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Solid waste characterization study over 3 seasons - Jamaica

Presentation of the results

June 2022

IDB
Inter-American Development Bank

Objectives and methodology

This Waste Characterization Study aimed to:

- **Quantify** the waste generated per annum and per capita.
- **Determine the composition** of the various waste streams and assess the seasonal variation.
- **Analyse the chemical and physical properties** of the waste.

Sampling plan:

- **3 campaigns:** moderately wet / wet / dry season
- **Sampling plan:**
  - 30 to 35 samples per region (MSW+ICI waste)
  - Total of 48 samples per campaign = 144 in total

Waste Characterization Methodology:

- Selection of collection routes with NSWMA according to sampling plan
- Characterization of 250kg samples: waste sorted according to 13 categories and 26 sub-categories




Waste quantification

Household waste generation (kg/day/capita)

- Truck collection followed by bikemen to register the number of houses and people collected
- Total quantity of collected waste weighted (MPM&WPM) or estimated (SPM&NEPM)
- Previous date of collection used to estimate the average quantity of MSW produced per household / capita and per day

  - *MSW = waste produced by households and small businesses*
  - **Average MSW production ratio: 1.1 kg/day/person**

Negligible variation of waste production throughout the year

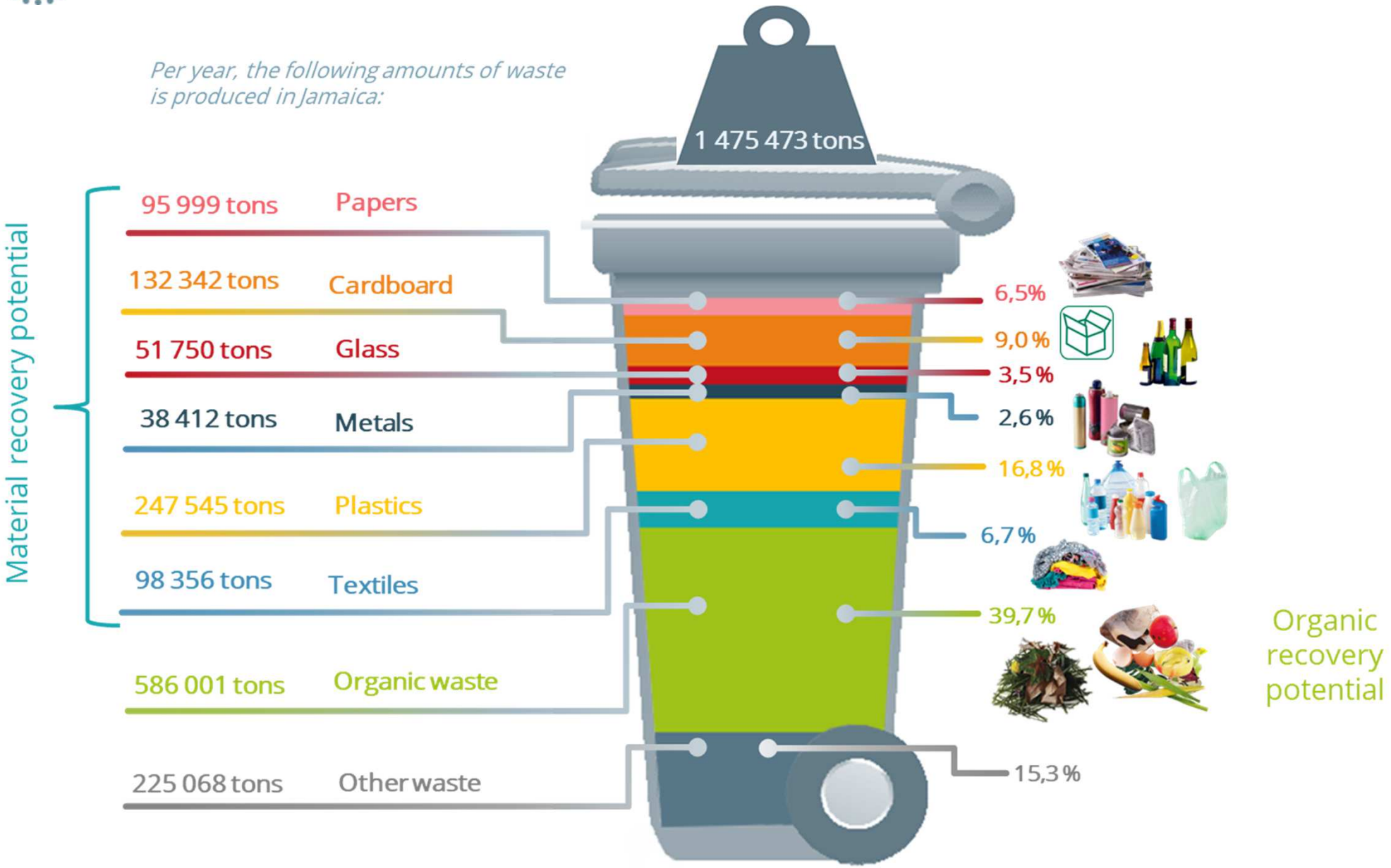
ICI waste generation

- At each site, and for each campaign, all vehicles bringing in waste were listed for a week, along with their size, operator, waste generator and volume of waste.

Region	Population (2019)	MSW production (tons/year)	ICI waste production (tons/year)		Overall waste production (tons/year)
MPM	1 277 686	552 739	31,9%	258 352	**811 091**
SPM	590 743	227 259	13,6%	35 790	**263 050**
WPM	492 600	152 861	32,6%	73 878	**226 739**
NEPM	373 065	158 064	9,5%	16 529	**174 593**
Jamaica	**2 734 094**	**1 090 923**		**384 549**	1 475 473

Average composition of Jamaican waste

Per year, the following amounts of waste is produced in Jamaica:

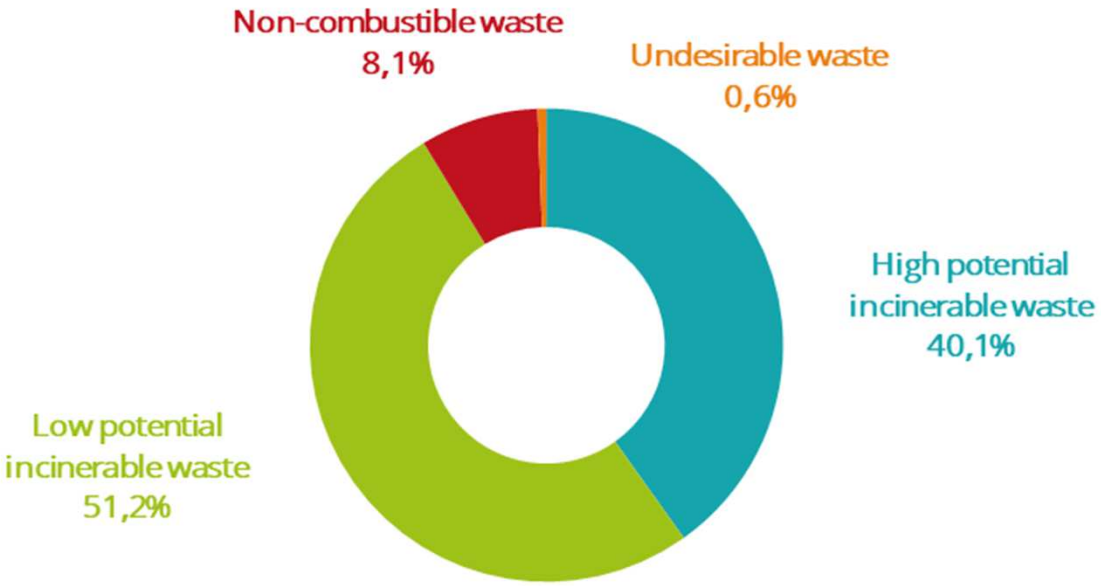


Other waste : sanitary waste, wood, E-waste, inert waste, hazardous waste...

Negligible variation of waste composition throughout the year

Incineration potential and chemical analysis

- Waste composition by incineration potential



- Chemical analysis methodology
  - **Constitution of 6 waste samples** of at least 80L (15kg) from the initial 250kg samples
  - **Drying of samples to a constant mass** in Jamaica
  - **Chemical analysis** in France

- Total humidity and Net calorific value

Parameter	Average
Total humidity	30.7%
Dry matter	69.3%
Net calorific value on dry matter	17.5 MJ/kg
Net calorific value on raw matter	11.4 MJ/kg

A copy of the full report and data set will be made available to interested parties through a secure data virtual data room at the appropriate time.

Kindly contact Ms. Renee Rattray @ rrattray@dbankjm.com for more information