



## **SDG 11.6.1 – Current Methodology and Way Forward**

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- **Challenges in Solid Waste Management in Africa**
- **SDG and Waste SDG Indicators**
- **Monitoring Methodology**
- **Way Forward**



# Urbanization in Africa



FIGURE 1.1: POPULATION BY MAJOR REGION 2010-2100 (IN MILLIONS, MEDIUM VARIANT)

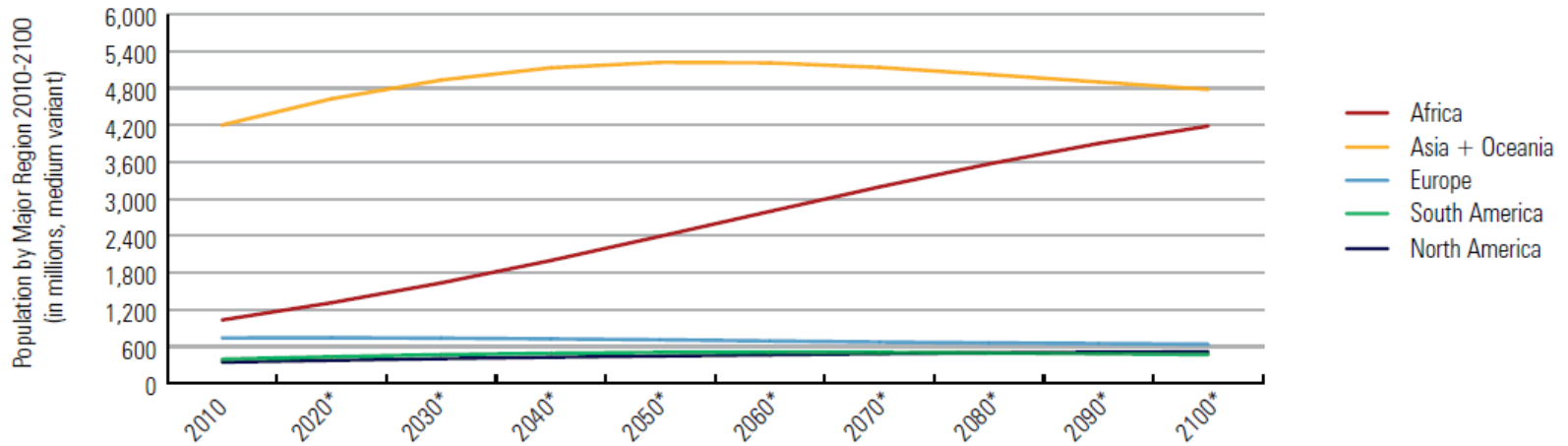
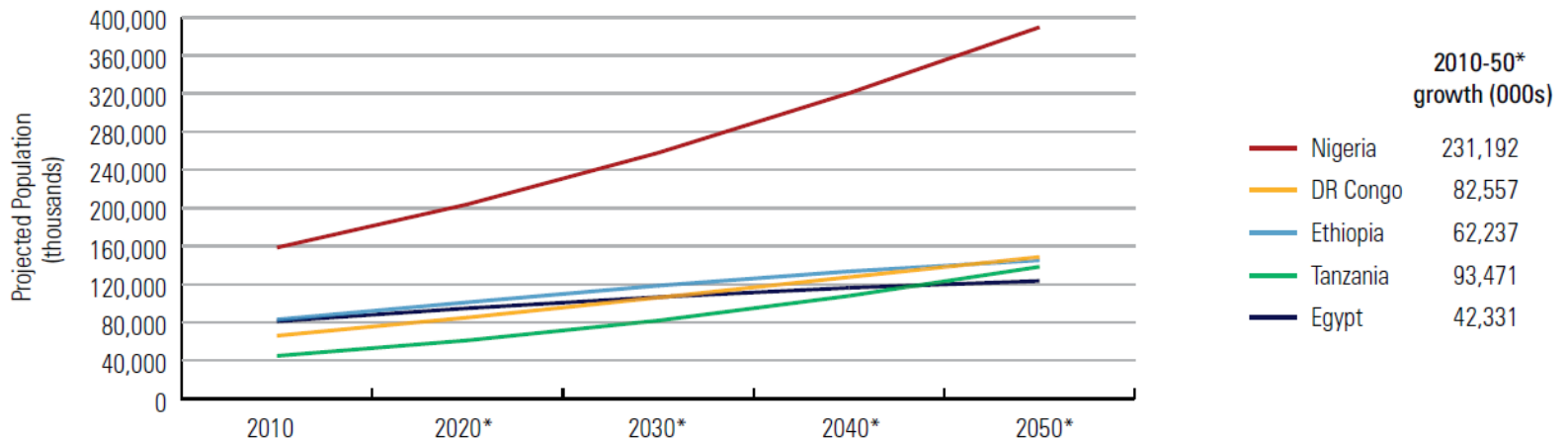


FIGURE 1.2: PROJECTED POPULATION DYNAMICS OF AFRICA'S FIVE MOST-POPULOUS COUNTRIES, 2010-2050 (THOUSANDS)







# Current Status of SWM

## Waste Generation







# Current Status of SWM

## Waste Collection & Transportation







# Current Status of SWM

## Waste Treatment & Recycling







# Current Status of SWM

## Waste Disposal







### Landfill explosion where 200 killed in Cotonou, Benin, Sept 2016



<http://www.newsx.com/world/40806-100-killed-200-injured-in-dump-site-explosion-in-benin>



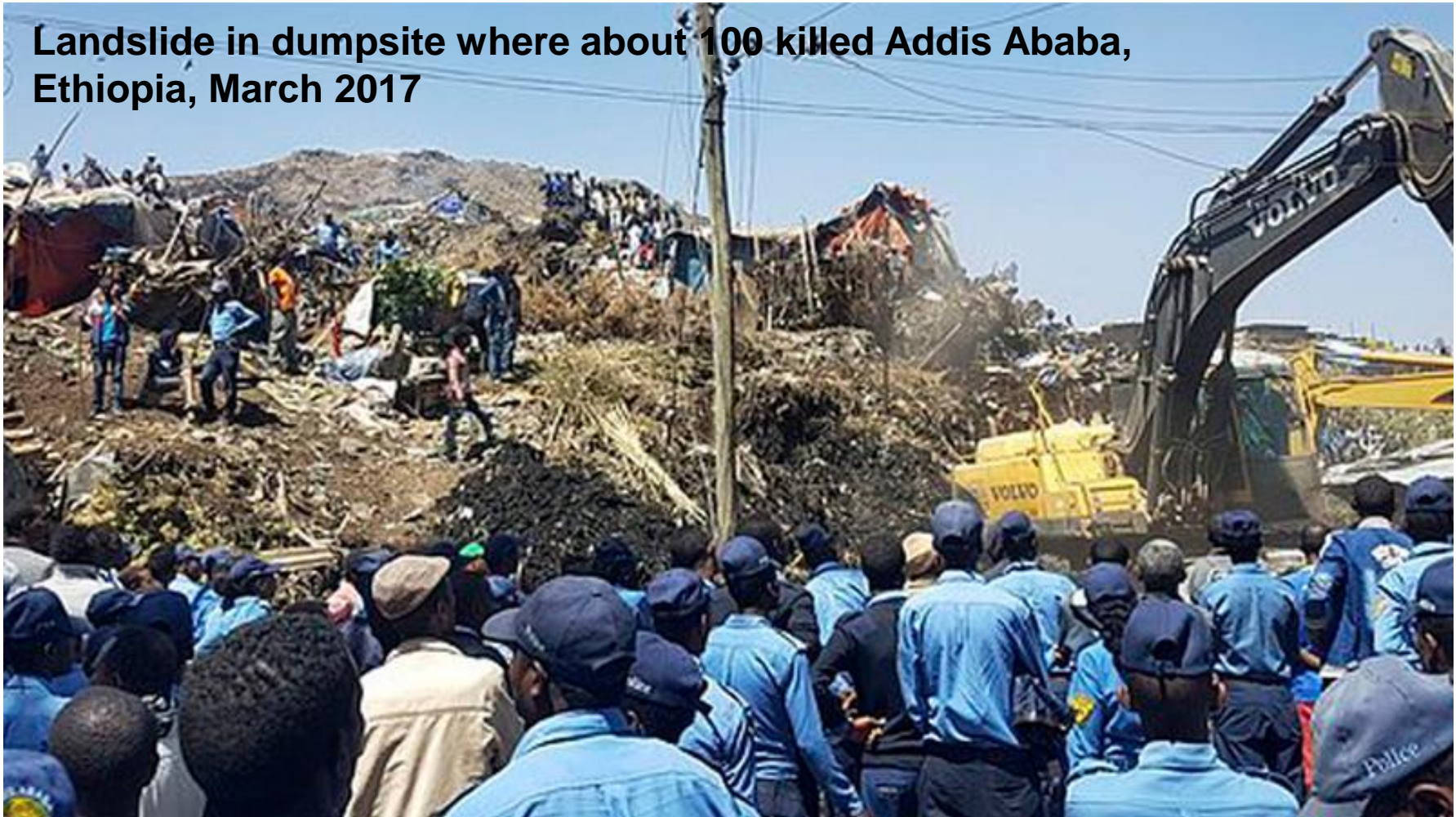


# Current Status of SWM

## Wake up call



**Landslide in dumpsite where about 100 killed Addis Ababa, Ethiopia, March 2017**



<http://www.aljazeera.com/news/2017/03/landslide-ethiopia-garbage-170312105503073.html>



# SDGs



## What is SDGs?

<b>1</b> NO POVERTY 	<b>2</b> NO HUNGER 	<b>3</b> GOOD HEALTH 	<b>4</b> QUALITY EDUCATION 	<b>5</b> GENDER EQUALITY 	<b>6</b> CLEAN WATER AND SANITATION 
<b>7</b> RENEWABLE ENERGY 	<b>8</b> GOOD JOBS AND ECONOMIC GROWTH 	<b>9</b> INNOVATION AND INFRASTRUCTURE 	<b>10</b> REDUCED INEQUALITIES 	<b>11</b> SUSTAINABLE CITIES AND COMMUNITIES 	<b>12</b> RESPONSIBLE CONSUMPTION 
<b>13</b> CLIMATE ACTION 	<b>14</b> LIFE BELOW WATER 	<b>15</b> LIFE ON LAND 	<b>16</b> PEACE AND JUSTICE 	<b>17</b> PARTNERSHIPS FOR THE GOALS 	





# SDGs



## Solid Waste Related Goals

<p><b>1</b> NO POVERTY</p>	<p><b>2</b> NO HUNGER</p>	<p><b>3</b> GOOD HEALTH</p>	<p><b>4</b> QUALITY EDUCATION</p>	<p><b>5</b> GENDER EQUALITY</p>	<p><b>6</b> CLEAN WATER AND SANITATION</p>
<p><b>7</b> RENEWABLE ENERGY</p>	<p><b>8</b> GOOD JOBS AND ECONOMIC GROWTH</p>	<p><b>9</b> INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	<p><b>10</b> REDUCED INEQUALITIES</p>	<p><b>11</b> SUSTAINABLE CITIES AND COMMUNITIES</p>	<p><b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION</p>
<p><b>13</b> CLIMATE ACTION</p>	<p><b>14</b> LIFE BELOW WATER</p>	<p><b>15</b> LIFE ON LAND</p>	<p><b>16</b> PEACE AND JUSTICE</p>	<p><b>17</b> PARTNERSHIPS FOR THE GOALS</p>	<p><b>THE GLOBAL GOALS</b> For Sustainable Development</p>

**Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable**  
**SDG Indicator 11.6.1: % of urban solid waste regularly collected and with adequate final discharge with regards to the total waste generated by the city**



# Methodology



## Proposed Rewording of SDG 11.6.1

**% of urban solid waste regularly collected and with adequate final discharge with regards to the total waste generated by the city**



**% of **municipal** solid waste **collected** and **managed in controlled facilities** with regards to the total waste generated by the city**







### ***Municipal Solid Waste:***

Wastes generated by households, and wastes of a similar nature generated by commercial and industrial premises, by institutions such as schools, hospitals, care homes and prisons, and from public spaces such as streets, markets, slaughter houses, public toilets, bus stops, parks, and gardens. The definition of MSW should follow the local definitions so it is important to annotate the local and national definition(s) of MSW. However, MSW should exclude the mineral waste.

### ***Total Municipal Solid Waste Generated by the City:***

The sum of collected municipal solid waste and uncollected municipal solid waste.

### ***Municipal Solid Waste Collected:***

Waste that is regularly collected from specific addresses or designated collection points.

### ***Municipal Solid Waste Managed in Controlled Facilities:***

Wastes being accepted in a facility that has reached at least an intermediate level of control out of collected municipal solid waste.



### **MSW Managed in Controlled Facility: INTERMEDIATE CONTROL**

Based on 'degree of environmental control' of facility

- Degree of control over **waste reception and handling** at each site
- Degree of control over both the **waste treatment and disposal process** in use at each site and over any potential emissions
- Degree of **monitoring and verification** of environmental controls







# Methodology

## Example Intermediate Control



- ← Minimize / Pre-treat wastes
- ← Detailed engineering standards
- ← Containment
- ← Operational control
- ← Open dumps

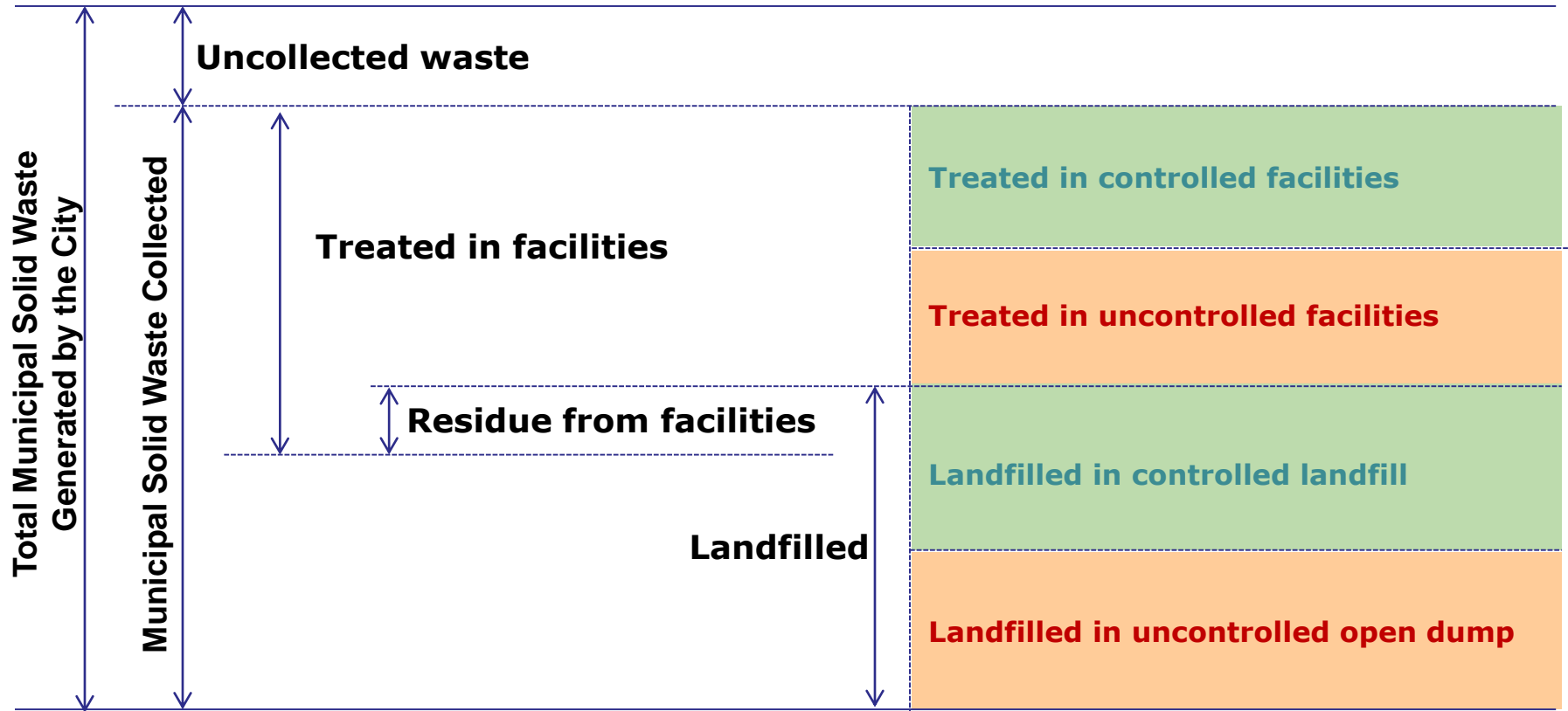


Stepwise progression controlling disposal



# Methodology

## Concept Model



*% of MSW collected and managed in controlled facilities*

$$= \frac{\text{Amount of waste collected and managed in controlled facilities} - \text{Residue}}{\text{Total MSW generated by the city}} \times 100 (\%)$$





# Methodology



## Reporting and Monitoring Format

Treatment facility name	Degree of control score	Process employed	Type of waste	Amount of solid waste received	Amount of sewage sludge	Amount of residue	Where residue is exported
	(1)						
	(2)			(t/d)	(t/d)	(t/d)	
	(3)						
	(1)						
	(2)			(t/d)	(t/d)	(t/d)	
	(3)						

Landfill sites name	Landfill type	Operation start year	Degree of control score	Amount of MSW received	Amount of swage sludge received
			(1)		
			(2)	(t/d)	(t/d)
			(3)		
			(1)		
			(2)	(t/d)	(t/d)
			(3)		



# Influence on Improved SWM Data Usage

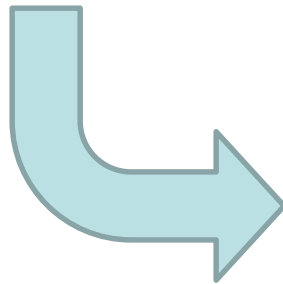


For formalization of informal sector



Could be improve to **30%**

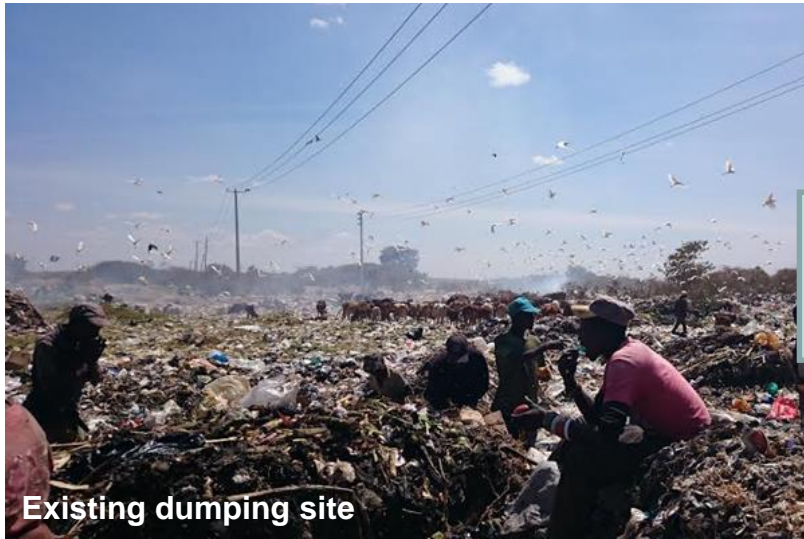
**0%**







# Influence on Improved SWM Data Usage



Existing dumping site



New pilot landfill site

**0%**



Could be improve to **60%**



1. Development of step-by-step guidance for monitoring on standard methodology & calculation modality (including waste generation methodology)
2. Testing the guidance in pilot cities in Africa
  - o 1 mega city
  - o 2 secondary cities
3. Analysis of obtained data with existing statistics with consultation with EGM members and partners
4. Finalization of methodology and guidance





**Thank you!**