

Operation of composting plants and marketing of compost



Composting place "Warden"



Digestion and composting plant
"Würselen"



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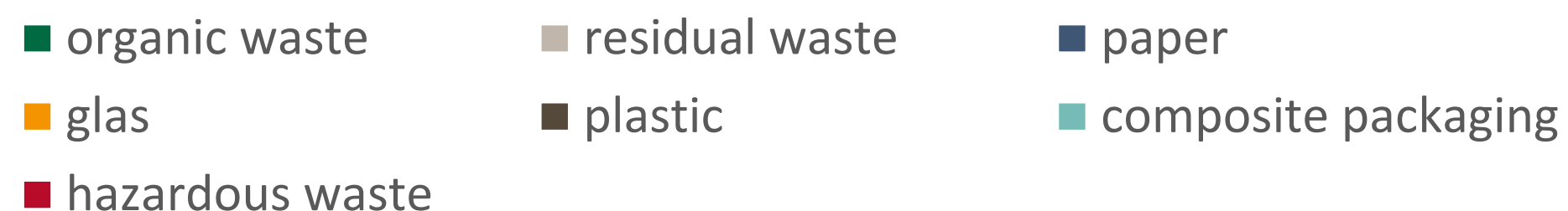
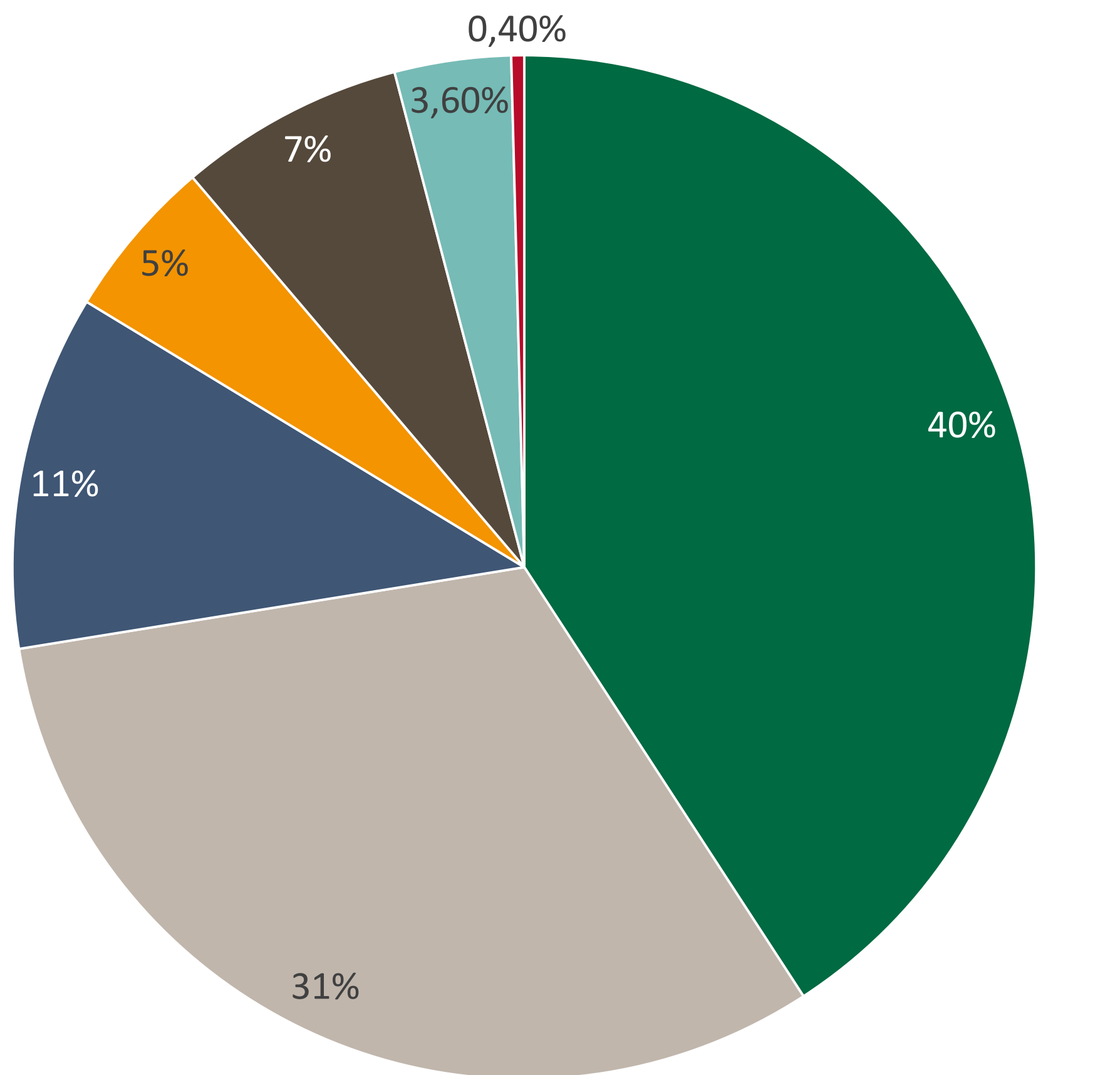
AWA Entsorgung GmbH

Starting point (end of the 1980s)

- Change of environmental awareness in Germany
- Realizing: handling of waste is not sustainable and does not meet the requirements of an ecological waste management
- Which measures are to be taken to reduce waste quantities?
- Which are plants to be installed in order to recycle or treat waste in an environmentally compatible manner?
 - increasing amounts of waste from private households
 - no acceptance of new landfill site in our densely populated area
 - beginning of separation of waste
 - end of the volume at landfill site expected
 - Municipal plants:
 - 1 landfill site
 - 4 small composting plants

Starting point

Waste composition of residual waste in 1991



- Workout of an integrated waste management concept
- Extensive inventory of facts regarding waste management: quantities; composition; organization; forecast; collective structure; treatment facilities; drop off stations
- Approximately 350 pages

Institutional setting

- Circular Economy and Waste Management Act 1994/96
 - hierarchy: avoidance – recycling – disposal
- Landfill ban for organic waste (01.06.2005)
- Integrated Solid waste Management Concept for the region of Aachen 1993:
 - Decision to install waste disposal consultancy; to build an incineration plant; forcing of waste separation
 - City of Aachen has the title: “ecological city for the future”



Approach / Compost Strategy

- Make experience with composting of organic waste
 - exclusively organic waste from public parks; trees + cemeteries (compost places)
- Collection of green waste from households
 - container (bring systems)
 - collection by waste cars in the streets (several times in the year)
 - Drop off station /recycling park
 - separate collection of Christmas trees
- Pilot project: collecting bio waste (kitchen- and foodwaste) from households in test areas (bins)
- Very important: public relation activities:
letters to all house owners, booklets, information desk , exhibition with posters, information event (clubs, schools, etc.), little presort bin, news article, telephone hotline, internet, app, movies...
- Compost place for garden and park waste Warden 1991 (10.000 t/a)
- Bio waste composting plant Würselen 1995 (11.000 t/a)
- Upgrading by Digestion plant in 2012 (20.000 t/a)
- New composting plant in Warden in 2017 (30.000 t/a)

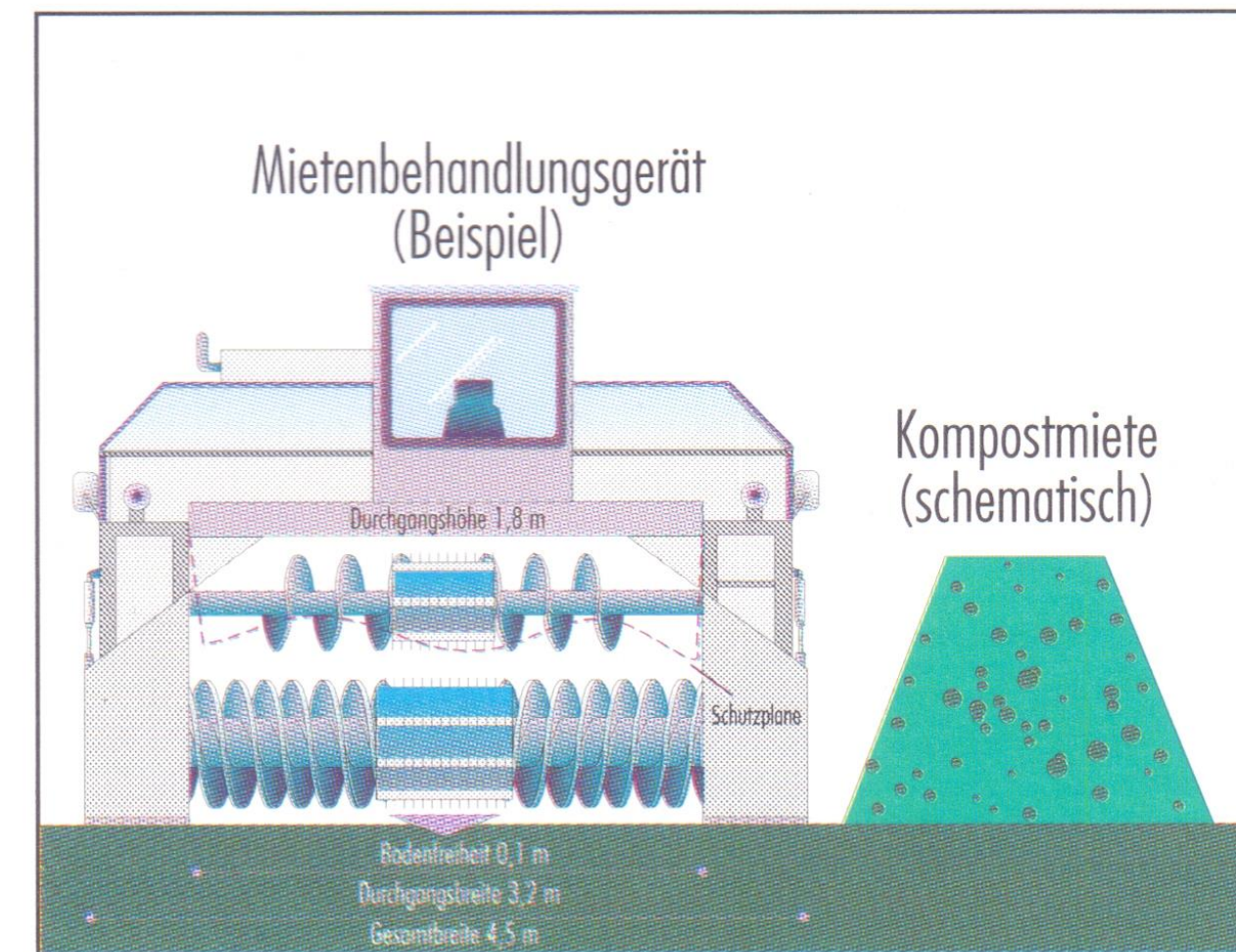
Composting plant Würselen

- Choice of location: reservation against compost plants
- Organization: Operation by another company with experience
- Choice of technical procedure
- Input: organic waste collection bin from households (kitchen- and food waste), garden waste (Collection by containers) from municipalities, gardening and landscaping companies
- Weighing scale
- Building: First rotting process (3 -5 weeks), mixed up bio waste and shredded material from garden waste
- Important: temperature 75-80 degrees



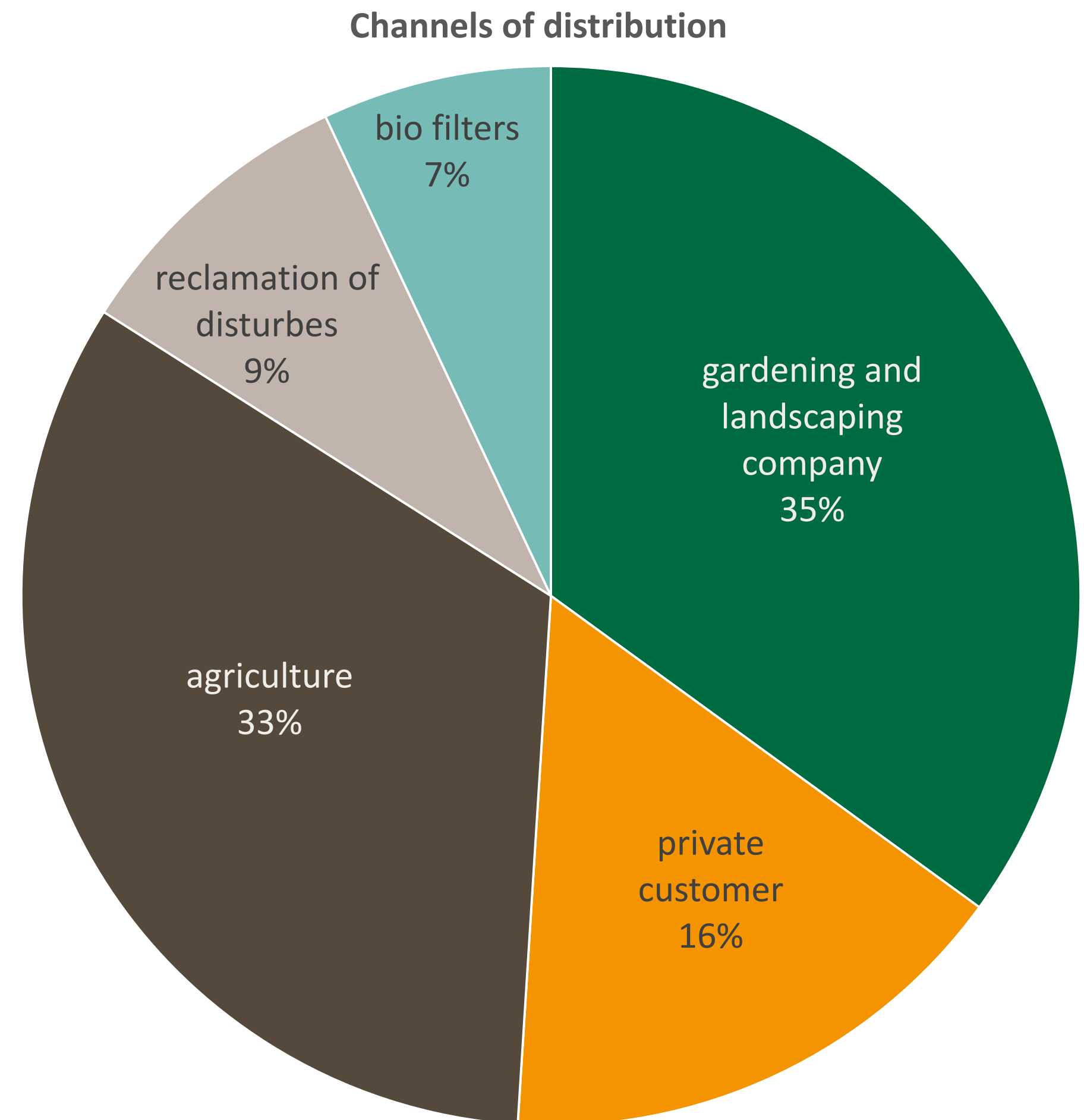
Composting plant Würselen

- Covered place: Main rotting process (7 weeks)
- A uniform rotting is achieved by multiple plough up/ moving the material
- Bio filter
- Composting leachate used for humidification
- Sieving plant
- Air separator



Marketing of compost

- Composting plants produce ca. 40.000 m³ compost
- Compost; material for mulching; substrate; products for bio filter; recultivation

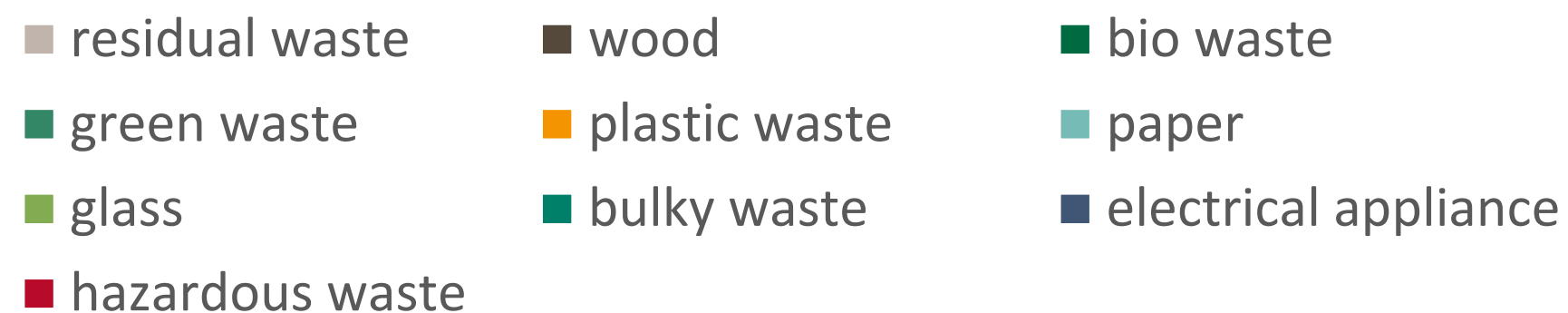
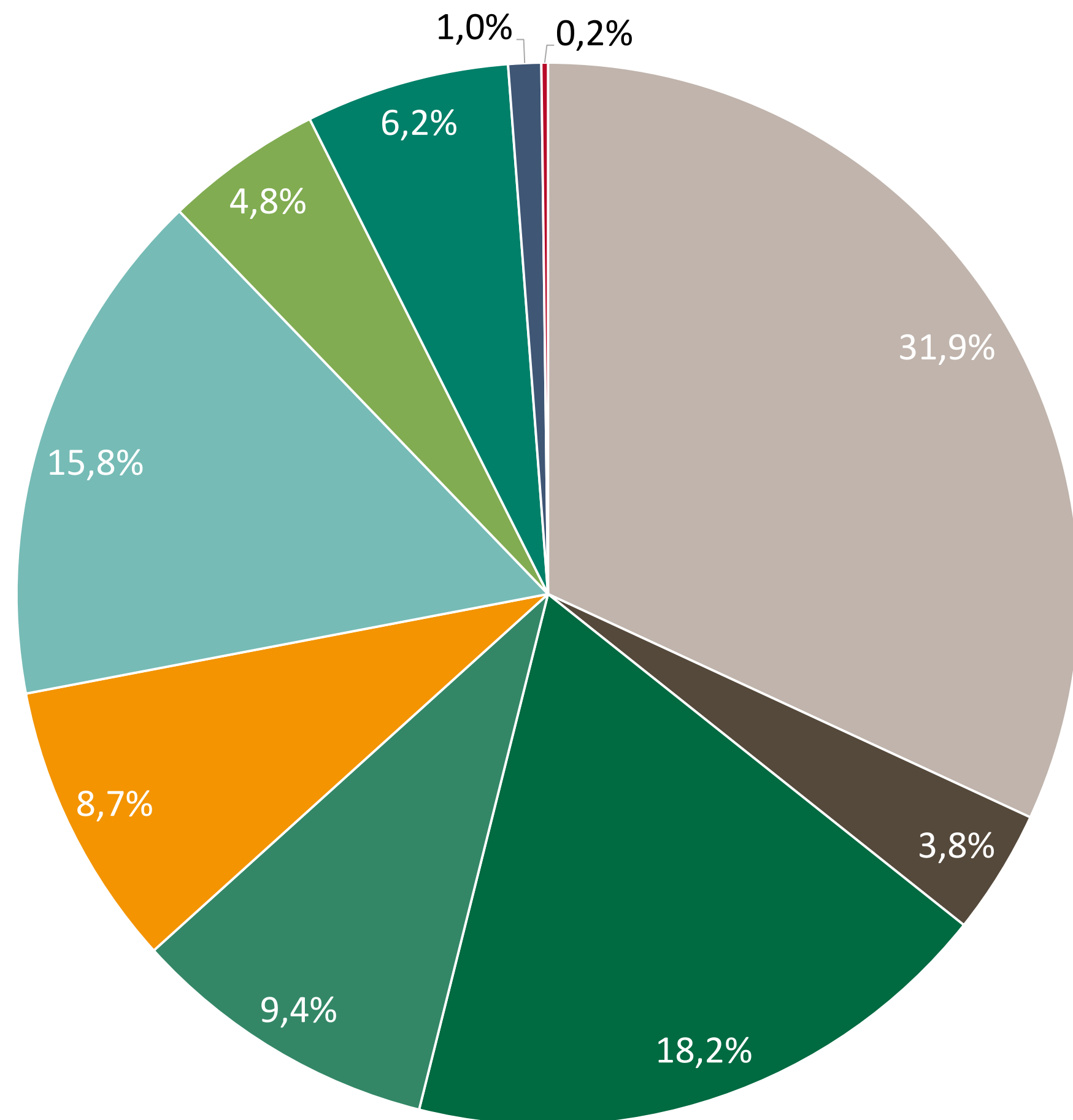


Marketing of compost

- All products are subject to the external supervision of the “Bundesgütegemeinschaft Kompost” (national recognized certificate)
- The marketing of the compost is contracted out to a special company
- When you provide garden waste you get a voucher for free compost material



Outputs



- Reduction of waste for incineration
- Production of compost
- Energy production (heat & electricity)
- Replacement of synthetic fertilizer
- Job creation

Lessons learnt



- Very important:
 - Politics must support the separation of food and kitchen waste
 - Intensive public relation/consulting as a permanent process
 - Bins are necessary for kitchen – and food waste
 - Short empty intervals contribute to acceptance
 - Requirement to use the green bin
 - Advertising for the products



Transfer

Preconditions:

- Concept for integrated solid waste management
- Market for compost
- Several steps:
 - Collecting garden waste (drop off; container)
 - Composting garden waste (compost place)
 - Make experience in composting
 - Pilot projects for collecting kitchen- and food waste
- Very important:
 - Public relation
 - Awareness raising for separate organic waste



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