

REPUBLIC OF NAURU

**NATIONAL IMPLEMENTATION  
PLAN FOR PERSISTENT  
ORGANIC POLLUTANT (POPS)**

# Table of Contents

Executive Summary.....	4
Glossary and Acronyms .....	5
1. Introduction .....	6
1.1 Purpose of the National Implementation Plan .....	6
1.2 Outline of the Stockholm Convention .....	6
1.3 Current list of chemicals scheduled under the Stockholm Convention .....	7
1.4 Obligations of a Party under the Stockholm Convention .....	7
1.5 Development of the National Implementation Plan .....	8
1.5.1 Structure of the POPs Project .....	8
2. Country Baseline .....	10
2.1 COUNTRY PROFILE .....	10
2.1.1 <i>Background and Physical Context</i> .....	10
2.1.2 <i>Socio-economic context</i> .....	11
2.1.3 <i>Political Profile of Nauru</i> .....	13
2.1.4 <i>Environmental Overview</i> .....	13
The smallness and geographical isolation of Nauru from continental landmasses (Asia, Papua New Guinea) resulted in the high level of species endemism, similar to neighbouring atoll islands. At the same time, the smallness and isolation factors are the probable causes for its ecological fragility and vulnerability. For example, many endemic species are dominated, being defenceless against the more aggressive invasive species, and while endemism is high at the species level, it is less diversified at higher taxation levels, Genetic variability is assumed to be limited but needs to be confirmed through studies (NEMS, 1998) .....	
2.2 Institutions, Policies and Laws .....	14
2.2.1 <i>Relevant policies and general legislative framework</i> .....	14
Table 3. NSDS Land Strategy.....	15
Table 4. NSDS Environment Strategy .....	15
2.2.2 <i>Roles and responsibilities of government agencies</i> .....	16
2.2.3 <i>Relevant International Commitments and Obligations</i> .....	18
2.2.4 <i>Description of existing legislation and regulations addressing POPs</i> .....	19
2.2.5 <i>Key approaches and procedures for POPs chemical management</i> .....	20
2.3 Assessment of the POPs Issue in the Country .....	20
2.3.1 <i>Assessment with respect to Annex A, part I chemicals (POPs pesticides)</i> .....	20
2.3.2 <i>Assessment with respect to Annex A, part II chemicals (PCBs)</i> .....	20
2.3.3 <i>Assessment with respect to Annex B chemicals (DDT)</i> .....	21
2.3.4 <i>Assessment of releases from unintentional production of Annex C chemicals (PCDD/PCDF, HCB and PCBs)</i> .....	21
2.3.5 <i>Information on the state of knowledge on stockpiles, contaminated sites and wastes</i> .....	22
2.3.6 <i>Summary of future production, use and releases of POPs – requirements for exemptions</i> .....	23
2.3.7 <i>Existing programmes for monitoring releases and environmental and human health impacts, including findings</i> .....	24
2.3.8 <i>Current level of information, awareness and education among target groups; existing systems to communicate such information to the various groups; mechanism for information exchange with other Parties to the Convention</i> .....	24
2.3.9 <i>Relevant activities of non-governmental stakeholders</i> .....	24

2.3.10	<i>Overview of technical infrastructure for POPs assessment, measurement, analysis, alternatives and prevention measures, management, research and development – linkage to international programmes and projects</i>	24
2.3.11	<i>Identification of impacted populations or environments, estimated scale and magnitude of threats to public health and environmental quality and social implications for workers and local communities</i>	25
2.3.12	<i>Details of any relevant system for the assessment and listing of new chemicals</i>	25
2.3.13	<i>Details of any relevant system for the assessment and regulation of chemicals already in the market</i>	25
3.	Strategy and action plan elements of the national implementation plan	26
3.1	POLICY STATEMENT	26
3.2	IMPLEMENTATION STRATEGY	26
3.3	STRATEGY AND ACTION PLANS	27
3.3.1.	<i>Action Plan on Unintentional releases of POPs</i>	30
3.3.2.	<i>Action Plan on Legislation</i>	32
3.3.3.	<i>Action Plan on Public Education and Awareness</i>	34
3.3.4.	<i>Action Plan on Capacity Building and Education</i>	35
3.3.5.	<i>Action Plan on Priority Areas</i>	38
Annex 1		39
Annex 2		41
Annex 3		42

## **Executive Summary**

This National Implementation Plan Report was developed to present the findings, conclusions, and recommendations of the review of the POPs programme on Nauru by the POPs Project Team.

The NIP document was formulated to illustrate Nauru's commitment as Party member to the Stockholm Convention in the area of Environmentally Sound Management (EMS) of Persistent Organic Pollutant (POPs) at the national level. The National Implementation Plan is to direct signatories of the Stockholm Convention to implement phase out activities for POPs management. POPs and waste disposal will always be a problematic issue for Nauru because of the limited land suitable for disposal and the associated cost.

## Glossary and Acronyms

ADB	Asian Development Bank
AusAID	Australian Agency for International Development
BAT and BEP	Best Available Techniques and Best Environmental Practices
DDT	Dichloro-Diphenyl-Trichloroethane or 1,1,1-trichloro-2,2-bis(4-chlorophenyl)ethane
EU	European Union
FAO	United Nations Food and Agriculture Organisation
GEF	Global Environment Facility
HCB	Hexachlorobenzene
JICA	Japan International Cooperation Agency
NGO	Non-government Organisation
NIP	National Implementation Plan
NZAID	New Zealand Agency for International Development
PCB	Polychlorinated biphenyls
PCDD	Polychlorinated dibenzo-p-dioxins
PCDF	Polychlorinated dibenzo-p-difurans
POPs	Persistent Organic Pollutants
POPs in PICs Project	The Persistent Organic Pollutants in Pacific Island Countries project – a project funded by AusAID and administered regionally by SPREP.
SOPAC	South Pacific Applied Geological Commission
SPREP	Secretariat of the Pacific Regional Environment Program
Stockholm Convention	The Stockholm Convention is an internationally-binding agreement that aims to initially rid the world of PCBs, dioxins and furans, and nine highly dangerous and toxic pesticides
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WHO	World Health Organisation

# **1. Introduction**

## **1.1 Purpose of the National Implementation Plan**

From the outset, this National Implementation Plan was formulated to illustrate Nauru's commitments and actions that it will undertake to implement the Stockholm Convention on Persistent Organic Pollutants (POPs) and thus meeting its obligations under the Convention.

## **1.2 Outline of the Stockholm Convention**

The Stockholm Convention on Persistent Organic Pollutants is an international binding agreement that commits governments around the world to take the necessary actions to reduce, and where feasible, eliminate the production and environmental releases of an initial list of 12 POPs chemicals – aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, toxaphene, polychlorinated biphenyls (PCBs), dioxins, furans and hexachlorobenzene (HCB). The Convention entered into force on 17 May 2004 with Nauru being one of the first 50 countries to become a party to allow the Convention to enter into force. It became a Party through ratification of the Convention on May 9, 2002.

POPs are highly stable synthetic organic chemicals, which are toxic, persistent, bio-accumulative, and pose a risk of causing adverse effects to human health and the environment. The initial twelve persistent chemicals are scheduled in current international negotiations to ban their production and use. Exposure to POPs can result in nervous system damage with impacts on learning and intelligence, liver damage, some cancers, and endocrine disruption or interference with hormone functions. Most POPs are soluble in fats, not in water, so women tend to accumulate them more readily in their body tissues than do men. Pregnancy and breast-feeding draw on maternal bodily fat reserves, so POPs are readily transmitted to infants. The effects of POPs on wildlife are similar to those observed in humans.

Recent studies have demonstrated a shift in POPs towards the earth's polar regions, as POPs tend to evaporate more in hot equatorial regions and condense and fall in precipitation near the poles. Whales, seals, penguins and the Canadian Inuit population show contamination from POPs produced in very distant regions, and many arctic/antarctic birds and small land and marine animals are dying from the direct or indirect effects of accumulated POPs.

Article 7 of the Stockholm Convention requires each Party to develop a National Implementation Plan setting out how it will address its obligations under the Convention and to submit the plan to the Conference of the Parties (COP) within two years of the Convention coming into force for the Party.

The Government of the Republic of Nauru recognises that the risk posed by these chemicals globally is a major issue of concern towards society and the environment and has therefore committed itself to develop this National Implementation Plan for managing them in an environmentally sound efficient manner. POPs together with other hazardous waste management have been the subject of numerous national, bilateral and regional programmes in the region over the past ten years. However, most of the activities that have been carried out in a relatively uncoordinated manner are due primarily to the lack of overall national strategies that guide this work. Compounding this problem is the fact that there is very limited resources and capacities in the country, as well as the lack of adequate infrastructure for the management of POPs in Nauru.

As a Party, Nauru is obligated to comply with the Convention's requirement by establishing an inventory and formulating a National Implementation Plan for the proper management of the scheduled POPs and Wastes to eventually eliminate their releases within the country and abroad.

### 1.3 Current list of chemicals scheduled under the Stockholm Convention

Currently, there are a total of 12 POPs chemicals scheduled under the Stockholm Convention and these and their uses are summarised in Table 1. A more complete description of the chemicals can be found at Annex 1 (This document has not taken into account the recently added new POPs)

Table 1: Summary of uses of chemicals addressed by the Stockholm Convention

<b>Chemical</b>	<b>Pesticide</b>	<b>Industrial Chemical</b>	<b>Unintentionally Produced</b>
Aldrin	+		
Chlordane	+		
DDT	+		
Dieldrin	+		
Endrin	+		
Heptachlor	+		
Mirex	+		
Toxaphene	+		
Hexachlorobenzene	+	+	+
PCBs		+	+
Dioxins			+
Furans			+

### 1.4 Obligations of a Party under the Stockholm Convention

The Stockholm Convention requires each Party to undertake certain actions as part of its commitment to meeting its obligations under the Convention and the ones that are relevant to Nauru can be found in Table 2 with a more complete description of the obligations at Annex 2.

Table 2: Summary of the obligations of the Stockholm Convention

<b>Obligation</b>	<b>Article</b>
Establish and implement measures, including regulatory and assessment schemes, to reduce and eliminate the intentional production, use, import and export of the 10 POPs used as pesticides or industrial chemicals	Art 3
Develop measures to reduce or eliminate POPs that are unintentionally produced	Art 5
Develop measures to identify and manage stockpiles and wastes containing POPs, including possible disposal mechanisms internationally	Art 6
Develop an implementation plan for the obligations under the Convention	Art 7
Develop and implement information exchange measures relating to POPs and their alternatives	Art 9
Establish and implement public awareness and education programs about the promotion of POPs	Art 10
Encourage or undertake research and monitoring relating to POPs	Art 11

Report on progress on implementing the Convention	Art 15
Establish and implement a program on the effective evaluation of the Stockholm Convention	Art. 16

Many of these actions will require establishing regulatory and assessment frameworks that will reduce the presence of these chemical in the country. On undertaking research into POPs chemicals, a number of capacity building initiatives will also need to be put in place to improve the base level of expertise in the country to effectively undertake the research activities.

## 1.5 Development of the National Implementation Plan

As stipulated in Article 7 of the Stockholm Convention each Party is required to develop and endeavour to implement a plan for the implementation of its obligations under this Convention. For Parties from developing countries and countries with economies in transition, this was achieved with the provision of resources through to Global Environment Facility (GEF) for enabling activities. Nauru as a developing country accessed this resources with the United Nations Environment Programme (UNEP) acting as the Implementing Agency.

### 1.5.1 Structure of the POPs Project

The main purpose of the POPs project was to develop a national implementation plan that would outline the policy and action plans that Nauru will implement to allow it to meet its obligations under the Convention. These include action plans that were geared towards reducing and where feasible, eliminating the release or production of the scheduled chemicals. The secondary aim of the project was to also contribute to the national waste minimization programme of the country.

The POPs Programme officially commenced in May 2003 and was to have ended in August 2006 but due to technical difficulties and the sudden departure of the coordinator, the national implementation plan was not completed until late 2010. The key government official positions that were instrumental in the successful completion of the POPs project are outlined in Table 3.

Table 3: Key positions in the POPs project

<b>Position in the POPs project</b>	<b>Position in Nauru</b>
National Focal Point	Secretary of CIE
Project Director	Director of Project – CIE
Task Manager	UNEP - David Piper, Jan Betlem
Finance Manager	UNEP - Victor Ogbuneke, Paul Vrontamitis
Advisor	GHD Consultant - Melanie Ashton
Advisor	SPREP – Dr. Frank Griffin
Project Manager	Secretary of CIE
National Coordinating Committee	Government Ministry & Department-Health, CIE, Utilities, Rehab, DPP, Quarantine, Agriculture, Customs,

In the POPs Project Guidance Document, a Government agency was to be designated as the national lead agency to oversee the establishment of a National Environment Coordinating Committee (NECC) that would direct and coordinate the implementation of the various aspects of the project. To this effect, the Department of Commerce, Industry & Environment was designated as the leading Ministry to manage the project and provide the necessary assistance to both the NECC and the national project coordinator. The role

of the NECC was to be the consulting group in planning and implementing the Project activities under the chairmanship of the National Project Manager, who is the Secretary of CIE. Most of the activities implemented were developed and undertaken by members of the NECC and these mainly involved the compilation of statistical data from each relevant stakeholder for establishing an initial inventory on POPs.

The NECC comprised largely of Government Ministries, Business and NGO that had responsibilities in the area of chemical management or impacted by the control of them. The National Project Coordinator and the Project Assistant were the leading personnel to coordinate the activities on the ground level in consultation with the NCC.

The National Coordinating Committee held meetings at least once a quarter while urgent meetings were convened at any convenient time and were usually during official working hours, as the majority of members are mostly government employees.

The specific activities that the NCC undertook included the following:

- Developing an inventory on POPs
- Capacity building activities
- Education and Awareness Raising programmes
- Reviewing Legislation
- National Implementation Plan coordination and development

Once a draft National Implementation Plan had been completed, it was then presented to the National Coordinating Committee for further review and endorsement.

The task of drafting the NIP was given to the National Project Coordinator who in consultation with both local stakeholders, mainly the members of the NCC and various regional and international advisors who assisted in reviewing the various components of the NIP.

## 2. Country Baseline

### 2.1 COUNTRY PROFILE

#### 2.1.1 Background and Physical Context

Nauru is an isolated, uplifted limestone island located 41 km South of the equator at 0° 32' South latitude and 166° 56' East longitude. It lies approximately 2000 km East-Northeast of Papua New Guinea, 4450 km South-Southeast of the Philippines and an equal distance to the Southwest of Hawaii. The nearest island is Banaba (Ocean Island), 300 km due East, which is part of the Republic of Kiribati. The main islands of Kiribati lie a further 400 km to the East (SPREP, 2006).



Figure 1. Map of Nauru Island

Nauru has a total land area of 2,259 ha (22.59 km<sup>2</sup>). It is surrounded by a fringing coral reef between 120 and 300 metres wide which drops away sharply on the seaward edge, to a depth of about 4,000 metres. The coastal plain is a zone of sandy or rocky beach on the seaward edge, and a beach ridge or fore-dune, behind which is either relatively flat ground or, in some places, low-lying depressions or small lagoons filled by brackish water where the surface level is below the water table (freshwater lens), the most extensive of which is found near the border of Ijuw and Anabar Districts, (see Figure 1, above). There are scattered limestone outcrops/ pinnacles on both the coastal plain and on the inter-tidal flats of the fringing reef, especially in the Anibare Bay area. The escarpment ranges in gradient from vertical cliffs to gradually sloping areas of colluvial soil (deposits that accumulate on and at the base of slopes, interspersed with limestone outcrops and pinnacles (SPREP, 2006).

The raised central plateau (Topside) lies between 20-45 metres above sea level ASL with occasional elevations of 50-70m ASL. Command Ridge is the highest point on the island, at 71m ASL. The central plateau comprises a matrix of coral-limestone pinnacles and limestone outcrops, between which lie extensive deposits of soil and high-grade phosphate rock covering approximately 1600 ha (over 70% of the island) (SPREP, 2006).

Nauru is located in the dry belt of the equatorial oceanic zone, with diurnal temperatures ranging from 26C to 35C, and night temperatures between 22C and 28C. Annual rainfall is extremely variable, averaging 2126 mm per year with a range of 280-4590 mm (over a 77 year period from 1916 to 1993). However, between 1977-1993 monthly rainfall ranged from 0 to 746 mm, with 62 months out of 204 months having less than 100 mm of rain. Rain tends to be more frequent during the months of December to April.

The country is highly vulnerable to drought, with prolonged periods common. This places severe stress on the natural species and leads to the death of non-coastal exotics and tree crops, exacerbated by the fact that there are no surface streams on the island and limited surface and ground water resources (SOPAC, 2009; SPREP, 2006). Buada Lagoon is a landlocked, slightly brackish, freshwater lake, in a fertile depression (about 12 ha in area), located in the low-lying southwest-central area, approximately 5m ASL. Apart from the brackish ponds near the base of the escarpment, there is an underground lake in Makwa (Moqua Cave) in the southeast (SPREP, 2006).

The only significant permanent freshwater resource is groundwater from a lens suspended above higher-density saltwater. The height of the freshwater lens varies. The water is brackish and increasingly polluted, used as grey water in the hotels. Inappropriate consumption of contaminated groundwater is reportedly widespread (SOPAC, 2009).

Nauru's indigenous flora and vegetation are among the most limited on earth due to the small size of the country, the limited diversity of habitat and the island's physical isolation from continental Asia and other island sources of colonizing plants. Just over 60 indigenous vascular plants have been recorded, compared with 510 introduced vascular plants. Nevertheless, indigenous species constitute the most culturally useful and ecologically important species. In the 1980's and 1990 only about 364 ha or 16.5% of the island's vegetation was dominated by primary or relatively undisturbed vegetation types, classified as coastal strand vegetation, mangroves and coastal marsh, inland forest and limestone escarpment or pinnacle vegetation. All have been reduced in size or degraded. 63% of the vegetation cover was regeneration after mining, (Thaman, *et al*, 2009).

### **2.1.2 Socio-economic context**

Nauruans are Micronesians and this society is matrilineal and the people are drawn from 12 tribes that are totemic in origin. Land ownership is an important symbol for the Nauruan identity. The concept of 'angam' refers to the strong emotional tie between Nauruans and their homeland. The issue of land shareholding rights and traditional 'individual' rights is an important consideration in efforts at land development and rehabilitation, (Government of Nauru, 2007).

The population of Nauru of approximately 10,065 (in 2006) is growing at an annual rate of 0.14% (Government of Nauru, 2007). If this rate continues in the long term, Nauru will have to deal with an ageing population. With so much of the island uninhabitable due to mining activities, the population is hemmed into the coastal fringe, making densities even higher than the average 495 persons/km<sup>2</sup>. Excluding the 70% of the island that is stated to be unusable, the population density on the remaining coastal fringe could be over 1,500 persons/km<sup>2</sup>. This has considerable implications and consequences for POPs management, in terms of the availability and suitability of land for future collection and disposal options.

In 2008 the Human Poverty index (HDI) for Nauru was 15.0, ranking it 9<sup>th</sup> out of 15 countries in the South Pacific covered by the survey. The main reason for this low ranking was the high proportion of the population not expected to survive to the age of 40 years (20%), the high proportion of the population without access to safe water (18.3%) and a very high comparative proportion of children not attending primary school (40%), (UNDP, in draft).

Phosphate mining provided the main source of export income for many years. The Pacific Phosphate Company began mining in 1907. In 1919 the British Phosphate Commission was formed. The island became a major exporter. Mining continued after independence in 1969 but phosphate deposits were practically exhausted during the 1980s. During the 1960s and 1970s Nauru reportedly had the highest per capita income in the world (Wikipedia, 2009). Limited secondary mining now takes place.

In 2005 an Australian company entered into an agreement to exploit remaining supplies. Revenues have fluctuated widely with the global financial crisis and subsequent recession. There were no exports of phosphate from Nauru for five months. The decline in the phosphate market severely impacted on the Nauru economy, leading to a reduction in government revenue of approximately A\$3.5 million in 2008-9, with the Phosphate Commission (RONPHOS) having to suspend salary payments, which affected household incomes. The phosphate market recovered in 2009 but is not expected to reach the levels prior to the crash. Forecast dividends to the Government of Nauru (GON) is expected to be \$4.4 million in 2009-2010 (excluding royalty payments) with the bulk coming in 2010, (Republic of Nauru, 2009a). Higher than expected revenues from fishing in 2008-9 helped buffet the economy.

The GON expects to raise A\$27.14 million in domestic revenue in 2009-10, mainly from fishing license agreements (A\$7.3 million) customs and excise (A\$5.8 million) RONPHOS dividends and phosphate royalty payments (A\$5.4 million). Nevertheless, the government's budget remains fragile and the country has limited and volatile revenues from non-donor sources, having to mainly rely on donor funds (see Table 1, below) (Republic of Nauru, 2009a, 2009b).

**Table 1. Revenue Contributions to 2009-10 Budget**

<b>Composition of Total 2009-10 Revenues (Budget Estimate)</b>	
<b>Revenue source</b>	<b>Percent</b>
Donor funds	54.0
Sale of fuel products	7.0
Customs and Excise Duties	10.0
Rhonphos royalties and dividends	9.0
Fisheries	13.0
Other	7.0

Source: Republic of Nauru, 2009b

The GON does not have long-range forecasts so it is difficult to predict how long this revenue stream will continue. The impact of climate change could seriously affect fisheries, but no information is available at present to determine what the precise consequences will be.

Most necessities are imported, mainly from Australia, with which the country ran a substantial trade deficit between 2000-2006, being only slightly in balance in 2007. The reliance on this and other external sources of supply for just about everything on the island, from food to building equipment, to fossil fuels for running the economy, makes the country very vulnerable to

disruptions in shipping and the expected rise in fossil fuel prices with peak oil. The socio-economic implications of this are serious. SPREP asserted that should the supply of imported food be cut off or become less frequent, some people could literally starve in Nauru (SPREP, 1996).

### **2.1.3 Political Profile of Nauru**

The Government of Nauru consists of a single-house parliament with 18 members representing 8 constituencies. The country is divided into 14 districts each of which has a Committee that deals with a range of matters affecting the district. They tend to work independently of each other. In the past, districts had an active role in government through the Nauru Local Government Council, but now their role is advisory through the Nauru Island Council (SOPAC, 2009).

Nauru community councils have been very active within the last 2 to 3 years as each community groups are representative of all 14 districts. The 14 districts have their own different councils and represent the population of each community. The district councils are very organised and active as important national issues are often encompassed within the 14 councils which include meetings of council leaders to meet and discuss important national issues. Government also utilises the NCC when support from communities is needed. (Nauru NBSAP Final Draft Report, 2010)

There are 15 Ministries shared amongst 6 Cabinet Ministers (April 2006) responsible for 54 departments, agencies and state owned enterprises (SOPAC, 2009)

No agency has sole responsibility for POPs management in its widest sense. The Department of Commerce, Industry and Environment has the responsibility for the management and protection of the Nauru environment, and to establish a National Implementation Plan (NIP) for Persistent Organic Pollutants (POPs).

The Department of Planning and Policy Division (DPPD) is responsible for the implementation of the National Sustainable Development Strategy (NSDS). It provides advice to departments to develop proposals and coordinate priorities with the NSDS and government policy and was responsible for convening the National Environment Coordinating Committee to oversee the implementation of NSDS. The committee has not had its first meeting, but there is a National Development Committee.

The Land and Survey Department is responsible for recording cadastral information

The Nauru Rehabilitation Corporation (NRC) is responsible for investigations and remedial work to rehabilitate areas mined of phosphate at Topside. It is not a policy making body but carries out some land-use planning and rehabilitation work, which is not however a comprehensive island-wide system. But NRC is also involved in POPs activities.

The Republic of Nauru Phosphate Corporation (RONPHOS) is a SOE with uninhibited operations. It is a potential polluter of surface water, groundwater and coastal waters (SOPAC, 2009) and is responsible for the pollution of the atmosphere (smoke and particulates from the production plant).

### **2.1.4 Environmental Overview**

Nauru's biological environment reflects a natural heritage of limited species diversity and endemism. It is estimated that Nauru supports 60 indigenous species of vascular plant (that is, ferns, gymnosperms and flowering plants, and excluding non-vascular plants, such as mosses, lichens etc.) have been recorded on the island. There are no endemic plants (unique to Nauru).

The total number of vascular plants, including introduced species, amounts to over 500. The introduced species consist mainly of ornamentals, weed species, food plants, and a number of other useful cultivated plants. Although greatly outnumbered by exotics, the indigenous species still constitute the most culturally useful and ecologically important species. Because of the unique adaptability of indigenous Pacific Island plants to the harsh conditions of coastal and small-island environments, and their cultural and ecological utility, their protection and enhancement are crucial as a basis for sustainable development in Nauru.

Nauru's main indigenous land animals consist of birds, insects and some land crabs. Some of these constitute resources of considerable importance to sustainable development, both in terms of their ecological and cultural utility and their possible importance to the development of National Reserves and a limited tourist activity. There are no indigenous land mammals in Nauru, with the Polynesian rat (*Rattus exulans*) being probably an aboriginal introduction. Other introduced rats, dogs, cats, pigs and chickens are common.

Reptiles are limited to geckos and skinks (*Gehrya* and *Emoia* species) which are abundant. The coconut crab (*Birgus latro*) is apparently, quite scarce, but a range of other smaller land crabs are often observed among the pinnacles of the escarpment and on the coastal strip. Some collection of invertebrates has been carried out, with the identification in 1993 of five species of fruit fly (*Bactrocera*).

Sea birds or migratory species constitute the most visible and among the most culturally important indigenous animals of Nauru. A total of 25 species of birds were recorded in Nauru in 1962, including nine species resident all year, nine passage migrants and vagrants, six winter residents, and one unconfirmed record, the sacred kingfisher. The single species regarded as endemic is the Nauruan reed warbler or Nauru canary (*Acrocephalus rehsei*). Brown and black (white-capped) noddies (*Anous stolidus* and *Anous minutes*, respectively), common fairy terns (*Gygis alba*) and the great frigate-bird (*Fregata minor*) are all culturally important.

The smallness and geographical isolation of Nauru from continental landmasses (Asia, Papua New Guinea) resulted in the high level of species endemism, similar to neighbouring atoll islands. At the same time, the smallness and isolation factors are the probable causes for its ecological fragility and vulnerability. For example, many endemic species are dominated, being defenceless against the more aggressive invasive species, and while endemism is high at the species level, it is less diversified at higher taxonomic levels. Genetic variability is assumed to be limited but needs to be confirmed through studies (NEMS, 1998).

The ecological vulnerability inherent in Nauru's smallness, isolation, and limited genetic variability is exacerbated by the ever present threat of extreme events such as severe droughts, storm surges and saltwater inundation as part of climate change and climate variability, and the impacts of human activities. In this context, the environmental and human threat that POPs chemicals present aggravates an already challenging situation.

## **2.2 Institutions, Policies and Laws**

### **2.2.1 Relevant policies and general legislative framework**

An Environmental Management Bill was formulated in 2006, (Government of Nauru, 2006). It set a framework that vests powers and responsibilities to the government and permits regulations to be made to deal with a full range of environment related issues. The proposed Act did not bind other government departments or agencies. All matters related to the management and conservation of Nauru's fisheries and marine resources and all matters arising from international fisheries related Conventions, were to remain the responsibility of the Nauru Fisheries and Marine Resources Authority. It was proposed that nothing under the Act should affect the ability of the Nauru Rehabilitation Corporation from performing its important statutory responsibilities.

The proposed Act provides for an Environment Officer who "*suspects that an activity, matter or thing may be impacting upon the environment, to issue a notice requiring that any person apparently in control of or associated with the activity, matter or thing comply with any specified requirement*". It was proposed that notices be issued to stop "*an activity which involves an immediate threat or risk to the environment*".

Regulations were to be made to prescribe offences, penalties and fines and requirements and procedures for the assessment of impacts on the environment, flora and fauna, CITES issues,

pollution, landfill, dumping, soil erosion, fees for applications, permits or approvals and establishing one or more Trust Funds for environment related purposes.

Consultation was provided for where any regulation was to be made, but only with other government departments. However, lack of consultation was not to affect the validity of any regulation. No public consultation was provided for and no system to resolve disputes was proposed.

The Bill has not been enacted. The Regulations have never been developed or published, so there is a complete lack of detailed coverage or specific procedures. But this lapse provides the opportunity to propose other environmental focal areas, including POPs, to be included in the legislation and its attendant regulations.

The Lands Act deals with land tenure, titling, leasing of land for public purposes, leases, rents and payments. It also deals with rights to remove trees and vegetation, sand, coral and limestone, but this is in respect to the payment of royalties or compensation, not the environmental or land management effects or impacts (Government of Nauru, 1976).

In 2005 Nauruans produced, for the first time, a vision for the future, entitled the National Sustainable Development Strategy 2005-2025 (NSDS) which envisioned:

*“A future where individual, community, business and government contribute to a sustainable quality of life for all Nauruans”* (Government of Nauru, 2005).

The strategy was revised in 2009. The goal for Land is stated as:

*“A transparent and fair land management system that supports social, economic and private sector development”*

The goal for the environment sector is stated as:

*“Sustainable use and management of the environment and natural resources for present and future generations”*

Strategies were developed for Land and the Environment, with short (2012), medium (2015) and long-term (2025) milestones. These are reproduced in Annex 2, abbreviated in Tale 3 and 4 below:

**Table 3. NSDS Land Strategy**

<b>Land Strategy</b>	<b>Short-term milestones 2012</b>
Review Land tenure system and land legislation	Land review commission established
Conduct land boundary survey on phosphate land and coconut land to determine availability of unutilized land	Land boundaries survey and report published
Develop a land use land and appropriate zoning with relevant requirements e.g. EIA	Review current land-use plan and zoning Develop land information system
Enhance capacity to address land degradation	National Action Plan endorsed

Source: Government of Nauru, 2005

**Table 4. NSDS Environment Strategy**

<b>Environment Strategy</b>	<b>Short-term milestones 2012</b>
Establish a regulatory framework for sustainable use and management of the environment and natural resources	Nauru’s state of environment, trends and priorities reviewed Draft national environmental legislation

	reviewed and updated
Environmental issue integrated into nation and sector policies, plans and programmes	National Environmental Management Strategy updated and implemented Strategy environmental planning and assessment formed and integral aspect of policy making Establish and strengthen coordination framework
Strengthen environmental monitoring and reporting	National policy framework for integrated MEA & SOE monitoring, assessment and reporting established and implemented
Develop locally appropriate approaches and initiatives to mitigate and adapt to climate change	National Adaptation Programme of Action developed Launch 2 <sup>nd</sup> National Communication report

Source: Government of Nauru, 2005

The principle strategic planning document for the country is the National Development Strategy (NDS), completed recently. The NDS has the following sections relevant to Persistent Organic Pollutants:

*Each Ministry is required to produce a yearly operational plan which sets detailed actions for that year. In the NSDS Plan for 2006, there is none on elements relating to POPs.*

*Nauru has no environment law only an ordinance of litter Act in place but do not really specify the demonstration on Environmental management. The recent environment law formulated is still yet to be tabled in Parliament. The principle importance of the Environment Act is to give a specific outline on procedures and consent for commercial or industrial POPs production and use. In addition, Nauru has a health ordinance dealing with Pharmacy and Poisons which could be used to regulate POPs chemicals.*

### 2.2.2 Roles and responsibilities of government agencies

The roles and responsibilities of relevant government agencies relevant to POPs are identified below:

Government Agency	Current Responsibility
Ministry of Foreign Affairs and Trade	<ul style="list-style-type: none"> <li>Control and manage foreign relations</li> </ul>
Ministry of Commerce, Industry & Resources	<ul style="list-style-type: none"> <li>Manage overall Environment activities and control disposal and removal of waste products through Government Ministry &amp; Local Business</li> </ul>
Ministry of Health	<ul style="list-style-type: none"> <li>Manage and control drugs and medicine</li> </ul>

	<ul style="list-style-type: none"> <li>• Safe and proper disposal of hazardous materials used and generated in hospitals and clinics</li> <li>• Promote measures to improve the health of the people of Nauru</li> </ul>
Ministry of Transport	<ul style="list-style-type: none"> <li>• Responsible for maintaining and improving transport</li> <li>• Custom clearance on import goods and shipping vessels</li> </ul>
Ministry of Utilities	<ul style="list-style-type: none"> <li>• Manage and control setting up of safe infrastructure for import and disposal of fuel</li> <li>• Reduction of black smoke emissions from power house</li> </ul>
Ministry of Finance and Planning,	<ul style="list-style-type: none"> <li>• Monitor and control cost of import and export of materials</li> <li>• Controls the supply of project funds</li> </ul>
Ministry of Fisheries and Marine Resources	<ul style="list-style-type: none"> <li>• Sustainable management of marine resources, including the use of chemicals in fishing</li> </ul>
Ministry of Education	<ul style="list-style-type: none"> <li>• Public Educational Programme awareness on Waste and Pollution</li> </ul>

The roles of Ministries which have responsibility in respect of chemicals management is summarized below:

Stage of Life-cycle / Ministry Concerned	Importing	Production	Storage	Transport	Distribution / Marketing	Use / Handling	Disposal
Environment							X
Health	X		x	X		X	X
Agriculture	X		x	X		X	X
Trade / Commerce	X		x	X			
Industry	X	X	X			X	X
Finance							
Transport							
Justice							
Customs	X						
Foreign Affairs							
Other							

### 2.2.3 *Relevant International Commitments and Obligations*

Nauru is a party member to the following international agreements relating to chemicals management and waste:

- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London, 1972)
- Convention for the Protection of the Ozone Layer (Vienna, 1985) and its Montreal Protocol
- Kyoto Protocol
- Convention on Biological Diversity (CBD)
- Cartagena (Biosafety) Protocol
- Convention on Combating Desertification (CCD)
- UNCLOS
- Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (Chemical Weapons Convention, CWC)
- Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (Basel, 1989)
- Convention on Persistent Organic Pollutants (Stockholm, 2001)
- Convention on Climate Change (UNFCCC)

Nauru is not a party to the:

- Convention to ban the Importation into Forum Island Countries of Hazardous Wastes and Radioactive Wastes and to control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific (Waigani, 1995)
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam 1998).
- Single Convention on Narcotic Drugs (1961)
- Convention on Psychotropic Substances (1971)
- United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988)
- ILO Convention No 170, Convention Concerning Safety in the use of Chemicals at Work (1990)

Nauru supports the:

- FAO International Code of Conduct on the Distribution and Use of Pesticides 2002 revised edition; and
- The Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Nauru is involved in the following international organisations:

- the Food and Agriculture Organization of the United Nations (FAO)
- the United Nations Development Program (UNDP);
- the United Nations Environment Program (UNEP);
- the World Health Organisation (WHO);
- the Global Environment Facility (GEF);
- Secretariat to the Pacific Regional Environment Program (SPREP)

### ***2.2.4 Description of existing legislation and regulations addressing POPs***

There are currently no laws or regulations targeted directly at addressing POPs, and consequently the Department of Commerce, Industry & Environment as lead agency is unable to fully implement the Convention's requirements. There are however relevant legislation that could be used as the basis from which the POPs and other chemical legislations can be developed and these are listed below. These can be use to prevent POPs from harming human health and environment which are as follows:

#### **Legislative Review 2006**

A legislative review carried out in 2004 identified the following laws that could be potentially used in relation to POPs:

*Environment Bill 2006* (not yet tabled in Parliament). It has two main functions:

- requires developers to have development consents before undertaking prescribed developments (currently pesticide production and use is a prescribed development); and
- controls waste and pollution, by preventing unreasonable pollution and requiring that prescribed premises be licensed.

### *Ports Authority Act 1990*

This Act establishes the Nauru Port Authority and gives general powers to manage ports.

### *Public Health Ordinance 1926*

The Public Health Ordinance is a framework law which allows the Minister to make regulations to protect and advance the public health of Nauru. Regulations have been made relating to water, litter and garbage, and latrines. Notably, the regulations require that all garbage and rubbish which can readily be destroyed by fire shall be so destroyed.

### *Customs Act 2005*

The Customs Act controls the movement of goods into and out of the country. It contains a list of restricted and prohibited imports and exports.

## **2.2.5 Key approaches and procedures for POPs chemical management**

The Ministry of Health, RONPHOS, Rehabilitation and the Ministry of Commerce, Industry & Environment have jointly managed most of the chemicals used in work areas including aspects related to storage, use and disposal. Occupational health is being promoted using available educational means and techniques by mostly Corporation around the island but was not being exercised properly due to the limited funds available to assist with the health and safety gears. The Ministry of Health in collaboration with the relevant Corporations are responsible for maintaining health in work areas.

In public health programmes, several workshops have been conducted on public awareness on the impact of cancers and other diseases that are in relation to the produce of POPs and wastes in the food chains.

In industry and public health, chemicals use must be managed so that environmental contamination does not occur. This is the responsibility of the Ministry of Commerce, Industry & Environment in collaboration with Health, RONPHOS, Rehabilitation and Utilities.

## **2.3 Assessment of the POPs Issue in the Country**

### **2.3.1 Assessment with respect to Annex A, part I chemicals (POPs pesticides)**

Nauru does not have a chemical production industry and as such does not produce any of the nine chemicals listed in Annex A. An assessment of these chemicals carried out as part of the POPs in PICs project found that none of the nine are present on the island.

Nauru has no intention to importing these POPs chemicals into the country for use. While there are currently no formal policies relating to POPs pesticides, there is sufficient generic legislation that would control or prohibit the importation of these pesticides into the country. The situation with any environmental contamination will not be fully known in the absence or limitations in the necessary technical capacity and resources as no proper monitoring of POPs pesticides in the environment, food, or in humans has been made.

### **2.3.2 Assessment with respect to Annex A, part II chemicals (PCBs)**

As part of the Persistent Organic Pollutants in Pacific Island Countries (POPs in PICs) project, 70 used transformers were field tested for chlorine with the Dexsil Chlor-N-Oil 50 test kits and 9 gave positive results. Oil samples from these were then sent to a accredited laboratory in Australia for confirmative analysis of which only one was confirmed to contain PCB-contaminated oil. This transformer was scheduled to be taken away by the POPs in PICs project but the transformer was

accidentally taken away by a scrap metal recycling company. What became of the contaminated oil is unknown.

This project was unable to assess the rest of the transformers on the island because of the limited time given. There are currently no legal controls on PCBs and there has been no monitoring of PCBs in the environment, food or in humans at the national level. This will be done as part of Global Monitoring program as part of the effective evaluation process.

### 2.3.3 Assessment with respect to Annex B chemicals (DDT)

The POPs in PICs project did not find any DDT in the country. Currently, there is no intention to use or import DDT. The commercial use of DDT mainly comes from import of mosquito coils from foreign countries.

### 2.3.4 Assessment of releases from unintentional production of Annex C chemicals (PCDD/PCDF, HCB and PCBs)

**Data from the following section have been copied from similar island states in the same geographical area with comparable sources of releases. Detailed data for Nauru are not available to date.**

Cat.	Source Categories	Annual Releases (g TEQ/a)				
		Air	Water	Land	Product	Residue
1	Waste Incineration	0.6	0.0	0.0	0.0	0.0
2	Ferrous and Non-Ferrous Metal Production	0.0	0.0	0.0	0.0	0.0
3	Heat and Power Generation	0.3	0.0	0.0	0.0	0.0
4	Production of Mineral Products	0.0	0.0	0.0	0.0	0.0
5	Transportation	0.0	0.0	0.0	0.0	0.0
6	Uncontrolled Combustion Processes	0.1	0.0	0.5	0.0	0.0
7	Production of Chemicals and Consumer Goods	0.0	0.0	0.0	0.0	0.0
8	Miscellaneous	0.0	0.0	0.0	0.0	0.0
9	Disposal/Landfill	0.0	0.0	0.0	0.0	0.0
10	Identification of Potential Hot-Spots					
<b>1-9</b>	<b>Total</b>	<b>0.9</b>	<b>0.0</b>	<b>0.5</b>	<b>0.0</b>	<b>0.0</b>
<b>Grand Total</b>				<b>1</b>		

Largest emission sources as identified for similar and comparable island states are:

- Medical/quarantine waste incineration – 14 tons/yr giving 0.560g TEQ emissions to air and 0.003g TEQ residue
- Cooking with virgin wood/biomass fired stoves - 2,563 TJ/year giving 0.256 TEQ to air
- Agricultural residue burning (in field), not impacted (cleaning up bush) - 36,702 tons/yr giving 0.018g TEQ to air and 0.367g TEQ to land
- Uncontrolled domestic waste burning – 219 tons/yr giving 0.066g TEQ to air and 0.131g TEQ to land

### 2.3.5 Information on the state of knowledge on stockpiles, contaminated sites and wastes

There are no stockpiles of POPs chemicals in Nauru. The only hazardous waste of note identified during the POPs in PICs project was the PCB-contaminated transformer which was accidentally removed by a scrap metal recycling company. There are however some waste oil contaminated sites around the industrial areas and will need to be rehabilitated by the NPC in collaboration with the Government. Some sites of concern are given below:

Site No	Location	Site Owner	Site activity	Surplus Chemicals	Contamination
Nau01	Aiwo	NPC	Hazardous Goods		
Nau02	Buada	NPC	Waste Dump		
Nau03	Buada	NPC	Waste Dump		
Nau04	Buada	NPC	Waste Dump		
Nau05	Nibok	NPC	Field workshop		
Nau06	Denigomudu	Government Stores	Warehouse		
Nau07	Aiwo	NPC	Oil Storage		
Nau08	Aiwo- No.2 Bin	NPC	Equipment Store		
Nau09	Aiwo	NPC	Power Station		

Location	Type of Chemicals	Quantity	Condition	Disposal Options
<b>Hydrocarbons and PCB</b>				
Nau01	White lead in oil	10.0kg	Ok	Local use
Nau02	Grease	3000 kg	Poor	Local use
Nau03	Transformer	1000 litres	Ok	Off island disposal
Nau04	Bitumen	30000 kg	Poor	Landfill
Nau05	Waste Oil	2000 litres	Poor	Waste oil disposal programme
Nau06	Refrigerator oil	60 litres	Ok	Waste oil disposal programme
Nau08	Transformer oil	4000 litres	Poor	Off island

				disposal
Nau09	Transformer oil	2000 litres	Ok	Off island disposal
<b>Miscellaneous</b>				
Nau01	Wax remover	80 litres	Ok	Local use
Nau01	Rust Proofing Wax	450 litres	Ok	Local use
Nau01	Boiler additive	600 litres	Old	Local use
Nau04	Sodium Pentachlorophenol	1200 litres	Ok	Off island disposal
Nau06	Dinitrol	440 litres	Ok	Solid then landfill
Nau06	Cement Additive	80 litres	Ok	Solidify then Landfill
Nau06	Cement Additive	180 litres	Ok	Local use
Nau06	Cement Additive	880 litres	Ok	Solidify then Landfill
Nau06	Adhesive	120 litres	Ok	Local use
Nau06	Estalpol	20 litres	Ok	Solidify then Landfill

The results were part of a survey carried out in June, 1998 by an AusAID consultant in collaboration with the Department of Commerce, industry & Environment. Major sites visited during the survey were:-

- Nauru Phosphate Corporation (NPC now called RONPHOS)
- Waste Dump, Topside
- NPC Dangerous Goods Store, Bottom side
- Nauru General Hospital Laboratory
- Waste Oil, Public works Depot
- Government Stores, various location
- NPC, Bins
- NPC storage depot
- NPC Cadmium slimes Dump, Topside

Currently Nauru has no effective procedures for the environmentally sound disposal of waste oil. Waste oil is either burnt in open fires or discharged into the environment. Waste oil contains traces of dioxins and PCBs as combustion by-products and so represents a risk of emissions in relation to the Stockholm Convention although the quantities of these have not been determined.

PCBs may have been used in electrical fittings and in diesel generation powerhouses located on Nauru. In addition, waste oil at these sites may contain dioxins and PCBs.

### ***2.3.6 Summary of future production, use and releases of POPs – requirements for exemptions***

As a country that does not produce chemicals, Nauru has no plans to intentionally produce any of the POPs chemicals. In addition, Nauru does not have any plans to import any of these chemicals for use or release in the country and as such no exemptions are required.

**2.3.7 Existing programmes for monitoring releases and environmental and human health impacts, including findings**

There are currently no existing programs for monitoring the releases and environmental and human health impacts of POPs in Nauru. However, Nauru will cooperate and participate in any regional or global programmes that aim to monitor the levels of these chemicals in its environment.

**2.3.8 Current level of information, awareness and education among target groups; existing systems to communicate such information to the various groups; mechanism for information exchange with other Parties to the Convention**

At the start of the POPs project, knowledge and awareness of POPs issues on Nauru was nonexistent. As part of the POPs project, the education and awareness task team undertook the following activities:

- workshops with communities, business, local corporation, woman groups and government Ministry discussing POPs issues;
- development, production and distribution of an information pamphlet on POPs;
- development and production of posters on POPs;
- development and broadcasting of radio programs on POPs;
- surveys to determine community knowledge and attitudes in relation to POPs.

After intensive public awareness activities raised in particular area of Nauru it was found that community knowledge of POPs had increased to around 40%.

**2.3.9 Relevant activities of non-governmental stakeholders**

Important non-governmental stakeholders involved in the development of this National Implementation Plan are detailed below:

<b>Name</b>	<b>Role</b>	<b>Interest in POPs</b>
Communities	National Women’s Group Non state actors such as NIANGO and Community Based Organisation (CBO)	POPs produce from cooking, and promoting alternative cooking practices
Business Garages	Government and local	POPs produced from vehicles and POPs in waste oil.
Industry	Government	Management and Disposal
Youth Groups	Provide a voice for the youth of Nauru	Education and awareness

**2.3.10 Overview of technical infrastructure for POPs assessment, measurement, analysis, alternatives and prevention measures, management, research and development – linkage to international programmes and projects**

Nauru has no suitable laboratory to test for POPs. Existing small scale laboratory tests are done at health (pathological testing) and water testing.

The POPs in PICs project has undertaken an assessment of POPs in the Pacific region, including Nauru, using external technical assistance. To date, the project has not found any of the Stockholm Convention POPs in Nauru. Preliminary testing for POPs in capacitors and transformers can be undertaken with appropriate information, training and equipment. Testing of groundwater around contaminated sites will require more detailed testing and external technical assistance.

Detailed analysis for POPs is now currently being sent to laboratories in Fiji, Australia or New Zealand for testing. It is recommended that proper training be provided to a selected number of Nauruans with the appropriate background to help build the basis of expertise in the country. Due to the high maintenance cost of running and maintaining a properly equipped laboratory, it is recommended that a simple basic laboratory be established in Nauru but for proper analysis of environmental samples, these would be done overseas.

### ***2.3.11 Identification of impacted populations or environments, estimated scale and magnitude of threats to public health and environmental quality and social implications for workers and local communities***

Due to the expected low levels of POPs in Nauru, no specific identification of populations or environments impacted by POPs have been made on record. No estimation of the scale and magnitude of the threats to public health, environment or workers have been made. It is expected that the impact of POPs in Nauru is likely to be unmeasurable.

### ***2.3.12 Details of any relevant system for the assessment and listing of new chemicals***

Due to the lack of chemical industry in Nauru, there is little government capacity dedicated to chemical issues. Control of chemicals could be achieved by the listing of chemicals under the Stockholm Convention or by listing chemicals as restricted or prohibited imports under the *Customs Act 2005*. Listing of a restricted or prohibited import under the Customs Legislation is not enforced constructively due to the limited understanding of POPs at the Custom area.

### ***2.3.13 Details of any relevant system for the assessment and regulation of chemicals already in the market***

Besides the Environment bill, there is no system for the assessment and regulation of chemicals in the market. At this stage, due to the relatively small number of chemicals being imported into Nauru, government regulations of chemicals have not been seriously looked at.

### **3. Strategy and action plan elements of the national implementation plan**

#### **3.1 POLICY STATEMENT**

In recognition of the environmental threats posed by persistent organic pollutants, the Government of Nauru commits itself to improve POPs management on Nauru from harming human health and the environment. It also commits itself to promoting “Duty of Care” approach within the Nauruan people would be a way in minimising POPs impact in the country. As part of being a Party member of the Stockholm Convention, Nauru will take actions, as specified in this National Implementation Plan, to reduce and eliminate releases of Persistent Organic Pollutants (POPs) in the country.

The Government of Nauru recognises and endorses this NIP as its main strategic plan to managing and administering POPs in the country and is committed to achieving the goal of this policy. This strategic plan also recognises that important involvement of the extended stakeholders network and their roles in achieving this goal

#### **3.2 IMPLEMENTATION STRATEGY**

The Department of Commerce, Industry and Environment is recognised in Nauru as the lead agency in the implementation of this national implementation plan but for the goal of this plan to be achieved, all relevant stakeholders nominated in the action plans will need to play their parts as well.

There are a number of barriers that the Government freely recognises as key to the successful implementation of this strategic plan. These are outlined below:

1. Scarce Capacity in chemical management.

In order for the action plans to be properly administered and implemented, there needs to be adequate capacity in the country with the knowledge of chemicals and their interactions with the various parts of the biota. The current capacity in Nauru is very limited and proper technical advice for chemical related work may need to be sought externally. This means that a major component of this initial strategic plan on POPs will be in the capacity building area.

It is recommended that a chemical management unit be put in place under the Department of Commerce, Industry and Resources to administer the implementation of this plan. This chemical unit will not only oversee matters pertaining to the Stockholm Convention but also to see the integration or mainstreaming of this work with that of the Basel Convention, Montreal Protocol and other relevant chemical related frameworks in a synergistic manner.

2. Establishment of proper institutional and infrastructural systems

Currently Nauru does not have any infrastructural set up to manage hazardous substances in an environmentally sound manner, nor does it have an adequate institutional system to monitor and manage chemicals that come into the country. There is a major need for these to be put into place if Nauru is going to not only track the chemicals that enter the country but also to provide a system to manage them during their product life and after they have become hazardous wastes.

The implementation of the National Implementation Plan will engage several government sectors, industries and NGO. The Ministry of Commerce, Industry & Resources will have an overall coordination of the POPs NIP implementation.

### **3.3 STRATEGY AND ACTION PLANS**

The element of the Strategy and Action Plans in the National Implementation Plan illustrates several actions targeted on different objectives. The Strategy and Action Plans are objectives, targets and key actions proposed for Nauru's NIPs:-

1. Action Plan on Unintentional releases of POPs
2. Action Plan on Legislation
3. Action Plan on Public Education and Awareness
4. Action Plan on Capacity Building and Education
5. Action Plan on Priority Areas

## Timeline for Actions under the POPs National Implementation Plan

(All figures in AUD\$)

Objective	Cost	Month									
		0-6	6-12	12-18	18-24	24-30	30-36	36-42	42-48	48-54	54-60
<b>Setting up and running a Chemicals Unit</b>	\$50,000										
<b>Action Plan on Legislation</b>											
1. List POPs as restricted imports under the <i>Customs Act 2005</i>	\$1000										
2. Determine appropriate administrative framework for the management of POPs and other chemicals	\$12,000										
3. Determine if licensing of mechanics is appropriate, and, if so, the administrative basis for administering those licences	\$5000										
4. Review the <i>Environment Bill 2006</i> to ensure that BAT and BEP can be applied	\$1000										
5. Develop legislation to give legal effect to the administrative framework for POPs and other chemicals	\$60,000										
<b>Action Plan on Public Education and Awareness</b>											
1. Develop public education and awareness programme including further materials for public education and awareness	\$40,500										
2. Raise public awareness of POPs on the island through posters, pamphlets and other education materials	No additional										
3. Raise public awareness of POPs on Nauru using mass communication systems and targeted workshops	\$35,500										
<b>Action Plan on Capacity Building</b>											
1. Develop practical and appropriate improved cooking methods	\$10,500										
2. Improve capacity of staff on chemistry and chemical management through university studies for appropriate staff and increased customs staff and training	\$100,000										

3. Develop improved systems for medical and quarantine waste disposal	\$300,500										
4. Establish dedicated personnel addressing integrated waste management policy issues	\$65,500										
5. Develop simple laboratory facilities necessary to conduct simple tests and collect samples	\$35,000										
6. Implement a sampling plan to measure ambient levels of dioxins and to clarify emissions of unintentional POPs	\$80,000										
7. Develop mechanisms for the environmentally sound disposal of waste oil that may contain PCBs	\$115,000										
8. Develop a training course for mechanics and other trade people who work in the environments where they come in contact with waste oil	\$40,000										
9. Hydrocarbon management	No additional										
10. Allocate staff to meet the information exchange, reporting and review requirements of the Convention	No additional										
<b>Action Plan on Priority Areas</b>											
1. Undertake PCB testing of transformers and other electrical equipment for dielectric PCB fluids on Nauru and export any identified PCB containing equipment	\$8,000										
2. Determine extent of all identified contaminated sites through environmental testing	\$90,000										
3. Seek available funding to implement remedial action	No additional										
<b>Total</b>											

### **3.3.1. Action Plan on Unintentional releases of POPs**

#### **Background**

Article 5 of the Stockholm Convention encourages Parties to; at a minimum take a number of measures to reduce or eliminate the release of any unintentionally produced POPs. An action plan on unintentionally produced POPs is therefore required given the prominence of this issue in Nauru. These are probably the only POPs that can be produced in the country through improper combustion processes.

Nauru releases, unintentionally, an estimated 1.0g TEQ/a of dioxins and furans into the atmosphere through various actions on the island. This is comparatively low compared to developed and most other developing countries. As populations increase and more industries are developed, the releases of these pollutants are forecasted to increase if actions are not taken now to reduce them in areas where alternatives or best environmental practices or technology are available.

Consistent with the objectives of the Stockholm Convention and to minimise any potential risks to human health and the environment, Nauru will actively take actions to reduce dioxins and furans releases.

It is felt appropriate that actions relating to unintentionally produced POPs be grouped in 'sub' action plans. The following table identifies the required elements of an action plan on unintentionally produced POPs (as detailed in the Stockholm Convention) and notes how each of those elements are addressed in this National Implementation Plan.

#### **Objectives**

To reduce releases of from unintentional POPs.

#### **Actions**

1. Evaluation of current and projected releases, including the development and maintenance of source inventories and release estimates, taking into consideration the source categories identified in Annex C
  - a. Review the work already undertaken using the UNEP toolkit as detailed in 2.3.4 of this National Implementation Plan;
  - b. Determine all types of sources of dioxins and furans and collect information on the estimates of how much dioxins and furans are being produced using the UNEP toolkit
2. Establish programs to promote education and training with regard to, and awareness of, the release of unintentional POPs
  - a. Develop integrated communication program to raise public education and awareness on unintentional POPs chemicals
  - b. Develop further materials for public education and awareness;
  - c. Undertaken awareness raising activities to raise public awareness of POPs and the application of BAT and BEP in Nauru through targeted workshops or promotional activities
3. Evaluation of the efficacy of the laws and policies in Nauru to enforce the policy on the reduction on the release of unintentional POPs
  - a. Review the work already undertaken in legislative and policy reviews as detailed in section 2.2 of this National Implementation Plan paying particular attention to the release on unintentional POPs chemicals
  - b. Determine appropriate administrative framework for the management of chemicals including setting emission standards for motor vehicles and power generation plants;
  - c. Review developments that require development consents under the Environment Bill 2006 to ensure that BAT and BEP is applied;

- d. Develop legislation to give legal effect to the administrative framework for the management of chemicals, and enact national legislation to enforce emission standards for all vehicles and power generation;
- e. Develop understanding of and promote practical and appropriate improved cooking methods;
- f. Develop improved systems for medical and quarantine waste disposal;
- g. Establish dedicated personnel addressing integrated waste management policy issues;
- h. Develop mechanisms for environmentally sound disposal of waste oil that may contain PCBs;
- i. Develop a training course for mechanics and other trade people who work in the environments where they come in contact with waste oil.

### **Management**

The management of this Action Plan will be undertaken by the Chemicals Management Unit within the Department of Commerce, Industry and Resources with the assistance of consultants and advisors.

### 3.3.2. Action Plan on Legislation

#### Background

Like many other MEAs that need to be integrated or mainstreamed into existing national regimes, the Stockholm Convention also requires appropriate legislation to regulate the production, use, import and export of POPs. It is also appropriate that the legislation addresses the transport, storage and disposal of POPs akin to those that are in place for the management of other hazardous materials.

Nauru has no legislation comprehensively regulating POPs or other types of hazardous substances and will need to be introduced.

Developing such legislation in Nauru will be a lengthy process. Parliament holds meetings once a quarter each year, Legislation dealing with chemicals will have many stakeholders including environment, agriculture, health, labour and customs.

Currently there is no capacity in these areas dedicated to chemicals management. Determining appropriate, effective and acceptable decision making and administrative procedures relating to legislation on chemicals will take some time.

In order to fulfil the restrictions on imports required by the Stockholm Convention as soon as possible, temporary controls on the import of POPs can be achieved by including POPs as restricted imports under the *Quarantine Act 2005*.

There is also some concern with the operation of mechanics in Nauru in the servicing of vehicles, (vehicles being a source of unintentional POPs), and the disposal of waste oil (which will contain traces of dioxins and PCBs as combustion by-products). There is a recognised need for commercial mechanics to be properly trained and licensed.

This option needs to be considered in consultation with the community. Training for mechanics is considered under the capacity building Action Plan. Licensing of mechanics, and mechanism for administering those licences, is considered under this Action Plan.

#### Objectives

1. List POPs and products containing POPs as restricted imports under the *Customs Act 2005*
2. Determine appropriate administrative framework for the management of all POPs chemicals
3. Develop legislation to give legal effect to the administrative framework for the management of POPs and other chemicals

#### Actions

Evaluation of the efficacy of the laws and policies in Nauru to enforce the policy on the management of all POPs chemicals

- a. Review the work already undertaken in legislative and policy reviews as detailed in section 2.2 of this National Implementation Plan
- b. Determine appropriate administrative framework for the management of chemicals;
- c. Review developments that require development consents under the Environment Bill 2006 to ensure that all POPs chemicals management are applied;
- d. Develop legislation to give legal effect to the administrative framework for the management of chemicals, and enact national legislation to enforce the management of POPs chemicals;

## **Management**

The technical management of chemicals is proposed to be undertaken by a consultant with a good knowledge of the bureaucracy and political situation as well as the legislative framework of Nauru and the MEAs systems. The consultant should have a good understanding of the extent and nature of chemical use in Nauru. The legislation will be designed to allow the importation and use of hazardous chemicals in Nauru only where necessary and where allowed by relevant international conventions.

The BAT and BEP required by the Stockholm Convention can be achieved by ensuring that the list of prescribed developments under the new Environment Act 2006 covers the necessary source categories.

The management of this Action Plan will be undertaken by the Chemical Management Unit within the Ministry of Commerce, Industry & Resources and the assistance of consultants and advisors.

### **3.3.3. Action Plan on Public Education and Awareness**

#### **Background**

There is a need to raise more public awareness on POPs at the national level as most of the people within the country are still yet at the stage of digesting the technical aspects of POPs. If awareness activities on POPs are to be effective throughout the country, an appropriate integrated communication strategy accompanied by significant resources will be needed in order to overcome this challenge.

After awareness raising and education activities are conducted, the Department of Health and Department of Commerce, Industry & Resources together with other relevant stakeholders would be able to continue POPs related health promotion measures on the islands. Mass communication systems can effectively be used to disseminate information about POPs to the public. It is appropriate to supplement these activities with targeted workshops.

Over the last two years of the POPs Project the project team had undertaken some public awareness activities. This Action Plan would build on those activities.

#### **Objectives**

1. Develop further materials for public education and awareness
2. Raise public awareness of POPs and the application of BAT and BEP on the island.
3. Raise public awareness of POPs and the application of BAT and BEP using mass communication systems and targeted workshops

#### **Actions**

The public awareness program will require considerable planning and preparation in order to accomplish the NIP requirement. Some educational materials, such as radio dramas, POPs presentations, pamphlets and posters have already been developed as part of the initial POPs project. These materials will be further developed to further promote public awareness of POPs.

Developing the school curriculum to include POPs and the effects of hazardous chemicals is an essential component to ensure long term public awareness and education.

The Health Ministry would ensure continued awareness of POPs and appropriate reduction methods if sufficient funds are available to assist with the program. Public awareness on Nauru will involve mass communication methods such as TV, radio, posters and signs as well as planned workshops targeted at specific groups such as community leaders and groups involved in producing or dealing with unintentionally produced POPs.

These awareness activities will be provide practical ways for the stakeholders to implement the BAT and BEP in a more effectively way to the general public.

#### **Management**

The implementation on the public awareness and education activities will be co-ordinated by the Ministry of Commerce, Industry & Resources in collaboration with the Chemicals Unit established.

### **3.3.4. Action Plan on Capacity Building and Education**

#### **Background**

Nauru has significant constraints in its capacity to implement the obligations of the Stockholm Convention. Constraints result from a small workforce and a limited resources, facilities, technical knowledge, and training.

Specifically, Nauru has identified the following gaps where capacity needs to be built:

- Lack of capacity to promote improved cooking methods on the island
- Lack of sufficient customs staff to effectively monitor imports
- Lack of effective medical and quarantine waste disposal
- Lack of dedicated personnel addressing waste management policy issues
- Lack of capacity to conduct an effective sampling program, including basic laboratory facilities
- Lack of mechanisms for environmentally sound disposal of waste oil
- Lack of trained mechanics
- Lack of general awareness on hydrocarbon management

#### **Objectives**

1. Develop understanding of promoting practical ways for appropriate improved cooking methods
2. Increase customs staff and training
3. Develop improved systems for medical and quarantine waste disposal
4. Establish dedicated personnel addressing waste management policy issues
5. Develop simple laboratory facilities necessary to conduct simple tests and collect samples
6. Develop and implement a sampling plan to measure ambient levels of dioxins and to clarify emissions of unintentional POPs
7. Develop mechanisms for environmentally sound disposal of waste oil
8. Develop a training course for mechanics
9. Develop awareness on hydrocarbon management

#### **Actions**

##### *Cooking*

Open fire cooking with biomass fuels and wood has been identified as a significant source of unintentional POPs in Nauru. To reduce these emissions, relevant BAT and BEP will need to be promoted. Efficient and alternative cooking methods such as solar stoves and smokeless ovens will be needed to be practiced in Nauru. To refine these practices, the national women's group will implement the best and most efficient cooking methods suitable for the island.

##### *Border control*

The absence of a Border control in Nauru is one fundamental weakness to effective implementation of the Conventions requirement. It is therefore appropriate that the Customs Service be strengthened to effectively identify possible imports that would be contrary to national legislation and the Stockholm Convention. Legislation will regulate the import of chemicals and restrictions on the import of POPs chemicals provided under the *Customs Act 2005*. Once these controls are in place, increasing the capacity of the Customs Service is essential for the effective enforcement of these restrictions.

### *Medical and Quarantine waste*

An incinerator was installed in the hospital when the hospital was built. The incinerator stopped working after a few years due to lack of maintenance. In 2003 the incinerator was repaired and upgraded, however, since then it has only worked for brief periods.

Waste pharmaceuticals are also a significant problem. It is therefore difficult to predict the pharmaceuticals that are needed in medical treatment and a significant amount of waste pharmaceuticals are been dumped mainly at the landfill.

Quarantine waste is currently disposed in landfill at the topside of the island. Proper Disposal infrastructures and options for medical and quarantine waste is needed. The recommendations will be implemented with accompanied training and support for any new practices and equipment.

### *Waste Management*

Collection of solid waste and disposal is currently the responsibility of the government. The CIR and Rehab is currently focusing on waste management proper disposal infrastructures will need to put in place for supporting waste sorting, recycling and littering, responding to future challenges relating to waste management.

### *Laboratory*

Nauru would not be able to support a full laboratory for chemical testing. There is however need for a small scale facility that could be used as a focal point for collecting and storing samples before any necessary detailed analysis overseas. The facility would have sampling and storage equipment in addition to equipment for conducting basic chemical tests. The Chemicals Unit will be responsible for reviewing existing laboratories and laboratory needs in Nauru, and sourcing equipment necessary for a basic laboratory. Training will be needed in this area to support the testing on chemicals.

### *Sampling plans*

Nauru will need Sampling plans for ambient concentrations of POPs in air, land, water, food, animals and humans, this will establish useful baseline data to determine whether the actions detailed under this action plan are effective. Sampling from identified emission sources of unintentionally produced POPs will help determine appropriate emission factors for calculation of more precise estimates of unintentional POPs being produced in Nauru. There is also a need to determine the burning of particular types of incinerators in the phosphate kiln. The Chemicals Unit will develop and carry out such sampling plans with necessary technical assistance from international consultants.

### *Waste Oil*

The Chemicals Unit will acquire the services of a consultant to determine the most appropriate procedures for disposal of waste oil. The Chemicals Unit will then be responsible for implementing the recommendations of the consultants report.

### *Mechanics Training*

The lack of trained mechanics has been identified as a relevant issue both in terms of management of waste oil contaminated by dioxins and PCB combustion by-products and in the maintenance of vehicles which produce dioxins and furans. The Chemicals Unit will engage a consultant to develop a training course for mechanics relevant to the Nauru situation. It is planned that the course will be delivered through the Tarawa Technical Institute.

### *Hydrocarbon management*

Lack of general understanding on proper procedures for hydrocarbon management has led to contaminated sites throughout Nauru. The worst of these sites are described in Waste hydrocarbons used in combustion processes will contain trace dioxins and PCBs. Training and information on proper procedures for hydrocarbon management will be conducted and targeted through workshops on Nauru.

### **Management**

Various entities will have responsibility for implementing this action plan. Activities under this action plan will be overseen by the Chemicals Unit.

### **3.3.5. Action Plan on Priority Areas**

#### **Background**

Proper disposal infrastructures and cleanup of the contaminated sites is a need on the island to mitigate emissions of POPs from harming the environment.

#### **Objectives**

1. Put in place appropriate disposal infrastructures for POPs
2. Determine extent of all identified contaminated sites, including groundwater contamination, and assess all concrete structures in the area, together with recommendations for remedial actions
3. Seek available funding to implement remedial action

#### **Actions**

To determine the presence of POPs and separate them in an environmentally sound manner.

Most of the contaminated areas on Nauru will need further feasibility studies to underpin their impact. This is proposed to be done by consultants in collaboration with the support of the Chemicals Unit under the Ministry of Commerce, Industry & Resources. The outcome of the consultants reports will recommend detailed remedial action for each site. Sourcing of funds for the remediation of these sites will be undertaken when the nature and cost of the proposed remedial action is known.

#### **Management**

The management of this of this Action Plan will be undertaken by the Chemicals Unit.

## Annex 1

### Descriptions of the 12 POPs<sup>1</sup>

Aldrin – A pesticide applied to soils to kill termites, grasshoppers, corn rootworm, and other insect pests.

Chlordane – Used extensively to control termites and as a broad-spectrum insecticide on a range of agricultural crops.

DDT – Perhaps the best known of the POPs, DDT was widely used during World War II to protect soldiers and civilians from malaria, typhus, and other diseases spread by insects. It continues to be applied against mosquitoes in several countries to control malaria.

Dieldrin – Used principally to control termites and textile pests, dieldrin has also been used to control insect-borne diseases and insects living in agricultural soils.

Dioxins – These chemicals are produced unintentionally due to incomplete combustion, as well as during the manufacture of certain pesticides and other chemicals. In addition, certain kinds of metal recycling and pulp and paper bleaching can release dioxins. Dioxins have also been found in automobile exhaust, tobacco smoke and wood and coal smoke.

Endrin – This insecticide is sprayed on the leaves of crops such as cotton and grains. It is also used to control mice, voles and other rodents.

Furans – These compounds are produced unintentionally from the same processes that release dioxins, and they are also found in commercial mixtures of PCBs.

Heptachlor – Primarily employed to kill soil insects and termites, heptachlor has also been used more widely to kill cotton insects, grasshoppers, other crop pests, and malaria-carrying mosquitoes.

Hexachlorobenzene (HCB) – HCB kills fungi that affect food crops. It is also released as a byproduct during the manufacture of certain chemicals and as a result of the processes that give rise to dioxins and furans.

Mirex – This insecticide is applied mainly to combat fire ants and other types of ants and termites. It has also been used as a fire retardant in plastics, rubber, and electrical goods.

---

<sup>1</sup> From UNEP (2002)

Polychlorinated Biphenyls (PCBs) – These compounds are employed in industry as heat exchange fluids, in electric transformers and capacitors, and as additives in paint, carbonless copy paper, sealants and plastics.

Toxaphene – This insecticide, also called camphechlor, is applied to cotton, cereal grains, fruits, nuts, and vegetables. It has also been used to control ticks and mites in livestock.

## Annex 2

### List of Participants in the National Coordinating Committee

No.	Name of Participant	Nationality
1	Mr. Warrick Harris	Nauruan
2	Mr. Frankie Ribauw	Nauruan
3	Mr. Pene Agadio	Nauruan
4	Mr. Bryan Star	Nauruan
5	Mr. Nodel Neneiya	Nauruan
6	Mr. Thomas Star	Nauruan
7	Mr. Vincent Scotty	Nauruan
8	Mr. Bernard Grundler	Nauruan
9	Mr. Andre Adun	Nauruan
10	Mr. Samuel Grundler	Nauruan
11	Mr. Demsey Detenamo	Nauruan
12	Mr. Earnest Stephen	Nauruan
13	Mr. Tazio Gideon	Nauruan
14	Mr. Pyon Deiye	Nauruan
15	Mr. Elkoga Gadabu	Nauruan
16	Ms. Rose Cain	Nauruan
17	Mr. Frank Griffin	Australian

### Annex 3

#### Detailed List of Actions and Expenditure

<b>Chemicals Unit</b>					
<b>Objective: to set up a functioning Chemicals Unit</b>					
<b>Activity</b>	<b>Responsible Agency</b>	<b>Timeframe</b>	<b>Performance Indicator</b>	<b>Resources Needed</b>	<b>Amount and source of funding in AUD\$ (figures in brackets identifies proportion to be funded by Stockholm Convention)</b>
Establishment of Chemicals Unit personnel	MELAD	Month 3-4	Chemicals Unit established	Advertising Costs Office Computer	Budget to be determined
Chemicals Unit personnel in	Chemicals Unit	Month 3-60	Action Plans implemented	Salary Consultant/advisor costs Transport	Budget to be determined
Establishing office facilities for the Chemicals Unit for 5 years, preferably co-located with Ministry of CIE	Chemicals Unit using	Month 4-6	Functioning Office established	Cost of acquiring resources (phone calls, quotes, transport)	Budget to be determined
Running Chemicals Unit office for 5 years	Chemicals Unit	Month 6-60	Office continues to function for 5 years	Office space Air conditioning Furniture Computers Phone lines and calls Electricity Internet Printer/scanner/copier/fax Consumables Accounting services	Budget to be determined

Identification of training needs for relevant staff and available training courses including management, data storage, sampling procedures, communication and public awareness, masters in chemistry	Chemicals Unit	Months 5-7	Appropriate training courses identified	Resources covered in Chemicals Unit	No additional resources needed
Training of relevant staff	Chemicals Unit	As needed, when available	Training successfully completed	Airfares Per diems Course costs	Budget to be determined

<b>Workshop</b>					
<b>Objective: To undertake workshops on the island</b>					
<b>Activity</b>	<b>Responsible Agency</b>	<b>Timeframe</b>	<b>Performance Indicator</b>	<b>Resources Needed</b>	<b>Amount and source of funding in AUD\$ (figures in brackets identifies proportion to be funded by Stockholm Convention)</b>
Organise basic resources for effective workshops	Chemicals Unit	Month 12-18	Functional resources acquired	2 Laptops 2 multimedia projectors 2 projection screens 2 flash drives 2 printers 2 whiteboards Consumables – White board markers, paper, A3 display sheets Electrical generator	Budget to be determined
Plan workshop on Nauru	Chemicals Unit	Month 12-18	Preparation for workshops complete	Covered in Chemicals Unit	No additional costs

Trial workshops for 1 week, , undertaken by 3 people including: – public awareness – sampling of animals, humans, air, burning. – promotion of alternative cooking practices – survey of effectiveness of workshops	Chemicals Unit	Month 18- 24	Workshops undertaken on one island	Transport to island Transport on island Gifts for maneabas Salaries of officers Per diems for officers Excess weight Incidentals	Budget to be determined
Review of first set of workshops	Chemicals Unit	Month 18- 24	Review undertaken and presented to co-ordinating committee	Covered by Chemicals Unit	No additional cost

<b>Action Plan – Legislation</b>					
<b>Activity</b>	<b>Responsible Agency</b>	<b>Timeframe</b>	<b>Performance Indicator</b>	<b>Resources Needed</b>	<b>Amount and source of funding in AUD\$ (figures in brackets identifies proportion to be funded by Stockholm Convention)</b>
<b>Objective 1: List POPs as restricted imports under the <i>Customs Act 2005</i></b>					
Develop cabinet paper to amend the list of restricted imports to prevent the import of POPs except in accordance with the Stockholm Convention	Customs Chemicals Unit AGs Office	Month 3-6	POPs listed as restricted imports	Staffing time	Budget to be determined
<b>Objective 2: Determine appropriate administrative framework for the management of chemicals</b>					
Draft terms of reference for consultant to report on the appropriate and effective decision making and administrative procedures for the management of chemicals	Chemicals Unit	Month 6-8	Terms of reference completed	Covered by Chemicals Unit	No additional cost
Engage consultant to develop appropriate and effective decision making and administrative procedures for the management of chemicals	Chemicals Unit	Month 8-12	Decision making and administrative procedures determined	Consultancy fees/per diem Meeting costs Transport	Budget to be determined

Cabinet approval of chemicals management procedures	Chemicals Unit	Month 12-14	Chemical management procedures approved by Cabinet	Covered by Chemicals Unit	No additional cost
<b>Objective 3: Determine if licensing of mechanics is appropriate, and, if so, the administrative basis for administering those licences</b>					
Draft terms of reference for consultant to report on whether licensing of mechanics is appropriate, and, if so, the most effective way to administer such licences	Chemicals Unit	Month 6-10	Terms of Reference Drafted	Covered by Chemicals Unit	No additional cost
Engage consultant to hold workshops with stakeholders on a possible licensing system for mechanics, and report on outcomes	Chemicals Unit	Month 10-14	Workshops held and report produced	Consultant costs Workshop Venue Refreshments Invitations Transport	Budget to be determined
<b>Objective 4: Develop legislation to give legal effect to the administrative framework and potentially the licensing of mechanics</b>					
Draft terms of reference for consultant to develop legislation reflecting chemical management procedures implementing the Stockholm convention and other relevant international conventions relating to chemicals and their disposal	Chemicals Unit	Month 14-15	Terms of reference completed	Covered by Chemicals Unit	No additional cost
Engage consultant to develop legislation	Chemicals Unit	Month 15-24	Legislation developed	Consultancy fees/per diem Workshops Travel	Budget to be determined
Consultations on draft legislation	Chemicals Unit AG's Office	Month 22-23	Consultations completed	Workshops Meeting costs	Budget to be determined
Review legislation in light of consultations	Chemicals Unit AG's Office	Month 24	Final draft of legislation produced	Covered by consultants costs	No additional costs
Present legislation to Cabinet for approval	Chemicals Unit AG's Office	Month 24-26	Legislation approved by Cabinet	Covered by Chemicals Unit	No additional costs

Support as necessary for Cabinet/Parliamentary process	Chemicals Unit	Month 26-36	Legislation enacted	Consultant advice	Budget to be determined
--	----------------	-------------	---------------------	-------------------	-------------------------

<b>Action Plan – Public awareness and Education</b>					
<b>Activity</b>	<b>Responsible Agency</b>	<b>Timeframe</b>	<b>Performance Indicator</b>	<b>Resources Needed</b>	<b>Amount and source of funding in AUD\$ (figures in brackets identifies proportion to be funded by Kiribati)</b>
<b>Objective 1: Develop further materials for public education and awareness</b>					
Planning of content of video about POPs and how POPs can be reduced in Kiribati	Chemicals Unit AMAK	Month 6-7	Video Planned	Covered by Chemicals Unit	No additional costs
Produce video	Chemicals Unit	Month 7-12	Video Produced	Video Camera Video software Actors Production costs	Budget to be determined
Plan television segments relating to POPs	Chemicals Unit	Month 7-8	Television segments planned	Covered by Chemicals Unit	No additional cost
Produce televisions segments	Chemicals Unit	Month 8-18	Television segments produced	Some costs covered by video production Production costs	Budget to be determined
Design and production of stickers on POPs	Chemicals Unit	Month 10-12	Stickers produced	Design costs Production costs	Budget to be determined

Design and production of posters and signs on POPs	Chemicals Unit	Month 10-12	Posters and signs produced	Design costs Production costs	Budget to be determined
Production of pamphlets based on previous material	Chemicals Unit	Month 10-12	Pamphlets produced	Production costs	Budget to be determined
<b>Objective 2: Raise public awareness of POPs in the outer islands through the travelling workshop</b>					
Promote public awareness using education materials produced through the travelling workshop	Chemicals Unit	Month 12-60	Travelling workshops completed	Covered under travelling workshop	No additional costs
<b>Objective 3: Raise public awareness of POPs on South Tarawa using mass communication systems and targeted workshops</b>					
Broadcast existing radio spots and radio dramas on POPs	Chemicals Unit	Month 12-60	Segments broadcast	Broadcasting fees	Budget to be determined
Publish newspaper articles on POPs	Chemicals Unit	Month 12-60	Newspaper articles published	Publishing fees	Budget to be determined
Broadcast television programs	Chemicals Unit	Month 12-60	Television programs broadcast	Broadcasting fees	Budget to be determined
Erection of signs and Posters	Chemicals Unit	Month 12-18	Signs and posters erected	Consent from local authorities	Budget to be determined
Promote activities for a POPs day as part of environment week once a year	Chemicals Unit	During environment week each year	POPs day occurs	Organise POPs competitions Floats Food Invitations PA equipment Presentations	Budget to be determined
Curriculum development for POPs and the effects of harmful chemicals	Chemicals Unit CDRC	Month 12-24	Curriculum updated	Workshop on curriculum Production of curriculum	Budget to be determined

Incorporate POPs information and reduction methods into the Health Promotions Unit workplan	Health Promotions Unit	Month 6-60	POPs material incorporated into workplan	Staff time Computing resources Partial funding of workshops	Budget to be determined
---	------------------------	------------	--	---	-------------------------

<b>Action Plan – Capacity Building</b>					
<b>Activity</b>	<b>Responsible Agency</b>	<b>Timeframe</b>	<b>Performance Indicator</b>	<b>Resources Needed</b>	<b>Amount and source of funding in AUD\$ (figures in brackets identifies proportion to be funded by Stockholm Convention)</b>
<b>Objective 1: Develop practical and appropriate improved cooking methods</b>					
Develop competition to promote more efficient cooking practices (solar stove, smokeless oven)	AMAK	6-12	Competition held	Prize money Promotion costs Co-ordination costs Venue	Budget to be determined
<b>Objective 2: Increase customs staff and training</b>					
Employ an additional Customs Officer for 4.5 years	Customs	Month 4-8	Additional customs officer employed	Hiring costs Salary Office Computer Phone Electricity Internet connection	Budget to be determined
Establish work experience placements for short periods (2-3 months) in countries overseas (Fiji, Australia, New Zealand)	Customs	Months 12-36	Work experience placements undertaken	Arranging placements Per diems Airmiles	Budget to be determined
<b>Objective 3: Develop better systems for medical and quarantine waste disposal</b>					
Draft terms of reference for consultant to review medical and quarantine waste disposal	Health Agriculture	Months 1-3	Terms of reference drafted	Staff time Computer Consumables	Budget to be determined
Engage consultant to review medical and quarantine waste disposal (including storage of waste before disposal) and make recommendations as to improvements	Health Agriculture	Months 3-6	Consultants report produced	Consultant fees/per diem	Budget to be determined

Implement recommendations of consultant	Health Agriculture	Months 6-18	Technology sourced	Equipment costs Secure waste store	Budget to be determined
Training of staff and support for new technology/systems	Health Agriculture	Months 18-60	Staff trained and support provided as needed	Consultant costs Training venue Staff time	Budget to be determined
<b>Objective 4: Establish dedicated personnel addressing waste management policy issues</b>					
Establish a forum of interested parties	MISA MELAD Local Government MFED Other as necessary	Months 6-60	Forum established	Meeting venue Meeting organisation Transport	Budget to be determined
Establish a position of waste management officer to support and carry out the decisions of the waste management forum	MELAD	Months 6-60	Position established	Salary Office Computer Phone Internet Electricity Consumables	Budget to be determined
Resources necessary to improve waste management	MELAD	Months 6-60	Resources available to improve waste management	Radio spots TV ads Competitions Workshops	Budget to be determined
<b>Objective 5: Develop simple laboratory facilities necessary to conduct simple tests and collect samples</b>					
Source necessary laboratory facilities to facilitate sampling program for 4 years	Chemicals Unit	Month 12-18	Laboratory facilities upgraded	Office Furniture Sampling equipment Other necessary equipment Basic reagents Refrigeration Electricity	Budget to be determined
<b>Objective 6: Implement a sampling plan to measure ambient levels of dioxins and to clarify emissions of unintentional POPs</b>					
Develop sampling plan for ambient concentrations of POPs in air, land, water, food, animals and humans	Chemicals Unit	Month 12-18	Sampling plan developed	Covered by Chemicals Unit	No additional costs

Develop sampling plan to determine more precise emission factors for sources of unintentional POPs	Chemicals Unit	Month 12-18	Sampling plan developed	Covered by Chemicals Unit	No additional costs
Implement sampling plan as part of travelling workshop	Chemicals Unit	18-60	Sampling plan implemented	Covered by Travelling workshop GPS to pinpoint samples	No additional costs
Implement sampling plan	Chemicals Unit	18-60	Sampling plan implemented	Covered by Chemicals Unit Assistance for testing single combustion sources	No additional costs
Analysing samples in Fiji/Australia	Chemicals Unit	18-60	Samples analysed	Transport costs Laboratory costs	Budget to be determined
Once samples have been analysed, the Chemicals Unit will produce a management plan for identified POPs	Chemicals Unit	48-60	Management plan produced	Covered by Chemicals Unit	No additional
<b>Objective 7: Develop mechanisms for the environmentally sound disposal of waste oil</b>					
Draft terms of reference to engage consultant to determine appropriate mechanisms for the environmentally sound disposal of waste oil	Chemicals Unit	6-8	Terms of reference drafted	Covered by Chemicals Unit	No additional costs
Engage consultant to determine appropriate mechanisms for the environmentally sound disposal of waste oil	Chemicals Unit	8-10	Appropriate mechanisms determined	Consultant fees/per diem	Budget to be determined
Implement recommendations of consultants report (exporting procedure, burning to generate electricity, collection of waste oil)	Chemicals Unit	10-16	Recommendations implemented	Equipment Adjusting procedures Amending laws	Budget to be determined
<b>Objective 8: Develop a training course for mechanics</b>					

Draft terms of reference for a consultant to develop a training course relevant to mechanics on Nauru	Chemicals Unit	8-10	Terms of reference developed	Covered by Chemicals Unit	No additional costs
Engage consultant to develop training course for mechanics on Nauru	Chemicals Unit	10-16	Training course developed	Consultant fees/per diem Meeting costs	Budget to be determined
Train trainers at the Technical Training Institute to deliver the course	Chemicals Unit	16-18	Trainers Trained	Consultant fees/per diem Meeting costs Practical workshops Equipment to measure emissions	Budget to be determined
Provide training to mechanics on Nauru	TTI	18-60	Mechanics Trained	TTI operating costs	Budget to be determined
<b>Objective 9: Hydrocarbon Management</b>					
Develop information and training resources for proper hydrocarbon management on Nauru	Chemicals Unit	10-12	Information and training resources developed	Covered by Chemicals Unit	No additional cost
Deliver information and training on hydrocarbon management as part of the travelling workshop	Chemicals Unit	12-60	Information and training delivered on Outer Islands	Covered in travelling workshop	No additional costs
Deliver information and training on hydrocarbon management on Nauru	Chemicals Unit	12-60	Information and training delivered on South Tarawa	Covered in public awareness	No additional cost
<b>Objective 10: Allocate staff to meet the information exchange and reporting requirements of the Convention</b>					
Meeting information exchange and reporting requirements of the Convention	Chemicals Unit	10-60	Information exchange and reporting requirements met	Covered by Chemicals Unit	No additional costs

**Action Plan – Priority Areas**

<b>Activity</b>	<b>Responsible Agency</b>	<b>Timeframe</b>	<b>Performance Indicator</b>	<b>Resources Needed</b>	<b>Amount and source of funding in AUD\$ (figures in brackets identifies proportion to be funded by Stockholm Convention)</b>
<b>Objective 1: Undertake PCB testing of transformers and other electrical equipment for dielectric PCB fluids on both Kanton and Banaba and export any identified PCB containing equipment</b>					
Testing of electrical equipment on Nauru	Chemicals Unit	12-18	All electrical equipment on Kanton and Banaba tested	Covered by travelling workshop Testing Kits	Budget to be determined
Export of PCB containing equipment	Chemicals Unit	12-24	All PCB containing equipment exported	Unknown	Funds to be sought as necessary
<b>Objective 2: Determine extent of all identified contaminated sites</b>					
Draft terms of reference for consultants to conduct comprehensive analysis of contaminated sites on Nauru	Chemicals Unit	12-18	Terms of reference drafted	Covered by Chemicals Unit	No additional cost
Engage consultants to conduct comprehensive analysis of contaminated sites, including groundwater contamination, assessment of concrete structures and recommended remedial actions	Chemicals Unit	18-24	Consultants engaged	Consultant fees/per diem Transport Equipment Testing of samples	Budget to be determined
<b>Objective 3: Seek available funding to implement remedial action</b>					
Seek available funding to implement remedial actions necessary to remediate assessed contaminated sites	Chemicals Unit	24-60	Funding obtained	Covered by Chemicals Unit	No additional cost