WASTE ATLAS: A GLOBAL WASTE MANAGEMENT TOOL

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Our era is characterized by the explosive growth in the amount of data available. Rapid technological evolution and development has led to an increased exchange of information. According to IBM, around 2.5 quintillion bytes (namely 2.5×10^{18} bytes) of data are generated daily (2012), embedded in the physical world in devices such as mobile phones and computers, creating, and communicating data.

In the waste management sector there is also a great amount of data which remains mostly unstructured on the web. Figure 1 presents the results that Google search engine generated for several key words related to waste management. The magnitude of the results provided in the figure, depicts in the best way the massive amount of waste management data available on the Internet which can be hardly accessed and handled by the user. In addition a significant amout of waste management data are either not recorded by relative stakeholders or not available on databases.
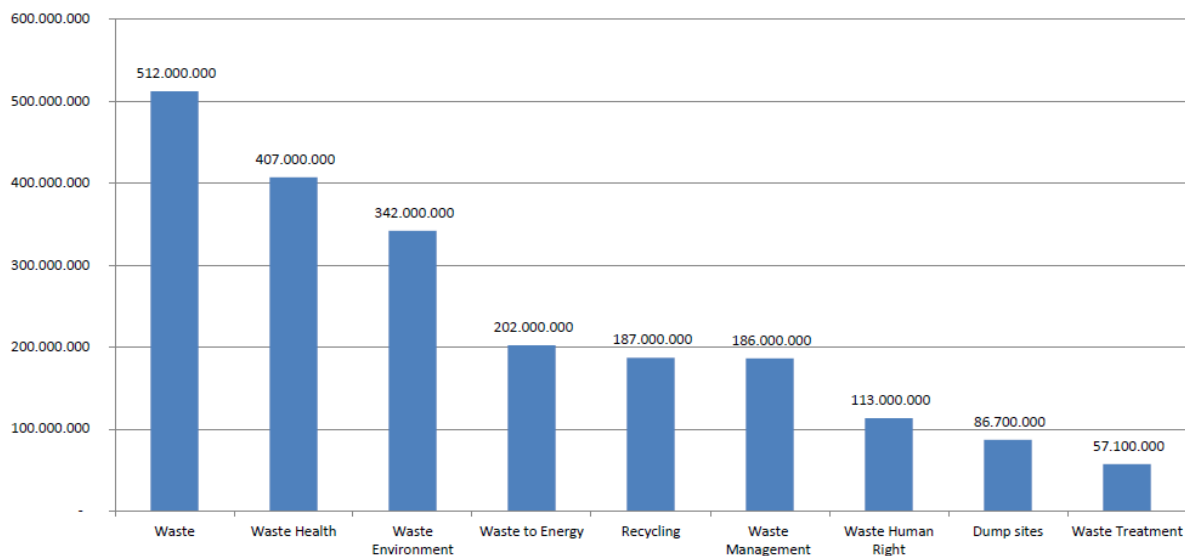

Figure 1: Google results for WM related key words

The need for meaningful information through this "chaos" of data available is already great especially in the waste management and recycling sector. There is a growing recognition of the need for global data sets that will allow all interested parties to benchmark and justify local decisions and policies in a better way.

Under this framework D-Waste team has developed Waste Atlas, a unique waste management tool, which aims to gather all the useful data in one place and provide tools for transforming data into meaningful information, helpful for decision making procedures. The appliaction is an online map that visulises the global waste management sector and provides acess to correlation charts and maps (see Firgure 2) for benchmarking and comparison reasons. For the first time waste management indicators (such as collection coverage or rate of unsound disposal) are correlated with other indicators, such as HDI and GNI per capita, for more than 165 countries around the globe. Moreover, visualizations make more obvious and highlight the differences existing over the world in many aspects of waste management, suggesting the areas where research and studies should be conducted and funds should be allocated to ameliorate current situation.

Data collection and upload is based on the contribution of global partners and numerous individuals, like scientists, consultants, academics, students and other people from different countries and organizations. Given the vast amounts of data and information generated and transferred through crowdsourcing activities, the data uploaded on Atlas is primarily checked to ensure its reliability and consistency with other data sets available from multiple sources.
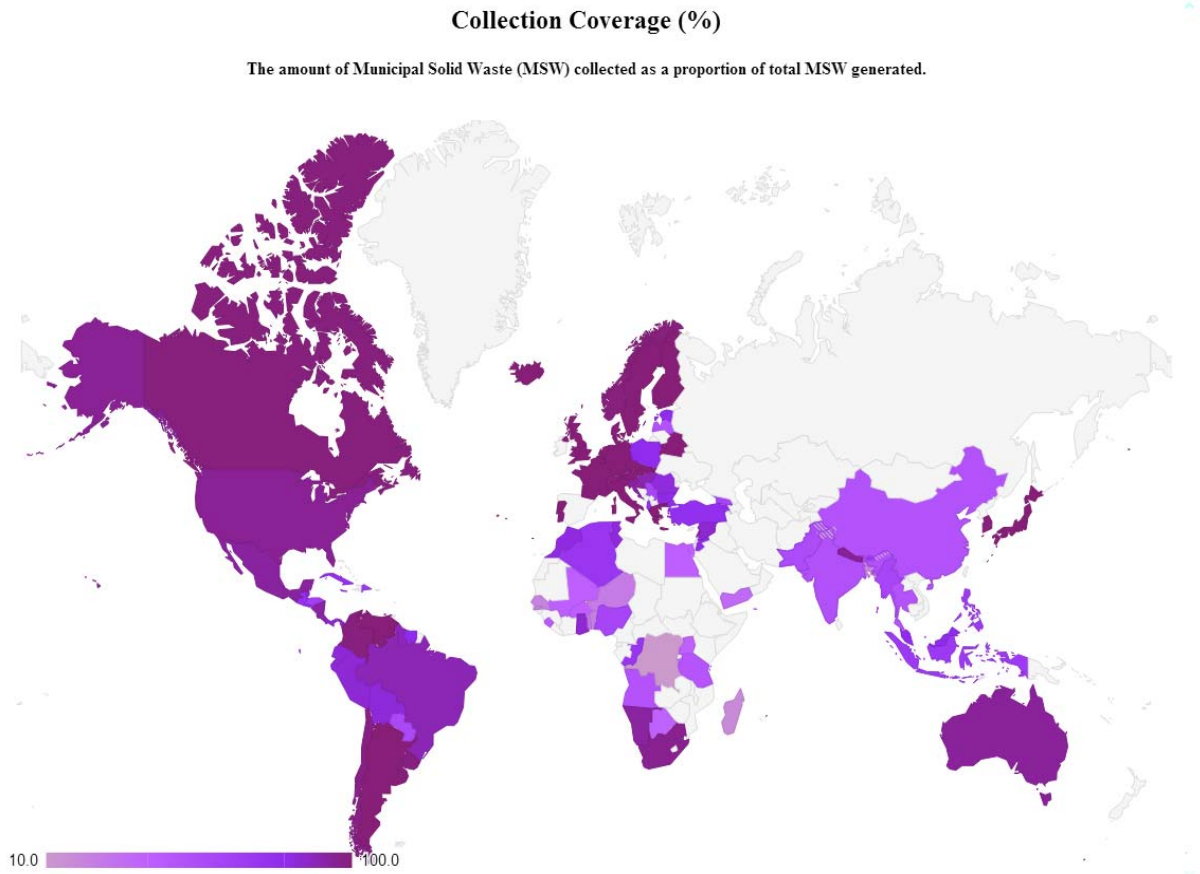
Collection Coverage (%)

The amount of Municipal Solid Waste (MSW) collected as a proportion of total MSW generated.

Figure 2: Collection Coverage (%)

By the early beginning of Atlas, it was obvious that such an effort requires a global alliance among key international organizations that would organize and implement Atlas project in the best way. In this sense Waste Atlas has already established partnerships with global and regional scientific, technical and waste management organizations including the International Solid Waste Association (ISWA), Sweep-Net, WTERT (Waste to Energy and Technology Council) and SWAPI.

Data collected so far has provided powerful information on waste management around the world and assessment of the data by D-Waste team has withdrawn valuable conclusions and findings.