



JICA's Approach for Solid Waste Management

(3R Forum @Indore)

12 April, 2018

Takema SAKAMOTO

Chief Representative

Japan International Cooperation Agency (**JICA**) India Office

- *Diagnositics and Analytics:*
 - > Identification of challenges/backgrounds for appropriate “*prescription*”
- *Awareness Improvement and Public Participation:*
 - > Involvement of civil society for *social innovation*
 - > Promotion of *environment education*
- *Private Sector Involvement:*
 - > Creation of better *business environment* for efficiency and sustainability
 - > Comprehensive approach (public role)
 - e.g. development of technology, regulation, institution, finance

Current Status and Challenges on SWM

- Increase of solid waste by urbanization, population increase, economic growth, life style change, etc.
- Illegal dumping and burning of wastes without consciousness, etc.



- Adverse effects on *environment and human health*
e.g. infectious diseases
- Adverse effects on *economic activities, tourism, etc.*

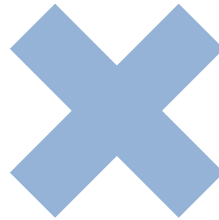


Integrated SWM through 3Rs with "Diagnostics" and "Prescription"

Implementation Capacity

- (a) Technology
- (b) Finance
- (c) Administration
- (d) Legislation
- (e) Public Awareness/
Public Participation

Private
sector
involvement



Process-wide Framework

- (1) Production and Consumption
- (2) Generation -> Segregation ->
Emission
- (3) Collection and Transportation
- (4) Intermediate Treatment/
Reuse/ Recycle
- (5) Final Disposal

JICA's Comprehensive Instruments for SWM

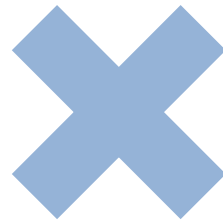
Identification of challenges

Implementation Capacity

- (a) Technology
- (b) Finance
- (c) Administration
- (d) Legislation
- (e) Public Awareness /
Public Participation

Process-wide Framework

- (1) Production and Consumption
- (2) Generation -> Segregation ->
Emission
- (3) Collection and Transportation
- (4) Intermediate Treatment/
Reuse / Recycle
- (5) Final Disposal



Adoption of support instruments

Concessional ODA Loan

Grant Aid

Technical Cooperation

PPP support

Glass roots
(Japanese local Govt/ NGO)

Volunteers



JICA's View for Assistance with Development Stage Concept

1 st stage	Improvement of public hygiene	<ul style="list-style-type: none">✓ Segregation/Collection Improvement e.g. Participatory approach✓ Dumping Control
2 nd stage	Reduction of environmental burden and prevention of pollution	<ul style="list-style-type: none">✓ Semi-aerobic landfill "Fukuoka Method"✓ Leachate treatment✓ E-waste treatment
3 rd stage	Establishment of material-cycle society with 3R initiative	<ul style="list-style-type: none">✓ Public awareness dev.✓ Legal framework dev.✓ Recycling industry promotion

Example of cooperation (at the 1st stage)

(c) Administration & (e) Public Participation X (3) Collection and Transportation

Background

- ✓ Rapid urban population increase in Bangladesh (Increase by 5.6%/yr)
- ✓ Serious air pollution, solid waste disposal, etc.

Characteristics

- ✓ Introduction of WARD Based Approach (WBA) (participatory approach) to improve collection and transportation (initially in 15 WARD)
- ✓ Currently, the number of WARD introducing WBA expanded to 25 in 2017.



50% increase

in waste collection rate (44% -> 65%)



Example of cooperation (at the 2nd stage)

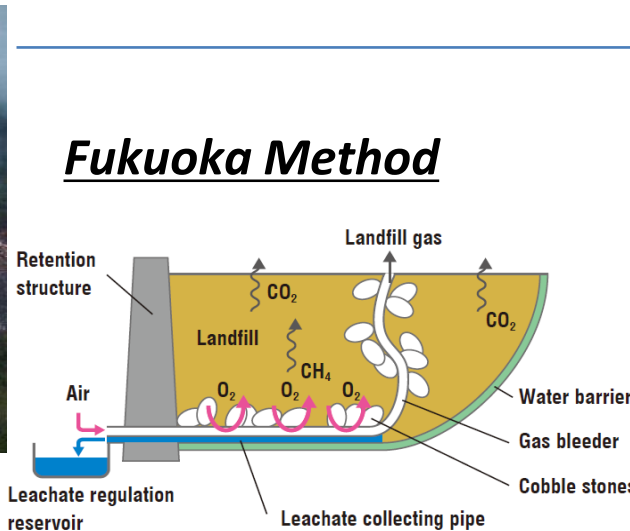
(a) Technology X (5) Final Disposal

Background

- ✓ Difficulties in dumping waste control and disposal site management
- ✓ Necessity of final disposal technology

Characteristics

- ✓ Introduction of Fukuoka method
(Semi-aerobic landfill structure; low-cost, environmentally friendly, and easy to introduce)



Structure of the Fukuoka Method
(semi-aerobic landfill system)



Example of cooperation (all stages)

(b) Finance, (e) Public Awareness X

(2) Segregation, (3) Collection and Transportation, (4) Recycle, & (5) Final Disposal, etc

Characteristics

- ✓ Introduction of area-wide solid waste management system first in India
- ✓ Installation of leachate treatment plant
- ✓ Construction of sanitary final disposal site with cover soil
- ✓ Public awareness and environmental education for segregation



C40 Award for Best Solid Waste Project (2016)*

Public Awareness Improvement



Segregation Promotion



*The C40 Cities Climate Leadership Group (C40) connects more than 80 of the world's greatest cities. C40 is focused on tackling climate change and driving urban action.

*Example of cooperation (at the 3rd stage)
(e) Public Awareness X (2) Segregation & (4) Recycle*

Awareness Improvement!

✓ Kodansha (Tokyo)

Publication of picture-books and “Reading Aloud Campaign”
for *mind-set change/ Social innovation*

‘Mottainai Grandma’

published in Hindi/English on 13 January 2018

