Federated States of Micronesia: National Government and State EPA Collaboration: Solid Waste Management Activities

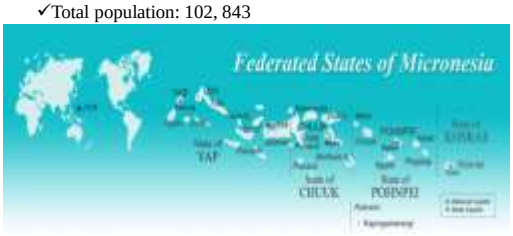
Miss Patti Pedrus
FSM Office of Environment and Emergency Management, National Government
Federated States of Micronesia

Outline

- FSM at a glance
- National and State Government roles
- Title 25
- J-PRISM in the FSM
- Before and After: Waste
- Solid Waste Management in the FSM
- States Progress
- Challenges
- Way Forward
- SIRO, TIROU, IEHNG, AND

Federated States of Micronesia

✓Multi-sovereign states in free association with the U.S
✓607 small islands in the Pacific region
✓Four main islands: Yap, Chuuk, Pohnpei, and Kosrae- all but Kosrae include numerous atolls
✓Total population: 102, 843



National and State Governments

- The Office of Environment & Emergency Management (OEEM) was created on September 12, 2007, and became the lead office responsible for environmental issues
- Integrating environmental considerations into strategic policy formulation
- Administering the Environment Protection Act
- Four semi-autonomous states
- Three branches of government
- Retain autonomy to manage their own domestic affairs
- Responsible for development of planning and natural resource/land management
- Regulatory agency; one responsible for delivering solid waste management services (EPA/KIRMA + T&I +PW)

Title 25

Title 25 establishes the following responsibilities:

✓formulate and implement environmental policies and legislation
✓ conduct research and develop strategies;
✓ protect and manage the environment within the National jurisdiction
✓ coordinate work with the state EPAs when applicable

J-PRISM in the FSM

✓ Building capacity in the FSM through its "Learning by doing approach" technical support programs for waste disposal and landfill maintenance
✓ Activities center around the 3R concept

- Under the J-PRISM project:

Key outputs and activities have been addressed:

✓ Strengthened human capacity
✓ Strengthened institutional capacity

Before and After: Waste

- **THEN**
- Subsistence economy
- Organic waste: coconut woven baskets, banana and taro leaves

- **TODAY**
- Money economy
- Imported goods and items
- Non-refillable products and packaging
- Rise in non-biodegradable waste
- Consumer society

Solid Waste Management in the FSM

- Recycling
- Awareness
- Disposal
- Collection
- Landfill Management

Yap State Semi-aerobic landfill (Fukuoka Method)





Yap State Recycling Activities





Chuuk State Horn Collection



Chuuk State Public Waste Bin



Pohnpei State Rehabilitated Dumpsite



Pohnpei State Awareness Program: "Environmental Club"



Kosrae State 4R Program



Kosrae State Leachate monitoring system



CHALLENGES

- **PHYSICAL SEPARATION**: Diminishes level of interaction that could foster an increase in collaboration
- **POLITICAL SET-UP**: Limited intervention in state affairs

WAY FORWARD

- COLLABORATE WITH STATES
- REVIEW OF ENVIRONMENTAL REGULATIONS
- ASSIST IN SECURING FUNDING OPPORTUNITIES AND PROMOTING SUSTAINABLE FUNDING SOURCES

THANK YOU J-PRISM

Solid Waste Management Division
Bureau of Public Works
Ministry of Public Infrastructure, Industries and Commerce

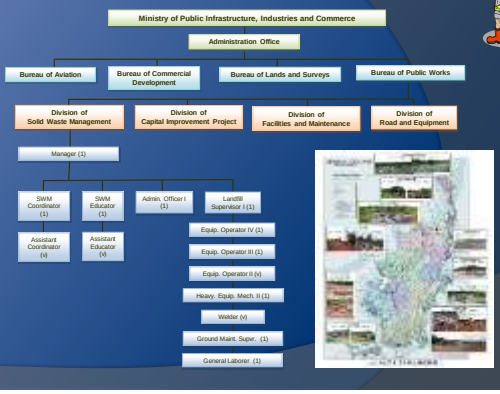
Republic of Palau

By: Calvin Ikesiil
Manager, Solid Waste Management Division

Contents

- Organization Chart
- J-PRISM
- 3Rs program
- Landfills
- Next step

Organization Chart FY 2014



J-PRISM Palau

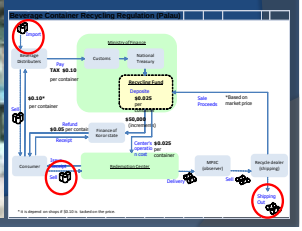
Output Number	Progress of Activities From September 2013 to August 2014	Activities to be implemented up to March 2015
Output 1: Management of the beverage container deposit fee program is enhanced.	• Redemption Rate is approximately 95%. • Deposit fee is over 4 million US since 2011.	• Monitoring • Amendment of the Law to include all beverage container. • Possibility to include other recyclable items • Annual Report
Output 2: National Solid Waste Management Plan is finalized and action plan is revised.	• Completed	• Review and revise the action plan as necessary.
Output 3: Awareness raising on 3R is enhanced.	Develop awareness materials and activities as follows: • Radio talk shows • School presentations • Earth Day activities • Sign boards • 3R Brochures • Tire waste bins	• Continue developing 3R materials • Install tire waste bins • Radio talk shows • School programs • Develop brochures for tourists
Output 4: Management of the final landfill site is enhanced.	• Operation & Maintenance of M-dock landfill • Temperature check on ventilation pipes • Location of new landfill site is identified in Aimeliik State.	• Continue O&M of M-dock landfill and temperature check. • Finalize closure plan of M-dock landfill • Survey of new site to identify exact boundaries. • Develop topographic survey and conceptual plan. • Prepare environmental assessment.
Output 5: Training program on 3R is developed.	• Regional workshop held in November 2013 with 40 participants.	• Next workshop in 2015 for all states in Palau.

Recycling Law (J-PRISM Output 1)

➢ Implementation of the Recycling Program since 2011 to May 2014.

Import	47, 329, 689 beverage containers ≤ 32 oz.	$4, 732, 969.00 (10¢ deposit fee)
Redeemed	44, 481, 576 beverage containers ≤ 32 oz.	$2, 224, 078.80 (5¢ refund)
Export	Aluminum, Plastic bottles, Metal (tin) container	Over 600 tons


Redemption Center



Awareness (J-PRISM Output 3)

3Rs

3R brochure


front



back

Awareness (J-PRISM Output 3)

3Rs

Sign Boards and school activities



Awareness (J-PRISM Output 3)

3Rs

Waste tires - Reuse for flower pots and waste bins



Landfill (J-PRISM Output 4)

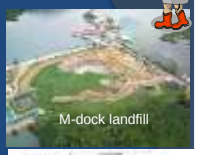
There are 16 States in Palau and 12 existing dumpsites.

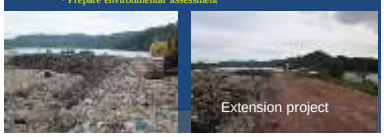
National landfill is located in Koror State

- Known as M-dock landfill
- Operation by National Government
- In operation for more than 50 years
- Land area: 13 acres
- Founded on a reef flat
- Rehabilitated in 2007 (fukuoka method)
- Extended in 2013
- Life expectancy- 3 years

New Site located in Aimeliik State

- Survey of new site to identify exact boundaries.
- Develop topographic survey and conceptual plan.
- Prepare environmental assessment

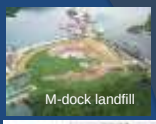






Next Step

- **Location of new landfill and its construction.**
  - ✓ August 2013- Executive Order: to establish the Landfill Task Force to review 3 options as follows:
    1) One landfill in Palau
    2) Several landfills in Palau √
    3) All 16 States will have its own landfill
  - ✓ New site has been located in Aimeliik State to serve Babeldaob and Koror State.
- **Collection/ Transportation** ⟹ Privatization
- **Waste Tires**
  - ✓ There are thousands of waste tires piled up in M-dock landfill and we are now looking at one solution to tackle the waste tire issue.
- **Improvement of existing programs (J-PRISM).**
  - ✓ Amendment to Recycling Law
  - ✓ 3R programs
  - ✓ Revise NSWMP
  - ✓ Develop textbook for SWM personnel
- Address hazardous waste, e-waste, infectious waste





Thank You!



Be a 3R Hero

Energy Recovery Section

July 29th to September 15th, 2014
Operation Days: 30 Days
Processed Plastic waste materials in this period
•486.1 kg or 0.5 tons

Bio-Diesel Production in this period
•732.11 Liters or 193.14 Gallons

Daily Average:
Processed plastic waste: ***16.2 kg/day**
Bio-Diesel Production: ***6.4 gallons/day**



Compost Facility Operations

July 2013 to July 2014 (1 year Period)

Combined total volume of processed materials (Yard waste, Kitchen waste, and Cardboard/Papers): **371.4 cubic meters**
Combined total weight of processed materials (Yard waste, Kitchen waste, and Cardboard/Papers): **176.7 Tons**
Total Compost materials processed for Sale

*Grade A: 2,145 cubic feet
*Grade B: 340 cubic feet

Actual Sales during this 1 year period:		
Grade A:	2,026 cubic ft. worth	$10,130.00
Grade B:	297 cubic ft. worth	$742.50
TOTAL SALES:		$10,872.50




Grade A

Grade B



Project Activities for Environmental Education



Awareness Activities

- School Visit Awareness (May 2013 – August 2014)
- Awareness on the Radio Programme
- Awareness Events in RMI



3R workshop in Ebeye

- Sharing the information and knowledge
- How to Reduce, Reuse, and Recycle
- J-PRISM 3R Regional Training in Palau



Policy for Environmental Education and future plan

- How to organize class activities
- On going plan

About The Organizational Chart for RMI-EPA

- Administration 財務、人事
- Water Quality and Monitoring Laboratory 水質管理
- Coastal & Land Conservation 沿岸・陸地保護
- Waste & Pollutant 廃棄物・汚染
- Education Awareness and IT 環境教育・IT






Awareness Activities

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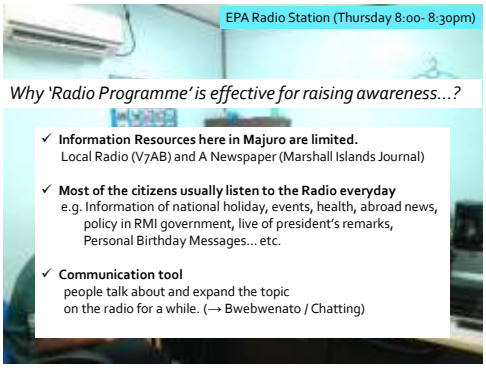
Step of School-based Awareness Activities

Knowledge & Understanding
↓
Activities
↓
Feedback
↓
Sharing or Expanding with others



Environmental Children's Drawing Contest in Majuro
550 pictures from 5 public elementary schools has collected and exhibited at ICC

Awareness on the Radio Programme



Why 'Radio Programme' is effective for raising awareness…?

- ✓ **Information Resources here in Majuro are limited.**
  Local Radio (V7AB) and A Newspaper (Marshall Islands Journal)
- ✓ **Most of the citizens usually listen to the Radio everyday**
  e.g. Information of national holiday, events, health, abroad news, policy in RMI government, live of president's remarks, Personal Birthday Messages… etc.
- ✓ **Communication tool**
  people talk about and expand the topic on the radio for a while. (→ Bwebwenato / Chatting)

Awareness Activities
- *School Visit Awareness (May 2013 – August 2014)*
- *Awareness on the Radio Programme*
- *Awareness Events in RMI*



3R workshop in Ebeye
- *Sharing information and knowledge*
- *How to Reduce, Reuse, and Recycle*
- *J-PRISM 3R Regional Training in Palau*

Policy for Environmental Education and future plan
- *How to organize class activities*
- *On going plan*

3R Workshop in Ebeye

What's the purpose of our visit?

- ◆ Holding on the present situation of ebeye dump site and people's Reorganization about waste issues
- ◆ Raising awareness of 3Rs: Reuse, Reduce, Recycle **for waste minimization**

Who's target?

- ◆ The workshop were **not only for children**, but we were also targeting **their families** and those in the community

How was the workshop?

- ◆ As EPA we strongly believe in our actions that all this will make **positive effects** on the current environmental situation in Ebeye.

Our Presentation

- What's happening to Majuro Atoll now…?
- How to Reduce, Reuse, Recycle for the sustainable future
- Display of 'Candle Holder' made of Aluminum cans
- Awareness games & Quiz





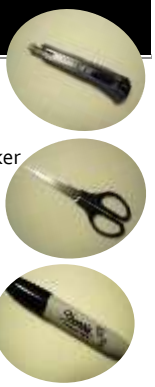


Material and tool

- Can
- String



- Cutter
- Scissors
- Work gloves
- Felt-tip marker
- Needle



Kwo maron ke lom lok eo wi ton an jaklok Kwat in Cola ?



3 weeks



1 year



200- 500 years



Never ...



J-PRISM
Sub-Regional Training Workshop in Palau

- Share the experiences on the 3Rs (Reduce, Reuse and Recycle) in Pacific Island Countries
- implement and operate the CDL (Container Deposit Registration programme)

After the Training…
Shared the knowledge and Open Discussion with MAWC and EPA

Awareness Activities

- *School Visit Awareness (May 2013 – August 2014)*
- *Awareness on the Radio Programme*
- *Awareness Events in RMI*

3R workshop in Ebeye

- *Sharing information and knowledge*
- *How to Reduce, Reuse, and Recycle*
- *J-PRISM 3R Regional Training in Palau*



Policy for Environmental Education and future plan

- *How to organize class activities*
- *On going plan*

How to organize class activities

Key Person

- Class teachers

Key Words

- **Pre-meeting** with Principals and Class Teachers
- **Local Language Communication**
- Daily Visiting (if it's possible)
- Clear the Purpose of Visit and Catch up the current situation

On going plan

- Continue the on going activities of last year
- New agenda's plan for 2014-2015 school year
- More activities **in community and churches**
- Improvement of partnership with MOE (Ministry of Education), MAWC, OEPPC, J-PRISM, and JICA



Kommol tata !! Thank you for your listening.



J-PRISM steering committee meeting

WELCOME TO RMI

CONTENT

- PROJECT ACTIVITIES IN RMI

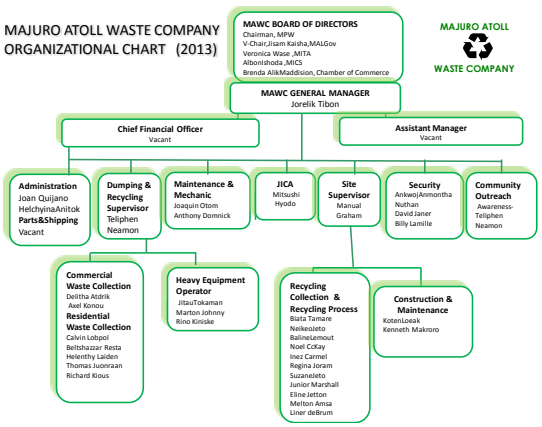
1. MAWC ONGOING ACTIVITIES ON 3R
2. EXPAND ACTIVITIES TO OTHER ISLANDS
3. PLAN FOR FUTURE

Majuro Atoll Waste Company (MAWC)

- ❑Was established by RMI government in March 2007
- ❑Is under auspices of Ministry of Public Works(MPW)
- ❑Is operating and managing the landfill site on Majuro
  - oSeparation process
  - oRecycling activities
- ❑Is scheduled separate collecting
  - Domestic waste
    - Residential waste
    - Green waste
    - Bulky waste
  - oCommercial Waste



MAJURO ATOLL WASTE COMPANY ORGANIZATIONAL CHART (2013)



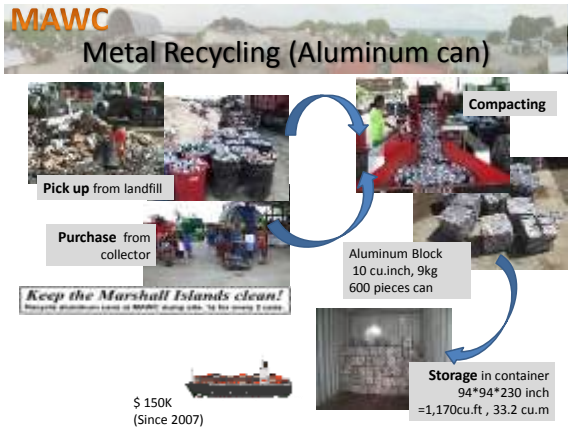
COMPOST

Rubbish to Resources













J-Prism Workshop & Training For Selected Grade 5 & 6 Teachers



@DES Jan 16, 2013

During All Schools Science Exhibition

1. DES Grade 6 Students showed their recycling projects



DES Recycling on Actions

4. Students are being involved in making flowers to decorate their classrooms from empty crackers plastic package and empty can of cola as sitting pots.



DES Recycling On Actions

5. Recycling Points are being developed in Classroom, too.

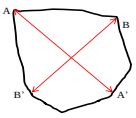


EXPAND TO OTHER ISLANDS

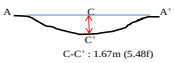








A-A' : 60m
B-B' : 52m



C-C' : 1.67m (5.48f)

The situation before the construction

The place where neighboring people threw away garbage without permission on hollow-formed damp ground.



Construction Phase



Cross Section of Phase

