

REPORT ON

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

WORKSHOP REPORT

FIJI

Submitted to :

South Pacific Regional Environment Programme
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Apia, Samoa

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ACRONYMS

CSSP	Chemical Society of the South Pacific
MRD	Mineral Resources Department
NGO	Non-government organization
PCBs	Polychlorinated Biphenyls
PICs	Pacific Island Countries
POPs in PICs	Persistent Organic Pollutants in Pacific Island Countries Project
PPE	Personal Protective Equipment
SPREP	South Pacific Regional Environment Programme
USP	University of the South Pacific

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 Fiji during the period 29 January, 2001 – 02 February, 2001, 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 Fiji's capacity for the effective management of hazardous materials and hazardous waste;
- To upgrade Fiji's capacity for effective management of contaminated sites;
- To encourage the development of specific strategies for managing hazardous materials in Fiji; and
- To raise awareness in Fijian 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. However, no responses were received from workshop participants.

2.0 WORKSHOP PARTICIPANTS

2.1 Organisations Represented

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

2.2 Organisations Not Represented

Several applicable organisations were unable to send a representative to the training workshop, including:

- Ministry of Education;
- Hospital;
- Customs Department;
- Member(s) of the automotive industry; and

- Member(s) of the oil industry.

3.0 MAJOR ISSUES IDENTIFIED

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

1. A regional resource and skills database needs to be established;
2. The Sustainable Development Bill needs to be enacted in its original draft form;
3. The Draft Mining Act needs to be enacted;
4. The Draft Workplace Conditions Legislation needs to be enacted;
5. There needs to be an agreement on the National Guidelines for Environmental Performance. An intermediate option may be to adopt Australian or New Zealand standards;
6. An in-country bioremediation task force needs to be funded and established under CSSP and EPA control;
7. Remediation trials for OP's and other contaminants need to be funded and undertaken through the USP;
8. A full scale remediation demonstration needs to be undertaken in the country;
9. Remedial technology options should be integrated into the relevant USP curriculum;
10. There needs to be an in-country hazardous materials storage area constructed;
11. There needs to be improvement of internet access;
12. A contaminated sites register needs to be established by the EPA;
13. There needs to be a provision in legislation for the management and disposal of asbestos;
14. An asbestos management program needs to be undertaken for Suva City;
15. There needs to be construction of a new landfill (Naboro Landfill) as a cogeneration landfill; and
16. There needs to be a reduction on import duty and prices for PPE and safety equipment.

4.0 COUNTRY REPORT UPDATE

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

- Agchem Chemicals has disposed of the 3 tonnes of isoprocarb reported in the Phase I survey by reducing cost;
- The condition of the 100 cyanide canisters stored by the Ministry of Health has deteriorated. The storage facility cannot be accessed as the canisters are lodged against the door. The ministry is concerned that if the structure of the storage building is breached that a major incident may occur;

- Lakena Research Stations Store of DicideX (Trichlorfan, O-P) has further deteriorated. As the product breaks down there is increased spillage. The storeroom is poorly ventilated. The breakdown of Trichlorfan is accelerated by heat, and produces carbon dioxide. This causes a breach in the storage containers; and
- Two major gold mines and a large number of small local mines have closed. One major gold mine was partially, but unsuccessfully remediated. Mine workings in regional Fiji are poorly managed and require rehabilitation.

5.0 EVALUATION ISSUES

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

1. Establishment of a chemical database is a priority;
2. Toxic waste disposal and safe explosives disposal is an issue;
3. Toxic materials emergency response training is necessary;
4. Storage/Disposal options for hazardous wastes should be addressed;
5. There needs to be a link between the Environment Department and the Occupational Health and Safety Division of the Health Department;
6. Labelling of imported chemicals is poor from Europe and China;
7. There needs to be a means of disposing of small quantities of chemicals in stock;
8. The group should form a committee to follow up on the safe disposal of stockpiles of hazardous wastes in Fiji;
9. There should be contacts to waste treatment companies in Australia and New Zealand who are able to treat chemicals wastes; and
10. There should be more information on waste treatment technology to enable in country implementation.

6.0 ACTION PLANS

6.1 General Action Plan

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

Table 1 – General Action Plan for Fiji

ACTION	WHO	TIMELINE	STATUS
Revise and update Draft Workplace Conditions legislation	Department of Health	06/01	
Review the Draft Mining Act including: hazardous waste and mine closure/rehabilitation.	MRD and Department of Environment	06/01	
Develop hazardous chemicals/waste, mining and exploration activities waste audit program.	MRD and Department of Environment	06/01	
Review incident/emergency response plan for mining operations, particularly for hazardous chemicals	MRD and Department of Environment	09/01	
Disposal of contaminated solvents and waste oil to Fletcher Steel Ltd.	Waq Ledua / Hira Lai, Orica, Fletcher Steel	02/01	
Design new labels for repacked chemicals	Waq Ledua /Orica	06/01	
Implement a national program for waste management planning	Department of Environment, NGO's	Annual Review	
Implement source segregation into the landfill and reduce landfill volume in general	Schools through CSSP and UPS	Annual Review	
Review and implement chemical management at USP and IAS	USP and consultants	12/01	
Develop a register for contaminated sites	Department of Environment/Local Authority	12/02	
Establish an in-country remediation task force	CSSP / Department of Environment	2001	
Undertake large scale remediation trials	CSSP/USP	2001	

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
Fj01	Storage of Dicedex	Storage of chemicals is becoming unsafe	Remediation in Agriculture station	Remediation Task Force

7.0 RECOMMENDATIONS

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

Table 3 – Recommendations Arising From Workshop

RECOMMENDATION	RESPONSIBILITY
1. Seek funding from donors to train and equip remediation task force in-country	William Peter
2. Put remediation team under CSSP and Department of Environment joint control	William Peter
3. Integrate lab trials of remediation approaches into USP undergraduate and post graduate environmental degree	William Peter
4. Recommend legislative change in country to address workshop issues	SPREP
5. Implement waste oil and solvent destruction program at Fletcher Steel	SPREP, Fletcher Steel, Orica, Department of Environment
6. Construct in-country hazardous waste storage facility	Department of Agriculture, Consultants

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APPENDIX A

Workshop Participants

WORKSHOP PARTICIPANTS

FIJI

Name

Organisation

Workshop Participants (16):

Bale Tamata	Institute of Applied Sciences, USP
Una Bera	Ministry of Health, Health Office, Nausori
Moti Lai Autar	Ministry of Agriculture Forestry and Fisheries
Hira Lai	Fletcher Challenge Steel Fiji Ltd.
Vandana Naidu	Department of Environment
Alifereti Raibevu	Suva City Council
Tupou T. Saubulinayau	National Fire Authority
Tevita Vakayagai	Agchem Ltd.,
Ben V Nand	Agchem Ltd., Fiji Manufacturing Association
Deo Narayan	Ministry of Health, Vector Control Unit
Suresh Singh	Fiji Electricity Authority Headquarters
Ian Fong	Mineral Resources Department
David Leong	Orica Fiji Limited
Waq Ledua	Orica Fiji Limited
William Peter	USP Chemical Society of the South Pacific
Samu Tiqatabua	OHS Inspectorate, Ministry of Labour

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