible incremental costs. If approved, these guidelines will be applied for all Bank sponsored investment projects.

12. Project Management Unit: Under the general policy guidance of the GTO, the GTO Executive Secretariat will be responsible for day to day management and coordination of project implementation and supervision. It will coordinate the preparation of the Country Program, and will also provide counterpart coordination for complimentary MP Trust Fund activities executed by the UNDP and the UNEP. Technical assistance on an as required basis to support the GTOES will be funded through the Bank's Work Program budget for Brazil.

13. Financial Intermediaries (FI's): BNDES will be responsible for appraisal and implementation supervision for industrial conversion subprojects with a cost of US\$ 2 million or more. FINEP will have the same responsibilities for all subprojects involving technology development/research and industrial conversion subprojects of less than US\$ 2 million. After approval by the responsible FI, all subprojects will be forwarded to the Bank for review by the Bank's Ozone Operations Resource Group (OORG). The Bank may grant final approval for subprojects of less than US\$ 500,000. MP Exec. Comm. review will also be required for final approval of subprojects of more than US\$ 500,000. The participating FI will receive an administration fee (basis to be determined) in lieu of interest rate differential for appraisal and supervision services. BNDES and/or FINEP will also be entrusted with disbursing funds to their respective project beneficiaries, maintaining Project accounts, arranging project account audits, and providing similar support for costs incurred by the GTOES. Both designated FI's are currently managing other Bank funded operations.

14. Project Sustainability: MP Trust Fund proceeds are passed on to

Article 5 beneficiary nations on a grant basis. Brazil will fund final beneficiaries on either a grant or concessionary credit basis, as is its option. The financing of the operation is, therefore, inherently non-sustainable, and replenishment of the MPIMF will be required as it is disbursed.

15. Rationale for Montreal Protocol Financing: Through the availability of the Grant Fund, the proposed project will provide a financial incentive to beneficiaries to accelerate the transition from ODS to non-ODS technologies, particularly where market incentives may be weak or not present.

16. Issues and Actions: The major issues which must be resolved during preparation are (i) eliciting formal GCB support for the design and scope of the project; (ii) finalizing agreement on institutional arrangements for the GTO, GTOES, BNDES, and FINEP, and their relationships with relevant environmental policy making and enforcement institutions (IBAMA, SEMA, and State EPA's (SEPA's); (iii) financial plan for the GTOES and level of Trust Fund support; (iv) assuring that public and private sector entities involved will have technical and administrative capacity to handle their assigned functions; (v) better definition of support programs, and quantification of potential subproject pipeline; (vi) clarification of eligibility criteria for retroactive financing; (vii) agreement on basis for administrative fees, and terms and conditions for transfer of funds to enterprises; (viii) timetable for country program preparation (ix) procurement, disbursement and audit arrangements; and (x) coordination arrangements for execution of other elements of Country Program implementation.

17. Environmental Aspects: While ODS reduction measures may be environmentally sound, other components of financed subprojects may not be. The GTO, BNDES, and FINEP will ensure that financed subprojects will be in compliance with national and local environmental regulations before the requested grant is approved, and during supervision shall ensure that such compliance is maintained.

18. Project Benefits: The project's objective, ozone layer protection, is not quantifiable in the conventional economic sense. The project's primary impact will be to assist Brazil to accelerate phase out of controlled ODS's as soon as technically feasible. Relative cost effectiveness in terms of least cost per ton ODS eliminated will be among the criteria used to establish priorities among eligible activities. It is estimated that the first group of subprojects (Annex 2) will contribute to the reduction of CFC consumption in Brazil and elsewhere (HFC-134a compressor export) of an estimated 3,000 tons of ODS annually.

19. Project Risks: The project faces three major risks. The first is related to the newness of the operation - the MP Trust Fund, its operating procedures, and its institutional relationships must all be created from point zero, in an environment of uncertain non-Trust Fund revenue sources. The second concerns the ability of private sector users and suppliers, whose technical and organizational capabilities are the key to ODS phase out, and the public sector supervisory entities, to work together in a constructive fashion. The third concerns potentially eligible beneficiaries willingness to use the Trust Fund.

20. Risk Mitigation: The first risk will be mitigated through the use of two capable financial intermediaries already experienced at operating World Bank sector credit lines, and the use of administrative fees for services. The second risk will be mitigated by most of the contact with beneficiaries being through the intermediaries, who are accustomed to dealing with the private sector, and with private sector participation in the GTO. Mitigation of the third risk area is less straightforward. The rate of introduction of some areas of non-ODS substitute technology has been so dynamic, and its economics so favorable, that transition has been spontaneous (e.g. aerosols, solvents). Nevertheless, the existence of an already identified subproject pipeline (Annex 2); the export orientation and dynamism of major industrial CFC users in the air conditioning/refrigeration field, where incremental costs will be positive; and the cessation of CFC production by the end of 1995 in the headquarters' countries of Du Pont (USA) and Hoechst (Germany), should generate an active demand for available funds. By the time that the Credit Agreement is effective, and institutional apparatus to process subprojects is in place, it is also expected that commercial replacement technology will be better defined than at present. These conditions, however, will not all be present until the end of 1992, for a Fund which, for the present, is only available until the end of 1993. This latter has caused some hesitancy vis a vis Fund utilization among some potential beneficiaries who envision multi-year phase out programs.

21. Staff Review Arrangements: The following staff is responsible for the Project and for the review:

Task Manager:	Donald Rhatigan, LAIEI
Division Chief:	Stephen J. Ettinger, LAIEI
CD Director:	Armeane Choksi, LAIDR
RED Chief:	Dennis J. Mahar
Bank Technical Advisor:	Kenneth King
Outside Specialist:	None for IEPS presentation

5/14/92