

REPORT ON

**TRAINING WORKSHOPS IN EFFECTIVE
MANAGEMENT OF HAZARDOUS MATERIALS,
HAZARDOUS WASTES AND CONTAMINATED
SITES**

**WORKSHOP REPORT
TUVALU**

Submitted to :

South Pacific Regional Environment Programme
PO Box 240
Apia, Samoa

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ACRONYMS

CCA	Copper Chrome Arsenate
DOA	Department of Agriculture
EU	Environment Unit
FK	Funafuti Kaupule
MFC	Ministry of Finance and Commerce
MIA	Ministry of Internal Affairs
MNRE	Ministry of Natural Resources and Environment
MOH	Ministry of Health
MWEC	Ministry of Works, Energy and Communication
PCBs	Polychlorinated Biphenyls
PICs	Pacific Island Countries
PICCAP	Pacific Island Climate Change Assessment Program
PMH	Princess Margaret Hospital
POPs in PICs	Persistent Organic Pollutants in Pacific Island Countries Project
PPE	Personal Protective Equipment
PWD	Public Works Division
SPREP	South Pacific Regional Environment Programme
TCS	Tuvalu Co-operative Society
TECS	Tuvalu Electricity Co-operative Society
TSECS	Tuvalu Solar Electricity Co-operative Society
WMP	Waste Management Project

1.0 INTRODUCTION

Management of hazardous materials, hazardous wastes and contaminated sites has become an increasingly important issue for Pacific Island Countries (PIC's). In 1997, AusAID, in conjunction with SPREP, implemented the Persistent Organic Pollutants in Pacific Island Countries project (POPs in PICs) to address this issue. As part of the POPs in PICs project, training workshops will be held in thirteen PICs to create awareness and understanding on the **effective management of hazardous materials, hazardous wastes and contaminated sites.**

A five day training workshop was delivered in **Tuvalu** during the period 25-31 October, 2000, and included interactive activities and exercises, site inspections and practical field demonstrations. The workshops were designed and delivered by Golder Associates under contract to SPREP with the following objectives:

- To upgrade Tuvalu's capacity for the effective management of hazardous materials and hazardous waste;
- To upgrade Tuvalu's capacity for effective management of contaminated sites;
- To encourage the development of specific strategies for managing hazardous materials in Tuvalu; and
- To raise awareness in Tuvaluan communities of issues associated with the generation and management of hazardous wastes.

Prior to the workshop commencing, a Pre-Workshop Questionnaire was prepared and distributed to workshop participants. The purpose of the questionnaire was to obtain preliminary information on participants understanding of hazardous materials management and any desired workshop outcomes. A summary of responses received from the Pre-Workshop Questionnaires is provided in Appendix A.

2.0 WORKSHOP PARTICIPANTS

2.1 Organisations Represented

A complete list of workshop participants is provided in Appendix B.

2.2 Organisations Not Represented

The following organisations were not able to send a representative to the training workshop:

- TECS Power Station;
- Fisheries Department;
- Agriculture Department;
- Customs Department; and
- BP Depot.

3.0 MAJOR ISSUES IDENTIFIED

The following major in-country issues were agreed by workshop participants, in order of priority:

1. Need to **raise community awareness** concerning hazardous chemicals;
2. Draft Poisons Bill to be passed, including labelling storage and handling obligations and adequate **legislative coverage** of all hazardous materials;
3. “Safe Use of Chemicals” **training for workers** in contact with chemicals is needed;
4. Availability of **Personal Protective Equipment (PPE)** to be increased;
5. Develop **interim management plans** for existing stockpiles and contaminated sites;
6. Completion of supporting **infrastructure construction** (Landfill and Hospital Waste Incinerator);
7. **Ratify** appropriate Conventions (Basel); and
8. **Monitor implementation** of agreed departmental Action Plans.

4.0 COUNTRY REPORT UPDATE

The following current information was obtained from participants and/or during site inspections:

- A major road sealing project is planned and provision for future safe disposal or re-use by contractors of residual bitumen will be needed;
- Basel and Waigani Conventions need to be ratified to export certain stockpiled chemicals off-island i.e. PCB's;
- Other WWII stockpiles may exist on the outer islands Nanumea and Nukufetau;
- TECS power station operators are unaware of the location of used transformer oils and waste oil may be cross-contaminated with PCB's;
- A hazardous CCA sawdust stockpile was identified at PWD joinery and resident use for smoking fish was noted. Health hazards from this practice are significant;
- A new controlled landfill is under construction; and
- A draft bill exists for poisons and therapeutic goods which may cover needs.

5.0 EVALUATION ISSUES

The following issues were noted in the daily workshop evaluation forms:

1. What regulatory controls are in place and how can end products of new chemicals entering Tuvalu be identified;
2. More discussion of POP chemicals (*rather than definition only*) and specific remediation of those in Tuvalu;
3. Video segments were well received. It was noted only some participants would fully benefit from the formal presentation of material. More group discussions were suggested;
4. Testing and monitoring of contaminated land could be better shown in the field;
5. Information on how to assess hazards . (*Example of risk assessment was given in workshop*);
6. When to dispose of PPE and how;
7. Further time for discussion of the reasons why major conventions are not signed by Tuvalu was suggested;

8. More detail of the breakdown of risk rating for contaminated sites in Tuvalu;
9. Other islands of Tuvalu need a similar survey and training; and
10. Repeat material on a regular basis (*annual presentations*).

6.0 ACTION PLANS

6.1 General Action Plan

During the workshop, participants developed and agreed to implement the Action Plan shown in Table 1 below, to address the identified major issues.

Table 1 – General Action Plan for Tuvalu

ACTION	WHO	TIMELINE	STATUS
Implement Site Management Plan at Hazardous Waste Store	WMP	Nov 00	
Draft Site Management Plan for PWD and conduct PWD Supervisor Training	PWD	Jan 01	
Purchase PPE for TSECS Staff (Outer Islands)	TSECS	Jan 01	
Training in Monitoring and Testing for PICCAP Staff	PICCAP	Jan 01	
Signage at Hazardous Waste Store and Staff Training	WMP	Nov 00	
Conduct Training and provide PPE to TCS Branches (Outer Islands)	TCS	Jan 01	
Raise Awareness of Department of Health staff	MOH	Nov 00	
Prepare Site Management Plan for Hospital, including Chemical Inventory and Staff Awareness	PMH	Jan 01	
Action Plan for Translation of Course Manual	FK	Nov 00	
Conduct Audit of Site Management Plans Prepared by Various Organisations & Departments	Environment Unit	Apr 01	
Raise Public Awareness <ul style="list-style-type: none"> • Radio Broadcasts (6 weeks) • Information Sheets, Posters & Public Information 	FK Public Health and MOH & MHA	Nov/Dec00 Jan 01	
Increase Availability of PPE	TCS and Hardware Stores	Jun 01	
Include Hazardous Substances in Draft Bill for next Parliament Session	Drugs Committee	Dec 00	
Prepare Funding Submission for Long Term Storage/Disposal for Outer Island Solar Batteries	TSECS	Mar 01	

ACTION	WHO	TIMELINE	STATUS
Establish Basic Testing Laboratory	MOE	Jun 01	
Management Training	WMP	Mar 01	
Budget Support for Actions	Ministerial Level	Dec 00	
Tuvaluan Wording on HazChem Signs	Public Health Unit / Language Board	Jun 01	
SPREP Liaison Concerning Future Programs	WMP	Dec 00	

6.2 Action Plan for Existing Stockpiles

A proposed action plan to manage existing stockpiles of hazardous materials was developed by participants, following site inspection, as shown in Table 2.

Table 2 – Action Plan for Existing Stockpiles

SITE NO.	SITE ACTIVITY	PROBLEMS	ACTION	RESPONSIBILITY
Tuva03	Fertiliser Stockpile	Deteriorating bags of Potassium Chloride and SuperPhosphate.	Repack for re-use as trace additive to compost and fertiliser for effluent disposal areas and bioremediation.	DOA/WMP/MNRE
Tuva01	Power Station	Soil contamination (hydrocarbons) and unknown location of used transformer oil (PCBs).	Test all oils in use or stored for PCBs and conduct environmental audit and awareness training.	TECS
Tuva05				
Tuva06				
Tuva04	PWD Workshop	Bitumen stockpile uncontrolled. CCA sawdust stockpile fire hazard. Fuel spills. Balance of Nitropril stockpile.	Media release on health issues of burning CCA materials. Signage and security for bitumen spill area. Concrete and bund fuel store and use hand pumps for dispensing.	PWD/MOH

7.0 RECOMMENDATIONS

Based on the training workshop outcomes, Golder Associates recommendations to achieve the defined project objectives in **Tuvalu** are outlined in Table 3 below.

Table 3 – Recommendations Arising From Workshop

RECOMMENDATION	RESPONSIBILITY
1. The Government of Tuvalu (Ministry of Health) should make presentation of its Draft Bill (Poisons, etc) to Parliament an urgent priority, including coverage of all hazardous substances used.	MOH / MNRE
2. Provide field tests kits to allow preliminary assessment of contaminated land to be undertaken and owners to implement action plan for existing stockpiles.	Environment Unit
3. The Action Plans (2) listed should receive ministerial support and be funded by the respective operating budgets for 2001.	MWEC / MFC
4. Public awareness to be raised by media broadcasts in Tuvaluan, including the serious health hazards associated with any stockpiling or burning of CCA treated wood.	Funafuti Kaupule
5. Information on chemical health hazards should be made available immediately in maintenance workshops and other places storing or handling chemicals and appropriate United Nations identification labels displayed.	Environment Unit (Workshop Operators)

Yours sincerely

GOLDER ASSOCIATES PTY LTD

Paul Scells
Workshop Facilitator

Allan Boase
Workshop Facilitator

APPENDIX A

Responses to Pre-Workshop Questionnaire

RESPONSES TO PRE-WORKSHOP QUESTIONNAIRE

Profile of Participants:

- Mechanic, (MNRE - Fisheries);
- Senior Technical Officer, (TSECS);
- Council Member for Public Health (Funafuti Kaupule), Certificate of Teaching NZ;
- Public Health Officer, (MoH);
- Truck Driver , (TCS – Fusi);
- Environment Officer, (MNRE – Environment Unit), Diploma Public Health;
- Waste Management Co-ordinator, (Waste Management Project), BA and Diploma Marine Fisheries;
- Supervisor Hazardous Waste Store, (Waste Management Project);
- Environment Officer, (Waste Management Project); and
- Manager, (TCS).

Expectations:

- Define hazardous materials in Tuvalu;
- How to deal with hazardous materials;
- Learn facts about hazardous materials and contaminated sites;
- Why are hazardous materials here and how do we manage them;
- To gain knowledge to share with others;
- How to store hazardous materials;
- How to handle and transport hazardous materials; and
- Consequences of poor disposal.

Current Perceptions on Hazardous Materials and Hazardous Wastes:

- Dangerous or risky materials;
- What danger is there to environment and material;
- Something terrible which would disrupt the health of people;
- Something difficult to control which may be harmful to the body; and
- Important to everyone.

Sites to Visit During Workshop:

- Hospital;
- Landfill and dump sites; and
- Contaminated sites.

RESPONSES TO PRE-WORKSHOP QUESTIONNAIRE (CON'T)

Techniques of Interest:

- Mechanical workshops;
- Recycling options;
- Safe disposal of hazardous materials;
- Recovery and reuse of hazardous materials; and
- Equipment and facilities needed for hazardous materials.

Other Comments:

- Extension of concepts to the community;
- Provide summary notes;
- Teach and demonstrate techniques; and
- All presentations in Tuvaluan or English with Tuvaluan translation.

Implications For Workshop:

- Participants have limited experience and formal technical training;
- They are interested in visiting sites and becoming aware of chemicals present in country;
- Seeking advice on basic safety procedures for handling and storage;
- Seeking advice on recycling, reuse and disposal alternatives;
- Avoid over technical material (maximise video content);
- Use visual aids and hands on activities and adjust time allowances to suit progress; and
- Help them identify stockpile/storage improvements on-site.

APPENDIX B

Workshop Participants

WORKSHOP PARTICIPANTS

FUNAFUTI, TUVALU

Name

Organisation

Workshop Participants (14):

Tiapolua Tautu	Public Works Division
Kapuafe Lifuka	TSECS
Maluofenua Kalisi	Waste Management Project
Poni Faavae	PICCAP
Toaripi Lauti	Funafuti Kaupule
Vaatau Paeli	Fisheries
Lavega Lototele	Princess Margaret Hospital
Falealili Feagai	Public Health Unit
Ilata Pulusi	Hospital Pharmacy
Mataio Tekinene	Environment Unit
Ulia Kalapu	Tuvalu Co-operative Society
Roy Lameko	Tuvalu Co-operative Society
Susan Tupulaga	Waste Management Project
Kelesoma Saloa	Waste Management Project

Facilitators:

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Paul Scells	Golder Associates