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Good Practice

Development and Monitoring an integrated system of separate biowaste stream at the Municipalities of Central Macedonia

KAFē KAdOS

(Bio-waste Brown Bin)

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Regional Association of Solid Waste Management Agencies of Central Macedonia (FoDSA KM)



Solid Waste Facilities in the Region

7 Regional Units

38 Municipalities

1.8 million Citizens

The responsibilities of FoDSA KM

- integrated treatment of Municipal solid waste, with the aim of reaching the targets set by the European and National Legislation.
- protection of the environment and public health.
- provides an advisory role to its members

ΚΑΦΕ ΚΑΔΟΣ

ΒΡΕΣ ΤΟ ΝΕΟ **ΚΑΦΕ** ΤΗΣ ΓΕΙΤΟΝΙΑΣ ΣΟΥ

Find your new “Coffee” bin at your neighborhood!



ΠΕΡΙΦΕΡΕΙΑΚΟΣ ΣΥΝΔΕΣΜΟΣ ΦΟΡΕΩΝ
ΔΙΑΧΕΙΡΙΣΗΣ ΣΤΕΡΕΩΝ ΑΠΟΒΛΗΤΩΝ
(ΦΟ.Δ.Σ.Α.) ΚΕΝΤΡΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ

Funding of Municipal Bio-waste Equipment and Material to the Municipalities of Central Macedonia

**Single beneficiary of sorting at source bio-waste equipment and tools
Funded by Operational Programme of Central Macedonia Region 2014-2020**

FoDSA KM

Municipalities

- Equipment Provision
- Technical Support of Municipalities and provision of an awareness communication plan
- Biowaste monitoring and treatment

- Develop and monitoring of the brown bin network
- Separate collection and transport to a composting facility
- Fuel, collection personnel, etc
- Information and awareness campaign

Find your new "Coffee" bin at your neighborhood!



Municipalities



37

Collection Vehicles



48

37 (5m³) – 11 (14 m³)

Brown Bins



35.940

34.937 (240L) – 1.003 (660L)

- 37 Shredders
- 37 Road Maps for developing separate bio-waste collection networks at Municipal level
- Monitoring Programme
- Technical Support Municipal separate bio-waste collection system
- Public awareness material

- One (1) 240 L bin per 50 residents
- At Municipalities over 63,000 resid., 5% of 240L bins are replaced by a corresponding number of 660L bins

(collection needs of large bio-waste producers and/or areas of high population density)



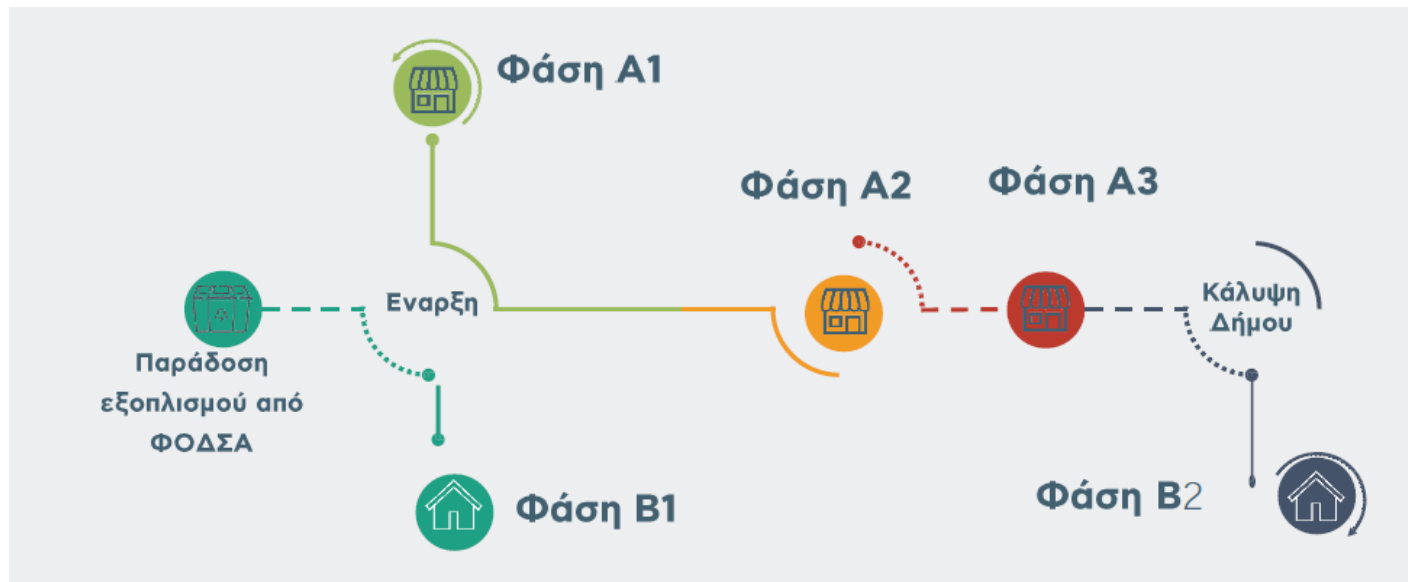
- Frequency: 7 days/week
- Transport: 20 min to the collection area, 90 min to the composting unit
- Emptying time 120sec.
- Maximum collection routes per day: ≤ 3
- Total route time ≤ 7 h
- Net route time 6.2h
- Capacities: 5m³ and 14m³
- Each municipality received a small vehicle for flexibility purposes

Road Map for the development of the bio-waste collection network at Municipal Level



Phase A. Large producers Network

- A1. Large Producers (*Food Markets, Hotels, food processing facilities, Fruit Shops*)
- A2. Mass catering establishments, nurseries, kindergartens, hospitals, camps
- A.3 Restaurants, bakeries, groceries



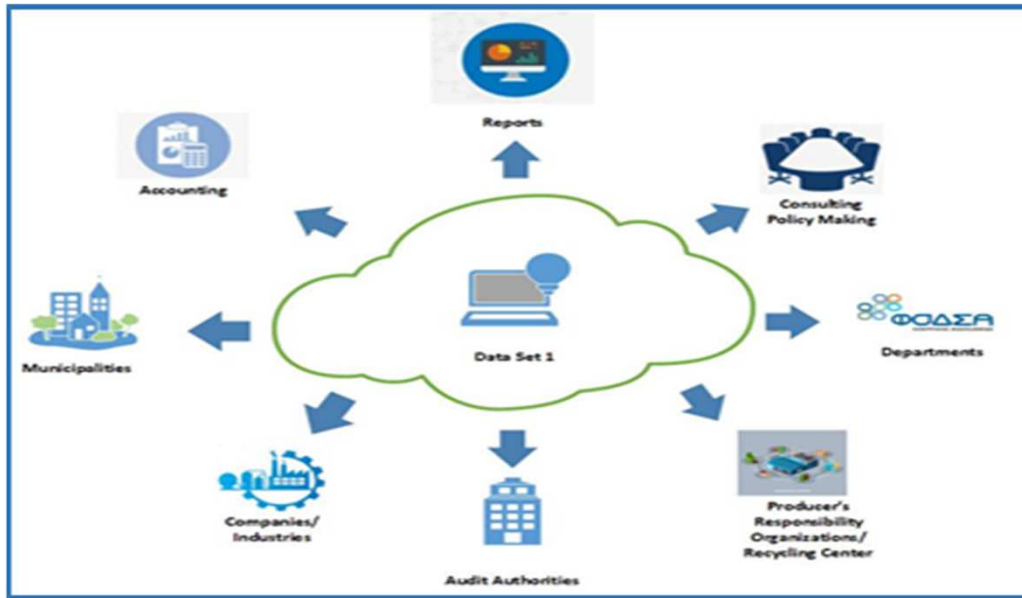
Phase B. Household Network

- B1. Pilot action to households (around 5,000 residents)
- B2. Municipal level

Information and Public Awareness Material



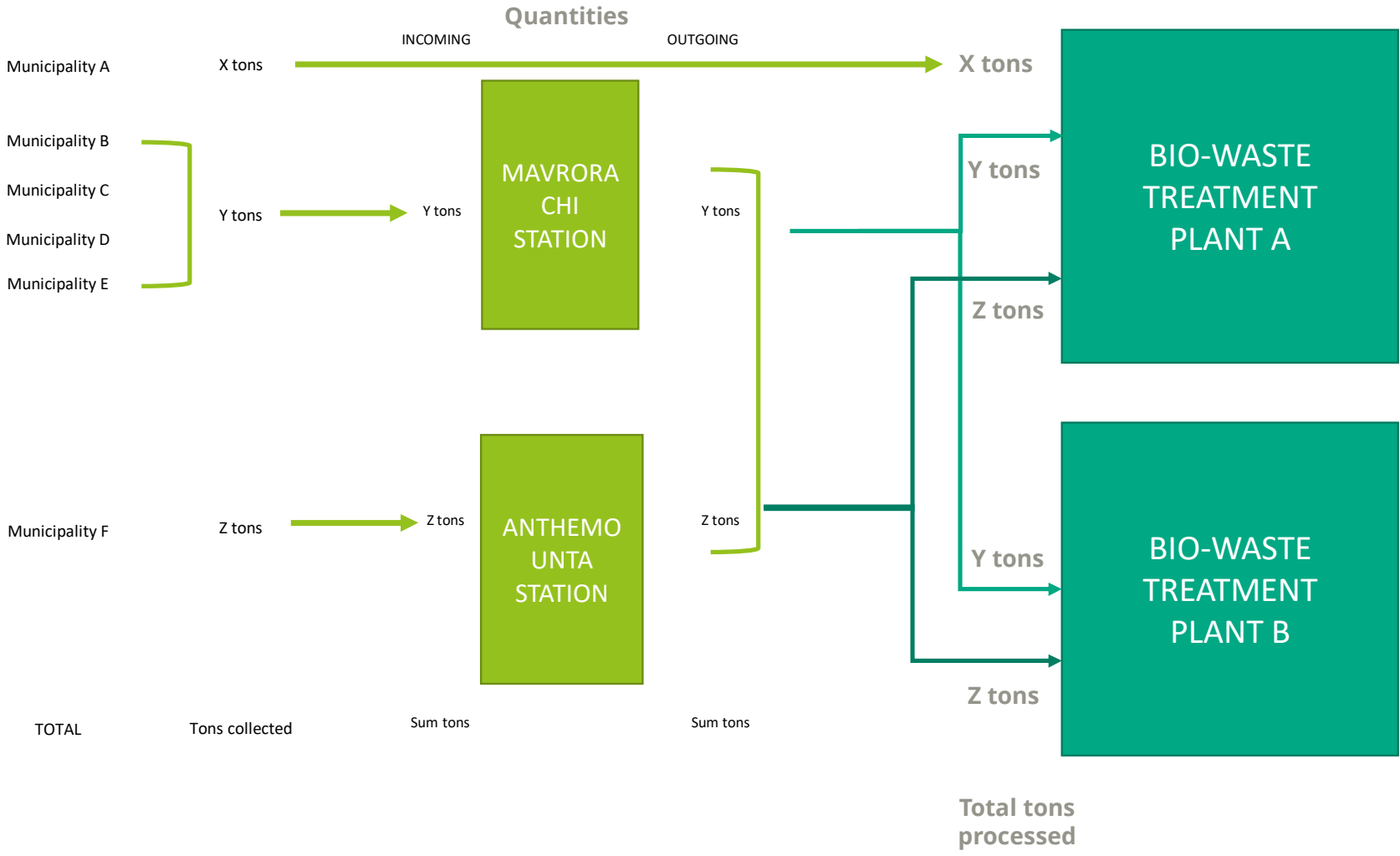
Monitoring and tracing bio-waste flows at Municipal Level



Bio-waste quantities:

- ✓ per management facility
- ✓ per month of production
- ✓ per year
- ✓ per producer (municipality, food market, hotel ect)

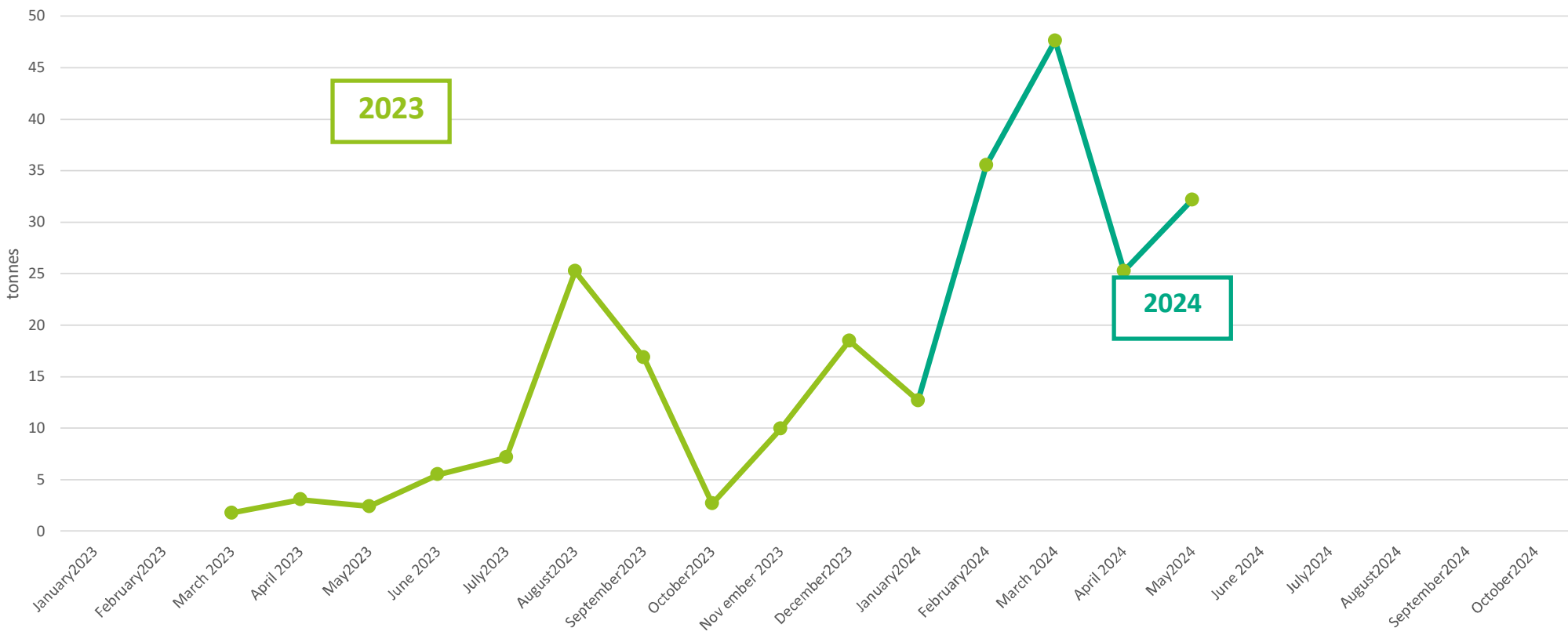




2023

Progression of Biowaste Collection

MUNICIPAL BIOWASTE SEPERATELY COLLECTED



Evidence of Success



Lessons Learned

- Forming a **working group** with representatives from all departments involved in all stages of the process, as it includes several deadlines, stages and procedures.
- The **single funding** proposal ensured the fulfilment of the institutional obligation of Local Authorities to **simultaneously start** of the separate bio-waste collection (01/01/2023) throughout Central Macedonia Region regardless of size, staffing and operational readiness of Local Authorities.
- Creating of a **common Awareness Campaign** material for nearly 2,000,000 million residents created a **single identity** that works cumulatively with multiplying benefits.
- The single funding procedure **saved hours of work** and procedures as the whole process was implemented by one beneficiary and not separately for each Local Authority.

Lessons Learned

- This value added process has **shaped a tool** that could be adapted for respective funding procedures of the Municipalities.
- It contributes to the implementation of the **new institutional framework** which foresees that the **financing** of Local Authorities' actions could be carried out **through Waste Management Authorities** with programmatic contracts.
- **Additional personnel** will be needed for more efficient collection and monitoring. Regular **exchange of information** between waste management departments in each Region or at national level is necessary within the same type of settlement structure, along with the set-up of a benchmarking process on **improving collection efficiency**.
- The **economic benefit** for sorting at source is the decrease of the pricing policy by **approximately 55.5%**. Therefore, Municipalities have the **motive** to:
 - diverge the biodegradable fraction of Municipal waste from landfilling
 - fulfill the obligation provided by the Directive 2008/98/EU, for separate collection of bio-waste
 - recover of raw materials and proper treatment to produce compost
 - reduce the waste management cost per Municipality

KAFE KADOS on the Policy Learning Platform of Interreg Europe

Expert Opinion

“This good practice is an excellent example of a regional integrated system of separate biowaste collection and monitoring.

The example from Greece highlights the economic benefits of an integrated system, as well as the importance of monitoring, potential for an impactful joint awareness raising campaign and single funding proposal.

The good practice can be a very useful and inspirational tool to other European regions that are currently developing or improving their biowaste collection.”

Thank you!

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