

REPORT ON

TRAINING WORKSHOPS IN EFFECTIVE MANAGEMENT OF HAZARDOUS MATERIALS, HAZARDOUS WASTES AND CONTAMINATED SITES WORKSHOP REPORT KIRIBATI

Submitted to :

South Pacific Regional Environment Programme

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ACRONYMS

ECD	Environment and Conservation Division
FSP	Federation of the South Pacific
KTC	Kiribati Technical College
PICs	Pacific Island Countries
POPs in PICs	Persistent Organic Pollutants in Pacific Island Countries Project
PPE	Personal Protective Equipment
SPC	State Power Corporation
SPREP	South Pacific Regional Environment Programme
TBA	To Be Announced
TBT	Tri-butyltin

1.0 INTRODUCTION

Management of hazardous materials, hazardous wastes and contaminated sites has become an increasingly important issue for Pacific Island Countries (PICs). 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 **Kiribati** during the period 22-26, January 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 Kiribati's capacity for the effective management of hazardous materials and hazardous waste;
- To upgrade Kiribati's capacity for effective management of contaminated sites;
- To encourage the development of specific strategies for managing hazardous materials in Kiribati; and
- To raise awareness in Kiribati's 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. One response was received from Baranika Etuati and prior to conducting the workshop the participants were asked to answer the questionnaire. A summary of responses 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

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

- Marine Division;
- Kiribati Port Authority;
- Plant and Vehicles Unit;
- Public Utilities Board;
- Fisheries Division; and
- Police (Fire Services).

3.0 MAJOR ISSUES IDENTIFIED

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

1. Kiribati to sign the **Basel Convention**;
2. Increase the level of **public information on hazardous wastes** and waste management;
3. **Increase powers of inspection** for safe storage and handling of hazardous materials;
4. **Adoption of materials storage and handling codes**;
5. Registration of **contaminated sites**;
6. Warehousing and **storage of hazardous materials**;
7. Passing and **enacting of the Occupational Health and Safety Act**;
8. **Extension/repair of sewage and drainage pipes** from public utilities such as the hospital;
9. **Improve access and lowering cost of internet access**;
10. **Internet training** for public sector workers; and
11. **Investigation of wind power** generation projects for Kiribati atolls.

4.0 COUNTRY REPORT UPDATE

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

- Additional sites containing hazardous materials were identified at: printing centres (inks and dyes), the health education centre (expired medicines), photographic centres (expired developer), Betio Harbour and Shipping (acids, paints-TBT); Customs warehouse (confiscated chemicals), high school laboratory (out of date chemicals); TCH (expired drugs and medicines); automotive garages (waste oil); outer islands (solid alkaline batteries).
- Participants have stated that the sodium hydroxide noted in the country profile data has been removed. However, the whereabouts of the chemical is currently unknown.
- Waste oil from the power generation plant in Betio has contaminated the local ground water lens. Neighbours from adjacent properties have reported fuel odours from the local wells. The site discharges spilled and leaked fuel to the local drains.
- Domestic litter and waste is a problem on the island. Coastal areas, lagoons and reefs contain large volumes of disposed waste.

5.0 EVALUATION ISSUES

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

1. What are the advantages and disadvantages of signing the Basel Convention, and why is there only one acceptance by a Pacific country;
2. Wind power generation should be considered as an option to diesel power;
3. Consideration to a centralised hazardous chemical store for South Tarawa possibly at the shipping compound;
4. Local culture does not encourage recycling and reduction methods;
5. PPE equipment is very difficult to obtain and maintain. A concerted education program is needed to resolve this problem.
6. NGO's provide funding and aid to build infrastructure but do not follow this up with a concerted maintenance program suitable for local culture.
7. Aid funding often gets diverted away from the projects and fails to change the attitude of decision-makers.

8. Much of this aid is wasted in NGO administration. A concerted audit should accompany every project.
9. Training of the local workforce is required with subsequent updates and reviews.

6.0 ACTION PLANS

6.1 General Action Plan

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

Table 1 – General Action Plan for Kiribati

ACTION	WHO	TIMELINE	STATUS
Initiation of a plastic bag recycling/elimination program	Environmental and Conservation Division/Federation of the people of the South Pacific	2002	
Plastic cup reduction/reuse program	Education Department/Peace Corps	Sept 2001	
Letter campaign to MP's for the signing of the Basel Convention	Workshop Participants	May 2001	
Public information campaign for hazardous materials	ECD/Peace Corps	April 2001	
Register of contaminated sites and areas	ECD	March 2001	
Investigaaion of warehouse facilities at Betio port for the storage of hazardous chemicals and materials	Ministry of Health, Ministry of Agriculture & Customs Dept.	Sept 2001	
Monitor S.A.P.H.E. project progress	Ministry of Health, Ministry of Agriculture, participants as Hazchem team under ECD	April 2001 – next meeting	

6.2 Action Plan for Existing Stockpiles

There was no stockpiles of hazardous materials that the participants felt confident enough to attempt to remediate. The participants agreed that it was necessary for external expertise to be involved in any attempts to remediate the existing stockpiles.

7.0 RECOMMENDATIONS

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

Table 3 – Recommendations Arising From Workshop

RECOMMENDATION	RESPONSIBILITY
1. Encourage parliament to enact outstanding environmental legislation, including seeking support from SPREP.	National Government
2. Encourage renewable sources of energy to reduce reliance on potentially contaminating fossil fuels.	SPC in consultation with SPREP
3. Initiate a sustainable recycling program to reduce waste streams and investigate potential markets off-island.	ECD/Peace Corps
4. Set up a hazardous goods warehouse near Betio Harbour to provide a centralised storage facility for chemicals waiting to be disposed and chemicals entering the country.	MoH, MoA, Customs Dept.
5. Plastics have commonly been used by residents as fuel for cooking. A public education program needs to be launched in order to warn residents of the health and environmental hazards of burning plastics.	MoH, ECD & Peace Corps
6. Monitor the S.A.P.H.E. project progress and improve waste handling and compaction facilities at the current landfill to extend its useable life.	ECD & MoH

GOLDER ASSOCIATES PTY LTD

Ken Gilbert
Workshop Facilitator

Allan Boase
Project Manager

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APPENDIX A

Responses to Pre-Workshop Questionnaire

RESPONSES TO PRE-WORKSHOP QUESTIONNAIRE

Profile of Participants:

- Information returned in pre-workshop questionnaires revealed that participants came from mostly Government departments and NGO's. Commercial activities were not represented.

Expectations:

- Gain an insight of the effect of chemical exposures;
- Increase knowledge on the management and treatment of hazardous material and contaminated sites;
- It will help me in understanding more about or dealing with hazardous materials and contaminated sites;
- To gain knowledge on the proper disposal of hazardous chemicals employed in the laboratory;
- Increase in knowledge and skills on handling, disposal and treatment of hazardous materials that are practical, safe and technologically appropriate for atoll countries;
- Learn more about hazardous materials and safe disposal methods;
- Get new insights in how children should avoid/dispose of hazardous materials;
- A little enhancement on current knowledge on hazardous waste;
- I want to know what they are. Whose responsible for them. How to handle them. What are the future plans; and
- A broader knowledge of the dangers and problems associated with hazardous materials.

Current Perceptions on Hazardous Materials and Hazardous Wastes:

- Poisonous- something that could cause problems;
- Safety; Environment; Health and money;
- Things that can cause damage to the environment or the humans health such as used batteries, vehicle oils, soda or acids;
- The implications or the effects it will have on human beings and the safest way of disposal;
- Waste that is toxic and poses a danger to living organisms and human health;

- Materials that could be harmful when not handled or stored as they should;
- Danger;
- Waste that is very dangerous and a nuisance to human health and island ecology;
- Worried about the environment; and
- Think of handicapped people who suffer from their environment being contaminated with hazardous materials or waste.

Sites to Visit During Workshop:

- Animal Health Storage Shed;
- Betio public landfill; and
- Betio customs storage warehouse.

Techniques of Interest:

- Alternative energy sources – Wind Power;
- Economic incentives into waste management and reduction;
- First aid procedures for hazardous waste management; and
- Local substitutes for imported materials.

Other Comments:

- Why has only one Pacific country accepted the Basel convention? What are the drawbacks of being a signatory?
- This workshop really reinforces my knowledge and objectives as a waste management officer;
- Reduction principles should be taught and stressed to the public, recycling is not really acceptable in the island culture;
- Supporting heavy import duties on plastics and luxury items could and should be looked into;
- PPE are understood by participants but are in limited supply on the island. Getting people to use them is also a big problem on the island;
- A cultural aspect of Kiribati is people look one day to one week ahead. The future is a hard concept to comprehend; and

- A lot of aid comes into the country as dollars and suffers from three problems:
 - It is kept by the wealthy and not filtered down to the people who need it;
 - It does not change the local attitudes; and
 - It is wasted by organisations (in country) by pushing paper around different offices/desks.

Implications For Workshop:

- Participants considered the workshop relevant to their areas of employment and were willing to maintain the principles and techniques learnt. Concern was expressed that maintaining enthusiasm for achieving recommendations and goals would be eroded over time and that periodic review should be carried out to ascertain progress.

APPENDIX B

Workshop Participants

WORKSHOP PARTICIPANTS

KIRIBATI

Name

Organisation

Workshop Participants (14)

Jim Kulik	Environment and Conservation Division (ECD)
Tarawaarini Takineti	Teinainano Urban Council
Ariti Tekae	Amak Womens Unit
Noketi Karova	Environment and Conservation Division (ECD)
Trahhare Talvea	Ministry of Health
Farram Redfern	Environment and Conservation Division (ECD)
Takirua	Customs
Kautoa Karaiti	Kiribati Oil Co.
Ariane Kienene	Ministry of Health
Tebuka Toatu	Ministry of Health
Tianeti	Kiribati Technical College (KTC) Science Teacher
Danfung Binoka	Federation of the South Pacific (FSP)
Herman Tiikana	Moroni High School
Mere Teaabo	Education

Facilitators:

David Hodge	Golder Associates
Ken Gilbert	Golder Associates