

Country Name	Waste Minimization and Recycling Promotion Project
Republic of Fiji	

I. Project Outline

Background	With the change of lifestyle of the people, Fiji had heavily depended on goods and materials imported from industrialized countries. It was, however, very difficult to recycle those materials and goods because of the geographical isolation and uneconomically small size of the recycle market in the country. Most of the imported goods and materials consumed in Fiji were recycled only by returning to outside market places in industrialized or large countries. Because it required added cost in managing wastes which lost potential as reusable resources, waste materials represented a loss of money and opportunity. Furthermore, poorly managed wastes had negative effects on tourism, by jeopardizing the image of “Pacific Paradise” promoted by Fiji and the generation and disposal of wastes had direct and indirect linkages to economic development. Under these circumstances, Fiji recognized the need to promote waste minimization and to introduce recycle activities with the 3R (Reduce, Reuse and Recycle) concept.												
Objectives of the Project	This project aimed at strengthening the capacity on 3R promotion for Department of Environment (DOE), Lautoka City Council (LCC) and Nadi Town Council (NTC) through establishment of a 3R model which consists of development of a Solid Waste Management (SWM) master plans, executing 3R pilot project, awareness raising in the target areas, and educational activities for 3R promotion matched with Fiji, thereby having the 3R expanded in other municipalities of Western Division.												
	1. Overall Goal: 3R (Reduce, Reuse, Recycle/Return) is progressed in Fiji, mainly in Western Division. 2. Project Purpose: Capacity of 3Rs of the DOE, LCC and NTC is increased through developing a 3R model for Fiji.												
Activities of the Project	1. Project site: Lautoka City and Nadi Town in the Western Division of Fiji 2. Main activities: (1) development of SWM master plans, (2) executing 3R pilot project, (3) awareness raising in the target areas, (4) educational activities for 3R promotion *Target wastes are the household and commercial wastes in LCC and NTC, which are collected and transported by both municipalities and the one, which is transported and landfilled into the Lautoka landfill site including the industrial waste. 3. Inputs (to carry out above activities) <table><tr><td><u>Japanese Side</u></td><td><u>Fiji Side</u></td></tr><tr><td>1. Experts: 8 persons</td><td>1. Staff allocated: 21 persons</td></tr><tr><td>2. Trainees received: 15 persons</td><td>2. Provision of Facilities and Equipment</td></tr><tr><td>3. Equipment: the weighbridge, excavator, multi-purpose truck, shredder and office equipment</td><td>3. Operating expenses</td></tr><tr><td>4. Operational Expenses</td><td></td></tr></table>			<u>Japanese Side</u>	<u>Fiji Side</u>	1. Experts: 8 persons	1. Staff allocated: 21 persons	2. Trainees received: 15 persons	2. Provision of Facilities and Equipment	3. Equipment: the weighbridge, excavator, multi-purpose truck, shredder and office equipment	3. Operating expenses	4. Operational Expenses	
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Project Period	October 2008 – March 2012	Project Cost	(ex-ante) 280 million yen, (actual) 301 million yen										
Implementing Agency	Department of Environment, currently Ministry of Waterways and Environment since August 2018. Lautoka City Council, Nadi Town Council												
Cooperation Agency in Japan	Kokusai Kogyo Co., Ltd., EX Research Institute, Ltd., Shibushi City (in Kagoshima Prefecture)												

II. Result of the Evaluation

<Constraints on Evaluation>

Effect of subsequent projects

It should be well noted that the outcome of the project studied under this ex-post evaluation is the combined effects with the subsequent JICA regional project known as “Japanese Technical Cooperation Project for Promotion of Regional Initiative on Solid Waste Management in Pacific Island Countries (J-PRISM Phase 1) (2011-2016)”. Therefore, it is not possible to assess the effect of the Project alone because similar technical assistance has been continued by the project after the project completion.

<Special Perspectives Considered in the Ex-Post Evaluation>

Evaluating Continuation Status of Effectiveness

In order to examine the continuation status of the indicator 1 of Project Purpose (“Total recycle rate to the MSW generation amount in Lautoka City and Nadi Town will be more than 14.0% and 22.2% respectively by the end of the Project.”), it is necessary to review the continuation status of Output 4 (awareness raising) of which indicators at the time of project completion were not achieved. This is to ensure that the achievement of the Project Purpose is attributable to what was implemented by the project, not by other external factors. Therefore, two indicators for Output 4, the indicator 4-1 (“Rate of public participation of separate collection of recyclables with the target residential area exceeds 30 %”) and the indicator 4-2 (“Home composters are installed as scheduled in the Action Plan.”) which are related to the Total Recycle Rate are used as the Supplementary Information 1 and 2.

For the judgmental standard, what was planned under SWM master plan of each council is applied as no information of planned data for those indicators are available in the existing document. The subject SWM master plans were updated after the project completion in 2012.

Clarification of measurement for the indicator of Overall Goal

The indicator for Overall Goal (“Percentage of population whose local authorities have been implementing the 3R promotion as opposed to the whole population of Western Division”) can only prove the fact whether or not the 3R promotion activity is introduced to the municipality and someone of that municipality is engaged in the activity. However, with this indicator alone, it does not prove how much the 3R is progressed in each council of Western Division of Fiji. Therefore, it is important to examine how well 3R promotion activity has been established in the municipal system of each council. In order to examine this aspect, Supplementary Information 3, “Have the 3R components been included as one of standard (mandatory) public services for municipalities in Western Division?” is used.

<Consistency with the Development Policy of Republic of Fiji at the Time of Ex-Ante Evaluation and Project Completion>

At the time of ex-ante evaluation, this project was consistent with national level plan, “Solid Waste Management in the Strategic Development Plan (2007-2011)” which focused on the proper management of solid waste and environmental protection for the sustainable development society. Because of its geographical settings as one of Pacific Islanders, the solid waste management sector was also supported by the regional level plan, “Pacific Regional Solid Waste Management Strategy (2010-2015)” by Secretariat of the Pacific Regional Environment Programme (SPREP) in which the minimization and recycling of waste was one of priority areas. At the project completion, this project was still consistent with both national and regional level of development plans, such as “National Solid Waste Management Strategy (2011-2014)” focusing on the waste minimization to protect the environment and to give account of institutional arrangements of solid waste management, and the aforementioned “Pacific Regional Solid Waste Management Strategy” was still active.

<Consistency with the Development Needs of Republic of Fiji at the Time of Ex-Ante Evaluation and Project Completion >

This project was consistent with Fiji’s development needs of solid waste management at the time of ex-ante evaluation as described in “Background” above. With the rapid industrialization and increasing demands of tourism at the time of project completion, waste management was a pressing issue and it was still needed to increase the capacity of 3R promotion in municipalities which bear responsibilities to deliver the solid waste management services in practical setting.

<Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>

At the Fourth Pacific Islands Leaders Meeting (PALM) in 2006, the Japanese government pledged to provide assistance in the field of solid waste management toward the Pacific Island Countries (PICs) including Fiji.¹

<Evaluation Result>

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement for the Project Purpose at the time of Project Completion>

By the project completion, the Project Purpose of “Capacity of 3Rs of the DOE, LCC and NTC is increased through developing a 3R model for Fiji” was achieved. Capacity improvement of 3Rs were proved by the achievement status of set indicators as shown in the data table. Total Recycle Rates (TCR) were partially achieved the targets. In an average of both councils combined, they achieved 76.3% of what were planned for 2012 (indicator 1). As for the reduction of Disposal Rates, which means expected reduction points of disposal rates against baseline (2008), both LCC and NTC achieved their targets respectively. In an average of both councils combined, they achieved 133.2% of what was planned for 2012 (Indicator 2). For the purpose to disseminate the 3R promotion to other municipalities, DOE organized seminars to explain the 3R guidelines and manuals developed by the project for targeted municipalities as planned (indicator 3).

The project framework was well thought out for the councils who are in charge of SWM, to learn on how 3R activities (reduce, reuse and recycle) could benefit to the councils, especially in terms of financial aspect. Though it was quite challenging to examine the capacity improvement of CPs mainly by quantitative data, this framework provided them with real practices on how certain 3R activities can generate some economic benefits and assist councils to monitor waste management activities, by confirming the results with numerical indicators.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

After the project completion, the project effects have partially continued. Though 3R promotion activities have been continued by LCC and NTC, they have had some difficulties to generate the expected outcome after the project completion. It should be well noted that Fiji had been attacked by severe cyclones several times in 2012, 2014 and 2016, which made devastating damage to both councils, eventually hindered the progress of 3R promotion activities. As a result, the achievement of TCR against plan for 2017 was only 56.7% in an average of both councils combined (indicator 1). This figure reflects the fact that LCC stopped the separate collection of recyclables since 2014 because it became difficult for them to maintain the public interest. As a countermeasure, LCC created the communal recyclable “Drop Off” Centre in the park anticipating that citizens would bring some recyclables upon their needs. This new measure was gradually generating the positive results as it was observed during the study that some recyclables were brought to Drop Off Center by the public. NTC has continued separate collection activities with focus on the regular monitoring. Though the NTC’s public participation rate has not increased, they have managed to maintain 11% since 2013 (Supplementary Information 1). In terms of Home Composting, both councils achieved approximately half of what was planned for 2017. The progress was quite slow in spite of strenuous efforts by both councils through the introduction of home composting subsidy program since 2010, which has been further supported by the subsidy of DOE with the aim of facilitating grassroots changes of attitudes across the country in 2015. Both councils have now decided to refocus awareness and promotion efforts of compost bins to schools (Supplementary Information 2). Other components of 3R, such as Market Composting, Green Waste Collection & Chipping Services and Clean School Program have been continued by two councils.

In terms of reduction of Disposal Rates, in an average of two councils combined, the achievement was 76.1% in 2017 (Indicator 2). The severe damages by aforementioned cyclones have partially contributed to this outcome.

The reason why 3R activities has shown the slow progress is, according to the questionnaire and interviews with councils, that the people would not easily adopt 3R activities into their daily practices with no incentives. In addition, it was difficult for the councils to enforce the 3R initiative under the current legal framework in which there are no clear guidance with powers to proceed 3R activities.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

It is observed that the Overall Goal, “3R (Reduce, Reuse, Recycle/Return) is progressed in Fiji, mainly in Western Division” has been achieved. According to the indicator 1 “Percentage of population whose local authorities have been implementing the 3R promotion as opposed to the whole population of Western Division” as shown in the data table, it was found that 3R promotion activities have been expanded and all councils in Western Division have been implementing some activities of 3R promotion. It is well noted that after the project completion, DOE independently organized 3R training for municipal councils with practical activities together with LCC and NTC as lead councils to expand the 3R nationwide.

As to whether the 3R promotion activity has been considered as the standard public services of the council (Supplementary Information 3), it was confirmed that all six councils have made “Home Composting” and four councils have made “Clean School Program” as their standard public services. “Market Waste Composting” and “Green Waste Collection & Chipping Services” have been taken as the standard

¹ MOFA ://www.mofa.go.jp/region/asia-paci/spf/palm2006/assist.html

public services by three councils. However, challenges have still remained because there are some activities that have been suspended even though they are “standard public services”.

<Other Impacts at the time of Ex-post Evaluation>

One of the positive impacts observed during the study is the better financial status of LCC with the surplus revenues incurred by the better management of Vunato Disposal Site (VDS) rehabilitated by the project. LCC earned revenues by selling composts generated by market waste and chipped green waste as mulching for the garden, etc. The surplus revenue has served to sustain not only for the maintenance of machinery and equipment used at VDS, but also for carrying out other 3R activities. Although it is combined with the effect of subsequent project, “J-PRISM Phase 1”, 3R promotion activities have further expanded to other divisions of Fiji such as Suva City, Nasinu Town and Lami Town in Central Division, Nausori Town in Northern Division and Labasa Town, Levuka Town in Eastern Division. It was identified by the questionnaire and interviews with LCC that the citizens have enjoyed the clearer environment and improved image of city and towns as the dumping of rubbish in rivers and the sea has been decreased. No negative impact on natural and social environment was observed.

<Evaluation Result>

In light of the above, the project achieved the Project Purpose at the time of project completion. The effect of the project has partially been continued and activities have been carried out after a manner with efforts by each council and DOE as well as with the support by the ongoing subsequent project. Consequently, the Overall Goal has been achieved and 3R promotion activities have been expanded to all councils of Western Division.

Therefore, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results																																			
(Project Purpose) Capacity of 3Rs of the DOE, LCC and NTC is increased through developing a 3R model for Fiji	Indicator 1: Total recycle rate (TCR)* to the Municipal Solid Waste generation amount in Lautoka City and Nadi Town will be more than 14.0% and 22.2% respectively by the end of the Project.	Status of the Achievement: Partially achieved (Partially continued) (Project Completion) Actual TCRs were achieved 104.3 % for LCC and 48.2% for NTC of respective target rates for 2012. In average of two councils combined, the achievement of indicator 1 was 76.3%. (Ex-post Evaluation) Actual TCRs were achieved 76.0% for LCC and 37.3% for NTC of respective planned rates for 2017. In average of two councils combined, the achievement of indicator 1 was 56.7%. <table><tr><th colspan="7">Total recycle rate</th></tr><tr><th>Council</th><th>2012 Planned</th><th>2012 Actual</th><th>Achievement against plan</th><th>2017 Planned (Master Plans)</th><th>2017 Actual</th><th>Achievement against plan</th></tr><tr><td>LCC</td><td>14.0%*</td><td>14.6%</td><td>104.3%</td><td>20.0%</td><td>15.2%</td><td>76.0%</td></tr><tr><td>NTC</td><td>22.2%</td><td>10.7%</td><td>48.2%</td><td>25.5%</td><td>9.5%</td><td>37.3%</td></tr><tr><td colspan="3">In average</td><td>76.3%</td><td colspan="2">In average</td><td>56.7%</td></tr></table>	Total recycle rate							Council	2012 Planned	2012 Actual	Achievement against plan	2017 Planned (Master Plans)	2017 Actual	Achievement against plan	LCC	14.0%*	14.6%	104.3%	20.0%	15.2%	76.0%	NTC	22.2%	10.7%	48.2%	25.5%	9.5%	37.3%	In average			76.3%	In average		56.7%
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	*TCR: A rate of the sum of recycled amount of household waste, business waste, public area waste and green waste to the total waste generation amount of MSW.	Note: There are some discrepancies in planned data for 2012 under the Master Plans which was updated after the project completion in 2012. The figure is stated as 12.8%. Supplementary Information 1 Rates of public participation of separate collection for recyclables at target site <table><tr><th>Council</th><th>2012 Planned</th><th>2012 Actual</th><th>2013 Actual</th><th>2014 Actual</th><th>2015 Actual</th><th>2016 Actual</th><th>2017 Actual</th></tr><tr><td>LCC</td><td>30.0%</td><td>8.8%</td><td>4.9%</td><td colspan="4">Separate collection for recyclables was stopped</td></tr><tr><td>NTC</td><td>30.0%</td><td>14.8%</td><td>11.6%</td><td>11.1%</td><td>12.0%</td><td>13.7%</td><td>11.0%</td></tr></table>	Council	2012 Planned	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Actual	LCC	30.0%	8.8%	4.9%	Separate collection for recyclables was stopped				NTC	30.0%	14.8%	11.6%	11.1%	12.0%	13.7%	11.0%											
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	Supplementary Information 2 Ratio of Accumulated Home Composters installed <table><tr><th colspan="2">Council</th><th>2012 Planned</th><th>2012 Actual</th><th>2017 Planned (Master Plans)</th><th>2017 Actual</th></tr><tr><td rowspan="2">LCC</td><td>Accumulated number of bins</td><td>285</td><td>179</td><td>876</td><td>396</td></tr><tr><td>% achieved</td><td colspan="2"></td><td>62.8%</td><td colspan="2">45.2%</td></tr><tr><td rowspan="2">NTC</td><td>Accumulated number of bins</td><td>229</td><td>139</td><td>524</td><td>280</td></tr><tr><td>% achieved</td><td colspan="2"></td><td>60.7%</td><td colspan="2">53.4%</td></tr></table>	Council		2012 Planned	2012 Actual	2017 Planned (Master Plans)	2017 Actual	LCC	Accumulated number of bins	285	179	876	396	% achieved			62.8%	45.2%		NTC	Accumulated number of bins	229	139	524	280	% achieved			60.7%	53.4%							
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	Indicator 2: Disposal rate* to the MSW generation amount in Lautoka City and Nadi Town will decrease by more	Status of the Achievement: Achieved (Partially continued) (Project Completion) LCC achieved 114.9% and NTC 151.5% of reduction of Disposal rates planned for 2012. In an average for two councils combined, the achievement was 133.2%. (Ex-post Evaluation) LCC achieved 92.8% and NTC 59.4% of reduction rates planned for 2017. In average of two																																			

	<p>than 9.4% and 16.9% respectively from 2008's by the end of the Project.</p> <p>*Disposal rate: A rate of disposal amount to the MSW generation amount.</p>	<p>councils combined, the achievement was 76.1%.</p> <table><tr><th colspan="9">Reduction of Disposal Rate</th></tr><tr><th colspan="2">Council / items to be examined</th><th>2008 Baseline</th><th>2012 Planned</th><th>2012 Actual</th><th>Achievement against plan</th><th>2017 Planned</th><th>2017 Actual</th><th>Achievement against plan</th></tr><tr><td rowspan="2">LCC</td><td>Disposal Rate</td><td>90.3%</td><td>80.9%*</td><td>79.5%</td><td></td><td>77.8%</td><td>78.7%</td><td></td></tr><tr><td>Points Changed (vs baseline)</td><td></td><td>△9.4*</td><td>△10.8</td><td>114.9%</td><td>△12.5</td><td>△11.6</td><td>92.8%</td></tr><tr><td rowspan="2">NTC</td><td>Disposal Rate</td><td>90.7%</td><td>73.8%</td><td>65.1%</td><td></td><td>73.2%</td><td>80.3%</td><td></td></tr><tr><td>Points Changed (vs baseline)</td><td></td><td>△16.9</td><td>△25.6</td><td>151.5%</td><td>△17.5</td><td>△10.4</td><td>59.4%</td></tr><tr><td colspan="5">In average</td><td>133.2%</td><td colspan="2">In average</td><td>76.1%</td></tr></table> <p>Note: There are some discrepancies in planned data for 2012 under the Master Plans which was updated after the project completion in 2012. The figures are stated as 81.06% and △8.7 respectively.</p>	Reduction of Disposal Rate									Council / items to be examined		2008 Baseline	2012 Planned	2012 Actual	Achievement against plan	2017 Planned	2017 Actual	Achievement against plan	LCC	Disposal Rate	90.3%	80.9%*	79.5%		77.8%	78.7%		Points Changed (vs baseline)		△9.4*	△10.8	114.9%	△12.5	△11.6	92.8%	NTC	Disposal Rate	90.7%	73.8%	65.1%		73.2%	80.3%		Points Changed (vs baseline)		△16.9	△25.6	151.5%	△17.5	△10.4	59.4%	In average					133.2%	In average		76.1%																																																																										
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	<p>Indicator 3: DOE holds seminars to explain the guidelines and manuals targeting more than half of the municipalities in Fiji which provide waste collection services.</p>	<p>Status of the Achievement: Achieved (Project Completion)</p> <p>DOE organized two seminars to explain the guidelines and manuals, participated by representatives of all municipalities in Fiji. On 23rd and 24th of Feb. 2011 to introduce 3R guidelines and manuals and to obtain feedbacks participated by 42 representatives. And on 2nd Nov. 2011 to introduce the revised documents for perusal participated by 57 representatives. These seminars greatly contributed to expand the 3R concepts and to enhance the understanding of practical implementation process among them.</p> <p>(Ex-post Evaluation)</p> <p>It is well noted that after the project completion, DOE organized 3R training for municipal councils with practical activities together with LCC and NTC as lead councils to expand the 3R to nationwide.</p>																																																																																																																																							
<p>(Overall Goal) 3R (Reduce, Reuse, Recycle/Return) is progressed in Fiji, mainly in Western Division.</p>	<p>Indicator 1: Percentage of population whose local authorities have been implementing the 3R promotion as opposed to the whole population of Western Division</p>	<p>Status of the Achievement: Achieved (Ex-post Evaluation)</p> <p>3R promotion activities have been expanded and as shown below all councils in Western Division have been practicing some activities of 3R promotion. Some activities have been taken as “standard public services (SPS)” for the councils. (Supplementary Information 3)</p> <table><tr><th rowspan="3">Council</th><th colspan="3">Population</th><th colspan="10">3R Promotion Activities</th></tr><tr><th rowspan="2">2011</th><th rowspan="2">2017</th><th rowspan="2">% (2017)</th><th colspan="2">Separate collection for recyclables</th><th colspan="2">Home composting</th><th colspan="2">Market waste composting</th><th colspan="2">Green Waste collection & chipping</th><th colspan="2">Clean School Program</th></tr><tr><th>In practice</th><th>SPS</th><th>In practice</th><th>SPS</th><th>In practice</th><th>SPS</th><th>In practice</th><th>SPS</th><th>In practice</th><th>SPS</th></tr><tr><td>BTC</td><td>14,868</td><td>14,868</td><td>16.1</td><td>○</td><td></td><td></td><td>Y</td><td>○</td><td>Y</td><td></td><td></td><td>○</td><td></td></tr><tr><td>LCC</td><td>43,838</td><td>47,000</td><td>50.8</td><td></td><td></td><td>○</td><td>Y</td><td>○</td><td>Y</td><td>○</td><td>Y</td><td>○</td><td>Y</td></tr><tr><td>NTC</td><td>11,895</td><td>19,152</td><td>20.7</td><td>○</td><td>Y</td><td>○</td><td>Y</td><td>○</td><td></td><td>○</td><td>Y</td><td>○</td><td>Y</td></tr><tr><td>STC</td><td>5,947</td><td>6,000</td><td>6.5</td><td>○</td><td></td><td>○</td><td>Y</td><td>○</td><td>Y</td><td>○</td><td>Y</td><td>○</td><td>Y</td></tr><tr><td>TTC</td><td>1,390</td><td>1,390</td><td>1.5</td><td></td><td></td><td></td><td>Y</td><td></td><td></td><td></td><td></td><td>○</td><td>Y</td></tr><tr><td>RTC</td><td>4,090</td><td>4,090</td><td>4.4</td><td></td><td></td><td></td><td>Y</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>92,500</td><td>100</td><td>43.3%</td><td>20.7%</td><td>78.0%</td><td>100%</td><td>94.1%</td><td>73.4%</td><td>78.0%</td><td>78%</td><td>95.6%</td><td>79.5%</td></tr></table> <p>Note: BTC: Ba Town Council, STC: Sigatoka Town Council, TTC: Tavua Town Council, RTC: Rakiraki Town Council</p> <p>Note: “Standard public services” mean the services provided by the councils, The above table shows the condition as of 2017. The condition of activities in practice may fluctuate due to some situation/ difficulties of each council at times (such as natural disaster).</p>	Council	Population			3R Promotion Activities										2011	2017	% (2017)	Separate collection for recyclables		Home composting		Market waste composting		Green Waste collection & chipping		Clean School Program		In practice	SPS	In practice	SPS	In practice	SPS	In practice	SPS	In practice	SPS	BTC	14,868	14,868	16.1	○			Y	○	Y			○		LCC	43,838	47,000	50.8			○	Y	○	Y	○	Y	○	Y	NTC	11,895	19,152	20.7	○	Y	○	Y	○		○	Y	○	Y	STC	5,947	6,000	6.5	○		○	Y	○	Y	○	Y	○	Y	TTC	1,390	1,390	1.5				Y					○	Y	RTC	4,090	4,090	4.4				Y									92,500	100	43.3%	20.7%	78.0%	100%	94.1%	73.4%	78.0%	78%	95.6%	79.5%
Council	Population			3R Promotion Activities																																																																																																																																					
	2011	2017		% (2017)	Separate collection for recyclables		Home composting		Market waste composting		Green Waste collection & chipping		Clean School Program																																																																																																																												
			In practice		SPS	In practice	SPS	In practice	SPS	In practice	SPS	In practice	SPS																																																																																																																												
BTC	14,868	14,868	16.1	○			Y	○	Y			○																																																																																																																													
LCC	43,838	47,000	50.8			○	Y	○	Y	○	Y	○	Y																																																																																																																												
NTC	11,895	19,152	20.7	○	Y	○	Y	○		○	Y	○	Y																																																																																																																												
STC	5,947	6,000	6.5	○		○	Y	○	Y	○	Y	○	Y																																																																																																																												
TTC	1,390	1,390	1.5				Y					○	Y																																																																																																																												
RTC	4,090	4,090	4.4				Y																																																																																																																																		
		92,500	100	43.3%	20.7%	78.0%	100%	94.1%	73.4%	78.0%	78%	95.6%	79.5%																																																																																																																												

Source : Terminal Evaluation Report, Council's Master Plans of Solid Waste Management , Questionnaire Survey, Interviews with counterparts

3 Efficiency

While the project period was as planned, the project cost slightly exceeded the plan (ratio against plan: 100%, 108%). Outputs were produced as planned.

Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

In the regional level, Fiji's government has aligned to "Cleaner Pacific 2025: Pacific Regional Waste and Pollution Management Strategy (2016-2025)", which is the subsequent strategy of aforementioned "Pacific Regional Solid Waste Management Strategy (2010-2015)", and which includes the management of municipal solid waste as one of priority areas and sets the prevention of waste generation as one of the strategic goals. At the national level, the Fiji National Solid Waste Management Strategy (2011-2014) has been in

the process of revision and the draft National 3R policy was finalized, both of which are waiting to be approved and endorsed. In the meantime, the Environment Management Regulations 2007 is currently referred in order to monitor the 3R promotion activities of the private and commercial sector and it is judged that the support from government's policy is to be maintained.

<Institutional Aspect>

Since the Department of Environment was transferred under Ministry of Waterways and Environment from August 2018, the organizational reform is underway. The exact number of staffs engaging in the 3R promotion is not available due to ongoing organizational restructuring. In the municipality level, an appointment of "3R Officers" who is specifically responsible for implementing 3R planned activities in both councils since 2015 have served well to promote 3R activities. The numbers of staff for LCC and NTC have decreased from 13 to 10 and from 14 to 11 respectively, but according to the interviews with councils, the current number of staffs is considered as sufficient since most of staff have well trained and thus, can manage activities independently. In terms of operation and management for landfill site, it has been well managed by LCC with full staff allocation.

<Technical Aspect>

With the subsequent ongoing projects, the number of counterparts involved in the project related activities with knowledge and skills of SWM has increased for two councils. It is assured by the capacity assessment done in 2015 (at the time of terminal evaluation for J-PRISM Phase 1) that the organizational capacity of councils as well as counterparts' individual capacity have been strengthened. Major contributing factors are that they have been given the opportunities to train others, such as those councils of Central Division, Northern Division and also other PICs. Experience to teach others have served well to develop their expertise, for LCC especially in the field of solid waste management system including landfill management, 3R promotion, market waste composting and for NTC, clean school program. 3R guideline in which the project contributed for its development was revised into the National 3R policy. Most of equipment provided by the project has been well maintained with proper care. It is well noted that the maintenance cost of those equipment for LCC has been covered by the revenue incurred through the operation of landfill (VDS).

<Financial Aspect>

As for the national level, Ministry of Waterways and Environment allocated FJ\$7.3 million to the solid waste management for the fiscal year of 2017-2018 (Source: 2017-2018 Fiji National Budget). Among this, FJ\$100,000 has been allocated towards the 3R Awareness Program, FJ\$230,000 for the implementation of National Waste Management Strategy, FJ\$120,000 towards the implementation of Environment Management Act and FJ\$1.2 million towards the Subsidy for Naboro Landfill rehabilitation. The allocation to the Clean School Program comes from the 3R Awareness program allocation which basically depending on council's requests for funding.

At the municipal level, both councils have secured the sufficient amount for solid waste management every year since the project completion as shown below. LCC has continuously allocated about 16% of total budget to solid waste management related activities and NTC, about 24% as well. As a result, they have continued their own home composting subsidy programs since 2010. Furthermore, both LCC and NTC have allocated for FJ\$2,500 to the Clean School Program every year since 2015.

Budget of LCC and NTC

Unit Currency (Fiji Dollars)

Organization		Project Completion 2012	2013	2014	2015	2016	Ex-post Evaluation 2017
LCC	Total budget	8,100,800	8,089,700	8,050,300	10,444,556	12,617,033	10,080,013
	SWM related (% of total budget)	1,430,669 (17.7%)	1,454,807 (18.0%)	1,598,372 (20.2%)	1,590,906 (15.2%)	1,504,902 (11.9%)	1,587,296 (15.7%)
	- SWM	1,274,669	1,290,348	1,311,372	1,301,906	1,191,902	1,223,996
	- 3R promotion/ monitoring/evaluation	6,000	6,000	6,000	8,000	8,000	8,000
	- Others (HD)	150,000	158,459	281,000	281,000	305,000	355,300
NTC	Total budget	4,197,153	4,130,398	4,862,364	4,145,114	4,120,784	4,895,608
	SWM related (% of total budget)	840,004 (20.0%)	780,657 (18.9%)	683,247 (14.1%)	1,269,147 (30.6%)	1,356,103 (32.9%)	1,434,204 (29.3%)
	- SWM	0	0	0	545,447	545,447	545,447
	- 3R promotion/ monitoring/evaluation	45,000	20,000	18,950	15,000	20,000	23,000
	- Others (HD)	795,004	760,657	664,297	708,700	790,656	865,757

<Source> LCC and NTC

<Evaluation Result>

In light of the above, no problem has been observed in terms of the policy, institutional, technical and financial aspects. Therefore, the sustainability of the effectiveness through the project is high.

5 Summary of the Evaluation

The project achieved the Project Purpose for "Capacity of 3Rs of the DOE, LCC and NTC is increased through developing a 3R model for Fiji" at the time of project completion. The effect of by the project has partially been continued. The Overall Goal has been achieved and 3R promotion activities have been expanded to all councils of Western Division with the support of subsequent ongoing project. As for sustainability, no problems have been observed in terms of policy, institutional, technical and financial aspects of the implementing agency. As for efficiency, the project cost slightly exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

1. Finalize and make the National 3R Policy effective

The draft National 3R Policy was formulated about 5 years ago, however, it is yet to be approved and is still in the official gazettes. For

the smooth implementation of 3R at the national, municipal and grassroots level, and further promote 3R, it is recommended that the Ministry should prioritize the finalization and approval of the Policy, so that efforts made by councils on 3R promotion activities so far can serve as further encouragement.

2. Allocate full-time 3R resource persons at municipal councils

3R promotion activities have been expanded to all councils, not only in Western Division but also Central, Northern and Eastern Division. However, it is identified by the study that currently ongoing activities have not maintained the expected standards. Such slow progress may discourage people or councils to continue activities. Therefore, it is recommended that at least one specialist as a full-time 3R Promotion officer should be assigned at every council to focus on 3R promotion activities. The position will serve to ensure that 3R is correctly implemented, monitored and evaluated maintaining the expected standards and to further improve SWM in towns and cities.

Lessons Learned for JICA:

1. Effective strategies to sustain the 3R initiatives

The incorporation of Subsidy Programs for Home Composting and CSP into the councils' standard public services is considered as one contributing factor for the sustainability of 3R activities under the project, which experience can be applied to similar JICA-assisted projects as one of the ways to secure the sustainability of the project effect. However, the reason why 3R activities has shown the slow progress is, according to the questionnaire and interviews with councils, that the people would not easily adopt 3R activities into their daily practices with no incentives. In addition, it was difficult for the councils to enforce the 3R initiative under the current legal framework in which there are no clear guidance with powers to proceed 3R activities. Therefore, if a project plans to get the community people involved in 3R activities, it needs to respond together either with a scheme to give them some incentives, or with the establishment of the legal framework to enforce 3R activities with power.

2. Appropriateness of indicators that can be consistently accessible

The project has taken the comprehensive approach to the solid waste management in which the effects by 3R activities were captured with numerical figure as indicators, such as Total Recycle Rates and Disposal Rates. So that councils could connect the impact of 3R promotion in an economic value of public services they have provided. In that sense, this approach was effective for councils to get a whole picture of solid waste management. However, it has also provided lessons through the study that those challenging indicators may not be consistently collected under such circumstances that the base data is affected by the occurrence of natural disaster or inadequate record keeping. Therefore, in order to set feasible indicators, it is important to give some consideration to their accessibilities (or availability) even after the project completion. Furthermore, the indicators should have a simple and clear calculation method otherwise the collected data may not serve to monitor the progress correctly. For that purpose, it is suggested that simplified guidelines should be set for the calculation of the indicators, with which councils are easily undertake the monitoring correctly.



LCC casual workers are loading a truck with market waste from the Lautoka Market. The market waste is transported to the Compost shelter at the Vunato Disposal Site, just 10 minutes from the City.



A local resident of Northern Press Community in Nadi displays her compost bin.



Community Recycling Centre at IYC Park in Lautoka.



A Recycling Centre caretaker with the log-book that records the individuals' details and types of recyclables dropped-off at the Centre.