

Environmental Policy of 3Rs and Implementation of 3Rs Pilot Project by Local Authorities in Sri Lanka under JICA Technical Corporation Project

The 3R International Scientific Conference (3RINCS)
Special Session: 3R Policy Issues in Asia and the Pacific and Needs for Scientific Cooperation - Plastics in coastal & marine environment (UNCRD)
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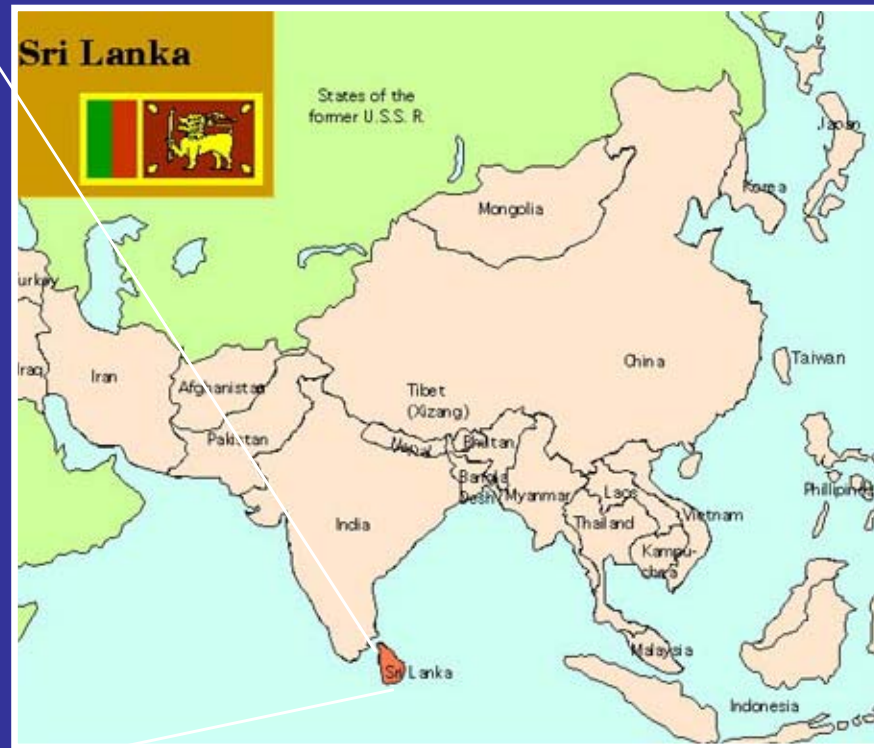
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Outline

1. Introduction
2. Environmental Policy of 3Rs in Sri Lanka
3. Implementation of 3Rs under JICA pilot project at Local Authorities in Sri Lanka
4. Conclusion

Introduction: Sri Lanka



	2001	2005	2010	2011
Population, total	18,797,000	19,644,000	20,653,000	20,869,000
GDP per capita (US\$)	837.7	1,242.4	2,400	2,836
GDP growth (annual %)	-1.5	6.2	8.0	8.2
Total Number of Local Authorities (LAs)	312 ²⁾	311 ³⁾	330 ⁴⁾	

Table 1 Background Information on Sri Lanka

1) The World Bank: <http://databank.worldbank.org/ddp/home.do?Step=12&id=4&CNO=2>
 2) Department of Census and Statistics 2002, Sri Lanka <http://www.statistics.gov.lk/misc/slmap.pdf>
 3) Database of Municipal Solid Waste in Sri Lanka (2005)
 4) Statics pocketbook 2011: <http://www.statistics.gov.lk/Pocket%20Book/chap15.pdf>

Introduction: Sri Lanka

Sri Lanka has attained middle income country (MIC) status, and achieved several Millennium Development Goals (MDGs).

... but at the same time, Sri Lanka has also serious environmental issues, including the *poor state of solid waste and liquid waste management.*

3R-related Environmental Policies

Year	Act/Regulations/Strategies	Remarks
1980	National Environmental Act No.47 of 1980	<ul style="list-style-type: none"> ■ Establishment of CEA ■ Introduction of EPL, IEE, EIA
1996	Gazette Extraordinary No. 924/12 of 1996	<ul style="list-style-type: none"> ■ National environmental (noise control) regulations
2000	National Strategy for Solid Waste Management (NSSWM)	<ul style="list-style-type: none"> ■ Ministry of Forest and Environment ■ 3-years action plan ■ Waste reduction, 3R implementation
2007	National Policy on Solid Waste Management	<ul style="list-style-type: none"> ■ Ministry of Environment and Natural Resources ■ Waste reduction ■ 3R implementation ■ Sanitary landfills
2007	Technical Guidelines on Solid Waste Management	<ul style="list-style-type: none"> ■ Central Environmental Authority (CEA)
2008	Pilisaruru Programme (CEA)	<ul style="list-style-type: none"> ■ National level programme for solid waste management under the chairmanship of Ministry of Environment, CEA, and others
2008	Gazette Extraordinary No. 1534/18 of 2008	<ul style="list-style-type: none"> ■ National Environmental (protection and quality) regulations ■ Management of scheduled waste

Table 2 Major Environmental Policies in Sri Lanka

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2000	Clear mention of 3Rs	
2007	Objectives spell out 3Rs	
2007	1. ensure environmental accountability and social responsibility of all waste generators, waste managers and service providers ,	
2008	2. actively involve individuals and all institutions in integrated and environmentally sound solid waste management practices,	
2008	3. maximize resource recovery with a view to minimize the amount of waste for disposal, and	
2008	4. minimize adverse environmental impacts due to waste disposal to ensure the health and wellbeing of people and of ecosystems	

Table 2 Major Environmental Policies in Sri Lanka

Improper waste discharge in urban areas



Waste discharging on roads



Waste scattered by animals

Improper Liquid Waste Management



Collected sewage discharged without treatment

Improper operation of Final Disposal Sites



Elephants at the open dumping site



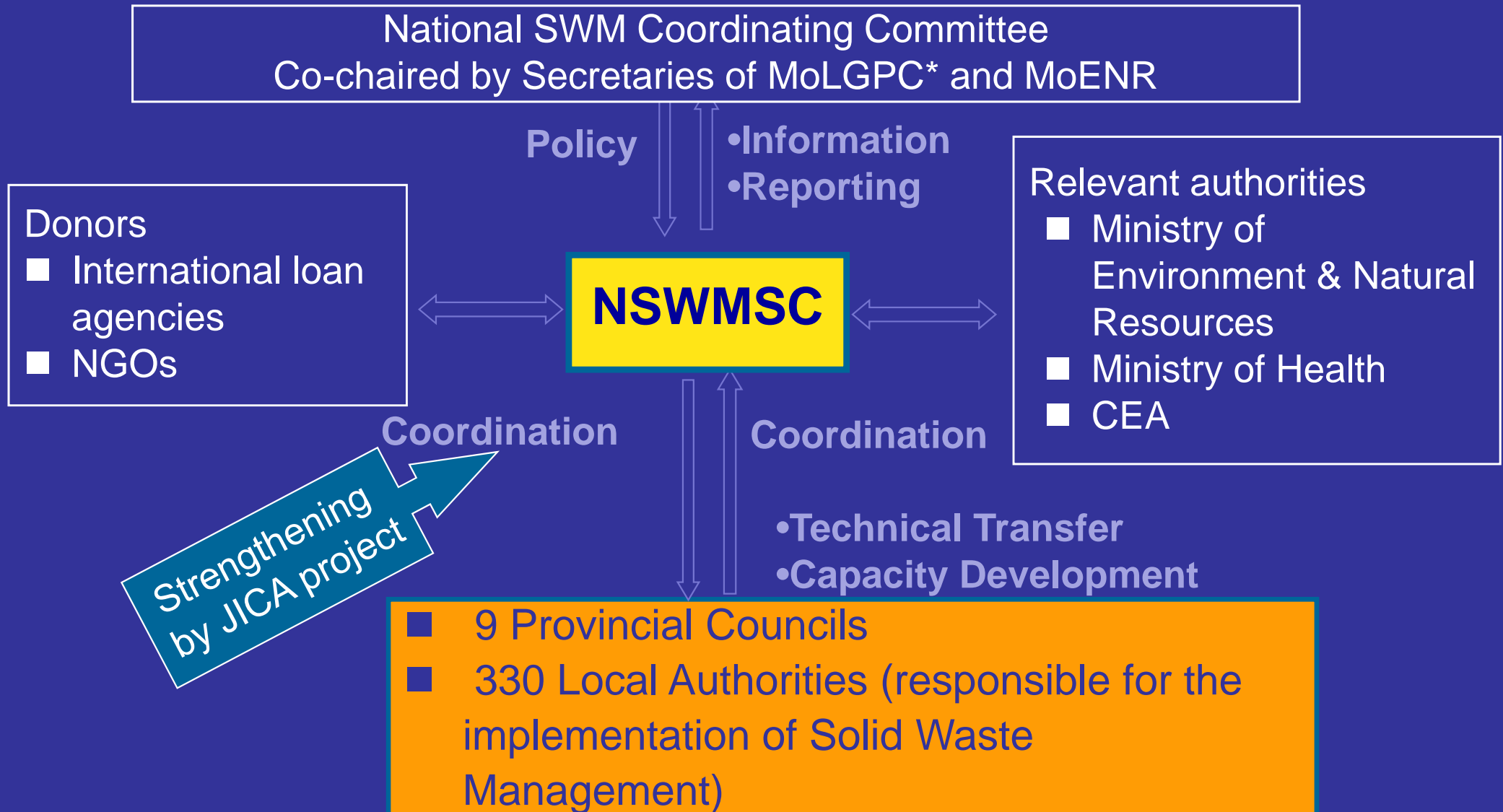
Open dumping sites



Leachate from open dumping sites

Implementation of 3Rs

National Solid Waste Management Support Centre



Implementation of 3Rs

National Solid Waste Management Support Centre

NSWMSC 's Policy Strategy

1: Waste Minimization

2: Resource Recovery

2-1: Segregation of recyclables at all generation sources.

2-2: Home composting of domestic waste by residents.

2-3: Centralized composting of commercial waste by local authority.

3: Sanitary Landfills

Implementation of 3Rs

National Solid Waste Management Support Centre

NSWMSC 's tasks

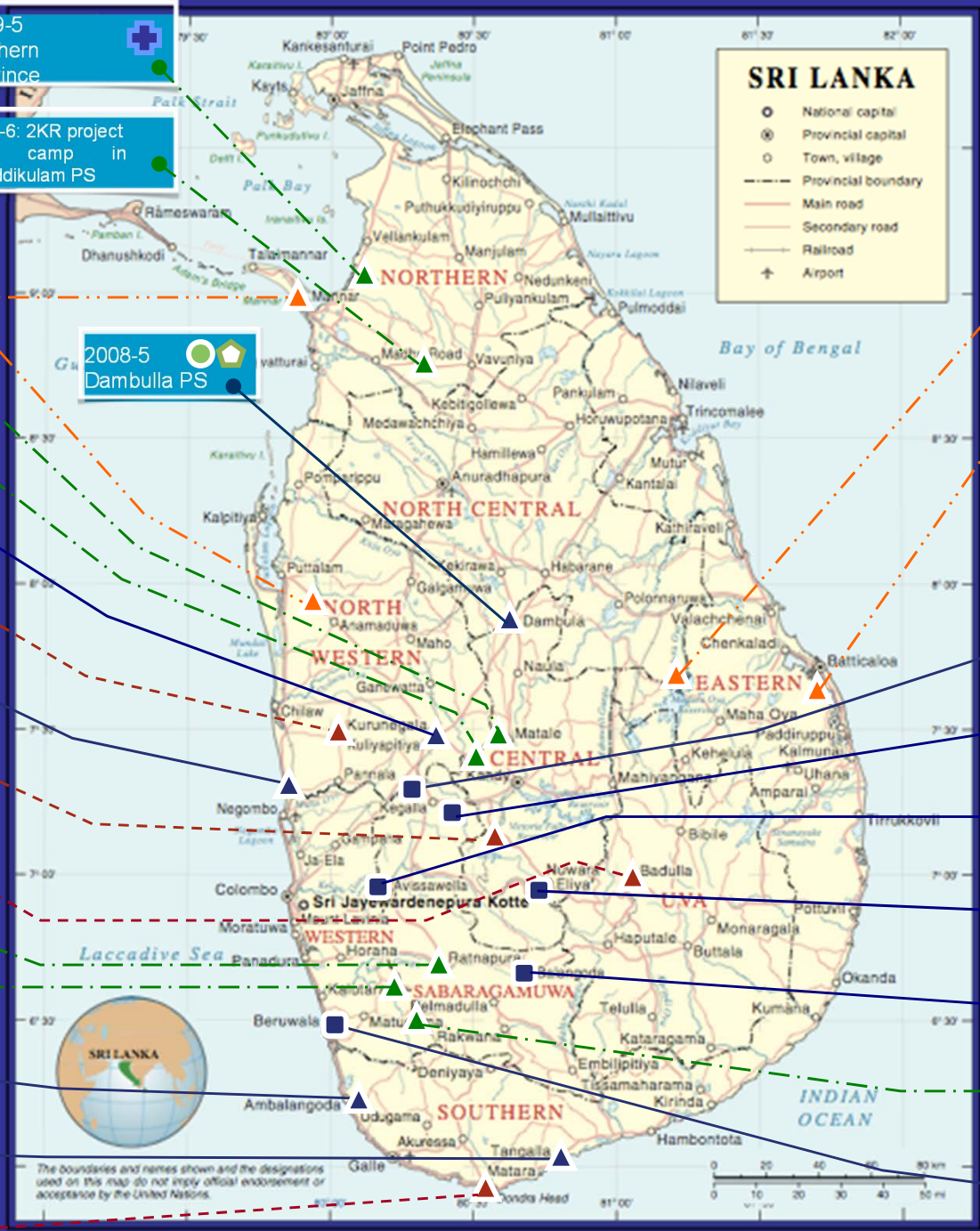
1. Provide **manuals and guidelines** to facilitate Local Authorities' implementation of proper SWM.
2. Provide **technical assistance** on SWM to Local Authorities.
3. **Study** current SWM conditions and practices in Sri Lanka and abroad; provide to Local Authorities..
4. Facilitate Local Authorities' **procurement of technical and financial assistance** from NGOs and donors.

NSWMSC's Model Projects

- = 2007
- = 2009
- = 2008
- - - ● - - - = 2010

CUP-NSWMSC Project Site Map

- = Compost
- ⬠ = Landfill
- ★ = Night soil treatment
- ⊕ = Provincial action plan
- ⊙ = Construction put in place
- ✦ = Operation put in place



2010-2 Manner UC

2009-5 Northern Province

2010-1 North Western Province

2009-6: 2KR project
IDP camp in Cheddikulam PS

2009-4 Wattegama UC

2008-5 Dambulla PS

2009-3 Central Province

2008-1 Kurunegala MC

2007-1 Kuliypitiya UC

2008-2 Wennapuwwa PS

2007-2 Nawalapitiya UC

2007-4 Badulla MC

2009-2 Ratnapura MC

2009-1 Sbaragamuwa Province

2008-3 Ambalangoda UC

2008-4 Tangalle UC

2007-3 Matara MC

2010-3 Eastern Province

2010-4 Kinniya UC

MLGPC's Funds

M-1 Implementing
Alawwa PS

M-5 On hold
Kegalle UC

M-3 On hold
Seethawakapura

M-2
Nuwara Eliya MC

M-4
Balangoda UC

M-7 On hold
Bulathsinhala PS

M-6 On hold
Belwera UC

20XX-X shows ID

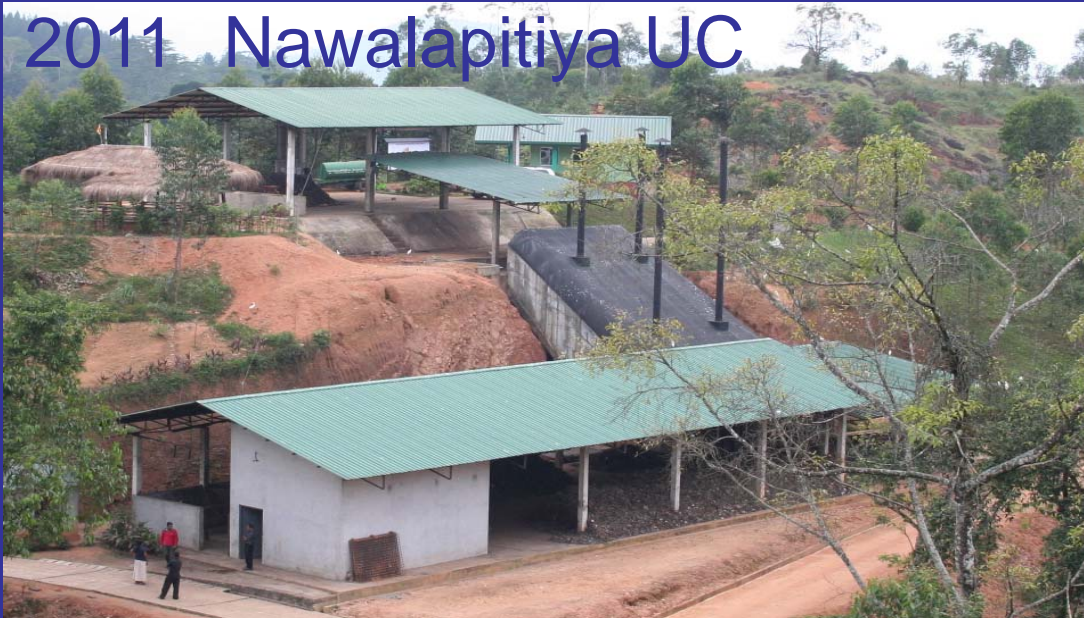
Source : CUP-NSWMSC

As of February, 2011

Implementation of 3Rs

under JICA pilot project, at Local Authorities

2011 Nawalapitiya UC



2010 Matara MC



2010 Kuliyaipitiya UC



2010 Badulla MC

Implementation of 3Rs

under JICA pilot project, at Local Authorities



Liquid Waste Management using coconut fibers
Both sludge and effluent were recycled

Implementation of 3Rs

under JICA pilot project, at Local Authorities

කුලියාපිටිය නගර සභාව කුණු එකතු කරන ක්‍රමය

<p>දිරාපත්වන</p> <p>දිනාය : වෙලාව :</p> <p>කවරයක හෝ බිකට් එකක කසළ දමා සිඳු තාද ක්‍රමයට කසළ චාර දෙන්න.</p> <p>ඉඳුල්(කුස්සියේ කුණු)</p>  <p>භෞමික අපද්‍රව්‍ය</p>  <p>කොම්පෝස්ට් පොහොර</p>	<p>දිරාපත්නොවන</p> <p>දිනාය : වෙලාව :</p> <p>කඩදාසි, කාඩ්බෝඩ් ප්ලාස්ටික් පොලිතින් වීදුරු බෝතල් යකඩ රබර් නැවත භාවිතයට ගන්න දේ</p> 
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කුලියාපිටිය නගර සභාව [Tel:087-2281275](tel:087-2281275)



Awareness raising by volunteers



Stores to sell compost to, and buy recyclables from, locals

Implementation of 3Rs

under JICA pilot project, at Local Authorities



Paper and bottles purchased... and compost sold



Implementation of 3Rs

Category	Waste composition	Collection Amount(ton/day)	Component of pilot project
Kitchen waste	34%	2.4	
Grass and wood	29%	2.0	
Sub total	63%	4.4	
Paper	11%	0.8	
Textile	6%	0.4	
Soft plastic	4%	0.3	
Hard plastic	1%	0.1	
Metal	0%	0.0	
Glass	1%	0.0	
Sub total	23%	1.6	
Leather and rubber	4%	0.3	
Ceramics and stone	10%	0.7	
Others	0%	0.0	
Sub total	14%	1.0	
Total	100%	7.0	

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Waste Amount and Composition in 2007 in Kuliypitiya UC

Implementation of 3Rs

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1 ton vs. 7 tons

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Implementation of 3Rs

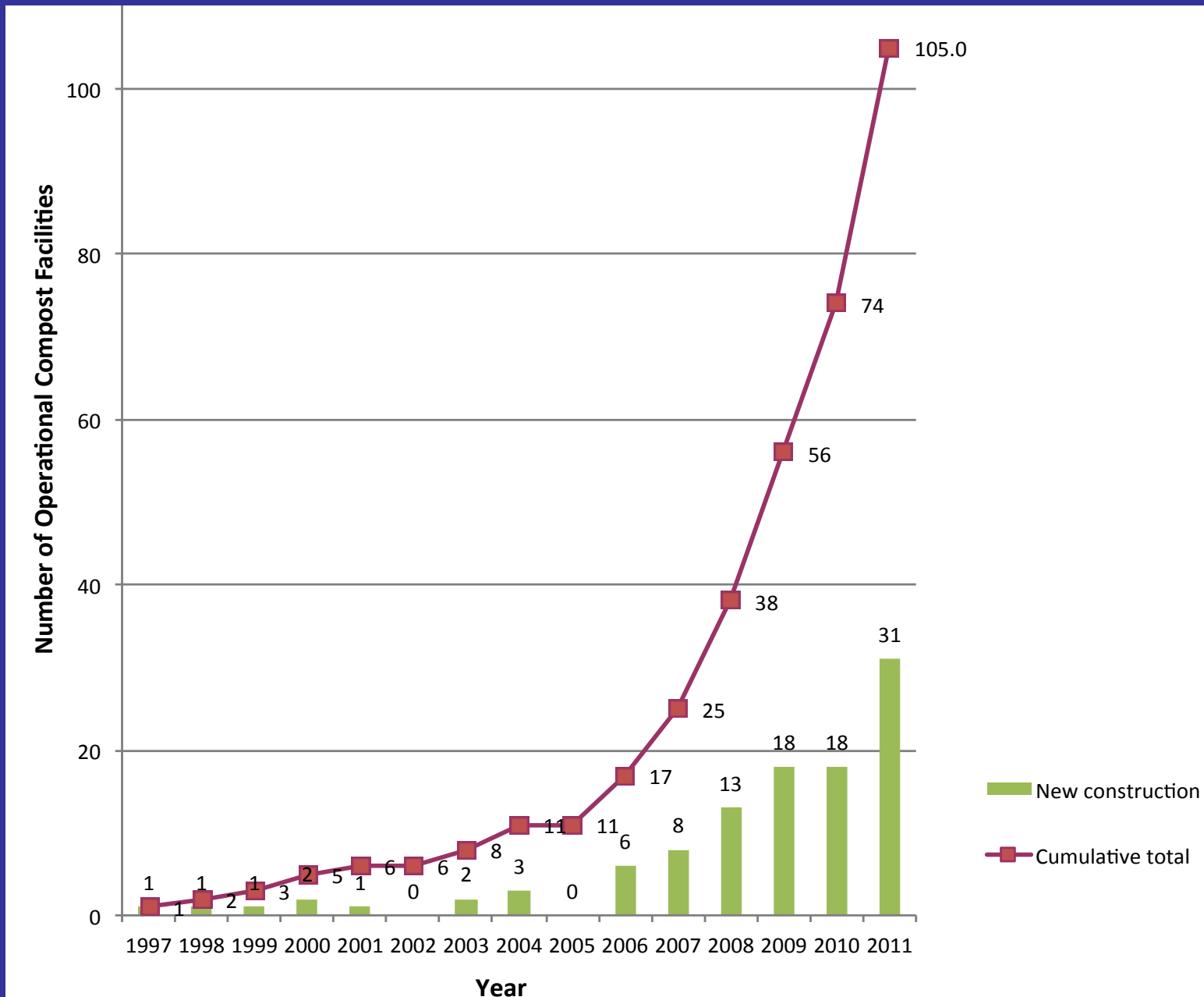


Fig 4 Number of operational compost facilities from 1990 to 2011

Conclusions

- Local authorities in Sri Lanka still face many issues such as high SWM costs, illegal dumping, low recycling rate, difficulties in landfill siting and poor technical capacity on landfill operation, despite the introduction of numerous acts, regulations and strategies related to SWM, and technical and financial support through donor-oriented projects.

Conclusions

- The amount of **waste generation will increase continuously** with population and economic growth, and cause serious environmental and social impacts.
- Greater emphasis needed on encouraging proper policy decisions, affordable and applicable technology for final disposal sites, proper financial facilitation of 3Rs, and awareness programs **to overcome current and future issues.**

Acknowledgements

- + The Staff of NSWMSC Sri Lanka
- + Prof. Ben Basnayake and Mr. Senaka Herath, Solid Waste Management Research Unit (SWMRU), University of Peradeniya.
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- +JST-JICA Science and Technology Research Partnership for Sustainable Development Program (SATREPS) (FY2011-FY2016)



... Thank you!