



SWEDISH ENVIRONMENTAL  
PROTECTION AGENCY



Sweden  
Sverige

## **Supporting Albanian Negotiations in Environment, Chapter 27 (SANE27)**

**Mbështetja e Negociatave Shqiptare në Mjedis,  
Kapitulli 27 (MNSHM27)**

**Stöd till Albanien i förhandlingar av miljökapitel 27**

Tirana, 13.10.2020



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# **Title: Planning and Development of Integrated Waste Management Systems**

**Sub-chapter: Development and operation of a Regional waste management system: The case of Western Macedonia in Greece**

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# *The Regional* **Integrated Waste Management System** *of Western Macedonia*





## DIADYMA'S BEGINNING



DIADYMA SA was founded in 1998, with the participation of 61 "Capodistrian" Municipalities & Communities - being one of the largest inter-municipal partnerships in Greece.

Shareholders (today after the new "Kallikratis" administrative structure): The 13 Municipalities of the Region of Western Macedonia - Aminteo, Voio, Grevena, Deskati, Eordea, Kastoria, Kozani, Nestorio, Orestida, Prespa, Serbia, Velvento & Florina

The main objective of the Company since its establishment was the design, implementation and operation of the Integrated Waste Management Plan in Western Macedonia Region, through the application of sustainable management methods, in order to achieve the objectives of the National and European legislation on waste management, with the lowest cost to the citizen.

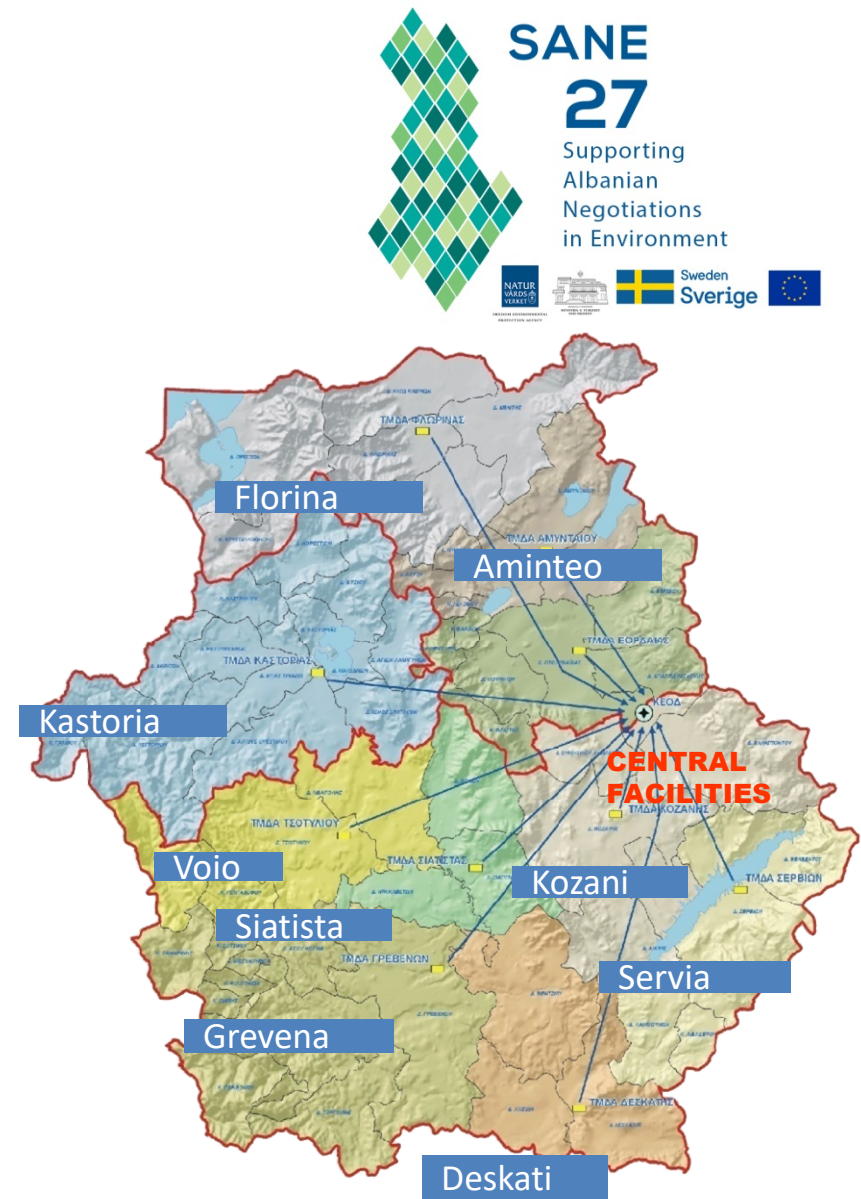




## IWMS

The IWMS has been in operation since July 2005 and consists of:

- The Integrated Waste Management Central Facilities(IWMCf) where the Municipal Solid Waste is processed and finally disposed of
- The 10 Local Waste Management Units, where the mixed waste, recyclable materials, bulky, electrical and electronic waste, green and other separately collected waste streams are initially registered and transferred and then through LWMU are transhipped and transported to the IWMCf.



## 1<sup>st</sup> Phase

### Ensure Landfill and restoration of Old Uncontrolled Dumpsites (2003-2007)

- Construction of 9 LWMU, 1 Regional Sanitary landfill (A & B Cells), Supplies of mobile equipment for waste transfer and land filling (Cohesion Fund, 13 million €)
- 207 Uncontrolled dumpsites were restored (38 with funding of 6 million € from Operational program ‘Environment and sustainable development’ (Operational program for environment and sustainable development), 169 with funding of 3 million € from program THISEAS (Development Program for Local Government)

## 2<sup>nd</sup> Phase

### Development of Recycling with Collection at Source programs & Exploitation of waste with the MBT plant (2009-2015)

- Development of Collection at Source programs with the use of four different bins (each for different recyclable material) (National Strategic Reference Framework, 4 million €, Hellenic recovery recycling corporation 1,5 million €)
- Construction of C' cell of sanitary landfill and Supplementary mobile equipment (National Strategic Reference Framework, 10 million €)
- Signing of Contract for the construction of MBT plant - through PPP project Total Investment 48 million €)

### 3<sup>rd</sup> Phase: Prevention and Reuse (2016-2023)

- ✓ Green Points Network for reuse and exploitation
  - a) Urban type “Green Points” in specific settlements(<3.000 inhabitants)
  - b) Collection of items for reuse in Materials Reuse Centers (logistics centers)
  - c) Networking of facilities – Online access for citizens (e-platforms)
- ✓ Expansion of existing networks of Collection At Source of recyclable materials
- ✓ Development of Collection At Source networks for biowaste
- ✓ Information and public awareness raising actions on waste prevention



## *Local Waste Management Unit (LWMU) in Kastoria*





## *Integrated Waste Management Central Facilities*







An aerial photograph of a waste management facility, likely a composting plant, with various buildings and storage areas. The facility is surrounded by green fields and a road. The following components are labeled with arrows pointing to their respective locations:

- Administrative building
- Weighing building
- Compost storage
- Refinery Unit
- Compost unit
- Wastewater Treatment Unit
- Reception unit
- Sanitary landfill
- Preprocessing
- Maintenance building
- Mechanical Sorting Unit
- Recyclables storage area
- Maturity of compost



## Management System Operation Recyclable Materials



1. Collection at Source



2. LWMU



3. Regional  
Recycling Center



4. Recyclables

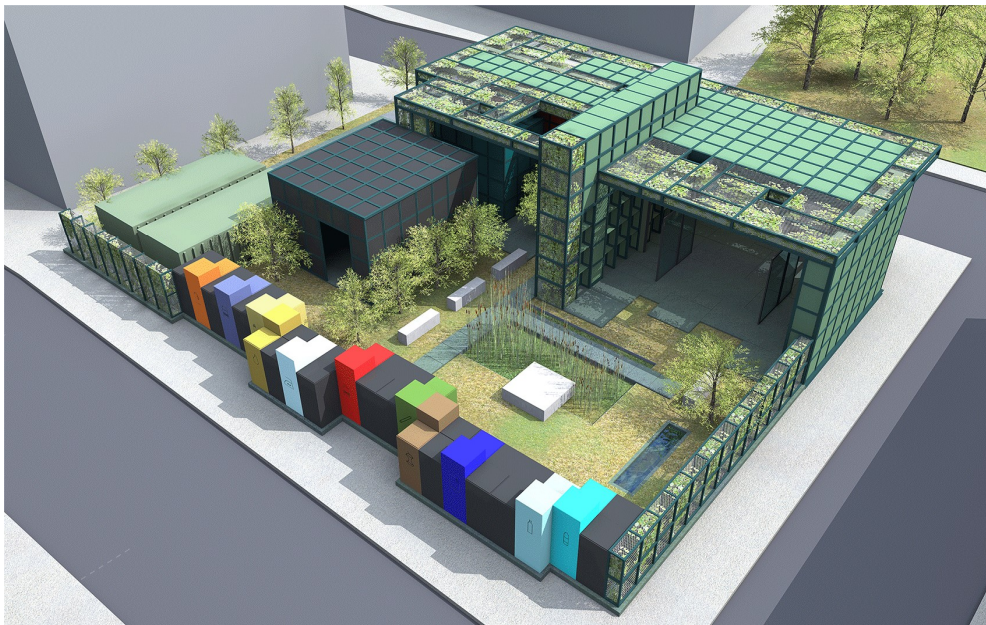


### ***Green Points Network – Material Reuse Centers***

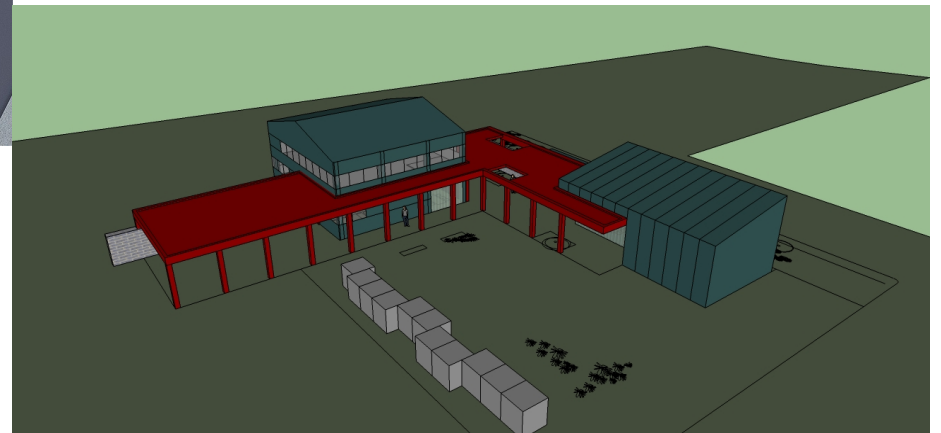
- a) The 10 existing LWMUs can operate as Big Green Points as each of them already has 7 waste streams (paper, plastic, glass, metals, WEEE, green, bulky) - Adding equipment to serve the other streams
- b) Construction of 12-15 Urban Type Small Green Points in specific settlements with at least one per Municipality in accordance with the Local Waste Management Plans
- c) Supply of 5 Mobile Units of prevention and reuse to serve remote settlements
- d) Construction of 5 Materials Reuse Centers within the LWMUs for the management of materials (logistic centers) and with Internet access for citizens' online access



## Urban Type Green Point



## Reuse Center



## Reuse center in LWMU of Kastoria



Funded by Interreg Greece-Albania  
“WASTE RREACT PROJECT”



## Reuse center in LWMU of Kastoria



**Funded by Interreg Greece-Albania “WASTE  
RREACT PROJECT”**

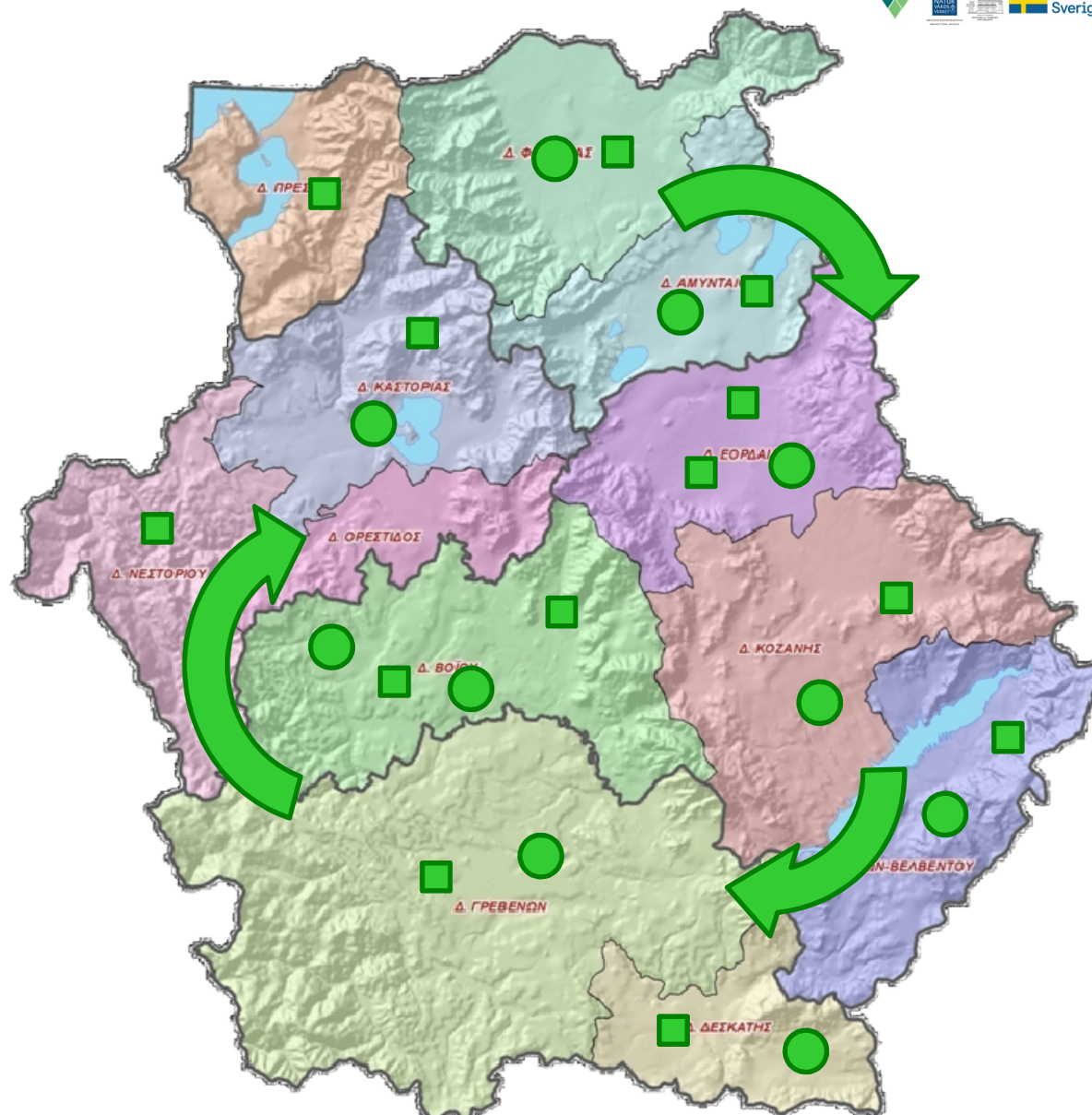
## Mobile Green Point





## Green Points and Reuse Centers Network

- : Big Green Point
- : Small Green Point
- ↻ : Mobile Unit of prevention and reuse



## *Development of Networks for collection at source of the Bio-waste*

- Municipalities will develop networks for biowaste collection at source with a brown bin.



- They will be processed at a Discrete stream in the MBT plant
- Distribution of compost bins at home.

***Biogas exploitation of landfill site in Western  
Macedonia for the production of electricity***

- **Scope:** the provision of services for the collection and exploitation of the biogas of the landfill site of the Integrated Waste Management Central Facilities of Western Macedonia waste for the production of electricity and the supply of the electricity distribution network, granting the right to exploit biogas, according to the terms and conditions set forth in this declaration.
- **Duration of the contract:** 20 years from the issuing of the Energy Efficiency Unit's license
- **Implementation finishes in 2021**



*Information and awareness raising actions on  
prevention issues*

- Continuation of information actions in schools in Western Macedonia
- Over the past 3 years, 15.000 Kindergarten, Primary,
- Secondary and High School students have been actively involved.
- Organization of conferences and informative events
- Exploitation of the MBT plant's multi-purpose room for student education



### *What we achieved*

- Closure and restoration of 207 uncontrolled dumpsites and application of land filling in 2005
- Implementation of programs for collection at source for 4 streams of recyclable packaging materials (paper, plastic, metals and glass) from 2009
- Recycling of around 18,000 tones / year of packaging materials, ie 80% of the target, of which 30% are sorted by source
- Processing the biodegradable fraction of waste to > 80% from 2017





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**Thank you for your attention!**



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