UNITED NATIONS

EP

United Nations Environment Programme

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/58/8
9 June 2009

ORIGINAL: ENGLISH

EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Fifty-eighth Meeting
Montreal, 6-10 July 2009

FINAL REPORT ON THE EVALUATION OF TERMINAL PHASE-OUT MANAGEMENT PLANS

EXECUTIVE SUMMARY

1. This synthesis report summarizes the evaluation of the role and the effects of terminal phase-out management plans (TPMPs), which have been prepared in several low-volume-consuming (LVC) countries. Among the issues evaluated are the CFC phase-out and compliance achieved, the management established and legislation introduced and enforced, the adequacy of funding and support received, the reasons for implementation delays, if any, the difficulties encountered and overcome, the quality of monitoring and reporting, the prospects for sustainability of the phase-out, and the lessons learned for the final elimination of CFC consumption.

2. This synthesis report covers the findings of a sample of individual country case studies carried out in eight LVC countries by different consultants during the period from December 2008 to May 2009. The following countries have been included in the sample: Croatia, Ecuador, Mauritius, Namibia, Papua New Guinea, Paraguay, the Republic of Moldova and Trinidad and Tobago.

Lessons learned

3. Early CFC phase-out has generally been achieved through the strict implementation of a CFC quota system and the development of market conditions rather than through investment activities.

4. Sustainability of CFC phase-out is ensured basically by the efficient operation and enforcement of the CFC import licensing system, the increasing unavailability of CFCs and CFC-based technologies, and continued monitoring and public awareness campaigns.

5. An efficient and operational public-private partnership forum consisting of government departments, customs, importers of refrigerants and equipment and other major key players has in most cases been instrumental in achieving early CFC phase-out.

6. Experience with the phase-out of CFCs can and should be used for the development of a strategy of hydrochlorofluorocarbons (HCFCs) phase-out. This is already being done in some of the countries visited.

Conclusions

7. All countries covered by this sample are in compliance with the TPMP Agreement and the CFC phase out targets set by the Montreal Protocol, and three of them have exceeded those targets by far.

8. None of these countries have established Project Management Units (PMUs), the implementation of the TPMP is being carried out by the respective National Ozone Units (NOUs), assisted in a few cases by a consultant or project coordinator paid from TPMP funds.

9. ODS-related legislation including the licensing and the import quota system has been introduced and is operational in all of the countries visited, and will need only some adjustments to include HCFCs.

10. Some delay in project implementation has been reported in almost all countries concerned, mostly during the first tranche of funding, due generally to initial problems of project set-up, administrative arrangements, and discussions with public and private stakeholders.

11. Most countries benefited from the flexibility clause, which made it possible to shift resources saved in certain areas of activity to areas considered as being of more urgent needs or higher priority with regard to target achievement.

12. Most country case studies agree that monitoring needs some strengthening to provide regular and reliable data on recovery and recycling (R&R) operations and to establish a system of follow-up of project beneficiaries.

13. Continuity of organizational structures and the NOU staff plays an important role in successful project implementation. Efficiency in target achievement is seriously hampered by changing norms, structures and procedures, as well as lack of the essential flow of information among the organizational units involved, as observed in a few countries concerned.

I. Background

14. This synthesis report summarizes the evaluation reports on the role and the effects of TPMPs, which have been prepared in several LVC countries. The concept of TPMPs was introduced through decision 45/54 of the Executive Committee to enable the total phase-out of CFCs or other ozone-depleting substances (ODS) according to an agreed time schedule and a maximum funding level depending on the respective country's baseline for CFC consumption, and specified project modalities to be used for achieving the objectives committed to. TPMP project proposals should contain the commitment by the Government concerned to the phased reduction and complete phase-out of CFC consumption. For this purpose, the Government would have flexibility to utilize the funds available to address specific needs that might arise during project implementation. Annual reporting on the activities undertaken in the previous year as well as a comprehensive work plan for the implementation of next year's activities are mandatory. Up to 20 per cent of approved funds are to be used for ensuring comprehensive annual monitoring and reporting.

15. The TPMPs are essentially a continuation of the earlier refrigerant management plans (RMPs). Some include new activities such as retrofit to hydrocarbon blends, addition of reclamation facilities, incentive schemes for end-users, and management units. Among the issues to be evaluated, as identified by the desk study on TPMP evaluation (UNEP/OzL.Pro/ExCom/55/8), are the CFC phase-out and compliance achieved, the management established, legislation introduced and enforced, the adequacy of funding and support received, the reasons for implementation delays, if any, the difficulties encountered and overcome, the quality of monitoring and reporting, the prospects for sustainability of the phase-out, and the lessons learned for the final elimination of CFC consumption.

16. This synthesis report covers the findings of a sample of individual country case studies carried out in eight LVC countries by different consultants during the period from December 2008 to May 2009. The following countries have been included in the sample: Croatia, Ecuador, Mauritius, Namibia, Papua New Guinea, Paraguay, the Republic of Moldova and Trinidad and Tobago.

17. A general overview of the compliance status of the countries covered by the sample is set out in the following table:

Country	Ratification status	TPMP approved	CFC consumption in 2007 (ODP tonnes)	Compliance with TPMP Agreement and MP obligation	Total funds approved for TPMP including support costs (US $)
Croatia	All Amendments	39th Meeting	0,0	Yes	408,179
Ecuador	Pending Beijing	41st Meeting	28,3	Yes	1,815,934
Mauritius	All Amendments	41st Meeting	0,0	Yes	239,594
Namibia	All Amendments	41st Meeting	0,0	Yes	285,325
Papua New Guinea	Pending Beijing and Montreal	39th Meeting	0,0	Yes	787,000
Paraguay	All Amendments	51st Meeting	12,3	Yes	618,045
Republic of Moldova (the)	All Amendments	52nd Meeting	9,2	Yes	570,825
Trinidad and Tobago	All Amendments	40th Meeting	0,0	Yes	494,500

II. Overview of the TPMPs

18. Since the TPMPs are considered to be a continuation of the RMPs under specific conditions, their function is to update, upgrade, strengthen and reinforce the activities implemented under the RMPs in order to accelerate and complete the ODS phase-out process in accordance with the targets set by the Montreal Protocol. In recognition of the fact that in certain cases Article 5 countries needed flexibility in carrying out phase-out activities in the refrigeration sector, the Executive Committee has, in a series of decisions (41/100, 45/54, 49/6), defined a set of criteria for the approval of requests for funding of terminal CFC phase-out management plans, particularly to assist LVC countries for the post-2007 period and on a case-by-case basis.

19. In case of the countries covered by the sample, the main components of the TPMPs are identified as follows:

Country	Main components of the TPMP
Croatia	• Legislation update • Training of technical workforce • Preparation of a Code of Practice • Establishment of a recovery-recycling-reclamation scheme
Ecuador	• Investment for phase-out in foam and commercial refrigeration sector • Technicians' training and procurement of R&R equipment • Customs training • Establishment of a reclamation centre
Mauritius	• Update of policy/regulatory measures • Training of customs officers • Training of technicians, special training programme in hydrocarbons • Incentive scheme of end-users • Phase-out in solvent sector and of methyl bromide
Namibia	• Training of customs officers • Additional technical training including the MAC sector • Incentives for end-users • Procurement of R&R equipment for training and CFC re-use • Technical assistance for methyl bromide phase-out

Country	Main components of the TPMP
Papua New Guinea	• Preparation and enforcement of legislation including licensing system • Training of technicians including technical assistance • Training of customs officers • Retrofit of commercial refrigeration units • Implementation of an R&R programme • Technical assistance to owners of halon-based systems • Incentive programme for conversion of CFC-based refrigeration systems • Monitoring and awareness activities
Paraguay	• Procurement of equipment for training to promote R&R and use of ODS alternatives • Enforcement of the CFC import licensing system • TPMP implementation, monitoring and control
Republic of Moldova (the)	• Customs training • Training of technicians • Monitoring and evaluation • Technical assistance for an incentive scheme for end-users with equipment component
Trinidad and Tobago	• Supplementary recycling in MAC, commercial and domestic refrigeration • Conversion programme for commercial refrigeration • Retrofit demonstration programme for MAC and domestic refrigeration • Training for existing and new R&R programmes • Conversion/recycling of building chillers

III. Institutional framework

20. In most of the cases assessed, the responsibility for the coordination of all activities related to the TPMP project lies with the Ministry that is in charge of environmental affairs, while in Ecuador, Namibia and Papua New Guinea it is the Ministry of Industry (Ecuador), the Department of Environment and Conservation (Papua New Guinea), the Ministry of Trade and Industry (Namibia), where the respective ozone unit (NOU) is integrated. In some countries the Ministry responsible for the implementation of the Montreal Protocol signed special agreements with different public or private institutions involving them in the performance of specialized activities related to TPMP implementation. So, for instance, in Croatia the Technical University of Zagreb is actively involved in the production of educational materials, training programmes, and the establishment of a re-use scheme for refrigerants. In Trinidad and Tobago close cooperation has been established with the Environmental Management Agency (EMA), an autonomous government body, to perform administrative and operational tasks. In the Republic of Moldova a working agreement has been signed with the Technical University where a well equipped training centre for refrigeration technicians is installed.

21. In none of the countries covered by the sample has a special Project Management Unit (PMU) been established, the tasks relating to TPMP implementation are being carried out by the NOU. In some cases a consultant or project coordinator has been hired (e.g. Ecuador, Papua New Guinea, Paraguay) from TPMP funds to assist the National Ozone Unit (NOU). According to most of the responsible ministries, there is confidence of being able to undertake all activities under the existing structures. In Mauritius, the NOU is staffed by officers of the Ministry on a part-time basis constituting a sort of task force. In other cases (e.g. the Republic of Moldova) the NOU is a special unit within the Ministry, its staff members are professionals contracted for the tasks to be performed under the Montreal Protocol. Regarding the effects of the NOU's status within the government structure on the efficiency of job performance, no evidence of any significant difference was found.

22. More important, however, are the effects to be attributed to reorganization in the responsible ministries or frequent changes in the NOU's staff. In the case of Paraguay, for instance, a series of reorganizations and changes of ministers as well as corresponding changes in the NOU's structure and staff took place. According to the respective country report, this has significantly affected the flow of information among units, management activities in general, and more specifically the documentation and the quality of information received by any new staff. Similar problems related to the reorganization of the

respective Department have also been reported from Papua New Guinea. It seems that continuity of procedures and information flows and an increasing experience in issues relating to ODS phase-out are important factors for facilitating target attainment.

23. In all countries covered by the sample, good cooperation between the NOU and the relevant government departments has been reported. In most of these steering committees, ozone committees or advisory boards have been established comprising of the representatives of government institutions involved in the implementation of the Montreal Protocol. Generally, the Ministry of Finance, the Ministry of Trade and Industry, Customs Department, in some cases the Ministry of Education or departments responsible for vocational training are represented in such Committees, the work of which constitutes an important government support for the activities of the NOU.

24. The same importance can be attributed to the cooperation with private stakeholders. In most countries an association of refrigeration and air-conditioning is operating that covers up to approximately 80 per cent (e.g. Trinidad and Tobago) of the respective market. Some countries (e.g. Mauritius, Namibia) have established a system of public-private partnership involving importers and distributors of refrigerants, refrigeration equipment, major end-users and/or technical training centres. Although in Croatia no association of refrigeration exists, the NOU is keeping close contacts with the Association of Entrepreneurs that plays an important role in providing information to related workshops and also in announcing training courses for refrigeration technicians. All country case studies agree with the conclusion that cooperation with such associations and other private stakeholders proves to have a key importance in obtaining the access to and trust of the refrigeration servicing sector.

IV. Legislation

25. ODS-related legislation, including the licensing and the import quota system, has been introduced in all countries covered by the sample. A number of countries have amended existing legislation to include provisions relating to the ban of production of ODS and the import of CFC-based refrigeration and air-conditioning equipment, new or used, the mandatory labeling of ODS containers, and the introduction of sanctions for the infringement of regulations. In some countries no more permits were issued for the import of CFCs (e.g. in Mauritius since 2005, Papua New Guinea since 2008, the Republic of Moldova since 2008). Though Papua New Guinea has not yet ratified the Montreal and the Beijing Amendment to the Montreal Protocol, it has established a well functioning licensing system and in 2008 the country achieved complete CFC phase-out. In most cases further regulations prescribe that all servicing workshops and technicians performing maintenance and decommissioning of ODS-based equipment are required to be certified and to obtain permission to operate. In the special case of Croatia, which is a candidate for EU membership, this country is on the way to adopting the strict ODS-related legislation actually in force in the European Union.

26. Some countries have introduced fiscal incentives to encourage industrial and commercial end-users to convert CFC-based equipment to ODS substitutes. Mauritius, for instance, established already in 2000 a zero import duty on ODS-free refrigerants and non-ODS using equipment and 30 per cent import duties on all ODS including HCFC-22. In the case of the Republic of Moldova some amendments to the Law from 2002 were approved under the TPMP, and following the new regulations substitutes to ODS are exempt from ecological taxes. According to information from the countries concerned, fiscal incentives and disincentives together with the development of market prices of CFCs and alternatives have proved to exert significant effects on accelerating the ODS phase-out process.

27. In some cases the respective country case studies suggest that certain elements of the legislative framework would still require improvements. In Paraguay, for instance, the customs import records should be required for crosschecking purposes every three months in order to enable the NOU to react in time to any transgression of the import quota. In some other countries, the customs import records

generally list the authorised importers as the selection criterion, and this process in fact eliminates the possibility of finding any non-authorized importer. In a few case studies it has been pointed out that regularity and reliability of import data from customs and records from servicing workshops and companies would have to be improved in order to develop an intelligence system depending on a continuous monitoring of the market.

28. With regard to the development of a strategy for HCFC phase-out, most countries covered by the sample still have not included that substance in the legislative framework. Exceptions are Mauritius and Croatia. In Mauritius, HCFC-22 and all other non-CFC refrigerants and chemicals are now under the "controlled" category, meaning that there are no limits on imports and exports but respective permits are required. Croatia is developing a strategy to phase out HCFCs by 2015, having already introduced in 1999 a licensing and quota system for the import and export of this substance. In Trinidad and Tobago the NOU is working towards a scheme for including HCFCs in the import and export licensing system.

V. Training

29. Training of refrigeration technicians already started under the RMP and has been continuing under the TPMP. Due to the differing structure and content of the individual country case studies, data regarding the number of trainers and technicians trained respectively under the RMP and the TPMP are partly incomplete and in some cases fragmentary as shown by the following table:

Country	Trainers trained	Technicians trained	Code of practice	Remarks
Croatia	28	2250	Developed and distributed	Continuing training programmes partly modified to meet current standards and trends in industry.
Ecuador	n.a.	1010	Still no Code prepared	ODS-related training module included in regular training programme and main training institution is prepared for further training.
Mauritius	n.a.	n.a.	n.a.	TPMP envisaged two programmes for technicians' training but no course was conducted in the 1st and 2nd year. However, a hydrocarbon training course for trainers was organized that, in a second course, had trained 38 technicians.
Namibia	3	30	n.a.	NOU considering implementing training courses through private sector to overcome distrust of informal sector against government initiatives.
Papua New Guinea	89	Technicians: 154 MAC: 50 Awareness training: 76	n.a.	Training in best practices introduced into the curriculum of technical and vocational schools driven mainly by trainers in the TPMP programme. Three training centres have been set up with equipment and material support from TPMP. NOU also organizes training for specific industries or companies.

Country	Trainers trained	Technicians trained	Code of practice	Remarks
Paraguay	n.a.	n.a.	Draft prepared under final approval	Agreement to organize training and certification of 400 refrigeration technicians is drafted expecting formal approval.
Republic of Moldova (the)	27	301	Under preparation	Planned to organize additional training courses for 200 technicians and 50 students of the Technical University.
Trinidad and Tobago	7 courses carried out	553	n.a.	Training programme to continue in order to include more participants from the informal workshops.

30. Training is considered as being of key importance for the ODS phase-out process in view of frequent job changes of technicians trained and changes in standards of industrial technologies. In some cases special attention is paid to ODS alternatives, as for instance in Mauritius where courses in hydrocarbons were organized. Accordingly in most countries visited, refrigeration training modules have been incorporated into the curriculum of technical schools and vocational training courses. Respective agreements with universities and other technical training centres have been established among others in Croatia, Ecuador, Paraguay and the Republic of Moldova to prepare training material and to organize courses for refrigeration technicians. In all these cases the sustainability of current training activities seems to be ensured.

31. Training courses for customs officers have taken place in each of the countries visited. In Namibia, 12 training workshops were conducted at various border control points and 177 customs officers were trained. In Croatia such workshops were carried out under the RMP and 34 participants attended. In Papua New Guinea a five-day train the trainer workshop was conducted by an international expert for 19 customs trainers and enforcement officers and a total of 137 customs officers have taken part in 8 training workshops. In Ecuador the customs training component is implemented through a three-year agreement signed with the Customs Department, and so far 15 inspectors have been trained as trainers by an international expert and 50 officers participated in two training workshops. In Mauritius, due to the presence of a free port, training and equipping of customs officers was seen to be an extremely important activity to ensure that customs officers were enabled to control any illegal import arriving through the free port. Two training courses were held in 2004 for 50 participants and six portable identifiers were procured for use at the main border points of the country.

32. Generally, no reliable information is available on the extent to which customs officers trained are still located at their original control point. In addition, some of the country case studies mention that, despite training, customs officers are not always fully competent when handling with detection equipment. In view of a frequent turnover in customs personnel, training represents a continuous task to be institutionalized. Accordingly, in many cases (e.g. Croatia, Namibia, the Republic of Moldova) issues relating to the Montreal Protocol and, in particular, the phase-out of ODS have become part of the regular customs training curriculum.

VI. Implementation issues

33. Some delay in project implementation has been reported in all of the countries visited, mostly during the first tranche of funding, due generally to the high workload related to initial project set-up, administrative arrangements, discussions with stakeholders, etc. In Ecuador, for instance, an integrated system for the management of official funds was introduced that provoked also some delay. Due to delay in disbursement of funds for the first tranche in Namibia, a request for the second and final tranche was submitted with a corresponding delay while at the time of the submission of the progress report only

limited funds from the first tranche had been spent. In Papua New Guinea the first phase of the TPMP was completed on schedule except the establishment of a code of practice and the formation of an association of refrigeration technicians; the implementation of the second phase is not yet completed. In Mauritius, the second tranche of funds was requested with a delay of three months due to delays in disbursing funds from the first tranche. For the 12 months delay in requesting the third tranche no reason was given. Some delay was caused by the import of hydrocarbon refrigerants and equipment into Mauritius and the slow progress in implementing the incentive scheme for conversion in government buildings. Due to an initial delay in signing the respective document by the Government of Paraguay, the country did not present the First Annual Implementation Report and the Second Annual Implementation Programme on time, the TPMP is running a little more than a year late.

34. Most of the countries visited clearly benefited from the flexibility clause. Ecuador used it for re-designing the R&R system by eliminating the concept of a centralized recycling facility for refrigerants. In Namibia the flexibility clause made it possible to use the funds approved for the MAC and the methyl bromide sectors for the incentive scheme, thus accelerating the CFC phase-out process. The same case was reported from Mauritius where parts of the funds approved for methyl bromide phase-out were allocated for the incentive project. Due to the late start of the TPMP in Paraguay as indicated in paragraph 36 above, it seems to be too early to assess the use of the flexibility clause. Trinidad and Tobago did not have to use this clause albeit there was a need for certain adjustments regarding the amount of incentives for conversion due to the responses of the beneficiaries.

VII. Recovery, recycling, reclamation

35. In some of the countries visited (e.g. Mauritius, Namibia) no R&R equipment was procured under the TPMP. In other countries the R&R system showed widely diverging results. In Ecuador the original intent was to create a system composed of 130 servicing workshops equipped and trained on R&R machines to include recovery equipment only with a separate recycling centre. This idea was abandoned, however, in view of negative experiences with similar structures in other countries of the region. In the case of Trinidad and Tobago, R&R equipment was purchased and distributed to 77 refrigeration servicing workshops and 3 recycling centres, but according to the report of the country case study, the majority of this equipment is no longer being used to a significant extent because of the decreasing number of CFC-based equipment. In Paraguay, about 400 set of tools and spare parts should have been distributed among servicing workshops but the first bidding procedure failed because only one offer was received. A second bidding procedure is now underway. In Mauritius, equipment provided under the RMP was distributed to the service workshops and training institutions but a recycling and reclamation system has never been used. In Papua New Guinea it was decided to establish a recovery and recycling network consisting of 3 recycling machines and 15 recovery units. Five recovery machines were provided to a refrigeration school while a recycling machine and some recovery units were provided to the Marine Academy for training. It was indicated that only two of the five machines were currently functioning. Croatia planned to establish a functional reclamation system under the TPMP and the respective equipment (gas chromatograph, reclaim and moisture content measurement units) was delivered in November 2004. Three centres have been identified to be equipped with the recovery, recycling and reclamation units but a new regulation of the Government established that a company interested in installing a reclamation centre must have a license for the treatment of dangerous waste. Equipment is to be delivered only to companies in possession of such a license. These and some other restrictive regulations for issuing the license required have caused technical problems for the companies envisaged as licensed reclamation centres.

36. In the special case of Croatia two major problems regarding the reclamation system were reported. Firstly, the issue of technical feasibility arises from the regulation that reclaimed ODS can be put on the domestic market only if it is certified that its physical and chemical properties are identical to that of a new substance. In the country, however, no appropriate laboratory exists to fulfill this

requirement. Secondly, companies running recycling and reclamation centres are obliged to perform refrigerant re-use activities without charge and so the economic viability of such activities is not ensured. Taking account of the decreasing demand for CFCs on the market, it seems doubtful whether such centres will be able to serve as an efficient and cost effective system. In any case, the centres may be relevant under the aspect of technical training, demonstration, awareness promotion and, possibly, the use of equipment for the phase-out of HCFCs.

37. In case of a number of countries it was reported that despite contractual commitment of the beneficiaries of R&R equipment no, or at least no regular and reliable, data on quantities recovered and/or recycled has been provided to the NOU.

VIII. Incentive schemes

38. Incentive schemes for converting CFC-based refrigeration equipment to alternative substances have produced differing results in the countries visited. Success of such programmes generally depends on the response of potential beneficiaries of incentive payments, and this response is to a significant extent determined by the development of prices for CFC and its alternatives. In countries where CFC-12 is practically not anymore on the market, and where new equipment with alternative refrigerants is increasingly being imported (e.g. Croatia), no specific incentives are needed to convert old equipment. In countries where prices of CFC-12 are rapidly increasing while prices of easily available alternatives remain stable (e.g. the Republic of Moldova), end-users incentive payment programmes may produce good and sustainable results.

39. In Namibia where the response of industry to a proposed incentive scheme was far below expectations, it was decided to establish a pilot scheme where 95 per cent of incentive funding was used for equipment in government owned schools and hospitals. In Mauritius where three government buildings are the main remaining users of CFCs in chillers, two of these chillers proved to be too old for a retrofit procedure. For the third installation, the Government decided to provide a subsidy of US $100,000 from TPMP funds, though no retrofit activities have taken place so far. Now, the German Government has given a grant of 1.1 million euros to replace the equipment provided the new equipment is ammonia based. In the case of Trinidad and Tobago a total of 16 supermarkets had retrofitted or replaced their refrigeration equipment under the incentive payment programme. During the first phase of the programme it became clear that equipment owners need a strong incentive in order to convert their equipment to alternative refrigerants, therefore the incentive had to be significantly increased during the second phase. In the Republic of Moldova, 18 enterprises participated in the incentive programme under the RMP, under the TPMP 10 more enterprises have received incentive payments and 15 further companies have applied for eligibility in that programme, these applications being now under review and examination. The country case study on Ecuador mentions that the most difficult challenge faced by the NOU was to convince the private sector of the benefits of technology conversion to non-CFC alternatives.

40. In the case of Papua New Guinea a workshop was held in 2004 for potential beneficiaries of an incentive programme, at which it was agreed to provide 60 per cent of the material and gas costs as incentive for conversion to HCFC or HFC alternatives and 100 per cent of the costs as incentive for conversion to hydrocarbon. In spite of wide publicity and interaction with the industry, the response from potential beneficiaries was muted. According to the country case study, the relatively low response rate may be attributed to the commercial availability of drop-in or near drop-in refrigerants. The impact of the programme could not be readily discerned from the available records as these did not provide the essential information such as the type, quantities of prices of CFC-based gases replaced or those of the replacement refrigerants.

41. Since the individual country case studies do not provide comparable data on prices and price developments over time of CFCs and alternative refrigerants, it is not possible to formulate more exact

conclusions about the role of price differences and the role of the level of incentive payments in influencing decisions of enterprises with regard to the conversion (retrofit or replacement) of refrigeration equipment. In any case, visits to enterprises in the countries concerned have confirmed that the factors mentioned, together with the related activities of the NOU and the respective professional organizations, actually do play a very significant role in the decision of opting for technology conversion.

IX. Monitoring, reporting, auditing

42. In all countries covered by the sample, the responsibility for monitoring lies basically with the NOU. In the case of Trinidad and Tobago, under the TPMP, a consultant was hired for monitoring but once the project funds were exhausted, the monitoring function had to be stopped. Though in most of these countries the NOU undertakes periodic inspections to refrigerant importers and distributors, according to most country case studies, regularity and reliability of data from end-users, R&R centres or workshops on the volume of CFC used, recovered or recycled needs to be improved and the follow up of project beneficiaries and participants of the training courses also requires some strengthening.

43. Some of the country case studies mention that in order to obtain more regular and reliable data on ODS consumption, communication between customs and the NOU needs to be significantly improved. So, for instance, in the case of Papua New Guinea, the verification report raises a concern about the fact that apparently no discernible cooperation between the NOU and the customs authority both in terms of monitoring or sharing of information on import of ODS into the country is taking place. Even at the implementation level, monitoring appears to be weak or unstructured. Weakness in record keeping can be attributed to several circumstances such as to changes in NOU staff, incomplete records of part-time consultants, etc. In the special case of Papua New Guinea it is also mentioned that the bilateral agency (GTZ) did not provide the NOU with all the financial information on the programme such as provision of R&R equipment, identifiers and some other capital expenditures.

44. Generally, reports were prepared and submitted in a timely and satisfactory way. In the case of Paraguay, as already explained above, annual implementation reports, action plans, and corresponding fund disbursement requests are running a year late. The case study on Mauritius mentions that details of the use of the flexibility clause are not very clear, it would also be useful to know which activities had savings that were used for the methyl bromide elimination project and why the solvent project component was dropped. In the case of Namibia, the first tranche progress report and second tranche action plan does not mention any activity undertaken or planned for methyl bromide and the second tranche action plan mentions activities for the R&R sector but during discussions it was understood that no activity was undertaken or planned.

45. The NOU's accounts are, in the countries concerned, audited annually through the Government's procedures in accordance with the respective national legislation. Independent verification reports according to a randomly selected sample of approved TPMPs established by decision 45/54 of the 45th Meeting of the Executive Committee have been carried out only in three of the countries visited: in Papua New Guinea (2006), Croatia (2007) and Trinidad and Tobago (2008). In all of these cases the verification reports confirmed the achievement of the targets set by the Montreal Protocol and assessed the results of the TPMP as being very satisfactory though in the case of Papua New Guinea recommendations for improving both the cooperation between Customs and NOU and the efficiency of data collection were made.

X. Lessons learned

46. It seems that one of the most important factors facilitating compliance with the ODS phase-out targets is economic development that enables and motivates industrial, commercial and servicing

enterprises to replace old equipment through new appliances imported from countries that have already completed the process of ODS phase-out.

47. Early ODS phase-out has generally been achieved through the strict implementation of the quota system under the environmental legislation and the development of market conditions rather than through investment activities.

48. Sustainability of the progress achieved in completing the CFC phase-out is ensured basically by the efficient operation of the import licensing system properly enforced, the increasing unavailability of CFCs and CFC-based technologies, and the continued monitoring and public awareness campaign as long as ODS consumption is recorded.

49. An important incentive to convert technologies to ODS-free refrigerant is the development of the price difference between CFCs and alternative substances. Increasing prices of CFCs while prices of alternatives remain relatively stable, together with the easy availability of substitutes, proves to be a powerful incentive for retrofit or replacement of refrigeration equipment.

50. An efficient and operational public-private partnership forum consisting of government departments, customs, importers of refrigerants and equipment and other major end-users has in most cases been instrumental in achieving early CFC phase-out.

51. Experience with implementation of TPMPs as a modality to phase out CFCs can and should be used for the development of a strategy for HCFC elimination, particularly in countries with ODS use predominantly in refrigeration servicing. This is already being done in some of the countries visited.

XI. Conclusions

52. All countries covered by this sample are in compliance with the TPMP Agreement and the CFC phase-out targets set by the Montreal Protocol. Three of them have already banned CFC imports and reported zero consumption for 2007 and/or 2008.

53. In none of these countries has a PMU been established, the implementation of the TPMP is being carried out by the respective NOUs, assisted in a few cases by a consultant or project coordinator paid from TPMP funds.

54. ODS-related legislation including the licensing and import quota system has been introduced and is operational in all of the countries visited. A number of countries have amended existing legislation to include provisions relating to the ban on import of CFC-based equipment, sanctions for the infringement of regulations, mandatory certification of refrigeration technicians, and fiscal incentives to encourage end-users to convert CFC-based equipment to ODS-free technologies. All of these measures would be equally important in also addressing HCFC phase-out.

55. According to some of the country case studies, enforcement of the legal framework would need certain improvements: namely, a mechanism for regularly accessing customs import data by the NOU, the use of identifiers at entry ports and an intelligence system depending on the continuous monitoring of the market.

56. Some delay in project implementation has been reported in almost all countries concerned, mostly during the first tranche of funding, due generally to initial problems of project set-up, administrative arrangements, and discussions with public and private stakeholders.

57. Most countries benefited from the flexibility clause, which made it possible to shift resources saved in certain areas of activity to areas considered as being of more urgent needs or higher priority with regard to target achievement.

58. In many cases no exact information regarding the use of equipment procured and the amount of refrigerant recovered and recycled exists. Most country case studies agree therefore that monitoring needs some strengthening to provide regular and reliable data on R&R operations and to establish a system of follow-up of project beneficiaries.

59. Continuity of organizational structures and the NOU staff plays an important role in successful project implementation. Efficiency in target achievement is seriously hampered by changing norms, structures and procedures. Lack of the essential flow of information among organizational units involved may cause important delays in project implementation as observed in a few countries concerned.

60. Incentive payment schemes for end-users have produced differing results in the countries visited depending mainly on the response of the potential beneficiaries. In some cases not too much interest was reported, in others the response of enterprises was clearly positive. It seems that the response is to a significant extent determined by the development of price differences between CFCs and the alternatives and the easy availability of ODS-free substances on the market.

61. Except in a few countries, a strategy for HCFC phase-out has not been developed so far. Mauritius has included HCFCs in the category of “controlled” substances, and Croatia plans to phase-out HCFC by 2015. In Trinidad and Tobago the NOU is working towards a scheme for including HCFCs in the import and export licensing system.

XII. **Recommendations**

62. The Executive Committee may wish to:

(a) Take note of the final report on the evaluation of terminal phase-out management plans as presented in document UNEP/OzL.Pro/ExCom/58/8;

(b) Request the bilateral and implementing agencies assisting Article 5 countries in implementing terminal phase-out management plans to regularly provide the National Ozone Units with updated financial reports on fund disbursements and commitments associated with the activities in the projects, so that they will be in a position to account to their respective Governments;

(c) Request Article 5 countries to give due consideration to the review and to enhance their data collection and monitoring systems for control of ODS trade, in order to improve the quality and reliability of the import/export data from customs authorities, companies and servicing workshops, where applicable;

(d) Request bilateral and implementing agencies, that in implementing the last tranche(s) of the terminal phase-out management plans to advise and assist Article 5 countries in reviewing current ODS regulations, including licensing systems, to incorporate import/export regulations on HCFCs;

(e) Request Article 5 countries to consider in future national phase-out plans, similar to the terminal phase-out management plans, the establishment of programme management units within the funding available, to complement the resources of the National Ozone

Units in order to improve their effectiveness in carrying out the implementation, monitoring and evaluation required under such programmes;

(f) Request the bilateral and implementing agencies assisting Article 5 countries to demonstrate the technical feasibility and economic viability of the ODS reclamation centres, before they are established;

(g) Request Article 5 countries, when developing and/or designing training programmes for technicians, to include specific modalities for assisting the informal sector in a cost-effective and sustainable manner.

- - - -