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1. INTRODUCTION AND OBJECTIVE

Over the years, there have been many experiences on composting in Morocco, but like in many developing countries, composting remains rarely undertaken and, in many cases, **unsuccessful** due to various reasons (World Bank, 2012). But in order to assess the **feasibility** of composting in the current conditions, a first step would be to estimate **compost actual demand**, that is why the objective of this paper is estimating compost potential demand through an analysis of planted crops and crop calendar in a certain area as a part of the final endeavor of estimating actual demand and deciding on the feasibility of compost.



Figure 1: Picture of Moroccan Composting plant

2. STUDY AREA

The study area is situated in the north-west part of Morocco, it includes **3 prefectures** subdivided into **7 municipalities**. It covers a total surface of 1858, 5 km², from which 68 **800 ha** is an agricultural area. The study area has **1 878 958 inhabitants** according to the National census of 2014.

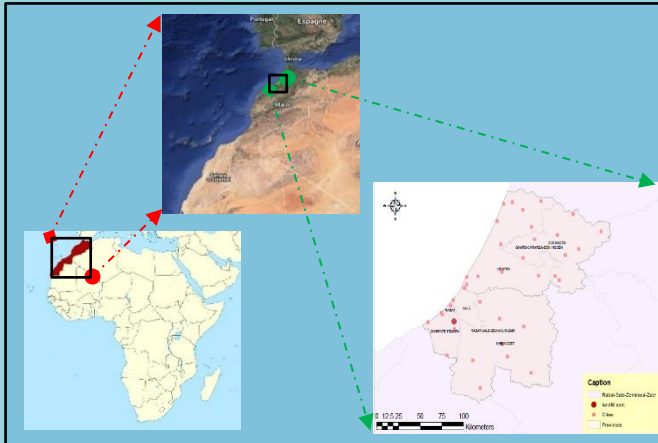


Figure 2: Situation map of the study Area (Rabat area)

3. METHODOLOGY AND THEORETICAL APPROACH

Estimating compost demand is a critical step when it comes to quantifying compost sales and analyzing the dynamics between supply and demand for composting. In this paper the focus was put specifically on “Potential standard demand” for compost.

Compost Potential Standard Demand (PSD) refers to the amount of compost to be used if the Usual Application Rates of compost per crops were applied and 100% of the arable farmlands in the area applied compost. And **Usual Application Rates** are defined as the amount of compost usually applied by farmers in [t /ha] for every type of crops and for the specified type of irrigation in that area.

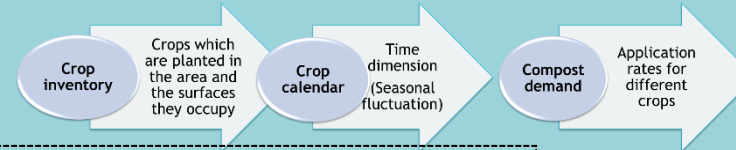


Figure 3: Flow of Compost potential demand calculation

4. CASE STUDY IN RABAT AREA

Combining the quantitative crops data, with the crop calendars adds a time dimension to the analysis and allows us to estimate the potential standard demand for compost over a year as shown in figure 4. The result is that compost potential demand presents seasonal fluctuation with a **peak** around October which is approximately 1 month prior to planting period for the predominant crops in the study area

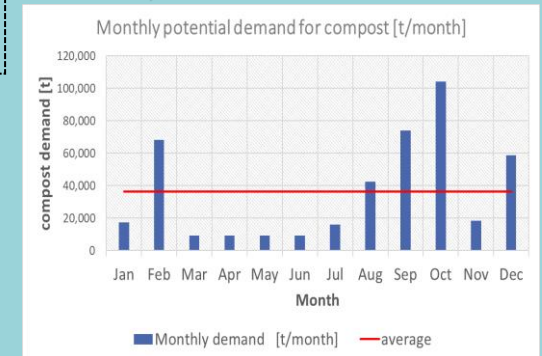


Figure 4: Monthly fluctuation of compost demand in the area

5. DISCUSSION AND CONCLUSION

Previous research on composting focuses mainly on compost’s technical or chemical aspects, this paper tackles a rather qualitative aspect for composting and a crucial point when assessing the feasibility of compost. In this paper a mathematical model was designed and applied to estimate compost potential demand through planted crops and crop calendars. The outcome is the quantity of compost potential standard demand and its variation with time. It can also be utilized to estimate market potential size through the local selling prices for compost, as well as the approximative estimation of the size of stockage area. In addition, compost actual demand could be estimated as a percentage for potential standard demand which will be object of future research focus.