

3Rs+Return

- Challenges in PICs -

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What's wrong with waste?

- Problems/issues in Pacific islands -

- Increasing amount of waste (remains on island)
- Difficult waste to treat (plastics, bulky waste, e-waste, hazardous waste)
- Unexpected disaster waste
- Negative impact on the environment
- Negative impact on the public health
- Negative impact on the tourism industry
- Lack of Government capacity to deal with waste



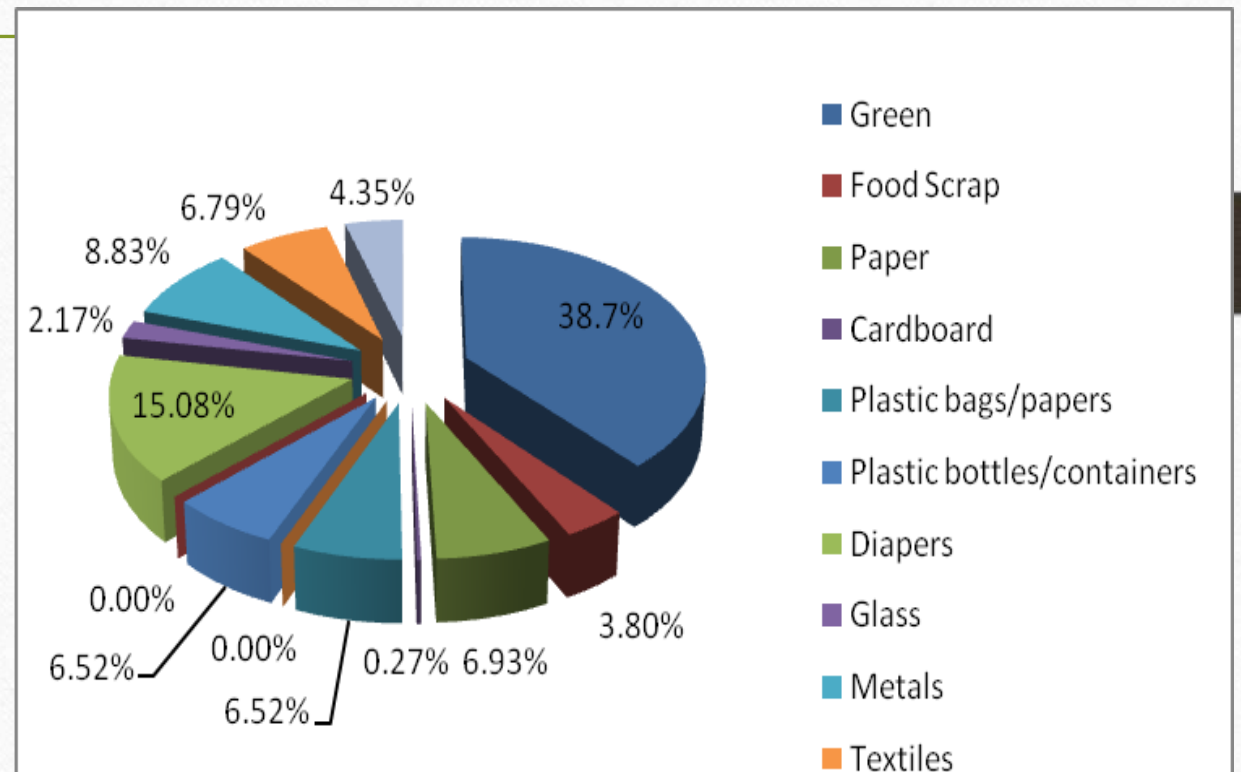
The real problem is upstream !



State of waste in Pacific islands

- How much? Too much -

- **Household waste generation (kg/day/person)**
 - 0.38 (Apia, Samoa, 2012)
 - 0.46 (Lautoka, Fiji, 2009)
 - 0.51 (Vava'u, Tonga, 2011)
- **Waste composition**
 - **Organic waste (regional 50+%)**
 - **Imported goods and materials**
 - Plastics, paper/cardboard, metals, diapers
 - Car bodies, white-ware, e-waste



Source: MNRE, Samoa, 2012

What are the challenges?

- Common features/constraints affecting SWM -

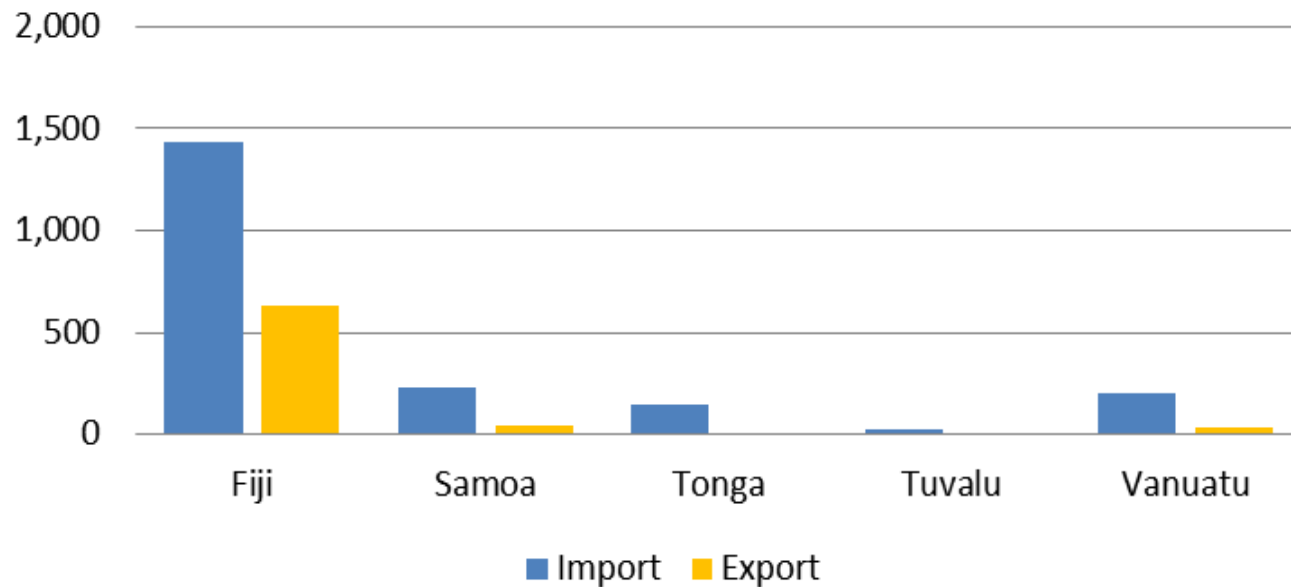
- **Geographical isolation**
 - Islands spread across the vast ocean
 - Difficult access
- **Limited Land Space**
 - Small islands/atolls
 - Small number of population
- **Remoteness**
 - Far from international recycle markets
- **Dependency**
 - Imported goods and foreign aids



Movement of Materials: Imbalance of Foreign Trade

Foreign Trade in five countries (2009)

(unit: million US\$)

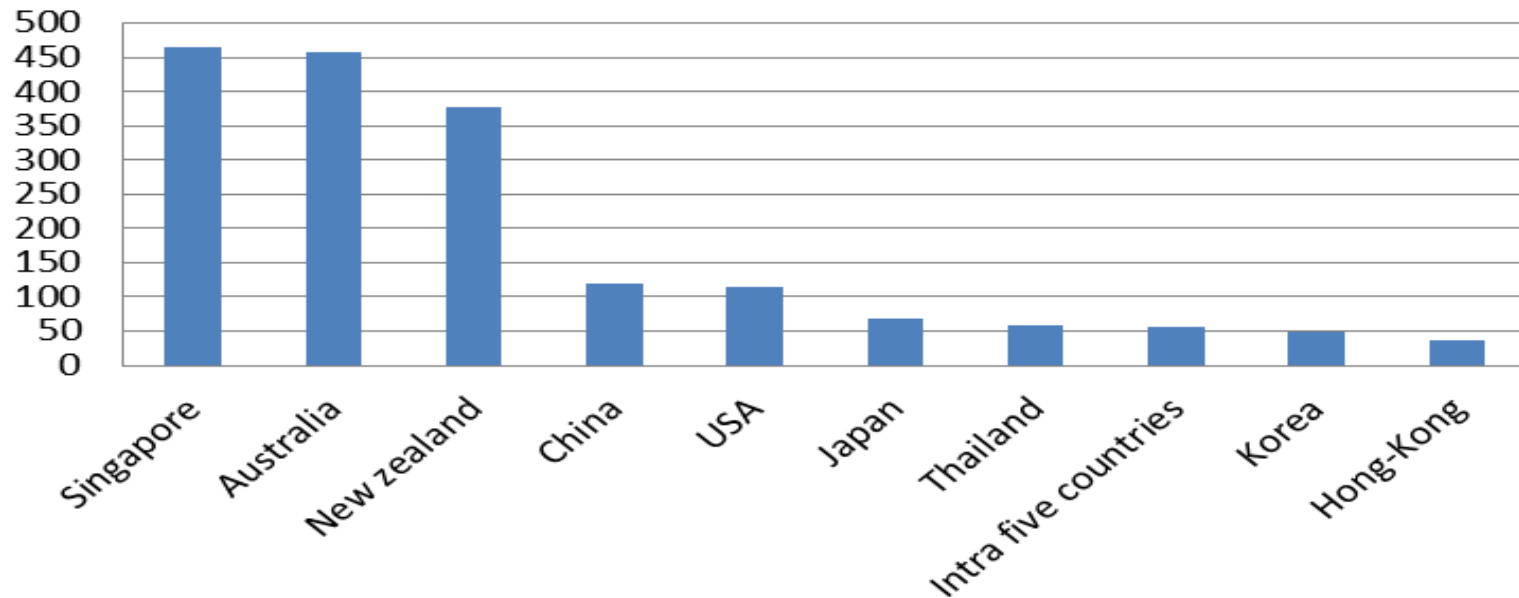


Source: Data Collection Survey on Reverse Logistics in the Pacific Islands, JICA, 2013

Movement of Materials: Country of origin of import to PICs

Foreign Trade in five countries

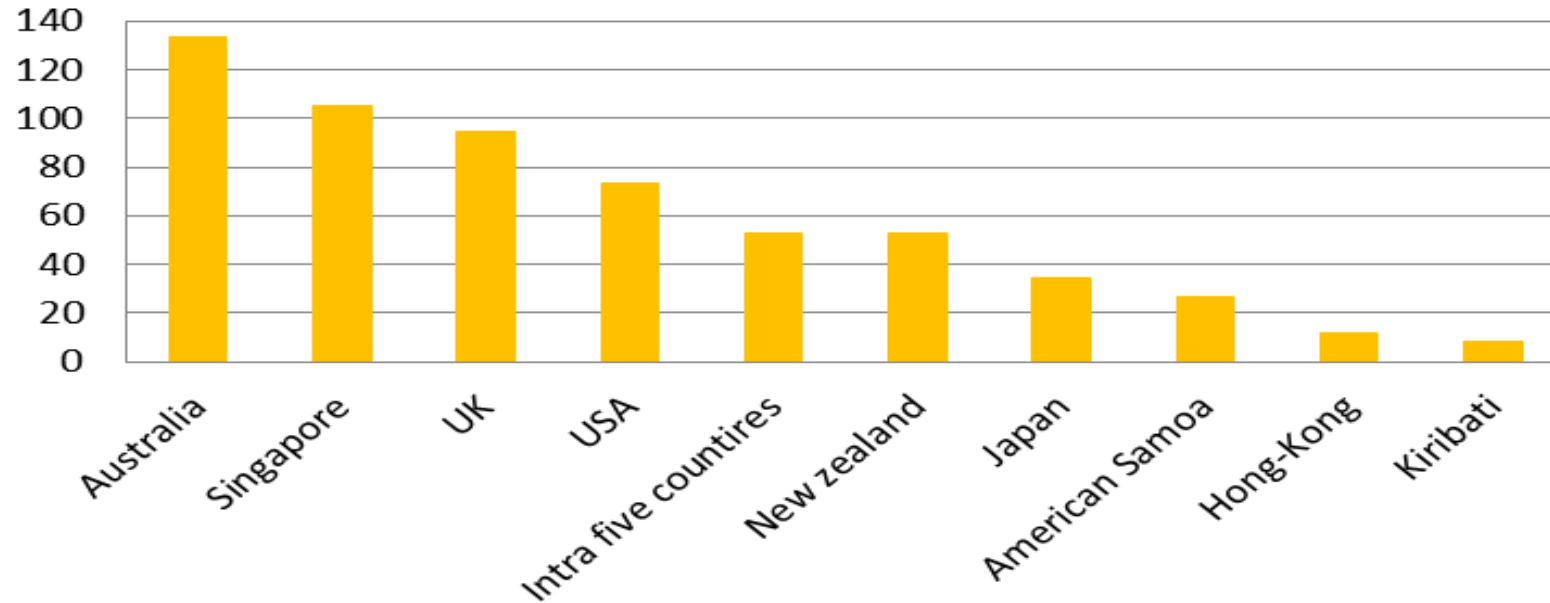
(Import, 2009) (unit: millionUS\$)



Source: Data Collection Survey on Reverse Logistics in the Pacific Islands, JICA, 2013

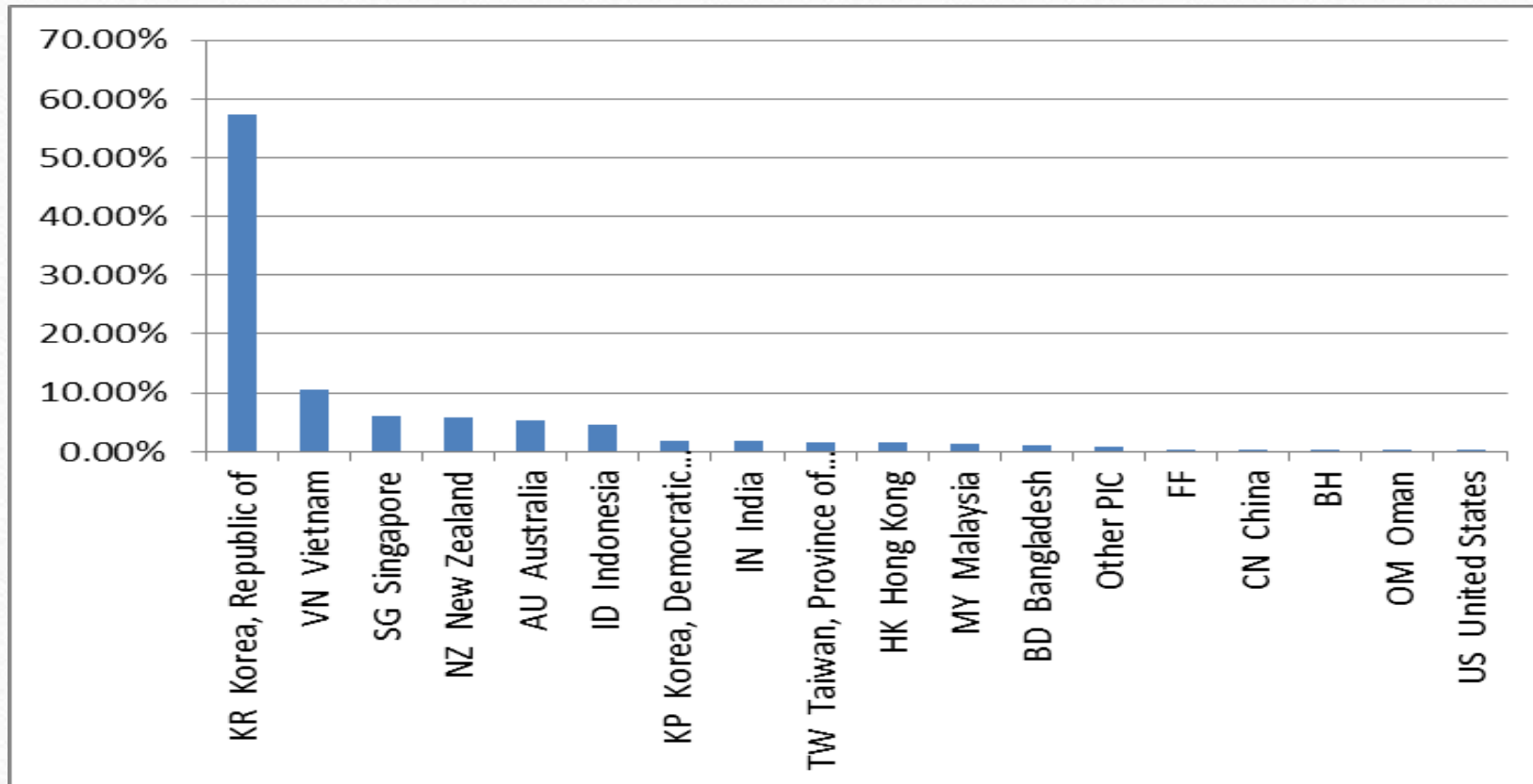
Movement of Materials: Export Destination from PICs

Foregin Trade in Five Countries
(export, 2009) (unit:million US\$)



Source: Data Collection Survey on Reverse Logistics in the Pacific Islands, JICA, 2013

Movement of Materials: Recyclables exported from Fiji to



Source: Data Collection Survey on Reverse Logistics in the Pacific Islands, JICA, 2013

What is an ideal/better situation?

- Promotion of 3R (Reduce, Reuse & Recycle)+**Return** -

Problems/Constraints

- Waste remains on island (one-way traffic to islands)
- Lack of recycle facilities on island
- Far from the recycle market
- Large portion of organic waste
- Difficult waste, such as e-waste, hazardous waste, car bodies, etc.

Preferred Options

- **Return** of recyclables/difficult waste to markets outside for proper recycle/treatment
- **Return** of organic waste to the nature/soil through compost, etc.

3R+Return (1)

- Sustainable financing to secure **Return** of recyclables/materials to large markets outside -

Economic Instruments

- **Deposit-refund program (CDL)**
- Environmental levy/Green fee
- Pre-paid garbage bag system
- Gate/tipping (disposal) fee
- Charge on plastic shopping bags
- **EPR**

PICs adopted

- Kiribati, FSM (Kosrae, Yap), Palau
- Palau, Cook Islands
- Kiribati, Vanuatu
- Fiji (Lautoka, Sigatoka, Naboro), Samoa, Vanuatu
- None in PICs
- ?

Extended Deposit-Refund Program (CDL)

One of economic instruments to promote "Return"



Deposit-refund program could be applied for any materials (recyclables or difficult waste)

3R+Return (2)

- Utilization of organic waste for **Return** to soil/nature -

Method

- Home Compost
- Market compost
- Mulching/wood chips
- Charcoal

Target

- Kitchen waste, yard waste
- Vegetables/fruits
- Wood trunks, branches, coconut husks, etc.



Return of organic matters to the nature/soil



Photos: Lautoka City Council

How can we deal with Challenges

- in order to promote 3R+Return -

Common features/constraints

- Geographical isolation
- Limited Land space
- Remoteness
- Dependency

Challenges

- Inter-island collection & ocean transportation
- Proper disposal of waste in limited land spaces with protection of water resources
- High cost of transportation
- Fluctuation of outside market prices
- Sustainability (appropriate technology & financing mechanisms)

How to tackle the problems/challenges

- At the national, regional & inter-regional level to promote “Return” -



- Improvement of recyclable collection
- Improvement of initial treatment skills of recyclers/collectors
- Institutional arrangement by the government
- Ocean transport network
- Cost reduction effort on ocean freight
- Accurate information database

Concluding Messages:

- “3Rs+Return” for Returns (benefits) -

- Waste as a **resource** and a source of income
- Mixture generates waste, **separation** produces resources
- Proper treatment and **recycling** (industrialized countries)
- Appropriate technology (low cost) and **sustainable financing**
- Change the people’s mindset, **change their behavior/practice**



Faafetai lava
Thank you very much for your support to
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