

**Global Environment Facility
Pacific Persistent Organic Pollutants Release Reduction Project**

**Training in Best Practice Chemical Management
for the Pacific Region**

Training Report for the Republic of Palau



**Environmental Quality Protection Board
Republic of Palau**



**Secretariat of the Pacific Regional
Environment Programme**



United Nations Environment Program

JULY 2016

Table of Contents

1. INTRODUCTION	1
2. ORGANISATIONAL DETAILS	1
3. COURSE CONTENT	2
3.1 Course Outline and Expected Outcomes.....	2
3.2 Resource Materials.....	3
3.3 Field Visits	3
3.4 Training for Customs Officers	4
3.5 Training of Trainers	5
4. COURSE OUTCOMES	5
4.1 Identification of National Issues/Action Planning	5
5. PARTICIPANT FEEDBACK.....	8
Appendix 1: Participants List.....	11
Appendix 2: Programme	14
Appendix 3: Participant Feedback Form	17
Appendix 4: Sound Chemical Management in the Republic of Palau (Section IV: Policy Objectives)	18
Appendix 5: Palau National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (PP 39-45)	30

Best Practice Chemical Management: Training Report for Palau

1. INTRODUCTION

Training in best practice chemical management was identified as a key need for Pacific Island countries in their planning for implementation of the Stockholm Convention on Persistent Organic Pollutants. In addition, it was recommended that the training should be applicable to all types of chemicals, rather than just those covered under the Convention.

The training component of the **Pacific Persistent Organic Pollutants Release Reduction Project** was developed in response to these needs. This involved the delivery of training courses within 14 Pacific Island countries with the overall aim of improving regional chemical management. The courses were developed and delivered by the Institute of Applied Science of the University of the South Pacific under a contract to the Secretariat of the Pacific Regional Environment Programme. Funding for the work was provided by the Global Environment Facility and implemented by the United Nations Environment Programme.

The objectives, comments, and actions from the existing Sound Chemicals Management Policy (2011) remain relevant to Palau's management of hazardous chemicals. Some are discussed again in the Action Plan from the Training Workshop but the full policy is included here for completeness. This appears in Appendix 4. Similarly, the 2007 Stockholm Convention National Implementation Plan for the management of pesticides, PCBs, and unintentional POPs contains some action points that remain relevant (Appendix 5). Additional ones for the new POPs will be relevant when the Stockholm Convention NIP is updated. As Palau continues with their refinement of the Draft Action Plan for Hazardous Chemicals developed during the Training, they will harmonize these two attachments.

This document provides a report for the training delivered in Palau.

2. ORGANISATIONAL DETAILS

The training course for Palau was delivered over the period 11 July to 15 July 2016. The main venue for the course was the Bureau of Marine Resources Conference Room, Koror, Republic of Palau, and the course presenters were Professor William Aalbersberg, Associate Professor Maika Vuki and Mr. Apisalome Movono. Local assistance with planning and organisation was provided by Ms. Zena Kulialang Rengulbai, Environmental Outreach Officer/ POPs Grant Coordinator for the Palau Environmental Quality Protection Board. This assistance is gratefully acknowledged.

The training course was targeted at people who are directly involved with the storage, handling, use or disposal of chemicals, and especially those people who work in laboratories, or as science teachers, or whose work involves the supervision or management of laboratory facilities. It was also relevant to government officials with regulatory responsibilities in this

area, including Customs Officers, who were given a more targeted one-day course on 15 July 2016.

A full list of the course participants is given in Appendix 1 of this report. As shown there, the participants included representatives from the following organisations:

- Environmental Quality Protection Board
- Division of Environmental Health, Ministry of Health
- Division of Solid Waste Management, Bureau of Public Works, Ministry of Public Infrastructure, Industries, and Commerce
- Department of Health, Ministry of Health
- Division of Oral Health, Ministry of Health
- Bureau of Fire and Rescue, Ministry of Justice
- Palau High School, Ministry of Education
- Aimeliik State Government
- Hatohobei State Government
- Solid Waste Management Office, Koror State Government
- Palau Chamber of Commerce
- Palau Academic Institute for Research
- The Environment Inc.
- Wellness Center
- Pacific Family Medical Supply
- Palau Water
- Surangel & Son's: Mason's Hardware
- Western Caroline Trading Company: Maintenance Department
- IP&E Palau, Inc.

3. COURSE CONTENT

A copy of the course programme is given in Appendix 2 of this report.

3.1 Course Outline and Expected Outcomes

The main training course covered best practice laboratory chemical management, chemical inventories and Stockholm Convention NIP updating and reporting, including POPs inventories. Some of these areas were also covered in the separate sessions for Customs Officers, along with information on the enforcement of national chemical regulations in the context of the chemicals and waste MEAs.

On completion of the course it was expected that participants should be able to:

1. Identify potentially hazardous chemicals or chemical wastes
2. Describe the most appropriate ways of working with those materials, including generally recommended procedures for safe storage, handling, use and disposal
3. Describe the steps involved in preparing a chemical inventory, and the ways in which this information should be used
4. Describe the national and international controls currently in place for managing specific groups of hazardous chemicals and hazardous wastes

Discussions and practical exercises were included throughout the programme. A key focus of the discussions was to draw out potential issues for later inclusion in a national action plan, as discussed under section 4.1. The material was also supported by presentation of a number of case studies, especially those of particular relevance to the Pacific Islands.

3.2 Resource Materials

All participants were provided with a printed copy of the training manual. They were also provided with a CD containing four electronic toolkits covering the following:

1. A regional best practice guide covering all aspects of chemical management
2. A best practice guide for the safe management of chemicals in laboratories, including those found in schools, hospitals, and veterinary facilities
3. A best practice guide for the safe management of chemicals at chemical storage sites
4. A best practice guide for the safe management of chemicals in Customs areas.

Each of the toolkits included the following components:

- A handbook
- A collection of electronic resource documents which could be accessed by using the links provided in the bibliographies at the end of each section of the handbook
- One-page fact sheets and posters on specific aspects of chemical management
- Other useful resources, such as teaching workbooks, and links to other relevant on-line documents and e-learning tools

3.3 Field Visits

The following field visits were carried out in support of the training programme:

Belau National Hospital Pharmacy

- Ms. Clarette Matlab, Chief Pharmacist, Division of Pharmacy and Medical Supplies, Ministry of Health

- Participants were able to confirm that Lindane has not been used for the last 5-7 years and an alternative has been identified for the treatment of Scabies and Lice. Ms. Matlab identified the high cost of Lindane as the primary factor in switching over to the alternative, Permethrin Lotion 1%. Her investigation into the increase in price of Lindane concluded that it was due to the ban imposed by the Stockholm Convention.

Palau Community College Laboratory

- Dr. Christopher Kitalong
- Participants were introduced to the various projects that students are involved with.
- Inspection of the laboratory chemicals storage and management revealed that chemicals are stored with the most hazardous being the highest on the shelf and furthest away from reach. These could perhaps be locked away.

Koror State Recycling Centre

- Mr. Katsuo Fuji, Consultant, Koror State Solid Waste Management Office
- This site visit included a detailed explanation of the plastics and used oil to diesel oil conversion by Mr. Fuji. One of the challenges that was identified at the site was the lack of oil drums to store the used oil that individuals were bringing.

Bureau of Public Works Tire Shredding Facility

- Mr. Harry Sambal, General Employer, Landfill Operations, Division of Solid Waste Management, Bureau of Public Works, Ministry of Public Infrastructure, Industries, and Commerce
- This site is a new facility that will begin this year to shred used tires. Participants were able to familiarize themselves with the facility. One of the challenges that they identified at site is the use of the tires once shredded. Mr. Sambal explained that the shredded tires will be stored and will become available for the public use. However, details beyond that would need to be further explored.

3.4 Training for Customs Officers

A separate training session was held for Customs Officers on 15 July 2016. The session was held in the Bureau of Marine Resources Conference Room, Koror, Republic of Palau and there were 5 Customs Officers present.

The training session was intended to provide Customs Officers with information on the types of hazardous chemicals they may come across during their normal working activities, and the ways in which those hazards could be identified and prevented. It also looked at the systems currently in place for controlling international trade in some especially hazardous chemicals, and all types of hazardous wastes. The overall programme was as follows:

- Introduction (Course overview and expected outcomes.
- Chemical and waste hazards
- Safety procedures for Customs Officers and cargo handlers

- International restrictions on imports and exports
- Monitoring and enforcement for the MEAs
- Administration of the MEAs
- Conclusion and national needs assessment

3.5 Training of Trainers

The Training of Trainers occurred in conjunction with the Customs Officers Training. Ten of the training participants attended and sought further details to help them develop local capacity. Professor Maika Vuki also visited the Surangel and Son’s Warehouse in Airai to assist the owner in the development of a chemical management plan and to review the chemical inventory the owner had performed. Professor Aalbersberg attended a meeting of the EQPB management board to provide a brief overview of the training and the draft action plan that arose from it.

4. COURSE OUTCOMES

4.1 Identification of National Issues/Action Planning

A key focus of the discussions held throughout the training sessions was the identification of potential issues for later inclusion in an action plan for national chemical management. The key issues identified during the training were as follows:

National Issues identified	Action Plan
Used oil	<ul style="list-style-type: none"> - Assist Koror State with obtaining empty oil drums or tanks. - Waste oil working group including all key stakeholders (and Palau Public Utilities Corporation) - Designate a day of collection/ Improve collection - Engaging gas stations to collect used motor/cooking oil - Explore user pay options
Waste chemical disposal	<ul style="list-style-type: none"> - Collection, storage, and disposal (including safe transport) - Develop inventory - Develop SOPs for best management practice for common hazardous waste (ex: common household cleaners, battery acid, drain cleaners, bleach, etc.) - Re-develop Hazardous Materials Program to include other key agencies (Bureau of Fire and Safety, National Emergency Management Office, State Governments, Ministry of Health, Division of Aircraft Rescue Fire Fighting, Environmental Quality Protection Board, Palau Chamber of Commerce, Japan International Cooperative Agency, Palau

	<p>Community College, etc.) – Coordinated by: Chemicals Safety Officer</p> <ul style="list-style-type: none"> - Explore best options for sustainable use including (Semi-) Privatization of incinerators - Operations, training, and maintenance
Waste batteries	<ul style="list-style-type: none"> - Collection, storage, and disposal (including safe transport) - Explore sustainable funding options - Public awareness and education of health effects
Unexploded ordinance	<ul style="list-style-type: none"> - Communication with Japan Mine Action Service, Cleared Grounds, and BPW Safety Officer, etc.
Public is unaware of health and environmental implications of hazardous home chemicals	<ul style="list-style-type: none"> - Improve awareness of hazardous home chemicals - Connect with Palau Media Council - Ministry of Education include POPs into curriculum (– home inventory) - Ministry of Health community workshops to all states and Non-Government Organizations - Dissemination of educational materials on chemicals safety and management
Farms with little chemical skills and knowledge	<ul style="list-style-type: none"> - Implement chemicals trainings - Farm chemicals inventory - Annual renewal of agricultural permit (inventory of pesticides/fertilizers) - Increase inspections and monitoring - Translations of brochures and other public awareness communications
Lack of a building code (fire exits, fire extinguishers, fire evacuation plan, etc.)	<ul style="list-style-type: none"> - Encourage lawmakers to develop a comprehensive building code that takes into account the various chemical-related situations (chemicals storage, inspection, building material) - Certified by Chemicals Safety Officer (needs to be appointed) - Fee structure
Lack of Emergency Response Certified staff	<ul style="list-style-type: none"> - Increase capacity of First Aid certified staff (at least two in each agency) - Opportunities for trainings - Laboratory Certification Program to include: First Aid Certification, Basic Life Support, Basic Trauma Life Support, Basic Chemicals Safety.
Disposal of used tires	<ul style="list-style-type: none"> - Develop utilization plan for shredded tires to be incorporated into the National Solid Waste Management Plan

	<ul style="list-style-type: none"> - Commercial operation – disposal fee imposed at import (deposited into a special fund not the General Fund)
Need for improved national chemical management	<ul style="list-style-type: none"> - Develop Public-Private Partnership (PPP) - To be comprised of existing Chemicals Task Force (executive order 264) and National Chemicals Safety Officer - Automated report generating system at customs/quarantine (import) to solid waste/customs (disposal/ export) Need Financing - General Training for Chemical Storage Design - Transportation of Hazardous Waste Training - Commercial operation – disposal fee imposed at import (deposited into a special fund not the General Fund) to be used for eventual disposal of hazardous waste
Glycerol (coolant and soap manufacturing by-product) disposal	<ul style="list-style-type: none"> - Collection, storage, and disposal (including safe transport) - Engage private companies
Plastic conversion plant	<ul style="list-style-type: none"> - Incorporate previous use of the PE/ PPE containers in the flowchart of decision process (was the container used to store hazardous chemical?) - Communication with AMITA through Ministry of Environment, Japan
Disposal, collection, and transport mechanism of obsolete Hazardous Chemicals	<ul style="list-style-type: none"> - National collection, disposal, and transport of hazardous chemicals that are not being used (i.e. calcium carbide (CaC₂)) - Review of chemicals inventory to identify unused/obsolete chemicals, contact Environmental Quality Protection Board - Incorporated in the National Solid Waste Management Plan
Human resource capacity	<ul style="list-style-type: none"> - Appoint a Chemicals Safety Officer - Lab Technician Training Program at Palau Community College - Field Officers - Trainers from Chemicals Management Workshop commit to train staff at respective offices/ agencies and develop other appropriate chemical management activities - Additional trainings requested: Ministry of Health for their Lab Techs and Facility and Maintenance Staffs; Customs/ Quarantine Chemical Identification Training

	and assistance with updating their database/inventory; Bureau of Fire and Rescue/ Environmental Quality Protection Board – Chemical Emergency Response Trainings and Hazardous Materials Certification; First Aid, Basic Life Support, Basic Trauma Life Support Certification → For All Stakeholders;
Disposal of products containing Brominated Flame Retardants	<ul style="list-style-type: none"> - Finalize Inventory - Collection, transport, and disposal - National strategies for exporting waste (including legislation and regulations at the national level)
Lack of Personal Protective Equipment	<ul style="list-style-type: none"> - Customs Officers to be equipped with ALL necessary safety equipment
Import/ Export of Hazardous Waste	<ul style="list-style-type: none"> - Consider development of Standard Operating Procedures (SOPs) for commonly imported/ exported hazardous waste (e.g. car batteries, oil, plastic)

Further action is necessary on:

- Training of Customs, EQPB, and relevant stakeholders on the coding and tracking system of pesticides
- Survey capacitors and/or transformers, develop a removal program for PCB containing equipment, and disseminate information regarding prohibited PCB containing equipment (Training needed)
- Develop and implement BAT/BET in relation to CM information, education, and communication programs

These and other issues will be described more fully in the draft national action plan that will be provided shortly to SPREP and other interested parties.

5. PARTICIPANT FEEDBACK

The participants were asked to complete a feedback form at the end of the training sessions. A copy of the form is provided in Appendix 3 and a summary of the responses is given below. This is based on 22 responses.

Note: to simplify the reporting the ratings on the forms (fair to excellent) have been converted to scores from 1 to 6, with 1 = poor and 6 = excellent.

Question	Rating	
	Range	Median
Aims and objectives – The objectives of the training were clearly defined	4-6	6

Information/subject content: The topics covered were relevant to the training objectives		
- general chemical management	1-6	5
- chemical safety	3-6	6
- inventories	3-6	5
- POPs chemicals	3-6	5
- chemical conventions	3-6	5
Group work – participation and interaction were encouraged	2-6	5
Resource pack – The materials provided were helpful, organised and easy to follow	4-6	5
Trainers – The trainers were knowledgeable about the training topic	3-6	6
Venue – The meeting room and facilities were adequate and comfortable	2-6	4
Time – The time allotted for the training was sufficient	2-6	5

What did you most like about the training?

Summary: Overall, participants liked the fact that they gained knowledge of chemicals—how to identify and classify them as well as the hazards and risks associated with the chemicals. Participants responded that they appreciate the training manual and the appendix, where they learned about the Safety Data Sheets and its importance and how to use it properly. Participants also learned about chemical and waste management, as well as the new and old Persistent Organic Pollutants (POPs). Participants found the overall training and presentations to be helpful and informative—training was hands-on and interactive, which was helpful for the participants in their learning process.

Participant Comments: Learning new chemicals and knowledge; identify and classify each chemical; Safety Data Sheets and Training Manuals; Networking with various agencies; Chemical and Waste Management; Presentation, Hands on and interactive; Learning of POPs and New POPs, and Chemical Disposal Methods, Trainers.

What did you least like about the training?

Summary: Biggest complaint of the training was the bathroom situation and the lack of personal protective equipment (PPE) when handling chemicals. Another complaint regarding the scientific names of chemicals, which made it hard for people to stay on track and remember all the information. Finally, a respondent felt the training sometimes dragged on, which made participants to lose focus.

Participant Comments: Bathroom situation, Lack of PPE when handling chemicals, Training sometimes dragged on, lost focus; Scientific names are hard for some to remember.

Is there anything else you would like the training to have covered?

Summary: Participants would like more focus on chemical safety and ways of disposal, as well as more in depth understanding of chemicals (definitions and names). A participant wanted to highlight the ship wreck removals. Participants would like more samples and pictures of POPs. Overall, participants would like to see this type of training to continue.

Participant Comments: Focus more on chemical safety and ways of disposal; More on definitions and name of chemicals; Ship wreck removal; samples and pictures of POPs; Continue training

What would you like to see as a follow up/on from this training?

Summary: Participants would like to see more training and more national chemical awareness programs. Safe chemical handling and education should be implemented in the school curriculum.

Participant Comments: More training on chemicals; More information and national chemical awareness programs; safe chemical handling and education in school curriculum; National Chemical Inventory= EQPB and Private sector cooperation; National Chemical Safety Management Plan; Implementation of workshop; Regular updated trainings; How to dispose unused and obsolete chemicals; trainings for all sectors—agriculture, quarantine, customs, schools, laboratories, etc.; Results of POPs survey and solutions; Action plans to be reviewed, assessed and monitored; POPs and its SDS and presence in country;

Further Comments

Participant Comments: EQPB did an excellent job with organizing the training; More trainings and workshops; Collaborative work of all stakeholders; Raised awareness among participants; Training was beneficial; Awareness in the public education; Chemical implementation.

Appendix 1: Participants List

No.	Name	Organization	Email	Phone
1	Charley Simeon	Division of Environmental Health		488-6073
2	Bris Ulechong	Palau Aqua		488-8466
3	Dwight Kolual	Hatohobei State Gov't		488-2218
4	Dominic Emilio	Hatohobei State Gov't		488-2218
5	Tom Watson	Surangel & Son's: Mason's Hardware	tom@surangel.com	488-3670 ext. 23
6	Clement Gbewonyo	WCTC Maintenance	abegbewonyo@gmail.com	488-2081
7	Dan Baldeo	WCTC Maintenance		778-5787
8	Hilda Masahiro	Division of Environmental Health	Hilda.masahiro@palauhealth.org	488-6073
9	Jon Vogt	Palau Chamber of Commerce	jon@melekau.com	
10	Sylvia Tmodrang	Division of Environmental Health	stmodrang@gmail.com	488-6073/6345
11	Efren Marquez, Jr.	IP&E	efren.marquez@pehq.com	488-6464/6565
12	John Ngiraked, Jr.	Koror State Solid Waste Management Office		775-1886 488-2802
13	Foster Ngirturong	Aimeliik State Gov't		544-2967
14	Jessica Emesiochel	Bureau of Public Works Division of Solid Waste Management	swm.bpw@gmail.com	775-4675
15	Saki Tanaka	Bureau of Public Works Division of Solid Waste Management	swm.bpw@gmail.com	779-3345
16	Janice Mathew	Ministry of Health Division of Oral Health	janice.mathew@palauhealth.org	488-2440
17	Belinda Eungel	Ministry of Health Department of Health	belindaeungel@palauhealth.org	488-2552
18	Malsol Nobuo	Ministry of Justice Bureau of Fire and Safety	malsolnobuo@gmail.com	488-1411

19	Cirilo Menor	Aimeliik State Gov't		544-2967
20	Christopher Kitalong	The Environment Inc. / Palau Academic Institute for Research	ckitalon@gmail.com	775-7037
21	Dudley Uro	Airai State Gov't	airaistate@gmail.com	
22	Mercy Beketaut	Ngardmau State Gov't		
23	Edwin Mario	Bureau of Customs	edwin33mario5@yahoo.com	779-3886
24	Terepkul Ngiraingas	Ministry of Health/ Palau Academic Institute for Research	terepkul@gmail.com	776-5077
25	Zoe Kintaro	The Environment Inc. / Palau Academic Institute for Research	zoezolu@yahoo.com	778-9831
26	Dilerong Ikesiil	e/ Palau Academic Institute for Research		778-3459
27	Olkeriil Yaoch	Environmental Quality Protection Board		488-1639/3600
28	Anthony Adelbai, Jr.	Environmental Quality Protection Board		488-1639/3600
29	Lincy Marino	Environmental Quality Protection Board		488-1639/3600
30	Zena Kulie Rengulbai	Environmental Quality Protection Board	eqpb.outreach@gmail.com	488-1639/3600
31	Liezel H. Pulgueras	Palau High School, Ministry of Education	lnfulgueras@yahoo.com	488-5474
32	Merly Kuartei	Pacific Family Medical Supply, Inc.	pfmsinc@gmail.com	488-6655
33	Omreng Amie Oilouch	Palau Academic Institute for Research/ Step Up Program		
34	Kiblas Soaladoab	GEF-SGP	kiblass@unops.org	488-7270
35	Leah Bukurou	Palau Academic Institute for Research/ Step Up Program		7787926
36	Zaca Adelbai	Palau Academic Institute for Research	adelbaizacateca@gmail.com	778-9824

37	Ebay Masayos	Palau Academic Institute for Research		
38	Olivia Cerna	Belau Wellness Inc		776-5020
39	Hannah Fugle	Belau Wellness Inc.		776-5018
40	David Mason	Palau Chamber of Commerce/ Palau Academic Institute for Research		775-3400
41	Pearl Marumoto	Belau Wellness Inc. / Palau Academic Institute for Research		775-5623
42	Roxanne Y. Blesam	Environmental Quality Protection Board	eqpb@palaunet.com	
43	Etpison Sadang, Jr.	Bureau of Customs		778-4345
44	Fredrick Antonio, Jr.	Bureau of Customs		776-3344
45	Lamar Inacio	Bureau of Customs		778-6274
46	Walter Mariur, Jr.	Bureau of Customs		488-1985
47	Jin, Jongsik	Chonbuk National University (KOREA)	Jongsik.jin@jbnu.ac.kr	

Appendix 2: Programme

GEF/UNEP: Pacific Persistent Organic Pollutant Release Reduction Project
CHEMICAL MANAGEMENT TRAINING FOR PALAU

Hosted by: SPREP/USP

July 11-15, 2016

Bureau of Marine Resource Conference Room

Koror, Republic of Palau

TENTATIVE AGENDA

Day 1 Monday (11 July)	
8:30	Registration
9:00	Opening and Preview of Course -Prayer -Remarks -Introduction of Participants -Introduction/ Overview to Chemical Management Topics 1-5: Topic 1: Course Introduction and Overview Topic 2: Definitions and Classifications of Chemicals and Hazardous Waste Topic 3: Need for Safe Management of Chemicals Topic 4: Introductions to Chemical Inventories Topic 5: Overview of Chemical and Waste MEAs
10:00	Morning Tea (Showing of POPs Video)
10:30	Chemical Management Topic 6 : Basic chemical types, properties and characteristics Topic 7A: Hazard Identification Topic 7B: Risk Assessment
1:00	Lunch
2:00	Topic 8: Proper Storage Practices Topic 9: Elements of a Chemical Management System
3:15	Afternoon Tea
3:30	Topic 10: On-going Management of the Chemical Management System and Practical Exercise
Day 2 Tuesday (12 July)	
8:30	Review of Day 1 and Action Points

9:00	Chemical Management Strategies Topic 11: Chemical Handling and Personal Protection
10:00	Morning Tea
10:30	Topic 12: Emergency Procedures Topic 13: Chemical Waste Management Topic 14: Strategies to Reduce Waste and Toxicity Topic 15: Management of Chemical Containers
1:00	Lunch
2:00	Site Visits: Belau National Hospital Pharmacy Koror State Recycling Center (Mr. Fuji) PCC Laboratory (Dr. Christopher Kitalong)
Day 3 Wednesday (13 July)	
8:30	Review of Day 2 and Action Points
9:00	Chemical Disposal and Inventory Topic 16: Disposal Options and Procedures
10:00	Morning Tea
10:30	Topic 17: Chemical Inventory Development Topic 18: Chemical Purchasing
1:00	Lunch
2:00	Topic 19: Process of Preparing an Inventory Topic 20: Updating an Inventory
3:15	Afternoon Tea
3:30	Stockholm Convention Topic 21: Stockholm Convention Overview Topic 22: Stockholm Convention Updating
Day 4 Thursday (14 July)	
8:30	Review of Day 3 and Action Points
9:00	Persistent Organic Pesticides (POPs) Topic 23: New POPs
10:00	Morning Tea

10:30	Topic 24: Enhanced post NIP Inventories Topic 25: Methodology for POPs Inventories Existing Palau POPs, NIPs and Action Points
1:00	Lunch
	Conclusions
2:00	Summary of Custom Issues
2:30	Summary of Palau Draft National Action Plan for Chemical Management
4:30	Evaluation, Close of Workshop and Presentation of Certificates

Day 5 Friday (15 July) OPTIONAL DAY- [Training for Trainers]

Appendix 3: Participant Feedback Form

Country: _____ Training Dates: _____

Please note that all data is collected anonymously and there is no link to your identity, or organisation
Please tick appropriate box and Thank you for completing this evaluation sheet.

Rating	Poor	Fair	Average	Good	Very Good	Excellent	Comments
Aims and objectives – The objectives of the training were clearly defined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Information/subject content: The topics covered were relevant to the training objectives							
- general chemical management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
- chemical safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
- inventories	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
- POPs chemicals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
- chemical conventions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Group work – participation and interaction were encouraged	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Resource pack – The materials provided were helpful, organised and easy to follow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Trainers – The trainers were knowledgeable about the training topic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Venue – The meeting room and facilities were adequate and comfortable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Time – The time allotted for the training was sufficient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
What did you most like about the training?							
What did you least like about the training?							
Is there anything else you would like the training to have covered?							
What would you like to see as a follow up/on from this training?							
Further Comments							

Appendix 4: Sound Chemical Management in the Republic of Palau (Section IV: Policy Objectives)

IV. POLICY OBJECTIVES

- 1) **OBJECTIVE 1: TO INCREASE PUBLIC AWARENESS AND UNDERSTANDING OF SAFE AND ENVIRONMENTALLY APPROPRIATE MANAGEMENT OF CHEMICALS.**
 - a) COMMENT: Responsibility for the safe and appropriate use of chemicals is shared by all sectors of society. Information on chemical safety, the proper use of chemicals and their hazards should be readily available to agencies and levels of government, business enterprises, workers, and the public. Broad participation in the development and affirmation of a policy is a cultural expectation in Palau.
 - b) Intended Policy Outcome: Help prevent injury to human health and the unique Palau environment, promote compliance with sensible precautions and increase participation in developing appropriate management of chemicals.
 - c) Strategies for Achieving Policy Objectives: National Task Force on Chemicals Management will develop and implement a public awareness and consultation plan in preparation for adoption of the policy by the national government.
 - i) Task Force meetings
 - ii) Business Group meetings
 - iii) Meetings with elected officials
 - iv) Meetings with assorted stakeholders.
- 2) **OBJECTIVE 2: TO IMPROVE IMPLEMENTATION OF PALAU'S EXISTING NOTICE OF INTENT TO IMPORT A PESTICIDE PROCEDURE AND THE EXISTING IMPORT LICENSE FOR OZONE DEPLETING SUBSTANCES (ODS).**
 - a) **COMMENT 1**: Palau EQPB regulations **provide that a person desiring to import a pesticide submit a Notice of Intent to the EQPB Chairman on a form provided prior to arrival of the**

pesticide shipment. The Chairman shall then issue any instructions relative to the disposition of the shipment which may include directions to release, detain for sampling, deny delivery or impound the shipment. Provisions are also provided for inspection of the shipment, detaining shipments arriving without notice and handling of detained, denied and impounded shipments at the cost of the importer.

- b) COMMENT 2: Palau's Ozone Layer Protection Regulations include Import and Export Control Systems covering all the ODSs including HCFCs and blends. The existing system became effective in 2005. Under this regulation, a license to import must first be obtained from EQPB. Upon approval, each licensed importer must file a notice of intent for each shipment into the country. An importer license is issued which is valid for one year. All of the HCFC imports to the country have to go through the same procedures as CFCs. Certain ODS are banned.
- c) INTENDED POLICY OUTCOME: Improve implementation of Palau's Notice of Intent procedure for pesticides and ODS and evaluate whether a similar procedure could be used for some other chemicals.
- d) STRATEGIES FOR ACHIEVING POLICY OUTCOMES:
 - i) The Notice of Intent provides a tool for screening what pesticides are being imported so that "Restricted Use Pesticides" (Identified in Appendix A of Palau Pesticide Regulations Chapter 2401-33) and other such pesticides could be refused entry into Palau or special precautions taken. The importer appropriately pays the cost of denied, detained or impounded shipments.
 - ii) Palau is developing a National Implementation Plan for Persistent Organic Pollutants (POPs) which are subject to the Stockholm Convention. At present the POPs are not specifically banned from importation by Palau law or regulations. The POPs include the following twelve chemicals: aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, toxaphene, hexachlorobenzene (HCB), polychlorinated biphenyls (PCBs), polychlorinated dibenzo- p- dioxins, and polychlorinated dibenzofurans. HCB and PCBs are

classified as industrial chemicals. Dioxins and furans may be released as unintentional by-products of combustion processes. The first nine of these chemicals are pesticides that can be addressed, at least temporarily, by the Notice to Import pesticide procedure.

- iii) There are many more chemicals than pesticides and many present less of a risk to people and the reef than pesticides do. A Notice of Intent procedure requiring an advance affirmative permission by the EQPB granting permission every time a chemical is to be imported would be too burdensome for business and for the administering agency. A simpler and less burdensome reporting program should be established, such as an annual notice.
- iv) A consolidated list of banned or severely restricted pesticides and other chemicals of concern will be made available to importers so that they could avoid ordering them. If a list is available, it should be clear that whoever imports a banned or restricted pesticide or chemical has to pay to send it back.

3) **OBJECTIVE 3: TO IMPROVE IDENTIFICATION OF CHEMICALS AT THE TIME OF IMPORTATION.**

- a) **COMMENT:** Chemicals are not produced in Palau. Chemicals should be identifiable when they come into Palau. Sometimes chemicals arrive without reliable documentation in English and without an internationally recognized identification number. The Division of Customs monitors imports at the Ports of Entry primarily for tariff purposes. Currently only an inadequate four-digit tariff code is used to collect data on imports. The Customs data collection system needs to be upgraded. Importing companies need to take responsibility for identifying what they are importing.
- b) **INTENDED POLICY OUTCOME:** Produce an ongoing inventory of imported chemicals that can be used to continue to develop an appropriate management system for chemicals in Palau.
- c) **STRATEGIES FOR ACHIEVING POLICY OBJECTIVES:**

- i) Continue to allow EQPB to review chemicals data maintained by the Division of Customs to develop a chemicals inventory.
 - ii) The Division of Customs and EQPB should continue to move towards an import chemical inventory that compiles the following data in English: name of chemical, estimated volume/weight of the chemical; user safety information, name of business importing the chemical; name of the State where the business is located; name of importer; name of country from where the product was imported; the UN chemical name and number (UN#) and/or the international Globally Harmonized System of chemical identification numbers (GHS#), the Material Safety Data Sheet (MSDS) or the International Chemical Safety Card (ICSC) for the chemical and any relevant information deemed necessary to include in the chemicals inventory.
 - iii) It is the importer's responsibility to provide the required information in a readily usable format. Failure to provide the information for hazardous chemicals should be considered grounds for detaining or rejecting the shipment.
 - iv) Customs will upgrade its tariff code system to enable efficient inventory of all chemicals imported into Palau and all chemicals exported out of Palau.
 - v) The EQPB and Customs will develop Standard Operating Procedures and a plan for collaborative response to address the arrival at any ports of entry of chemicals of concern, such as Persistent Organic Pollutants (POPs), Ozone Depleting Substances (ODS) or chemicals that are "restricted" or "banned" under Palau laws
- 4) **OBJECTIVE 4: DEVELOPMENT OF A LIFE-CYCLE (CRADLE TO GRAVE) CHEMICAL MANAGEMENT SYSTEM.**
- a) **COMMENT:** A life-cycle (cradle to grave) approach to chemical use will assure the public's right to know what imported chemicals are in Palau and encourage facilities to responsibly transport, store, use, and dispose of chemicals in ways that minimize adverse effects on human health and the environment. This will require the

cooperation of industry and commercial business as well as government ministries and agencies. No one government ministry or business can adequately protect all of the pathways to potential environmental damage or risk to human health. However, it is primarily the responsibility of private companies and individuals who are the main users of chemicals.

- b) **INTENDED POLICY OUTCOME:** To protect Palau's particularly sensitive reef and marine resources from chemical pollution as well as to minimize risks to human health especially of vulnerable populations such as children, older people and workers by implementing a cradle to grave system.
- c) **ACTIONS NEEDED:**
 - i) Develop a notification system requiring persons who import or store a hazardous chemical of more than 20 gallons liquid or 50 pounds solid to file an annual report. The report will be updated for new chemicals or information. The report will include an inventory of what chemicals are stored, how much, where stored, in what kind of containers, and physical and health hazards.
 - ii) Each facility will have a chemical management business plan to describe its operations, proper storage in accordance with the Material Safety Data Sheet (MSDS) or the International Chemical Safety Card (ICSC) for each chemical and a plan for disposal of waste or unused chemical. Training, spill prevention, response plans for any releases or spills will be included in the business plan.
 - iii) A copy of the annual report and updates and a copy of the chemical management business plan along with a copy of the MSDS and/or ICSC for each chemical will be filed with the Haz Mat team, the fire department, the hospital and EQPB. A facility will promptly notify the spill response center in the event of a release.
 - iv) The facilities will be subject to inspections by the EQPB.

5) OBJECTIVE 5: TO ENSURE THE PROPER DISPOSAL OF ALL CHEMICALS, AND PARTICULARLY THOSE THAT POSE THE

GREATEST POTENTIAL THREATS TO HUMAN HEALTH AND THE ENVIRONMENT.

- a) **COMMENT:** Even when chemicals are properly identified, stored and utilized, current disposal methods for unused or waste residuals of used chemicals present enormous challenges. The national waste disposal facility, located next to the marine environment at M-Dock, Koror State, was not designed to accept hazardous waste and chemicals, but those materials appear to be disposed of at the landfill. Use of the landfill for the purpose of chemical disposal could undermine the effectiveness of the landfill and pose a threat to the environment. Disposal facilities for chemical wastes from electronic equipment, scrap metal, used oil, tires, batteries, plastic and pharmaceuticals are severely limited. Used electrical transformers containing PCBs continue to accumulate with no method for disposing of them on island while international restrictions and expense bar their shipment off island. Medical and other potentially toxic wastes are burned in contained systems that appear to be problematic. Palau's regulations on chemical waste disposal are minimal and could use revision to provide for better protection and compliance.
- b) **INTENDED POLICY OUTCOME:** Successful development and implementation of secure storage facilities and chemical disposal mechanisms in Palau and arrangement of off-island disposal options.
- c) **STRATEGIES FOR ACHIEVING POLICY OUTCOMES**
- i) Identification of most important operation and maintenance challenges of the national waste disposal facility and the necessary steps, including long term funding sources, necessary to ensure continued successful operation of the facility.
 - ii) Analysis of other current and potential waste streams containing chemicals and development of strategies and resources to deal with each, e.g. electronic waste, used oil, pharmaceuticals.

- iii) Develop partnerships with countries donating chemicals or equipment to assist in operation, maintenance and repatriation of wastes and unused chemicals and equipment.
 - iv) Increased participation in regional and international agreements that would assist in chemical removal and disposal.
- 6) **OBJECTIVE 6: PROMOTE PERSONAL AND CORPORATE RESPONSIBILITY SO THAT THE CHEMICAL IMPORTER OR USER WHO BENEFITS ECONOMICALLY FROM IMPORTING OR USING THE CHEMICAL BEARS THE COST OF PROPER CHEMICAL MANAGEMENT DURING ITS LIFE CYCLE INCLUDING THE COST OF APPROPRIATE DISPOSAL.**
- a) **COMMENT:** This is also sometimes referred to as the “polluter pays” principle. This should almost always come into play to the extent feasible when clean-ups are needed as a result of spills or releases into the environment. The government should cost recover. But sound chemical management seeks to avoid and prevent pollution of Palau’s unique and sensitive resources. The cost to do that should also be borne by the person or corporation that benefits from importing or using the chemical.
 - b) **INTENDED POLICY OUTCOME:** Encourage responsible behavior. Prevent pollution. Develop cost recovery mechanisms.
 - c) **STRATEGIES FOR ACHIEVING POLICY OUTCOME:**
 - i) Research and test cost recovery and economic incentive methods to pay for appropriate disposal of hazardous wastes.
 - ii) Evaluate up-front payments for disposal at the time of importation for such items as motor oil and car batteries.
 - iii) Review the implementation of the aluminum can and plastic bottle return programs and consider ways to develop similar programs for hazardous wastes.

- 7) **OBJECTIVE 7: TAKE STEPS TO ENABLE EMPLOYERS AND WORKERS TO PROTECT THEIR HEALTH AND SAFETY FROM THE RISKS OF CHEMICALS.**
- a) **COMMENT:** The first step is to provide workers with information concerning risks to health and safety from chemicals and actions that should be taken in order to protect themselves from chronic or acute exposure to hazardous chemicals. Workers need to take precautions to protect themselves. Employers need to participate in this effort by providing safety instruction and necessary equipment.
 - b) **INTENDED POLICY OUTCOME:** Prevent injuries and harmful exposures to hazardous chemicals.
 - c) **STRATEGIES FOR ACHIEVING POLICY OBJECTIVES:**
 - i) Importers and Employers must identify chemicals and make the pertinent MSDS or ICSC available to the people using the chemical and consumers.
 - ii) Employers need to be proactive in warning workers and encouraging and requiring safety in chemical use.
 - iii) Raise public awareness and educate the public on issues of chemical safety.
 - iv) Engage health professionals in the public education program.
 - v) Proper labeling on chemical products
- 8) **OBJECTIVE 8: DEVELOP COORDINATION AND COOPERATION AMONG OTHER NATIONAL MINISTRIES AND AGENCIES AND WITH THE STATE GOVERNMENTS.**
- a) **COMMENT:** Other ministries and agencies are also involved with hazardous chemicals. For example:
 - i) The Division of Agriculture provides farmers and the public with assistance in the identification of suitable pesticides, fertilizers and agricultural practices and its quarantine

regulations prohibit the importation of pesticides and fertilizers that do not have labels in English.

- ii) Pesticide residues on produce are the concern of the Public Health Department.
 - iii) Petroleum products including fuel oil and gasoline must be properly stored by PPUC, gasoline stations and oil companies.
 - iv) The Division of Marine law enforcement serves as a protector of Palau's Exclusive Economic Zone and is the first responder to illegal or grounded vessels.
 - v) The Ministry of Natural Resources, Environment and Tourism is concerned with the safety of laborers.
- b) **INTENDED POLICY OUTCOME:** Engage all levels of government in promoting and cooperating in a national program of sound management of chemicals.
- c) **STRATEGIES FOR ACHIEVING POLICY OBJECTIVES:**
- i) The ministerial mandates and programs should be analyzed in order to ensure a well co-ordinated division of responsibility related to the sound management of chemicals in Palau.
 - ii) The various ministries and levels of government should include good chemical management practices into their own policies and operations.

9) OBJECTIVE 9: OPTIMIZING BENEFITS OF INTERNATIONAL COOPERATION.

- a) **COMMENT:** Successful chemicals management is often dependent upon the actions and inactions of individuals and governments outside of Palau. Critical decisions regarding manufacturing, marketing, quality controls, labeling, use standards, storage, disposal, transportation, and the strength of environmental regulation are often the subject of international agreements. Active participation in these agreements could provide increased environmental protection and technical and other resources.

- b) INTENDED POLICY OUTCOME: Maximize environmental protection and available resources through Palau's increased participation in international cooperation activities regarding chemical management and utilize international chemical nomenclature and identification systems (such as the UN# and GHS#).
- c) STRATEGIES FOR ACHIEVING POLICY OBJECTIVES: Implementation of an action plan to determine potential costs and other impediments as well as benefits to be derived from participation in international chemical related agreements. If warranted, implementation of all steps necessary for participation, with particular attention to the following:
- i) Waigani Convention -The Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement and Management of Hazardous Wastes within the South Pacific Region. (Signed and ratified)
 - ii) Stockholm Convention on Persistent Organic Pollutants. (Signed but not ratified)
 - iii) Montreal Protocol regarding Ozone Depleting Substances. (Signed and ratified)
 - iv) Chemical Weapons Convention. (Signed and ratified)
 - v) International Organization of Atomic Energy (IAEA). (Signed and ratified)
 - vi) Organization for the Prohibition of Chemical Weapons (OPCW). (Signed and ratified)
 - vii) Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal. (No action)
 - viii) Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. (No action)
 - ix) International Labor Organization Convention No. 170 on

Safety in the Use of Chemicals At Work. (No action)

10) OBJECTIVE 10: TO MINIMIZE THE RISKS OF CATASTROPHIC IMPACTS OF HAZARDOUS CHEMICALS ON HUMAN HEALTH AND THE NATURAL ENVIRONMENT.

a) COMMENT: Certain hazardous chemicals present unique challenges to public health and safety. Without proper safeguards, the storage of large quantities of chemicals, including fuel on land, transport of chemicals by ship through close in waters, future use of chemicals in oil and gas exploration pose risks beyond current capacity to respond to such emergencies.

b) INTENDED POLICY OUTCOME: Coordinate private and government response planning in order to maximize protection of the public from major hazardous chemicals threats.

c) STRATEGIES FOR ACHIEVING POLICY OUTCOME:

- i) Identification of existing and new sources of hazardous chemicals that pose extraordinary risks to public safety.
- ii) Identification of methods and standards to be utilized to minimize risks.
- iii) Determination of HAZMAT and other resources and responsibilities in the event a catastrophic event occurs.
- iv) Development of preparedness and response plans by both business and the government.
- v) Development and implementation of an action plan to address gaps in prevention and protection.

11) OBJECTIVE 11: ENGAGE THE HOTELS AND DIVE SHOPS AND OTHER USERS OF CHEMICALS IN IMPROVED CHEMICAL MANAGEMENT.

a) COMMENT: Tourism is one of the largest industries in Palau. It is the face of Palau to much of the world. So chemicals and wastes have to be handled appropriately. Hotels and dive shops generate batteries, used motor oil, and other wastes and use cleaning agents and other chemicals.

- b) INTENDED POLICY OUTCOME: Safe use of chemicals and proper disposal of chemical wastes in a high profile sector.
- c) STRATEGIES FOR ACHIEVING POLICY OUTCOMES:
 - i) Engage hotels, dive shops and the tourism industry in a series of discussions promoting use of green products and the reduction of importation, use and disposal of chemicals that are potentially harmful to the reef.
 - ii) Get inventory of chemicals imported, volume of usage per year, locations and methods of storage and protocol for disposal.
 - iii) Develop brochures specific for this industry to increase awareness of proper chemicals management during use, storage, stockpile and disposal.

Appendix 5: Palau National Implementation Plan for the Stockholm Convention on Persistent Organic Pollutants (PP 39-45)

ACTION PLAN TO ADDRESS POPs PESTICIDES (ARTICLES 3; ANNEX A, PART I AND ANNEX B, PART I)

Background:

Under Article 3 of the Convention, Parties are required to take measures to reduce or eliminate releases from intentional production and use which include: Prohibit and/or take legal and administrative action necessary to eliminate production and use of Annex A, Part I, chemicals (POPs pesticides), and restrict production and use of Annex B chemicals (DDT); and Regulate any trade in these POPs with both Parties and Non-parties.

Although there are no recorded or identified uses of POPs pesticides in country, monitoring, assessment, inventory, training and capacity building efforts are needed to ensure that POPs pesticides do not enter Palau in the future. Although all POPs pesticides are banned a list needs to be adopted by the Board, promulgated and distributed to all relevant stakeholders for notification.

Goal and Purpose:

To ensure that controls on the importation, exportation, production and use of all pesticides, including POPs are effectively enforced and any existing POPs chemicals are disposed in an environmentally sound manner.

Objectives:

- ✓ To establish an effective and efficient tracking system of POPs to track restricted, banned and allowed pesticides in Palau
- ✓ To develop a program for the regulation, management and identification of pesticides, including POPs and ensure its enforcement
- ✓ To raise awareness of the public and private sector on shipping, sale, proper use, handling, storage and disposal of pesticides
- ✓ To develop and promote integrated pest management and traditional agro-forestry practices.

Activities and Outputs:

1. Monitoring and Tracking of Imports and Exports
 - Review and modify current coding and tracking system to prohibit POPs pesticides from entering Palau

- Training of Customs, EQPB and relevant stakeholders on the coding and tracking system of pesticides
2. Coordination, Management and Capacity Building
 - Coordination of relevant regulatory agencies on regulation, management and identification (through testing, etc.) of pesticides, including POPs
 - Capacity building for the property processing techniques for the purpose of sending samples off-island for testing.
 - Capacity building of EQPB, Customs and other relevant stakeholders in the enforcement of regulations on pesticides and POPs
 3. Education, Awareness, and Information Exchange
 - Education and training of public and private sector on shipping, sale, proper use, handling, storage and disposal of pesticides
 - Materials translated into relevant languages to relevant target audiences through relevant medium (pamphlets, radio, etc.)
 - Increase information available on POPs pesticides and alternatives
 4. Pesticide Reduction and Alternatives
 - Conduct training and awareness to the community on IPM and traditional agro-forestry and/or promote existing IPM programs
 - Develop and/or promote an IPM/Traditional Agro-forestry manual in English and Palauan on the methods, and cost/benefits of incorporating traditional agro-forestry and make these are provided in all settings including the private sector and pesticide/fertilizer distributors.

ACTION PLAN TO ADDRESS PCBs AND CONTAMINATED SITES
(ARTICLE 3 AND 6)

Background:

In addition to the obligations under Article 3, under Article 6 Parties are required to develop appropriate measures to reduce or eliminate releases from stockpiles and wastes including taking appropriate measure to identify, remove and dispose of the contaminated wastes in an environmentally sound manner.

There are no longer any PCB containing transformers in Palau, however there are some possibly contaminated sites in Babeldaob that need to be properly assessed and action taken. Additionally, as Babeldaob and other areas are further developed sites may be uncovered. In anticipation of any future identification of PCBs, PCB containing equipment or contaminated sites and stockpiles measures need to be developed for the public to notify the appropriate authorities; proper inspection and identification; removal and/or storage; transport; and disposal among other things need to be developed.

Goal and Purpose:

To ensure the identification, inventory and systematized management of all PCB related equipment/units, hazardous wastes and contaminated sites.

Objectives:

- ✓ Ban the use of transformers containing PCB and other equipment containing PCBs.
- ✓ To develop and establish a comprehensive plan in identifying the location of PCB, items containing residues of PCB such as capacitors, hazardous waste, stockpiles and contaminated sites.
- ✓ Develop mechanism to test equipment for the presence of PCBs, update inventories and properly store and dispose of equipment and wastes through approved measures.
- ✓ Public and private involvement (empowerment) for the identification of contaminated sites and its containment, effective waste segregation of hazardous/contaminated materials and putting it in proper stockpiles for approved disposal.
- ✓ Provision of an integrated life-cycle approach in the management of hazardous chemicals and its derivatives by starting with the consultancy, training, review of laws, formulation of a national development program and its implementation.
- ✓ Enforcement of the laws governing the systematized management of PCB, its derivatives and HAZMAT.

Activities and Outputs:

1. Legal Review and Update
 - Review existing regulations and develop/implement legislation as necessary to ensure that no further import/use of PCB.
 - Review existing regulations and develop/implement legislation as necessary to ensure compliance to best approach to management and disposal of hazardous, and obligations under the Convention
 - Enforcement of existing laws and regulations
2. Capacity Building and Training
 - Prepare a list of resources and expertise and obtain training for personnel on how to detect and test for the presence of PCB in the transformers and test possible contaminated sites using field test kits.
 - Support the hazmat response team, their training and equipment needs
3. Monitoring and Management
 - Public awareness in reporting waste sites for proper identification and further action through appropriate mediums such as radio, village visits, etc.
 - Further assessment and identification of potential contaminated sites.
 - Coordinate regionally in effective waste segregation and disposal efforts.
 - Survey capacitors and/or transformers, develop a removal program for PCB containing equipment, and disseminate information regarding prohibited PCB containing equipment
 - Ensure proper identification, labeling and removal from use all PCB containing equipment
 - Capacity building for the property processing techniques for the purpose of sending samples off-island for testing.
4. Measures for Reporting, Handling, Storage, Transport and Dispose of PCBs and Wastes
 - Improve safe transportation rules and regulations for PCB/THW to include: transport vehicle standards, guidelines for preparation of waste transport, of waste shipments, emergency response capability, authorization of qualified couriers and THW traceability.
 - Movement or transport of PCB/THW shall contain tracking- its originator and the end point
 - Survey and assess the possible locations of PCB, its derivatives, HAZMAT, stockpiles and contaminated sites and appropriate remediation, removal, or disposal steps taken
 - Continue developing Best Management Practices or Best Environmental Techniques

**ACTION PLAN TO ADDRESS UNINTENTIONAL PRODUCTION OF POPs
DIOXINS AND FURANS, HCB AND PCBs (ARTICLE 5, ANNEX C)**

Background:

Under Article 5 of the Convention Parties are required to take appropriate measures to reduce or eliminate releases from unintentional production of Annex C POPs. Measures include the promotion of Best Available Techniques (BATs) and Best Environmental Practices (BETs) for all sources, promote and/or require the use of alternatives; and to require the use of BATs for new sources under Annex C, Part II.

Using the Standardized Toolkit, developed by UNEP Chemicals, it was determined that the highest releases of dioxins and furans are from waste incineration, power generation and transportation. The high levels released from transport are temporary related to the construction of the Compact Road in Babeldaob and will decrease once construction is complete. However, this does not negate the need for measures to address the gradual increase in transportation that will occur as a result in increases in development across Palau. Additionally as Palau's population increases so too will the need to address waste disposal and power generation needs.

Regulatory measures are in place that addresses waste incineration systems, as well as other sources of stationary releases. Additionally there are regulatory measures in place that address transportation and open burning. However gaps and areas of ambiguity need to be resolved in order for proper monitoring, enforcement and reporting to occur.

Goal and Purpose:

Progressive reductions in the release of unintentionally produced POPs in the Republic of Palau through the utilization of best environmental practices and best available techniques (BAT/BEP), and the enforcement of controls on all sources of unintentional POPs production.

Objectives:

- ✓ Prepare inventory of dioxin and furans releases
- ✓ Develop and implement BAT/BEP promotion, adoption and monitoring programs
- ✓ Formulation or improvement of regulations relating to the production of unintentional POPs
- ✓ Develop and implement a strategy to reduce emissions from burning of rubbish, field/forests and medical waste, and promote alternatives such as composting
- ✓ Design and implement a program for recording and reporting information on

quarantine and medical waste generation and upgrading current management and disposal methods

- ✓ Develop and implement a program for awareness of environment and health effects of dioxins and furans and ways to reduce or eliminate exposure

Activities and Outputs:

1. Monitoring, Data Collection and Reporting
 - Develop data collection methods
 - Strengthen the monitoring system for industrial and household sources
 - Develop monitoring system for agricultural, commercial, and other sources
 - Develop Palau emission factors
 - Data collection for the updated inventory
 - Inventory reporting, data analysis and program review
 - Review operation for stationary sources at least every two years
2. BAT/BEP Development and Promotion
 - Identify BAT/BEP appropriate to the significant level of dioxin and furan sources and set performance criteria for each BAT/BEP
 - Develop and implement BAT/BEP information, education and communication programs
 - Coordinate with the Department of Education to integrate BAT/BEP in the curricula and extra-curricular activities
 - Develop incentive/rewards system for dioxin and furan sources adopting BAT/BEP where possible and appropriate
 - Develop and adopt financing programs for sources adopting BAT/BEP where possible and appropriate
 - Develop performance evaluation of the application of BAT/BEP
3. Legislative and Regulatory Update
 - Review existing local and international regulations and policies pertaining to unintentional POPs
 - Investigate opportunities to apply BAT/BEP under the Palau Environmental Quality Protection Act 24PNC
 - Establish sampling capability for dioxins and furans
 - Establish ambient baseline levels for dioxins and furans for relevant sources, e.g. stationary sources such as waste incinerators, power generators, etc.
 - Conduct life cycle analysis and risk assessment based on the four major sources of dioxins and furans
 - Set ambient criteria and standards for emissions for BAT/BEP
 - Enforcement of existing regulations for sources of unintentional production of POPs
4. Education and Awareness
 - Increase public education and awareness through local resources (Video, brochures and posters)
 - Conduct surveys on awareness on effects of rubbish and field burning and alternatives
 - Develop and implement program on village consultation for awareness and

alternatives to burning

5. Waste Disposal, Alternatives and BAT/BEP

- Complete collection information on quarantine, medical and municipal waste volumes and management options
- BAT/BEP for quarantine, medical and municipal waste volumes, management and disposal options
- Source new technologies, disseminate information on them and promote their use
- Coordinator with landfill management to develop appropriate measures for ash disposal from incineration