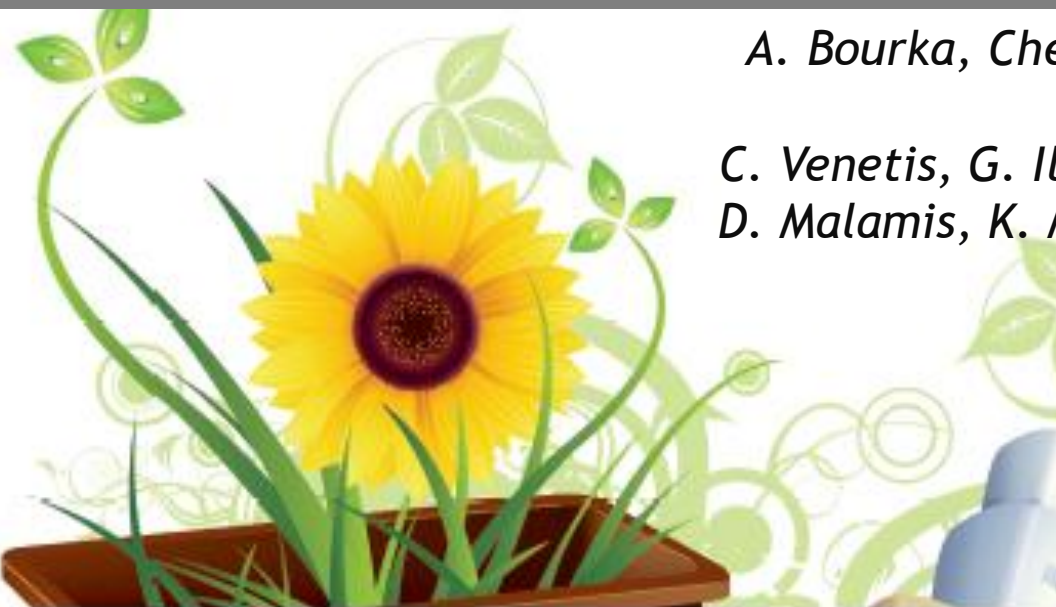


# Biowaste Management in Greece and recommendations for future developments

*A. Bourka, Chemical Engineer MSc, EPTA S.A*

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D. Malamis, K. Moustakas, M. Loizidou, NTUA*



# Food waste prevention



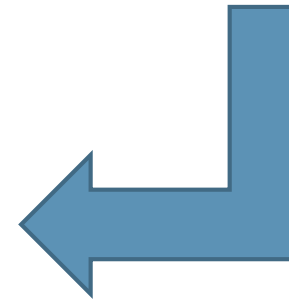
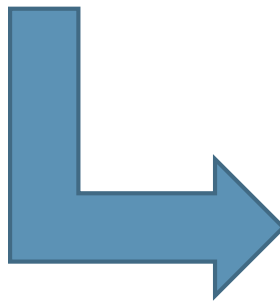
# Biowaste Management



**A.** Separate Collection



**B.** Recovery (Composting or Anaerobic digestion)





# A. Separate Collection in Greece

## Current Status



### HOME COMPOSTING



- Only for vegetable & green waste
- Many case studies in Greece

### MUNICIPAL COLLECTION



- All types of biowaste
- Only City of Athens & Kifissia

## B. Treatment of Biowaste in Greece

### Current Status



#### COMPOSTING PLANTS

**2** composting plants for organic fraction of MSW → EMAK, DEDISA → EMAK also source-separated

**> 10** composting plants mainly for livestock and other non municipal waste streams



# A. Separate Collection in Greece

## How to get forward



### TOOLS

- Biowaste Guide (EPPERAA, 2012)
- Biowaste Step-by-Step Guide (AthensBiowaste, 2014)
- Biowaste Software (AthensBiowaste, 2014)
- Operation Manual for Composting Facilities (EPPERAA, 2014)  
*To be issued in September 2014*

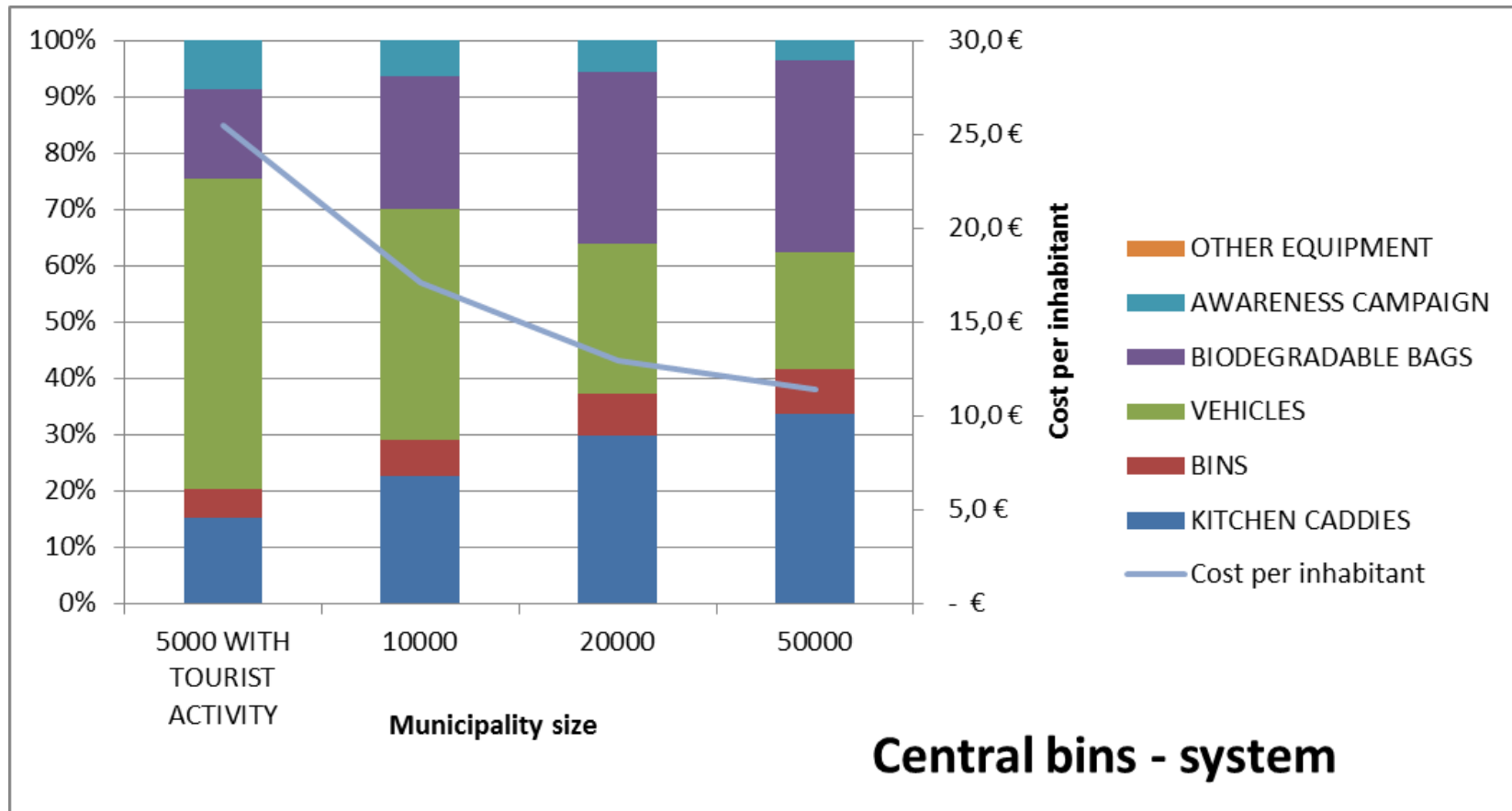


Οδηγός λειτουργίας αναχών εγκαταστάσεων κομποστοποίησης  
(αερόβια επεξεργασία) προδιαλεγμένων βιοαποβλήτων



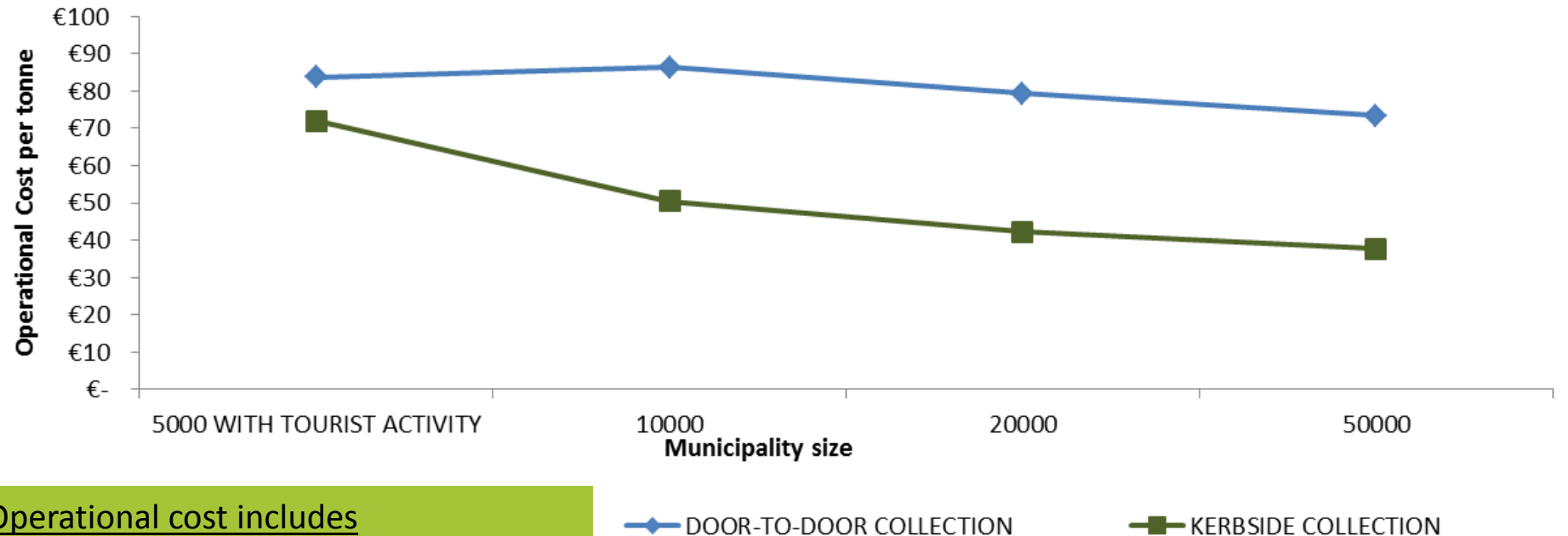
# Indicative case studies: Athens Biowaste Software

## Investment Costs of separate collection



# Indicative case studies: Athens Biowaste Software

## Operational Costs of separate collection



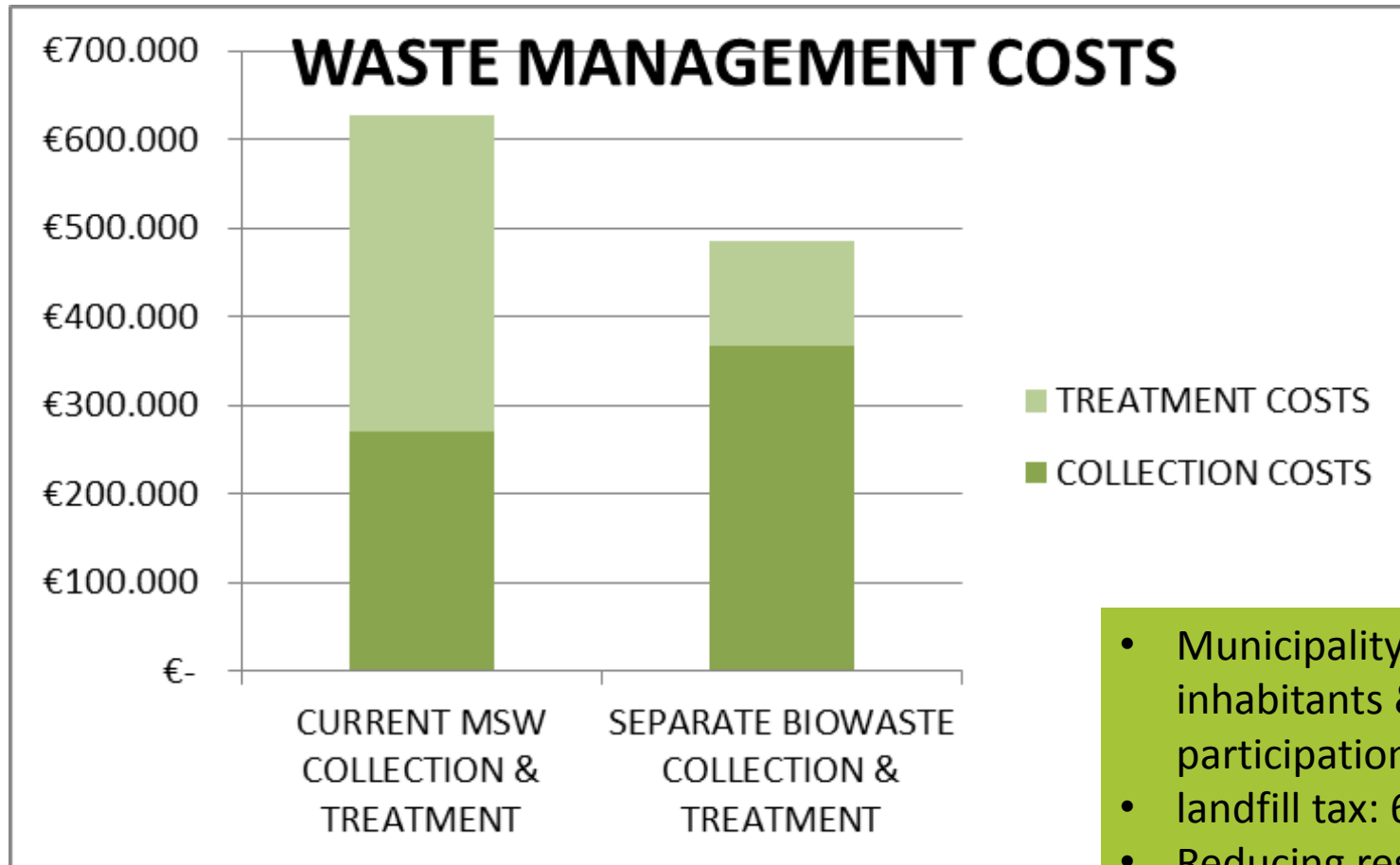
### Operational cost includes

- 1.COLLECTION PERSONNEL
  - 2.FUELS
  - 3.VEHICLE COSTS
  - 4.BINS REPLACEMENT
  - 5.AWARENESS CAMPAIGN
  - 6.ADMINISTRATIVE PERSONNEL
- } 60-80%



# Indicative case studies: Athens Biowaste Software

## Total waste management costs



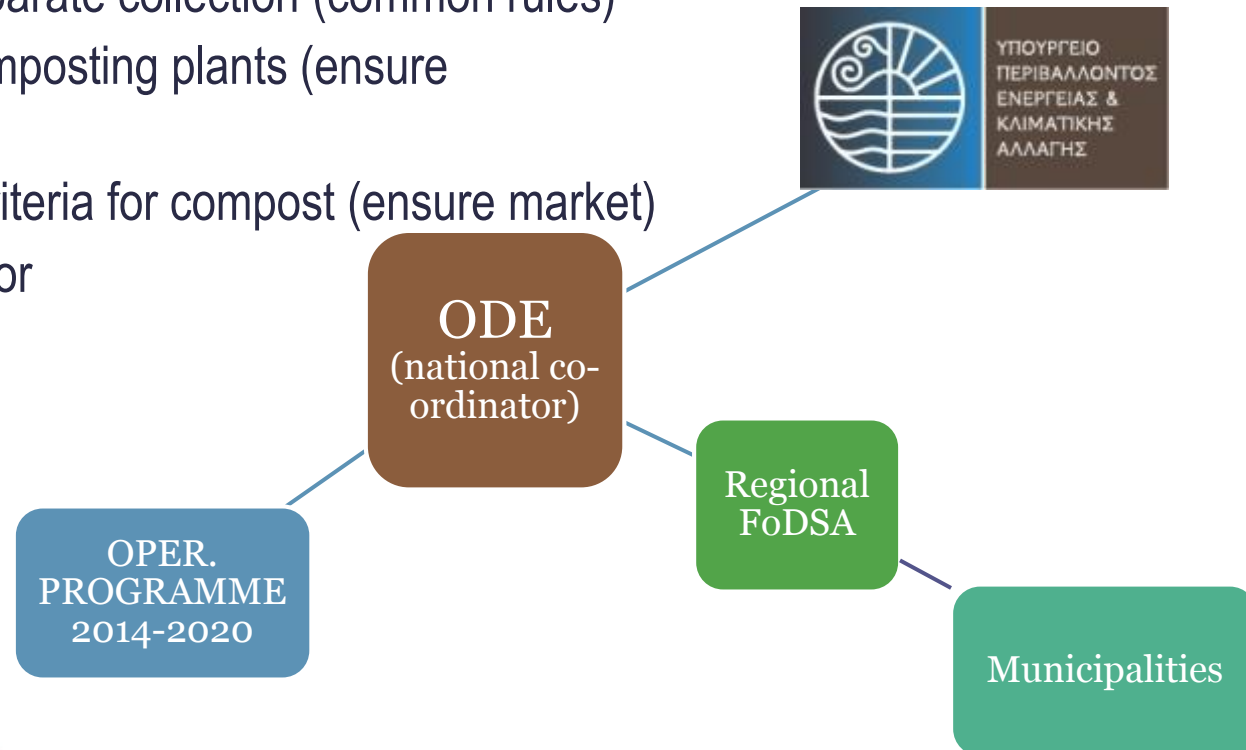
- Municipality with 90.000 inhabitants & 20% participation
- landfill tax: 60€
- Reducing residual waste collection frequency by 50%

# Biowaste Management in Greece

## What our next steps?



- National Co-ordination → ODE
- Ministerial Decision with:
  - Basic specs for separate collection (common rules)
  - Basic specs for composting plants (ensure hygienisation)
  - Minimum Quality criteria for compost (ensure market)
  - Register and Monitor





1. Separate collection: correctly planned and monitored → key success factor
2. Decrease of waste management costs for municipalities → it can be visible after landfill tax & change in residual collection frequency
3. Many instruments/tools already developed → direct promotion of biowaste management
4. National co-ordination and legislative improvements are required



THANK YOU FOR THE  
ATTENTION

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