





WASTE DEFINITION

The rest of the day-to-day activities of human and or from natural processes that form solid

WASTE MANAGEMENT OBJECTIVES

- Reduce waste generation
- Handle garbage (sorting, collecting, transporting, and processing the final in where the final processing)
- So as to create a good environment, clean, and healthy

MAKASSAR CITY POPULATION IN THE LAST TEN YEARS

Nu	Year	NUMBER OF MALES (Soul)	NUMBER OF WOMEN (Soul)	NUMBER OF POPULATION (Soul)
1	2000	547,687	565,001	1,112,688
2	2001	557,050	573,334	1,130,384
3	2002	565,882	582,430	1,148,312
4	2003	572,686	587,325	1,160,011
5	2004	582,382	596,641	1,179,023
6	2005	582,572	610,862	1,193,434
7	2006	611,049	612,491	1,223,540
8	2007	618,233	617,006	1,235,239
9	2008	601,304	652,352	1,253,656
10	2009	610,270	662,079	1,272,349
11	2010	642,098	697,276	1,339,374

TABLE WASTE AND ARE HANDLED PER DAY IN THE CITY OF MAKASSAR

LOCATION	GENERATION (M3/Day)	TO THE TOTAL GENERATION (%)	UNTREATED WASTE (M3/Day)	DIFFERENCE IN THE GENERATION AND UNTREATED (M3/Day)
Household				
Industrial	226.46	6.15	216.81	9.65
Commercial	318.42	8.65	282.18	36.24
Public Area	1325.61	36.02	1155.67	169.94
NUMBER	1,870.49	50.82	1,654.66	215.83
Total				
Industrial Area	588.36	15.99	522.99	65.37
Commercial Area	134.41	3.65	120.47	13.94
Public Area	112.95	3.07	108.82	4.13
Industrial Area	74.68	2.03	67.45	7.23
Public Area	94.26	2.56	84.32	9.94

COMPARISON LIST OF WASTE HANDLING THE CITY OF MAKASSAR IN (M3/ DAY) FROM 1997/1998 TO DECEMBER 2010

NU	YEARS OF SERVICE	WASTE GENERATION	UNHANDLED	% OF THE GENERATION
1	1997/1998	2.913,40 M3/DAY	2.753,79 M3/DAY	94,52%
2	1998/1999	3.311,60 M3/DAY	2.987,40 M3/DAY	90,21%
3	1999/2000	3.535,20 M3/DAY	2.996,67 M3/DAY	84,77%
4	2000	3.816,00 M3/DAY	3.064,00 M3/DAY	80,29%
5	2001	3.918,00 M3/DAY	2.675,30 M3/DAY	68,28%
6	2002	3.560,00 M3/DAY	2.871,84 M3/DAY	80,67%
7	2003	3.748,00 M3/DAY	3.251,74 M3/DAY	86,76%
8	2004	3.580,15 M3/DAY	3.121,55 M3/DAY	87,19%
9	2005	3.546,21 M3/DAY	3.109,56 M3/DAY	87,69%
10	2006	3.582,01 M3/DAY	3.151,27 M3/DAY	87,97%
11	2007	3.661,81 M3/DAY	3.245,29 M3/DAY	88,63%
12	2008	3.812,69 M3/DAY	3.315,20 M3/DAY	86,95%
13	2009	3.680,03 M3/DAY	3.278,12 M3/DAY	89,08%

WASTE MANAGEMENT OF A NEW PARADIGM

PRINCIPLES OF WASTE AS A RESOURCE prioritize
Prioritize PRINCIPLE POLLUTION CONTROL

IMPLEMENTATION OF PRINCIPLES TSB ACTIVITIES PERFORMED :

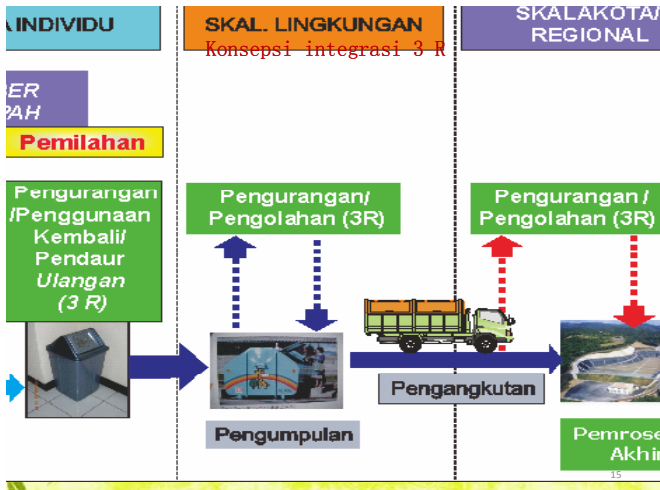
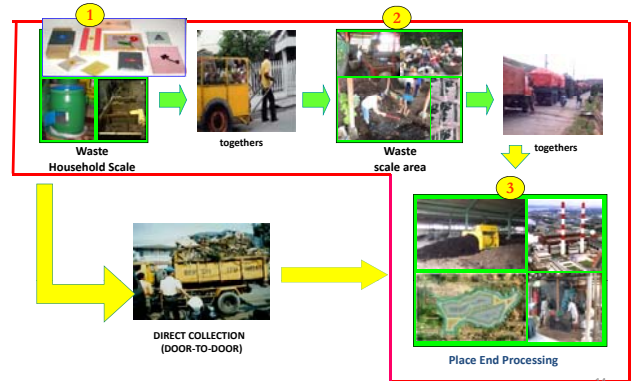
1. 3R (*REDUCE, REUSE, RECYCLE*).
2. EXTENDED PRODUCER'S RESPONSIBILITY (EPR).
3. *WASTE TO ENERGY*.
4. END MANAGEMENT That *ENVIRONMENTAL FRIENDLY (SANITARY LANDFILL)*.

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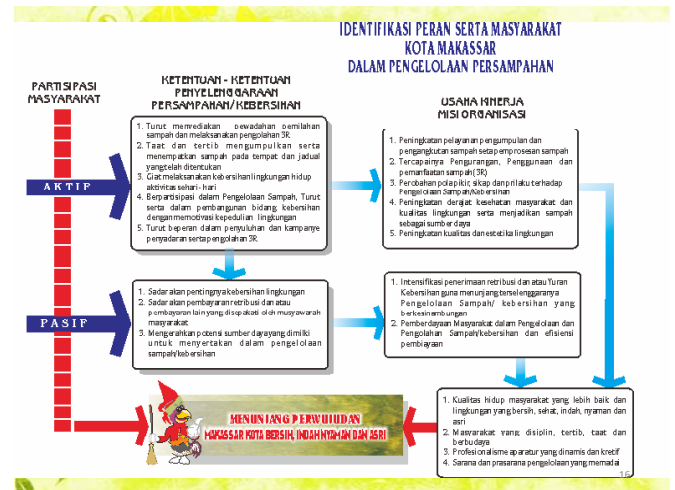
1. SAVES RESOURCES.
2. EXPENSES pollutants reduced.
3. ECONOMIC VALUE & OPEN EMPLOYMENT.
4. LOW OPERATIONAL COST.
5. EXPENSES landfill is reduced.

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NEW PARADIGM MANAGING WASTE



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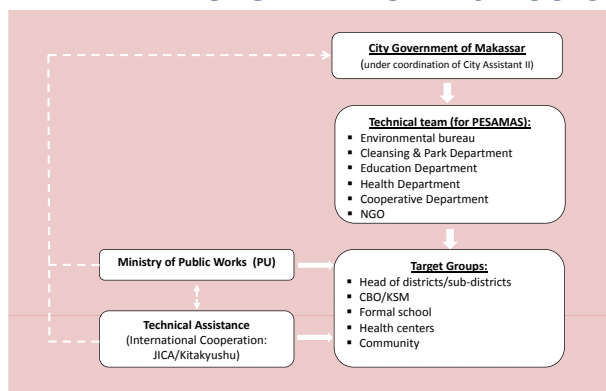
ACTION PLAN FOR WASTE REDUCTION PROGRAM THROUGH COMPOSTING (PESAMAS) IN MAKASSAR CITY (2011-2013)

ANDI MURTAN
Chief of Urban Cleaning Management Division
Cleansing & Park Department
City Government of Makassar
INDONESIA

COMMITMENT OF CITY GOVERNMENT FOR COMPOSTING & 3R

- Promoting a community based composting (PESAMAS) is a model of waste reduction program up to 5-10% within next 3 years by optimizing waste separation through composting (household and communal level), under technical assistance of Kitakyushu City/JICA
- Conducted grass-root project for composting (2009) under technical assistance of Kitakyushu City/JICA & physical supports from Ministry of Public Works (PU)

ORGANIZATIONAL STRUCTURE



Action 1: PROMOTE COMPOSTING PRACTICES

No.	Activity	Indicator of Activity			Stakeholder	Financial Sources	Expected Support from JICA
		2011	2012	2013			
1.1	Communal composting for residential area	Operated 3 composting centers at Rusunawa Mariso, BTP Tamalanrea, & Sambung Jawa	-	Established 2 composting centers at 2 residential area	Makassar City, NGOs, Public Works (PU)	Makassar, City PU	Technical assistance for composting & improving management of composting centers
1.2	Household composting (THM)	Distributed 500 THM units	Distributed 1,500 THM units	Distributed 3,000 THM units	Makassar City, community, NGOs	Makassar City	Technical assistance for composting & awareness campaign modules
1.3	Composting for school level: <ul style="list-style-type: none"> Elementary school Junior High School Senior High School 	35 school: 350 THM units	45 school: 450 THM units	60 school: 600 THM units	Makassar City, school, PU	Makassar City, PU	Technical assistance for composting and environmental education module for school.
		10 school: 150 THM & 40 aerobic-composter	25 school: 250 THM & 100 aerobic-composter	30 school: 450 THM & 180 aerobic-composter			
		8 school: 80 THM & 24 aerobic-composter	13 school: 130 THM & 45 aerobic-composter	23 school: 345 THM & 115 aerobic-composter			
1.4	Composting at health centers:	60 centers: 67 THM	112 centers: 126 THM	136 centers: 150 THM	Makassar City, Health centers	Makassar City	-
1.5	Composting for park	7 parks: 21 aerobic-composter units	Established 1 composting center at masjidry park	-	Makassar City	Makassar City	Technical assistance for composting & modules
1.6	Composting at public facilities (bus station)	Distributed 30 THM & 8 aerobic-composter units	Distributed 25 THM & 8 aerobic-composter units	Distributed 25 THM & 8 aerobic-composter units	Makassar City	Makassar City	-
1.7	Composting for traditional market	-	-	Established 1 composting center at 1 market	Makassar City, PU	Makassar City, PU	Technical assistance for composting & modules
1.8	Operational support for composting center	OM for 3 composting centers	OM support for 3 composting centers	OM support for 3-5 composting centers (including compost centers for market)	Makassar City, PU	Makassar City, PU	-
	Procurement of composting equipments for 1 composting center (Sambung Jawa)	Procurement of composting equipments for 1 composting center	Procurement of composting equipments for 1 composting center				
1.9	Procurement transportation for disposing residue to landfill	-	1 unit transportation	1 unit transportation	Makassar City, PU	Makassar City, PU	-
	-	2 units container for residue collection	2 units container for residue collection				

Action 2: ENVIRONMENTAL AWARENESS CAMPAIGN

No.	Activity	Indicator of Activity			Stakeholder	Financial Sources	Expected Support from JICA
		2011	2012	2013			
2.1	Makassar Green & Clean (MGC)	50 Districts	75 Districts	100 Districts	Makassar City, NGOs, private sectors, communities, MGC, media	Makassar City, private sector, media	-
2.2	Selecting motivator & facilitators for environmental cadre	Motivator team (10 person), facilitator team (50 person) and cadre team (1,500 person) available	Motivator team (10 person), facilitator team (75 person) and cadre team (2,250 person) available	Motivator team (10 person), facilitator team (100 person) and cadre team (3,000 person) available	Makassar City, NGOs, private sectors, communities, MGC, media	Makassar City, private sector, media	-
2.3	Developing manual guideline for solid waste management at source level	Draft manual guideline of waste separation at source level	Draft manual guideline of waste collection and transportation	Dissemination manual of waste management	Makassar City	Makassar City	Technical assistance for developing Standard Operational Procedure (SOP) for solid waste management at source level

Action 3: CAPACITY BUILDING

No.	Activity	Indicator of Activity			Stakeholder	Financial Sources	Expected Support from JICA
		2011	2012	2013			
3.1	Short-course on waste management policy to Japan for the decision makers level	-	Conducted short-course policy on waste management to Japan for the decision makers level	-	Makassar City	Makassar City, JICA	Training package (program, local transport)
3.2	International training/short-course for improving technical capacity on SR implementation in Kitakyushu City/other cities in Japan	-	Assign at least 1 person of technical staff to international training	Assign at least 1 person of technical staff to international training	Makassar City	Makassar City	Training package (program, accommodation & local transport)
3.3	Study tour of waste management (local/national level)	Conducted at least 1 time study tour on waste management (local/national level)	Conducted at least 1 time study tour on waste management (local/national level)	Conducted at least 1 time study tour on waste management (local/national level)	Makassar City, NGOs, community, PU	Makassar City, PU, JICA	Training program & local transport

Action 4: PROMOTING RECYCLING PRODUCT

No.	Activity	Indicator of Activity			Stakeholder	Financial Sources	Expected Support from JICA
		2011	2012	2013			
4.1	Promoting of compost utilization	Research & Development for compost quality and composition	Identify mechanism of compost marketing	-	Makassar City, Community	Makassar City	Technical assistance for promoting organic farming/urban farming & introducing an environmental business system on recycling product for local government (LG)
		Identify compost demand/supply in Makassar City & South Sulawesi Province	Established piloting project for organic farming	Established piloting project for organic farming			
		Promoting urban farming concept at household/residential area (traditional herb plan, organic vegetables, etc)	Promoting urban farming concept at household/residential area (traditional herb plan, organic vegetables, etc)	Promoting urban farming concept at household/residential area (traditional herb plan, organic vegetables, etc)			
4.2	Marketing for recycling handycraft products	Identification the demand & capacity of recycling crafts production in Makassar City	Identify mechanism of recycling crafts marketing	-	Makassar City	Makassar City	-

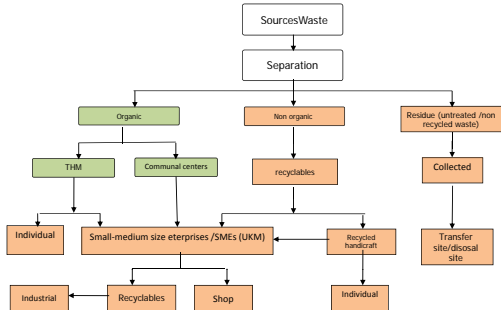
Action 5: MONITORING FOR PROJECT IMPLEMENTATION

No.	Activity	Indicator of Activity			Stakeholder	Financial Sources	Expected Support from JICA
		2011	2012	2013			
5.1	Establish PESAMAS team	Established PESAMAS team by Mayor decree (SK Walkota)	-	-	Makassar city, NGO	Makassar City	-
5.2	Monitoring & evaluation	Identify mechanism for project monitoring & evaluation	Conducting monitoring & evaluation activity	Conducting monitoring & evaluation activity	Makassar City, PESAMAS team	Makassar City	Technical assistance for monitoring & evaluation scheme (including the monitoring & evaluation tools/software, etc)
		Conducting monitoring & evaluation activity	Identify lesson learnt & input for project improvement	Identify lesson learnt & input for project improvement			



CITY OF MAKASSAR

Schematic Model for PESAMAS Implementation in Makassar City



Examples :

- Takakura Home Method (THM) and
- Aerobic- Composter volume 110 ltr



Thank You