

# EU policy, concept and strategy on biowaste management



## Key instruments and implementation of best European practices and experience in different local situations



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- Grigor Stoyanov,



Ministry of environment and water of Bulgaria,  
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board member

# The EU Ressource Challenge

- Population to reach 9 billion by 2050;
- 2 billion middle income earners in 'developing countries' are expected to triple their consumption by 2020
- In a “business as usual” scenario, extraction of resources will triple by 2050
- Global demand for food, feed and fibre will increase with 70% by 2050, while 60% of the ecosystems underpinning their supply are already degraded or used unsustainably
- Competition for resources (including raw materials) increases, resource scarcities appear, prices go up - this will affect the European economy
- In Europe we consume 16 tonnes of materials annually per capita, 6 tonnes of which become waste



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# EUROPEAN LEGAL FRAMEWORK

## Thematic Strategy on waste prevention and recycling

### Framework

Waste Framework Directive  
(2008/98/EC)

Waste Shipment Regulation  
(EEC/259/93)

### Waste Treatment

Incineration Directive  
(2000/76/EC)

Landfill Directive  
(1999/71/EC)

recycling standards  
(future, based on WFD)

Sewage Sludge  
(75/439/EEC)

Batteries & Accumulators  
(2006/66/EC)

Packaging & Packaging Waste  
(94/62/EC)

Mining Waste  
(2003/319/EC)

End-of-Life Vehicles  
(2000/53/EC)

Electrical & Electronic Equipment  
(2000/96/EC)

PCBs, PCTs  
(96/59/EC)

Restrictions on the Use of Hazardous Substances in WEEE  
(2002/95/EC)

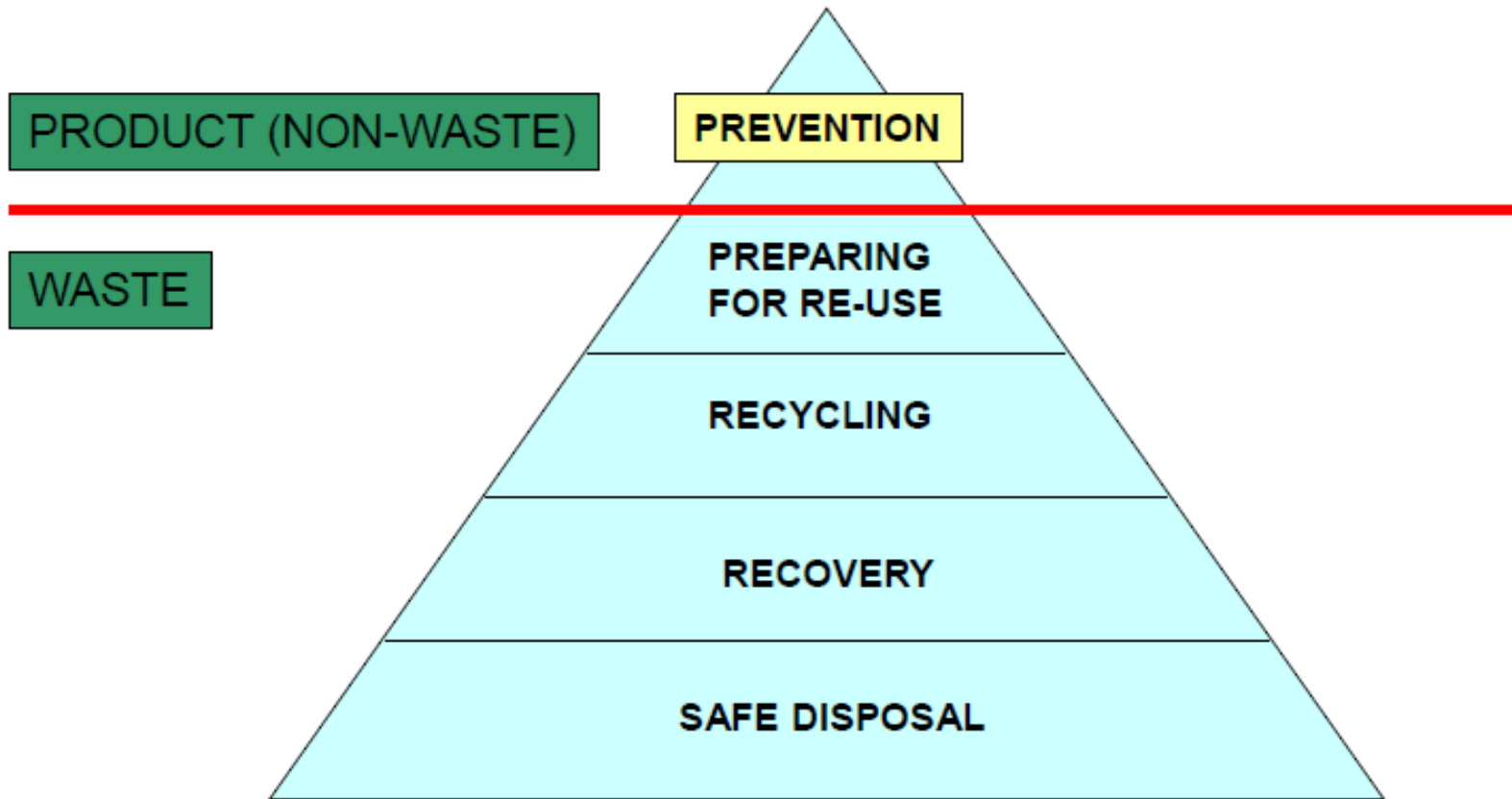
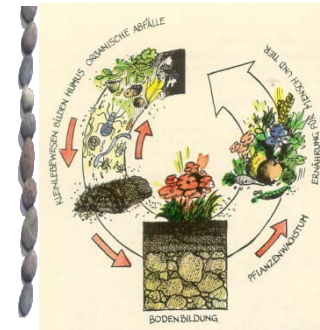


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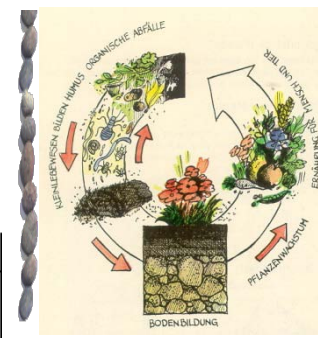
# EUROPEAN LEGAL FRAMEWORK

Obligations in the EU Waste Framework Directive:  
establish Waste Management Plans (art 28) in line  
with the waste hierarchy (art 4)



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<b>EU Targets</b>		min recovery	min recycling	collection rate
Packaging	2008	60%	55%	
Cars	2015	95%	85%	100%
Electronics	2006 2016	70%	50%	min 4 kg per inhabitant per year 85% of WEEE arising (COM proposal)
Batteries	2011		50% to 75% (efficiency)	
	2012			25%
	2016			45%
Tyres	2006	0 landfill of tyres		
Biowaste diverted from landfills	2006	reduction to 75% of the 1995 level		
	2009	reduction to 50% of the 1995 level		
	2016	reduction to 35% of the 1995 level		
New targets (WFD)	2015	Separate collection: at least paper/metal/plastic/glass		
	2020	50% recycling household waste		
	2020	70% construction and demolition waste re-use/recovery and recycling		



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# EU-Landfill Directive 1999/31/EC

Reduction of **biodegradable** waste from landfill



in % of biodegradable waste 1995

25% → 2006/10

50% → 2009/13

65% → 2016/20



separated at the source

liquid



dry/solid



**NO** separate collection!!

mixed waste



For the **Landfill Directive diversion targets** (Art. 5) an **impact assessment** on the need of the revision of these targets is done (2013).  
**?? > 65% ?? ... ?? Current Debate: Complete Ban from 2020/25 ??**



# Composting vs. AD ??

**COMPOSTING (aerobic)**

**ANAEROBIC DIGESTION (anaerobic)**

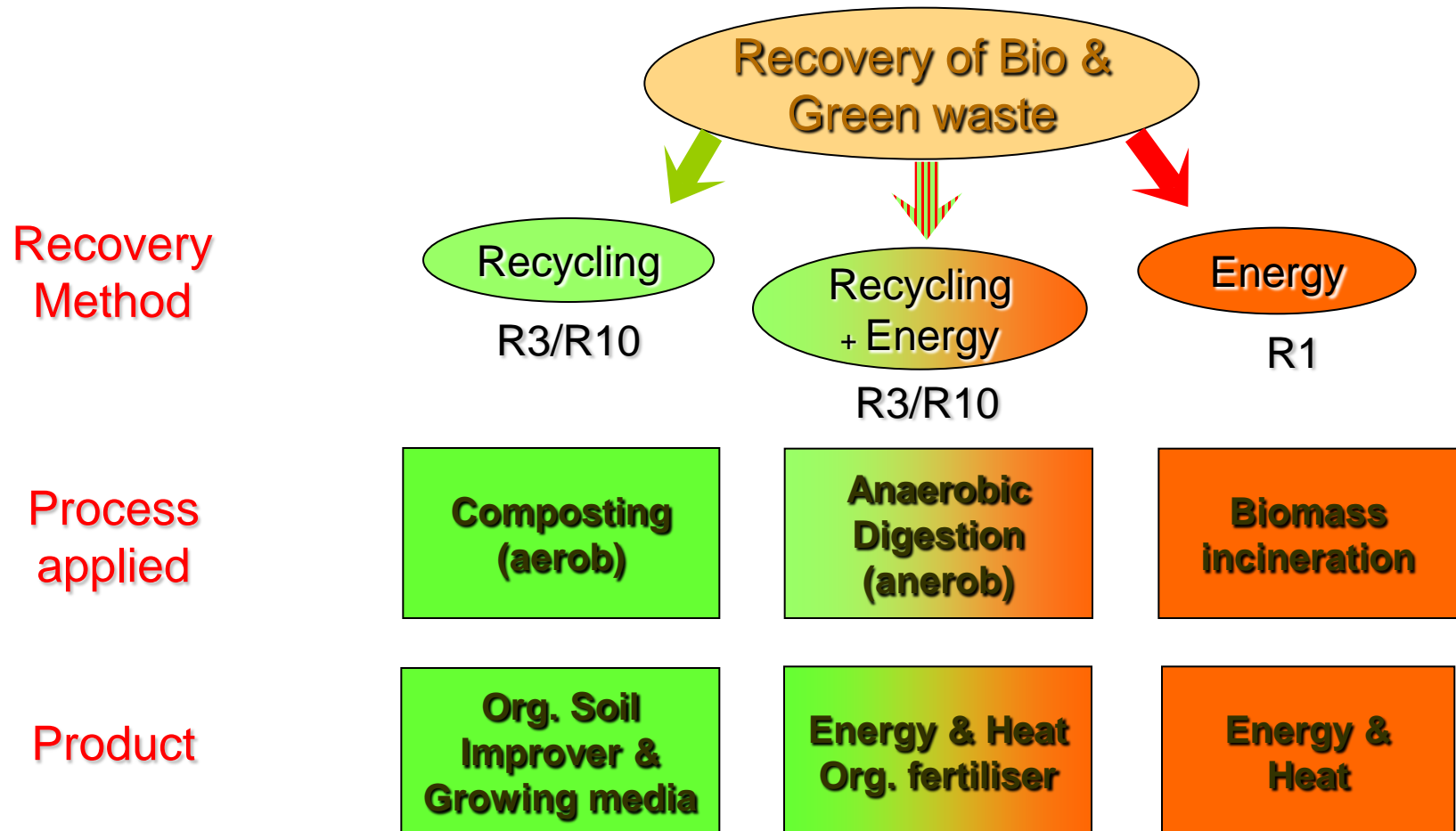


*Increasing water content*

*Increasing structure [wood]*



# Recovery and Recycling Options for Organic Waste Streams



# Collection Schemes



# Collection Schemes





Fotos: Florian Amlinger, KE&B, Austria

# TYPICAL OPEN WINDROW COMPOSTING PLANT





**OPEN WINDROW** composting



# Further Windrow Systems



Compost Technology

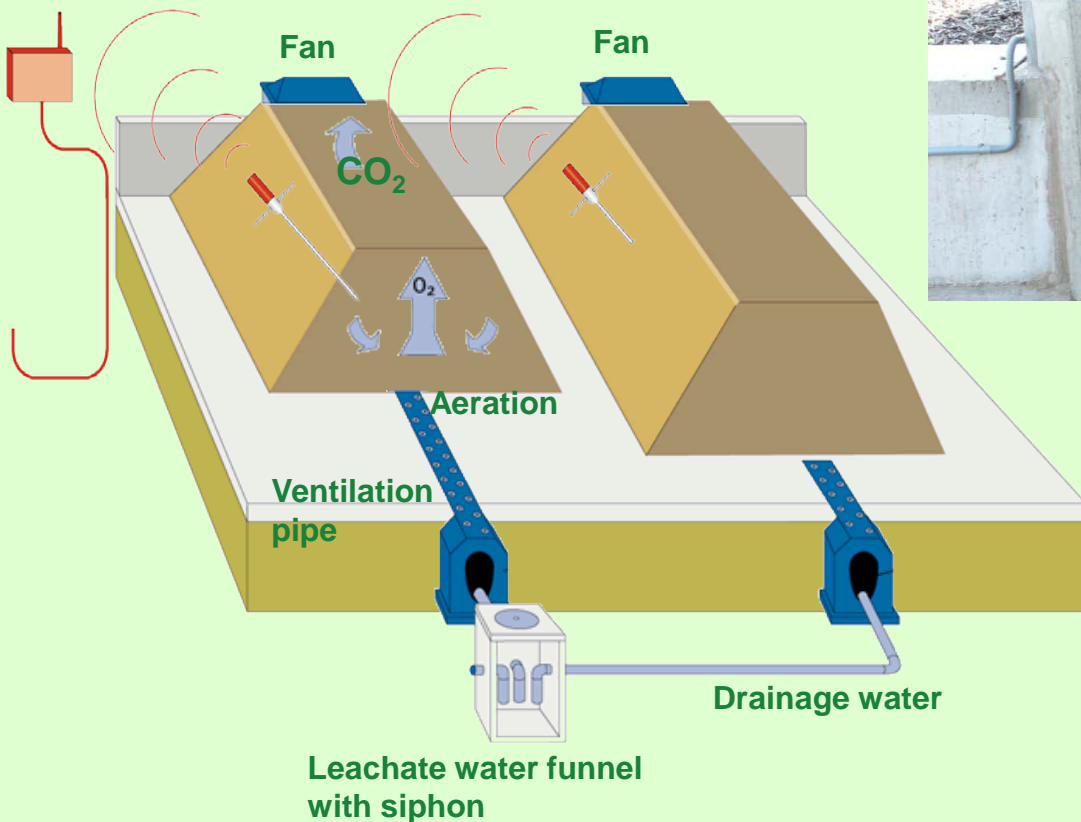
# Forced Aeration in Open Windrow Systems

COMPONENT

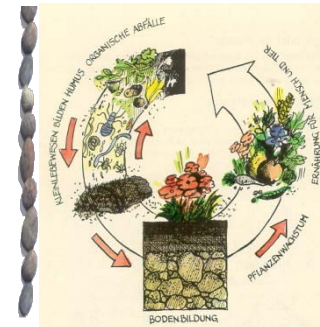
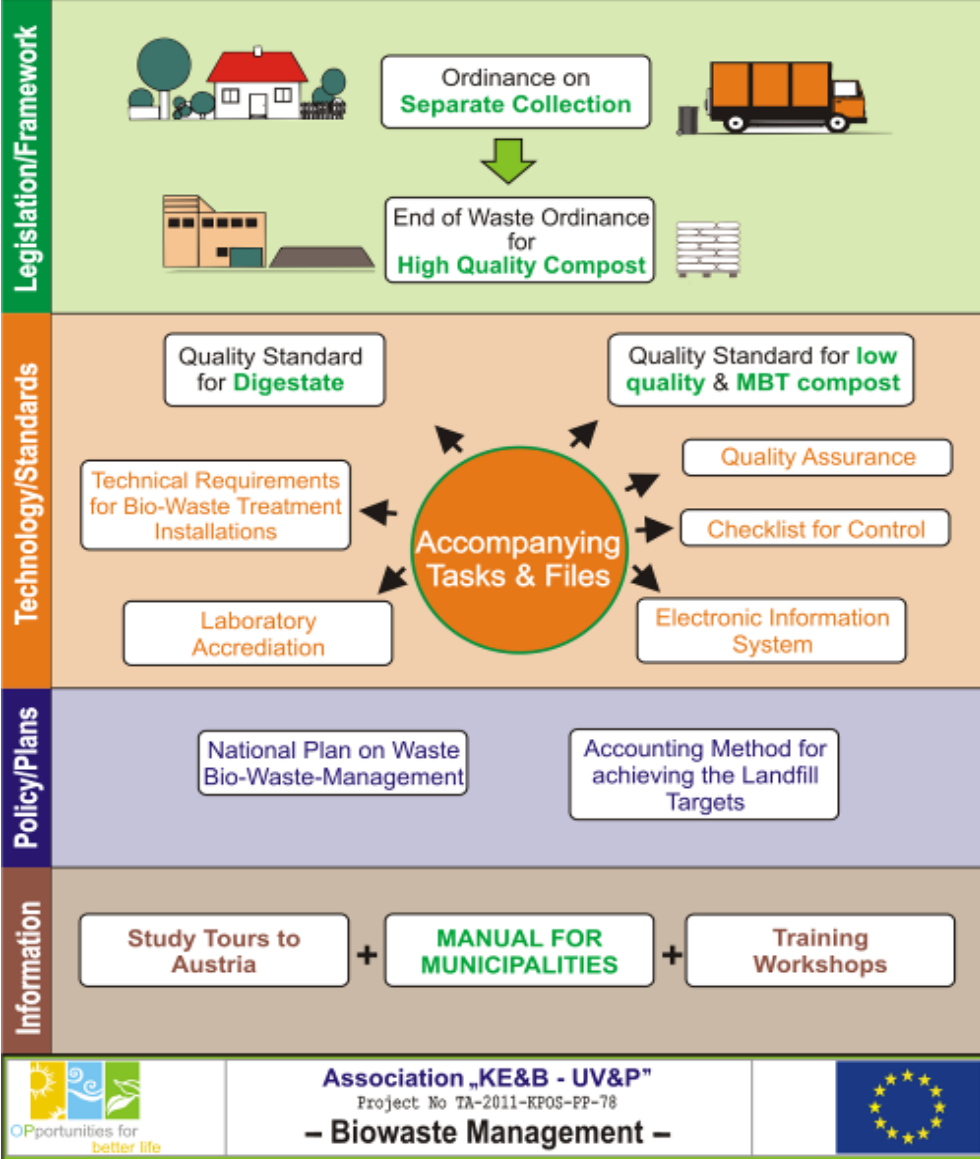
SEIRINGER



Temperature GSM  
transmission





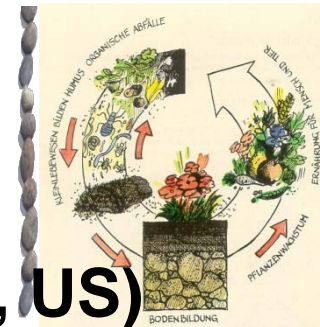


## The project

- The logic of the project STAGES representing key elements of the envisaged Bulgarian Biowaste Strategy and its implementation
  - Legislation
  - Accompanying technical standards and guidelines
  - Adapting policy instruments and reporting schemes
  - Training & support



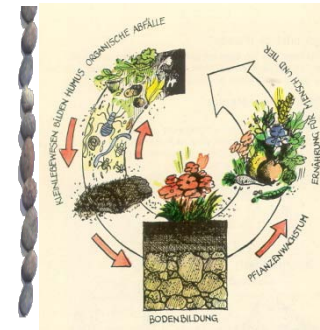
# Implementing Directive 99/31 and art. 11 + 22 of WFD



- **Bans on biodegradables to landfills (e.g. BR, US)**
  - Most stringent provisions
  - May lack flexibility
  - Requires codified thresholds for acceptance at landfills
- **Obligation on separate collection**
  - On Municipalities (e.g. NL) – may be deceived with poor performing / low participation systems
  - On households (e.g. AT) – very effective, if stringent control possible
  - May require phased implementation
- **Targets for sep. collection / composting / recycling**
  - Specific biowaste processing targets (e.g. Sweden)
  - General recycling + composting targets (IT & UK)
  - Result-oriented + flexible



# Sep. Collection and recycling targets for biowaste



25% of biowaste by year 2016

50% of biowaste by year 2020

70% of biowaste by year 2025

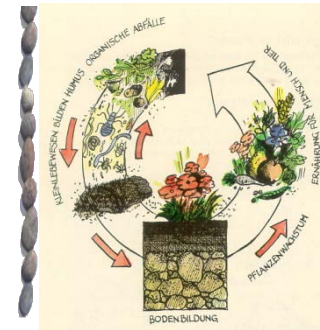
- Relative to the quantity of municipal biowaste as generated in year 2014 (base-line year)
- recycling = composting or anerobic digestion



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# Obligations of local authorities



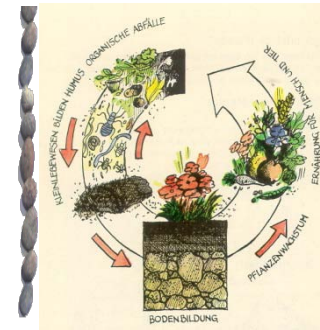
- **Bulgaria is divided on 55 Waste management regions**
- The municipalities in every region are obliged to create **Regional Waste Management Associations** with the purpose of proper waste management on the territory of the region and building the entire needed infrastructure.
- **The Mayors have to organize and coordinate within the WM Regions:**
  - **A phased introduction of** separate collection schemes for bio-waste from households and similar institutions (shops, restaurants)
  - Implement complete separate collection and recycling of green waste from garden and parks
  - The planning and installation of composting and/or biogas plants
  - Install recycling centers, including bring sites for garden waste for settlements with a population of > 10,000 inhabitants



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# Biowaste management in waste management regions/associations

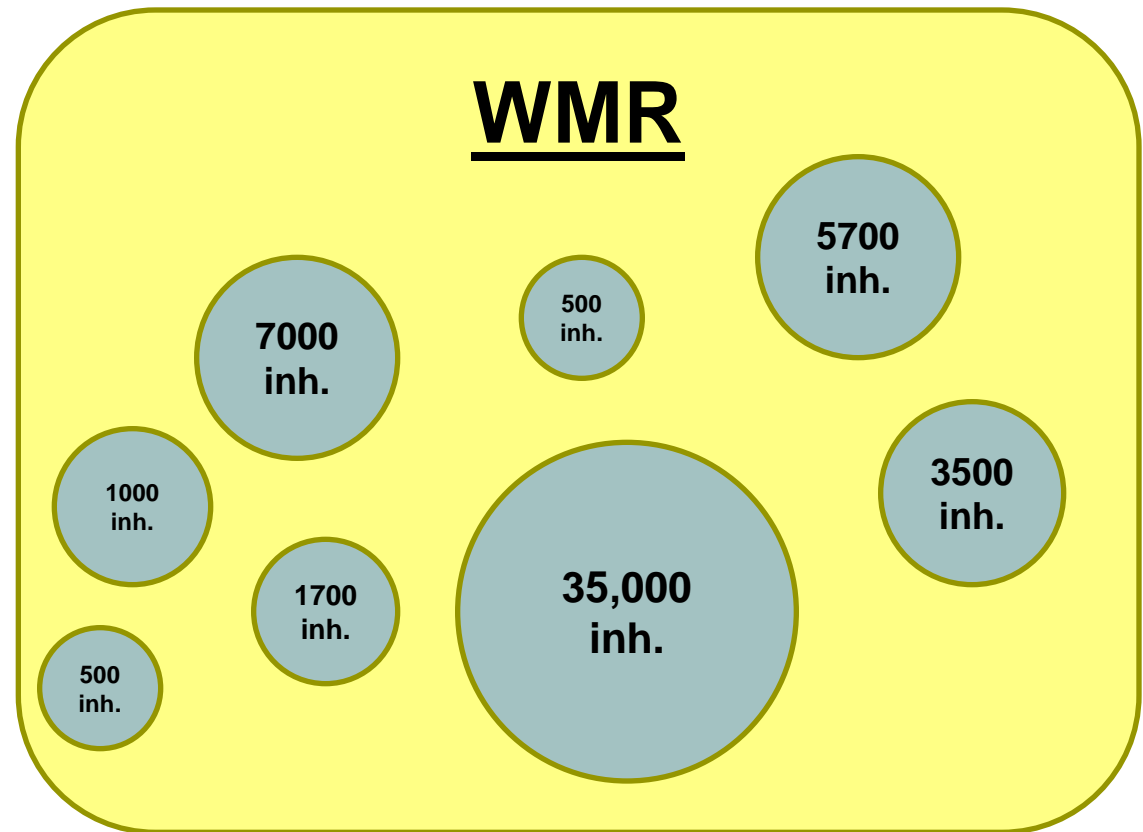


## Options for single municipalities

**Separate Collection** from households and similar sources

**Home composting** (i.e. no or only partly separate collection)

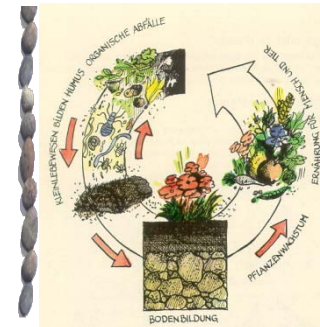
**Sep. Collection** for large producers only



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# Biowaste management in waste management regions



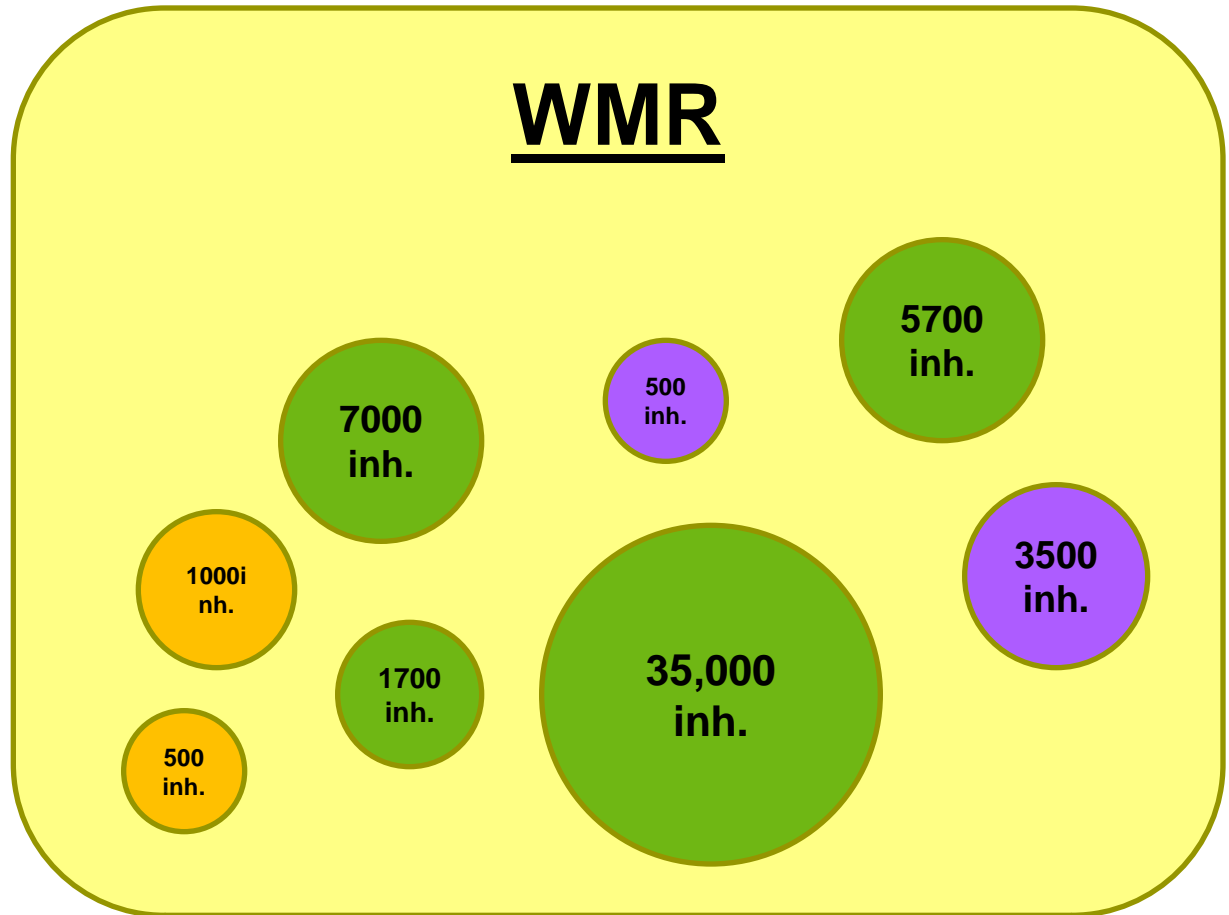
## Options for single municipalities

**Separate Collection** from households and similar sources

**Home composting** (i.e. no or only partly separate collection)

**Sep. Collection** for shops, restaurants only

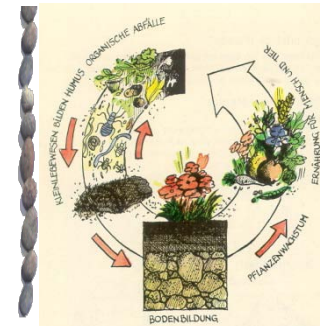
## WMR



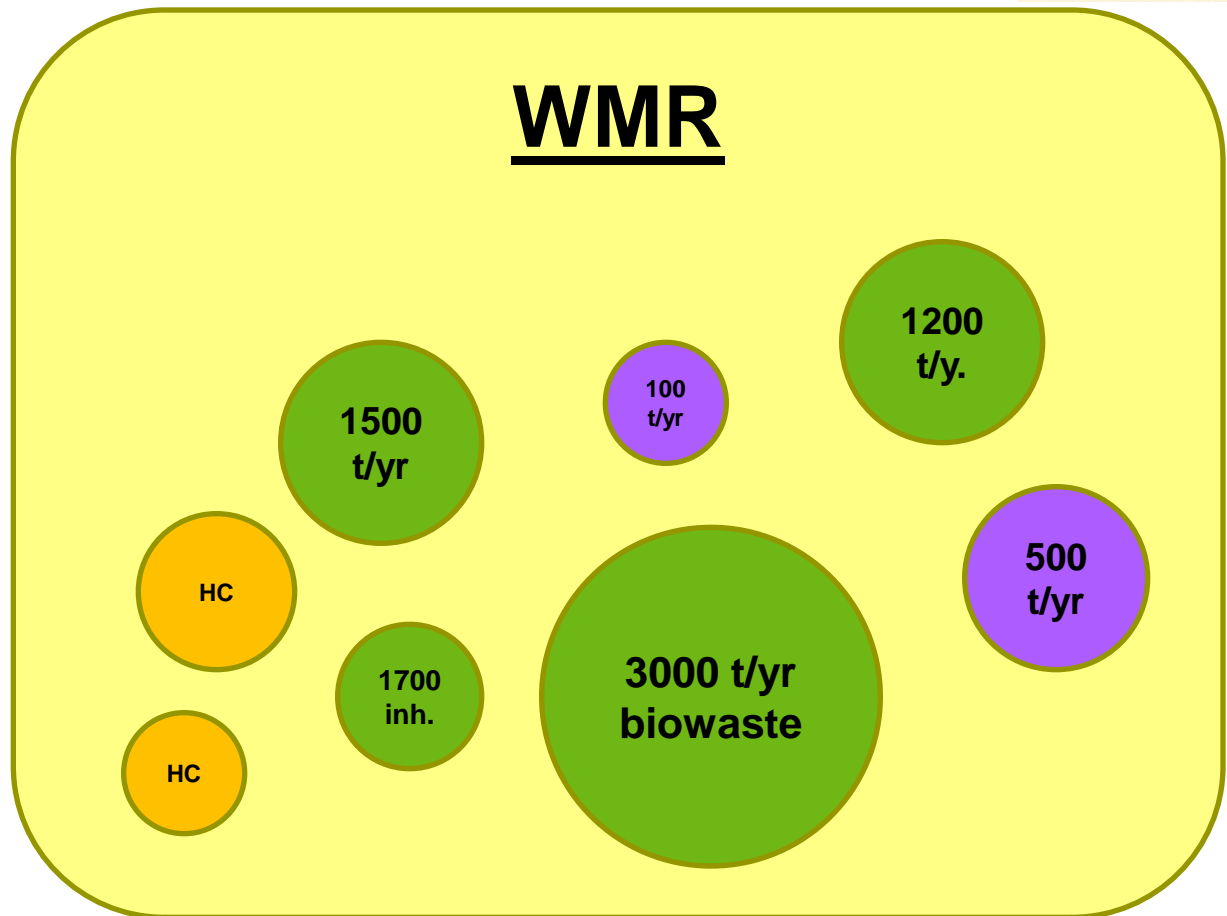
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# Biowaste management: targets for single municipalities:



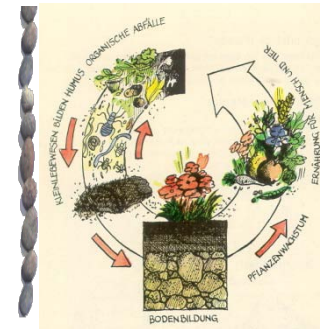
<u>Options for single municipalities</u>
Sep. Collection = 7400 ton
Home composting for 2 municipalities
Sep. Collection for large producers in 2 municipalities



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# Capacity building – a model for decentralised composting



	Nr. Comp. plants	Biowaste treated	Served population	Produced compost	Agricultural land needed
Decentralise plants	321	385,000 t	2,750,000	154,000 t	10,000 ha
All plants incl. OPE projects	374	1,031,140 t	7,365,286	412,500 t	27,000
% decentralise plants (incl. OPE projects)	86%	37% of total potential treated in agriculture comp. plants			



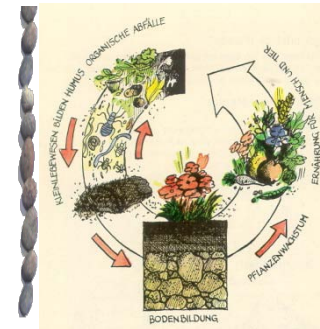
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# Ordinance on Biowaste

## BASIC CONCEPT



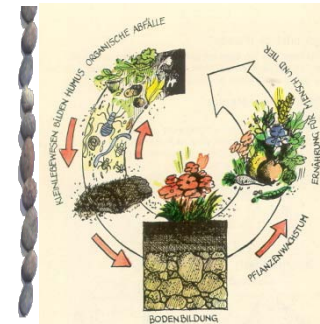
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# Does the Source Matter ???



# Draft Ordinance – Quality Concept I



- **Compost** may be produced from **source separated Biowaste (<10% impurities)** and/or **quality certified Sewage Sludge** and may include **Additives** and shall meet **strict limits** for *heavy metals* and *impurities*

= **Product**

- **Organic Soil Amendment** may be produced from **source separated Biowaste (<10% impurities)** and/or **quality certified Sewage Sludge** and may include **Additives** and shall meet **less strict limits** for *heavy metals* and *impurities*

= **Waste**

- **Stabilised MBT Output** may be produced from **Mixed Municipal Waste Fractions, Biowaste (>10% impurities)** **Sewage Sludge** (Decree No. 339)

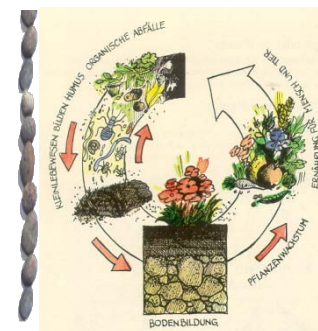
= **Waste**



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# Course of the QAS



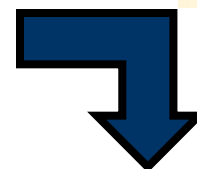
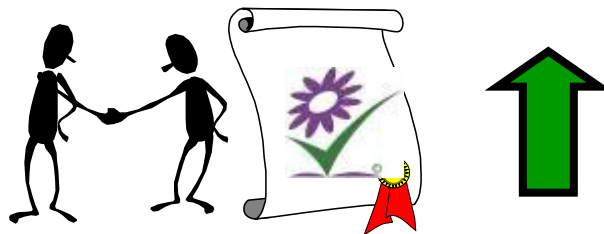
**Composting Plant**  
Member of **National Organisation**

**Contract**

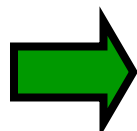
**Evaluation Report**

sanctions,  
complaints, measures

**Not okay**



**Quality Committee QC**



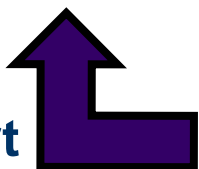
**Okay**

**Quality Label Certificate**

**Acknowledged Laboratory**  
sampling & quality analysis



**Report**



**National Organisation NQAS**

Analyses assessment  
and plant inspection



**Test report**

**Inspection: ECN: every 2 years**

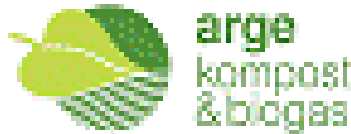
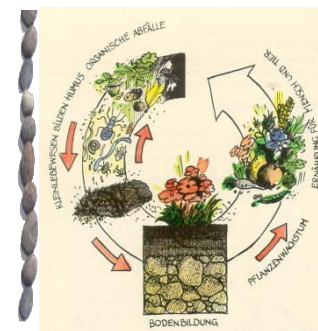
**AT: 1x / year**



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# Quality Assurance, Certificates and Labels for Compost and Digestion Residues

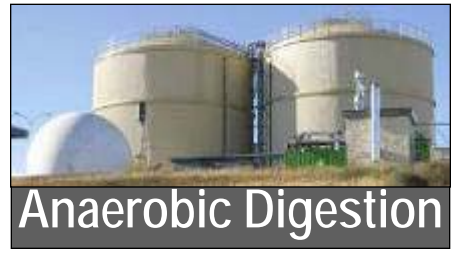
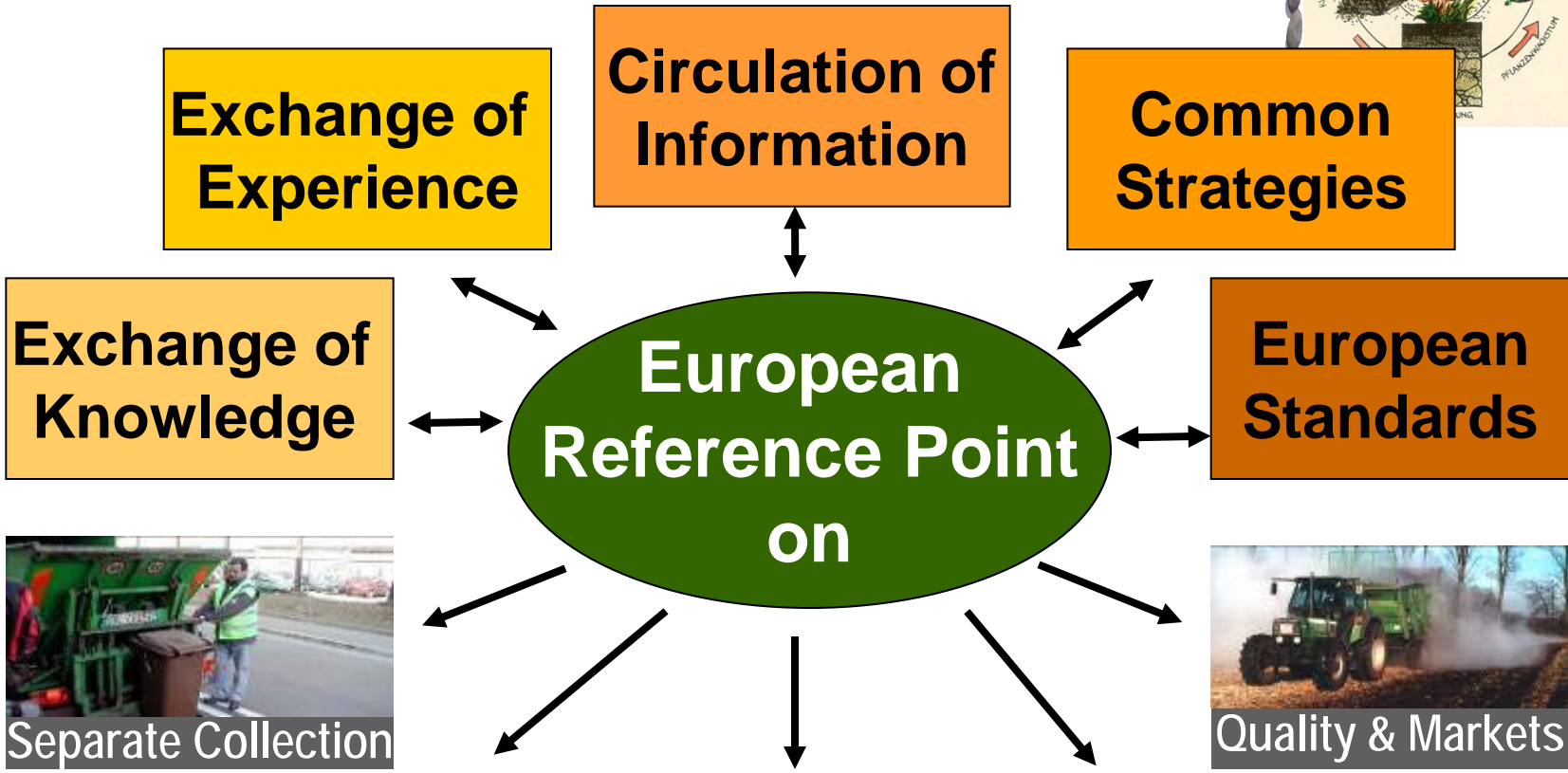


**QAS Monitoring in EU:  
800 plants with capacity of  
11 million tons composting  
and  
2.5 million tons digestion**



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# European Compost Network ECN



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# ECN Quality Assurance Scheme (ECN-QAS)

## Targets of ECN-QAS

- Harmonisation of the compost quality and requirements across Europe
- Harmonisation of quality assurance schemes across Europe
- Assistance to build up national quality assurance schemes
- Assurance and monitoring of high quality compost products in Europe
- Promotion of recycling of waste «from waste to product»



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# Content and labels of ECN-QAS

The European Quality Assurance Scheme includes:

- Awarding the ECN-QAS Conformity Label to national quality assurance organisations (NQAO)
- Awarding quality labels for composting plants and compost products

In future:

- Awarding quality labels for digestion plants and digestate products



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# Registered Composting Plant

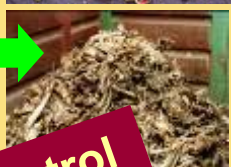


Storage

Mixing

Conditioning

batch composition ...  
batch monitoring ...  
°C, turning, watering ...



INPUT

Receipt Control

Residues

Compost = Product

QM: the principle of a traceably documented process

# THANK YOU FOR ATTENTION!

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**MINISTRY OF ENVIRONMENT AND WATER OF BULGARIA,  
European Compost Network**

**WG5 „Eastern and Mediterranean countries“ - Chair and  
Board member**

