

# Proper separation and collection of business-related food waste in Bandung City

Japan Environmental Sanitation Center  
(JESC)



# Output 2

## Capacity Building for business entities (restaurants, hotels and Traditional markets)

Proper separation and collection of business-related food waste

Separation & collection

Transfer Depot

business-related  
food waste

Separation & collection

business-related  
food waste

Biodigester

Recycle of food wastes



# Key activities

Properly separate and collect business-related food waste

## Business entities

- Restaurants
- Hotels
- Traditional markets



Bio-digester

Organic food waste

# Schedule and Work allocation in 2017

2017

- Evaluation of foregone studies and acquiring current flow of business-related food wastes
- Selection of model business entities and investigation on the amount and the composition in each model business entity
- Investigation on actual situations of food waste disposal/recycle in each selected model business

# Schedule and Work allocation in 2018

- Preparation of a waste separation and collection manual on business-related food wastes based on the results
- Implementation of the training for proper separation and collection of commercial organic wastes

2018

# Past study survey on business-related food wastes

**Fig.1 Waste amount in Bandung City in 1994**

No	source	Ton	%
1	Residential	983,40	65,56
2	Traditional Market	281,55	18,77
3	Road	82,80	5,52
4	Commercial Area	89,85	5,99
5	Institution	42,15	2,81
6	Industry	20,25	1,35
	<b>SUM</b>	<b>1.500,00</b>	<b>100</b>

\*) PD. Kebersihan Research at 1994

**Fig.2 Waste amount in Bandung City in 2005**

source	Organik	An organik
Residential	56 %	44 %
Non Residential	48 %	52 %
average	52 %	48 %

\*) Evaluation of waste recycling potential in Bandung Municipal Solid Waste Oleh Prof Enry D. dkk, 2005

# Interview survey on actual situations of food waste discharge in each selected business entity



Traditional market



Restaurant  
(Shopping mall)



Hotel

# Sampling survey on the amount and the composition of food waste in business entities in Bandung City

## 1. Type of business entities and number of sample

(1) 2 traditional markets, 6 samples

(2) 3 hotels, 3 samples

(3) 3 middle class restaurants, 3 samples

## 2. Sampling method and dates of sampling

SNI 19-3964-1994

September to November in 2018

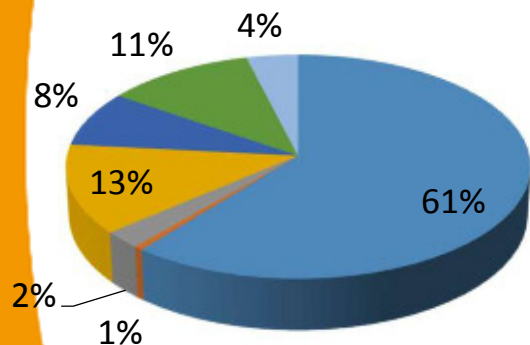
## 3. Results



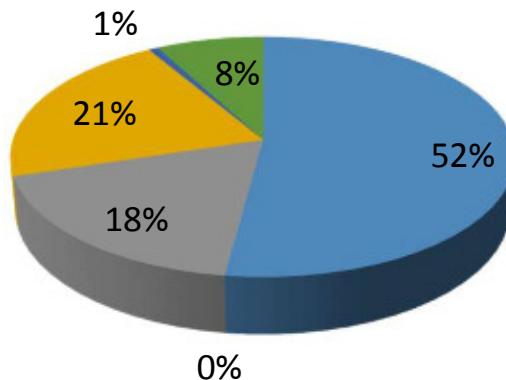


# 1. Traditional markets

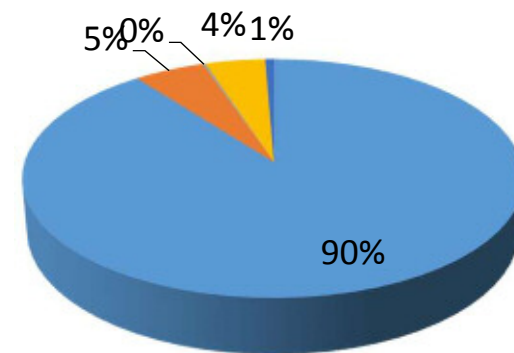
## Cihaurgeulis Market



small restaurant 1



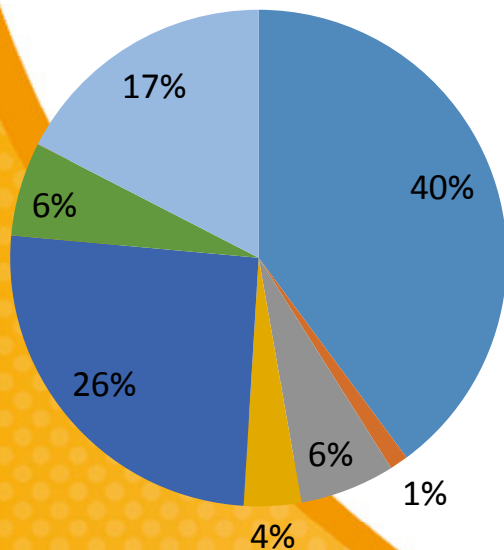
small restaurant 2



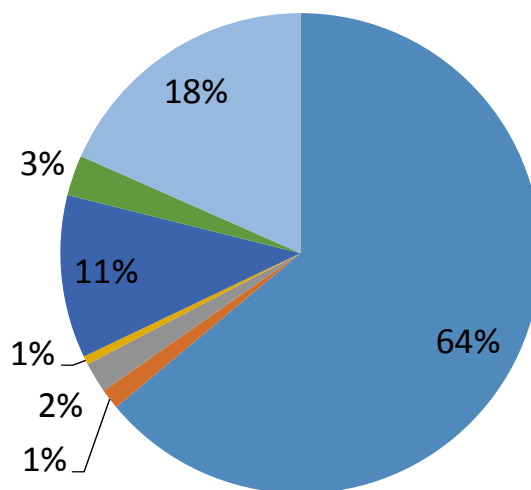
vegetable booth 3

- Vegetation
- Rice, Noodle
- Egg skin
- Bone
- Plastic
- Paper
- Banana leaf

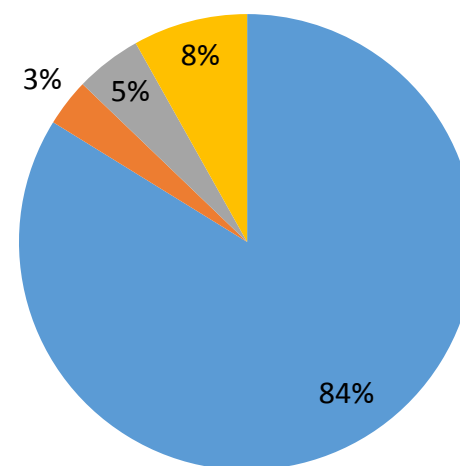
## Sederhana Market.



small restaurant 1

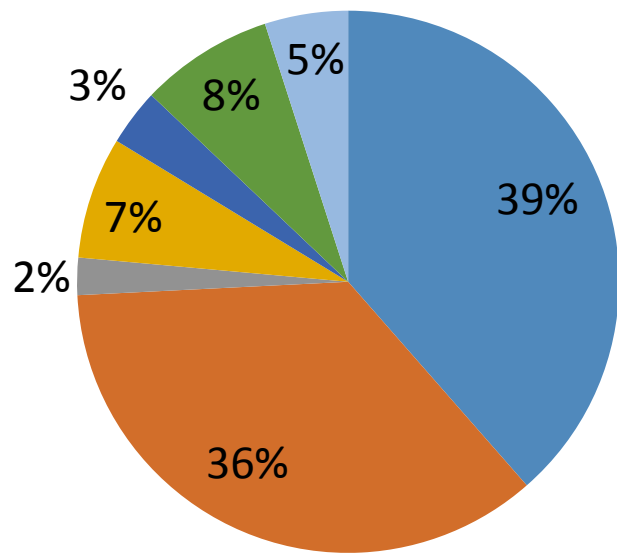


small restaurant 2

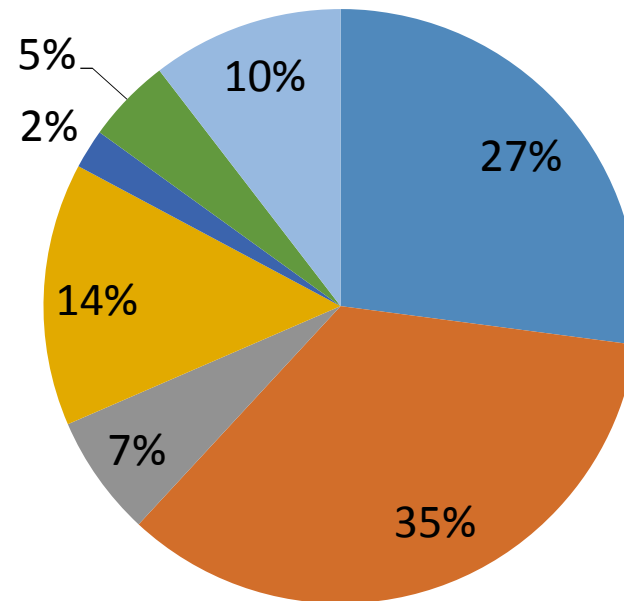


vegetable booth 3

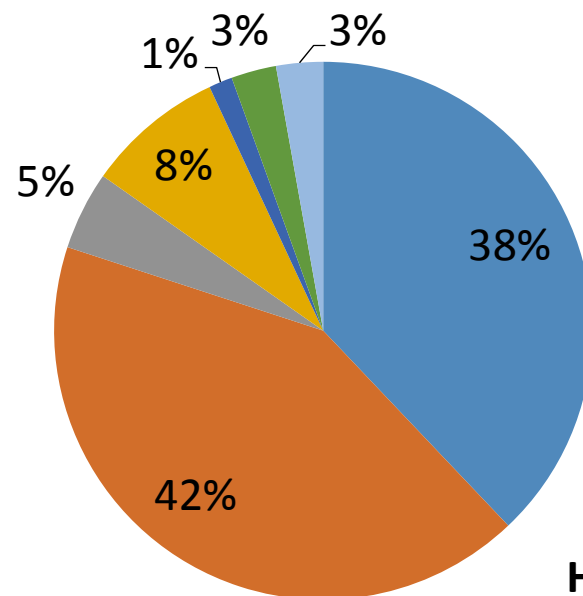
## 2. Hotels



**Hotel 1**



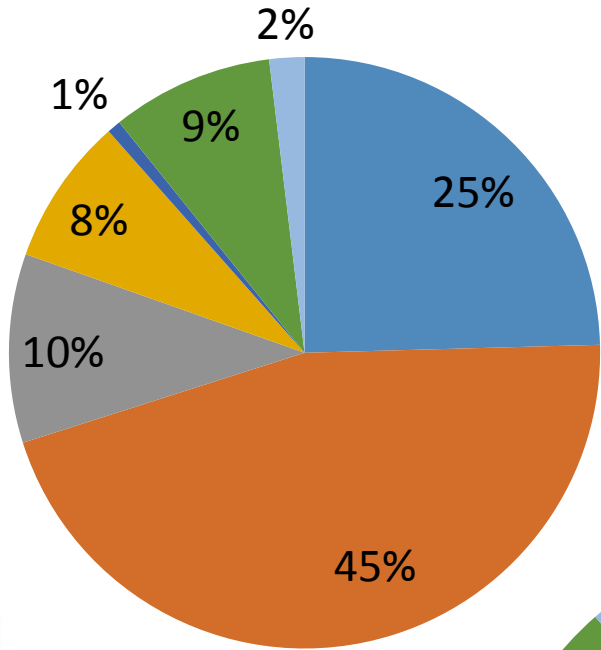
**Hotel 2**



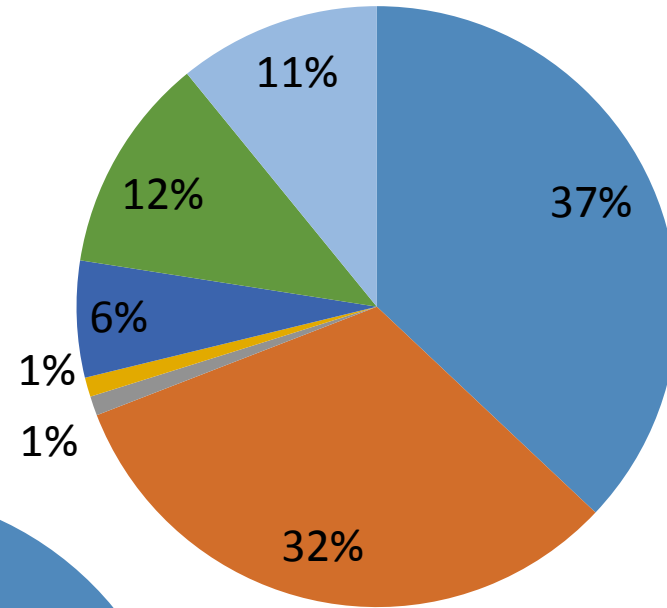
**Hotel 3**

- Vegetable
- Rice
- Banana leaf
- Bone
- Egg skin
- Paper
- Plastic

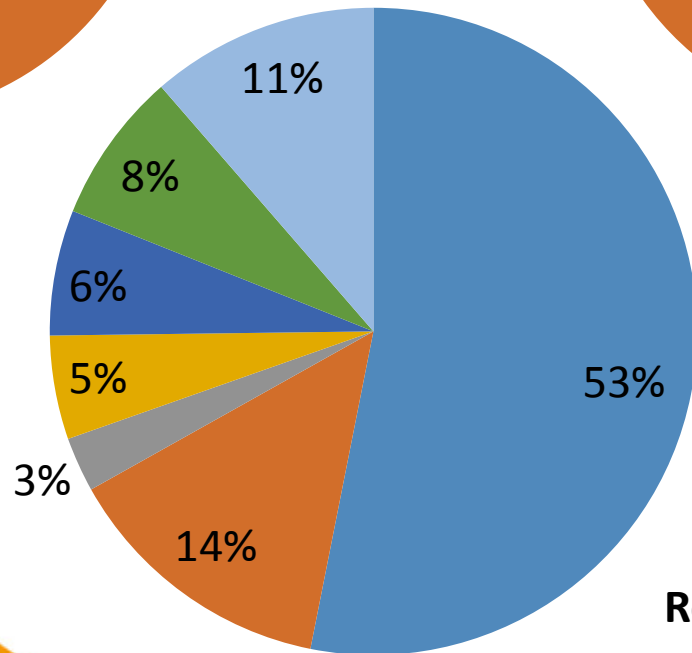
# 3. Restaurants



resto 1



resto 2



Resto 3

- Veg/fruit
- Rice
- Banana leaf
- Bone
- Eggs Skin
- Paper, Tissue
- Plastic

# Result of amount and density

		<b>Amount kg/day</b>	<b>Density kg/l</b>
<b>Cihargeulis Market</b>	<b>small restaurant 1</b>	<b>3.59</b>	<b>0.24</b>
	<b>small restaurant 2</b>	<b>1.04</b>	<b>0.22</b>
	<b>vegetable booth</b>	<b>3.82</b>	<b>0.25</b>
<b>Sederhana Market</b>	<b>small restaurant 1</b>	<b>2.1</b>	<b>0.2</b>
	<b>small restaurant 2</b>	<b>3.47</b>	<b>0.27</b>
	<b>vegetable booth</b>	<b>3.24</b>	<b>0.23</b>
<b>Hotel</b>	<b>hotel 1</b>	<b>6.66</b>	<b>0.46</b>
	<b>hotel 2</b>	<b>5.08</b>	<b>0.36</b>
	<b>hotel 3</b>	<b>7.45</b>	<b>0.52</b>
<b>Middle class restaurant</b>	<b>resto 1</b>	<b>7.36</b>	<b>0.49</b>
	<b>resto 2</b>	<b>6.99</b>	<b>0.47</b>
	<b>resto 3</b>	<b>5.34</b>	<b>0.35</b>

# Conclusion of sampling survey

- Measurements were carried out for 8 days, in accordance with Indonesian National Standard (SNI) 19-3964-1994
- Food waste must be separated into vegetable, rice, Banana leaf, bone, eggshell, paper, plastic.
- The density of food waste from traditional market is 0.20-0.27 kg/l.
- The density of food waste from hotel and middle class restaurant is 0.36-0.52 kg/l.

# Training in Japan (Site visit)



Bio-digester in Ogawa town



BIOENERGY



Kawasaki Nambu School lunch Center

# Training program in November

1. Date: 27, November 2018
2. Venue: Gino Feruci kebon Jati Hotel
3. Participants: Managers of restaurants and hotels and PDK
4. Agenda: Policy of SWM in Bandung city/  
Commercial organic waste management in  
Japan /Guidelines for solid waste  
management in commercial sectors
5. Evaluation



# Manual (Draft)

Item	Contents	Use
<b>Guideline</b> for separation and collection of commercial organic waste	Essence for action plan in Bandung City	To be incorporated into <b>master plan</b>
<b>Manual</b> for separation of organic waste in <b>hotels</b>	How to <b>separate</b> organic waste	<b>Text</b> for training program
<b>Manual</b> for separation of organic waste in <b>restaurants and commercial sectors</b>		
<b>Manual</b> for separation of organic waste in <b>traditional markets</b>		
<b>Manual</b> for collection and transportation of commercial organic waste	How to <b>collect and transport</b> commercial organic waste	





Thank you for your attention!

Terima kasih