COLLECTION, RECYCLING, AND RECOVERY OF PAPER AND BOARD

19th Report

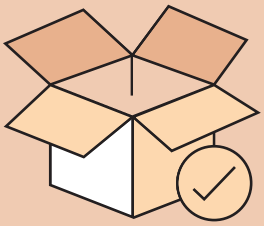
2013

july 2014

comieco
Consorzio Nazionale Recupero e Riciclo degli Imballaggi a base Cellulosica

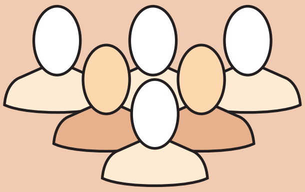
CONTENT

Highlights



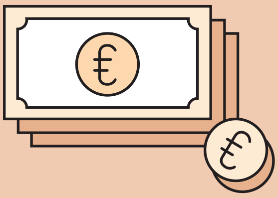
48.4
KG

IS THE AVERAGE AMOUNT OF PAPER AND BOARD COLLECTED SEPARATELY BY EACH ITALYN CITIZEN IN 2013



4.8
BILLION EUR

IS THE NET AMOUNT OF COMMUNITY BENEFITS DERIVED FROM SEPARATE PAPER AND BOARD COLLECTION FROM 1999 TO 2013



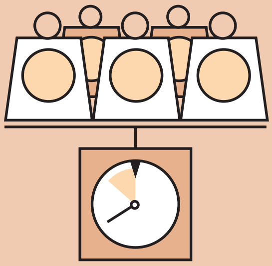
83.1
MILLION EUR

IS THE CONSIDERATION FOR PAPER AND BOARD PACKAGING COLLECTION ALONE

10

TONS

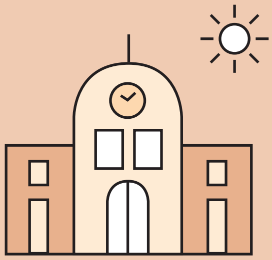
OF RECOVERED PAPER WERE RECYCLED
EVERY MINUTE IN 2013 IN ITALY



88

MILLION EUR

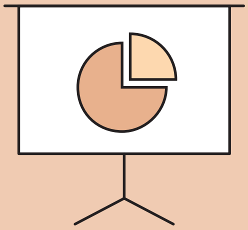
IS THE AMOUNT TRANSFERRED
IN 2013 TO THE ITALYN MUNICIPALITIES
UNDER THE AGREEMENTS
BY WAY OF CONSIDERATION



86

%

IS THE RECYCLING RATE
OF PAPER AND BOARD PACKAGING
COLLECTED IN 2013



Preface

Renewed growth of separate paper and board collection is recorded in 2013. This is the highlight of the 19th Report on Collection, Recycling, and Recovery of paper in board and is, indeed, just a sign – the increase is, in fact, a mere 1% vs. 2012 – yet a positive one, which opens up positive perspectives for the present and the future. The consumption of recovered paper by the Italyn paper industries has increased during the year, while exports have decreased.

However, collection did not increase evenly across the Country. Like in 2012, the North suffered more than other regions from weakening consumptions, whose impact is stronger on collection data wherever the separate collection rate is higher, and shows a 1.7% negative result. On the other hand, while growth is recorded in the Centre and South – 4.6% and 4.8% respectively – these regions, and the South in particular, can hardly make the improvements that several challenging situations– even if not true “waste emergencies” – now in place would require.

Meanwhile the recovered packaging management system has prepared to cope with the next five-year period. On April 1 last, in fact, ANCI and CONAI implemented the new National Framework Agreement to regulate separate collection management, which provides additional economic resources for separate collection to Municipalities and collection service management companies, subject to the consortium’s commitment to recover all the waste collected according to specific qualitative requirements.

The year 2013 is therefore also the right time to assess the outcomes of the previous Agreement and, particularly, of the Technical Annex regulating relations between the Municipalities and Comieco.
In its five-year term, the Annex on paper and board materials, implemented in compliance with the principle of subsidiarity vs. the market, saw over 500 million EUR transferred to the parties involved in the agreements, as well as the management of more than 9 million tons of paper and board gathered through separate collection services, now more and more widespread and effective.

What else is left to do then? The availability of paper for recycling in Italy exceeds domestic consumption – a surplus that provides great opportunities to the Italyn paper industry.
However these opportunities can only be leveraged if appropriate national industrial policies are in place to stimulate the demand of made-in-Italy products (to which the packaging pipeline is linked), ensure the conditions to provide financial resources for technological investments, and implement measures to fill the gap vs. European competitors, particularly with respect to the cost of energy. In other words, the conditions should be established to implement a circular economy in our Country – a goal that the European Union has been pursuing more and more assertively for some time.

Broad margins for growth still exist (according to estimates, more than 1 million tons of paper and board are still available for collection) in most southern regions, where good practices are in place in several Eco-Champion Cities, whereas in others (Naples, Reggio Calabria, Palermo, Messina) household paper and board collection is not increasing, or is even decreasing, despite the effort and commitment. Moreover, collection potentials are still significant in Rome.

In 2013 Comieco called a 2 million EUR tender for funding of separate collection equipment, and set up measures and tools via the new Technical Annex to provide continuing support to collection with dedicated resources aimed at the regions and Cities that strive to achieve the new recycling targets (50% of major materials) set by the European Governments for 2020 within the framework of the measures for waste prevention and management and for the use of the resources provided by the recent EU general Scheme "Living well within the limits of our planet".

IGNAZIO CAPUANO
President, Comieco

Paper and board collection and recycling: system results upon termination of the third general agreement

CARLO MONTALBETTI
General Manager, Comieco

1

Signs of recovery

▸ TABLE 1
page 18
▸ FIGURE 1
page 19

The picture emerging from the 2013 data analysis highlights a variety of conditions across the national territory. In fact, while the different dynamics observed in the three macro-areas generally result into substantial stability, the term “static” should rather be used when referring to separate paper and board collection development.
A mere comparison vs. 2012 is deemed non-exhaustive, and a general overview of the whole 2011-2013 period is rather provided for better understanding.

After reviewing the final data, particularly for the North, last year’s figures were downsized, particularly for the Emilia Romegna region, where the rate of waste recycled directly by producers is recorded separately. This is why the decline of collection rates, which accounted for 2.3% across Italy, was indeed close to 4%, a more appropriate figure to describe the overall dynamics of urban waste production, established between 4 and 5%.
In 2013, a general recovery is observed, capable to bring separate paper and board collection in the cities back to values above 2.9 million tons (+1%).

While this figure – which corresponds to a net balance close to 30thousand tons – should be generally seen as a positive sign, it is obtained by offsetting opposite data for the Northern macro-area (-1.7%), which sees a decline by about 28thousand tons, and for the Centre and South – growing by 4.6% and 4.8% respectively, which means approximately 58tons of new collection.

If 2011 is also considered, a general 1.5% decline is observed, where the loss of over 90thousand tons in the North (-5.3%, with peaks of more than eight percent points in regions like Piedmont or Emilia Romegna) is offset by just more than half (+47thousand tons) by the rest of the national territory.

As mentioned, the decline is widespread in the North and sharper in the regions that boast higher collection rates (including Emilia Romegna, Piedmont, as well as Trentino-Alto Adige); as to the Centre, signs of weakness are observed in Tuscany, where a 3% decline is recorded in 2013, adding up to last year’s decline vs. 2011.
Despite the negative result, the over 1.6 million tons of paper and board collected in the North in 2013 account for more than half of nation-wide collection.

At the same time, an excellent performance is observed in Latium (+13.7%), partly as a result of changes to the service now under way in Rome, described in detail in the section on sample cities.

In the South, Basilicata achieves a praiseworthy 15.8% increase, representing the highest difference recorded vs. 2012. With a 7.9% increase, Puglia records, in turn, an absolute growth by approximately 9thousand tons. Lastly, a growing trend is observed this year again in Sicily, albeit at a very limited absolute value rate. This region, alongside Campania, offers the highest growth potential in terms of available amounts.

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Collection yield: the Italyns are not reducing separate collection

FIGURE 2 ◂ page 20
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TABLE 2 ◂ page 21
TABLE 3 ◂ page 21

Per-capita collection increased again in 2013, after two negative years, to 48.4 kg/ab per year. The Italyns are showing to a growing extent their innate propensity to sort out and appreciate such valuable resources as paper and board and to increase their collection, despite a total waste reduction in the present economic context that reflects the general decline of consumptions.
The symbolic threshold of 50kg/ab per year is “fleeting”. Achieved and exceeded between 2009 and 2011, this target had already been met across most of the national territory. According to estimates, if all the underperforming regions – mostly in the South – achieved the average separate collection target, an additional estimated 440thousand tons would be collected, with an overall 14% increase, the present standards in the rest of the Country remaining unchanged.

Reference regions include Trentino-Alto Adige (78.9 kg/ab per year), Vallée d’Aoste (75.4 kg/ab per year), and Tuscany (712.6 kg/ab per year), which confirms its leading position in the Centre macro-area.

Growth is generally recorded across the Centre, where the per-capita collection rate (61.5 kg/ab per year) exceeds for the first time the levels recorded in the North (59.1 kg/ab per year, due to a corresponding decline in this macro-region. On one hand, data confirms that the collection standards are by now aligned across most of the national territory but, on the other, it provides food for thought, especially with respect to the uneven management of private collection flows in terms of assimilation and to dissimilar waste accounting management criteria at national level, entrusted to individual regional regulations.

In the South, Sardinia beats Abruzzo (45.2 vs. 43.7 kg/ab per year respectively). Over few years these regions have been approaching average national levels, thanks to regional rules focused on separate collection and on the implementation of proximity services in most Cities. Third in ranking is Puglia (29.7 kg/ab per year), close to exceeding the 30 kg/ab per year threshold during this year.

A review of national data points out to a decline of overall waste production (-3.2%) and a combined further development of separate collections in general (+6.3%). In this context, two figures deserve stressing: on one hand a total collection rate above 40% for the first time and, on the other, a 23% incidence of paper and board collection on overall separate collections.
This result is gradually aligning with the physiological occurrence of paper and board in urban waste, particularly vs. the development of organic waste collection. One virtuous example is the experience under way in Milan, which is preparing to lead the world ranking of cities.

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Collection under the agreements

‣ TABLE 4 *page 22*
‣ TABLE 5 *page 23*

The Consortium is actively involved in the above-described dynamics.
During 2013, Comieco took charge of just less than 1.5 million tons of paper and board, i.e. about 110thousand tons less (-6.8%) than in 2012.
This figure is not in contrast with a national coverage that sees 83.9% of the inhabitants (-1.5% vs. 2012) and 70.7% of the Cities (-4%) involved in the agreements. "Partial" management systems provided for by the Technical Annex are still in place and allow collection operators to adjust the management format of the agreement to specific operating and system-based needs and to the market context.
The net management figure, excluding the materials "removed" from the agreements as an effect of the so-called "windows", points out to a +1.7% trend, consistent with general observations.

Based on this data, the Consortium as a stakeholder in the recycling process of the collected materials, actually managed 51% of total municipal paper and board collection. If, on the other hand, general pulp-based materials are considered (apparent national paper and board collection), Comieco accounts for 24.4% vs. 25.5% in 2012.

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Considerations: Comieco invested more than 1 billion EUR in 16 years

‣ TABLE 6 *page 23*
‣ FIGURE 4 *page 24*

The resources invested at local level by way of considerations by the Consortium amount to 83.1 million EUR in 2013. This value actually corresponds to the figure recorded in the previous year (-0.1%), despite the above-mentioned decline of managed amounts.
Despite a decrease of market quotations of paper for recycling, the investment of recyclers for similar product fractions (frazioni merceologiche similari, FMS) collected non-separately fell to 4.8 million EUR (-55%) in the same period. This decline has a dual cause: on one hand, the reduction of FMS entrusted to Comieco (just less than 88thousand tons, or -13.3% vs. 2012) and, on the other, the reduction of paper for recycling quotations, particularly the less valuable types – so called "waste paper" – which decreased by almost 20% over a year and by virtually 50% percent in two years, while their value remained unchanged in recent months.

Including the considerations paid in 2013, the total 1 billion EUR value of the economic resources invested to support separate paper and board collection upon the launch of the system fifteen years ago is exceeded (1.04 billion EUR). An additional 100 million EUR provided directly by recyclers over the same period should also be considered.

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ANCI-CONAI Agreement. Considerations upon the start of a new cycle

FIGURE 5 ◂ *page 25*
FIGURE 6 ◂ *page 26*
FIGURE 7 ◂ *page 27*

The year 2013 (despite a delay to 31/03/2014 pending definition of the new agreement) sees the termination of the third cycle of implementation of the ANCI-CONAI Framework Agreement and of the Technical Annex for paper and board packaging (CTA).
This term allows to draw a conclusion on the effects of the Comieco agreement, a voluntary instrument provided to the Cities to promote the recycling of paper and board collected separately.

The first two agreement contributed – or even drove – the development of collection across the national territory: from about one million tons in 1998, it totalled 3 million tons – following an almost linear growth – by the end of 2008. This decade saw growing people's awareness of good waste management practices and the industrial development of the whole pipeline, with more and more importance attributed in time to quality in view of recycling, rather than to separate collection as such.
This was one of the main focuses of the 2009-2013 Framework Agreement, which was implemented at a time (late 2008) of severe economic downturn also affecting raw material markets.
On that occasion, a mainstay was set, i.e. the assurance of recycling at positive economic conditions across the whole national territory, while strengthening subsidiarity vs. the market and the focus on the quality of the collected materials.
This resulted into:
A. an increase of resources supporting separate paper and board collection;
B. consolidated collection levels;
C. a reversal of urban waste production trends (from positive to negative);
D. opening to the market;
E. an improvement of the quality of services and of the collected materials.

This was the foundation for the new Agreement, in place since April 1 and until the early months of 2019.

The new agreement is qualified – among other things – by a growing focus on households. A review of the paper sector and a number of focused checks highlighted an increase of the amount of packaging in this particular collection flow. Therefore, the flat rate of packaging included in the mixed paper collection flow was adjusted from 25 to 32% - and will account for 35% in full operation.

6

Metropolitan areas: an overview of consumptions and of waste management

Separate collection monitoring by the Consortium in certain cities, including Turin, Milan, Florence, Rome, Naples, and Palermo, continued in 2013 in cooperation with service operators. These six big cities, in the North, Centre, and South, provide true "observation points", which allow to keep global waste management dynamics under control.

▸ FIGURE 8 *page 28*
▸ FIGURE 9 *page 29*

A decline of consumptions, recorded in the six cities like across the rest of Italy, results into an average 1.3% decline of overall waste production (with a negative -3.6% peak in Turin and unchanging data in Florence and Rome).
The decline is sharper if non-separate waste flows are only considered, whose amount is set to an average -6.1%, whereas separate collections record a general increase by more than 11%.
This general picture is the result of a broad variety of trends, of which a detailed description is provided below.

Separate collection is growing significantly in Florence (+9.0%), Milan (+15.0%) and, particularly, Rome (+21.2%) but, while total urban waste is decreasing in Milan (-2.4%), its amount is basically unchanged in both central cities.
On the other hand, a general decline is recorded in Turin, with basically the same trend (approximately -3.5%) for total urban waste, separate, and non-separate collection.
Conditions are critical in both southern cities. Here separate collection rate trends are more negative than for other waste flows (total urban waste and non-separate urban waste) – warning signs that arouse concern and call for specific measures.

Lastly, if overall separate collection is considered in the six sample cities, the paper and board fraction accounted for an average 39.2% in 2013, with a maximum rate in Rome (44.0%) and a minimum rate in Palermo (19.1%).

7

The audit system

In order to determine the consideration due to the parties to the Agreements for the performed collection, and based on the general conditions of the agreements and of the technical annex in force, during 2013 Comieco performed approximately 1,800 sample collections and sorted out approximately 360,000 kg of paper and board. Based on the arithmetic mean of the results of the individual tests performed to set the consideration due to the parties to the agreements on the incoming and outgoing materials at sorting plants (according to the type of agreement in place), a foreign fraction incidence of 2.54% is recorded in the tests associated with 1.01+1.02 (collection of packaging and graphic paper, newspapers, magazines) and of 0.45% in those associated with 1.04+1.05 (dedicated packaging collection), below the thresholds set to classify the material in the first bracket, i.e. 3% for 1.01+1.02 and 1.5% for 1.04+1.05.

▸ FIGURE 10 *page 30*
▸ TABLE 7 *page 31*

During 2013, as it did in earlier years, Comieco carried out audits on 109 parties, including sorting plants, paper mills, and processing plants, supported by three specialized companies, in order to ensure data transparency and reliability, guarantee the monitoring level of the system, and ensure the appropriate operation of the system, thus minimizing litigations.

8

Recycling

FIGURE 11 ◂ *page 32*
TABLE 8 ◂ *page 33*
FIGURE 12 ◂ *page 34*
FIGURE 13 ◂ *page 35*
FIGURE 14 ◂ *page 35*
FIGURE 15 ◂ *page 36*
FIGURE 16 ◂ *page 37*
FIGURE 17 ◂ *page 38*

The local systems network remains unchanged and therefore the average conferment distance (17.3 km) is in line with last year's.
This system develops across a network of 322 sorting plants that receive and process the material for downstream steps, organized in two parallel systems to identify the final recycler.

Sixty percent of the material is allocated pro-quota to 57 paper mills located across the national territory. The other 40% is awarded to recyclers by means of auctions organized in accordance with the commitments undertaken in 2011 and approved by the Authority for Competition and the Market (AGCM).

After one year of sharp decline, the negative trend in the paper and board pipeline is now slowing down (-0.6%), while production levels remain almost unchanged (8.5 million tons of paper and board). The general trend results from an aggregation of the decline (-3.2% in 2013 adding up to -3.5% in 2012) recorded in the production of graphic paper for hygienic and sanitary use and the recovery (+2.6%) of the packaging sector, which partly offsets the decrease by almost seven percent points recorded in 2012.

Over the 2011-2013 period, production levels recorded a general 5.6% decline in both macro-sectors (packaging and other paper) of the material pipeline.
Important inputs come from import/export data, which show a positive balance for the export market (+3.0%) combined with a decline (-2.8) of the domestic market.

If the analysis is focused on the market of paper for recycling, an increase is observed (+1.4%, Assocarta data), consistent with an increased domestic demand from the packaging production sector, characterized by a more abundant use of raw materials obtained from recovered paper.
Domestic demand provides only partial support to a parallel export decline by almost 250thousand tons. The net balance (export-import) is anyway highly positive, with over 1.3 million tons of paper for recycling sold to foreign markets.

The trend is unchanged, as from mid-2012, for monthly quotations of paper for recycling, whose fluctuations are almost negligible and still have a positive value.

The total amount managed by Comieco (1.5 million tons) accounts for 24.4% of apparent national paper and board collection, which was estimated in consideration of the consumption of paper for recycling by the Italyn industrial sector and of net exports (paper for recycling consumption + export – import).

9

Packaging management: confirmed efficiency and efficacy

Packaging recycling and recovery rates are still growing and now total 86.1% (material recycling) and 93.4% (recovery, including energy recovery) respectively.

▸ FIGURE 18 *page 39*
▸ TABLE 9 *page 40*
▸ FIGURE 19 *page 41*

It should be noted that these values occur in a context where both packaging consumption (-148thousand tons) and packaging recycling (-57thousand tons) are declining. The total amount is positive, with a 1.7% increase of the recycling rate compared to 2012. The share incinerated for energy recovery is also slightly declining. The net effect on recovery rates shows a 1.5% increase.

10

Separate collection and recycling generate value for the Country

This 19th edition of the report provides an update of the detailed Cost-Benefit Analysis, describing the impact of separate paper and board collection performed by the Cities. The update concerns the year 2013 and the data developed starting from 1999. The following items were considered:

▸ TABLE 10 *page 42*
▸ FIGURE 20 *page 42*

– COSTS
a. the higher cost due to separate collection vs. collection of waste “as is”;
b. the missed benefit connected with the choice not to use pulp-based materials for energy recovery.

The total cost of these two items is estimated at 71.8 million EUR for 2013, i.e. more than 40% lower. Significantly lower SC costs are recorded, particularly following the growing cost for management of waste “as is”. The energy market also records lower values vs. the previous years, with an impact on the missed potential benefit of the use of paper and board for energy generation.

– BENEFITS
a. avoided emissions;
b. avoided cost for disposal of the recovered material
c. value of the generated raw materials
d. value of employment in related business.

The total benefit for 2013 is estimated at just less than 536.1 million EUR.
The total value is about 1% higher than the value estimated for 2012. Within the individual items, while the benefit resulting from non-disposal increases (+12%), in the light of the quotations mentioned in section 8, a decline by about 20% of the value of generated raw materials is recorded.

The net benefit deriving from such evaluation (using the same sources as in previous years) is 464.3 million EUR.
The total net benefit was therefore approximately 4.8 million EUR in 15 years – from 1999 to 2013, which includes 1.3 billion EUR higher costs vs. 6.1 billion EUR derived benefits

If the five-year terms of validity of the General ANCI-CONAI Agreements are considered (1999/2003 - 2004/2008 - 2009/2013), the net benefits show an increase from an average baseline annual value of 220 million EUR to 315 million EUR with the second agreement, up to the present value of 425 million EUR/year in the last four-year period (therefore the net benefit actually doubled on an annual basis in ten years).

Charts and tables

ACRONYMS

FMS	Frazioni Merceologiche Similari (similar product fractions) (non-packaging paper and board)
RD	Separate collection
RU	Urban waste
%	Percent rate
n	Number
t	Tons
kt	.000 tons
ab	Inhabitants

TABLE 1

TREND OF MUNICIPAL SEPARATE PAPER AND BOARD COLLECTION BY REGIONS AND BY AREAS. YEAR 2013 AND CHANGES VS. 2012.

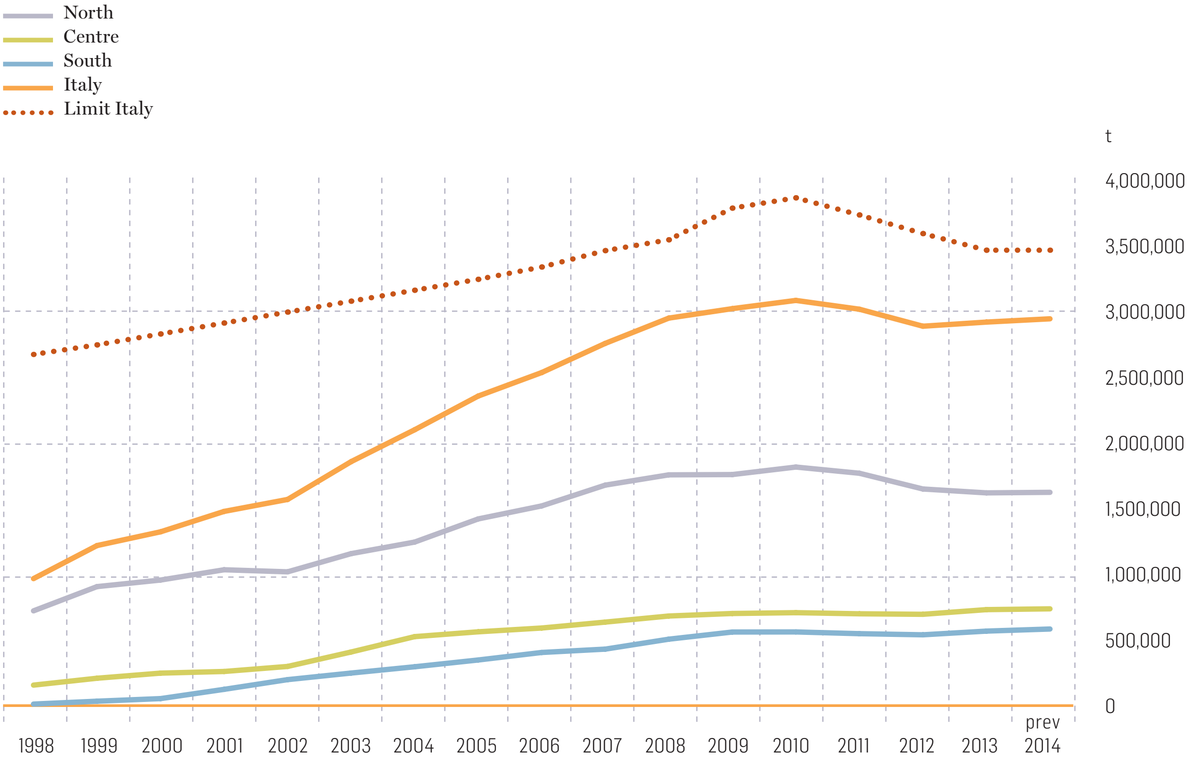
(Source: Comieco)

	TOTAL INHABITANTS	2012	2013	Δ 2012-2013	Δ 2012-2013
	n	t	t	t	%
Emilia Romegna	4,337,979	295,127.0	281,756.6	-13,370.4	-4.5
Friuli Venezia Giulia	1,230,441	68,228.2	66,507.7	-1,720.5	-2.5
Liguria	1,615,064	87,339.0	85,446.1	-1,892.8	-2.2
Lombardy	9,742,179	519,941.7	522,964.9	3,023.1	0.6
Piedmont	4,432,571	295,094.4	282,424.2	-12,670.2	-4.3
Trentino Alto Adige	1,010,328	81,051.3	79,736.3	-1,315.0	-1.6
Vallée d'Aoste	127,065	9,643.3	9,582.3	-61.0	-0.6
Veneto	4,885,549	289,660.8	289,325.1	-335.7	-0.1
NORTH	**27,381,176**	**1,646,085.7**	**1,617,743.2**	**-28,342.5**	**-1.7**
Latium	5,626,710	265,697.8	302,138.6	36,440.7	13.7
Marche	1,569,578	95,137.9	97,884.1	2,746.3	2.9
Tuscany	3,707,818	277,478.0	269,097.9	-8,380.0	-3.0
Umbria	894,222	54,851.3	56,081.8	1,230.5	2.2
CENTRE	**11,798,328**	**693,164.9**	**725,202.4**	**32,037.5**	**4.6**
Abruzzo	1,334,675	57,647.5	58,363.6	716.1	1.2
Basilicata	590,601	12,983.5	15,033.6	2,050.0	15.8
Calabria	2,008,709	37,221.0	36,417.3	-803.7	-2.2
Campania	5,812,962	160,238.3	168,863.6	8,625.3	5.4
Molise	320,795	6,636.2	6,312.8	-323.4	-4.9
Puglia	4,079,702	112,494.5	121,333.3	8,838.8	7.9
Sardegna	1,671,001	71,819.4	75,527.2	3,707.8	5.2
Sicily	5,037,799	78,999.3	82,231.1	3,231.7	4.1
SOUTH	**20,856,244**	**538,039.8**	**564,082.4**	**26,042.6**	**4.8**
ITALY	**60.035.748**	**2.877.290.4**	**2.907.028.0**	**29.737.5**	**1.0**

FIGURE 1

MUNICIPAL SEPARATE PAPER AND BOARD COLLECTION. 1998-2013 TREND AND 2014 FORECASTS.

(Source: Comieco)



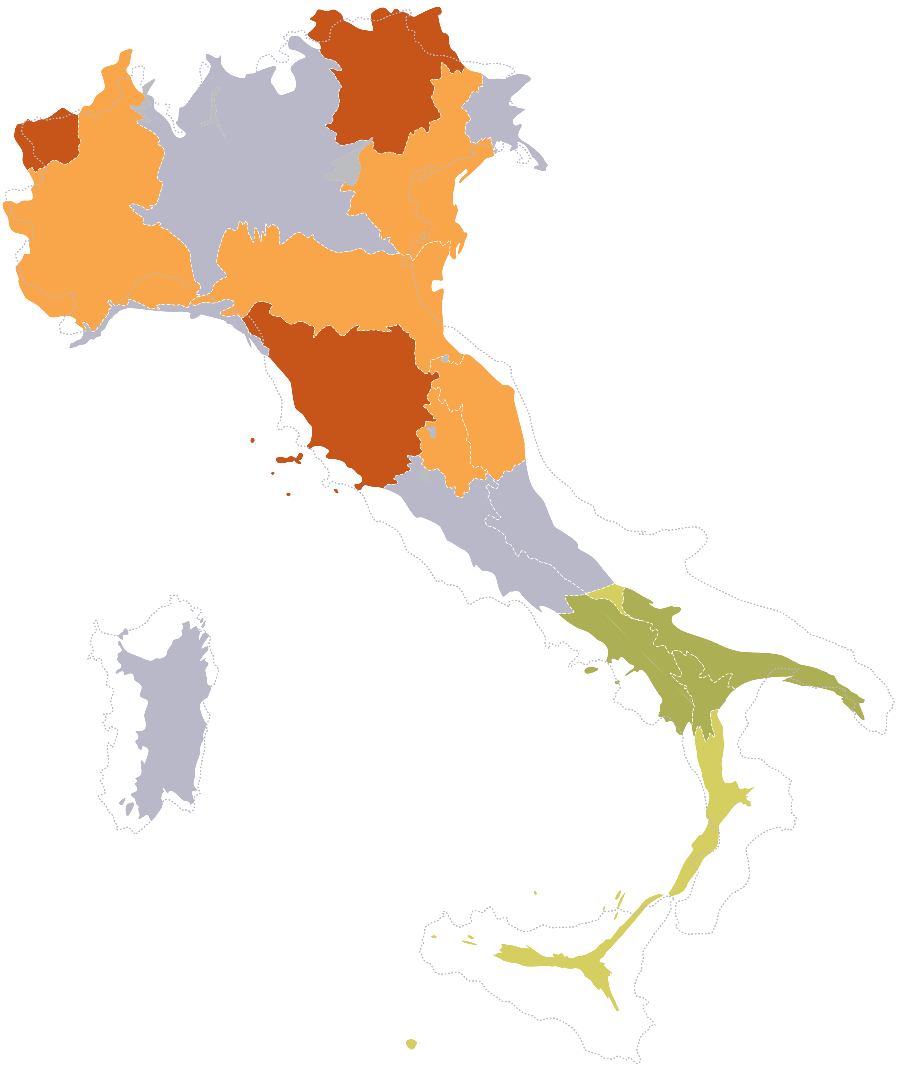
		NORTH	CENTRE	SOUTH	ITALY
2013	t	1,617,743	725,202	564,082	**2,907,028**
2014 forecast	t	1,621,773	730,747	578,833	**2,931,403**

FIGURE 2

MUNICIPAL PER-CAPITA SEPARATE PAPER AND BOARD COLLECTION BY REGIONS AND BY AREAS. YEAR 2013.

(Source: Comieco)

- <20 kg/ab-year
- 20-40 kg/ab-year
- 40-55 kg/ab-year
- 55-70 kg/ab-year
- >70 kg/ab-year



TOTAL PER-CAPITA 2013

	kg/ab-year
Emilia Romegna	65.0
Friuli Venezia Giulia	54.1
Liguria	52.9
Lombardy	53.7
Piedmont	63.7
Trentino Alto Adige	78.9
Vallée d'Aoste	75.4
Veneto	59.2
NORTH	**59.1**
Latium	53.7
Marche	62.4
Tuscany	72.6
Umbria	62.7
CENTRE	**61.5**
Abruzzo	43.7
Basilicata	25.5
Calabria	18.1
Campania	29.0
Molise	19.7
Puglia	29.7
Sardegna	45.2
Sicily	16.3
SOUTH	**27.0**
ITALY	**48.4**

FIGURE 3

MUNICIPAL PER-CAPITA SEPARATE PAPER AND BOARD COLLECTION BY AREAS. 1998-2013 HISTORICAL DATA SET.
(Source: Comieco)

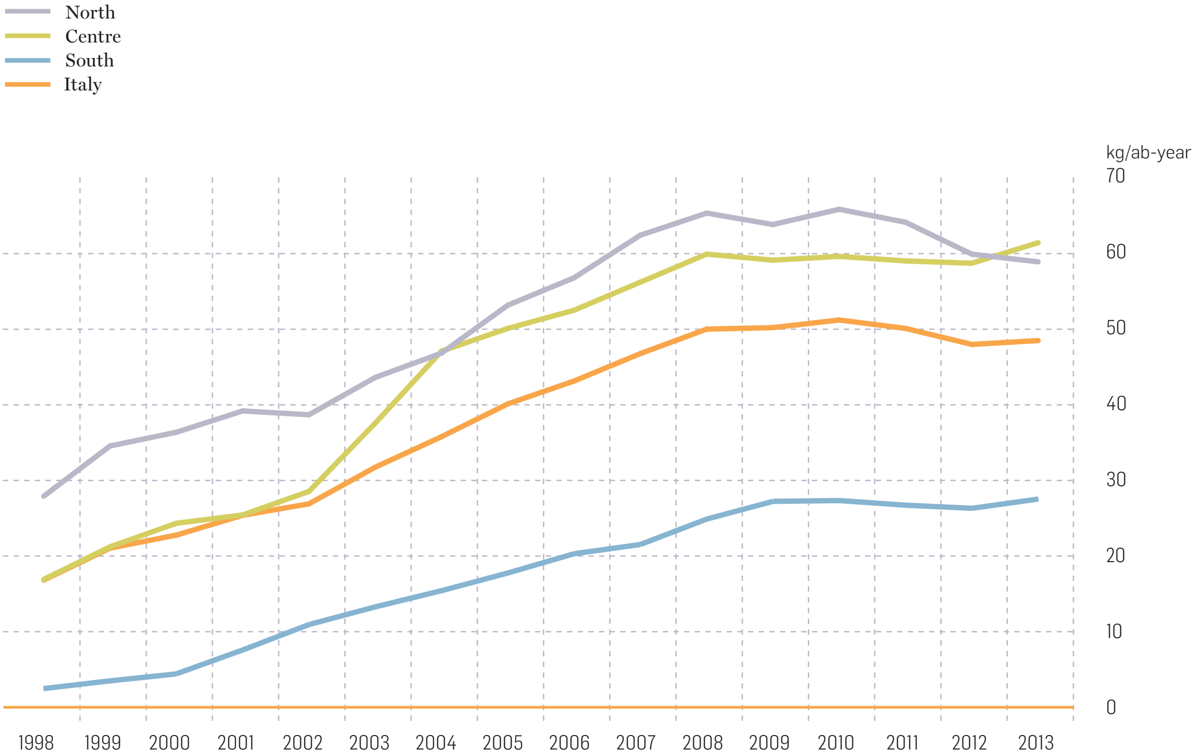


TABLE 2

PER-CAPITA MUNICIPAL SEPARATE PAPER AND BOARD COLLECTION BY AREAS. 1998-2013 VARIATION.
(Source: Comieco)

	1998	2013	Δ 1998/2013	Δ 1998/2013
	kg/ab	kg/ab	kg/ab	%
North	28.3	59.1	30.8	108.8
Centre	17.1	61.5	44.4	259.5
South	2.4	27.0	24.6	1.026.9
ITALY	**17.0**	**48.4**	**31.4**	**184.8**

TABLE 3

COMPARISON OF URBAN WASTE PRODUCTION, OVERALL SEPARATE COLLECTION, AND MUNICIPAL SEPARATE PAPER AND BOARD COLLECTION IN ITALY. 2012-2013 PERIOD.
(Source: data processed by Comieco)

		2012	2013	2012/2013 Δ %
Total UW	t	29,962,096	29,004,928	-3.2
Total SC	t	11,964,821	12,717,981	6.3
Municipal paper and board SC	t	2,877,290	2,907,028	1.0
Total SC vs, total UW production	%	39.9%	43.8%	
MUNICIPAL PAPER AND BOARD SC VS, TOTAL UW PRODUCTION	%	**24.0%**	**22.9%**	

TABLE 4

AGREEMENTS SIGNED IN THE 2001-2013 PERIOD AND COVERAGE RATE OF THE AGREEMENTS.

(Source: Comieco)

			2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
North	Signed agreements	n	170	215	225	224	228	211	208	202	203	202	186	177	165
	Covered cities	%	58.5	63.7	69.9	71.8	75.4	76.5	78.1	77.4	80.9	81.0	74.9	71.8	71.4
	Covered inhabitants	%	69.5	72.3	76.4	79.5	81.4	82.5	83.2	82.4	85.5	85.9	82.8	80.4	78.9
Centre	Signed agreements	n	35	59	80	88	97	103	109	111	124	124	118	119	119
	Covered cities	%	62.5	63.7	70.3	72.2	77.4	78.4	80.1	79.2	77.9	75.4	73.7	70.2	68.2
	Covered inhabitants	%	81.3	81.4	87.4	88.1	91.1	91.5	93.9	93.4	94.0	93.4	92.6	89.6	88.0
South	Signed agreements	n	124	197	281	328	334	302	329	414	428	454	487	492	530
	Covered cities	%	44.7	47.8	57.1	63.2	68.6	75.6	77.8	80.8	79.5	79.5	77.4	72.6	70.5
	Covered inhabitants	%	68.9	68.8	78.8	84.4	87.1	89.2	91.7	94.2	92.5	92.5	91.8	89.7	88.1
ITALY	Signed agreements	n	**329**	**471**	**586**	**640**	**659**	**616**	**646**	**727**	**755**	**780**	**791**	**788**	**814**
	Covered cities	%	**54.6**	**58.6**	**65.9**	**69.2**	**73.5**	**76.5**	**78.2**	**78.7**	**80.1**	**79.8**	**75.5**	**71.8**	**70.7**
	Covered inhabitants	%	**71.5**	**72.8**	**79.4**	**82.9**	**85.3**	**86.6**	**88.2**	**88.6**	**89.5**	**89.6**	**87.9**	**85.4**	**83.9**

TABLE 5

LOCAL COVERAGE BY REGIONS AS AT DECEMBER 31, 2013.

(Source: Comieco)

	CITIES	CITIES UNDER THE AGREEMENTS		INHABITANTS	INHABITANTS UNDER THE AGREEMENTS		COLLECTION UNDER THE AGREEMENTS
	n	n	%	n	n	%	t
Emilia Romegna	341	318	93.3	4,337,979	4,236,581	97.7	104,942.9
Friuli Venezia Giulia	218	176	80.7	1,230,441	1,146,422	93.2	33,280.6
Liguria	235	113	48.1	1,615,064	1,230,593	76.2	25,589.6
Lombardy	1,547	715	46.2	9,742,179	5,767,729	59.2	215,893.8
Piedmont	1,206	1,077	89.3	4,432,571	4,019,439	90.7	164,759.3
Trentino Alto Adige	331	312	94.3	1,010,328	945,417	93.6	51,702.0
Vallée d'Aoste	74	74	100.0	127,065	127,065	100.0	9,884.2
Veneto	581	450	77.5	4,885,549	4,133,990	84.6	107,672.5
NORTH	**4,533**	**3,235**	**71.4**	**27,381,176**	**21,607,236**	**78.9**	**713,724.8**
Latium	378	184	48.7	5,626,710	4,619,460	82.1	67,497.6
Marche	246	196	79.7	1,569,578	1,391,920	88.7	53,162.4
Tuscany	287	245	85.4	3,707,818	3,569,738	96.3	167,725.1
Umbria	92	59	64.1	894,222	797,719	89.2	19,275.2
CENTRE	**1,003**	**684**	**68.2**	**11,798,328**	**10,378,837**	**88.0**	**307,660.4**
Abruzzo	305	232	76.1	1,334,675	1,223,089	91.6	51,363.6
Basilicata	131	69	52.7	590,601	430,579	72.9	10,197.6
Calabria	409	266	65.0	2,008,709	1,589,134	79.1	25,246.2
Campania	551	422	76.6	5,812,962	5,239,329	90.1	137,300.8
Molise	136	37	27.2	320,795	162,817	50.8	3,846.7
Puglia	258	236	91.5	4,079,702	3,941,286	96.6	112,928.6
Sardegna	377	189	50.1	1,671,001	1,178,339	70.5	50,657.3
Sicily	390	352	90.3	5,037,799	4,606,617	91.4	69,372.9
SOUTH	**2,557**	**1,803**	**70.5**	**20,856,244**	**18,371,190**	**88.1**	**460,913.7**
ITALY	**8,093**	**5,722**	**70.7**	**60,035,748**	**50,357,263**	**83.9**	**1,482,298.9**

TABLE 6

RESOURCES ALLOCATED TO PARTIES UNDER THE AGREEMENTS IN 2013. DETAILED BY AREAS.

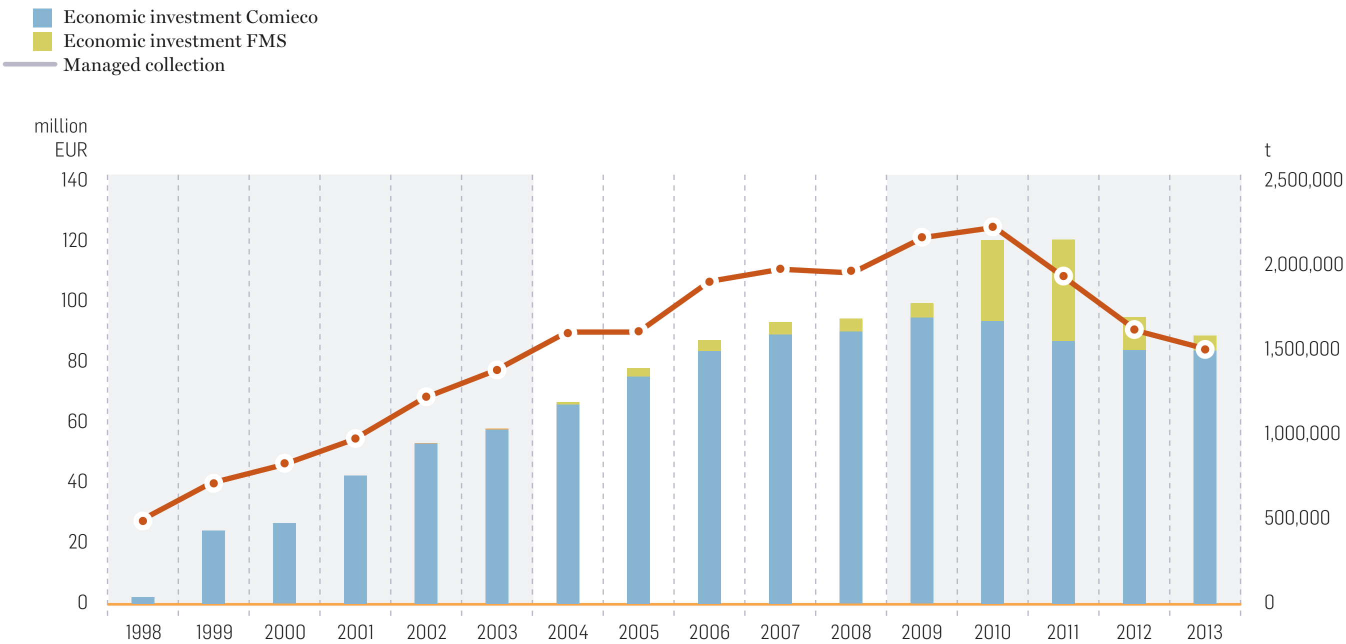
(Source: Comieco)

AREA	INHABITANTS UNDER THE AGREEMENTS	MANAGED PACKAGING	ECONOMIC INVESTMENT OF COMIECO (Packaging)		ECONOMIC INVESTMENT OF RECYCLERS (Similar Product Fractions)	
	n	t	EUR	EUR/ab. under the agreements	EUR	EUR/ab.under the agreements
North	21,607,236	441,852	40,950,265	1.90	2,281,312	0.11
Centre	10,378,837	200,765	18,383,349	1.77	898,857	0.09
South	18,371,190	270,012	23,778,088	1.29	1,607,491	0.09
ITALY	**50,357,263**	**912,629**	**83,111,701**	**1.65**	**4,787,661**	**0.10**

FIGURE 4

ECONOMIC INVESTMENT. HISTORICAL 1998/2013 DATA SET.

(Source: Comieco)



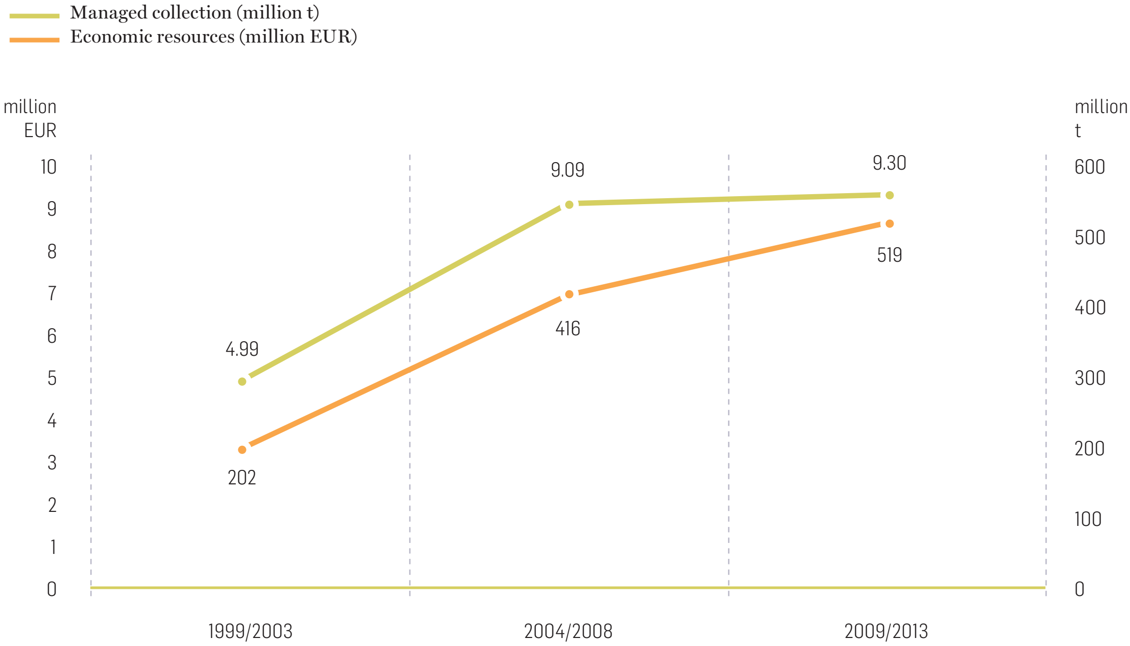
		1998	1999	2000	2001	2002	2003	2004	2005	2006
Economic investment Comieco	million EUR	2.2	24.0	26.4	42.0	52.5	57.1	65.4	74.5	82.9
Economic investment FMS	million EUR	0.0	0.0	0.0	0.0	0.1	0.3	0.7	2.8	3.5
Managed collection	t	485,358	705,530	810,800	958,595	1,201,757	1,361,939	1,584,066	1,747,523	1,878,988

		2007	2008	2009	2010	2011	2012	2013	TOTAL
Economic investment Comieco	million EUR	88.3	89.2	93.8	92.8	86.1	83.2	83.1	1,043.5
Economic investment FMS	million EUR	4.0	4.3	4.9	26.5	33.3	10.7	4.8	95.9
Managed collection	t	1,949,623	1,928,063	2,134,203	2,192,664	1,895,370	1,591,170	1,482,299	23,907,949

FIGURE 5

COMPARISON OF MANAGEMENT DATA OF THE ANCI-CONAI FIVE-YEAR AGREEMENTS.

(Source: Comieco)



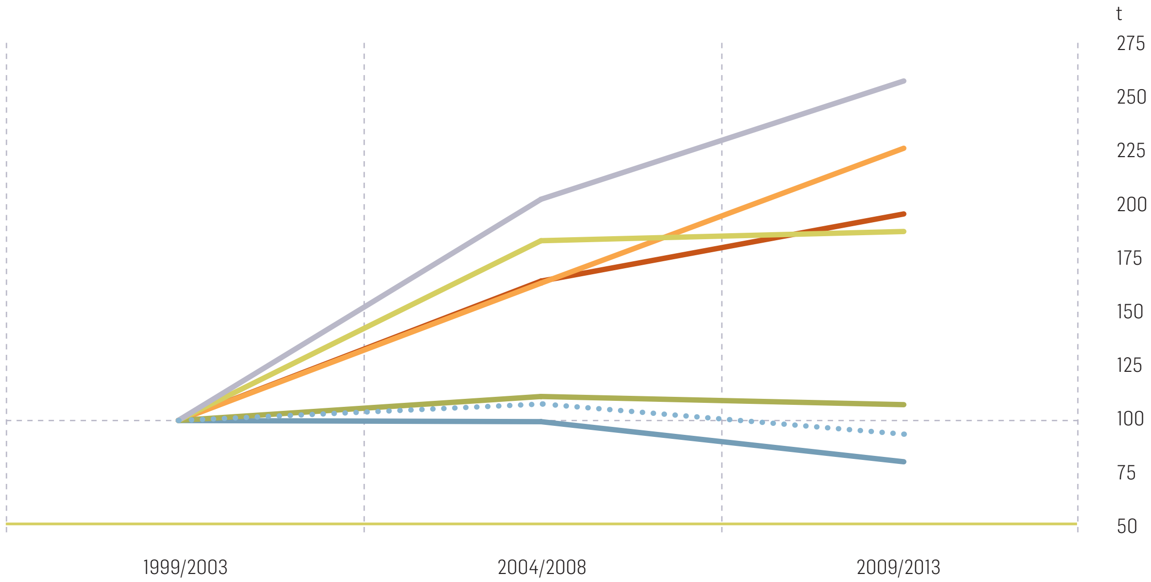
% CHANGE VS. PREVIOUS FRAMEWORK AGREEMENT		1999/2003	2004/2008	2009/2013
Economic resources	%	---	105.3	24.9
Managed collection	%	---	82.0	2.3

FIGURE 6

COMPARISON OF THE ANCI-CONAI FIVE-YEAR AGREEMENTS.

(Source: Comieco)

Economic resources (Comieco + F. M. S.)
Managed by Comieco
Total UW
Non-separate UW
Total SC
Paper and board SC
Paper production



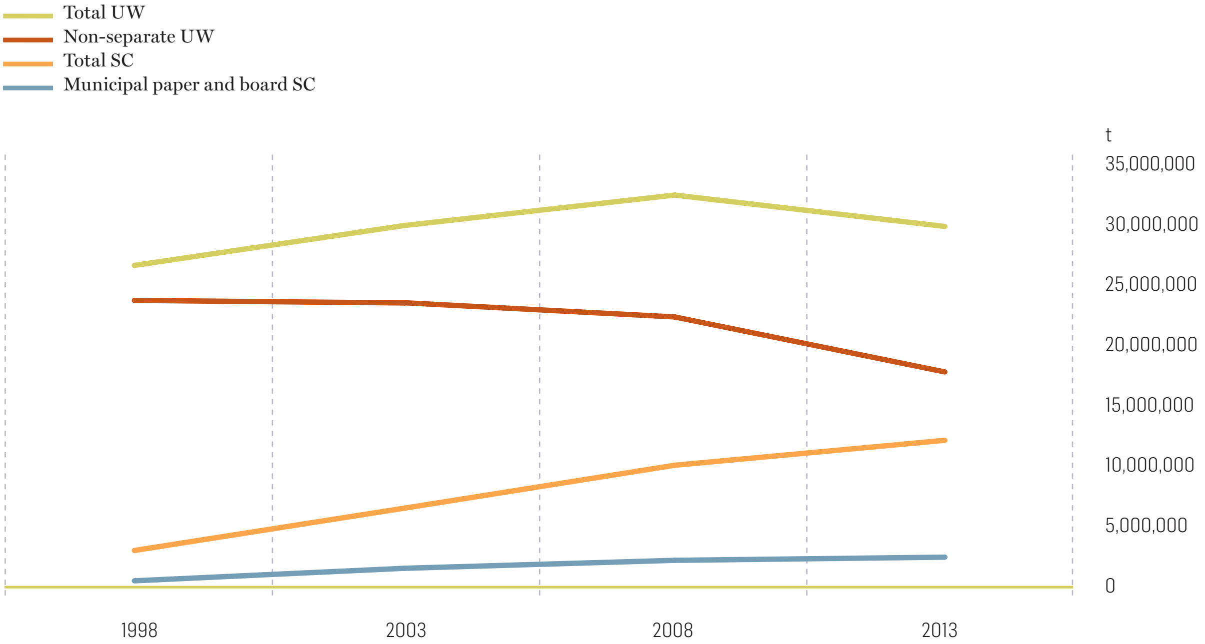
	1999/2003	2004/2008	2009/2013
Economic resources (Comieco + F. M. S.)	100.0	205.3	256.5
Managed by Comieco	100.0	182.0	186.2
Total UW	100.0	109.1	106.0
Non-separate UW	100.0	97.6	80.7
Total SC	100.0	163.1	225.1
Paper and board SC	100.0	163.7	194.4
Paper production	100.0	108.0	95.7

Note:
A value of 100 was set for each index for 1999-2003 data.
The 2004/2008 and 2009/2013 period were compared against this reference value.

FIGURE 7

COMPARISON OF THE ANCI-CONAI FIVE-YEAR AGREEMENTS. REFERENCE YEAR 1998.

(Source: Comieco)



		1998	2003	2008	2013	Δ1998/2013
Total UW	t	26,845,726	30,038,079	32,471,591	29,004,928	**2,159,202**
Non-separate UW	t	23,839,004	23,588,092	22,534,382	16,286,947	**-7,552,057**
Total SC	t	3,006,721	6,449,987	9,937,209	12,717,981	**9,711,260**
Municipal paper and board SC	t	1,000,993	1,942,775	2,934,146	2,907,028	**1,906,035**
Collection managed under the agreements	t	470,877	1,361,939	1,928,063	1,482,299	**1,011,422**

FIGURE 8

WASTE COLLECTION IN THE SAMPLE CITIES TURIN, MILAN, FLORENCE, ROME, NAPLES, AND PALERMO. PER-CAPITA 2004-2013 DATA.

(Source: Comieco)

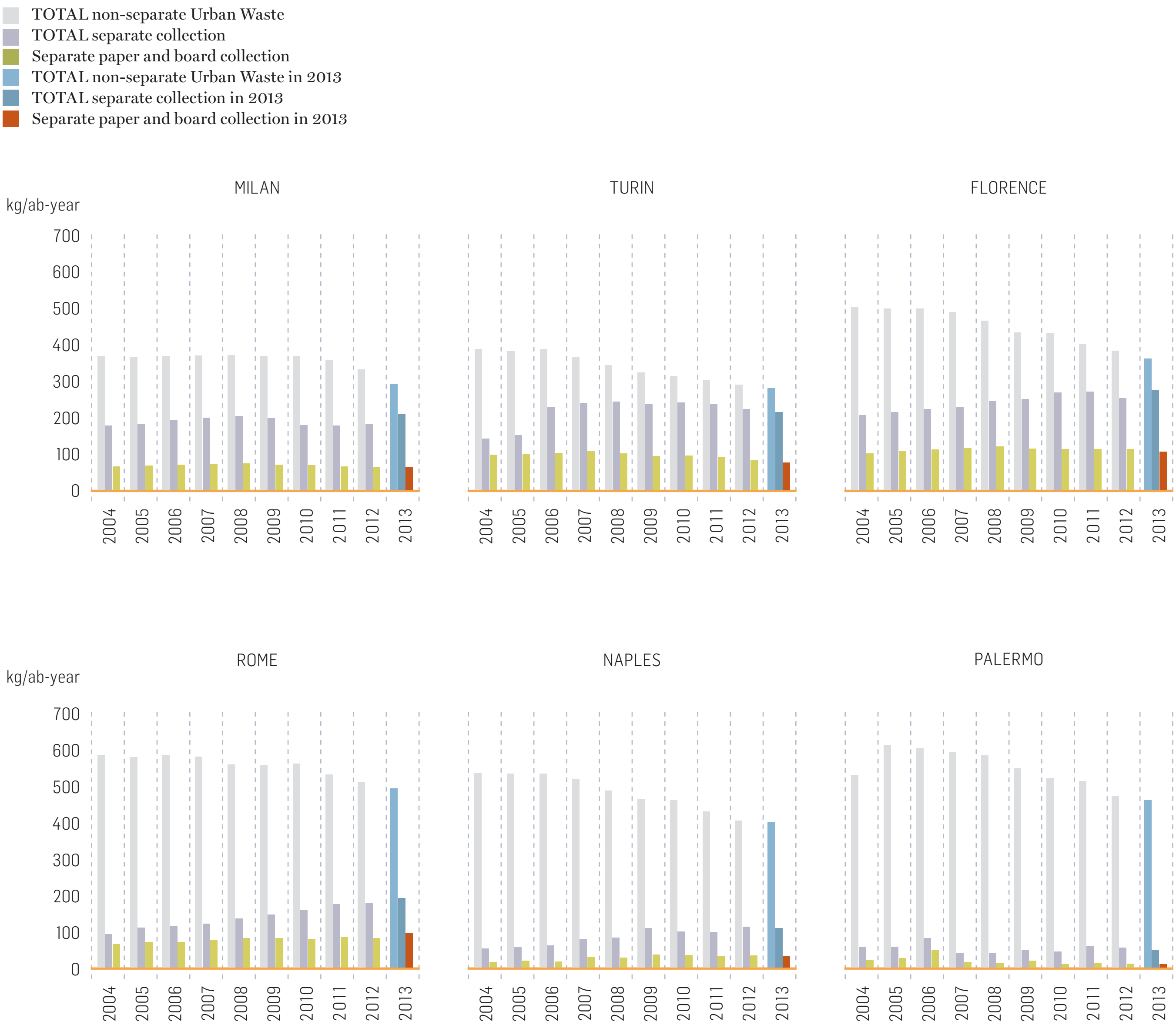
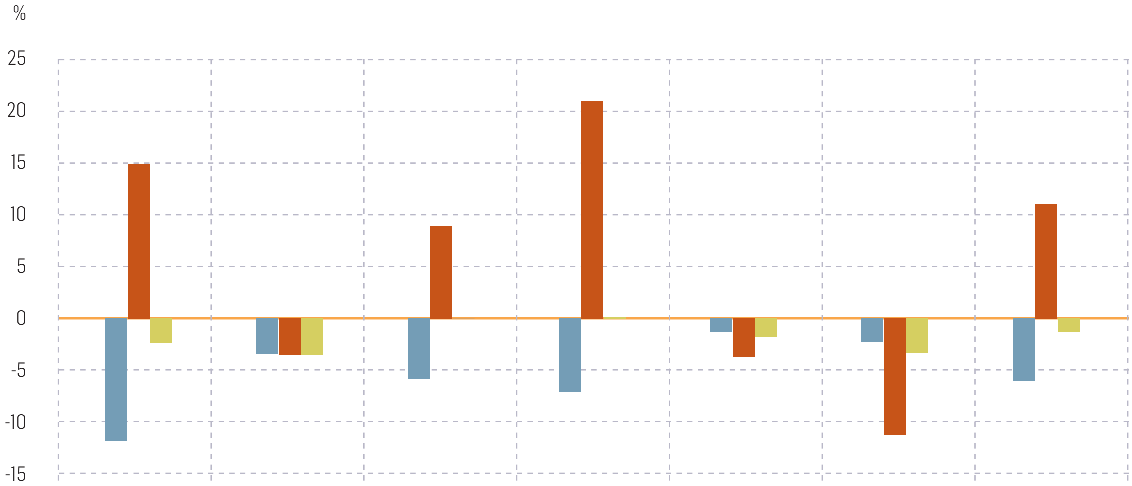


FIGURE 9

WASTE COLLECTION IN THE SAMPLE CITIES TURIN, MILAN, FLORENCE, ROME, NAPLES, AND PALERMO. 2011-2013 VARIATIONS.

(Source: Comieco)



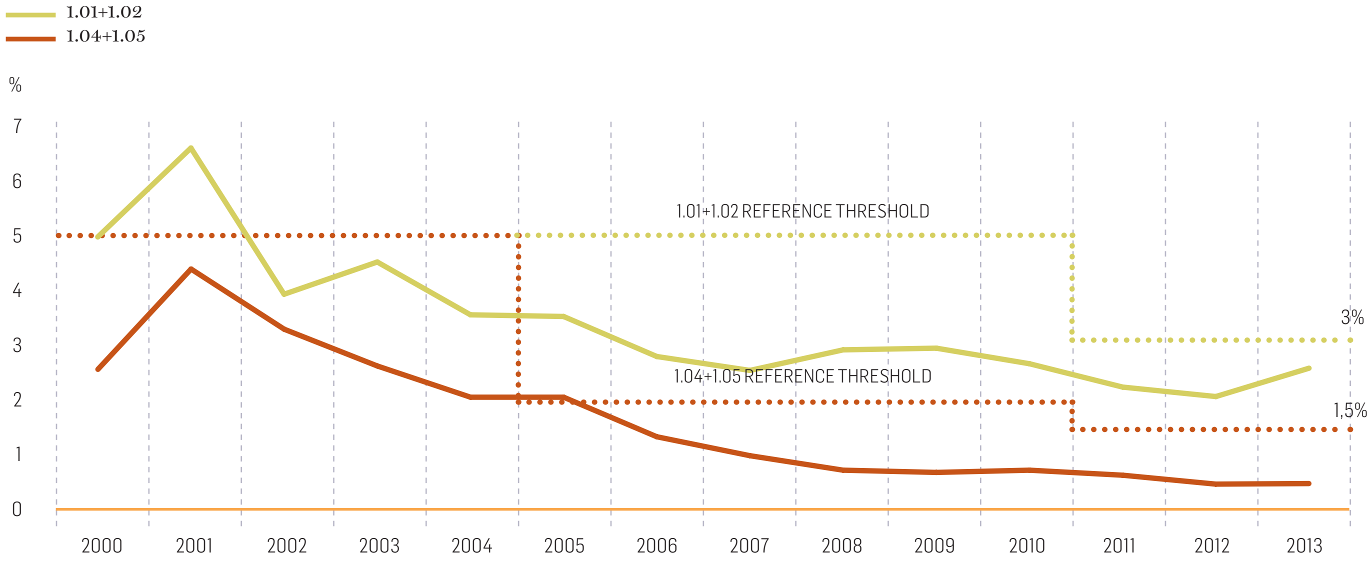
		MILAN	TURIN	FLORENCE	ROME	NAPLES	PALERMO	MEAN
Δ 2012/2013 Total non-sep UW	%	-11.9	-3.4	-5.9	-7.2	-1.3	-2.3	-6.1
Δ 2012/2013 Total SC	%	15.0	-3.5	9.0	21.2	-3.7	-11.4	11.1
Δ 2012/2013 Total UW	%	-2.4	-3.5	0.0	0.1	-1.8	-3.3	-1.3

2013 DATA		MILAN	TURIN	FLORENCE	ROME	NAPLES	PALERMO	TOTAL
Tot SC	t	270,921	191,539	100,533	545,637	106,087	31,744	1,246,461
Tot UW	t	649,838	442,617	232,549	1,755,718	497,499	335,807	3,914,028
SC/UW	%	41.7	43.3	43.2	31.1	21.3	9.5	-
Non-sep UW	t	378,917	251,078	132,016	1,210,081	391,412	304,062	2,667,566

FIGURE 10

QUALITY OF THE COLLECTED MATERIAL (MEAN TREND OF FOREIGN FRACTIONS). 2000-2013 PERIOD.

(Source: Comieco)



			1ST ANCI-CONAI AGR.				2ND ANCI-CONAI AGR.					3RD ANCI-CONAI AGR.				
COLLECTION	**DATA**		**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
1.01+1.02	Performed analyses	n	27	171	275	533	443	321	772	930	990	1174	1302	1,054	949	863
	Analyzed amounts	kg	n,d,	26,166	42,657	119,814	103,884	76,572	188,826	227,852	214,764	252,289	279,917	220,178	198,471	184,365
	Foreign fractions	%	4.90	6.50	3.87	4.45	3.50	3.47	2.75	2.50	2.87	2.90	2.62	2.20	2.03	2.54
1.04+1.05	Performed analyses	n	26	122	165	281	335	291	779	1041	1145	1176	1068	1,041	1051	936
	Analyzed amounts	kg	n,d,	25,455	33,181	62,104	119,124	62,936	145,873	181,758	200,085	202,555	193,863	186,802	201,014	182,703
	Performed analyses	%	2.50	4.30	3.22	2.56	2.00	2.00	1.29	0.95	0.69	0.65	0.69	0.60	0.44	0.45

Note
The new CTA, in force since 2010, redefined the quality brackets and lowered the 1st-bracket specifications.
The above results refer to the total product analyses performed at sorting plants both on incoming and on outgoing materials in order to determine the amount of the considerations due to the parties under the agreements.

TABLE 7

QUALITY OF THE COLLECTED MATERIAL (MEAN TREND OF FOREIGN FRACTIONS). DETAILED BY MACROAREAS. 2000-2013 PERIOD.

(Source: Comieco)

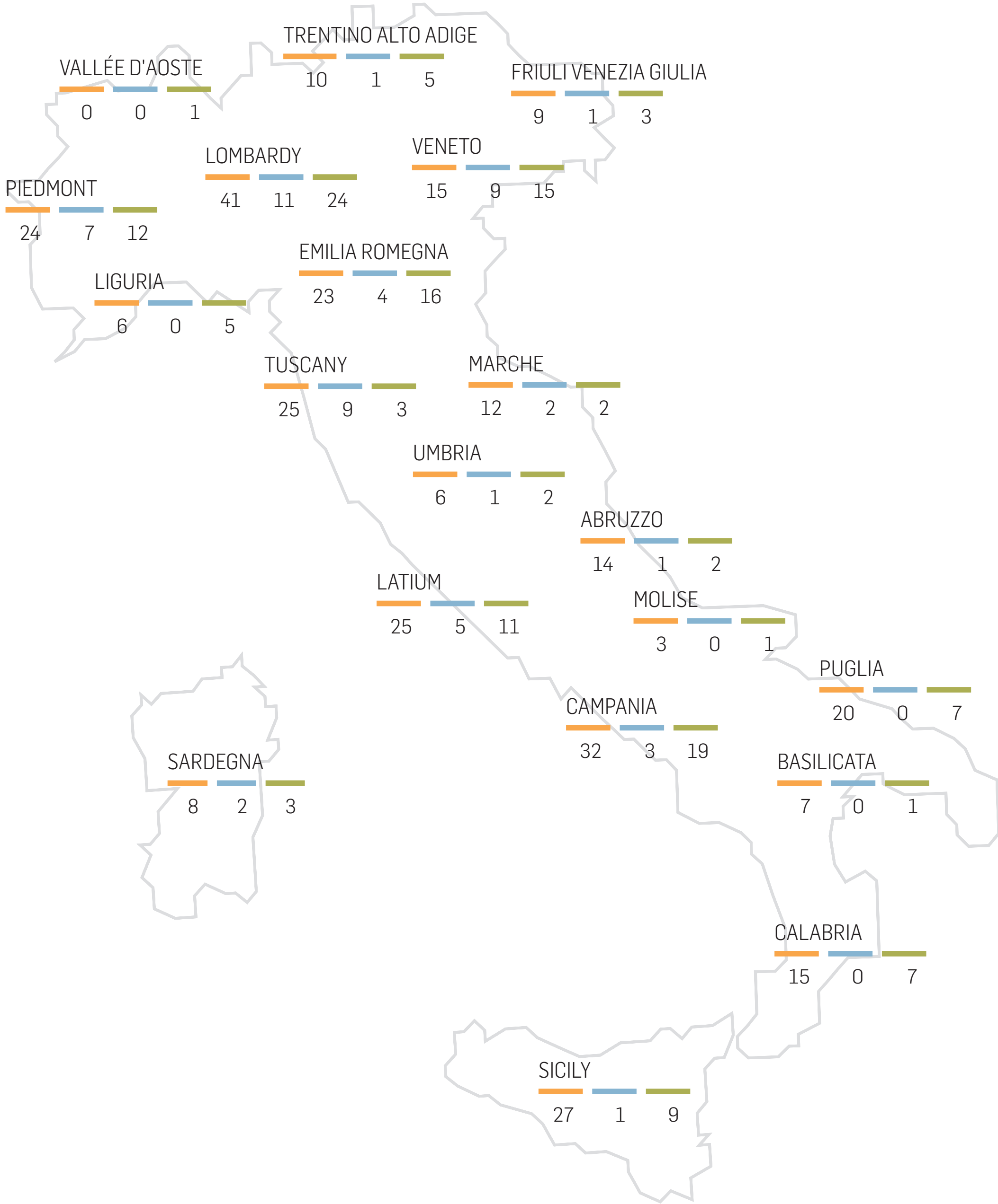
	YEAR 2012		YEAR 2013		Δ 2012-2013
	ANALYSES	FOREIGN FRACTION	ANALYSES	FOREIGN FRACTION	FOREIGN FRACTION
	n	%	n	%	%
1,01+1,02					
North	400	1.74	311	1.83	0.09
Centre	213	2.12	171	2.73	0.61
South	336	2.32	381	3.04	0.72
ITALY	**949**	**2.03**	**863**	**2.54**	**0.51**
1,04+1,05					
North	452	0.32	401	0.28	-0.04
Centre	243	0.55	222	0.53	-0.02
South	356	0.51	313	0.60	0.09
ITALY	**1,051**	**0.44**	**936**	**0.45**	**0.01**

FIGURE 11

THE RECYCLING NETWORK, YEAR 2013.

(Source: Comieco)

Sorting plants under the agreements
Paper mills under the agreements
Sorting plants for collection of secondary and tertiary packaging



AREA	SORTING PLANTS UNDER THE AGREEMENTS	MEAN DISTANCE FOR CONFERMENT	PAPER MILLS UNDER THE AGREEMENTS	SORTING PLANTS II & III
	n	km	n	n
North (*)	128	17,3	33	81
Centre	68	16,5	17	18
South	126	17,6	7	49
TOTAL	**322**	**17,3**	**57**	**148**

(*) one paper mill is located within the territory of the Republic of San Marino

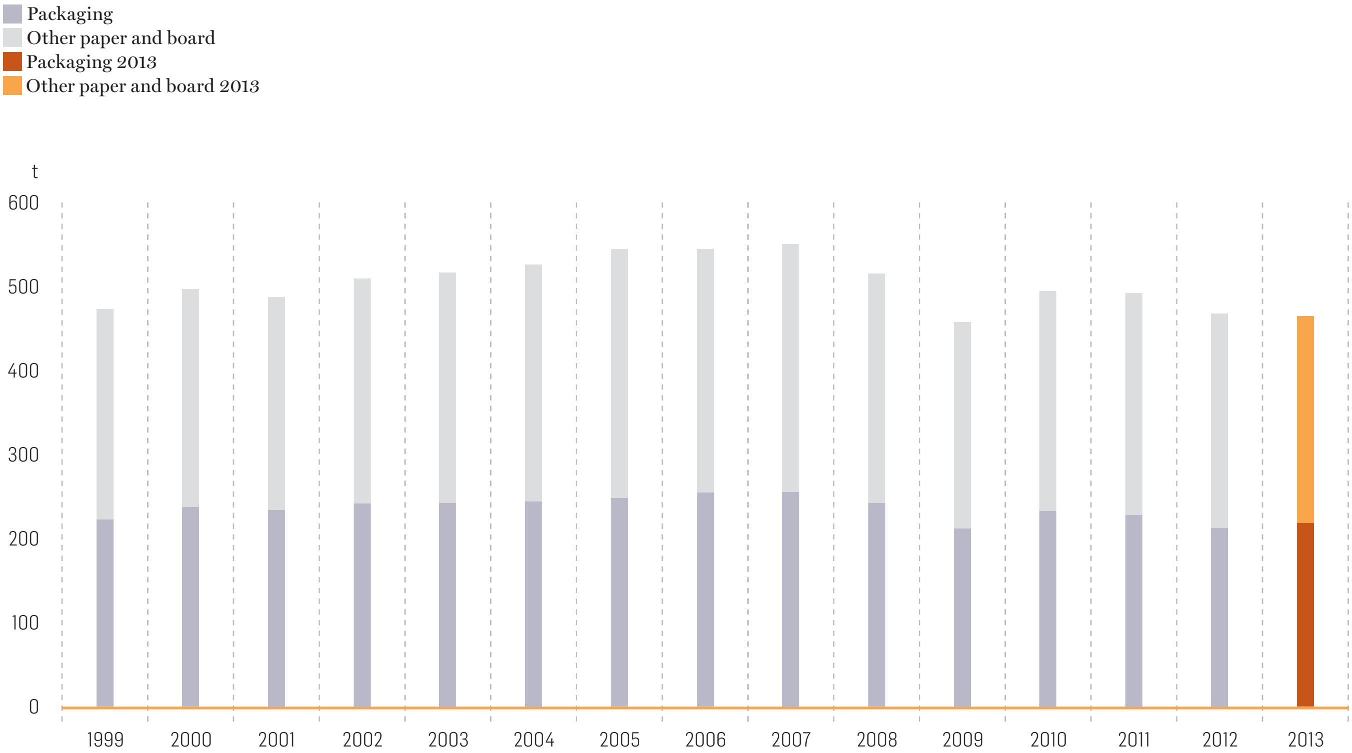
TABLE 8

PRODUCTION, IMPORT, EXPORT, AND APPARENT CONSUMPTION OF PAPER AND BOARD IN 2013.
(Source: ISTAT data processed by Assocarta and Assocarta estimates)

		PRODUCTION (A)	IMPORT (B)	EXPORT (C)	APPARENT CONSUMPTION (A+B-C)
Total Packaging (paper. board & cardboard)	t	3,992,733	2,500,219	1,297,256	5,195,696
Δ vs. 2012	%	2.6	-3.5	6.0	-1.2
Total other paper and board (newspaper and paper for hygienic-sanitary use)	t	4,543,278	2,283,211	2,443,106	4,383,383
Δ vs.2012	%	-3.2	-2.0	1.5	-5.1
Total paper production	t	8,536,011	4,783,430	3,740,362	9,579,079
Δ vs.2012	%	-0.6	-2.8	3.0	-3.0

FIGURE 12

PAPER AND BOARD PRODUCTION. 1999-2013 HISTORICAL DATA SET.
(Source: ISTAT data processed by Assocarta and Assocarta estimates)

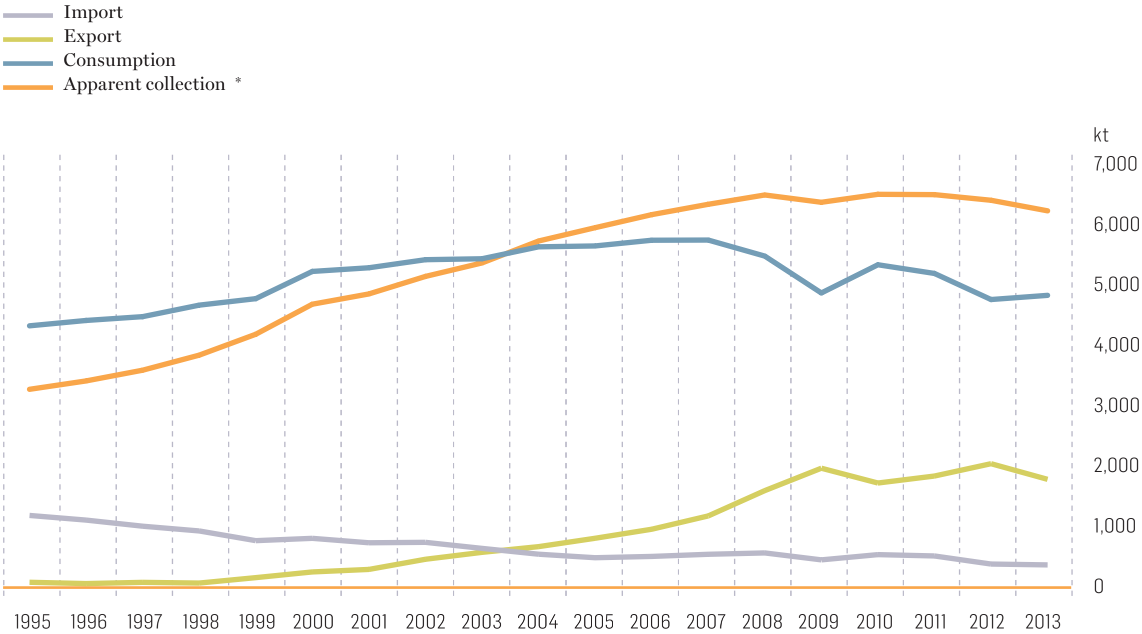


PAPER PRODUCTION (kt)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Packaging	4,071	4,347	4,287	4,429	4,440	4,471	4,541	4,661	4,681	4,434	3,877	4,261	4,178	3,893	**3,993**
Other paper and board	4,615	4,784	4,669	4,927	5,051	5,196	5,458	5,347	5,431	5,033	4,527	4,826	4,864	4,695	**4,543**
TOTAL PAPER PRODUCTION	8,686	9,131	8,956	9,356	9,491	9,667	9,999	10,008	10,112	9,467	8,404	9,087	9,042	8,588	**8,536**

FIGURE 13

CONSUMPTION, IMPORT, EXPORT OF PAPER FOR RECYCLING AND APPARENT COLLECTION*. 1995-2013 PERIOD.
(Source: Assocarta data processed by Comieco)



* Apparent collection: Consumption + Export – Import

FIGURE 14

RAW MATERIALS OF PAPER INDUSTRY IN 2013.
(Source: Assocarta and Comieco)

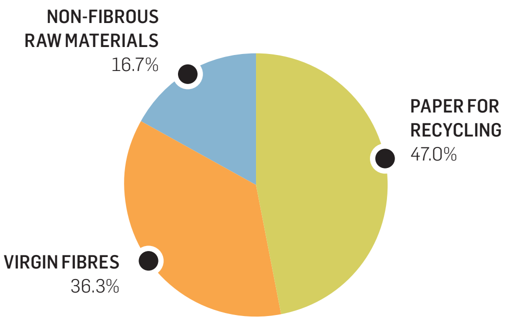
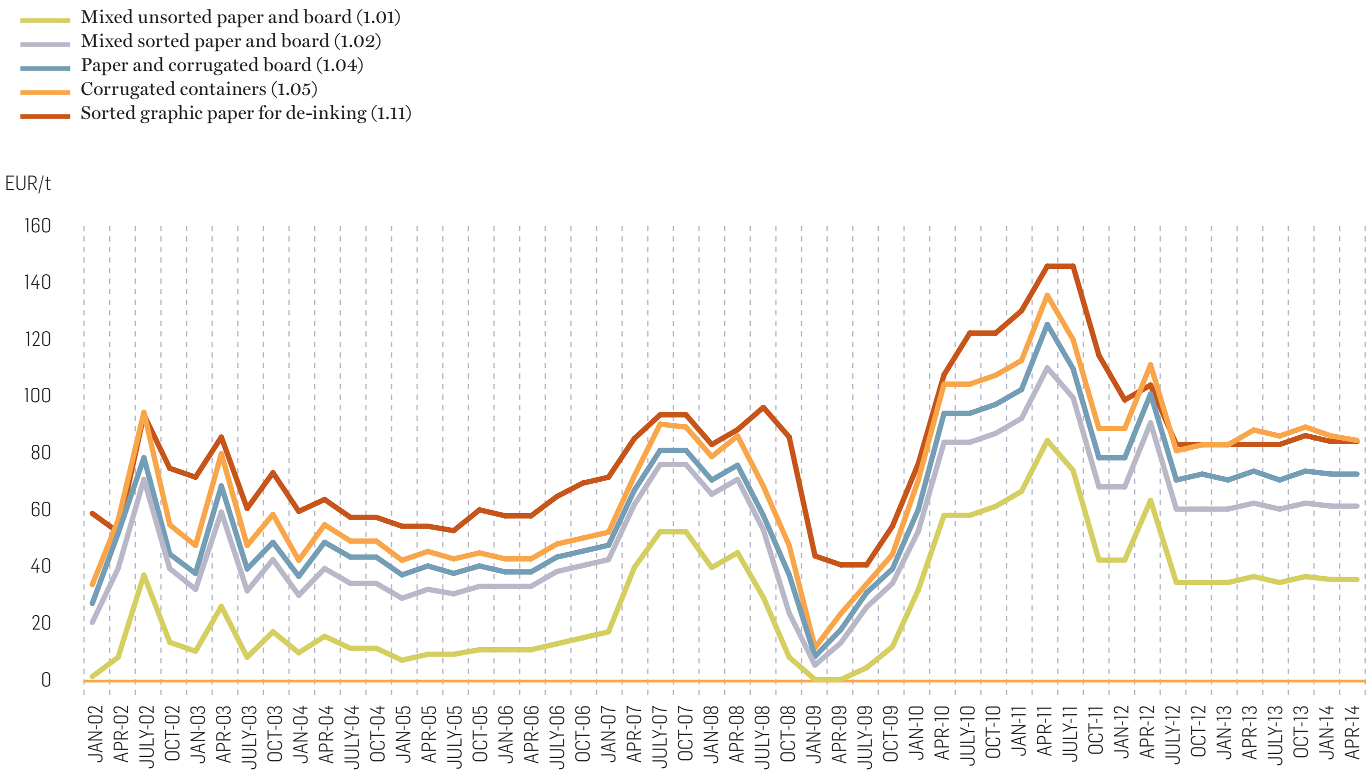


FIGURE 15

MONTHLY MONITORING OF PAPER FOR RECYCLING VALUES * (EUR/T). JANUARY 2002 – APRIL 2014 PERIOD.

(Source: Milan Chamber of Commerce)

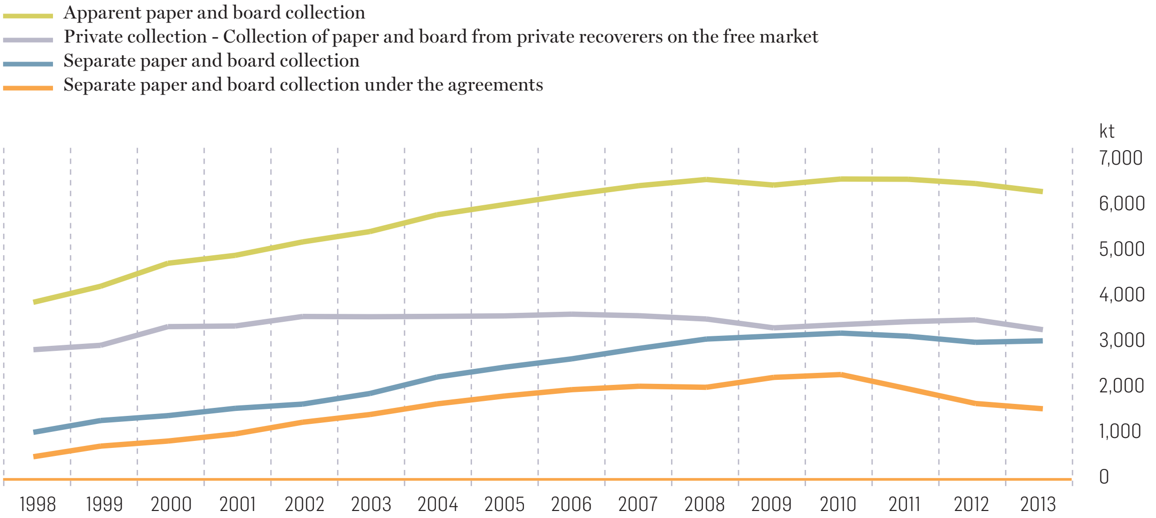


* for sorted materials, packed in bales without foreign substances, from recoverer to user ex departure facility, VAT and transport excluded, except paper for recycling relevant to types referred to the materials recovered through separate urban and similar waste collection.

FIGURE 16

OVERALL AND MUNICIPAL PAPER AND BOARD COLLECTION IN ITALY. 1998-2013 HISTORICAL DATA SET.

(Source: Comieco)



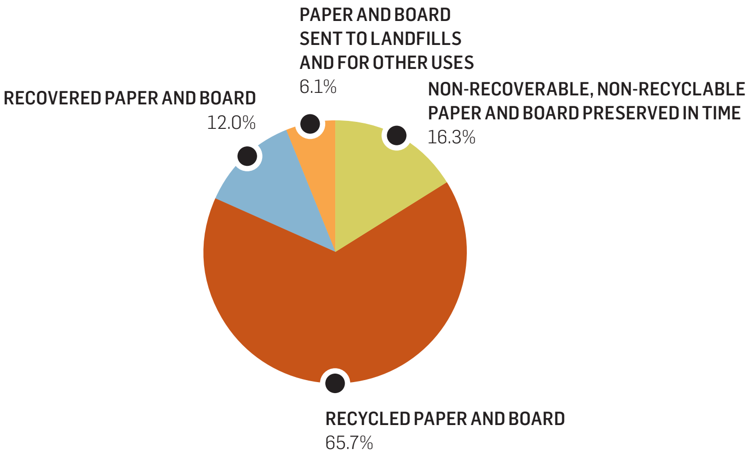
		1998	1999	2000	2001	2002	2003	2004	2005	2006
Apparent paper and board collection	kt	3,749	4,084	4,565	4,730	5,011	5,227	5,578	5,792	6,001
Municipal paper and board SC	kt	1,001	1,247	1,349	1,501	1,589	1,810	2,154	2,358	2,532
Municipal paper and board SC under the agreements	kt	485	706	811	959	1,202	1,362	1,584	1,747	1,879
Private collection	kt	2,748	2,837	3,216	3,229	3,422	3,417	3,424	3,434	3,469
MUNICIPAL PAPER AND BOARD SC UNDER THE AGREEMENTS VS. APPARENT COLLECTION	%	**12.9**	**17.3**	**17.8**	**20.3**	**24.0**	**26.1**	**28.4**	**30.2**	**31.3**

		2007	2008	2009	2010	2011	2012	2013	Δ t 1998/2013	Δ% 1998/2013
Apparent paper and board collection	kt	6,187	6,316	6,199	6,326	6,321	6,231	6,062	2,312	61.7
Municipal paper and board SC	kt	2,750	2,945	3,008	3,069	3,004	2,877	2,907	1,906	190.5
Municipal paper and board SC under the agreements	kt	1,950	1,928	2,134	2,193	1,895	1,591	1,482	997	205.6
Private collection	kt	3,437	3,371	3,191	3,257	3,317	3,354	3,155	406	14.8
MUNICIPAL PAPER AND BOARD SC UNDER THE AGREEMENTS VS. APPARENT COLLECTION	%	**31.5**	**30.5**	**34.4**	**34.7**	**30.0**	**25.5**	**24.4**		

FIGURE 17

DESTINATION OF PAPER AND BOARD PRODUCTS CONSUMED IN ITALY IN 2013.

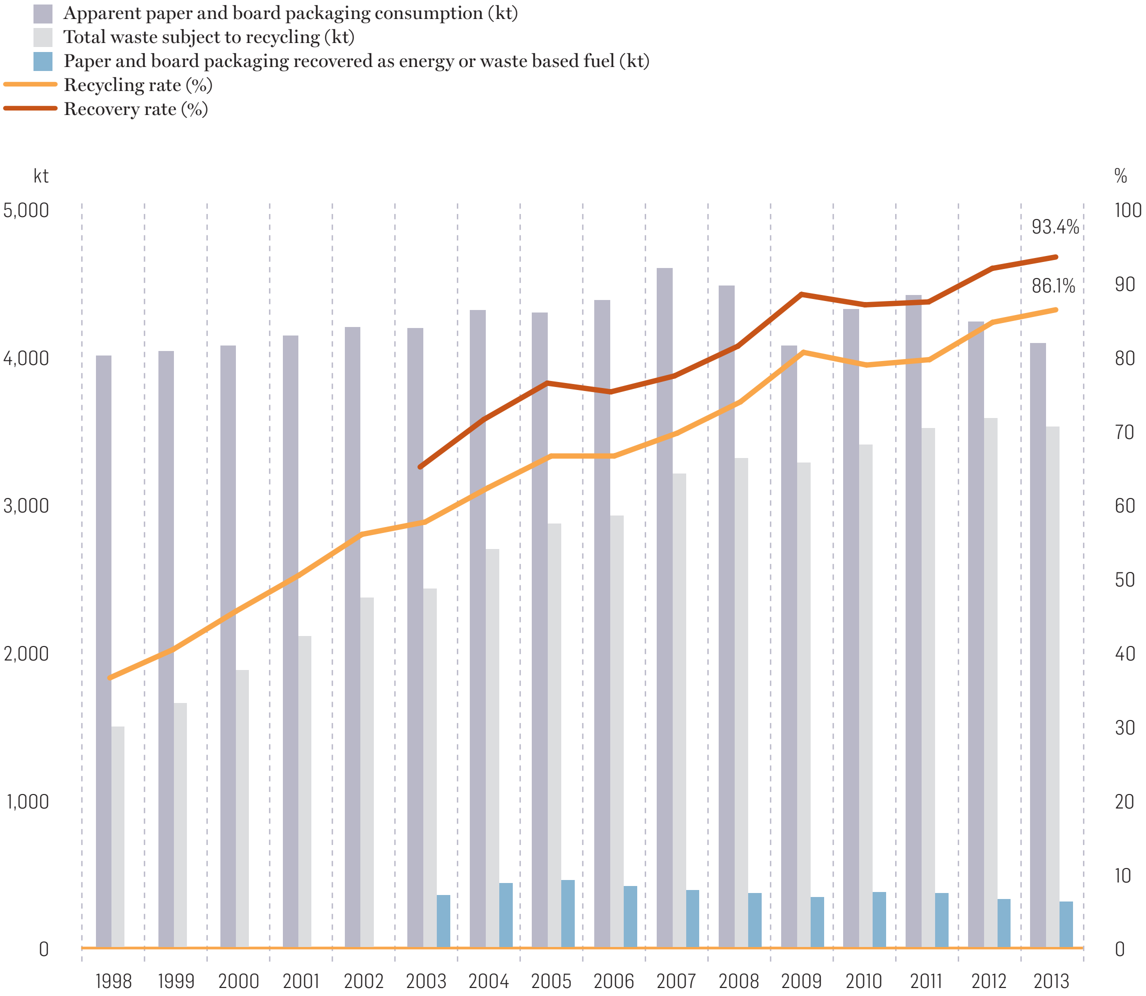
(Source: Assocarta data processed by Comieco)



	kt
Non-recoverable, non-recyclable paper and board preserved in time	1,190
Recycled paper and board	4,807
Recovered paper and board	875
Paper and board sent to landfills and for other uses	443
TOTAL USE OF PULP-BASED PRODUCTS	**7,315**

FIGURE 18

ACHIEVED PAPER AND BOARD PACKAGING RECOVERY AND RECYCLING TARGETS. 1998-2013 PERIOD (KT AND %).
(Source: Comieco)



Note: energy recovery before 2003 only monitored for the share managed under the agreements.
Total data not available.

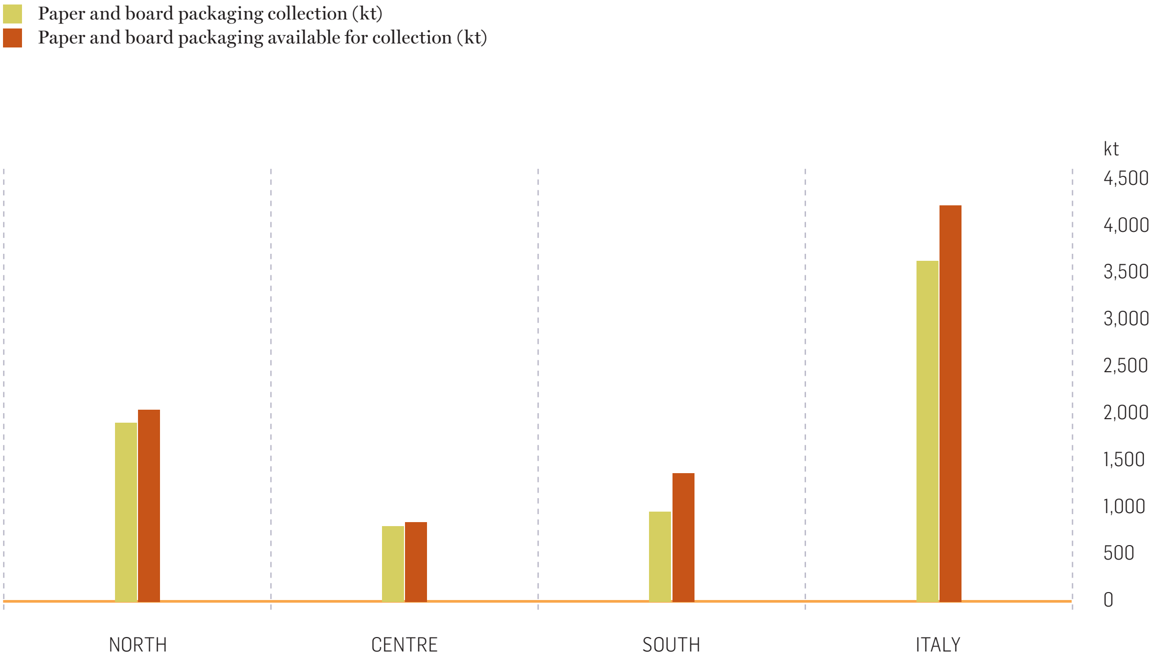
TABLE 9

PAPER AND BOARD PACKAGING RECOVERY AND RECYCLING TARGETS ACHIEVED IN 2013.
(Source: Comieco)

CALCULATION OF RECYCLING AND RECOVERY RATES	YEAR 2013	Δ 2012/2013
Apparent paper and board packaging consumption	4,106,596	-3.5%
Paper and board packaging from 1.01+1.02 (paper and packaging) recycled in Italy	361,461	5.3%
Paper and board packaging from 1.04+1.05 (packaging only) recycled in Italy	2,024,155	5.5%
Paper for recycling originating from packaging recycled abroad	1,150,970	-13.5%
TOTAL RECYCLED PAPER AND BOARD PACKAGING	**3,536,586**	**-1.6%**
PAPER AND BOARD PACKAGING RECOVERED AS ENERGY OR WASTE-BASED FUEL	**296,783**	**-5.8%**
TOTAL RECOVERED PAPER AND BOARD PACKAGING	**3,833,369**	**-1.9%**

RECYCLING	**86.1%**
ENERGY RECOVERY	**7.2%**
RECOVERY	**93.4%**

FIGURE 19
PAPER AND BOARD PACKAGING COLLECTION INDEXES ACHIEVED IN 2013 BY MACRO-AREAS.
(Source: Comieco)



		NORTH	CENTRE	SOUTH	ITALY
Paper and board packaging collection	kt	1,848	769	919	**3,536**
Collection index	%	93.3	94.8	69.6	**86.1**

Note: The "collection index" estimates the collection level in public and private areas, with reference to the apparent consumption of paper and board packaging available for collection.

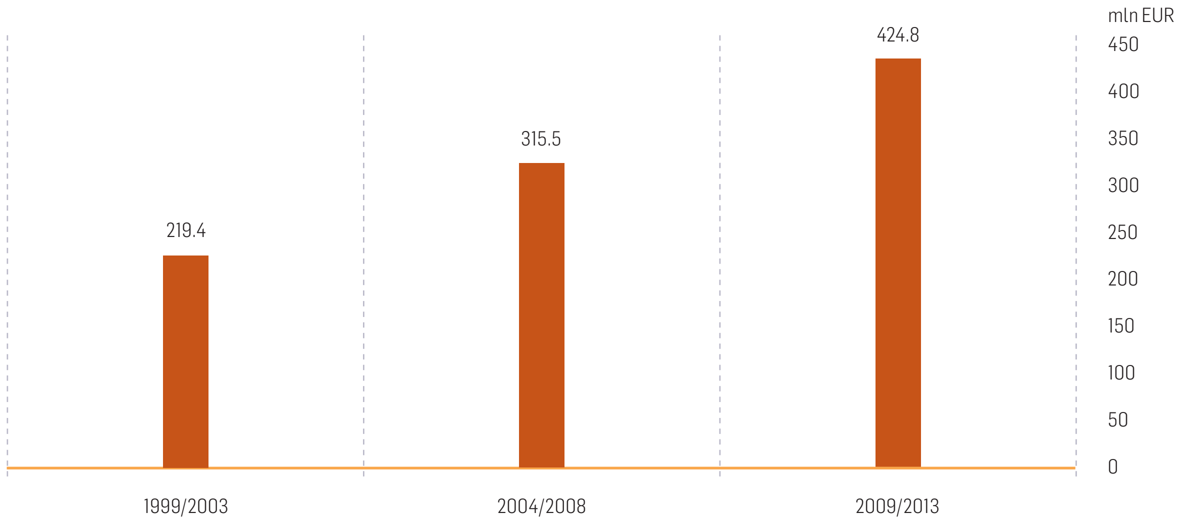
TABLE 10

BALANCE OF PAPER AND BOARD COLLECTION AND RECYCLING IN ITALY. 1999-2013 HISTORICAL SET.
(Source: Althesys data processed by Comieco)

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	TOTAL
	million EUR															
Cost items																
SC differential	-35.9	-40.4	-56.3	-62.1	-73.5	-72.3	-74.1	-74.8	-78.7	-79.6	-82.6	-81.1	-106.3	-102.7	-52.3	-1,072.8
Non-generated energy	-7.3	-6.6	-8.4	-9.4	-12.7	-14.5	-19.6	-23.0	-23.7	-30.5	-22.1	-20.9	-23.3	-23.5	-19.5	-265.0
TOTAL COSTS	**-43.2**	**-47.0**	**-64.7**	**-71.5**	**-86.2**	**-86.8**	**-93.7**	**-97.8**	**-102.4**	**-110.1**	**-104.7**	**-102.0**	**-129.6**	**-126.3**	**-71.8**	**-1,337.8**
Benefit items																
Avoided emissions	50.9	54.2	63.9	67.3	75.7	63.5	50.4	72.9	75.7	89.0	52.8	55.8	73.6	71.1	70.4	987.2
Non-disposal	106.1	115.0	139.1	149.3	171.2	189.7	204.5	220.6	234.6	257.3	266.5	266.4	266.3	257.5	287.9	3,132.0
Generated raw materials	68.7	69.2	4.9	29.8	28.6	27.1	25.7	32.2	109.7	79.3	16.2	157.6	184.2	121.2	97.4	1,051.8
Generated employment	34.9	37.7	43.5	48.1	51.5	50.6	63.2	68.6	72.3	81.5	83.3	84.7	84.0	81.2	80.4	965.4
TOTAL BENEFITS	**260.6**	**276.1**	**251.4**	**294.5**	**327.0**	**330.9**	**343.8**	**394.3**	**492.3**	**507.1**	**418.8**	**564.5**	**608.1**	**530.9**	**536.1**	**6,136.4**
NET BALANCE	**217.4**	**229.1**	**186.7**	**223.0**	**240.8**	**244.1**	**250.1**	**296.5**	**389.9**	**397.0**	**314.1**	**462.5**	**478.5**	**404.6**	**464.3**	**4,798.7**

FIGURE 20

MEAN ANNUAL BENEFIT OF SEPARATE PAPER AND BOARD COLLECTION AND RECYCLING BASED ON THE ANCI-CONAI AGREEMENTS.
(Source: Althesys data processed by Comieco)



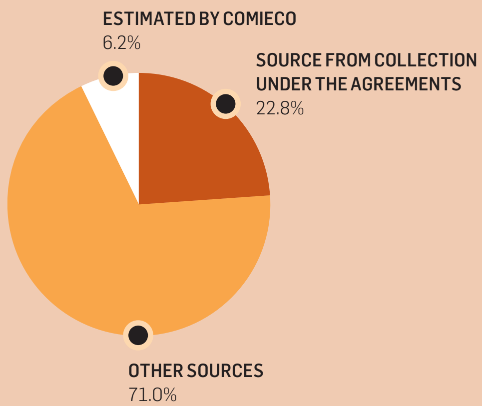
Note on the method

In order to ensure appropriate reading of the data contained in this report, the changes made vs. the past edition are highlighted.
The figure for collection in the Emilia Romagna region and the total figures for the area were updated vs. the year 2012.
For a few years now, the share of separate paper and board collection not managed by the Consortium has been based on the input of the Entities and organizations that monitor or manage the waste flows (ISPRA, Regions, Agencies, Provinces and Work Groups, ANCI Cities, operators, plants, etc.).
The goal is to obtain as detailed as possible local data for comparison against the data on the Consortium's management. Whenever official data is not available, Comieco estimates the amounts collected at provincial level.
As to evaluations for 2013, which are the object of this Report, 71.0% of collection data originates from official sources, and partially overlaps to the data available to Comieco; 22.8% refers to amounts managed by the Consortium directly, i.e. reported by the parties under the agreements as provided for by the Technical Annex (without any other official sources); and 6.2% is based on estimated amounts.

The estimation process considers separate paper and board collection by now in place across the whole national territory, albeit with broad differences in efficiency levels. This mode supersedes the previous one, which evaluated the rate of active "inhabitants."

If no different data sources are available, the per-capita collection data of parties to the agreements is applied, detailed by provinces, also for areas that are not managed upon agreement with the Consortium. This allows to estimate the collection amount, which is added up to the collection data available to Comieco.

FIGURE 21
SOURCES AND METHOD.
(Source: Comieco)



COMIECO

National consortium for Recovery and Recycling of Paper and Board Packaging

Paging and graphic layout
XXYSTUDIO

SEDE DI MILANO
via Pompeo Litta 5 20122 Milano
T 02 55024.1
F 02 54050240

SEDE DI ROMA
via Tomacelli 132 00186 Roma
T 06 681030.1
F 06 68392021

UFFICIO SUD
c/o Ellegi Service S.r.l.
via Delle Fratte 5 84080 Pellezzano (SA)
T 089 566836
F 089 568240

WWW.COMIECO.ORG

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Consorzio Nazionale Recupero e Riciclo
degli Imballaggi a base Cellulosica