THE ITALIAN MARKET OF COMPOSTABLE BIODEGRADABLE BIOPLASTICS

Prepared for: Assobioplastiche

Plastic Consult

Two business missions

plastic consult – business insight	plastic consult – finanza d'impresa
From 1979	From 2010
Consulting and business intelligence for the petrochemicals and plastics sector	Cross-sector economic and financial consulting for small to medium businesses

plastic consult – business insight

- Domestic and European sector analyses
- Structural studies
- Continuous monitoring of national markets
- National production statistics
- Support for strategic repositioning (diversification, acquisitions and divestitures)
- Locating industrial and commercial partners

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- Business control
- Financial accounting and cash flow management
- Banking facility management
- Real time profitability and budget analysis monitoring
- Monitoring and revision of cost centres
- Aggregation: start-up consortia, associations and business networks

Contents

1. Size and composition of the sector

- Coverage of the study
- The universe
- Plant location
- Employment and business volumes

Coverage of the study

Methodology

Our focus

This report is centred on companies with productions facilities in Italy for transformation of bioplastics, that is polymers being biodegradable and compostable in accordance with the UNI EN 13432 standard.

compostabile
CIC
OK compost
VINÇOTTE

Manufactured goods are varied so products have been classified by use or production technology according to the following outline:

- Plastic bags and carriers
- Sacks and bag for organic waste collection
- Other film: food packaging film, agricultural film, hygiene film
- Disposables: dishes, cups and cutlery; bowls for deli and catering
- Other injection moulded goods: preforms for bottles, stationary, gift and fancy goods
- Other applications

Coverage of the study

Methodology

Fieldwork (1 of 2)

Based on Plastic Consult database and in-house information originating form recent studies, we conducted a broad field survey that involved direct contact with over 100 companies.

Overall, 77 companies were identified having transformed bioplastics, at least partly in, 2012, exclusively or as a part of their production processes.

At the same time, the potential of spin-off industries was assessed, particularly plastic bags for retail outlets.

Scope of the study

Methodology

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Fieldwork (2 of 2) – Focus on shopping bags

To maintain continuity with the sector analysis conducted last year, we included a specific focus on shopping bags by monitoring production of polyethylene bags in addition to that of compostable bags. We also attempted to round the survey off by estimating import volumes in order to read the domestic market trend.

A number of companies active in the downstream processing of bioplastics were also contacted in order to estimate the overall potential of the sector in terms of the number of companies and their business volumes, in preparation for a more detailed analysis of the entire sector.

1. Size and composition of the sector

- Coverage of the study
- The universe
- Plant location
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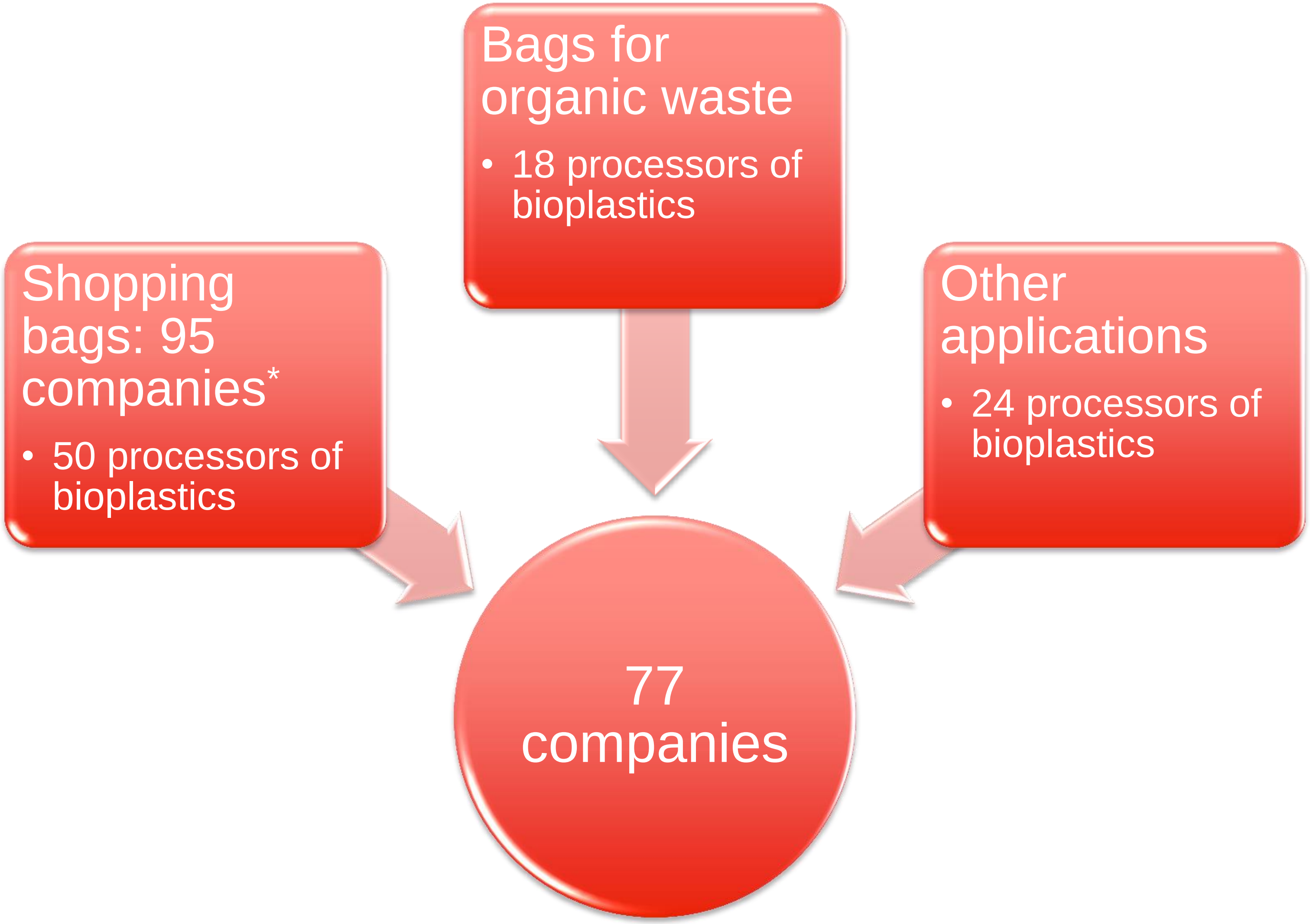
The universe

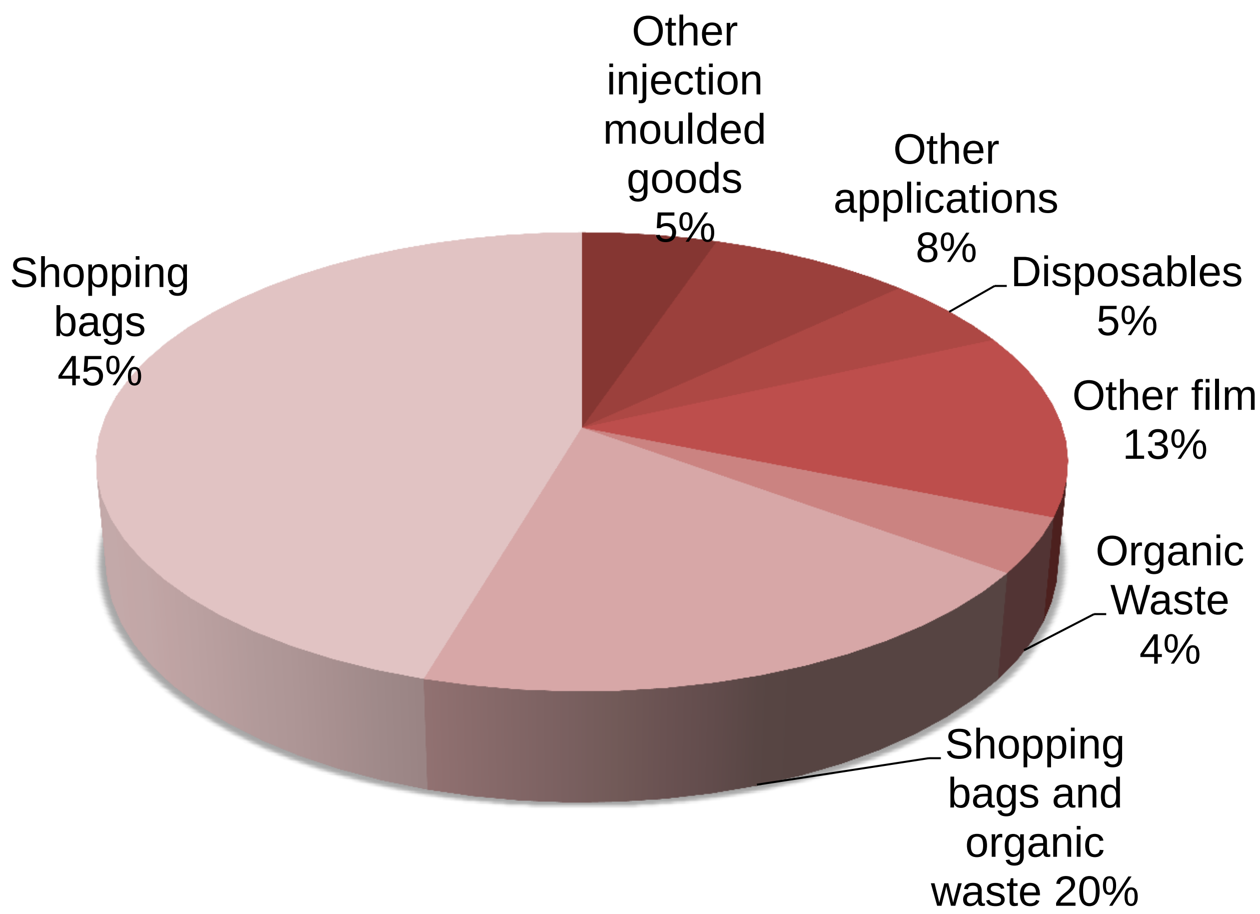
Bioplastics– Number of companies



*2011 data, including producers of non-biodegradable bags

The universe

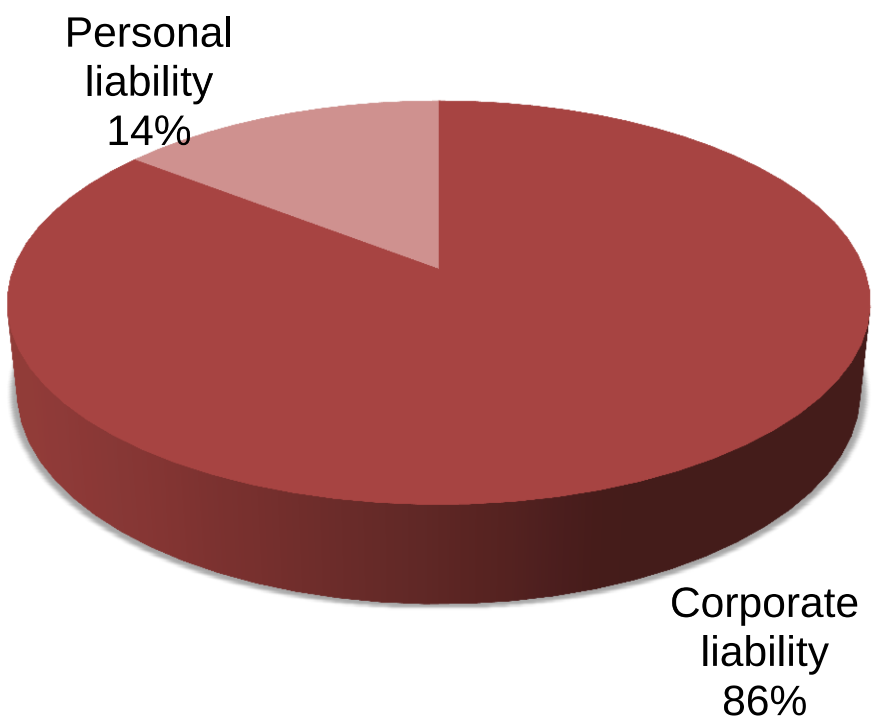
Bioplastics - Company specialisations

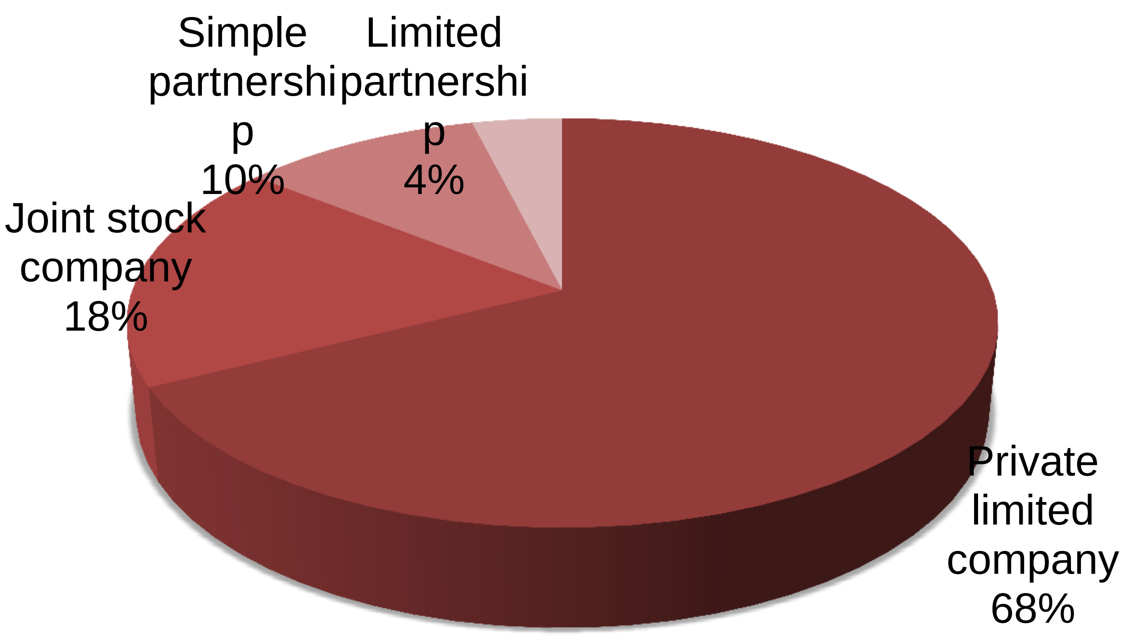


Total: 77 companies

The universe

Bioplastics – Types of companies





Total: 77 companies

THE ITALIAN BIODEGRADABLE POLYMERS MARKET

1. Size and composition of the sector

- Coverage of the study
- The universe
- Plant location
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Plant location

Regional distribution of facilities

	Number of companies	%
ABRUZZO	2	2.6
CALABRIA	1	1.3
CAMPANIA	6	7.8
EMILIA ROMAGNA	8	10.4
FRIULI VENEZIA GIULIA	2	2.6
LATIUM	2	2.6
LIGURIA	3	3.9
LOMBARDY	13	16.9
MARCHE	4	5.2
PIEDMONT	8	10.4
PUGLIA	2	2.6
SARDINIA	3	3.9
SICILY	7	9.1
TUSCANY	3	3.9
UMBRIA	3	3.9
VENETO	10	13.0
TOTAL	**77**	**100.0**

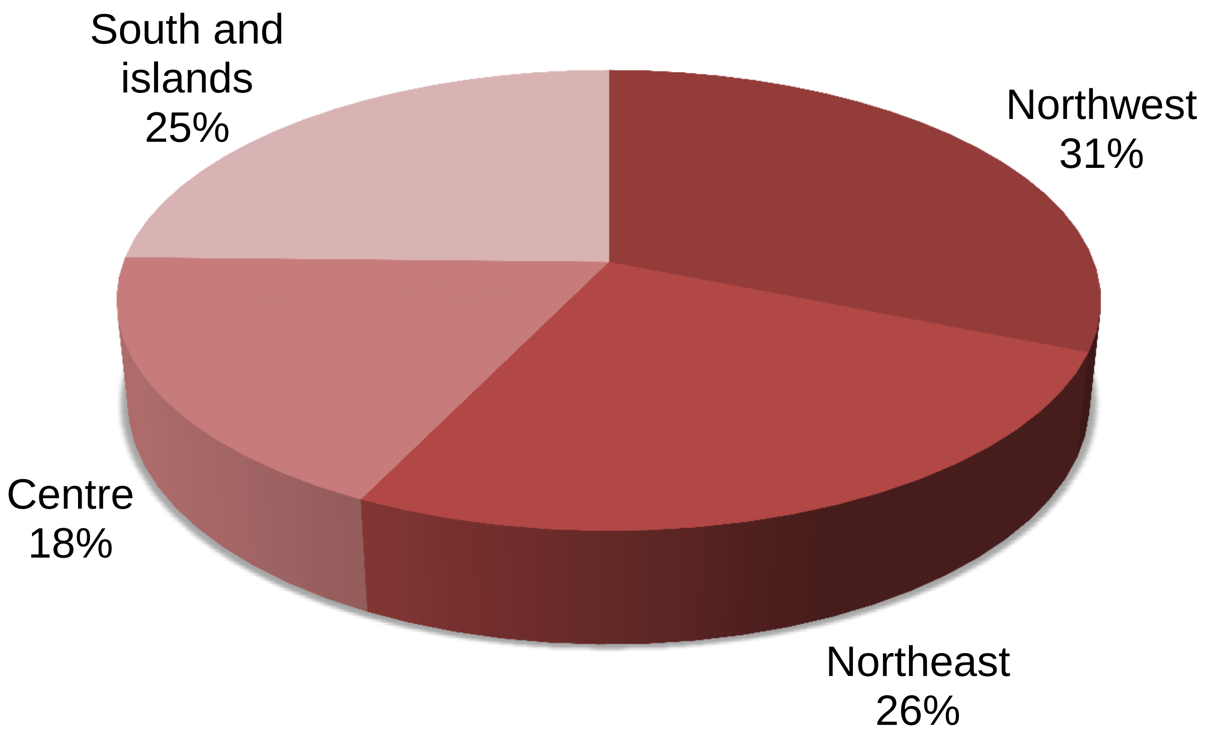
The 5 leading regions:

- *Lombardy*
- *Veneto*
- *Sicily*
- *Piedmont*
- *Emilia Romagna*

Account for 60% of the companies in the sector

Plant location

Breakdown of facilities by geographical area



Total: 77 companies

Plant location

Comparison between compostable bags and all bags

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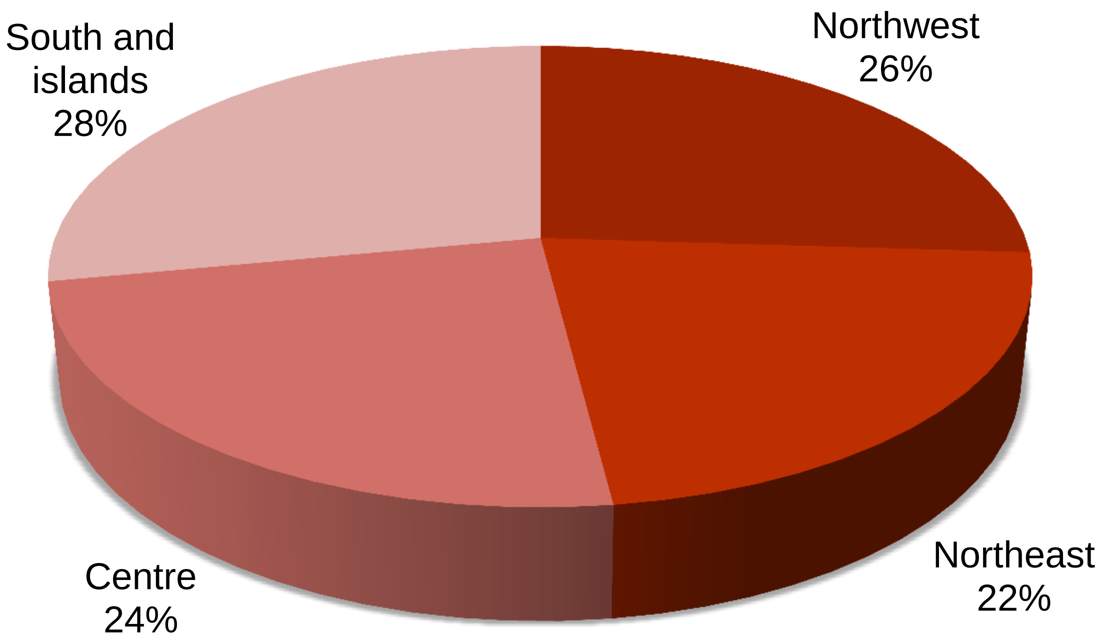
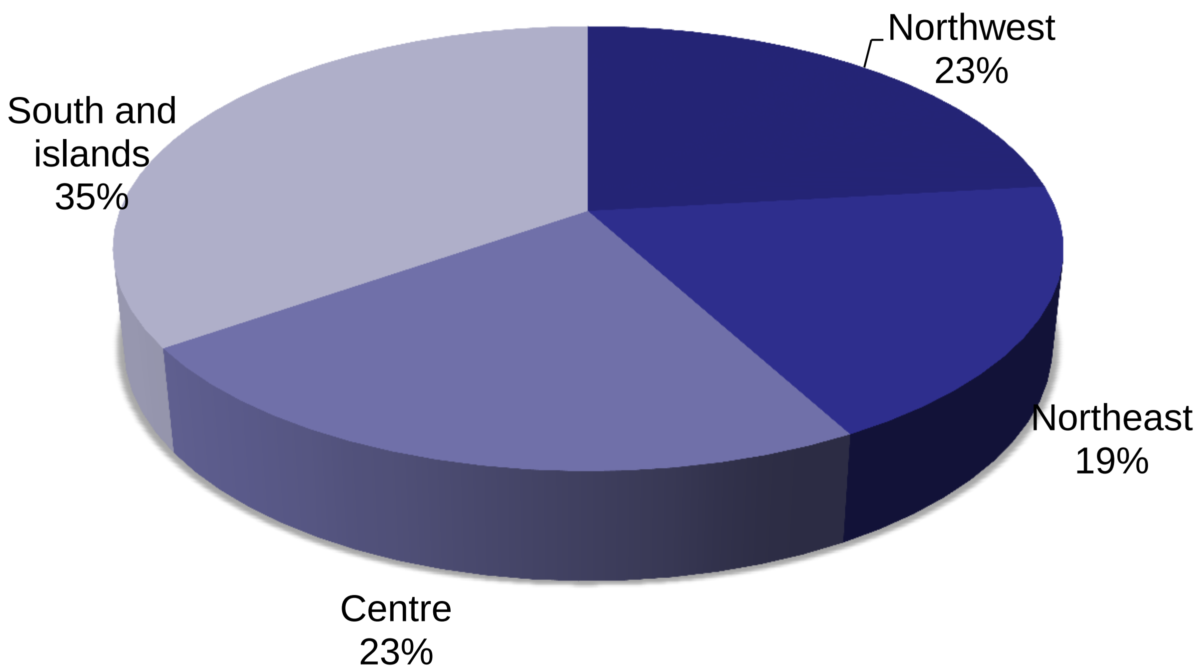
Compostable bags
50 companies



All bags
95 companies**



**2012 data, producers of biodegradable bags only

**2011 data, including producers of non-biodegradable bags

THE ITALIAN BIODEGRADABLE POLYMERS MARKET

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Employment and business volumes

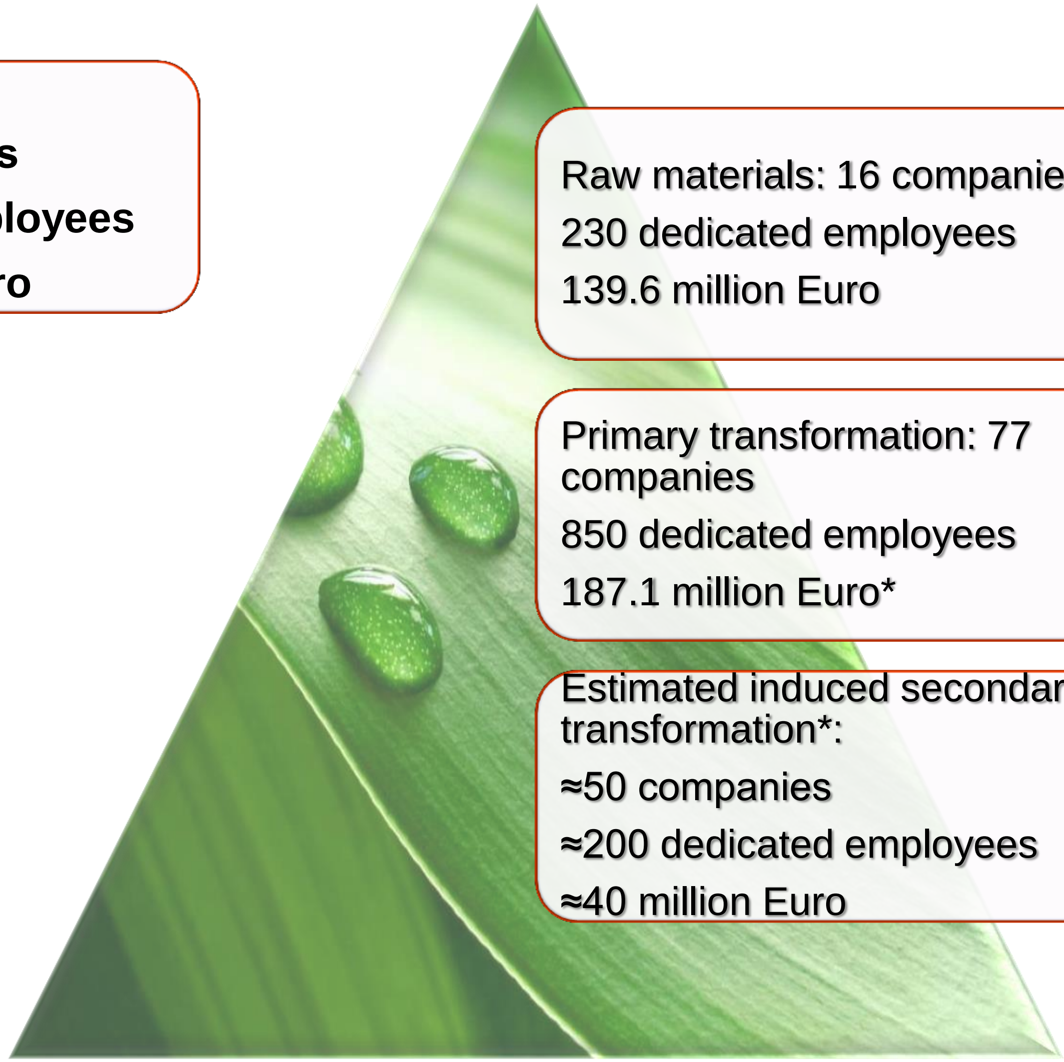
The domestic bioplastics sector- 2012

Sector total

≈145 companies

≈1300 dedicated employees

≈370 million Euro



Raw materials: 16 companies

230 dedicated employees

139.6 million Euro

Primary transformation: 77 companies

850 dedicated employees

187.1 million Euro*

Estimated induced secondary transformation*:

≈50 companies

≈200 dedicated employees

≈40 million Euro

***** Product value at ex-works prices

Employment and business volumes

Aggregate data for the bioplastics sector

	2012 data	Percent
Producers of raw materials*		
Companies active in Italy (no.)	16	-
Members of Assobioplastiche (no.)	7	44%
Total biopolymer volume (tons)	39,250	-
Assobioplastiche members volume (tons)	38,000	97%
Raw materials sales total (€ mln)	139.6	-
Assobioplastiche members sales (€ mln)	135.4	97%
Product manufacturers		
Companies active in Italy (no.)	77	-
Assobioplastiche members (no.)	16	21%
Total biopolymer volume (tons)	39,250	-
Assobioplastiche members volume (tons)	23,050	59%
Biodegradable products sales (€ mln)	187.1	-
Assobioplastiche members sales (€ mln)	114.1	61%
Biodegradable products workforce (no.)	850	-
Assobioplastiche members workforce (no.)	350	42%

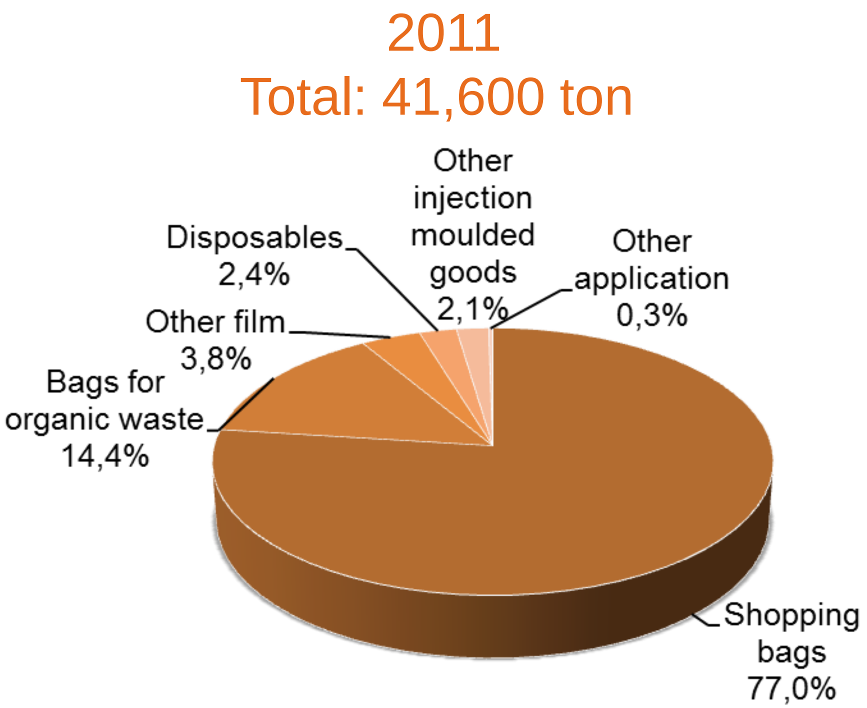
* Polymers and ready-to-use compounds, excluding chemical intermediates. Sales companies and agents of foreign producers also included.

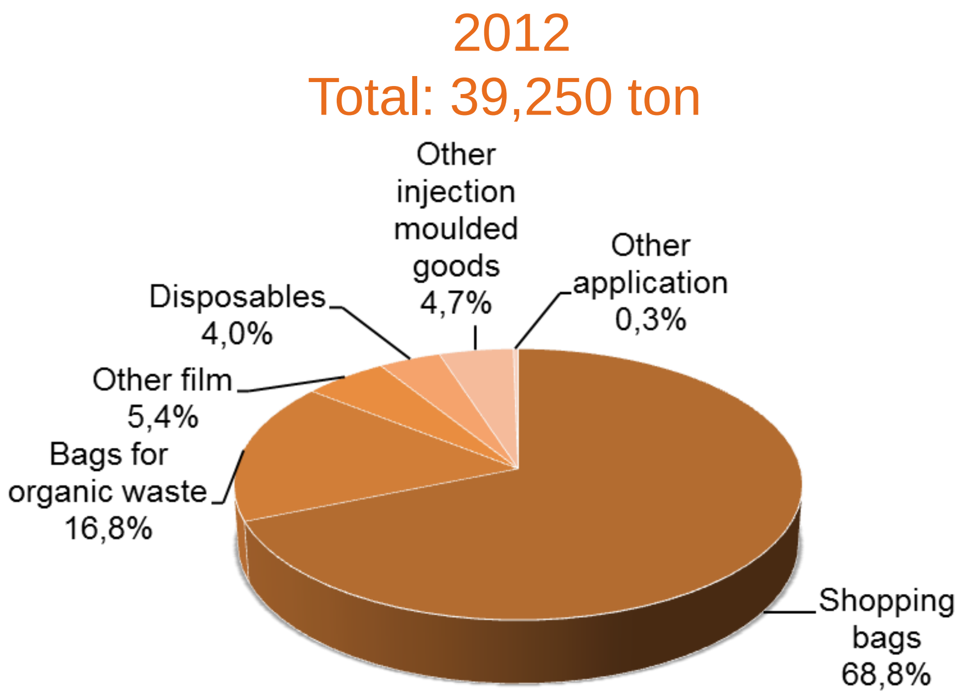
2. Sector data

- Compostable products manufacturing
- Focus on shopping bags
- Factors impacting sector growth

Sector data

Breakdown of compostable products manufacturing by type





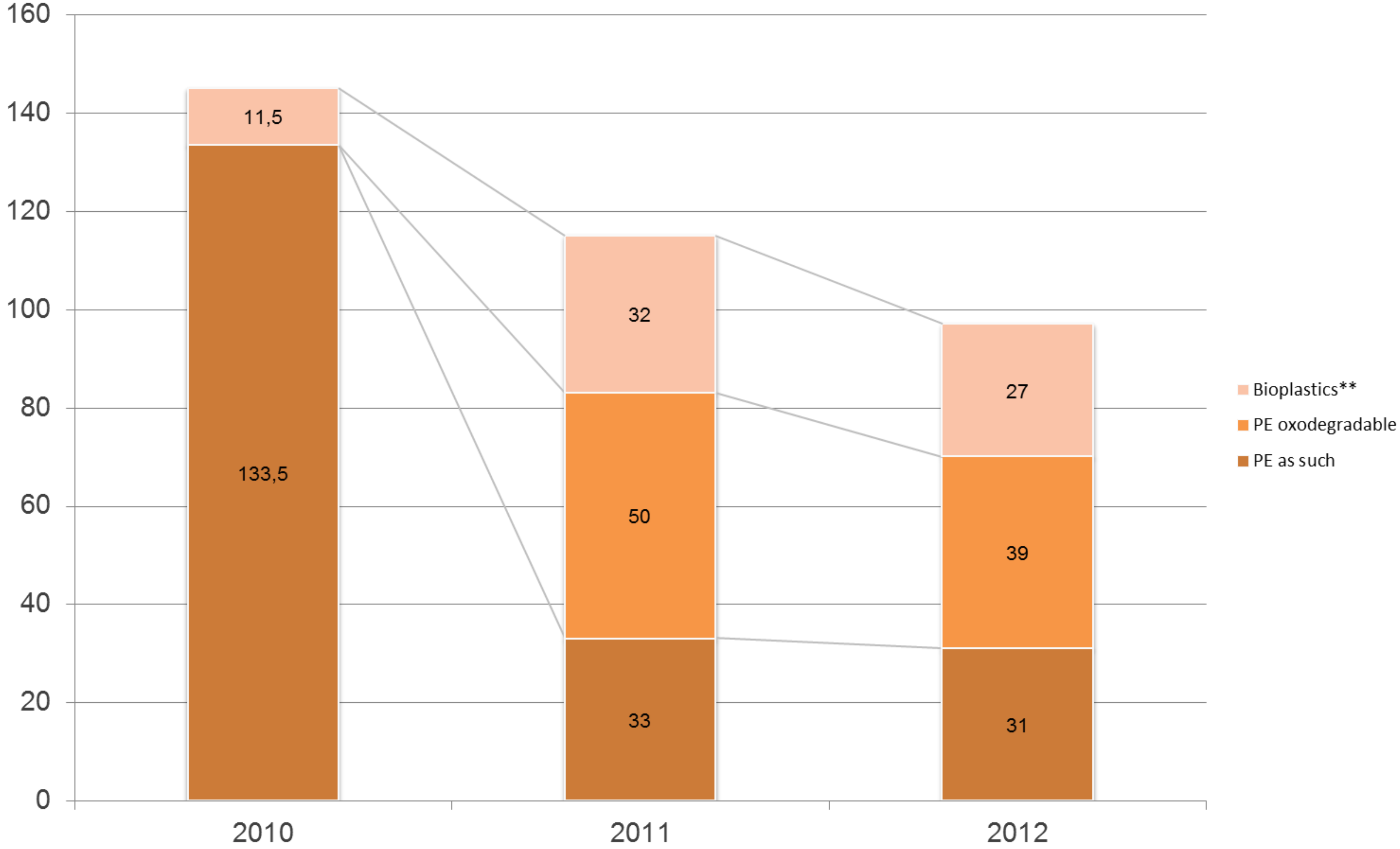
Other film: for foodstuffs, for use in agriculture and for sanitary use
Disposables: dishes, cups and cutlery; food packaging for sales and catering
Other injection moulded goods: blanks for bottles, writing materials and household objects
Other applications: masterbatches, extrusion coating, thermoforming and other products

2. Sector data

- Compostable products manufacturing
- Focus on shopping bags
- Factors impacting sector growth

Shopping bag segment data

Manufacturing trend - shopping bag segment (Kton)



* PE with additivies inducing biodegradability

** Biodegradable and compostable polymers in accordance to UNI EN 13432 standard

Sector data

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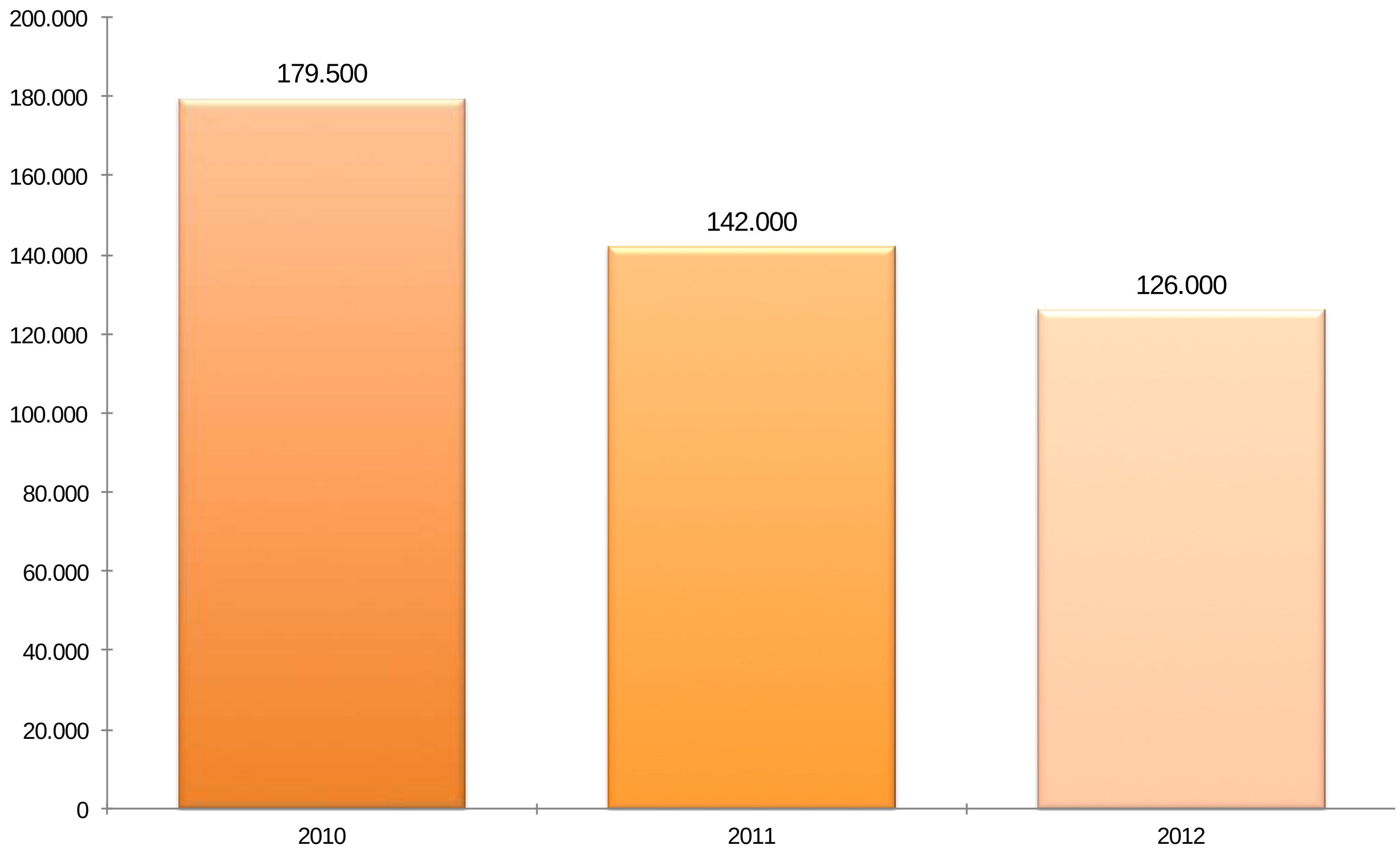
Disposable shopping bag market forecast 2010 -2012

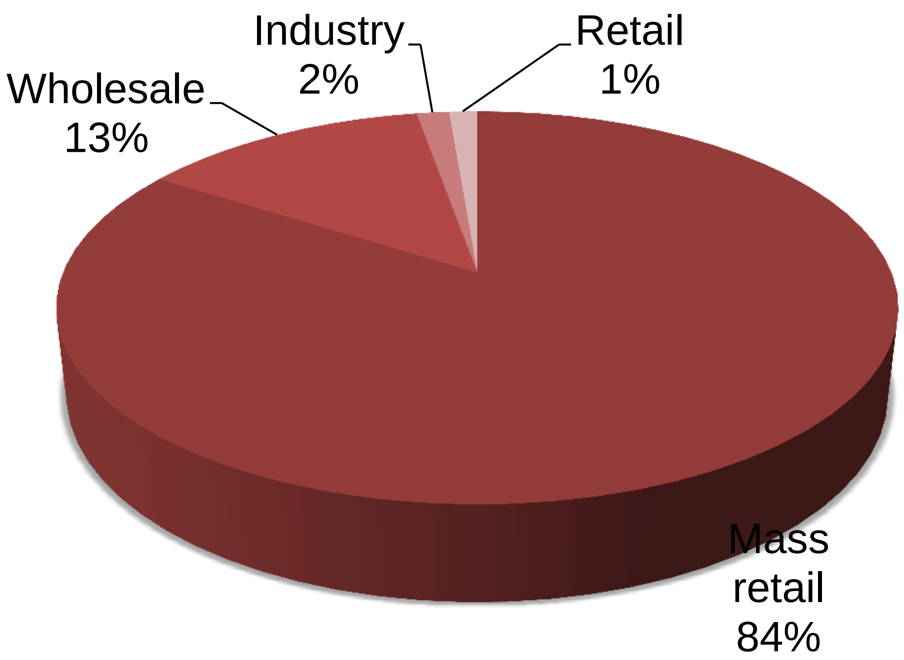


- Downward trend of domestic production
- Imports stable in 2012

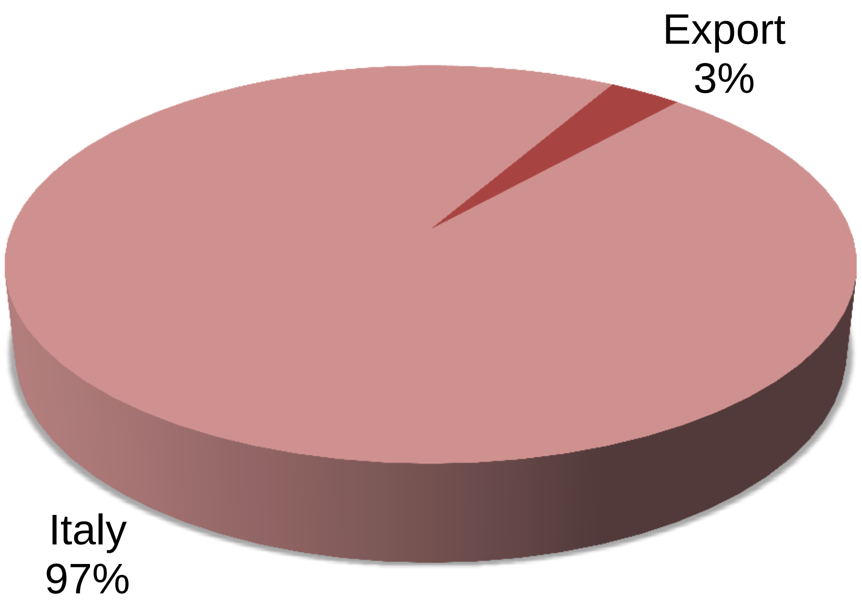
Compostable shopping bags in 2012

Sales and export channels

Sales channels



Destination



Total: 27,000 ton

Compostable shopping bag manufacturing

Company specialisation in the shopping bag segment - 2012

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Level of specialisation in shopping bag manufacturing	Number of companies	%
Less than 10%	9	18
From 10% to 20%	8	16
From 21% to 50%	9	18
Specialised (50% and above)	24	48
	50	100

50 Converters of bioplastics

Average level of specialisation: 44%

THE ITALIAN BIODEGRADABLE POLYMERS MARKET

2. Sector data

- Compostable products manufacturing
- Focus on shopping bags
- Factors impacting sector growth

Factors impacting sector growth

Most influential factors

Shopping bags

- Postponement of the European Commission decision concerning national legislation extends uncertainty and is a brake on both demand and investments in the sector.
- Public debate in Europe on waste management, GPP and marine litter makes further important developments in the segment more likely

Bags for organic waste

- Diffusion of separate collection of organic waste drives expansion of the sector (+10% volume in 2012)
- Companies invest in the sector by expanding the product range (3 new entries in the segment in 2013)

Other food applications

- An excellent environmental image facilitates development of all the main applications such as bottles, disposables and food packaging film.
- Diffusion of separate collection of food wastes from catering services and at public events

Other non-food applications

- Improvements in the technical characteristics of raw materials are facilitating developments of film for use in agriculture
- The true potential of start-up applications such as paper film laminates still to be checked

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materio
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Tel. +39 02 477 111 69
info@plasticconsult.it

www.materioteca.com
info@materioteca.com