

COMMUNITY-BASED SOLID WASTE BANK MODEL FOR SUSTAINABLE EDUCATION: THE EVOLUTION OF MIFTAHUL JANNAH SOLID WASTE BANK

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Indonesia



PRESENTATION OUTLINE



INTRODUCTION



WASTE MANAGEMENT SYSTEM IN
INDONESIA

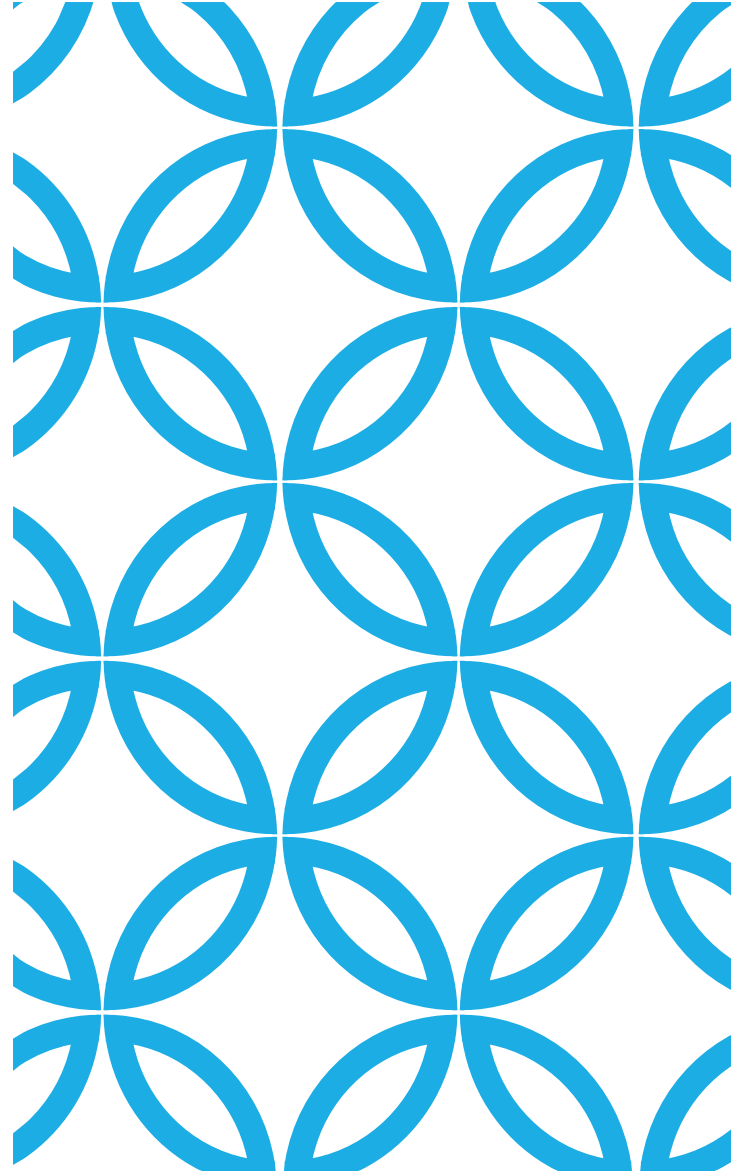
From Waste
to Resource

Shifting paradigms for smarter wastewater interventions
in Latin America and the Caribbean

COMMUNITY-BASED SOLID WASTE BANK
MODEL FOR SUSTAINABLE EDUCATION
(Case Study: TPA Miftahul Jannah)



CONCLUSION



INTRODUCTION

CURRENT WORLD POPULATION

WORLDOMETER, July 17, 2021:
05.22 pm Indonesia Time

Current World Population

7,879,898,869

[view all people on 1 page >](#)

TODAY

Births today
277,779

Deaths today
116,618

Population Growth today
161,161

THIS YEAR

Births this year
75,885,875

Deaths this year
31,858,708

Population Growth this year
44,027,167

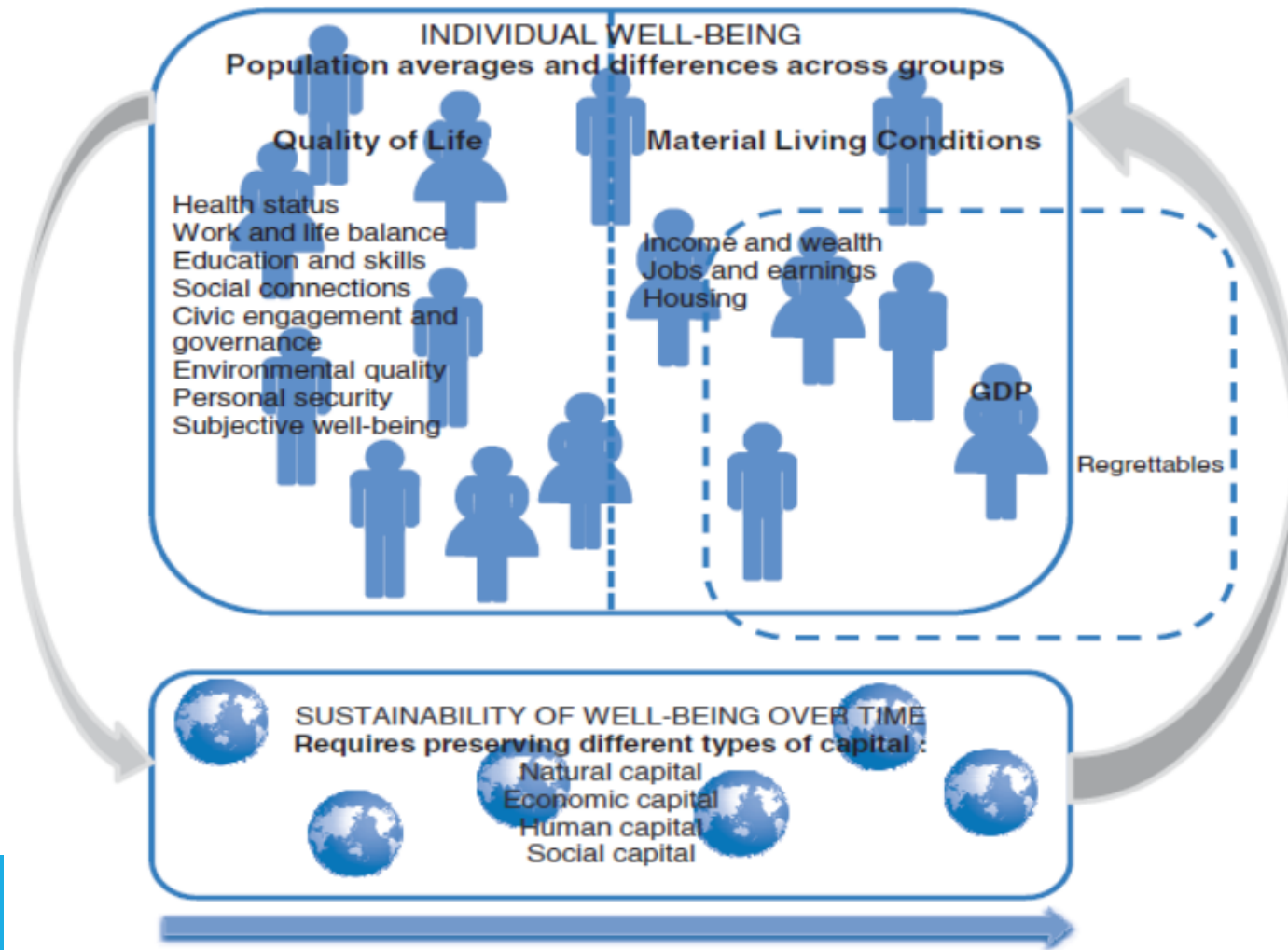
World Population Forecast (2020-2050)

View population projections for all years (up to 2100)

Year (July 1)	Population	Yearly % Change	Yearly Change	Median Age	Fertility Rate	Density (P/Km ²)	Urban Pop %	Urban Population
2020	7,794,798,739	1.10 %	83,000,320	31	2.47	52	56.2 %	4,378,993,944
2025	8,184,437,460	0.98 %	77,927,744	32	2.54	55	58.3 %	4,774,646,303
2030	8,548,487,400	0.87 %	72,809,988	33	2.62	57	60.4 %	5,167,257,546
2035	8,887,524,213	0.78 %	67,807,363	34	2.70	60	62.5 %	5,555,833,477
2040	9,198,847,240	0.69 %	62,264,605	35	2.77	62	64.6 %	5,938,249,026
2045	9,481,803,274	0.61 %	56,591,207	35	2.85	64	66.6 %	6,312,544,819
2050	9,735,033,990	0.53 %	50,646,143	36	2.95	65	68.6 %	6,679,756,162

Source: **Worldometer** (www.Worldometers.info)

Elaboration of data by United Nations, Department of Economic and Social Affairs, Population Division. *World Population Prospects: The 2019 Revision*. (Medium-fertility variant).



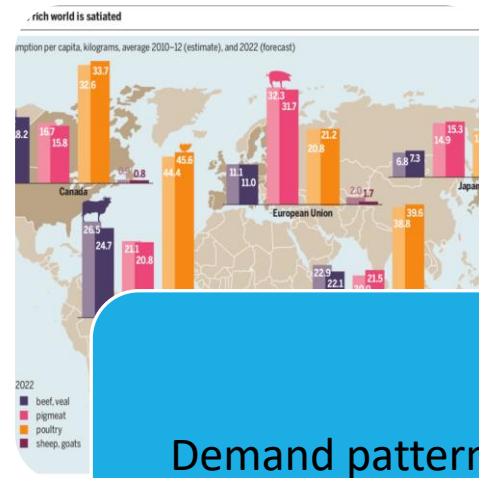
EVERYONE ASPIRES TO A GOOD LIFE

OECD, 2011

THE TRIGGERS OF GLOBAL INDUSTRIAL SYSTEM



Globalization
 Developing area
 Middle class economy
 Population
 Urbanization
 Technology



Demand pattern
 Consumer behavior
 Product life cycle



Natural resources depletion
 Increasing the amount of waste, pollution, and emission

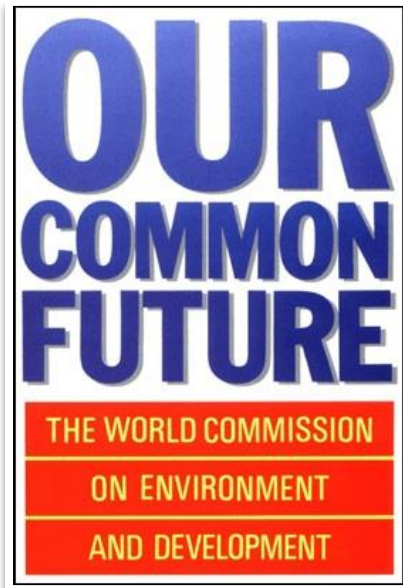


SUSTAINABLE DEVELOPMENT

“Meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.”



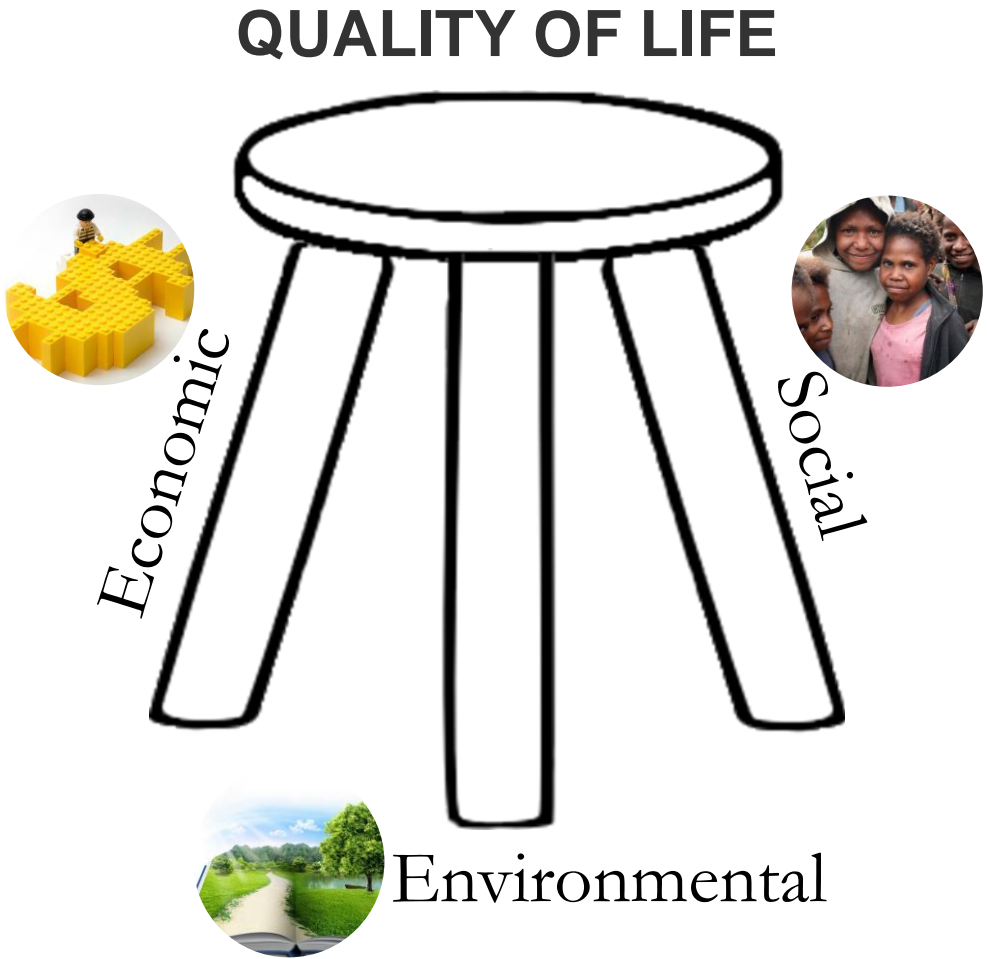
WCED, 1987



Sustainability can be referred to as a system that is economically effective, environmentally sustainable and socially fair.

Dr. Gro Harlem Brundtland

THE TRIPPLE BOTTOM LINE OF SUSTAINABILITY





The 17 sustainable development goals (SDGs) to transform our world:

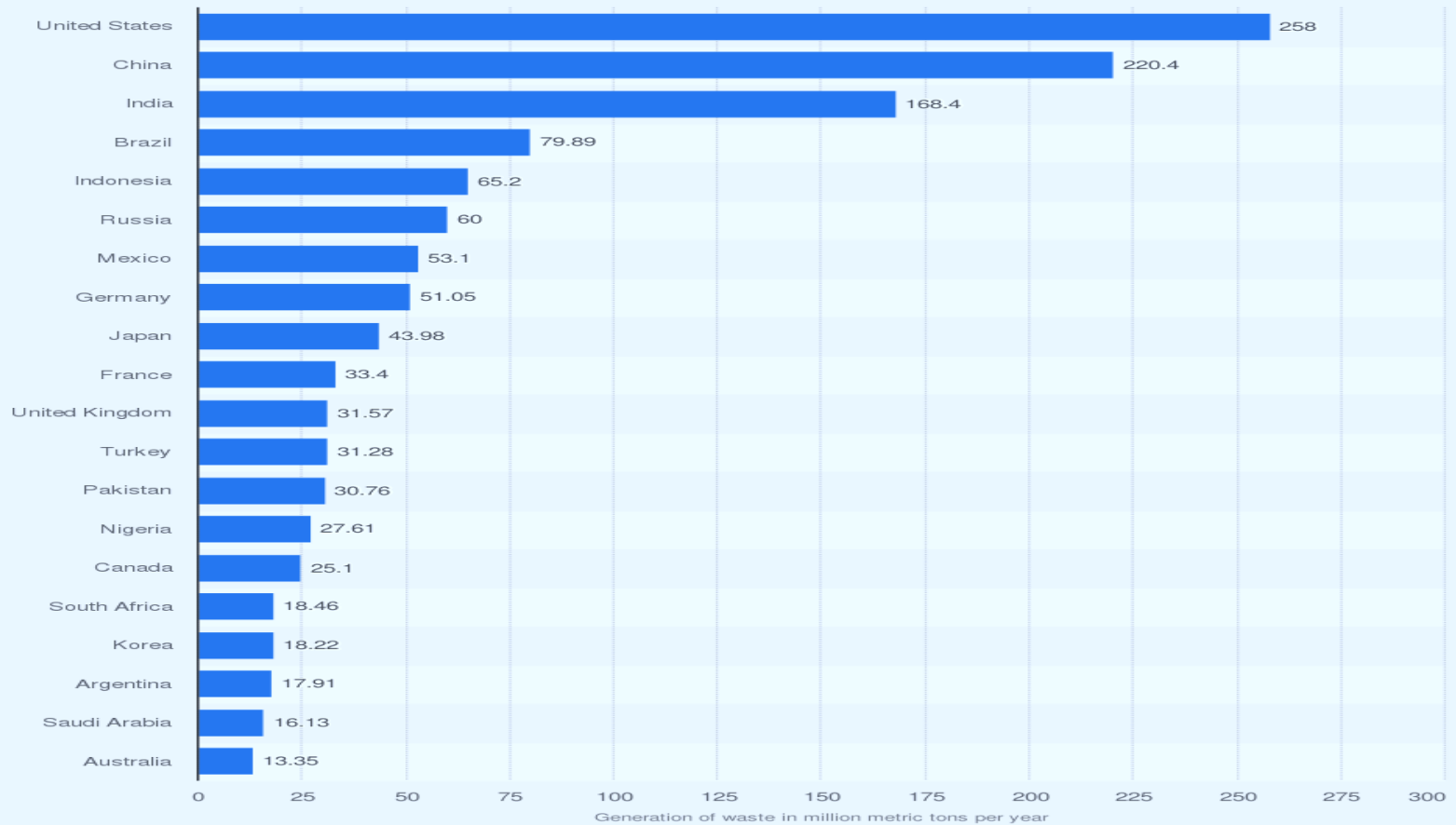
- GOAL 1: No Poverty
- GOAL 2: Zero Hunger
- GOAL 3: Good Health and Well-being
- GOAL 4: Quality Education
- GOAL 5: Gender Equality
- GOAL 6: Clean Water and Sanitation
- GOAL 7: Affordable and Clean Energy
- GOAL 8: Decent Work and Economic Growth
- GOAL 9: Industry, Innovation and Infrastructure
- GOAL 10: Reduced Inequality
- GOAL 11: Sustainable Cities and Communities
- GOAL 12: Responsible Consumption and Production
- GOAL 13: Climate Action
- GOAL 14: Life Below Water
- GOAL 15: Life on Land
- GOAL 16: Peace and Justice Strong Institutions
- GOAL 17: Partnerships to achieve the Goal



This Photo by Unknown Author is licensed under CC BY-SA



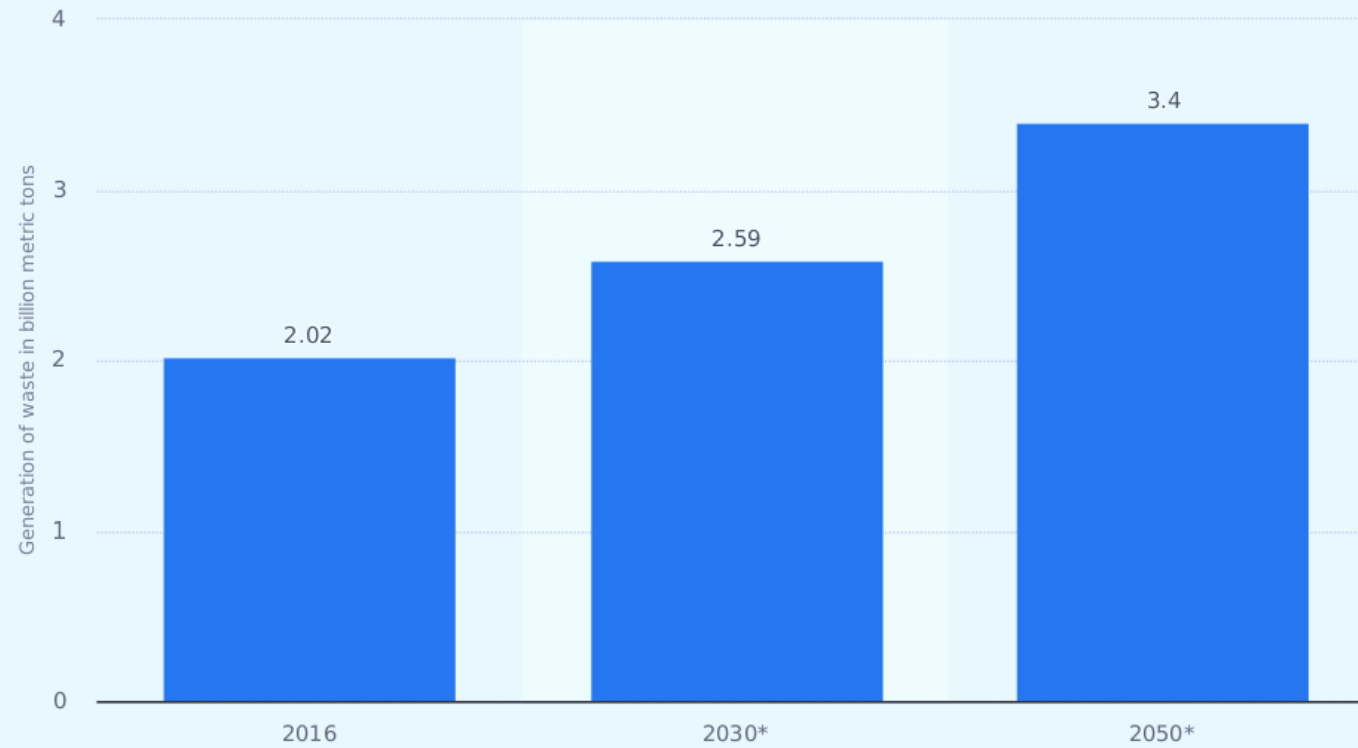
Generation of municipal solid waste worldwide in 2017, by select country (in million metric tons)*



Source
World Bank
© Statista 2020

Additional Information:
Worldwide, 2017

Projected generation of municipal solid waste worldwide from 2016 to 2050 (in billion metric tons)



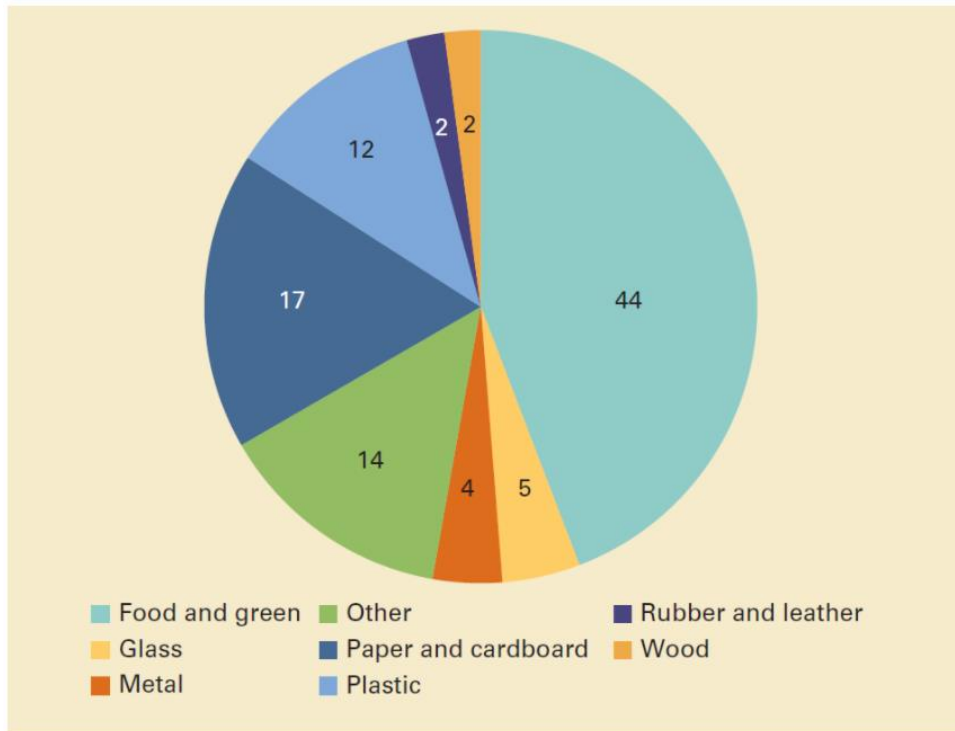
Source
World Bank
© Statista 2019

Additional Information:
Worldwide; 2016

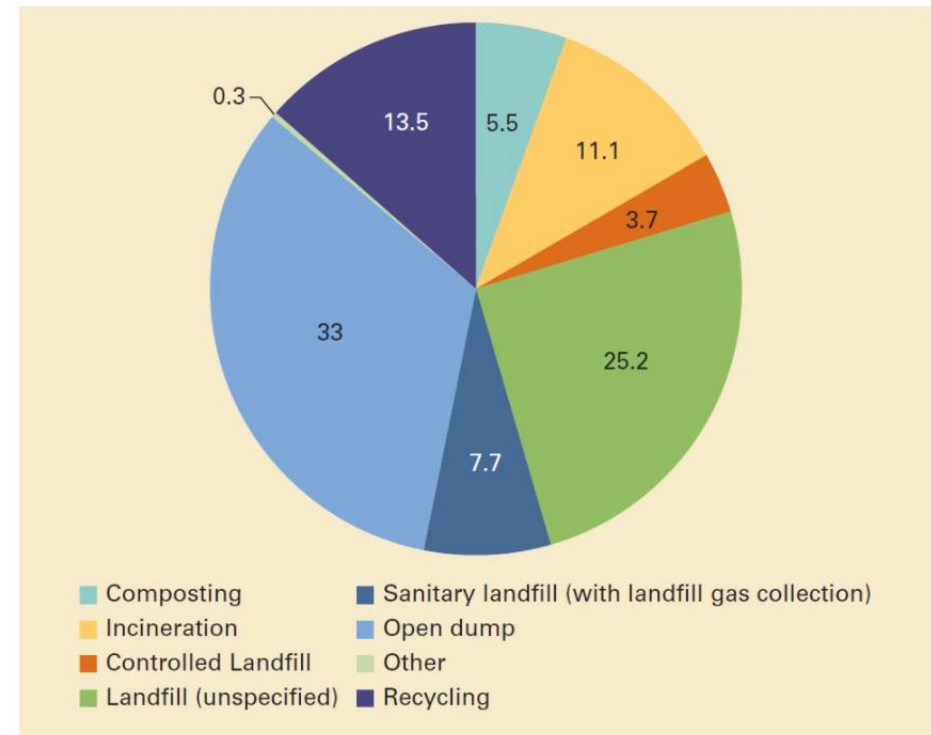
GLOBAL WASTE COMPOSITION AND TREATMENT

(The World Bank, 2021)

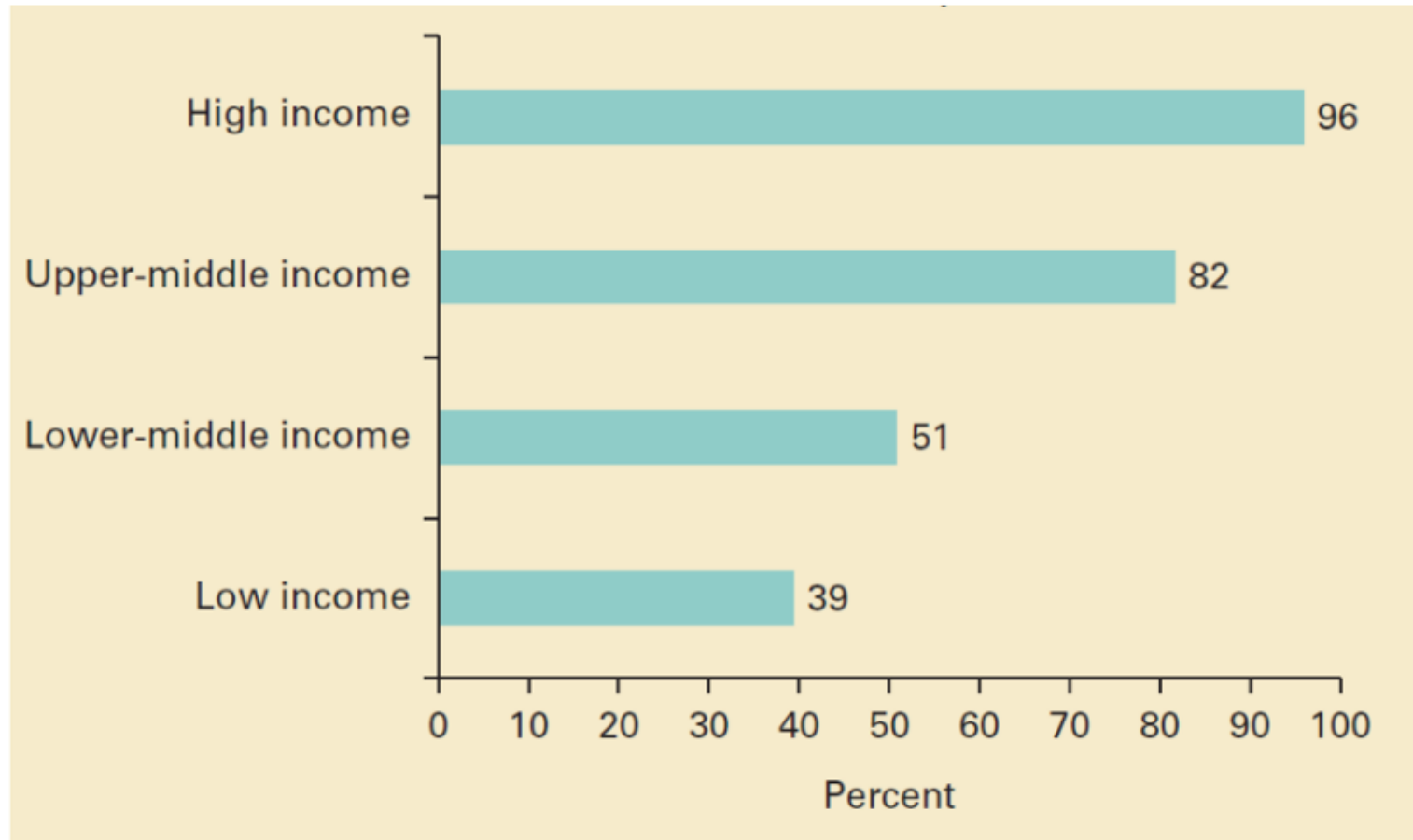
Global waste composition (percent)



Global treatment and disposal of waste (percent)



Waste collection rates, by income level (percent)




Source: *The World Bank, 2021*

SOLID WASTE MANAGEMENT


SWM refers to all activities pertaining to the control, collection, transportation, processing, and disposal of waste in accordance with the best principles of public health, economics, engineering, conservation, aesthetics, and other environmental considerations. SWM scope includes all attendant administrative, financial, legal, and planning and engineering functions (Salequzzaman *et al.*, 2001).



 Public health

 Environmental protection

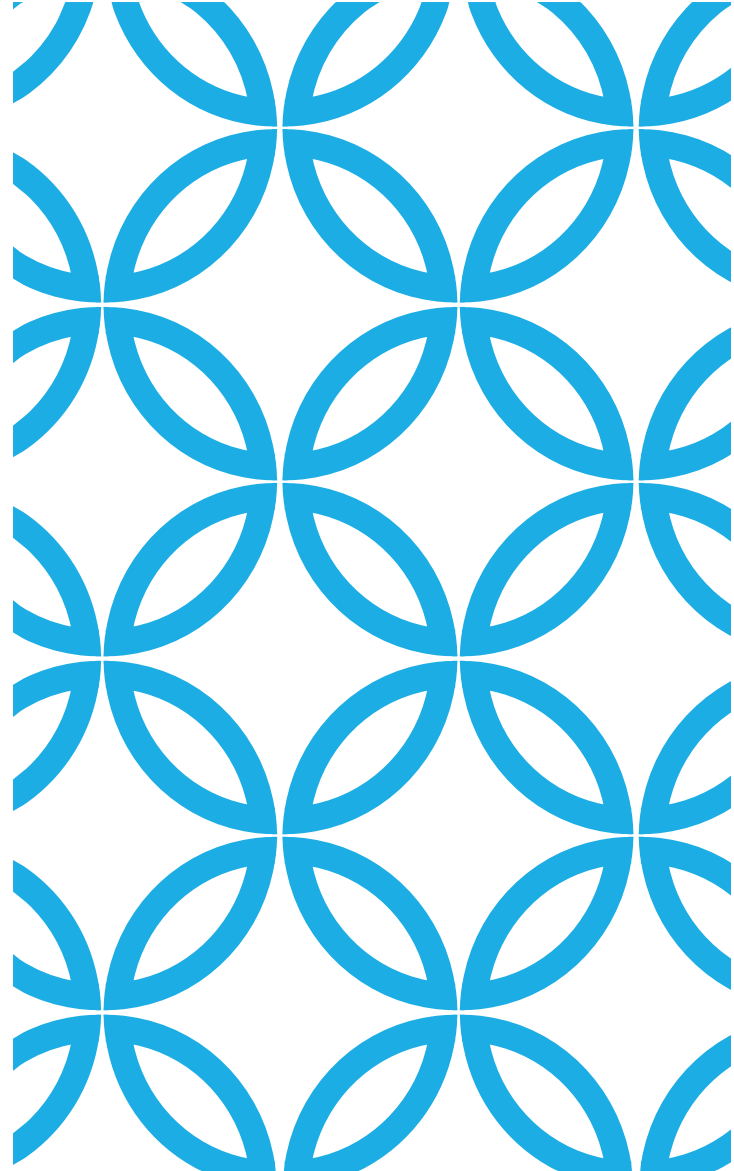
 Resource value of waste

 Closing the loop

 Institutional and responsibility issue

 Public awareness

A CATEGORIZATION OF DEVELOPMENT DRIVERS IN WASTE MANAGEMENT



WASTE MANAGEMENT SYSTEM IN INDONESIA

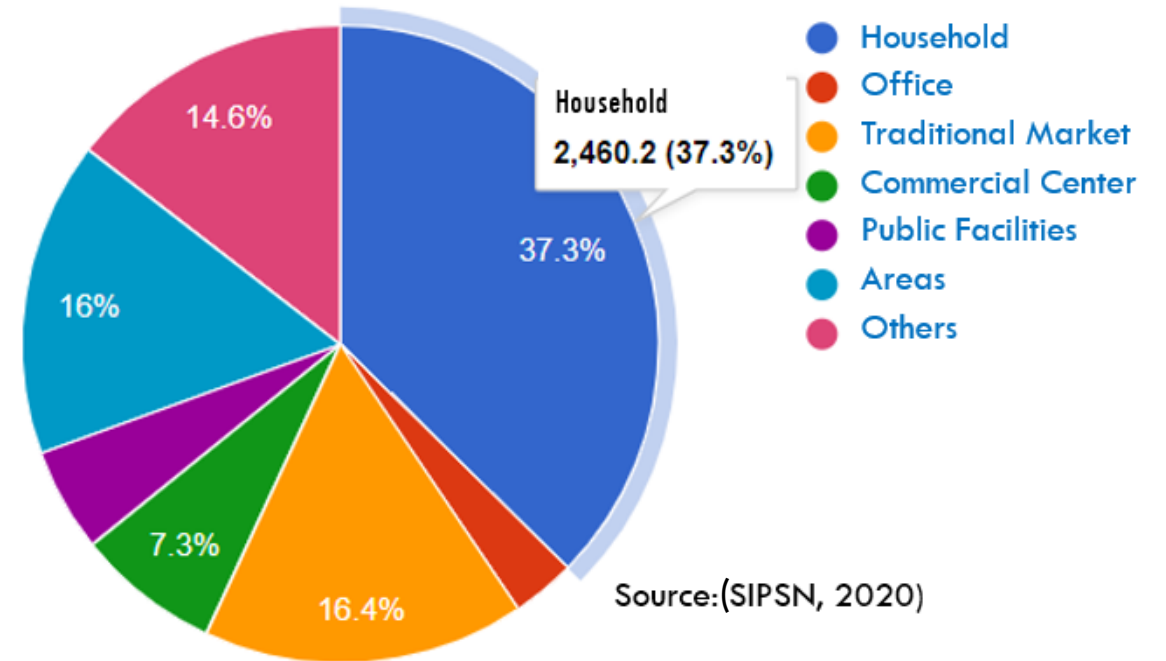
WASTE GENERATION IN INDONESIA

2018: 64 million tons
from 267 million people.

2020: 67,8 million tons
from 270 million people

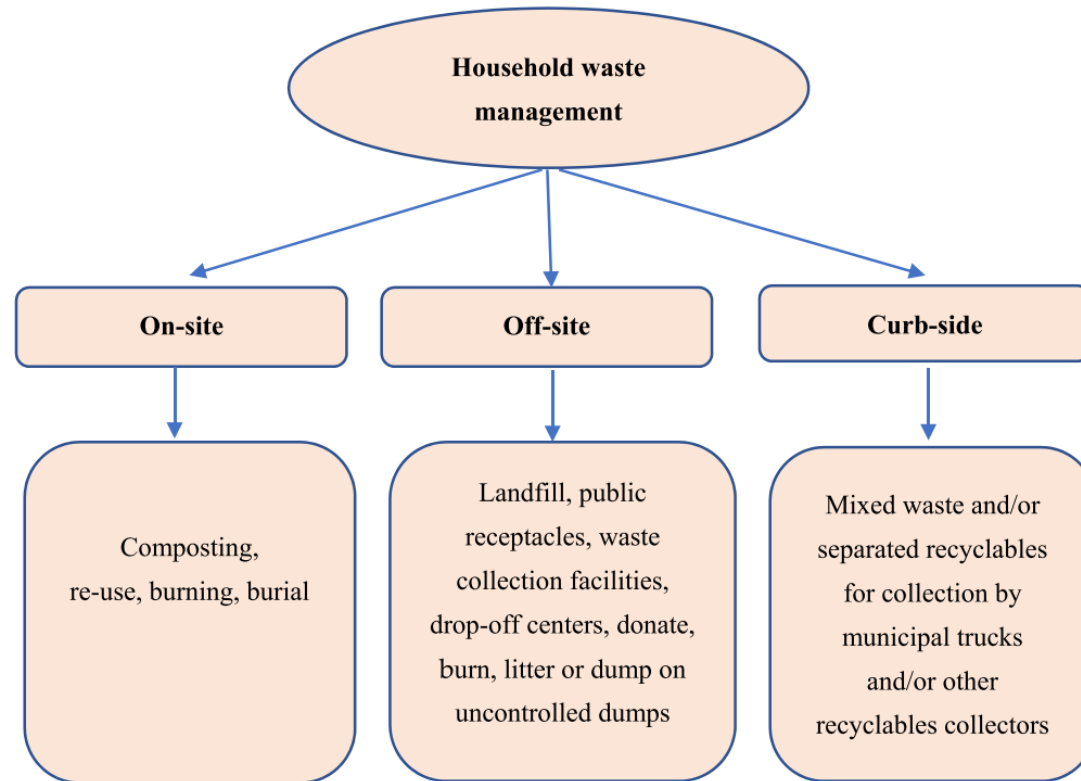
- 0.68 kg per day per person.
(KLHK, 2021)

Composition of waste by source 2020



THE WASTE MANAGEMENT OPTIONS AVAILABLE TO HOUSEHOLDS

(SERRET AND FERRARA, 2008)



INDONESIAN LAW NO. 18 YEAR 2008

Waste management is defined as a systematic, comprehensive, and continuous activity which includes waste reduction and waste management.

Waste management cannot be solved only by the government by "collecting, carrying away, disposing" to the landfill, but it must be done comprehensively and integrated from upstream to downstream to provide economic benefits, health for the community and safety for the environment, and can change people's behavior.

WASTE MANAGEMENT IN INDONESIA

Actors

- Formal sector (municipal agencies)
- Informal sector (scavengers, itinerant waste pickers, or itinerant waste buyers) - a labor intensive, with low technology and low income

Mostly linear pattern

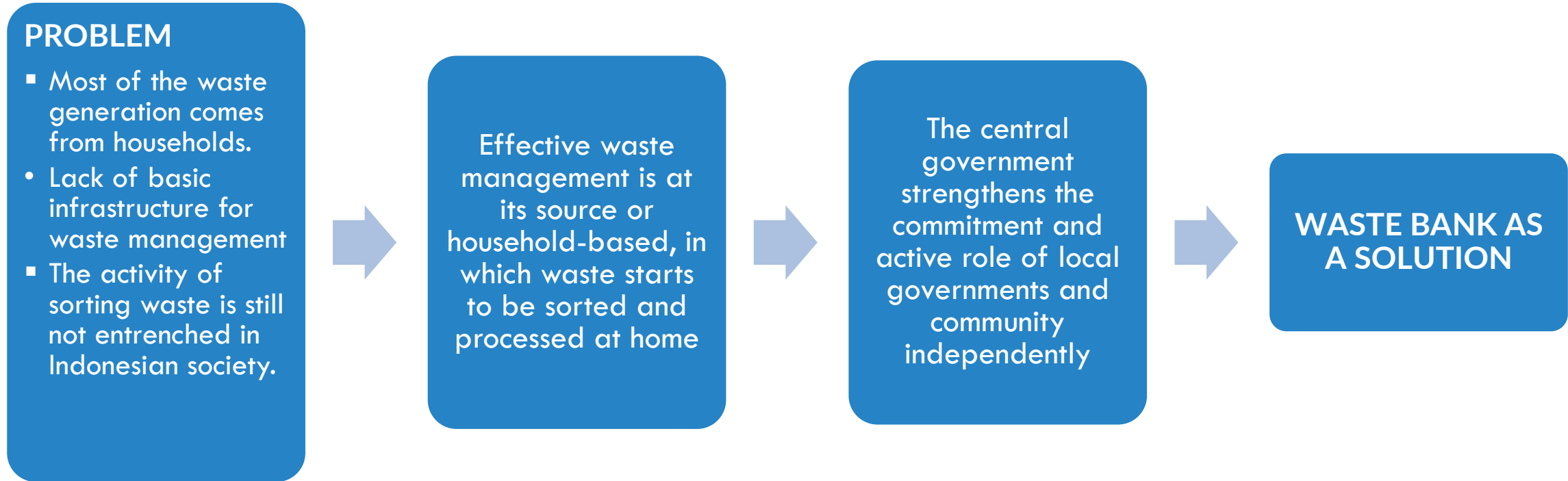
- Open dumping and landfilling contributes 69 % of the waste management pattern

Low absorption capacity of recycling activities (11% of the total national waste generation)

- South Korea: 50%
- Colombia: 20 %

Waste collection rate in Indonesia is less than 40 %

- Central Asian and Pacific countries: average of 70 %
- Scavengers as an informal business make a large contribution (80%)



INDONESIAN WASTE MANAGEMENT APPROACH

INDONESIA REGULATIONS FOR HOUSEHOLD WASTE MANAGEMENT

(SIPSN, 2020)

UU No.18 Tahun 2008

- Management of Household Waste and Household-Type Waste

PP 27 Tahun 2020

- Specific Waste Management

Perpres No. 97 Tahun 2017

- National Policies and Strategies for the Management of Household Waste and Household-Type Waste

Permen LH No. 13 Tahun 2012

- Guidelines for the Implementation of Reduce, Reuse and Recycle Through Waste Banks

P.10/MENLHK/SETJEN/PLB.0/4/2018

- Guidelines for Formulating Regional Policies and Strategies for the Management of Household Waste and Household-Type Waste

QUANTITY

- More than 11 thousands

CONTRIBUTION

- 1.7% to the handling of national waste

ROLE

- As a place to store waste that has been sorted by type of waste
- Encourage public participation to participate in sorting waste.
- Empowering community through waste management

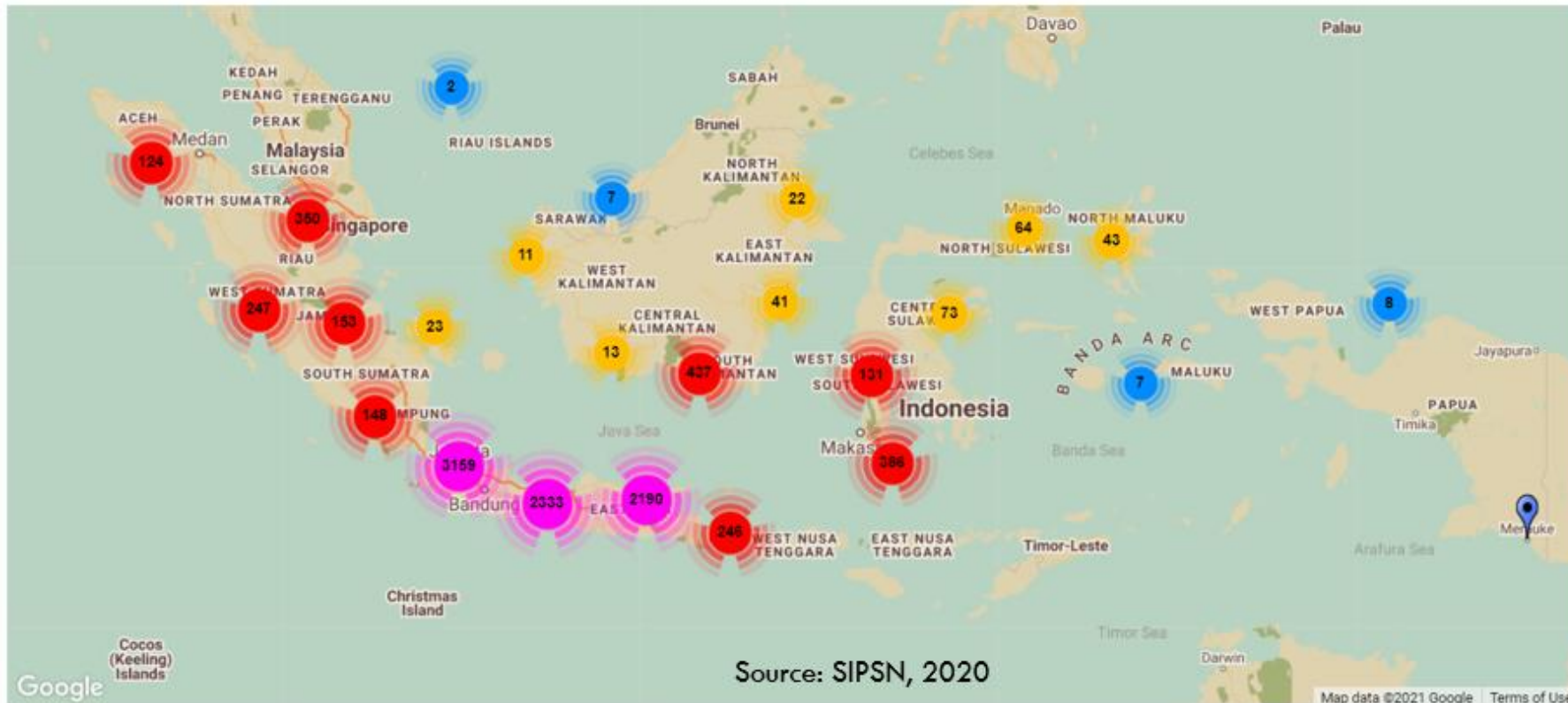
ORGANIZATION

- Community independently
- Community in collaboration with local governments
- Community in corporations with a corporate social responsibility (CSR) scheme

BENEFIT

- Increase community income
- Increase human social interactions

WASTE BANK AS A COMMUNITY-BASED WASTE MANAGEMENT



2015: 1075 units

2020: 11,330 unit

WASTE BANKS IN INDONESIA

(MEDCOM, 2021)

FACTORS INFLUENCING THE SUCCESS OF HOUSEHOLD WASTE MANAGEMENT

Changing Mindset

The willingness of households to participate in a separation-at-source program

The Establishment of Institutional Waste Management

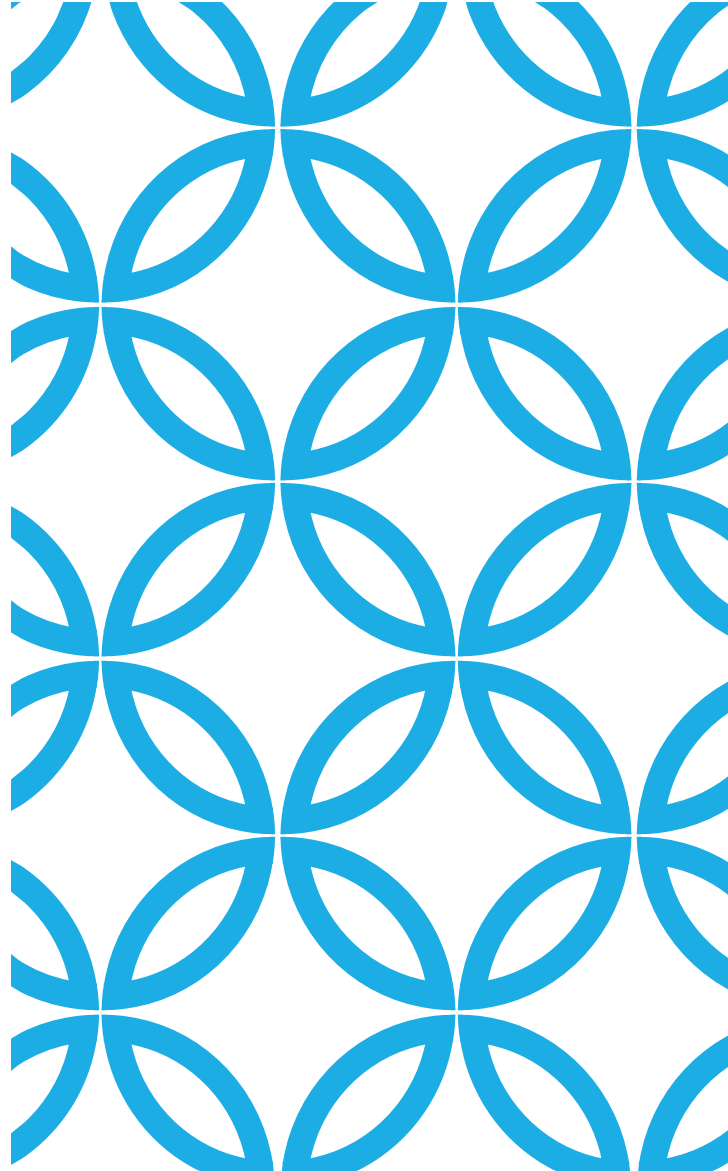
Financial and operational sustainability

Management Training and Waste Sorting Techniques.

Market Access.

Continuous Assistance

Good service



COMMUNITY-BASED WASTE BANK MODEL FOR SUSTAINABLE EDUCATION

Case Study: TPA Mihtahul Jannah



SUSTAINABLE EDUCATION
IS EDUCATIONAL PRACTICES
THAT EMPHASIZE THE BALANCE OF THE THREE PILLARS
OF SUSTAINABILITY



NATIONAL EDUCATION IN INDONESIA

(THE LAW OF THE REPUBLIC OF INDONESIA NUMBER 20 YEAR 2003)

DEFINITION

- Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation and state.

OBJECTIVE

- To develop the potential of students to become human beings who believe and fear God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens.

INDONESIAN EDUCATIONAL PATH

Formal, non-formal, and informal educations which can be complementary and enriching.

Religious education

- Aims to prepare students to be members of the community who understand and practice the values of their religions and/or be a theologian.
- May be organized in formal, non-formal, and informal education.

THE QURAN EDUCATION PARK (TAMAN PENDIDIKAN AL-QURAN, TPA)



One of the non-formal religious educations



Aims at improving the ability of students or learners to read, write, understand, and practice the content of the Quran



Legal basis: the Indonesian Government Regulation Number 55 Year 2007 about Religion Education and Religious Education



Funding sources: students' contribution, community fund/donors, government fund, and other kosher (*halal*) and non-binding funds

TPA MIFTAHUL JANNAH

Yogyakarta Special
Region (DIY)

Sleman District

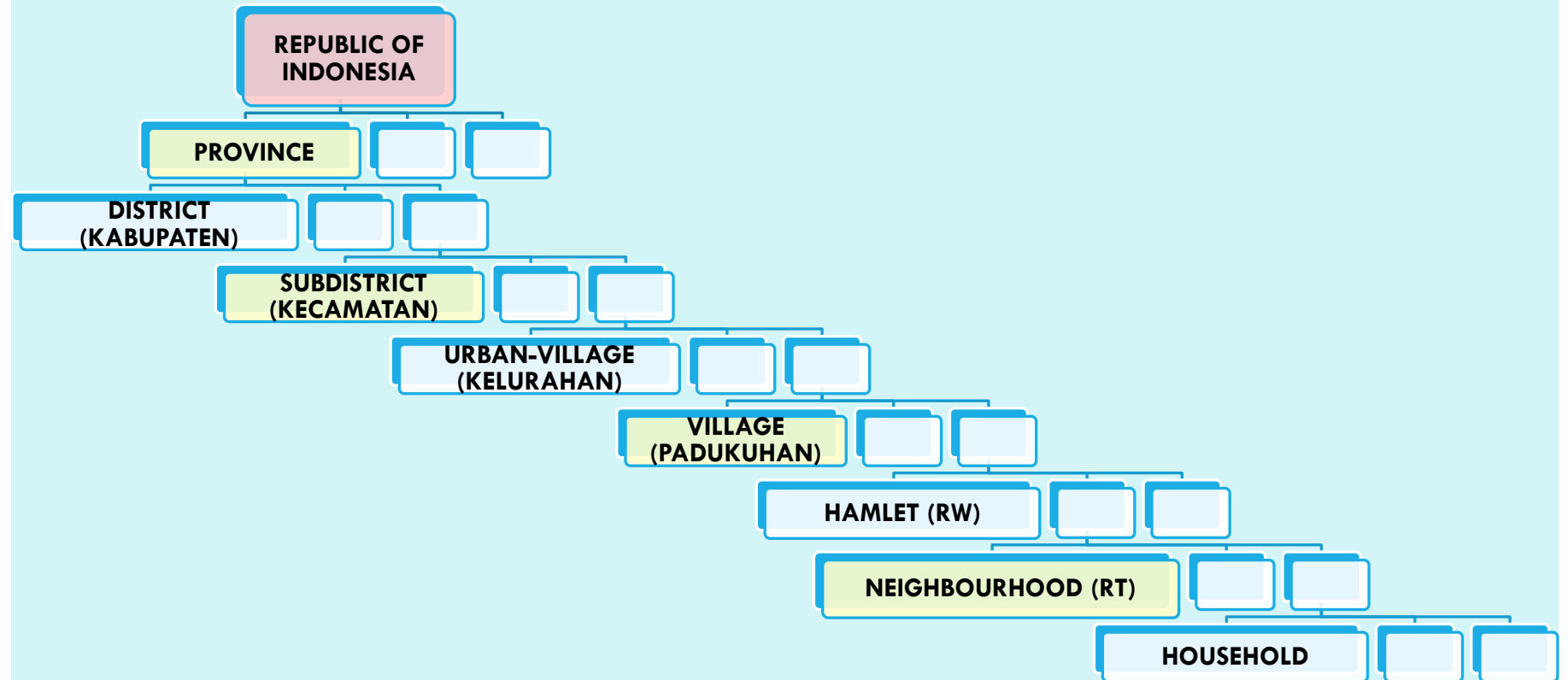
Berbah Subdistrict

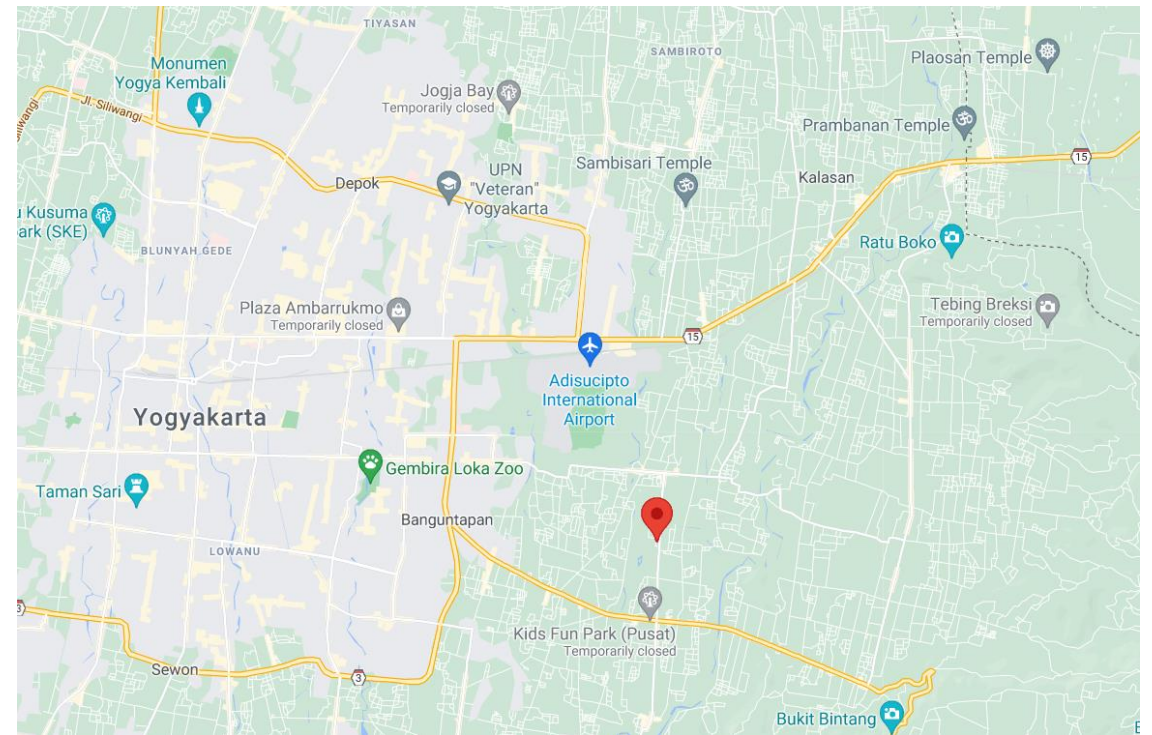
Tegaltirto Urban
Village

Sonosari Village

14th Hamlet

Indonesian Village Administration System





TPA MIFTAHUL JANNAH LOCATION

TPA MIFTAHUL JANNAH 2013

Established in October 11, 2009 by the youth of Sonosari hamlet and *Takmir* of Miftahul Falaah Mosque.

- *Takmir* is a group of people who have an obligation to prosper mosque.

Mission

- To contribute to the community in building a strong moral and character future generation.

Accredited "B" by Quran Kindergarten and TPA Coordinating Agency of the province of Yogyakarta Special Region since February 9, 2013.

Standards for learning process :

- Done through classical approach and private;
- Teaching materials are adapted to the curriculum in accordance with the level or learners' age;
- Learning method is adjusted to the developmental age of the students taking into account the principle of "playing while learning" or "learning while playing";
- Instructional media should be interesting and fun for students, safe and not harmful, meet the elements of beauty and neatness, raise the creativity of children, and support the planned teaching package; and
- Learning assessment includes cognitive, affective, and psychomotor aspects, and is conducted in a sustainable manner.

TPA MIFTAHUL JANNAH (2013)

Current condition:

- 53 students
- 9 *ustad/ustadzah* (male teacher/female teacher).
- Organizing committee: 13 local people.
- Education grade:
 - A (for pre-kkindergarten and kkindergarten children) .
 - B (for 1st to 3rd year of elementary school students)
 - C (for and 4th to 6th year of elementary school students)
 - D (for junior high school students)

High student learning interest

High committee members commitment

Certificates for graduated learners

- The Regional Director of Indonesian Direction and Development Institutions for Quran Kindergarten,
- Mosque Youth Communication Agency,
- Coordination Board for Quran Kindergarten,
- TPA Miftahul Jannah.



TPA MIFTAHUL JANNAH: PROBLEM

Lack of donors

Less regular financial contribution from students due to their poverty.

Difficult to improve the quality of the learning process

APPROACH TO SOLVE THE PROBLEM



Household as potential sources of income.

Limited landfills

Improper waste disposal due to lack of community understanding on environmentally sound waste management

Household waste as income

If every household produces waste and it can be collected and sold together to the waste buyer, then the money earned from selling the waste can be used to finance the operations of the TPA.

Shifting the perspective of the waste

From "waste as resource" to "waste as income generator".

IMPLEMENTATION

April 2012

- Waste management proposal by PKK (*Pemberdayaan Kesejahteraan Keluarga/ Family Welfare Empowerment*)

May 2012:

- TPA as a collecting point.
- TPA Students started to collect their own household waste.
- The collected waste was sold to waste collector/buyer (without structured and systematic management)
- Not all parents concerned about this action.

June 2014

- Community-based waste bank was developed
- *Supported by Community Services Grant of the Universitas Pembangunan Nasional "Veteran" Yogyakarta.*

WHAT IS PKK?

PKK is a community development movement that started from the Home Economic seminar in Bogor in 1957.

The PKK movement was socialized starting from the concern of the wife of the governor of Central Java in 1967.

The vision of PKK is to improve family welfare through the 10 main aspects of the family that are essentially basic human need

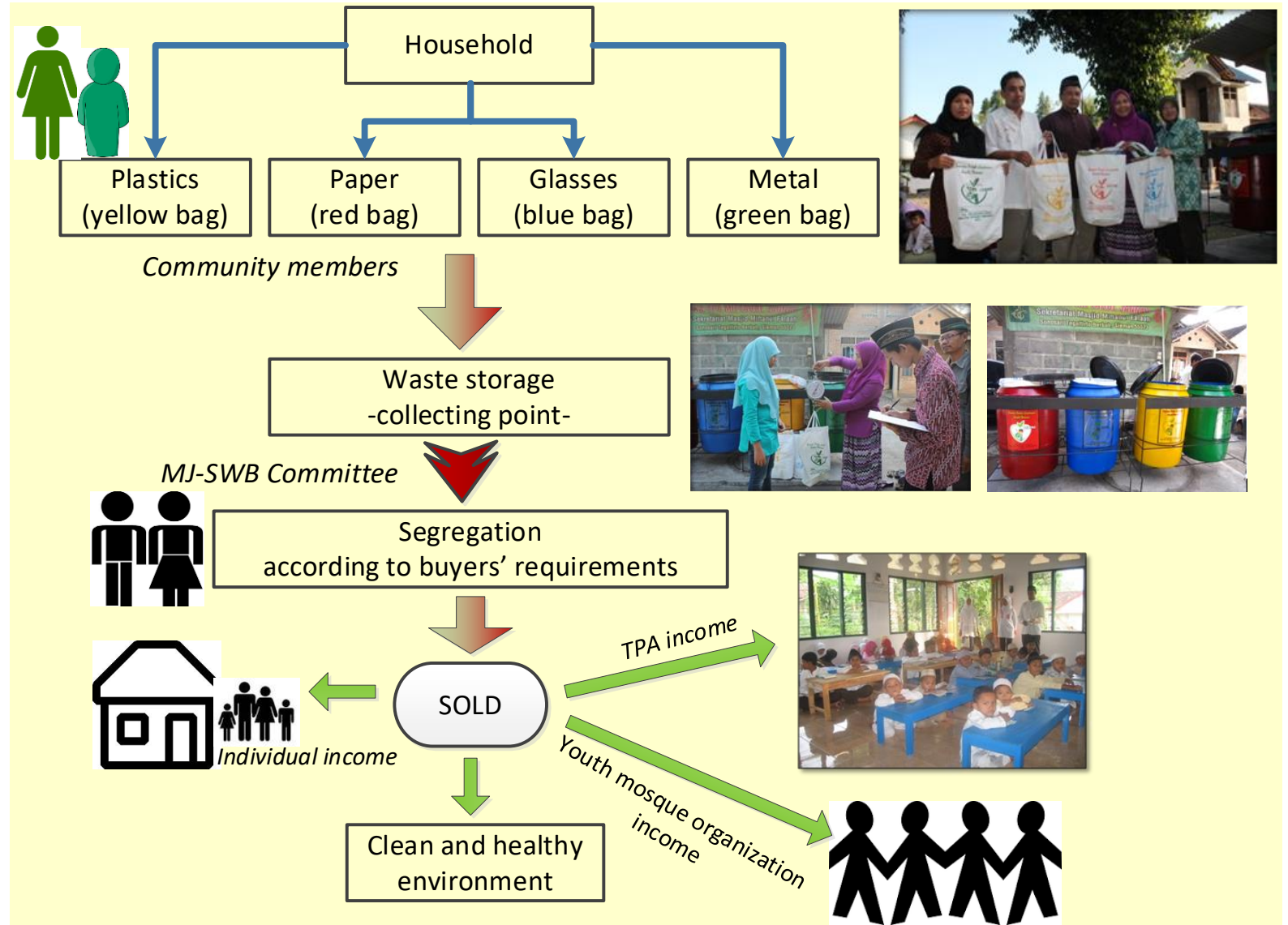
PKK Mobilization Teams are developed at all levels, whose team members are volunteers and consist of community leaders/leaders, wives of heads of offices/services and wives of regional heads up to village and sub-district levels whose activities are supported with local revenue and expenditure budgets.

In the reformation era, through the PKK National Working Meeting on 31 October to 2 November 2000, the name of the PKK changed from “Pembinaan Kesejahteraan Keluarga” (the Family Welfare Development) to “Pemberdayaan dan Kesejahteraan Keluarga” (the Family Welfare and Empowerment).

THE 10 PKK MAIN PROGRAMS

1. Appreciation and Practice of Pancasila
2. Mutual cooperation
3. Food
4. Clothing
5. Housing and Household Management
6. Education and Skills
7. Health
8. Cooperative Life Development
9. Environmental Sustainability
10. Healthy Planning

TPA MIFTAHUL JANNAH SOLID WASTE BANK (MJ-SWB) 2014



MJ-SWB IMPACTS

ENVIRONMENT

- Increase environment quality

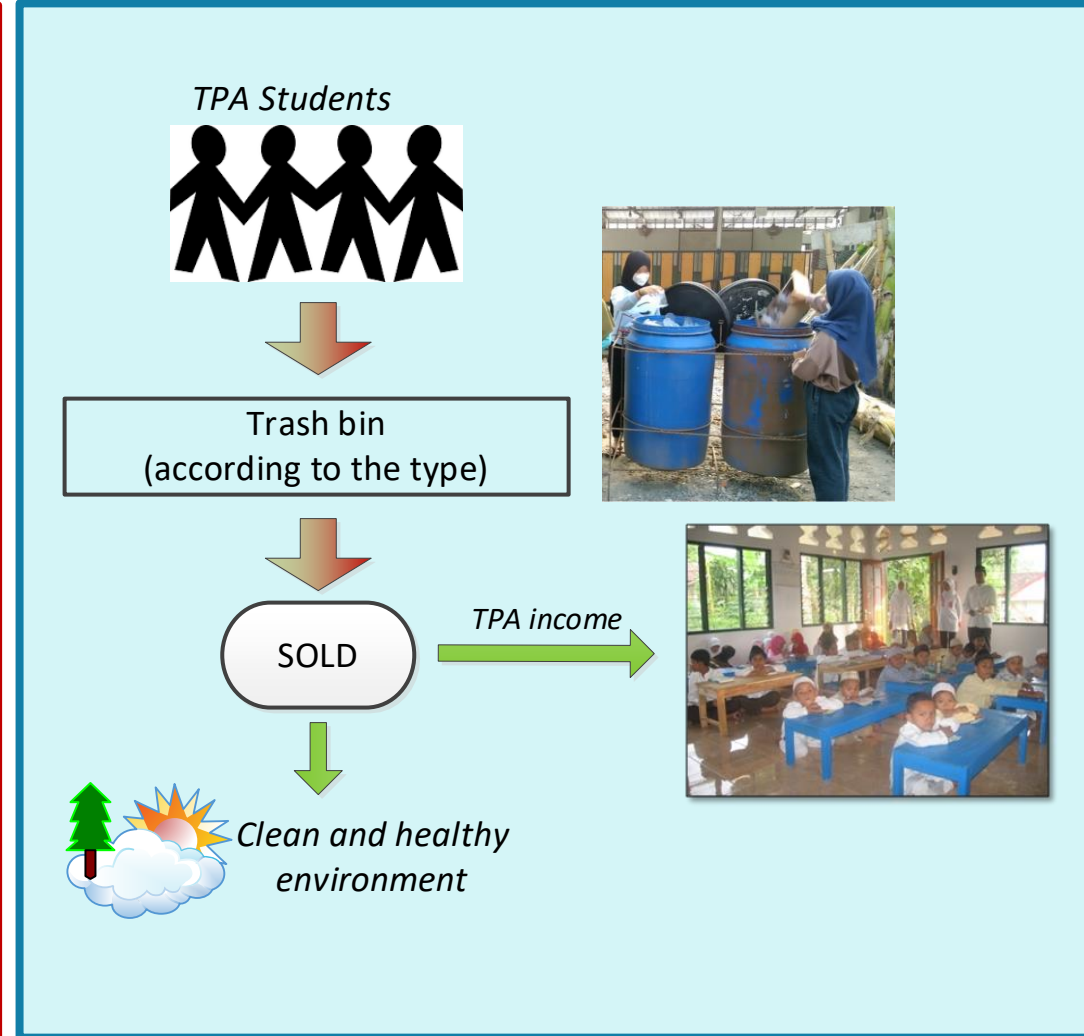
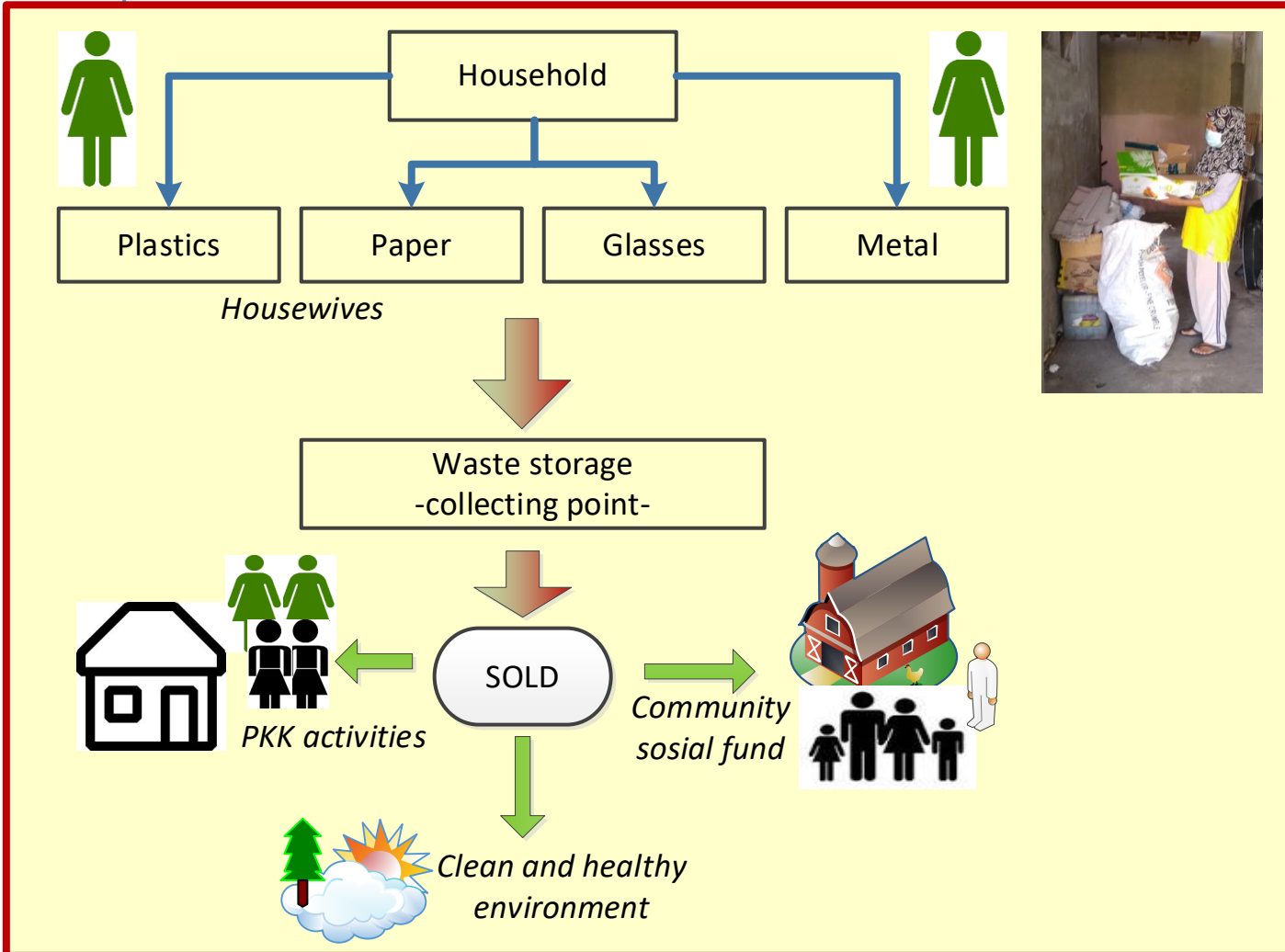
ECONOMY

- Financial support for TPA learning activities
- Increase individual income

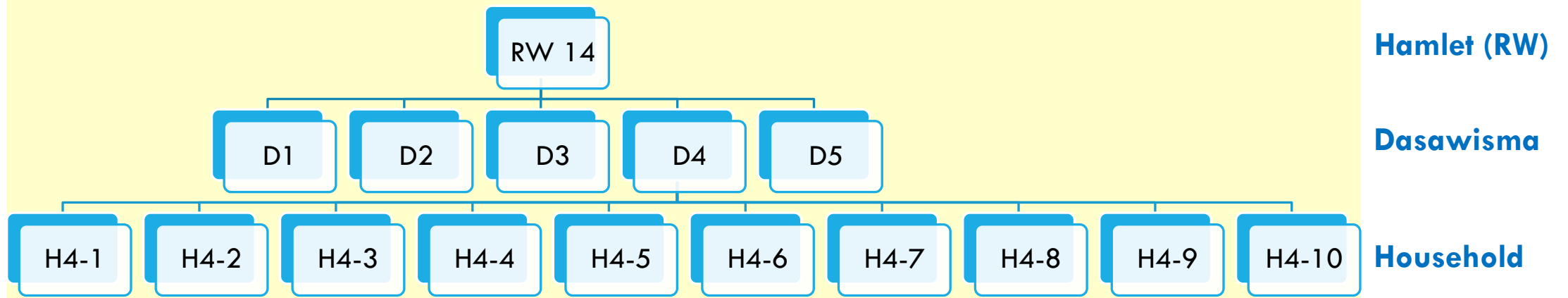
SOCIETY

- Strengthen religious spiritual
- Provide independent learning for TPA students
- Increase environmental awareness
- Improve household waste management skills
- Increase the spirit of cooperation, responsibility, and mutual care

THE EVOLUTION OF MJ-SWB (2018)



MJ-SWB MANAGEMENT STRUCTURE BY PKK MEMBERS



FACTORS INFLUENCING THE SUCCESS OF MJ-SWB

Leadership

- MJ SWB receives support and assistance from the community leaders.

Gender issues

- The involvement of housewives and PKK members are able to take responsibilities and to work for the system.

Professionalism

- The committee members of TPA MJ are mostly college students. As knowledgeable people, they can easily receive instructions for managing the waste.

Continuous learning

- Both TPA committee and PKK members have high enthusiasm for learning that arrives to the continuous improvement of the system.

Community Cooperation

- The local community has high spirit of mutual cooperation.

FACTORS INFLUENCING THE SUCCESS OF MJ-SWB

Socio-economic

- Initiated by the community without intervention from other parties.
- All community members voluntarily and wholeheartedly to participate in every stage of the system.
- High sense of community as a brotherhood results in good relationships among community members through respectful, collaborative, and sustainable interactions.
- Close relationship and good communication between the committee as service provider and the community as consumers.
- Members' sincerity in contributing most of the money earned from selling the waste will ensure the sustainable funding for the TPA.
- Sense of awareness and responsibility owned by the youth of the village to improve the welfare of the supported by a harmonious relationship among them.

CONCLUSION

Community-based solid waste bank (CSWB) can be an option for waste management in developing countries.

As a CSWB model for sustainable education, MJ-SWB provides sustainable outcomes which include improving education quality, environmental quality, and well-being and empowering housewives. Thus, it contributes to the achievement of SDGs.

Factors influencing the success of MJ-SWB include leadership, professionalism, continuous improvement, and the participation and cooperation of the local community.



THANK YOU

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