National Compliance Action Strategy

to implement the

Montreal Protocol on Substances that Deplete the Ozone Layer

in

Tuvalu

Prepared by the Ministry of Natural Resources, Energy & Environment
with assistance from the South Pacific Regional Environment Programme (SPREP)

1.0 Introduction

Tuvalu is comprised of nine small islands, six of them being atoll islands (with lagoons) namely Nanumea, Nui, Vaitupu, Nukufetau, Funafuti, and Nukulaelae. The remaining three, Nanumanga, Niutao and Niulakita are raised limestone reef islands. None of the islands are more than three metres above sea level, with the biggest island, Vaitupu, having a land area of just over 1000 acres. The total land area is approximately twenty-six square kilometres with a sea area of 900,000 square kilometres. During the pre-independence period, 1938 – 1978, Tuvalu was a British Colony called the "Gilbert and Ellice Islands Colony (GEIC). The islands are located between latitudes 5 degrees and 11 degrees south of the equator and between longitudes 176 degrees and 179 degrees east of Greenwich. To the north, about 1400 km is the Republic of Kiribati and to the south, 1100 km is the Republic of Fiji.

The dispersed nature of the islands, its isolation from markets, its tiny landmass, a small population and a narrow resource base are the major constraints that have restricted Tuvalu's economy. Despite all these economic disadvantages, government is funded through aid money, revenue collected from direct taxes, custom duties, philatelic sales, licensing fees for foreign fishing vessels plus revenue generated from the Tuvalu Provident Fund (TPF). During 1994, the Gross Domestic Product (GDP) stood at AUD $15.6 million and is slowly increasing at 1.3% per annum.

About 80 % of the total population aged 15 years and over are involved in subsistence agriculture, fishing and other home activities. The remaining 20% of the population are government and private business employees.

Most inhabitants of Funafuti, which is the location of the capital and the most developed of the islands, have electricity in their houses. Domestic refrigerators are reasonably common, but chest freezers are preferred and are more common. Air-conditioners of any kind are rare outside of the only hotel and government office buildings. Because of the small size of the islands that make up Tuvalu the vehicle fleet is very small for the size of the population. As with many other countries in the region, most of the vehicle fleet are second-hand Japanese vehicles. Most vehicles have air-conditioning in them when they arrive.

Because Tuvalu is a small group of islands, with fairly constant trade winds, corrosion from salt air is a severe problem. Accordingly steel products, such as cars, but also refrigerators and air-conditioners, suffer from corrosion problems. The average life of a car in Tuvalu is in the order of three to five years after arrival in the country because of the corrosion.

1.1 Purpose

As part of the process of meeting its obligations under the Protocol, the government of Tuvalu, in close collaboration with The SPREP International Consultant, has developed this National Compliance Action Plan (NCAP). The NCAP was prepared to reflect the commitment of the Government of Tuvalu to comply with its obligations under the Montreal Protocol.

For that purpose, data on consumption of ODS is presented and analysed, as well as a strategy containing concrete actions to possible timely phasing out. A detailed Action Plan for phasing out ODS has been elaborated and the specific projects to achieve it identified. This document provides the basis for monitoring progress of implementation of the Montreal Protocol in Tuvalu.

Tuvalu intends to be actively involved in the regional strategy to implement the Montreal Protocol in the Pacific region. Most of the activities outlined in this strategy will be funded through the Regional Strategy even though they are included in the NCAP. The budget is therefore presented as part of the Regional Strategy and not this NCAP.

The development of the NCAP is important in determining the level of ODS consumption in the country. More specifically the NCAP:

- is a reflection of the commitment of the government of Tuvalu to achieve compliance with its obligations under the Montreal protocol
- provides an assessment of the consumption of ODS in Tuvalu from 1995 to 2010
- identifies the actions that the government intends to take in order to fulfil its obligations under the Protocol, and
- identifies the nature and extent of the assistance sought by the government of Tuvalu from the Multilateral Fund to support its efforts to protect the ozone layer and meet the Protocol's objectives

1.2 Status

Tuvalu ratified the 1985 Vienna Convention and the 1987 Montreal Protocol on 15 July 1993. It ratified the 1990 London Amendment and the 1992 Copenhagen Amendment on 31 August 2000.

The Government is currently considering ratification of the 1997 Montreal Amendment and the 1999 Beijing Amendment. Advice has been provided by UNEP to the Government on the implications of ratifying these amendments and the ratification is expected shortly.

Tuvalu is classified as operating under Article 5 of the Montreal Protocol and as such is entitled to assistance from the Multilateral Fund to comply with its obligations.

According to data submitted to the Ozone Secretariat Tuvalu is required to freeze its consumption (i.e. import of bulk substances) at a maximum level of 0.328 ODP tonnes from 1 July 1999. The average consumption of CFCs for 1995-97 was equivalent to 0.0289 kg per capita (assuming a population of 11,350). In 2000 imports of CFCs had already fallen to zero. Tuvalu has met its obligation to freeze its consumption in July 1999 at its base level.

Tuvalu is in full compliance with all of its obligations under the Montreal Protocol.

Because it is a party to the 1992 Copenhagen Amendment Tuvalu is required to control the consumption of CFCs, halons, methyl chloroform (1,1,1-trichloroethane), carbon tetrachloride, HCFCs, HBFCs, "other halogenated CFCs" and methyl bromide at this time.

Table 1.1 Maximum allowable consumption under Montreal Protocol

Year	Montreal Protocol percentage reduction	Maximum consumption (ODP tonnes)
Base Year	0%	0.328
2000	0%	0.328
2001	0%	0.328
2002	0%	0.328
2003	0%	0.328
2004	0%	0.328
2005	50%	0.164
2006	50%	0.164
2007	85%	0.049
2008	85%	0.049
2009	85%	0.049
2010	100%	0

Tuvalu does not produce ODS. All ODS are imported.

1.3 Assistance Received

Tuvalu has not received any assistance from the Multilateral Fund for phase-out activities.

The South Pacific Environment Programme (SPREP) through its regional programme for the implementation of the Montreal Protocol in the Pacific region employed a regional consultant to assist with the development of the NCAP in Tuvalu. Specifically, the regional programme promotes the phase out of ODS in Pacific Island Countries through public education and environmental awareness and designing policy instruments to control ODS supply and usage.

The Memorandum of Understanding (MOU), established between SPREP and UNEP, enabled the provision of technical assistance by SPREP for the development of Tuvalu's NCAP. Additional assistance included:

- A one-day workshop for government departments and small industrial enterprises conducted by the SPREP Regional Consultant, Mr. Iain McGlinchy . Findings and data from the report on the consultant's visit were used to develop the NCAP.
- Participation by a representative at a three day workshop in Apia, Samoa in April 2001 on implementation of the Montreal Protocol in the Pacific.
- Training for two refrigeration technicians in Auckland, New Zealand at the beginning of 2000 funded by NZ ODA.

2.0 CURRENT SITUATION

2.1 Current and forecast Consumption

2.1.1 Current Consumption

Only two types of ozone depleting substances are known to have been imported into Tuvalu. These are: chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs). All

consumption of these ozone depleting substances (ODS) is in the refrigeration and air conditioning service sector.

Chlorofluorocarbons (CFCs)
There is no known data of import and consumption of ozone depleting substances (ODS) for years before 1995. Until 1999 the most common ODS used in Tuvalu was CFC-12 with lesser amounts of CFC-502 also being used. Because most ODS refrigerants were imported through Fiji, the decision by that country to cease imports of CFCs on 1 January 2000 has meant that CFC imports into Tuvalu effectively ceased at the same time.

The following are the best estimates of Tuvalu's CFC consumption, based on the survey carried out by the international consultant in 1999 and as reported to the Ozone Secretariat.

Table 2.1 Consumption of CFCs in Tuvalu (tonnes)

Substance	ODP	1993	1994	1995	1996	1997	1998	1999	2000
CFC-12	1	0.25	0.25	0.3	0.4	0.25	0.25	0.2	0
CFC-115	0.6	0	0	0.007	0.025	0.025	0.025	0	0
ODP tonnes		**0.25**	**0.25**	**0.304**	**0.415**	**0.265**	**0.265**	**0.2**	**0**

NB. CFC-502 is a mixture of 51.2% CFC-115 and 48.8% HCFC-22. It is reported here as its components.

Hydrochlorofluorocarbons (HCFCs)
Tuvalu, is not required to begin to control the level of imports of HCFCs until 2015 and does not have to finally phase them out until 2040. Tuvalu is only obliged to report the total quantity of HCFCs imported into Tuvalu each year from 2000, the year it ratified the 1992 Copenhagen Amendment. It is not required to reduce its consumption of these substances at this time. Data for earlier years is presented for information.

The use of HCFCs is generally increasing in Tuvalu, corresponding to the rise in use of the HCFC-22 in air conditioning and refrigeration equipment.

In addition to the import of HCFC-22 there may be a small amount of HCFC being imported as components of mixtures used to service equipment that once used CFCs, but so far this is negligible and no HCFC-containing mixtures were identified in this survey.

Table 2.2 Consumption of HCFCs in Tuvalu (tonnes)

Substance	1997	1998	1999	2000
HCFC-22	0.225	0.225	0.200	0.280

Other ODS Consumption
There is no known consumption of halons in bulk form in Tuvalu as there are no facilities to handle these. Halon fire extinguishers are rare and none are serviced in Tuvalu.

There is no reported use or consumption of any other ODS, i.e. methyl chloroform, carbon tetrachloride, "other CFCs" and HBFCs. It is extremely unlikely that anyone would wish to export any of these substances to Tuvalu, as there are no facilities likely to use them.

2.1.2 Forecast CFC Consumption

There is no obvious source of CFC supply in the immediate region and CFC consumption is already at zero. Therefore forecasting future demand in the absence of government regulations is difficult.

It might be possible to predict CFC demand based on installed capacity of CFC equipment, but there is only limited data on the number of pieces of refrigeration and air-conditioning equipment in Tuvalu that still uses CFCs and would require this for servicing.

If the supply of CFC had not stopped in 2000 it is reasonable to assume that the demand for CFCs would have dropped from its level in 1999 to zero over a period of less than 10 years as existing equipment was replaced. Under this scenario it is likely that Tuvalu would have remained in full compliance up until 2010.

The main area of uncertainty in predicting demand is the on going importation of second hand equipment, particularly second hand vehicles, that contain CFCs in them. If an alternative supply of CFCs were established, then the demand for servicing mobile air-conditioners in cars could be relatively high.

Table 2.3 Forecast ODS consumption in ODP tonnes

Year	Montreal Protocol Maximum consumption	Forecast consumption if no other intervention
2000	0.328	0.2
2001	0.328	0.18
2002	0.328	0.16
2003	0.328	0.14
2004	0.328	0.12
2005	0.164	0.1
2006	0.164	0.08
2007	0.049	0.06
2008	0.049	0.04
2009	0.049	0.02
2010	0	0

It is clear from table 2.3 that if regulations are not put in place, to restrict imports of CFCs then even one small shipment of CFCs to meet the demand to service imported second-hand Japanese cars could potentially put Tuvalu into a situation of non-compliance.

2.2 Industry Structure

There are no manufacturing facilities using any ozone-depleting substances in Tuvalu. All ODS consumed in Tuvalu are used in the refrigeration and air-conditioning service sector.

2.2.1 Importers of ODS in Tuvalu

There are no major importing companies in Tuvalu. The private companies and government departments involved in servicing refrigeration equipment order their own refrigerants and usage varies from year to year.

The individual end users imported their own refrigerants on an “as-needed” basis. All CFCs were imported from Fiji. Other refrigerants, especially the new non-ozone depleting refrigerants, were sometimes imported from Australia or New Zealand. However, Fiji is usually the transit port and the actual origin of the CFCs is unknown.

2.2.2 Users of refrigeration and air-conditioning equipment

There are three larger refrigeration and air-conditioning workshops attached to the Public Works Department, the Ministry of Fisheries and the National Fishing Company of Tuvalu (NaFICOT). There are also three smaller one-person operations that mainly deal with domestic refrigerators, but also sometimes work on the commercial refrigeration equipment. There are no car dealers or organisations that services mobile air-conditioners in cars.

There are less than 10 technicians in the country with the skills to undertake the repair and maintenance of refrigeration equipment.

Mobile air-conditioning units (MACs)

There is a small vehicle fleet in Funafuti for the size of the population (in 1999 there were only 335 vehicles for 11,350 people). Most people use small motor bikes and scooters for transport. Second-hand vehicles imported from Japan dominate the car fleet. Working mobile air-conditioning units are not common. The very poor state of the roads and the high corrosion means that failure rate of MACs is fairly high. Although some MACs are serviced, most are not. Estimates from the April 2000 workshop are that only 10 –20 vehicles per year carry out work on their air-conditioning equipment. Accordingly, and unlike most other countries, little CFC is used for ongoing servicing of MACs. There is still some servicing carried out with CFC-12, but this is now in short supply. The non-ozone-depleting refrigerant HFC-134a is now commonly used in the newer units.

Commercial refrigeration

There are no large supermarkets in Tuvalu. Stores use mainly chest freezers to store goods. There are a small number of upright display cabinets for drinks and fresh fruit storage. The Tuvalu Co-operative Society (TCS), which operates the majority of the country's stores, has a policy of replacing their in-store refrigeration equipment every year, so all is CFC-free. The TCS uses up to five reefer containers (refrigerated shipping containers) at any time to store produce. The Co-operative does not own these but they are rotated on and off the container ships. Some CFC-12 and CFC-502 has been used to service these in the past. New reefer units mainly use HFC-134a. These reefer containers are the only equipment in Tuvalu larger than domestic refrigerators and chest freezers to use CFCs.

Newly installed units in the supermarkets are using HFC-134a. Servicing of older equipment is still usually done with CFCs, but increasingly HFC-134a and the other refrigerants are being used because CFC-12 is in short supply.

The fishing industry

The fishing industry is the largest user of refrigeration equipment in Tuvalu. The Fisheries Department operates one vessel and some small shore-based equipment on Funafuti. These are mostly domestic chest freezers. It is also responsible for maintenance for newly installed HCFC-22 freezers on the outer islands.

A separate Government-owned company operates a commercial fishing operation and maintains its own shore based refrigeration equipment. Apart from large domestic chest freezers, there are no CFCs used by the fishing company. The boats use ice to cool the catches and this ice is made using HCFC-22 and R507 refrigeration equipment. R502 has been used in the past but this has all been replaced with new equipment using other refrigerants.

Domestic refrigerators

Domestic refrigerators and chest freezers are relatively common in Funafuti with the 2000 Census reporting that 20% of households had a refrigerator or freezer. Most are imported from Australia and have therefore been CFC-free since 1995. Most inhabitants of Funafuti, have electricity in their houses. Domestic refrigerators are reasonably common, but chest freezers are preferred and are more common. It is estimated that three quarters of the households on Funafuti had some form of refrigeration equipment. However, refrigeration is rare outside of Funafuti as there is limited availability of electrical power.

There are no reported examples of large-scale imports of second hand domestic refrigerators.

Servicing of domestic refrigerators and display cabinets is occurring, but the tropical conditions meant corrosion of the mild-steel pipe work was a major problem and therefore units had a fairly short life. The uneven voltage and power cuts also meant compressor failures were relatively common.

Technicians at the workshop for the private sector reported it was common to have to repair equipment and re-charge every one or two years due to rusted pipes if they were kept in a non-air-conditioned building. (This compares with only once in 20 years in a country like New Zealand or Australia).

Servicing had been done mainly with CFC-12 in older units and HFC-134a in the new units. Total reported use in 1999 for servicing all domestic refrigerators and display cabinets was less than 50kg per year and declining rapidly. Only one company currently holds a small stock of CFCs for servicing.

Building Air-conditioning

There are no large CFC-11-using air-conditioning equipment (chillers) in Tuvalu. There are few buildings more than two stories high and no major hotel complexes. Air-conditioning of any kind is uncommon except for office buildings where it is needed to protect computer and other electronic equipment. Less than 10% of building were reported to have any kind of air-conditioning in 2000. All air-conditioning is done using HCFC-22 window units and split systems. Most other buildings use only ceiling fans and open windows for cooling. According to data provided by the Customs Department, imports of window air-conditioners have increased in recent years, possibly associated with the rise in use of computers in government offices.

2.2.3 Fumigation

There is no use of methyl bromide for any applications in Tuvalu. A fumigation cabinet using methyl bromide did operate during the 1980s and early 1990s. It has not been used since 1991 and has not been maintained. It is not currently operative.

2.3 Institutional framework

The Tuvalu Ministry of Natural Resources, Energy & Environment (MNREE) will co-ordinate the NCAP, formulate and develop appropriate legislation, report to the Montreal Protocol's Ozone Secretariat and Multilateral Fund and participate in public and industry awareness campaigns.

Tuvalu has already established a national Committee to look at the NCAP and this will continue to function under the NCAP. The National Committee is currently made up of:

Table 2.4 Composition of Tuvalu National Committee

Name:	Position:	Organisation:
Isala T. Isala	Crown Counsel	Attorney General Office
Pakai K. Asaia	General Manager-TCS	Tuvalu Cooperative Societ.
Malofou Sopoaga	Electrical Supervisor	Public Works Division
Mainaaga V. Taape	Custom Officer	Customs Department
Kilifi T. O'Brien	Environment Officer	Environment Unit
Lopati Tefoa	Technician	Private
Taake Samuelu	Technician	Private
Ioapo Tapu	NaFICOT Technician	NaFICOT
Temalie Teiti	Fisheries Technician	Fisheries Department
Uatea Vave	Agriculture Officer	Agriculture Department

2.4 Policy Framework

As a party to the Montreal Protocol, Tuvalu has accepted the responsibility to phase out ODS in the country. The policy framework within which ODS will be managed is based on :

- Legally enforceable restrictions on import of ODS
- Industry support for new non-ODS technologies
- Training of service technicians and Customs officers
- Co-operation between Government and ODS importers and users to raise awareness and ensure the phase-out is sustainable.

There is no specific legislation to ban the import of ODS in Tuvalu. Regulations to control consumption will be prepared under either the Customs Act or the Pesticides Act. All regulations will be developed in consultation with ODS users in Tuvalu.

2.5 Government and Industry response

The Government's first response to the Montreal Protocol was to commence the preparation of an Action Plan in collaboration with UNEP and SPREP in 1999. For this purpose, a country visit, survey, and workshop were organised with the technical assistance of SPREP's international consultant in March 2000. Tuvalu has also taken part in regional meetings in Apia, Samoa in 1998 and 2001, and the workshop held in the margins of the1999 Open Ended Working Group meeting in Geneva.

Industrial response started with the main ODS users in Tuvalu. The suppliers have already started importing low and non-ODS gases. The retailers are also changing to non-CFC manufactured products. All new refrigeration equipment sold or installed in Tuvalu has been CFC-free for several years.

3.0 Implementation of the Phase Out Strategy

3.1 Strategic Statement by the Government

The Government of Tuvalu is committed to its obligations under the Montreal Protocol on Substances that Deplete the Ozone Layer and is prepared to undertake an accelerated CFC Phase-out target date of 31 December 2005, inline with other countries in the region and as part of the Pacific Regional Strategy.

Adoption of an early phase-out date will send a strong signal to the global community demonstrating Tuvalu's commitment to global environmental issues. It will also reduce problems associated with the dumping of obsolete technologies. These target goals will be achieved with the support of the Multilateral Fund and the Pacific Regional Project in collaboration with the private and public sectors, NGOs, and other government and international agencies.

3.2 Action Plan and Projects under the NCAP

3.2.1 Action Plan

In order to be able to comply with the Montreal Protocol the Government must carry out a number of actions. These are set out in the following Action Plan

1. Maintain compliance with the Montreal Protocol while preparing an accelerated phase-out program.
2. Establish a National Ozone Unit (NOU) office to co-ordinate, implement, and monitor the phase-out program.
3. Prohibit any new activity related to the import, production or use of ODSs in new equipment
4. Ban of import of ODS-using and ODS-containing equipment (including new and second-hand domestic refrigerators using CFC-12 as the refrigerant)
5. Introduction of controls on the import (and export) of all ODSs (including licensing, taxation and/or quotas as appropriate)
6. Strengthening ODS import/export monitoring program by developing a licensing system.
7. Consideration of system of fiscal incentives/disincentives in favour of non-ODS alternatives and transitional substances.
8. Implement and monitor training of customs officers to ensure proper control of import and export of ODSs and information collection and submission
9. Implement and monitor training of refrigeration service technicians in good practices of refrigeration to minimise the use of ODSs and mitigate their emissions into the air during the service of refrigerators
10. Conduct public awareness campaign on necessity and means for protection of the Ozone Layer of the Earth and the government's commitment to phase out ODSs

Education, training, legislation, regulations and other incentives will ensure that Tuvalu will continue to meet its obligations under the Montreal Protocol and ensure a sustainable phase out of ODS.

3.2.2 Projects

All Projects set out in the Action Plan will be implemented as part of the Pacific Regional Strategy. The budget for these projects is presented as part of the overall Regional Strategy.

National Support Project

A National Support Project is necessary to enable the achievement of strategic objectives under the Montreal Protocol. This project will establish the National Ozone Unit (NOU) with one part time "Ozone Officer" under the Environment Department under the MNREE as this is the agency responsible for implementing the Montreal Protocol in Tuvalu. The Unit will be staffed for three years (2002 – 2005). After that time the position will be funded form the Environment Department's annual budget. The position will be established as the equivalent of 37% of a full time position for the three year term. For the first year, while regulations are being prepared, a greater number of hours may be needed (up to 70% of full time), with less (20% of full time) in the second and third year. Following the introduction of legislation, the key tasks will be to manage the import permit system for HCFCs and continue any ongoing public education campaigns. The NOU would also oversee the development and implementation of the certification scheme for refrigeration technicians.

Annual reports on ODS consumption will be submitted to the Ozone Secretariat, as required under Article 7 of the Montreal Protocol. In addition, annual reports on progress of implementation of NCAP will be submitted to the Multilateral Fund Secretariat and the Implementing Agency as required under the decision of the 10th meeting of the Executive Committee.

The NOU will require assistance from the Pacific Regional Project to help develop the national regulations.

Legislation and Regulations

To ensure ongoing compliance with the Montreal Protocol, the government will establish a system to monitor and control CFC imports. The development of these regulations and drafting the necessary legislation will be a high priority and should be in place as quickly as possible. New regulations and policies should be prepared under the Customs Act or the Pesticides Act. Assistance will be sought from the Pacific Regional Project to help develop the appropriate regulations.

Because the supply of CFCs from Fiji has already ceased, the Government will prohibit imports of CFCs from the date the regulations come into effect. This will ensure that Tuvalu remains in full compliance with its obligations under the Montreal Protocol in coming years and ensure it meets the 2005 Regional phase-out target.

Any import license scheme will require co-operation from the importers and the Customs Officers. It may also require amendments to the Harmonised System (HS); an internationally agreed upon system of classifying trade goods and recording import statistics that Tuvalu uses to allow identification of individual controlled substances.

An import license scheme will be necessary for HCFCs for tracking purposes. This will be implemented at the same time as the license system for CFCs. These licenses will be issued on demand; with no restrictions on the quantity imported, but the actual quantities of HCFCs imported will be required to be reported to the DOE.

Controls on the remaining substances are necessary to ensure ongoing compliance with the Montreal Protocol. The government will prohibit the import of all halons, "other CFCs", 1,1,1-trichloroethane (methyl chloroform), carbon tetrachloride, and hydrobromofluorocarbons (HBFCs). None of these substances are known to have any use in Tuvalu. Some such as the "other CFCs" and the HBFCs are no longer manufactured.

In case there are some unforeseen demands for CFCs or any other ODS other than HCFCs, the regulations will also allow imports for "essential uses" provided that the Environment Department approves these.

In addition to prohibitions on the import of the "bulk substances" the Government will develop regulations to prohibit the import of both new and second hand products containing CFCs, such as refrigerators and freezers. This is to avoid receiving "junk technology" and to reduce future demand for CFCs to service the equipment.

Financial incentives
The Government will investigate the possibility of introducing financial incentives to promote the use of non-ozone depleting substances to replace CFCs through reductions in import duty and such like. It will also investigate the possibilities of reducing import duties on equipment such as recovery and recycling machines needed to protect the ozone layer.

Training Programs and Workshops for Refrigeration Technicians
To successfully introduce the new non-CFC refrigerants into Tuvalu will require new skills for technicians. The new refrigerants require new handling procedures and new lubricants. It will be vital that training is provided quickly if Tuvalu intends to implement a phase-out date of mid-2002. It will also be important that technicians have the necessary skills to fix leaks in existing equipment, rather than continuing to simply add new gas to equipment without fixing the leak.

It is proposed that a training programme be developed to teach these skills. The courses would teach recovery and recycling and good engineering practices as well as issues relating to the legislation and ozone depletion. Those who attended would receive free or subsidised training. There are currently no suitable training facilities in Tuvalu. It is expected that training will be provided by a suitable qualified trainer from overseas for all of the Tuvaluan technicians as part of the Pacific regional Strategy. Once the current technicians are trained they will be responsible for training any new entrants to the trade.

The trainer will develop a course in consultation with MNREE and deliver this in Tuvalu in 2002 or early 2003.

Training for Customs Officials
Tuvalu does not produce any CFCs and therefore all of its CFC consumption must be imported. It follows that border controls will be vital to ensure that the Government's policies are implemented. In particular it will be important to ensure that CFCs are not smuggled into

Tuvalu. If illegal imports of CFCs become common or widespread, it will undermine the whole NCAP by postponing the phase-out and by penalising those who remain law abiding.

To successfully implement the licence scheme it will be vital that Customs Officers from the Department of Customs and Taxation are trained to recognise CFCs and their alternatives. This training should be provided once regulations are in place.

It is expected that training will need to be provided by an overseas expert. This training should take three or four days to complete and would include training on the relevant Tuvalu legislation, the Montreal Protocol, recognition of packaging and storage containers and training in the use of the Refrigerant identification equipment.

As well as the provision of training, it will be important to provide portable refrigerant identification equipment. Field officers will be provided with portable identification equipment and where there is doubt about the accuracy of labelling they will send samples to a central laboratory (possibly in Australia or Fiji) for legal testing. The training providers should also assist with the development of policies for sampling of shipments of refrigerant gases.

It is recommended that one unit be provided as there is only one major port. This unit would then be available for use by the refrigeration workshops when not in use by Custom's staff.

Training of Customs Officers and provision of the detection equipment will be provided under the Pacific Regional Strategy and will be co-ordinated with other Customs forces in the region. All of the costs for this training will be met as part of the Regional Strategy.

Recovery and recycling machines

The use of recovery and recycling equipment allows workshops to re-use any CFCs that are extracted from the customers' vehicles at the time of servicing. Any CFCs that are recovered can be re-used, either in the same piece of equipment or in another piece of equipment later on. This is done instead of releasing the refrigerants to the atmosphere, as is the case in all workshops in Tuvalu at present.

Following the workshops by the International Consultant and by the Environment Department in preparing this strategy, there is a high level of interest among Tuvalu technicians in being able to obtain recovery and recycling equipment for use in their workshops. The very high cost of recovery and recycling equipment deters most small workshops from acquiring these at present.

The Government wishes to request funding, through the Multilateral Fund and the Pacific Regional Strategy, to be able to offer a 50% subsidy on the cost of purchasing these machines. If this approved, the subsidy would only be offered to companies whose technicians have completed the approved training course. Funding would be sought to allow the purchase of up to 5 units at a cost of US$2,500 per unit (i.e. a subsidy of US$1,250 per machine)

The Government would only allow the subsidy for technicians who had received training from the Government approved course.

Public awareness
Aside from developing regulations, public education would be a key task of the "Ozone Officer". There is currently little or no awareness of the Montreal Protocol among the general population or among most politicians.

Creating awareness of the Montreal Protocol will be a very important part of the strategy. It is vital that the public understands why CFCs are being phased-out and what they can do to assist in this process. The ongoing project to bring electricity to the outer island also has the potential to increase demand for refrigeration equipment. It is important for the consumer that they understand why any "new" second-hand equipment that are imported should not contain CFCs.

There is already a considerable body of material available from UNEP already, but these needs to be translated into the local languages first.

It is expected that appropriate, Pacific focussed, public awareness materials, can be provided through the Pacific Regional Strategy. In particular assistance will be needed for translating materials into the local language.

3.2.3 Roles in Implementing the Strategy

The lead agency for implementing and managing the NCAP will be the National Ozone Unit under the Environment Department. Given the complexity of the project it will be necessary to collaborate with a number of organisations. The principal organisation will be the Customs and Taxation Department which will enforce the proposed regulations controlling the importation of ODS. The Customs Department will also be involved in collocation of import data through administration of import permits.

3.3 Timeframe and Consumption Implications of Action Plan

3.3.1 Timetable

The schedule for implementing activities to meet the Protocol objectives and its effects on ODS consumption is presented in Table 3.1. Of these activities, the ones that will lead ensure continued zero consumption levels are:

1. Monitoring of ODS imports and exports through a licensing system, new Refrigerant identification equipment, and well-trained Customs Officials.
2. The training of technicians in good service practices and the use of recovery and recycling equipment and retrofitting.
3. Fiscal policy measures to encourage the development of economically viable and attractive ODS free technologies.
4. Ban the use of ODS based technologies in new installations.

Table 3.1 Schedule for the Action Plan

Action	Description	Schedule	Impact	Implementing Agency
1	Establishment of NOU office	Mar 2002	Enabling Activity	DOE

2	Establishment of TNOC	Mar 2002	Enabling Activity	DOE
3	Public Awareness and Education	Nov 2001	Enabling Activity	DOE
4	Establishment of Licensing System	Dec 2001	Regulation on Restricted Imports and Exports	NOU Customs Department Attorney General's Office
5	Establishment of Monitoring System	Jan 2002	Data Reports under Article 7	Customs Department NOU
6	Training of trainers	2002	Reduction of Consumption	NOU Tuvalu Environment Department
7	Training of Customs Officials	2002	Reduction of Consumption	NOU Tuvalu Environment Department Customs Department
8	Training of technicians	2002 2003 2004	Reduction of Consumption	NOU Tuvalu Environment Department with Refrigeration Engineers and Technicians
9	Consideration of tax incentives to promote use of substitutes and alternative technologies	July 2002	Reduction of imports and usage of CFC	NOU Customs Department Attorney Generals Office Department of Finance
10	Ban on new installations and equipment using controlled ODS	Jan 2002	Elimination of new demands	NOU Customs Department Attorney Generals Office Chamber of Commerce

3.3.2 Consumption implications

Tuvalu has already achieved zero consumption because of the actions of other countries in the region that supply imported goods to Tuvalu. The actions set out in this plan are to ensure that Tuvalu maintains its zero consumption and its status of full compliance with the Montreal Protocol. The Government notes that although the supply of CFCs has ceased, there is still demand. If the actions set out in the NCAP are not taken and if an alternative supply of CFCs is established by importers, then Tuvalu could quickly find itself in a position of non-compliance.

3.4 Budget and Financial Program

The implementation and management of this NCAP has as a prerequisite the establishment of a National Ozone Unit (NOU) office. For this purpose, a National Support Project is submitted for approval as part of the Pacific Regional Strategy. Funds allocated through the regional Strategy will be used to co-ordinate public education campaigns, operate and staff the NOU office, train technicians and Customs Officials, set up a certification program, and purchase new CFC recovery and recycling and detection equipment.