



Our Islands, Our Waste, Our Future

Japan's Cooperation on Solid Waste
Management in the Pacific Region



Japan International
Cooperation Agency

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Japan's Cooperation on Solid Waste Management in the Pacific Region

Japan, as one of the island countries that share the Pacific Ocean, has been assisting other island countries in the Pacific in improving their waste management and preserving their beautiful environment since 2000. Now that the waste issue in the Pacific has become serious and more complex, Japan's continued cooperation is required to strengthen the capacity of human resources and institutional systems as well as the adoption of technology in order to effectively respond to problems in each country depending on different national environments and the degree of modernisation. Since the Fifth Pacific Islands Leaders Meeting (PALM 5) is scheduled for May 2009 in Hokkaido, Japan, it is considered appropriate to share more widely the results of 10 years of Japan's cooperation on solid waste management in the Pacific region. This brochure highlights some of the important points, as follows:

1. Waste issues in the Pacific
2. The relationship between PALMs and Japan's cooperation
3. Pillars of Japan's cooperation on solid waste management in the Pacific
4. Passing the beautiful islands forward to future generations

We hope to continue working together as a partner to improve solid waste management in Pacific island countries in order to enhance the quality of life of the people and pass the beautiful environment forward to future generations.

4

Our Islands, Our Waste, Our Future

3

Pillars of Japan's Cooperation on Solid Waste Management in the Pacific

- Strengthening the Capacity of Human Resources
- Developing Institutional Systems
- Sharing Japan's Technology and Experience

2

Progress on Solid Waste Management along with PALMs

1

Small Islands, Big Issues



1 Small Islands, Big Issues

Waste issues are becoming serious because of increasing waste volumes and the wide variety of waste created by the modernisation of lifestyles and the unique characteristics of small islands.

Characteristics of Islands

- Limited land on islands
- Separation of land by the sea
- Far from international markets
- Weak economies
- Excess of imports over exports
- Modernisation of lifestyles
- Traditional society in rural areas
- Rich fauna and flora in coastal areas

Waste Issues on Pacific Islands

- Increase and diversification of waste due to modernisation of lifestyles
- Retention of waste on islands
- Insufficient waste recycling
- Difficulty of land acquisition for waste-disposal sites
- Environmental damage to rich fauna and flora due to inappropriate waste treatment
- Environmental Pollution due to inappropriate management of landfill site



2 Progress on Solid Waste Management along with PALMs

- The government of Japan invited all leaders of the PIF¹ member countries and hosted the Summit Meeting in 1997 to strengthen the relationship between Japan and PIF members and to cooperate in the development of the Pacific region. Thereafter the summit meetings were held in 2000, 2003, and 2006. PALM 5² is scheduled to be held in Hokkaido in 2009.
- PALM 1 recognised and reconfirmed working together with PIF countries or regions in developmental and environmental areas. Japan and the PIF members carry out efforts on waste issues according to these declarations.



Courtesy of MOFA



Relationship between PALM Outcomes and Japan's Efforts on Waste Issues

Outcome of PALMs

PALM1 (1997)

The Summit recognised the value of close cooperation and reconfirmed that Japan and the PIF members continue to work together in developmental and environmental areas.

PALM2 (2000)

The Miyazaki Initiative was adopted at the summit, setting waste management as one of the regional and global priority issues. The government of Japan committed to construction of the SPREP³ Training and Education Centre in Samoa as well as conducting regional training programmes on waste management.

PALM3 (2003)

The joint action plan, as a part of the Okinawa Initiative, was adopted, and it declared that PIF members will endeavour to develop a regional solid waste management strategy, to encourage and support appropriate waste minimisation activities, and to establish and upgrade waste disposal facilities. The government of Japan committed to support these actions.

PALM4 (2006)

The government of Japan agreed to assist in implementation of the Pacific Solid Waste Management Strategy, which was authorised and adopted by SPREP member countries.

Japan's major efforts

- Conducted a project formulation study on waste issues in the Pacific.

- Construction of the SPREP Training and Education Centre (grant aid assistance)
- Dispatch of experts on solid waste management attached to SPREP
- Improvement of the Tafaigata disposal site in Samoa as a model
- Implementation of training programmes on solid waste management
- Drafting the Pacific Regional Solid Waste Management Master Plan

- Dispatch of experts in solid waste management attached to SPREP
- Implementation of bilateral technical cooperation project in Palau
- Continuation of the training programme
- Implementation of small projects using grassroots funding
- Assisting SPREP in finalising the Pacific Regional Waste Management Strategy, authorised in September 2005 by SPREP member countries

- Implementation of bilateral technical cooperation projects in Vanuatu and Fiji and assisting in formulating national waste management plans/policies
- Implementation of region-wide technical cooperation project based in Samoa
- Continuation of training programme

¹ PIF: The Pacific Islands Forum, formerly the South Pacific Forum (SPF) until a name change in October 2000, was founded in August 1971 and comprises 16 independent and self-governing states in the Pacific. The forum is the region's premier political and economic policy organisation. Forum leaders meet annually to develop collective responses to regional issues. (www.forumsec.org.fj/index.cfm)

² PALM: Pacific Islands Leaders Meeting

³ SPREP: A regional organisation established by the governments and administrations of the Pacific region to look after its environment. It has grown from a small programme attached to the South Pacific Commission (SPC) in the 1980s into the Pacific region's major intergovernmental organisation charged with protecting and managing the environment and natural resources. It is based in Apia, Samoa. (www.sprep.org/)

3 Pillars of Japan's Cooperation on Solid Waste Management in the Pacific

Japan has been assisting the Pacific region in improving its waste management on the basis of three pillars, as follows: The first pillar is to Strengthen the capacity of human resources. Japan has been conducting a variety of workshops and training sessions with various participants to increase the capacity of waste

management in the Pacific. The second pillar is to develop institutional systems. We assist Pacific nations in developing strategies or plans for institutional systems to efficiently improve their waste management. The third pillar is to share Japan's technology and experience such as a landfill methods and 3R practices.

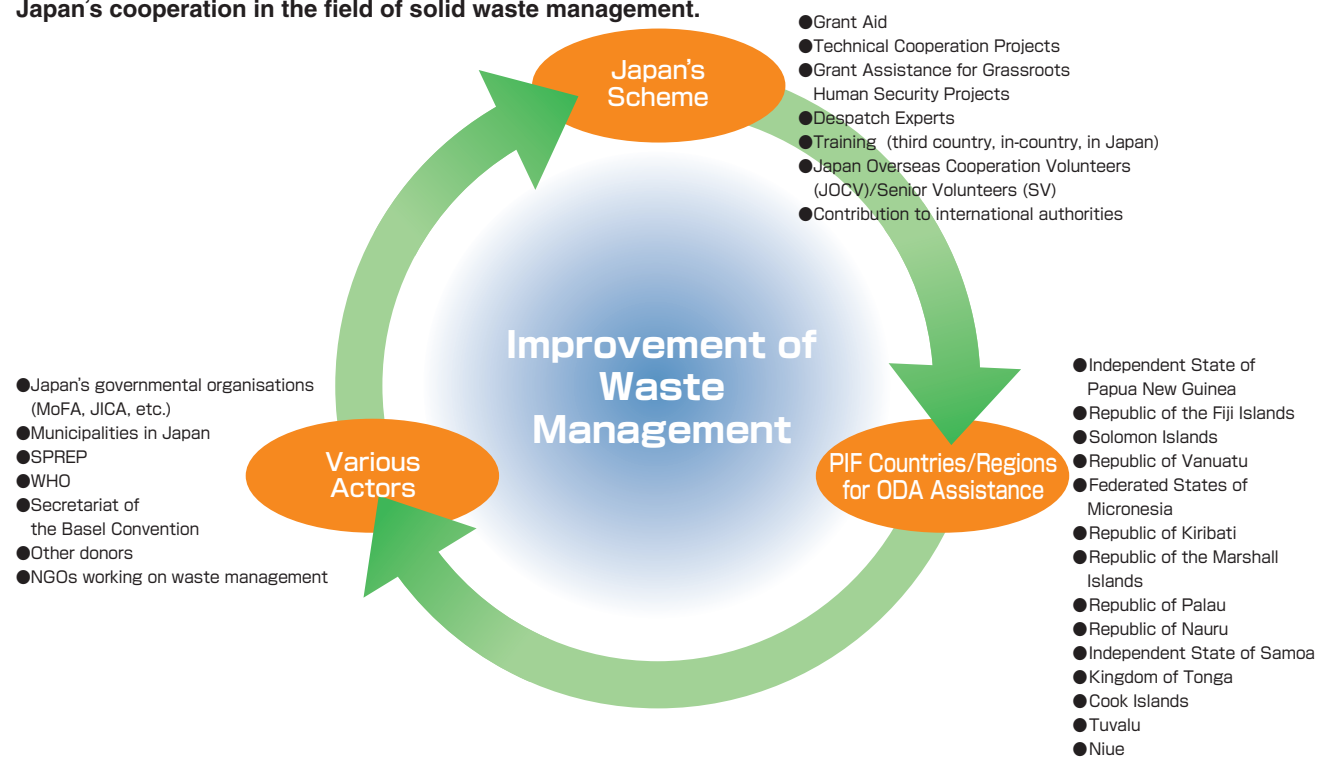
● Strengthening the Capacity of Human Resources

● Developing Institutional Systems

● Sharing Japan's Technology and Experience

Working with Various Actors

Japan has been working on improvement of waste management in the PIF countries in collaboration with various actors such as regional/international organisations, other donor agencies, NGOs, municipalities in Japan, etc. SPREP has been the partner agency of Japan's cooperation in the field of solid waste management.



Relationship among actors for improving the waste management in the Pacific Region

● Strengthening the Capacity of Human Resources — ①

Intensive Training on Solid Waste Management in Collaboration with Various Actors

Third-country Training in Samoa

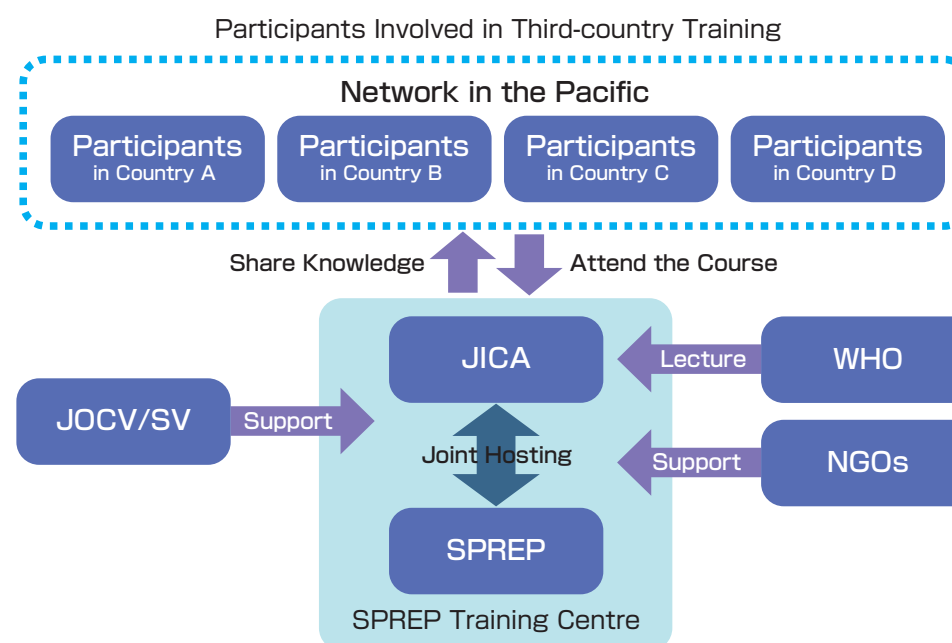
Training sessions were implemented under the joint effort of JICA, SPREP, and the WHO at the SPREP Training and Education Centre, which was constructed with Japan's grant aid in 2002. Many organisations concerned, such as the WHO, NGOs, the government of Samoa, and JOCV/SVs, supported the training sessions. As a result, trainees have not only acquired and shared knowledge and skills on waste management but also established a network among the people and organisations concerned.

Region-specific Training in Okinawa, Japan

Participants exchanged knowledge and experiences in Okinawa, which has a natural environment and conditions similar to Pacific

In-country Training

In-country training sessions were held in Fiji, Papua New Guinea, Kiribati, the Solomon Islands, Nauru, Vanuatu, the Federated States of Micronesia, and the Marshall Islands.



Dr. Frank K. Griffin

Pollution Prevention and Waste Management Advisor, SPREP

The annual training sessions have greatly assisted Pacific island countries in managing their waste better, and the region looks forward to continued assistance from JICA in the coming years.



Prof. Yasushi Matsufuji

Department of Civil Engineering, Fukuoka University

The advantages of semi-aerobic sanitary landfill, created in Japan, include low cost of construction and maintenance as well as easy operation; thus this can be called sustainable technology. I am very glad to observe that this system has been applied in Samoa and extended to other Pacific islands. I hope that this system will be improved further with a new model suited for Pacific islands through the efforts of former JICA trainees. Samoa is expected to be the base for capacity development of environmental protection.



Dr. Hisashi Ogawa

Regional Advisor in Healthy Settings and Environments, World Health Organisation (WHO) Western Pacific Regional Office

I joined this training course from the beginning as a lecturer mainly on health-care waste management. The course is designed to cover essential subjects from basic field studies, such as waste analysis and time and motion studies, to applied subjects such as policy planning on waste management. I hope that the participants will try improving their waste management in collaboration with other agencies and medical institutions after returning to their countries.

● Strengthening the Capacity of Human Resources — ②

Application of Training Outcome to Home Countries

Kosrae State in the Federated States of Micronesia (FSM)

Participants in the training session in Samoa and a JOCV recognised the issue of solid waste management in Kosrae and conducted waste analysis. They also brought up the necessity of a project to the Embassy of Japan in FSM. They then formulated a landfill improvement plan through discussions with the embassy and supported by SPREP. The plan was implemented with grassroots funding, and the landfill site was upgraded to a semi-aerobic landfill in March 2009. The new landfill has been managed jointly by a JOCV and counterparts in Kosrae.



Landfill in Kosrae State, FSM

Savai'i Island in Samoa

Samoa's Ministry of Natural Resources and Environment constructed another semi-aerobic sanitary landfill on Savai'i island with its own budget, technically supported by the training participants.



Landfill on Savai'i island, Samoa



Ambassador Shoji Sato

Japanese Ambassador to FSM

I was very impressed not only by the completion of the semi-aerobic sanitary landfill but also the change from a former dumping area to a planting area. I'm sure that one of the reasons the project was successful was because JOCVs had continued to support the project devotedly. The leaders of FSM admired their efforts when they saw the improved landfill site. Kosrae State is considering the next project for further improvement of waste management. The embassy of Japan will continue to support Kosrae State so that they can be proud of the beautiful environment of their island in the future.



Mr. Weston Luckymis

Director, Department of Transportation and Infrastructure, Kosrae State

Ms. Rie Morita

JOCV

Without the considerate comprehensive assistance of the government of Japan, which is a Grassroots Grant, the despatch of JICA experts and JOCVs, and providing opportunities for us to participate in training sessions, the project would not have been able to be completed successfully. Indeed, we unequivocally express very genuine appreciation for this assistance.

Ms. Kyoko Takayanagi

Former JOCV

When I saw people in Kosrae dumping waste such as cans, bottles, and PET items into the sea, I really recognised the need for good waste management on the island. Then I started waste studies with the technical assistance of SPREP. I felt a great sense of accomplishment when it was decided that our plan would be materialised.



● Developing Institutional Systems

Formulation of the Pacific Regional Strategy and National Policies on Waste Management

Formulation of the Pacific Solid Waste Management Strategy

The issue of solid waste management has common characteristics in Pacific countries. It is therefore essential to adopt a comprehensive approach. The government of Japan thus assisted in drafting the master plan for waste management in the Pacific region. The members of PIF recognised the importance of the issue and conducted internal consultations through SPREP. The draft was finalised as the Solid Waste Management Strategy for the Pacific Region and approved by all the member countries of SPREP in September 2005.

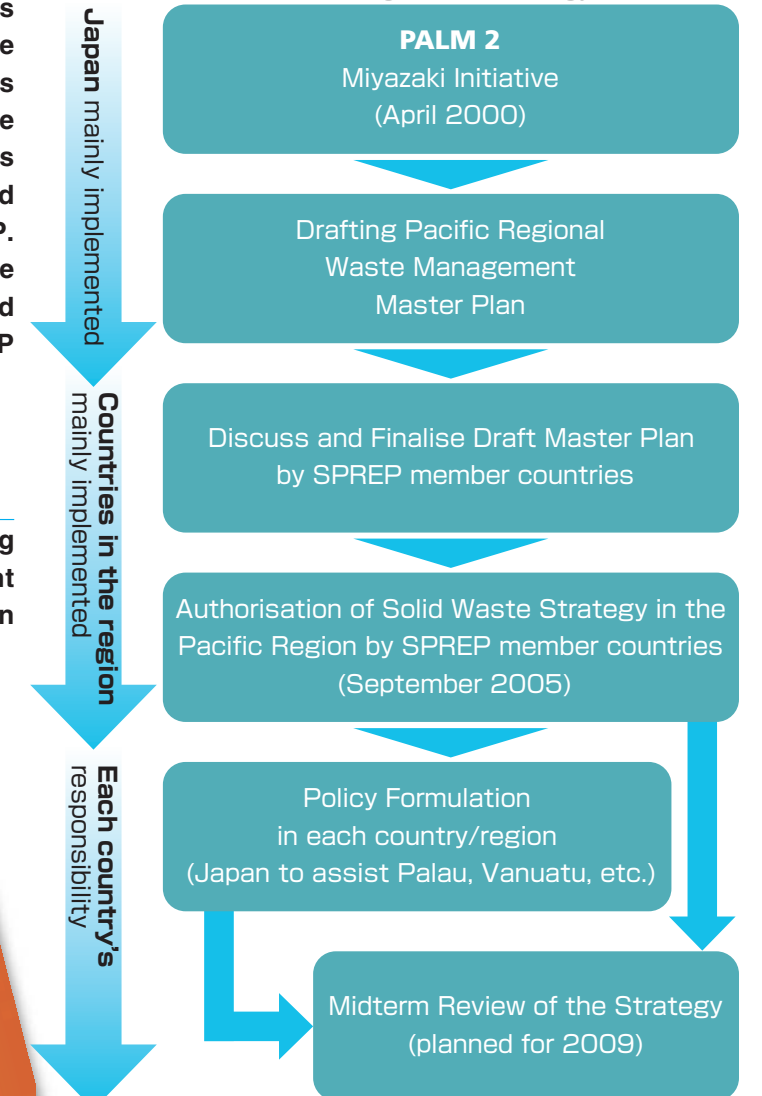
Formulation of National Solid Waste Management Plans

PIF countries have been assisted in formulating national plans on solid waste management through implementation of technical cooperation projects.



Solid Waste Management Strategy for the Pacific Region

Process on Formulation of Pacific Solid Waste Management Strategy



● Sharing Japan's Technology and Experience — ①

Introduction of Semi-aerobic Landfill Technology

● The semi-aerobic sanitary landfill system was developed jointly by Fukuoka City and Fukuoka University. This system is a standard for municipal disposal sites in Japan. The Fukuoka Method is an application of the semi-aerobic landfill system to fit local conditions in developing countries at relatively low cost.

● This model is replicated in Palau, Vanuatu, and FSM and is expected to be replicated further in similar volcanic and high-altitude islands in the Pacific region.



Mr. Shiro Amano

JICA Senior Advisor, Waste Management

I was dispatched to SPREP as a waste-management expert. My mission was to tackle waste issues in the Pacific region and to promote an environmentally friendly landfill model by improving the Tafaigata Landfill in Samoa. For this improvement, the modified semi-aerobic sanitary landfill method for developing countries was applied because it is becoming popular in Asia and in other countries. As my successors, Mr. Tashiro and Mr. Hironaka were dispatched to support leached treatment and monitoring, respectively. Our counterparts in Samoa have been operating the landfill properly as a model in the region. This model has been transferred to Palau, Vanuatu, and FSM.



Tu'u Luafatasaga Dr. Ietaita Setu Taule'alo

Chief Executive Officer, Ministry of Natural Resources and Environment, Independent State of Samoa

Waste management is one of Samoa's key environmental priorities. With strong support from JICA, Samoa has successfully adapted the world-renowned Fukuoka Method for landfill management to its two sites at Tafaigata, Upolu and Vaiaata, Savai'i. Great progress has also been achieved in the incineration of health-care waste and development of waste recycling. The Samoa-JICA waste project is an excellent example of a successful bilateral partnership that has greatly enhanced the amenity of the local environment.



● Sharing Japan's Technology and Experience — ②

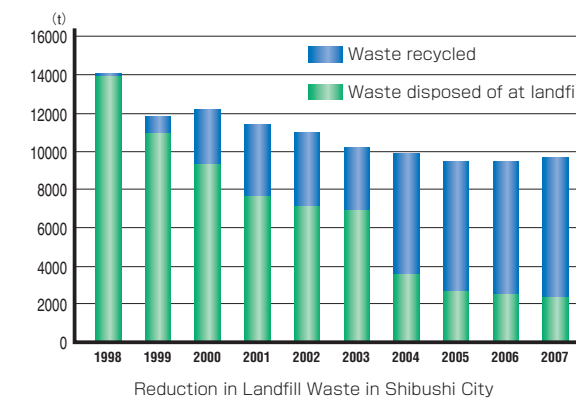
Transfer of Successful Waste Reduction Practices in Shibushi to Pacific Islands

3R Efforts in Shibushi City, Kagoshima Prefecture

The city of Shibushi in Kagoshima Prefecture, a small city located in southern Kyushu Island, has been tackling waste reduction with the full collaboration of local communities. This effort was recognised with the Minister of the Environment Prize on Symbiotic Community Building through 3R Activities in 2008.



Collection of Recyclables in Shibushi City



Waste Collection in Fiji

Shibushi's Efforts

The city of Shibushi has no incinerator for waste treatment because the city consulted citizens and abandoned the incineration option for solid waste management. Instead, the city and the citizens chose to go with 3R activities to reduce waste. As a result of their hard work, the volume of waste disposed of at the landfill has been drastically reduced (80% in seven years) so that the life of the landfill site has been largely extended.

Application to Waste Management in Fiji

For technical and economical reasons it is difficult for Pacific island countries to have waste incinerators. Therefore, the experience of Shibushi is considered very valuable and helpful to small island countries in order to minimise and reduce the growing amount of solid waste. With the assistance of Shibushi City, JICA started a technical cooperation project for 3R promotion in Fiji to establish a model of 3R activities for small island countries in the Pacific.



Mr. Rajendra Pratap

Waste Minimisation and Recycling Promotion Project Director of Health Services, Lautoka City Council

Lautoka City and Nadi Town Council are very grateful to the Japanese government for providing technical assistance that will definitely improve the solid waste management situation in the greater Western Region. The councils are impressed with the model set up by Shibushi City Council, so we will strongly promote the 3R module to minimise solid waste in collaboration with the Japanese experts. Upon completion of the project, target communities will be mobilised through extensive awareness-raising using developed education materials to effect the above desired changes among the citizens.



Mr. Junichi Nishikawa

Director, Office of Environmental Policy Citizen-Environment Division
Shibushi City Local Government

The city has been working together with the people of Shibushi to solve solid waste problems through intensive 3R activities. We are very glad if our experience contributes to waste reduction in Fiji. We realise that 3R practices are now becoming an international standard to keep our environment clean. We are going to further move our 3R efforts forward in a more efficient manner, and we hope to exchange knowledge and experience with people in Fiji.



4 Our Islands, Our Waste, Our Future

Outcomes to Date and Looking to the Future

Continued support of Japan is critically needed

Mr. Asterio Takesy

Former SPREP Director

Waste management is a serious issue for all of the Pacific island countries, for it threatens all three pillars of sustainable development—economic, social, and environmental fabrics of our fragile island ecosystems. Japan has been collaborating with SPREP through JICA in addressing solid waste management in the Pacific, for which I am most grateful. The successful piloting of the Fukuoka Method of solid waste disposal in Samoa is a landmark accomplishment in the region.

The adoption of the Pacific Regional Solid Waste Management Strategy and its Action Plan for implementing the strategy by SPREP members in 2005 and 2006, respectively, were a solid demonstration of political commitment by the Pacific countries and territories. JICA contributed immensely to the formulation of both strategies; more importantly, it has continued to support the region in the crucial and more difficult phase of waste management development in the region—implementation of the strategy.

Japan, to be sure, is a key player in solid waste management in the Pacific region. It is an important development partner and a stakeholder. Japan has successfully embarked on a long voyage with the Pacific. The nature of solid waste management is a continuous one; therefore, for the Pacific countries to have a fighting chance of progressing on this front, the continued support of Japan is critically needed now and for the foreseeable future.



●Implementation of a number of training sessions to increase the capacity of human resources

In collaboration with various participants, JICA and SPREP held regional training sessions three times in Okinawa, five times in Samoa as third-country training, and eight times in eight different countries as in-country training. As a result, people concerned with waste management in the Pacific region have shared knowledge and experience of good practices and have established a network to exchange information more efficiently.

●Establishment of a model for in-land waste disposal, replicated in other countries in the Pacific

The Tafaigata waste landfill site in Samoa was upgraded to a sanitary landfill using semi-aerobic landfill technology as a model for volcanic and high-altitude islands. This model has also been applied to landfills in Palau, Vanuatu, and FSM.

●Formulation of the regional guiding principle and respective national plans on solid waste management

The SPREP member countries finalised, approved, and adopted the Solid Waste Management Strategy for the Pacific Region (the Regional Strategy) based on the draft master plan, the formulation of which was assisted by the government of Japan. Japan further assisted PIF countries in formulating the national plans on solid waste management in accordance with the Regional Strategy.

●Promotion of 3R activities for waste minimisation and reduction

The technical cooperation project focusing on promotion of 3R started in Fiji. This project is going to be a regional model for 3R promotion. Once established, the model is expected to be extended to other island countries in the Pacific.



Settled problems are only one part, and many issues still remain unsolved. It is also a good opportunity for us Japanese to reexamine our lifestyle through the various waste issues in the Pacific.



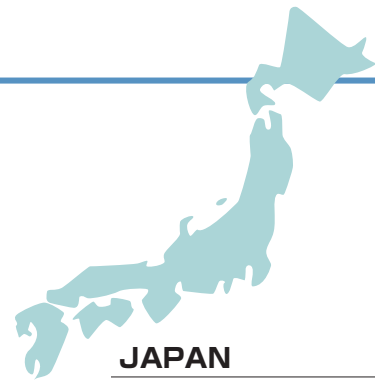
Dr. Kunitoshi Sakurai

President, Okinawa University

Japan has been helping Pacific island countries to tackle solid waste problems based at SPREP since PALM 2. As a result of these efforts, the people concerned with waste management in the Pacific have established a network, and the semi-aerobic sanitary landfill system is modeled at Tafaigata in Samoa and is being extended to other countries. These achievements, however, are only one step forward to the goal, and many issues still remain unsolved. For example, waste disposal on atolls requires another approach from that of Samoa, and effective methods for waste minimisation and reduction must be considered under the circumstances that a modernised lifestyle based on a society of mass production, mass consumption, and mass waste disposal has penetrated into Pacific islands. I believe that it is also useful for us Japanese, who live in an island country, to reexamine our lifestyle taking into account the difficulties that people in the Pacific have been facing.



Japan's Cooperation in the Pacific Region since 2000



JAPAN

- PALM
- Training on Waste Management
- Dispatch lectures for training in Samoa



●● Federated States of Micronesia

- Training in Japan
- Training in Samoa
- In-country training
- JOCV/SV
- Tofol Solid Waste Development Project (Grant Assistance for Grass-roots Project)

Micronesia

●● Republic of the Marshall Islands

- Training in Japan
- Training in Samoa
- In-country training
- JOCV/SV (Environment) 5 volunteers

Republic of Nauru

- Training in Japan
- Training in Samoa
- In-country training

Republic of Kiribati

- Training in Japan
- Training in Samoa
- In-country training

Tuvalu

- Training in Japan
- Training in Samoa

Comprehensive Efforts in the Pacific region

- Regional Project Formulation Study
- Dispatch Experts to SPREP
- Solid Waste Management Project in Oceania Region (Technical Cooperation Project)
- Assistance in formulating Solid Waste Management Strategy for the Pacific Region
- Preliminary Survey on Large/Bulky Waste Management in the Pacific Island Countries

●● Republic of Palau

- Training in Japan
- Training in Samoa
- JOCV/SV
- The Project for Koror State Government Compost Facility and Recycling Center (Grant Assistance for Grass-roots Project)
- The Project for Improvement of Solid Waste Management (Technical Cooperation Project)

Republic of Palau

Federated States of Micronesia

Independent State of Papua New Guinea

Republic of Nauru

Solomon Islands

Melanesia

●● Solomon Islands

- Training in Japan
- Training in Samoa
- In-country training

●● Independent State of Papua New Guinea

- Training in Japan
- Training in Samoa
- In-country training

●● Republic of Vanuatu

- Training in Japan
- Training in Samoa
- In-country training
- JOCV/SV
- The Project on Improvement of Bouffa Landfill (Technical Cooperation Project)
- The Project for Provision of Waste Disposal Equipment for Port Villa Municipality (Grant Assistance for Grass-roots Project)

●● JICA Overseas office

●● Embassy of Japan

Polynesia

●● Independent State of Samoa

- Training in Japan
- Training in Samoa
- JOCV/SV
- The Project for SPREP training centre in the Independent state of Samoa (Grant Aid Project)
- Provision of Incinerator (Grant Assistance for Grass-roots Project)

Cook Islands

- Training in Japan
- Training in Samoa

Niue

- Training in Japan
- Training in Samoa

●● Kingdom of Tonga

- Training in Japan
- Training in Samoa

●● Republic of the Fiji Islands

- Training in Japan
- Training in Samoa
- In-country training
- JOCV/SV
- Provision of Compactor Garbage Truck to Suva City Council (Grant Assistance for Grass-roots Project)
- The Project for Improvement of Sanitary Environment in Tavua (Grant Assistance for Grass-roots Project)
- The Project for Provision of Garbage Compactor Truck to Nausori Town Council (Grant Assistance for Grass-roots Project)
- Provision of Compactor Garbage Truck to Lami Town Council (Grant Assistance for Grass-roots Project)
- Provision of Compactor Garbage Truck to Rabi Island (Grant Assistance for Grass-roots Project)
- The Project for Provision of Backhoe to Sigatoka Town Council (Grant Assistance for Grass-roots Project)
- Waste Minimization and Recycling Promotion Project (Technical Cooperation Project)



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Global Environment Department

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