

Waste Paper Recovery: Italian Experience and Case Study

Roberto Di Molfetta,
Recycling Manager,
Comieco, Milan Italy



comieco
Consorzio Nazionale Recupero e Riciclo
degli Imballaggi a base Cellulosica

2004: Italy is a net exporter of recovered paper

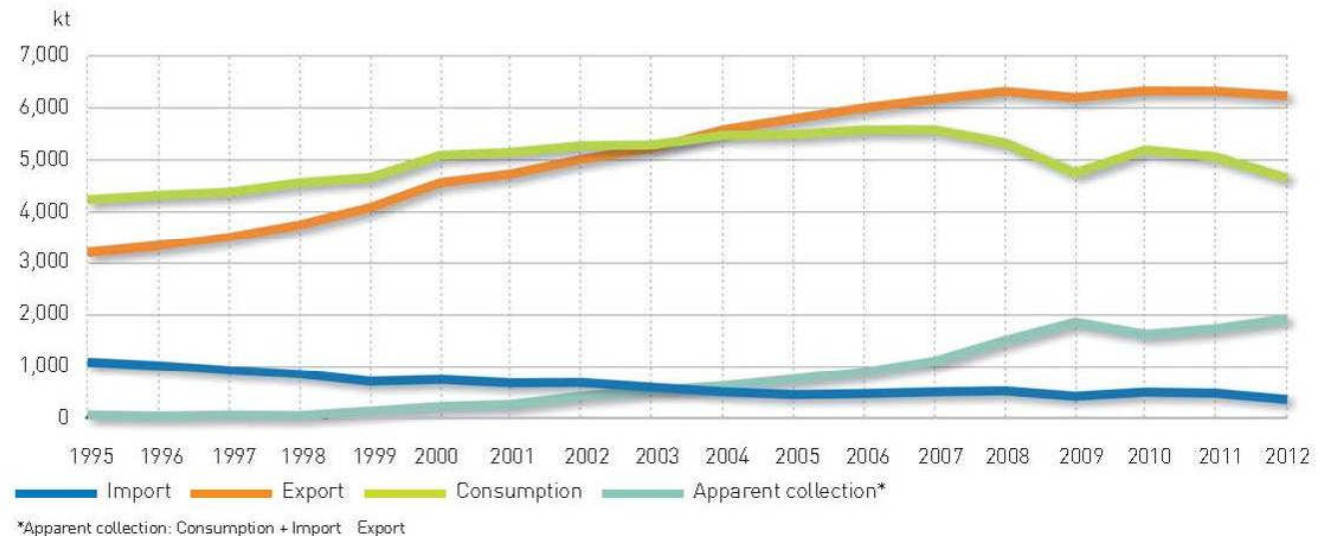
Since 2004 the Italian paper industry has become self-sufficient in terms of recovered paper procurement.

Exported amounts increased to 1.9 million tons in 2012 and allow to balance supply against current domestic consumption.

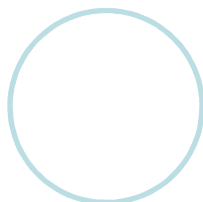
However exported amounts provide a strategic reserve for the Italian paper industry

China is the main destination of exports

Consumption, import, export of paper for recycling and apparent collection*. 1995-2012 period.
Source: Assocarta data processed by Comieco



Italy is among the main European consumers of recovered paper



Italy ranks fourth by total used volume of recovered paper in CEPI countries.

The production volume and, therefore, the recovered paper volume, have been declining in the past few years as a consequence of the recession affecting the whole region, and Italy in particular.

'000 Tonnes	Paper and Board			Paper for Recycling					
	Production	Consumption*	Net Trade**	Utilisation	% chg 12/11	Net Trade	% chg 12/11	Collection***	% chg 12/11
Austria	5,004	1,938	3,065	2,400	-1.4	-949	-5.3	1,451	1.3
Belgium	2,007	2,820	-1,654	1,150	-0.2	727	-17.5	1,877	-7.7
Czech Republic	759	1,291	-532	313	-2.1	494	18.3	807	9.4
Finland	10,694	988	10,109	567	-2.7	122	-8.6	704	-4.2
France	8,100	9,193	-1,093	5,037	-1.9	2,046	12.0	7,348	2.7
Germany	22,630	20,038	2,592	16,203	0.8	-910	43.3	15,293	-1.0
Hungary	684	821	-137	702	4.5	-266	19.9	436	-3.1
Italy	8,588	9,871	-1,283	4,649	-8.1	1,582	25.2	6,231	-1.4
Netherlands	2,761	2,859	-452	2,140	-0.9	240	-41.5	2,380	-4.0
Norway	1,197	630	567	333	-22.1	319	52.2	652	2.3
Poland	3,793	4,804	-1,011	1,708	5.8	133	-40.7	1,842	0.1
Portugal	2,111	1,106	1,006	325	-2.4	347	-22.2	672	-13.8
Romania	318	737	-419	281	2.6	113	29.9	394	9.1
Slovak Republic	751	488	263	82	-17.6	168	26.6	250	7.8
Slovenia	675	406	269	402	-2.9	-165	-1.5	237	-3.9
Spain	6,177	6,158	19	5,068	-0.5	-516	39.1	4,552	-3.6
Sweden	11,417	1,906	9,439	1,624	-5.1	-297	-6.8	1,327	-11.4
United Kingdom	4,416	9,955	-4,976	3,822	1.7	4,333	1.2	8,155	1.4
Total CEPI	92,081	77,364	14,717	46,808	-1.1	8,865	3.1	55,673	-0.4

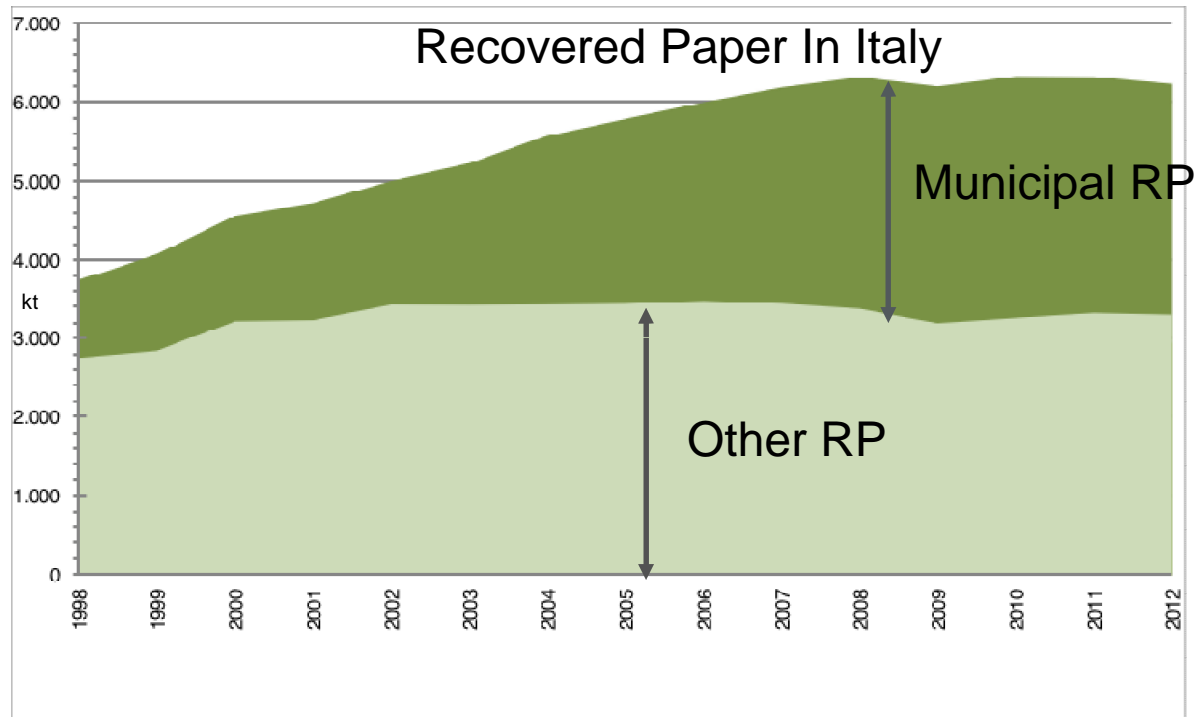
The increase of separate collection has resulted into self-sufficiency

Over just more than a decade 1998-2012:

Municipal separate paper and board collection grew from 1 million tons to 3 million tons.

Collection from private venues as related to market demand remained constant in time at approximately 3 million tons and new volume availability is very limited.

Overall recovered paper availability grew from 3.7 to 6.2 million tons (+66.2%)



The drivers of municipal separate collection development

Regulatory requirements

1994 EU Directive about packaging waste and producers responsibility

1997 Italian law about separate collection target for Italian municipalities

1997 Italian law about shared responsibility (producers, converters, fillers, consumers, municipalities) for packaging collection and recycling

Economic drivers

1996 Landfill tax enforced at regional level

1998 Voluntary packaging fee to fund collection and recycling

1998 National Agreement between municipalities and packaging consortia to ensure a fixed price and the recycling of all the collected packaging waste everywhere in Italy. The municipalities also save the cost of non-separate waste disposal.

1994 → Increasing shortage of disposal facilities in Italy

About Comieco and its funding mode

Comieco is the Italian no-profit paper pipeline organization ensuring operationally the achievement of national paper and board recycling targets.

It represents the packaging industry and includes about 3400 companies (producers and importers of raw material-cellulose (mills); producers and importers of empty packaging (converters); recovered paper sorting plants).

Comieco is funded with a fee (amount of money) given by the paper and board manufacturers (but paid by companies that produce packaged goods).

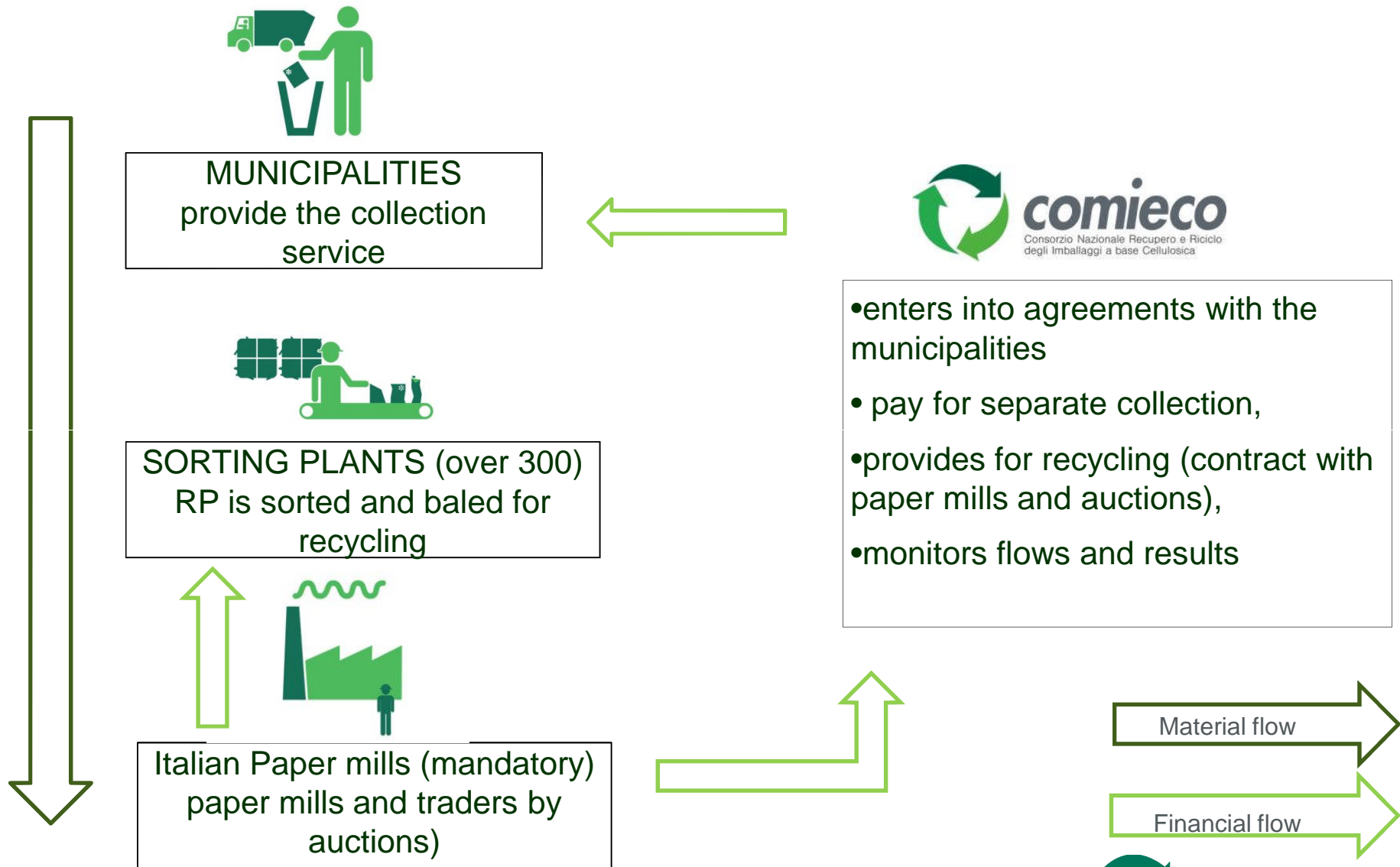
The fee depends on the weight of the packaging unit and is meant to cover the extra cost of packaging waste collection.

Comieco does not receive any public funding.



Paper and Board Environmental Fee - EUR Tonnes													
2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
30,00	30,00	15,59	15,59	15,59	15,59	15,59	30,00	22,00	22,00	22,00	22,00	10,00	4,00

How Comieco manages recovered paper collection



Fees paid to the municipalities by Comieco

Over 1 billion EUR paid to the municipalities for separate RP collection.

The fee includes a fixed share based on the packaging collection cost (95 EUR/t in 2013) and a variable share for the non-packaging paper fraction (30 EUR/t in 2013).

The fee is paid for bulk paper transported to the sorting plant (10-mile average distance).

In 2012 Comieco managed 1.6 million tons of the 2.9 million tons of municipal recovered paper collected in Italy.

Every year the municipalities can opt either for entering into the national agreement with Comieco or selling the recovered paper (all or a share of the collected paper).

Economic investment. 1998/2012 historical data set.

Source: Comieco



		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	TOT.
Economic investment Comieco	million EUR	2.2	24.0	26.4	42.0	52.5	57.1	65.4	74.5	82.9	88.3	89.2	93.8	92.8	86.1	83.2	960.4
Economic investment FMS	million EUR	0.0	0.0	0.0	0.0	0.1	0.3	0.7	2.8	3.5	4.0	4.3	4.9	26.5	33.3	10.7	91.1
Managed collection	kt	485.4	705.5	810.8	958.6	1,201.8	1,361.9	1,584.1	1,747.5	1,879.0	1,949.6	1,928.1	2,134.2	2,192.7	1,895.4	1,591.2	22,425.6



Local and national advertising campaigns to promote RP collection

A key factor is the support provided to the municipalities for local communication campaigns and focused awareness actions.

Traditional tools, such as folders and outdoor advertising;

Initiatives like “Palacomieco”, a touring facility where visitors can learn how to identify the packaging to be included in separate collection and about the recycling cycle;

the “Riciclo Aperto” (Open Recycling) days, which provide for visits to paper mills and recovery plants.

“Cartoniadi”, a competition among cities or districts within the cities that measures the collected amount and quality and allows to win a money prize to be used for public utility works.



The Italian RP collection can improve

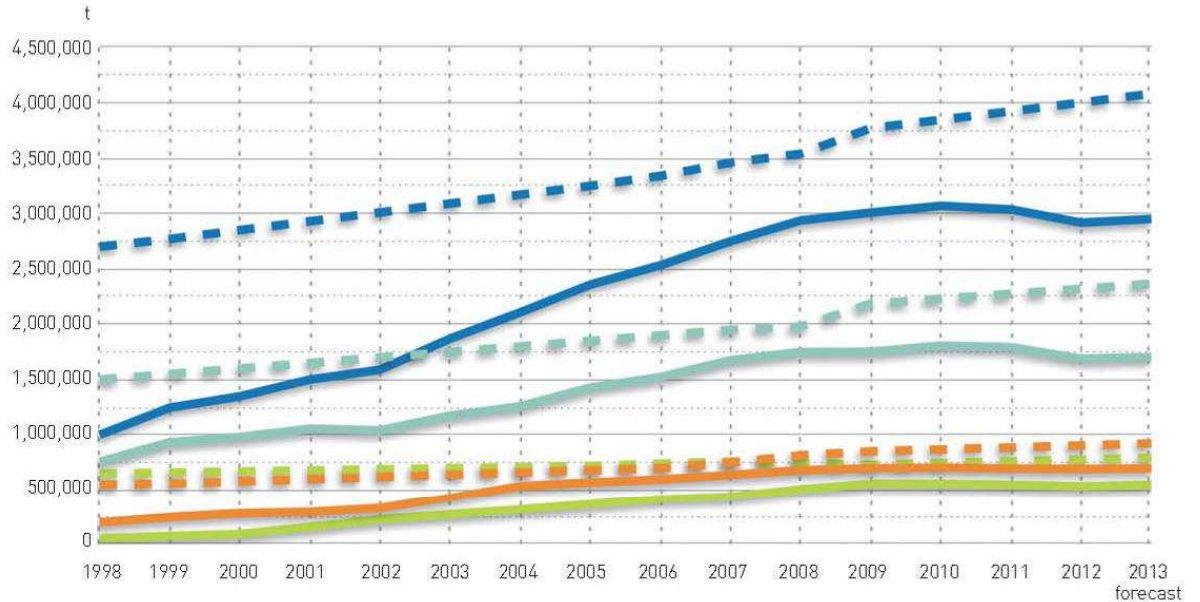
A potential increase of approximately 1 to 1.5 million tons of separate collection remains.

Collection did not develop evenly across the country, where collection yields per inhabitant widely differ among the individual regions.

Cities like Naples or Palermo in the south and the Italian capital Rome suffer from a poor collection service.

Comieco is now supporting cities with low collection levels through the provision of bins and containers.

Municipal separate paper and board collection. 1998-2012 trend and forecasts for 2013.
Source: Comieco



		NORTH	CENTRE	SOUTH	ITALY
2012	t	1,704,501	693,165	538,040	2,935,706
2013 forecast	t	1,708,747	698,512	552,109	2,959,369

- North
- - - Limit North
- Centre
- - - Limit Centre
- South
- - - Limit South
- Italy
- - - Limit Italy

	North	Centre	South	Italy
	kg/per capita/year	kg/per capita/year	kg/per capita/year	kg/per capita/year
2012	62,3	58,8	25,8	48,9

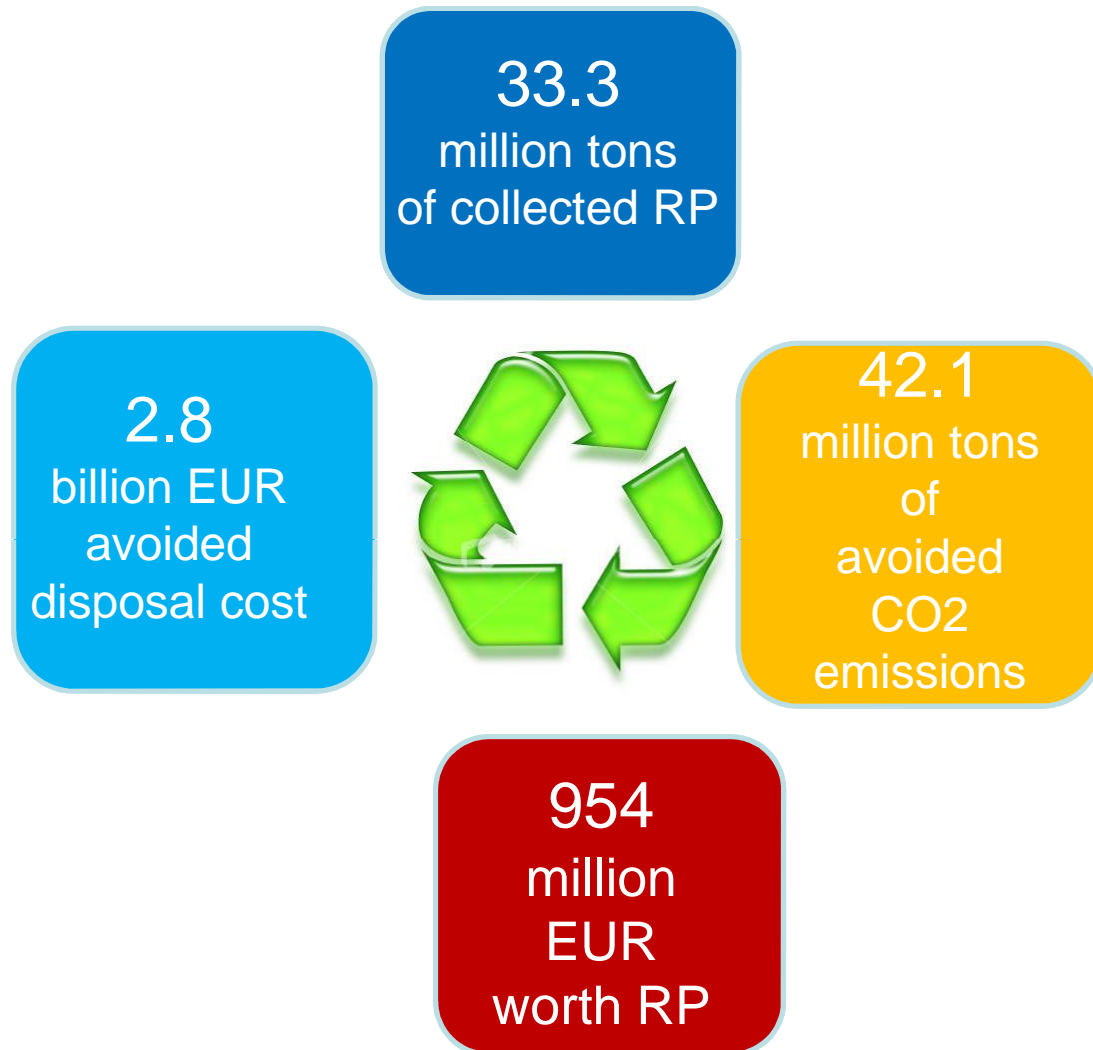
Cost benefit analysis 1998-2012

Separate collection and recycling bring benefits to the whole country.

The saved disposal costs reduce waste management costs.

Benefits derive from reduced gas emissions and the value of the generated raw materials.

In 14 years then – from 1999 to 2012 – the total net benefit amounted to over 4.3 billion EUR. The calculation includes 1.26 billion higher costs vs. 5.6 billion benefits



Conclusions

In just more than a decade, Italy has been able to implement a system for separate paper and board collection from households, retail stores, and small-scale concerns, which covers the whole population of about 60 million and over 8,000 cities, growing from 1 to 3 tons of collected materials

Paper and board packaging and recovery organizations have managed to turn the duty set by the European and Italian law into an opportunity through the development of a municipal separate collection system that, combined with private collection, has resulted into a self-sufficient paper industry and created a surplus for export.

The recycling target of 60% of the consumed packaging is widely exceeded and is steadily at 80%

The collection system is efficient, the collected material has an impurity rate of less than 3% of weight upon collection, the cost for packaging companies is among the lowest in Europe and is coping effectively with the current recession

A potential increase of approximately 1 to 1.5 million tons of separate collection remains, particularly in central and southern Italy

While the Parliament defined the rules and goals, it entrusted to the companies the task of designing the most efficient system to achieve them; this is a key for success and a guarantee for a cost-effective system.

The experience of Italy with recovered paper should be considered as a success and a reference case resulting from the best possible exploitation of market forces and from legal regulation actions.