



FLASH No.3

Featuring activities in Micronesian region



August 2013, No.3

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J-PRISM Flash is a newsletter of which aims is to share the project practices and lessons learnt in the Pacific region. In addition, this newsletter would further facilitate communications among all stakeholders of the J-PRISM including project counterpart members, NGOs, private sector and international organizations relating to waste management in the region. J-PRISM Flash "No.3" provides J-PRISM project activities featuring in Micronesian region.

1. Pohnpei Pilot Project

A pilot project on rehabilitation for semi-aerobic landfill in Pohnpei, Federated States of Micronesia (FSM) was conducted from 17th to 27th June 2013, under J-PRISM activities in Pohnpei. The purpose of this project is to increase the capacity for all officers in charge of landfill management. Such subjects as rehabilitation work, operational management, monitoring and future development of planning on new landfill in Pohnpei were discussed through the demonstration of upgrading the current dumpsite to a landfill using the semi-aerobic system known as the "Fukuoka-Method" with the assistance of J-PRISM experts.

Mr. Charles Lohn, Environmental Protection Agency (EPA), Pohnpei State Government, took the initiative of this project and called for all related agencies including the Office of Environment and Emergency Management (OEEM), Program Management Unit (PMU), Transportation and Infrastructure (T&I), municipal governments, Pohnpei Waste Management Services (PWMS) to take part in





this project. Seven (7) participants from Kosrae, Chuuk, Yap States and the Republic of the Marshall Islands (RMI) also joined this project to adopt and expand lessons learned in their states and country.



In-house session at the first day of the project, the Governor, Senator, Mayors expressed their expectations on the project to protect the communities and contribute to sustainable development in Pohnpei and the Micronesia Region throughout the improvement of waste disposal sites.



During the first week, the time mostly spent for excavating, embanking and compacting existing waste to construct the embankment. The work is simple but truly important to form the proper slope and the smooth



bottom ground for the later work to be carried out during the following week. Participants learned how to make a simple survey and utilize excavators effectively and efficiently to form the embankment on site .



After constructing the embankment and leachate pond, gas ventilation system and leachate collection pipes were properly aligned and installed. It was impressing that participants came up with by themselves an idea to utilize "waste drums" for the connections between the gas ventilation and leachate pipes. This idea was applied for the first time in the rehabilitation of dump sites in the Pacific region and therefore we would call it as the "Pohnpei Method." At the last day of the field work, a leachate circulation system was set by the participants. When the power was switched on, the leachate pumped up from the leachate pond instantly spouted out of the pipe.

On 27th of July, a site tour was arranged to show the result of the pilot project for all representatives from the National government, Pohnpei State government, municipal governments, Embassy of Japan in FSM, JICA Micronesia Office. At the closing session, Hon. John Ehsa, Governor of Pohnpei State Government, highly praised the achievement of this project and thanked that new experts on landfill management were developed here in Pohnpei through the pilot project to properly manage the landfill and to expand their lessons for further improvement on waste management not only in Pohnpei but across the FSM. Hon. Eiichi Suzuki, Ambassador of Japan, also expressed his appreciation to all the collaborative efforts among personnel involved who made this pilot project a success and emphasized that this project would encourage the citizens to continue to fight against pollution in order to conserve the beautiful islands.



2. Marshall Demonstration of rehabilitation Demonstration and training on improvement of dumpsite in Majuro

A two-day demonstration and training on improvement of dumpsite was conducted for Majuro Atoll Waste Company (MAWC), Majuro, Republic of the Marshall Islands (RMI) on 4th and 5th of March 2013. Prof. Yasushi Matsufuji of Fukuoka University, one of the Adviser Committee members of J-PRISM, was invited to demonstrate how to improve an existing dump site using the semi-aerobic landfill system (also known as the "Fukuoka Method"). Prof. Matsufuji is a well-known pioneer of semi-aerobic landfill system and has been involved in a number of landfill rehabilitation all over the world. The aim of this training is to improve the existing operation and facility in an economical and sustainable way utilizing locally available materials or waste such as used tires, pipes and so on.

Before starting the field work, Prof. Matsufuji pointed out some issues to be tackled at the in-house session, such as bad condition of access road, no physical partition with embankment, anaerobic condition, lack of budget, no leachate treatment, etc.

After the in-house discussion, all participants started to work on improving the access road and constructing the partition embankment under the guidance of Prof. Matsufuji. Pictures below illustrate the conditions before and after the work.

The next demonstration was to learn how to construct the partition (cell) with embankment using old waste. Importance of compaction of waste layer was also emphasized in order to prolong the life span of dumpsite and to enable for incoming vehicles to drive into the far corner of the embankment so that bulldozer can save the fuel without pushing waste a long distance. In addition, once constructed, the embankment becomes the boundary between seaward and inward to prevent the waste from flying away to the sea.

During the training, participants learned on site how to install a set of gas ventilation and leachate collection facility using old tires which had been piled up at the backyards of MAWC for long time. A simple leachate treatment facility (retention pond and biotope) was also installed by the participants. Prof. Matsufuji frequently emphasized that the Fukuoka-Method is based on the semi-aerobic system, but has wide variety of applications to improve dumpsites by making use of locally available materials and resources with ideas and efforts that fit to the conditions under various constraints such as lack of budget, machinery, technology, and human resources.



Dumpsite before demonstration



Dumpsite after demonstration



Access road, before work



Afer work



Access road, before work



Access road, after work



Single-line Type gas ventilation



Leachate drainage by used tires



Retention pond and biotope



3. YAP Training

2nd Regional Training on Landfill Management in Yap, Federated States of Micronesia

As part of the regional project activity of J-PRISM, the 2nd Regional Training on Landfill management was conducted in Yap, Federated States of Micronesia (FSM), 19-22th February 2013. The training was conducted over 4 days and made up of a mixture of in-house lectures and field demonstrations/exercises at the existing dump site. Twenty six (26) representatives were invited to this training from Palau and all the four states in FSM.

At the openeng speech of the first day, Mr Vincent Figir, the Director of Public Works and Transport (PWT), expressed his expectation to the participants to share their experiences and ideas throughout the training.

Representatives from Palau, Yap, Chuuk, Pohnpei and Kosrae presented the current conditions and challenges of their landfills to share with other participants, followed by the presentation of landfill operation in Port Vila by Mr Amos Mathias, the Landfill Operations Supervisor of Port Vila Municipal Council, Vanuatu, who participated in the training as one of instructors.

On the subject of improvement of waste disposal sites and development in Pacific Islands, Mr Shiro Amano, Chief Advisor of J-PRISM, stressed the importance of considering the "rubbish bin concept" which illustrates clear demarcation of the disposal area for waste when improving open dumpsite.. Mr Faafetai Sagapolutele, Assistant Chief Advisor, discussed the importance of control and management of access, disposal faces and the disposed waste with proper levelling, compaction and soil cover as the basic maintenance operations and management for waste landfills.

On the second day, all participants observed demonstrations on waste leveling, compaction and soil covering at the dumpsite. Using an excavator provided by PWT, Mr Mathias showed participants how to use the machine to level waste and apply cover soil. Some participants who are operators in their own state/country took turns to exercise the similar operation by themselves.

On the third day, participants were grouped into two and each group was assigned to set up a gas ventilation facility. One team used a perforated PVC pipe and two used drums to install a single-type facility and the other used a PVC pipe and six used drums with used tires to make a triple-type.

On the final day, participants observed embankment formulation work using existing waste and soil for covering. Mr. Mathias formed a part of proposed embankment at the site and explained the importance of effective use of old waste in making embankment and demonstrated how to make the site look better by dividing the disposal site using embankment. Mr. Vernon Basiliu from Palau and Ms. Lisa Muranaka, J-PRISM expert, explained how to a PET bottle to monitor transparency of leachate by simple method and allowed participants to exercise the method. With guidance from J-PRISM Expert Mr Haseyama, participants tried monitoring of pH of leachate using a patch test kit. Through a series of lectures and exercises, all participants acquired basic understanding of simple monitoring method on leachate.

At the end of the training, Ms Christina Fillmed , Executive Director Yap EPA, thanked J-PRISM, on behalf of all participants and remarked that all states/country learned a lot of practical ideas and methods on proper landfill/dumpsite management and they would do their best to improve their landfill sites applying what they learned from this training.



Used tires are buried around the drums in order for the facility not to be damaged by machines' daily operation.



Expert Ms Muranaka and Mr. Vernon Basiliu from Palau explain how to make a simple equipment for transparency monitoring of leachate.



Mr Mathias from Vanuatu provides a lecture on the technique how to make an embankment cell at the site.

4- Voices from Experts



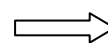
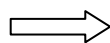
Risa Muranaka

J-PRISM expert in charge of Palau & FSM (Chuuk & Yap)

Palau

Construction of new dyke at M-Dock landfill

M-Dock landfill rehabilitated in the last JICA technical project (2006-2008) became full in 2012. Solid Waste Management office of Bureau of Public Works (SWM-BPW) constructed new dyke on the existing dyke to increase the capacity of the landfill. The total construction cost was prepared by SWM-BPW from Recycling Fund of Container Deposit Fee Program. Also gas venting pipes and leachate pond were rehabilitated and recirculation system will be installed soon.



Process of construction of dyke

Training in November 2013

Koror state operates a Redemption Center which receives, counts, compacts beverage containers and refunds US\$0.05 per container under Container Deposit Fee Program. They received 24,925,154 from April 2011 to Dec. 2012. To share their experience and knowledge with other countries especially in Micronesia, training will be conducted in Nov. 2013 with cooperation of SWM-MPW.

Chuuk State

With initiatives from Chuuk Environmental Protection Agency (EPA), JOCV, and Chuuk Women’s Council (CWC) and Department of Transportation and Public Works (T&PW) Pilot Project for waste collection service has been launched from 2012. The collection system they chose for the Project is “Horn Collection” (will be changed to Music Collection in near future) which the residents in the target area bring waste when they hear the Horn from compacter trucks. Pre and After-survey were conducted before and after the project showing willingness to pay the service has been increased which means the satisfaction from residents toward collection service has been increased.



Residents bring waste to a truck when hear the horn



Workshop at Community place



Cooperative kids



Cooperative kids

Comments from T&PW (collection crews):

“I like the horn collection. The residents are very cooperative and the work is not dirty compared to the other method.”

Comments from residents:

“It’s good because it promotes cleanliness and health, though I threw away to sea before. We want to involve our community more”.

Improvement of a Public Dumpsite

From March 2013, with assistance from EPA and J-PRISM, DT&PW improved the public dumpsite. The challenges were; a) designated dumpsite area was small (164feets x 164feets) but waste has been dumped 0and pushed over the boundary, b) the area was swamp and sometimes vehicles got stuck in the dumpsite, c) available heavy equipments were limited. The improvement activities were conducted as follows;



1) Pushing the waste inside the boundary



2) Reusing waste tires for an approach road



3) Installation of gas venting pipe



4) Installation of fence and sign boards



5) Clean-up the surrounding area



Before (Access Road)



After (Access Road)



Before (inside dumpsite)



After (inside dumpsite)

Yap State

Wire Recycle Bins can be seen around in Yap State in FSM.

Only material you need is a security wire. First you make the tube, and add its bottom afterward.

It cost about \$15.00 per Bin. The advantage of this Bin is that people can see the inside, which encourage the user to segregate the waste, also the rain or any liquid aren’t collected at the bottom of the Bin. While it is required to make frame around to increase further durability.

In the awareness program launched in 2012 in Yap, 60 Bins will be installed in all schools and some public spaces for promoting segregation of Aluminum cans and Plastic bottles.



Make tube



Add bottom



Completed



Installed Bins at school



Akira Haseyama

J-PRISM expert in charge of Marshall Islands & FSM (Pohnpei & Kosrae)

Pohnpei State

2012 was a remarkable year for Pohnpei state. Aluminum cans deposit program has been introduced in Pohnpei. There are still some challenges associated with this implementation, but Pohnpei counterparts will be able to overcome these issues in the future.

In Pohnpei state, waste collection is provided by municipalities; however, some municipalities cannot provide regular collection, while others provide inefficient collection service. JICA and Pohnpei EPA conducted Time and Motion Study (waste collection surveys) to improve collection system.



Starting Aluminum cans deposit program



Example of collection vehicle without mechanical loading



Time and motion study

Kosrae State

Kosrae state has been making efforts for waste minimization and promotion of recycling. Kosrae has become one of the leading states with introduction of recycle system. Not only recycle, but also public awareness and education for children are very important and effective methods to keep islands clean.

Therefore, Kosrae state has developed two educational materials for waste minimization; English and local language (Kosraean) versions. Local language version is used for children. JICA volunteers and expert have launched school visit to teach waste minimization in Kosrae.



School visit and waste minimization education by Japanese volunteers



preparing education materials for children



Pressed Al-cans for container deposit program

Republic of Marshall Islands

Environmental Protection Authority (EPA) and Majuro Atoll Waste Company (MAWC) had launched "School based recycling system" by visiting and providing waste minimization education to school children and teacher training. Booklets and video for waste minimization were developed and provided to schools. EPA and MAWC also introduced "4Rs" (Reduce, Reuse, Recycle, and Refuse) to children.



School visit and waste minimization education



Education material (Booklet)

About our project

Japanese Technical Corporation Project for Promotion of Regional Initiative on Solid Waste Management in Pacific Island Countries (J-PRISM), the 5 years, regional project implemented by the Japan International Corporation Agency (JICA) in partnership with the Secretariat of the Pacific Regional Environment Programme (SPREP) officially commenced in February 2011. The purpose of J-PRISM is capacity development on waste management in the eleven (11) member countries in the Pacific.

Member countries (Federal States of Micronesia, Republic of Fiji Islands, Republic of Kiribati, Republic of Marshall Islands, Republic of Palau, Independent States of Papua New Guinea, Independent State of Samoa, Solomon Islands, Kingdom of Tonga, Tuvalu and Republic of Vanuatu).

J-PRISM Project Office

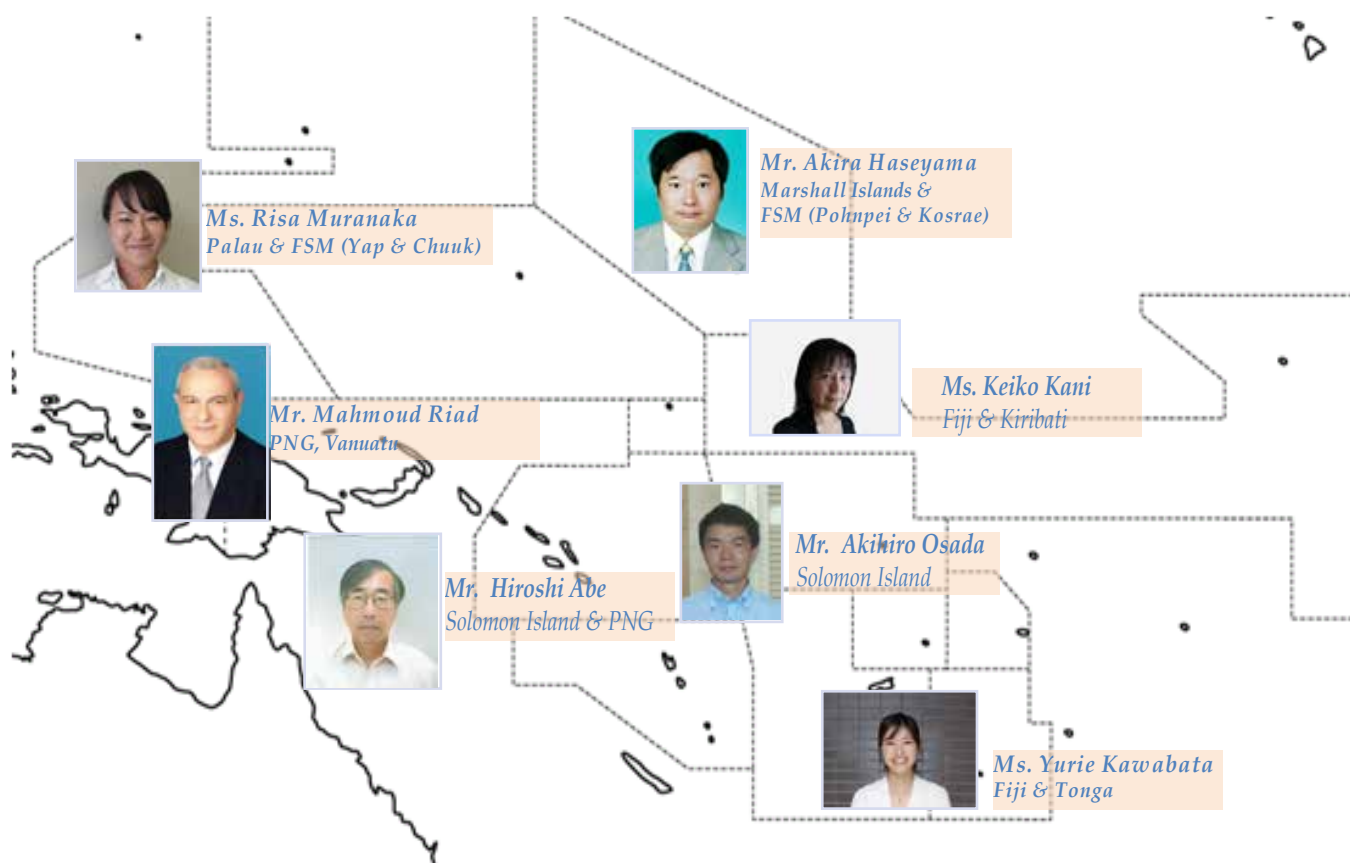
c/o P.O. Box 240, Secretariat of the Pacific Regional Environment Programme (SPREP) Apia, Samoa Tel: +685 21929 (ext 324)

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Mr Hiromichi Kano : Project Coordinator
Mr Makoto Tsukiji : Project Coordinator
Ms Pueina Parkinson : Project Assistant
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SPREP

Ms Esther Richards : Solid Waste Management Adviser



J-PRISM

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