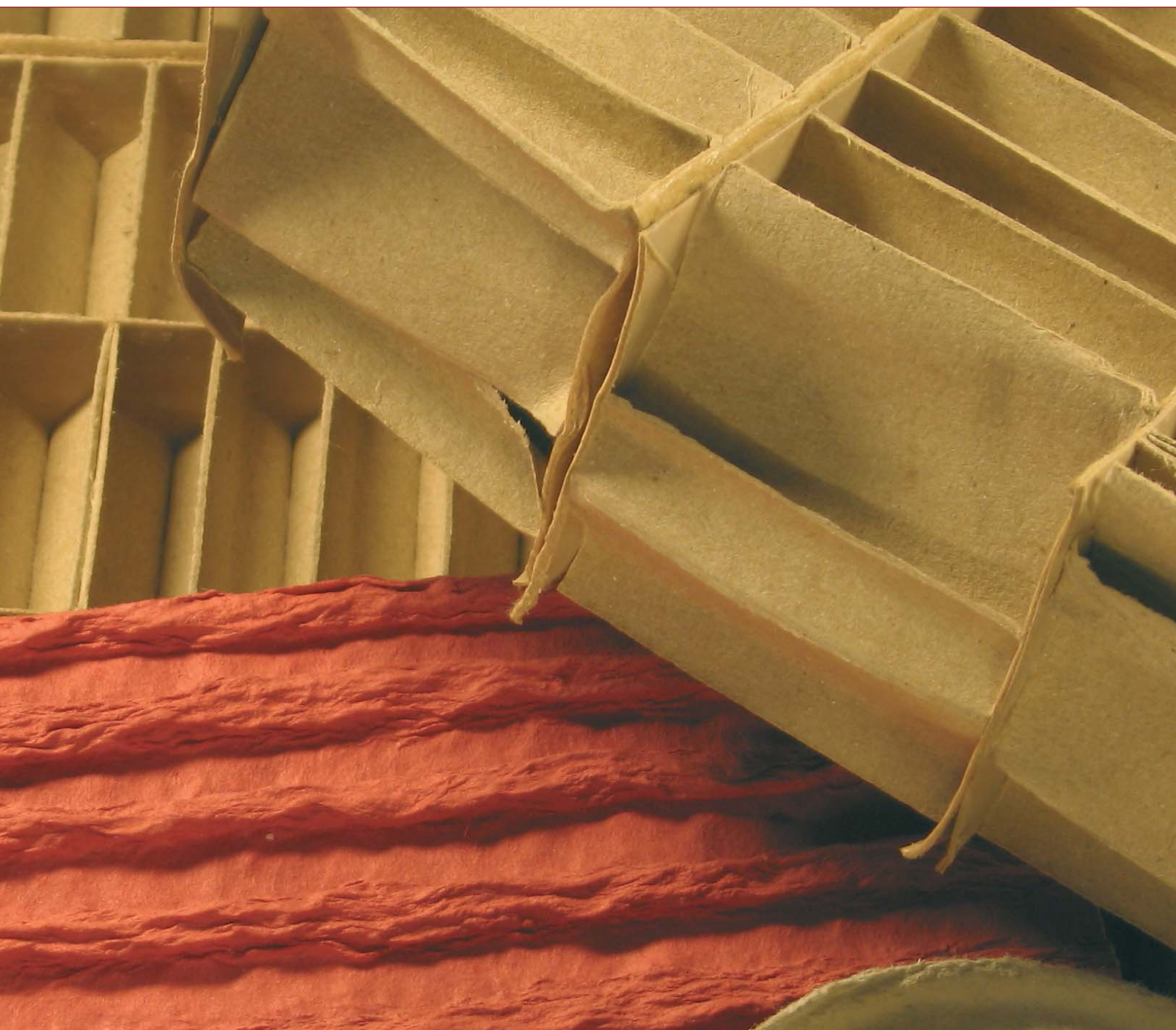


PAPER AND BOARD COLLECTION, RECYCLING AND RECOVERY  
**11th COMIECO REPORT 2005**



Preface by Claudio Romiti - Chairman of Comieco

July 2006



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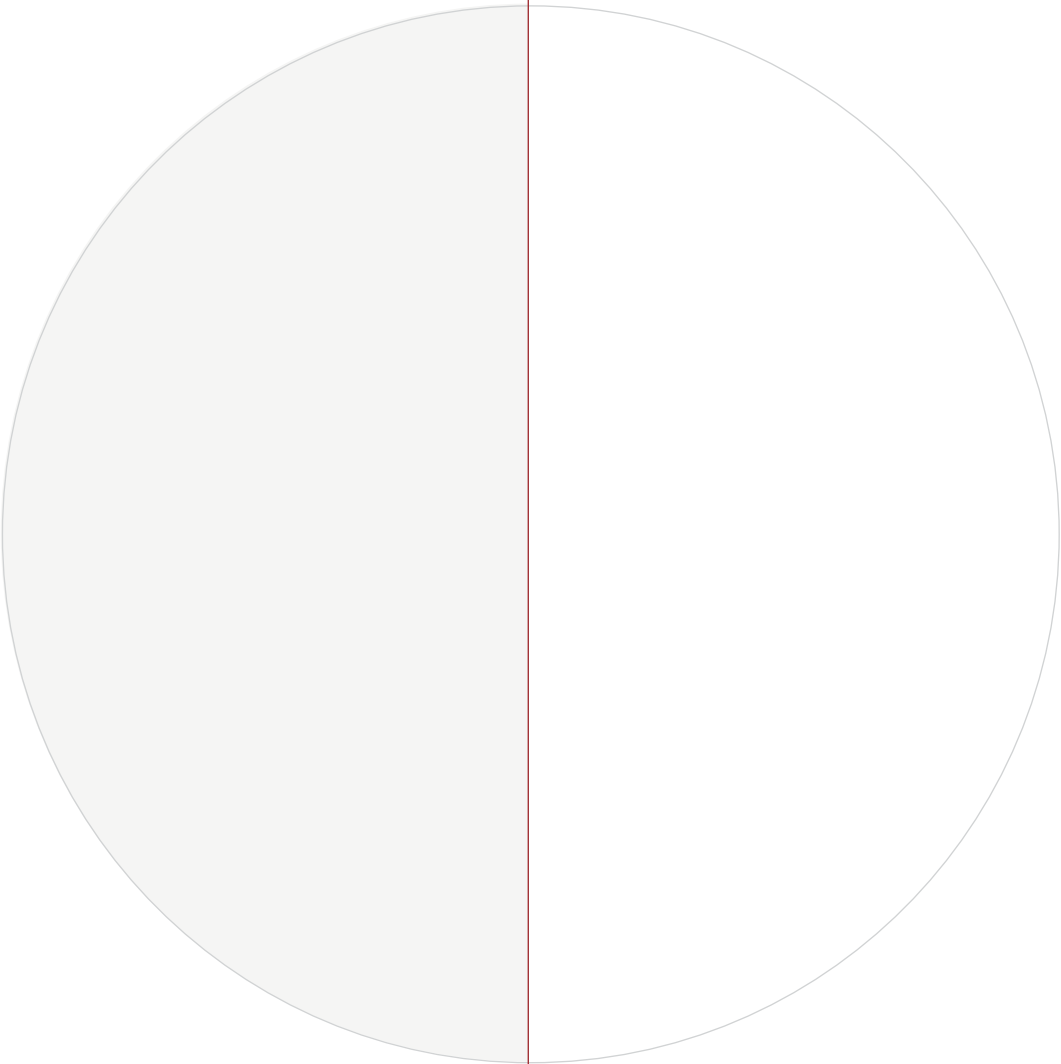
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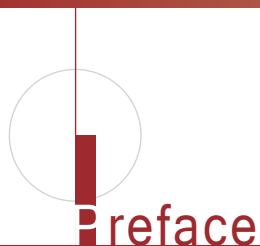
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With its 11<sup>th</sup> Report on Paper and Board Collection, Recycling, and Recovery, Comieco expands the scope of its analysis.

The following pages contain a comparison, albeit limited, of the Italian and European experience in separate waste collection. The outcome for the reviewed Italian cities is a comforting, or even surprising result of the efforts that many Italian Cities, collection service operators and, particularly, citizens and companies have made starting from the ambitious paper and board separation and recycling targets sets in 1997 by the legislators. Separate paper and board collection at the end of 2005 is 7.5% up, totalling 2.26 million tons; while Comieco ensures the collection of 1,747,000 tons of waste packaging and recovered paper in the Cities throughout the national territory for recycling, the paper and board packaging recycling rate amounts to 66.6% of the total consumed quantity.

Based on the above results, the Framework Agreement between ANCI and CONAI, executed in 2000 and renewed in 2004, is worth stressing along with the commitment of the Cities and of service users. Such agreement mobilizes significant economic resources in favour of collection, amounting to a total of 74.5 million EUR for Comieco in 2005, which will soon call for an increase in the environmental fee on the paper and board packaging used in our Country.

I also wish to stress the further opening of the recycling market. Exports of recovered paper are close to 750,000 tons, with a positive balance of about 300,000 tons vs. imports.

As usual, this Report is mainly focused on the South of the Country, where paper and board collection increased significantly (+15.2%) in 2005, with the share subject to agreements with Comieco close to +16.0%.

The growth recorded in the South is a result of both the implementation of new agreements with the Cities with over 500,000 inhabitants and of the increased yield per inhabitant of collection.

A relevant factor of growth in the South is represented by a significant increase in the

collection of households (+29%), whose quantity is, however, lower than for business activities, first and foremost of small-scale trade. These are outstanding results that, however, should be further improved, especially with respect to collection services in medium and large cities, to fill the gap with the rest of the Country.

Comieco is the wider system represented by CONAI, contributing to separate waste collection development in the South. In 2005, along with the commitment to recycle and economically remunerate collection ensured by the Framework Agreement with ANCI, several projects supporting the Cities and the operators in the identification of collection targets and models to be followed have been initiated in the South and will continue during the next year, supported by local communication actions.

The overall paper and board collection and recycling scenario highlighted by the 11<sup>th</sup> Report is generally positive, not only for the significant progress made, but particularly because it points out to further margins of improvement both in the collected volumes and in the evolution of the industrial recycling system. An improvement of results requires, however, a stronger commitment throughout the national territory in terms of service provided to the users, with special focus on the efficiency of the employed systems and on the quality of the collected material, as well as on the ability of the recovery and recycling companies to keep ensuring that the paper recovered in Italy is used for industrial purposes, turning such resource into a driver for the development of the concerned sectors.

Comieco is prepared to provide the necessary support and intends to continue to promote such improvement through an even stronger focus on efficiency and market support in its work.

Claudio Romiti  
Chairman of Comieco

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## Introduction

A recent analysis carried out by the Kyoto Club and by Istituto di Ricerche Ambiente Italia<sup>1</sup> shows that the overall collection and recycling system should by now be seen as a competitive factor for business.

According to this study, the recycling industry is not just one part of the waste management cycle, but rather a component of the country's economic and industrial system.

In the 2000-2004 period, this sector showed a 5% recycling index growth, vs. a 3.8% decline of the industrial production index.

The main field of application is the metal sector, with 62%, while paper materials rank second, with 8% of the total (**Figure 0**).

In Italy, 50% of the production of steel, aluminium, lead and paper uses a manufacturing input constituted by over 50% of secondary materials originated from production scraps and from waste selection and recovery.

More specifically, with respect to paper materials, paper and board consumption grew by about 40% at a European level from 1991 to 2004, totalling 88.2 million tons.

At the same time, the processing of paper and board obtained from separate waste collection developed.

Over the same period, the recovered paper collection rate (ratio of collection to overall consumption) increased to approximately 60% and even exceeded 70% in some cases - a rate beyond which no significant improvements can be expected, since 20-25% of paper and board cannot be collected and recycled (paper for sanitary or filing uses).

The data contained in this year's report, now at its eleventh edition, points out to a further evolution of the country's paper sector in 2005 and, particularly, to the input of the separate recovered paper collection performed by the Cities to its ongoing growth, in quantitative and qualitative terms, as a source of procurement for this industry.

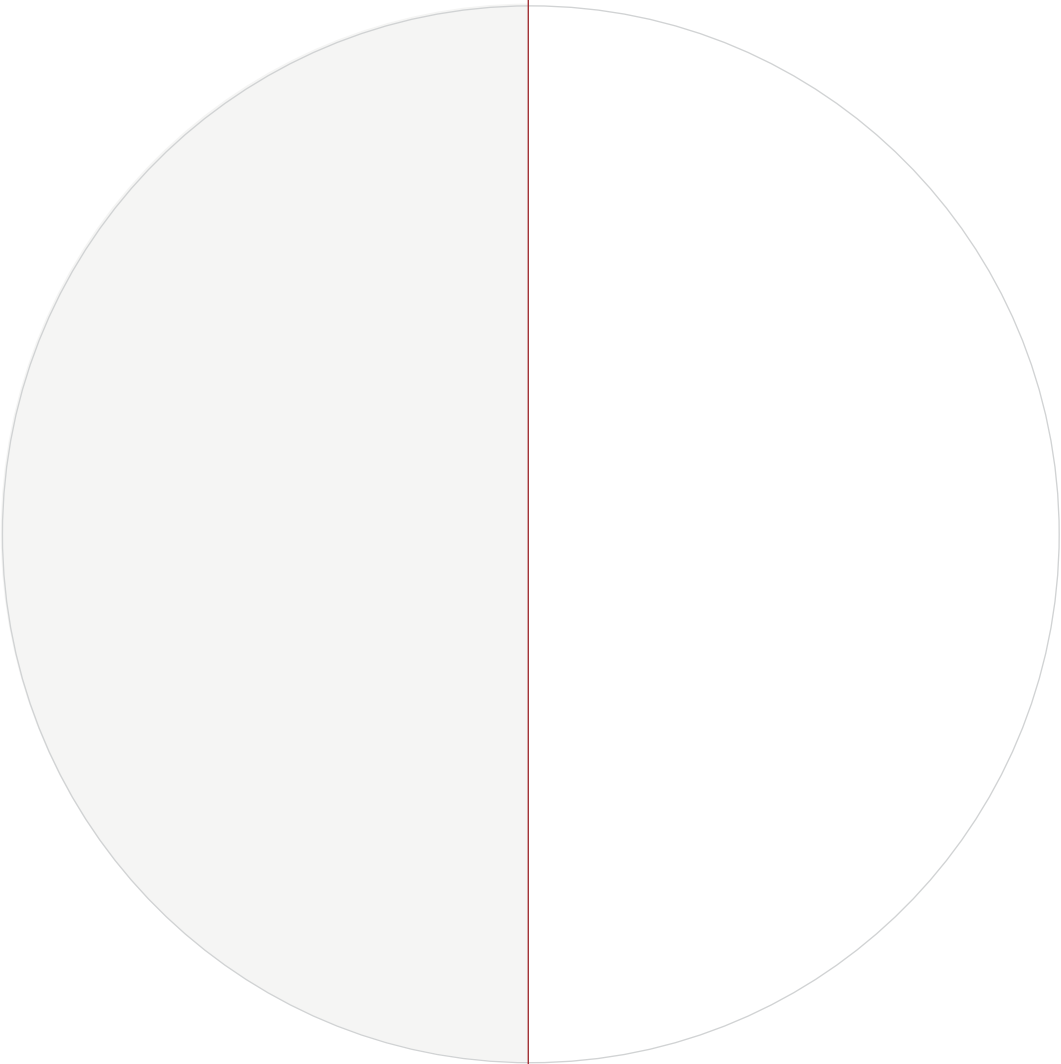
In 2005, the overall quantity of paper and board originating from separate recovered paper collection by the cities totalled 2.26 million tons, with a 126% increase since 1998, when collection barely exceeded one million tons.

An increase of more than 150,000 tons is estimated for the current year, leading to a total of over 2.4 million collected tons.

This outstanding activity allowed the Italian Cities to achieve significant results in the environmental area: just consider that the paper and board collected and recycled from 1998 to 2005 - about 13 million tons - prevented the creation of as many as 100 landfills and, at the same time, transferred important economic resources from the paper industry to the local institutions. Over the same period, the Italian paper system changed from a net recovered paper importer (over 800 thousand tons in 1998) to an exporter, with a "quality leap" for the first time in 2004 and a further consolidation in the past year.

Carlo Montalbetti  
General Manager of Comieco

<sup>1</sup> "Il riciclo ecoefficiente" - Edizioni Ambiente - 2006



## Five big cities: Rome and Naples as the most promising

Five sample cities, five champions indeed.

Record cities (in absolute terms) in paper and board collection, and as such, champions of Italy. But they are also taken as samples in statistical terms - examples selected to identify what steps should be taken, and when, to further improve the paper and board collection service. Here they are, in alphabetical order: Florence, Milan, Naples, Rome, and Turin.

The overall 2005 data for the five cities is compared against the 2004 data, providing some food for thought.

First of all, the data shows that the quantity of non-separate disposed waste is decreasing in all the five cities.

Meanwhile, the overall separate waste collection is growing in the five sample cities.

But, particularly, it turns out that the quantity of waste collected separately is higher, in absolute value, than the decrease in the quantity of non-separate waste (**Table 01**).

In other words, users produce more waste (while growth amounts to 1.84% in Rome, it is below 1% in the other cities), but they separate even more, and thus achieve a positive balance: less "garbage" and more "recycling".

The same trend can be considered from the viewpoint of the operators, rather than of the waste-separating citizens: data shows that separate waste collection makes up for the increases recorded in waste production, but also reduces - or erodes - by 1% the share of waste that used to be disposed of in landfills (**Figure 01**).

A measurement of results based on the residents, whatever the number and breakdown of the economic activities included in the municipal collection cycle<sup>1</sup>, shows that Florence ranks first in terms of waste production: its citizens produce on average more than 700 kg of waste each (732.6 kg per capita), but at the same time they are great recyclers: of these annual 732.6 kg, they separately collect 219.6 kg per capita.

Rome follows in terms of total per-capita waste production: together with Florence, in fact, it

suffers from the waste produced by a huge flow of tourists every year. Naples, Milan, and Turin follow at a distance, with less than 600 kg per capita per year.

As to separate waste collection, Florence is followed by Milan and Turin (more than 150 kg per capita), then Rome (129.6 kg) and finally Naples (53.3 kg), which is trying to recover from a waste emergency that has been under way for too long (**Figure 02**).

A more detailed analysis, however, highlights these trends more clearly.

In particular, data on recovered paper collection managed upon agreement<sup>2</sup> shows a general increase with percent rates of varying magnitudes, which seem to be particularly favourable in Rome and Naples: both cities total +19% (15thousand tons more in Rome).

A more sustained growth obviously occurs, in fact, where paper and board collection is less developed, whereas it follows a more physiological growth process in Turin and, particularly, in Milan and Florence ("mature" cities).

In the light of the recorded growth rates, Rome is now one of the main paper collection poles in the Country, in quantitative terms (the area includes almost 3 million inhabitants, plus those in the metropolitan area, whose collection rates are still not too high). Besides the activities managed through Comieco, the city has collection systems for major users that account, alone, for a further 80thousand tons - almost the whole amount of collection in Campania in 2005, by comparison.

The activities performed in co-operation with the city's service provider - Ama Spa - and with the City administration have undoubtedly contributed to these results. These include, for example, the event "Cartoniadi", which took place in 2005.

In these five cities taken together, paper and board are generally used as a role model, as an example.

To some extent they are drivers. In fact, the paper and board collection percent rate is up from 34.1% to 34.9% of total separate waste collection.

<sup>1</sup> The different degree of waste absorption and public service activation in the Italian Cities hampers the ability to compare the collection data. In the sample under study, Florence shows the highest, and Milan the lowest absorption degree.

Besides this factor, the incidence of tourists and commuters should be analyzed.

<sup>2</sup> Such agreements are contracts entered into by Comieco and the City authority or collection system operator to handle the packaging flows and other paper and board fractions based on the national agreement signed by the National Packaging Consortium (CONAI) and the National Association of Italian Cities (ANCI).



## Comparing European cities: an assessment of the Italian Model

*"Can the Italian experience in packaging management be assessed?*

*Can the model of Comieco, and of the Consortia in general, be compared - in terms of efficiency - against the models implemented in other cities? The answer is yes, according to the data on a European comparison requested by Comieco."*

The analysis allows to highlight the similarities and differences between the ways in which the consortia react in the five European countries (Italy, France, Spain, Germany, and the UK) taken as reference.

The aim of the study was to provide a brief qualitative and quantitative overview of the situation of separate paper and board collection in such countries.

The analysis included general data, obtained from official sources; a number of significant case studies were analyzed.

These were then compared against some Italian cases considered as homogeneous in terms of territorial characteristics.

These comparisons allowed to identify three kinds of homogeneous international entities: the big cities (Paris, Milan, London, Rome), the intermunicipal areas, and the medium-sized urban centres.

The general status (**Figure 03**) of urban waste production in the five Countries concerned confirms that Germany ranks first, followed by the three big industrialized Countries similar by economic structure and number of inhabitants (France, the UK, and Germany), then Italy and, finally, Spain.

In per-capita terms, however, the main waste producers are the 26 million Spaniards, with 602 kg per inhabitant per year, vs. 531 kg of the Italians.

The overall waste management system (**Figure 04**) of Germany stands out for its frequent use of incineration (more than half of all garbage), followed by the three landfill-based Countries, namely the UK, Italy, and Spain. Recycling and composting are very effective in France.

Interesting comparisons (**Figures 05-08**) can also be made among the different entities considered as homogeneous (cities, Municipal districts, large and medium-sized cities).

In all the described cases, the Italian cities considered as reference models clearly show a performance in line with, or exceeding the corresponding European examples.

## The most promising outcome of 2005: growth in the south of Italy

2005 was an important year for paper and board collection. Comieco and the service providers, in fact, consolidated and strengthened the collection system, increasing its penetration especially in the South (Table 02).

Almost two years ago, in this respect, the Consortium established a work team made up of four board directors (representing companies in the southern region, namely two paper mills and two paper and board industries) and of the members in charge of managing the southern region.

The activities and commitment of the work team were aimed at directing, promoting and developing the Consortium's activities in the South.

In absolute terms, the three reference regions in the South are Campania, Sicilia and, particularly, Puglia, where the highest quantity is recorded - in spite of less significant, but still two-digit growth rates than in other regions: alone, they account for 72% of the total paper and board collected in the South.

While the other regions (except Abruzzo, which stands half-way between the Centre and the South) basically started later, in the past year they showed the highest growth rates, with a total 15.2%.

One case apart is Sardegna, which shows again the most significant development rates, also resulting from a per-capita collection lower than the average in the South (70% compared to the Southern average).

The most complicated situation in the South is perhaps observed in Molise, where the awareness of several local administrations is still poor and where the local collectors' network does not include industry-sized companies.

Central Italy is also growing fast: a robust collection system and a strong environmental awareness of the citizens have contributed to the development of the area into one of the most advanced in terms of waste and packaging management, and at the same time boasting important quick-growth areas.

Two cases stand out among the central regions.

One is the case of Rome that started later than the main northern cities and is now expected to soon become the main Italian city in terms of collected quantities. The other case concerns an apparent standstill of paper and board collection observed in Umbria, in countertrend to the Centre.

Northern Italy is confirmed as the main collection area, but at the same time as a by now "mature" one. Growth in the North is, in fact, less prominent than it used to be.

The four main regions (Lombardia first, followed by Veneto, Emilia Romagna and Piemonte) have now achieved a European standing.

The mountain regions (Valle d'Aosta, the autonomous provinces of Trento and Bolzano, Friuli Venezia Giulia), where social cohesion stimulates virtuous behaviours, show some cases of excellence.

Liguria is still lagging behind: here, paper and board collection can still hardly achieve the spread and the efficiency observed elsewhere in the North.

## The paper sector and packaging waste recovery: a green overview

As the main actors in the total separate recovered paper collection performed in Italy, which is estimated to have reached more than 7.7 million tons in 2005 (**Table 03**), the paper and board collected globally in the country have achieved the significant amount of 2.26 million tons, with a total 7.5% global increase corresponding to almost 160,000 additional tons compared to 2004.

The North is still the reference area, but the most outstanding increase rates, as already mentioned, are recorded in the south, where trends are in line with the past year.

In absolute terms, a similar growth is expected for 2006, however with additional quantities primarily originating from new collection activities in the southern regions (**Figure 11**).

As to the Consortium's role and to the quantities managed upon agreement in 2005, these amounted to 1,747,000 tons, with a 10.3% increase compared to the previous year.

The processed quantities accounted for 77.1% of the total national separate waste collection (**Table 04**).

At the end of the year, the total number of contributors subject to the agreements totalled 657. However, since the renewal of the agreements is still under way, the final figure, with the same number of Cities involved, may change; in Sicilia, for example, the direct execution of the agreement with the relevant authorities (ATO) has reduced the number of signed contracts to 97 vs. 120 in 2004 (**Figure 13**). The rate of inhabitants grew in 2005 to 85.3% of the Italian population (vs. 83% in 2004): these include 1.4 million new inhabitants that can now rely on the collection and recycling of separate materials through the execution of agreements by their municipal administrations.

Just less than 6,000 Cities are now involved in the agreements, equal to 73.5% of the local administrations (**Table 05** and **Figure 14**).

In the southern regions, the agreements still provide the main outlet for the paper and board collected by the municipal administrations (about 15% more compared to the other two main areas of the Country): this confirms the ability of Comieco to ensure that recycling is also performed in the areas where no production and recycling systems, i.e. the paper mills, are directly available.

A look at the economic situation (**Table 06** and **Figure 16**) shows that the resources transferred to the Cities in 2005 amounted to 74.5 million EUR (+14%, a growth rate similar to the previous year).

These should be added to the over 2.8 million EUR granted by the paper mills to the parties to the agreement on the paper-based materials other than packaging provided through mixed paper and board collection.

As to the breakdown of the collection activities (**Table 07**), the differential values of household collection and business collection are reduced in favour of the former, also due to the impact of the conditions provided for by the new ANCI-Comieco technical attachment.

This is especially true in the South, where the households' input grew by 4 percent points compared to the collection performed upon agreement in 2004, and by 30% in terms of collected quantities: this virtuous trend also benefited from the activities carried out by the Consortium for the promotion of such collection systems.

The yield per inhabitant of collection grew by 7.2% to 36 kg (**Figure 17**).

As to the location of the packaging waste sorting plants (**Figure 18**), there are no major novelties compared to 2004: while the recycling network made up of the collection and selection plants basically did not change, the number of paper mills in charge of recycling the collected paper lost five units, which discontinued their activity. On the other hand, the quantity of materials brought to the sorting plants increased (**Figure 19**): trends point out to an improvement, especially in the mixed paper and board collection flows. A total of about 140 tons of materials were analyzed within the framework of over 600 checks.

The trend of prices for certain recovered paper types (**Figure 20**) continued to show some stability during the year, confirming the 2004 trend.

This stability follows a period of recovered paper price fluctuation, which was strong in 2002-2003.

A 3.4% increase in paper production was recorded in 2005 (**Table 9**).

Such increase was related to the development of exports, whose volume grew by over 6%, and to a slight decline of imports (-1.2%).

Domestic consumptions remained unchanged compared to 2004.

The growth of graphic paper production recorded in 2004 (+5.1%) was confirmed in 2005, in particular for glossy paper (+5.5%) and paper for domestic, sanitary, and health uses (+4.5%).

The packaging sector recorded a total 1.6% growth. The overall apparent consumption of unprocessed paper and board amounted to 11 million tons.

As to recovered paper consumption, domestic collection grew by 3.6% from about 5.8 million tons, imports declined by 11 percent, and exports grew by 24%: recovered paper consumption globally amounted to 5.5 million tons (**Figure 21**).

**Figure 12** shows the trend of the past 10 years: Italy has changed from one-million tons net imports to net recovered paper exports in 2004, showing an increase in collection vs. domestic consumption.

The raw materials used by the paper sector (**Figure 22**) included recovered paper as the main one (48%), while new fibres only accounted for 35%, followed by non-fibrous raw materials (17%).

Recovered paper consumption was not homogeneous in the different paper production segments: while in 2005 the usage rate was 100% for packaging paper and board production, it amounted to 11.7% for graphic and printing paper production.

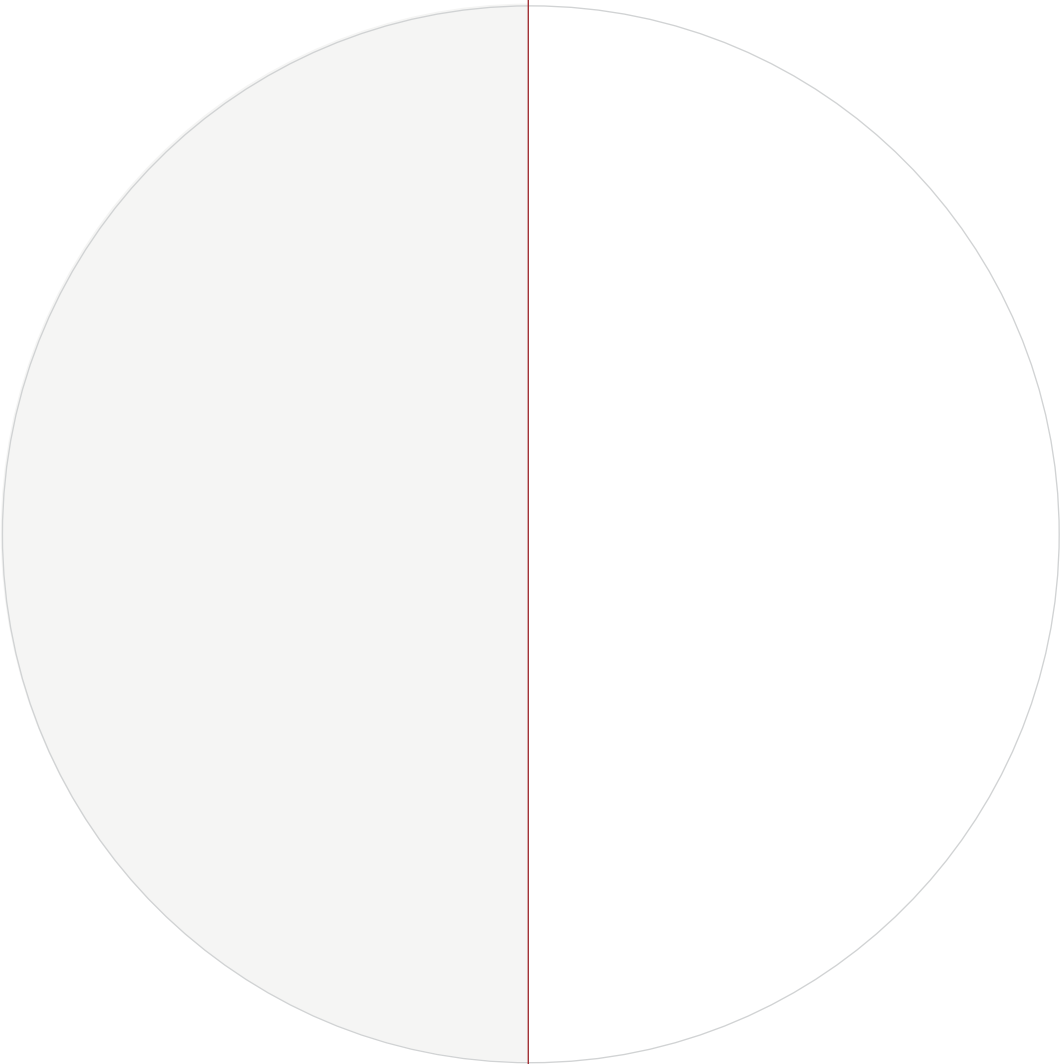
Sixteen percent of the recovered paper was used for the production of paper for sanitary and health uses.

For the second year in a row, a "fibre balance" was achieved with Assocarta based on a method defined at a European level by CEPI (European Confederation of Paper Industries): for 2005 it was confirmed that a significant share (22%) of paper and board products for consumption could not be recycled or recovered because they were, for example, meant to be stored in time (books, files, documents, and others) or for sanitary uses and, as such, disposed of.

Of the remaining share, 46% was recycled, 12% was recovered, and 20% was finally disposed of (**Figure 24**). As to the recycling and recovery targets in apparent paper and board packaging consumption, the final data on the 2005 activities (**Table 10** and **Figure 25**) point out to a total 66.6% recycling rate and, if the rate of recovered paper packaging meant for energy or fuel production is considered (according to studies by CONAI), the recovery rate rises to 76.86%.

For the next few years, Comieco intends to confirm and improve the achieved recycling targets in order to allow separate recovered paper collection to finally take off in the South.

In 2005 the apparent per-capita paper and board packaging consumption amounted to about 76 kg: of these, 58 kg were recovered (vs. 55 kg in 2004) and, of the latter, 50.4 kg were recycled (vs. 47 kg in 2004).







## Notes on the method

The calculation of the separate paper and board collection share not handled by the Consortium was the object of a survey primarily aimed at collecting official data.

In particular Comieco, based on a co-operation initiated in the past years, signed a protocol of understanding with UPI (the Union of the Italian Provinces) and established several contacts with the Provincial Waste Working Groups (Osservatori Provinciali Rifiuti, OPR) for data search.

Only when it was impossible to collect official data (ARPA, OPR, Citiesx, or the operators), did Comieco use the method described below.

At the end of the survey, 25.6% of the data on collection came from official sources and partly overlapped data already available to Comieco; 64.5% referred to quantities handled directly by the Consortium (without any other official sources); and, finally, 9.9% was based on quantitative estimates.

In order to estimate the quantities not handled by Comieco, and not available from the above-mentioned official sources, 3 groups of provinces were considered:

- group A, relevant to the provinces where Comieco covers more than 85% of the inhabitants through the agreements mechanism;
- group B, relevant to the provinces where Comieco covers 51 to 85% of the inhabitants through the agreements mechanism;
- group C, relevant to the provinces where Comieco covers 20 to 50% of the inhabitants through the agreements mechanism.

A direct survey was then carried out on the Cities and service providers aimed at identifying the number of Cities not involved in agreements but delivering a separate paper and board collection service.

If the City under study provided information on any implemented collection services, as well as data on collection, such data was included in the official sources.

On the other hand, if no quantitative data was available, the rate of inhabitants not subject to the agreements but involved in separate paper and board collection was identified: for these, the same per-capita figures recorded for the inhabitants subject to the agreements in that province were assumed.

The data on collection was then calculated and added up to the figure referring to the share managed by Comieco, so as to estimate the overall collection in the territory considered.

Note: the paper and board collection data for the Region of Veneto referring to the year 2004 was amended after a final analysis.

This accounts for the difference vs. data in the previous Report.

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# Charts and tables

## LEGEND OF ACRONYMS

SWC - SEPARATE WASTE COLLECTION

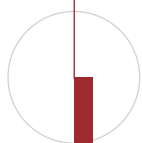
FMS - PAPER AND BOARD OTHER THAN PACKAGING

MSW - MUNICIPAL SOLID WASTE

RP - RECOVERED PAPER

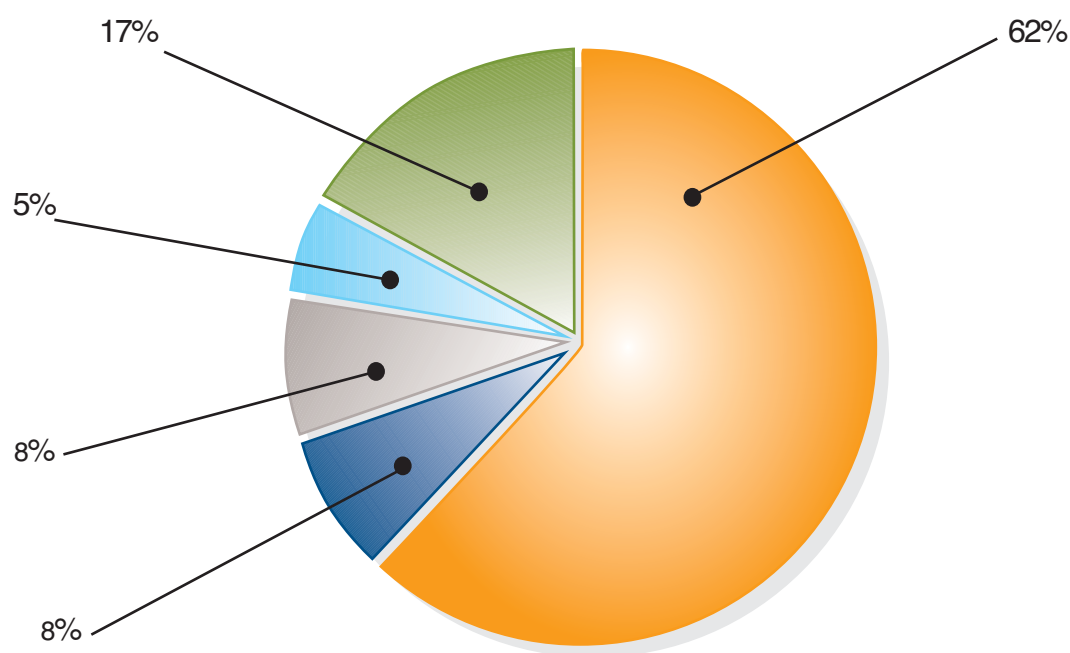
n. - NUMBER

t - TONS



**Fig. 00 Breakdown of the economic value**  
of recovered materials in Europe  
by usage sectors (Year 2001)

SOURCE: AMBIENTE ITALIA



#### PRODUCTION SECTOR



## II ab.01 Waste management in the cities of Florence, Milan, Naples, Rome and Turin

SOURCE: COMIECO

### Year 2005

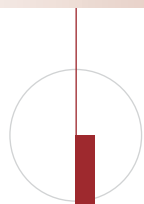
CITY	INHABITANTS	TOT MSW COLLECTION	TOT SWC	TOT MSW	TOT SWC/ TOT MSW	PAPER AND BOARD RP UPON AGREEMENT	PAPER RP/ TOT SWC
		t	t	t	%	t	%
Milan	1.256.211	474.396	235.486	709.882	33,2	85.456	36,3
Turin	865.263	342.940	134.536	477.476	28,2	52.856	39,3
Florence	356.118	182.700	78.187	260.887	30,0	29.990	38,4
Rome	2.546.804	1.476.831	329.945	1.806.776	18,3	91.521	27,7
Naples	1.004.500	523.768	53.545	577.314	9,3	17.492	32,7
Total	6.028.896	3.000.635	831.699	3.832.335			Average <b>34,9</b>

### VARIATIONS 2004 - 2005

CITY	TOT MSW COLLECTION	TOT SWC	TOT MSW	PAPER AND BOARD RP UPON AGREEMENT
	%	%	%	%
Milan	-0,56	2,87	0,55	2,06
Turin	-1,59	6,89	0,66	7,22
Florence	-1,17	3,73	0,25	1,87
Rome	-0,74	15,22	1,84	18,99
Naples	-0,31	4,65	0,14	18,69
Average	<b>-0,76</b>	<b>8,34</b>	<b>1,08</b>	

### PER CAPITA YEAR 2005

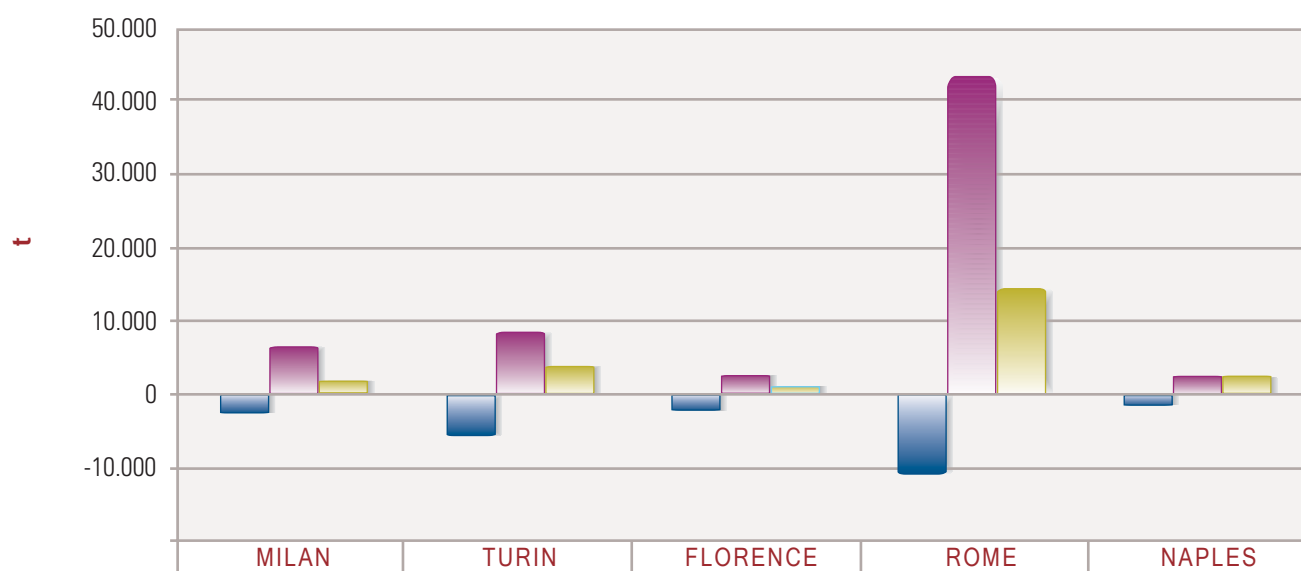
CITY	TOT MSW COLLECTION	TOT SWC	TOT MSW	PAPER AND BOARD RP UPON AGREEMENT
	kg/inhab.	kg/inhab.	kg/inhab.	kg/inhab.
Milan	377,6	187,5	565,1	68,0
Turin	396,3	155,5	551,8	61,1
Florence	513,0	219,6	732,6	84,2
Rome	579,9	129,6	709,4	35,9
Naples	521,4	53,3	574,7	17,4



**Fig. 01 Urban waste management in the cities**  
of Florence, Milan, Naples, Rome and Turin  
2004-2005 change

SOURCE: COMIECO

ABSOLUTE ANNUAL VARIATIONS 2004 - 2005

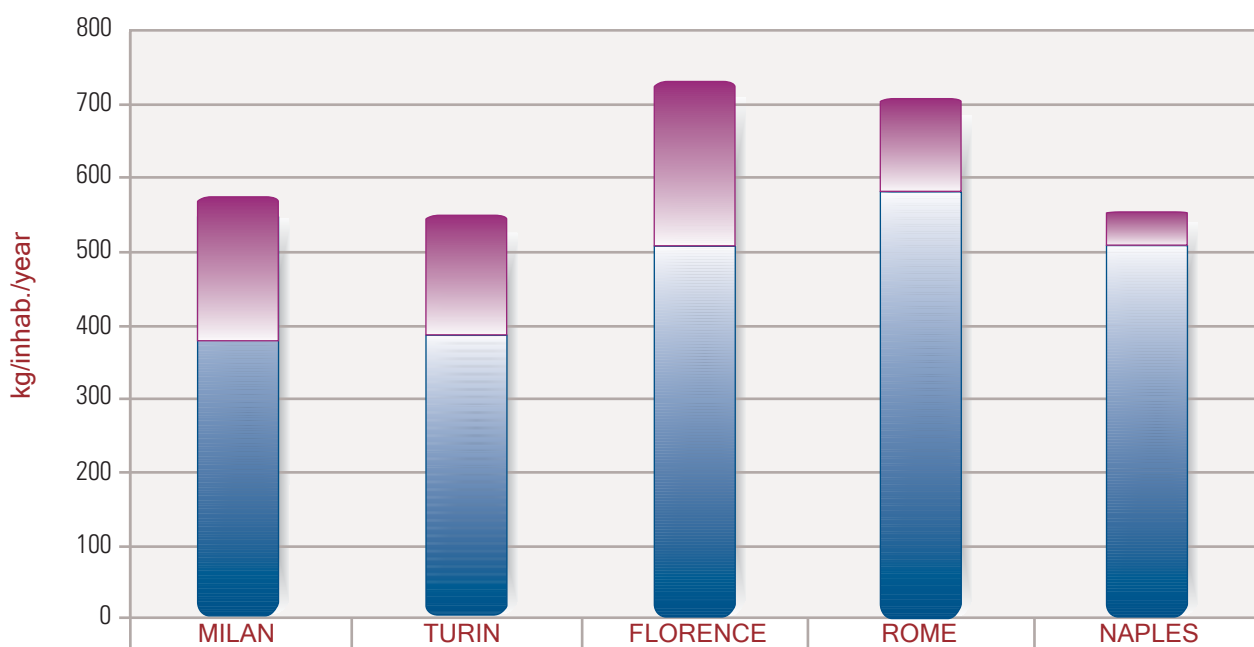


		MILAN	TURIN	FLORENCE	ROME	NAPLES
TOT MSW COLLECTION	t	-2.688	-5.535	-2.158	-10.994	-1.603
TOT SWC	t	6.567	8.672	2.815	43.584	2.382
PAPER AND BOARD RP	t	1.721	3.558	550	14.608	2.755

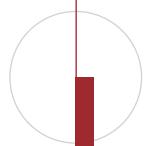
**Fig. 02 Urban waste management in the cities**  
of Florence, Milan, Naples, Rome and Turin  
per-capita 2005

SOURCE: COMIECO

PER CAPITA - 2005



		MILAN	TURIN	FLORENCE	ROME	NAPLES
TOT SWC	kg/inhab./year	187,5	155,5	219,6	129,6	53,3
TOT MSW COLLECTION	kg/inhab./year	377,6	396,3	513,0	579,9	521,4

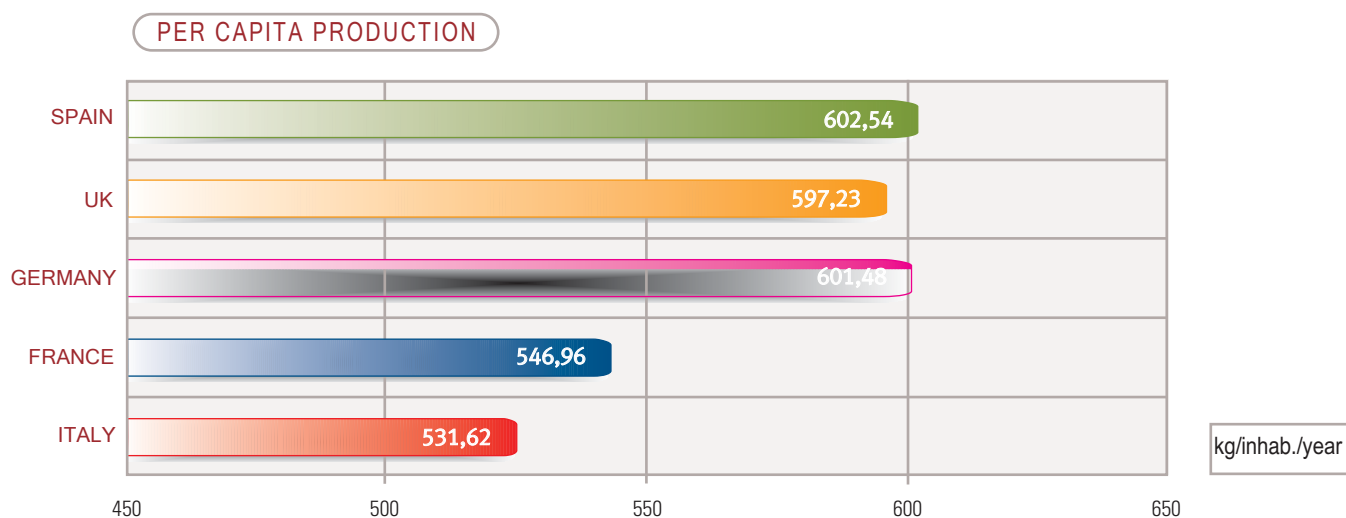


**Fig. 03 Comparison in Europe -**  
Urban waste production and management

SOURCE: COMIECO, ERM

YEAR 2004 (* = 2003, ** = 2002)		Italy	France	Germany	UK	Spain
Total Production	t	31.100.000	33.024.000	49.622.000	35.535.000*	26.028.000**
Per capita production	kg/inhab year	531,62	546,94	601,48	597,23	602,24

FINAL DESTINATION OF MSW		Italy	France	Germany	UK	Spain
Compost and recycle	%	15,1	77,0	57,8	13,6	22,9
Energy recovery	%	10,0	14,5	22,8	2,8	6,3
Landfill	%	51,9	8,0	19,2	81,1	71,6
Other	%	23,0	0,5	0,2	2,5	1,2

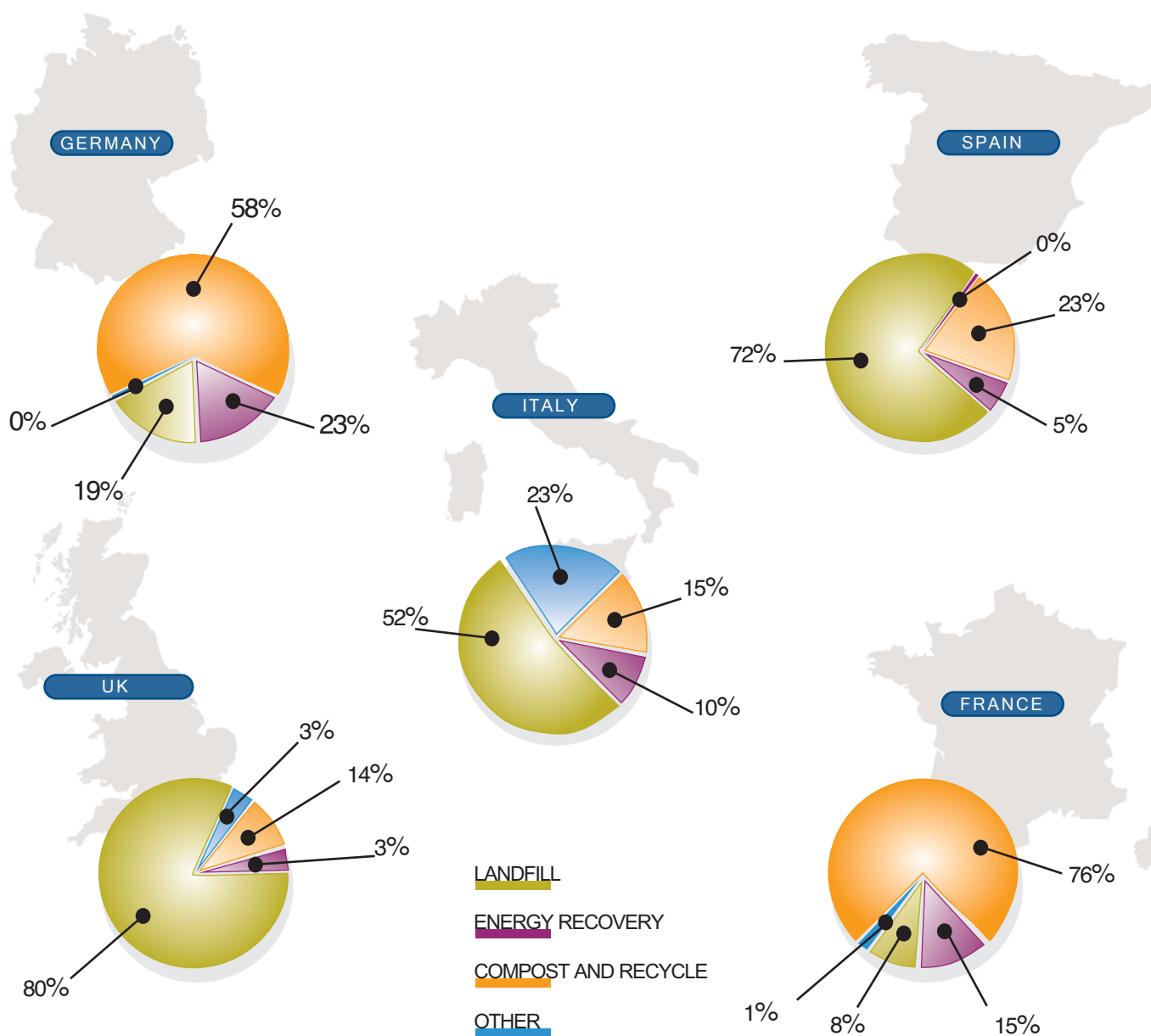


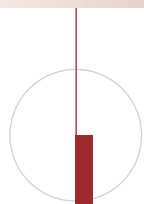


**Fig. 04 Comparison in Europe -**  
Final destination of urban waste (Year 2004)

SOURCE: COMIECO, ERM

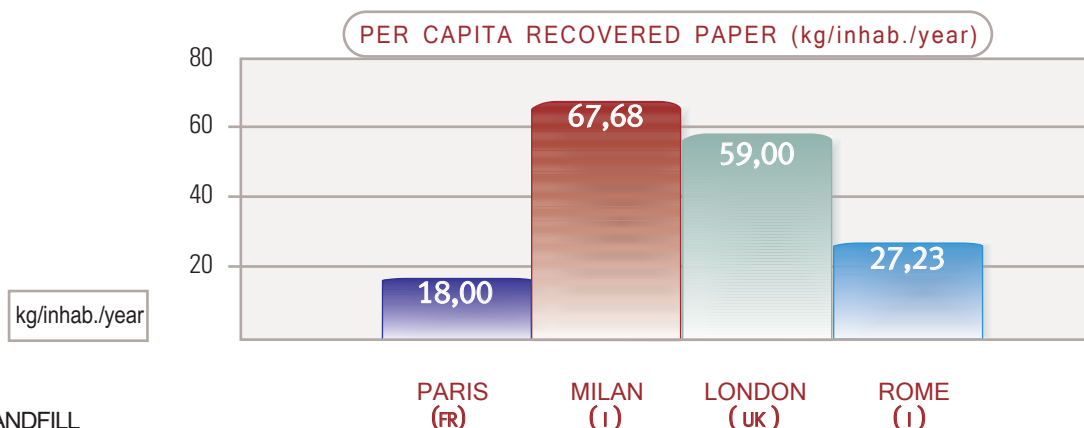
FINAL DESTINATION OF URBAN WASTE



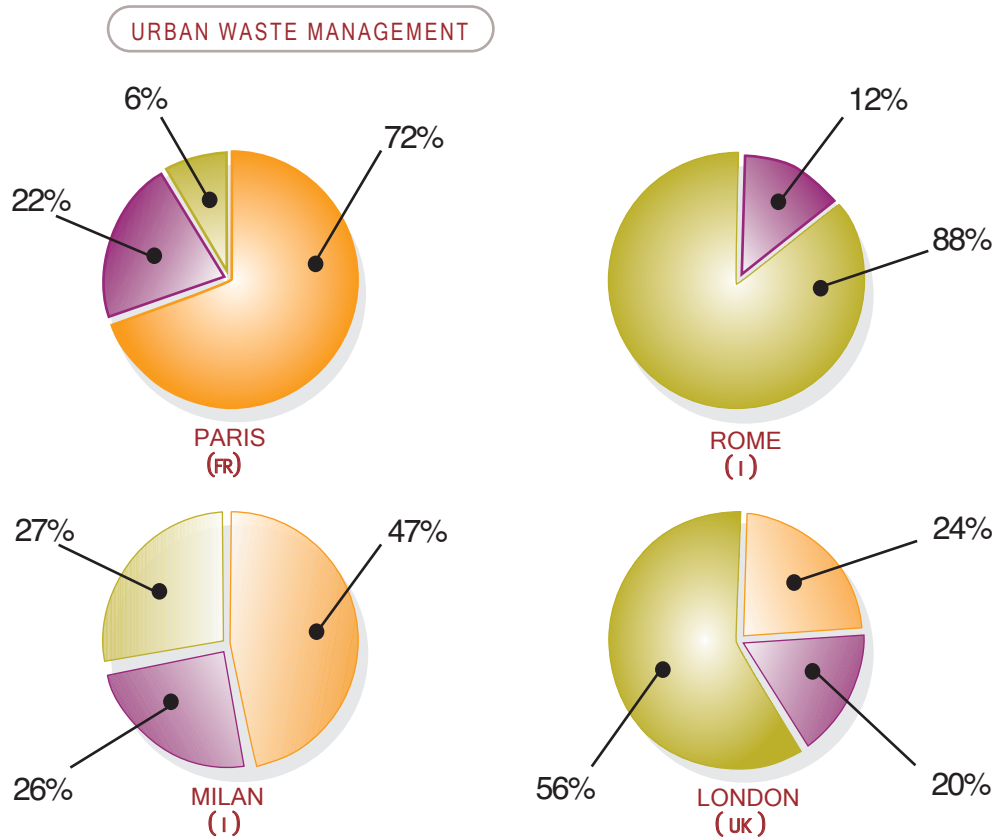


**Fig. 05 Comparison in Europe -**  
Metropolitan areas (Year 2004)

SOURCE: COMIECO, ERM

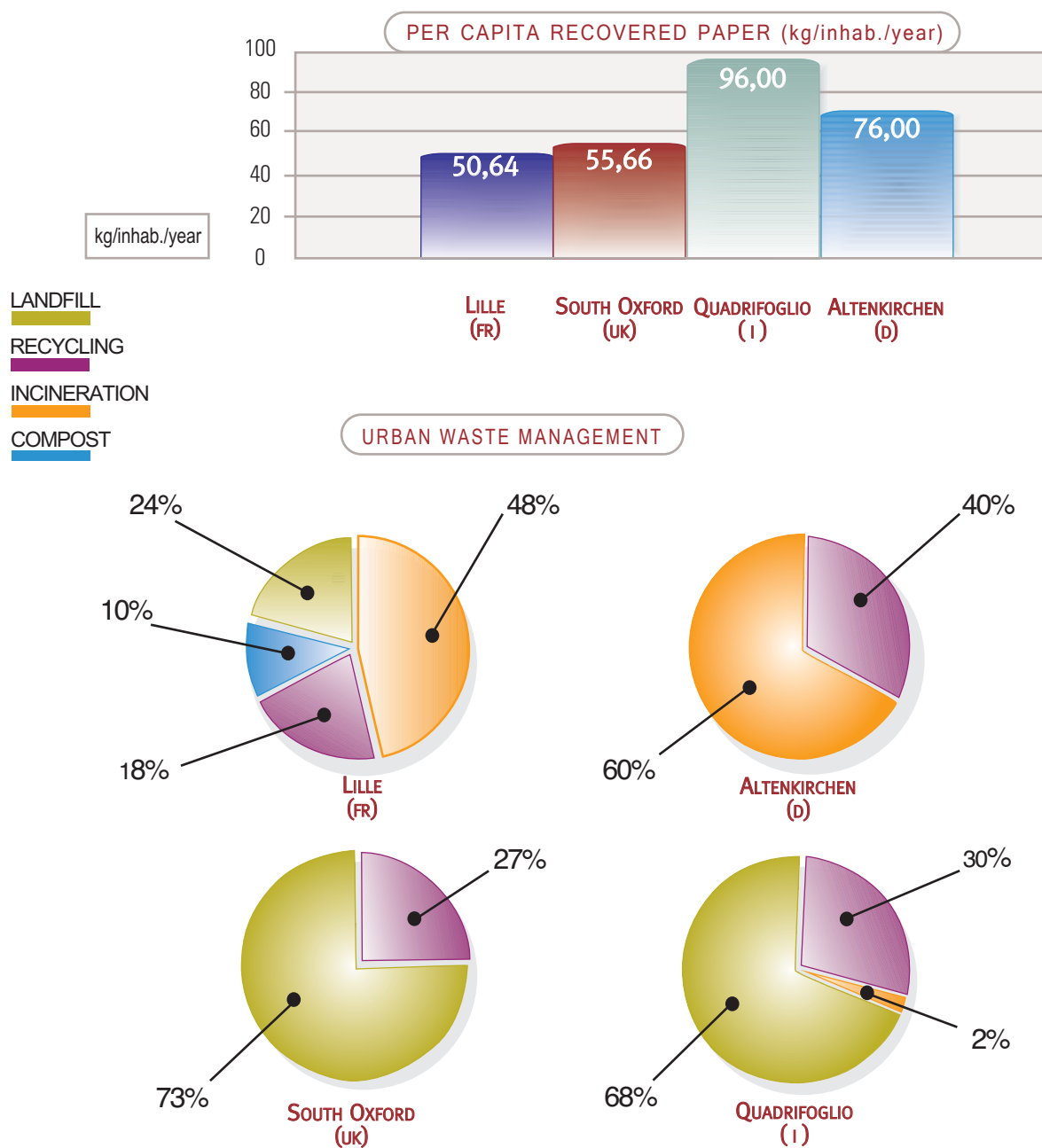


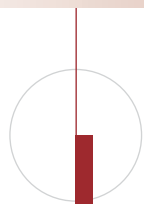
LANDFILL  
RECYCLING  
INCINERATION  
COMPOST



**Fig. 06 Comparison in Europe -**  
Municipal districts (Year 2004)

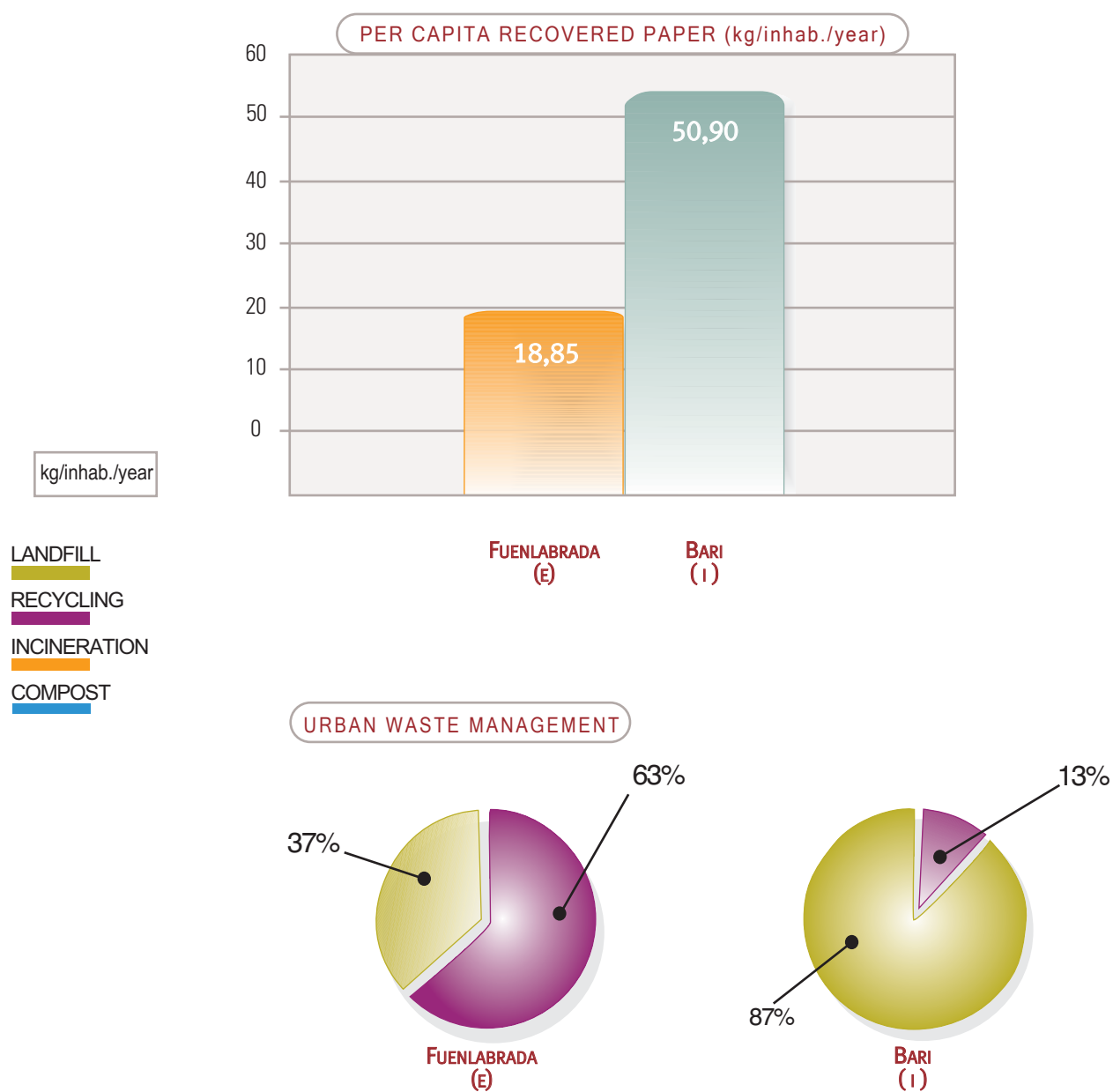
SOURCE: COMIECO, ERM





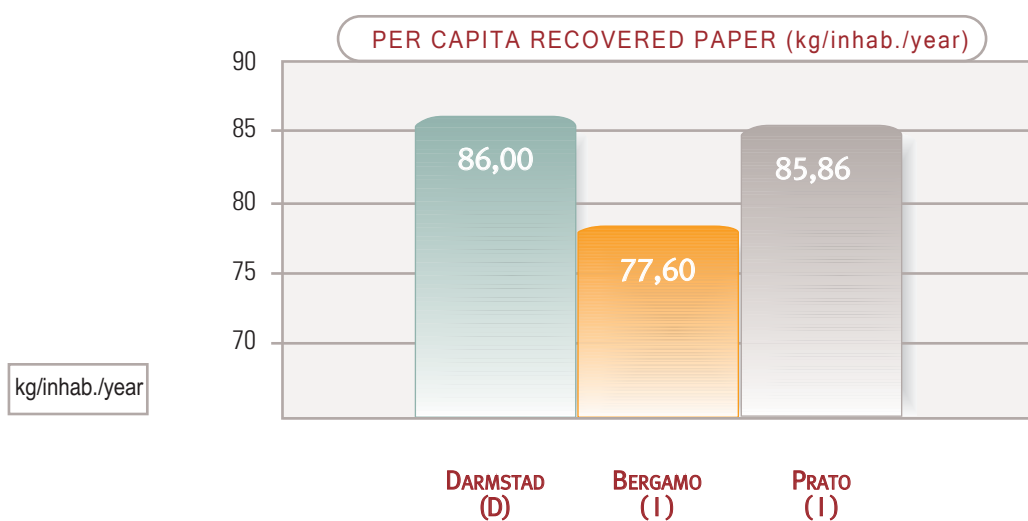
**Fig. 07 Comparison in Europe -**  
Large-sized cities (Year 2004)

SOURCE: COMIECO, ERM

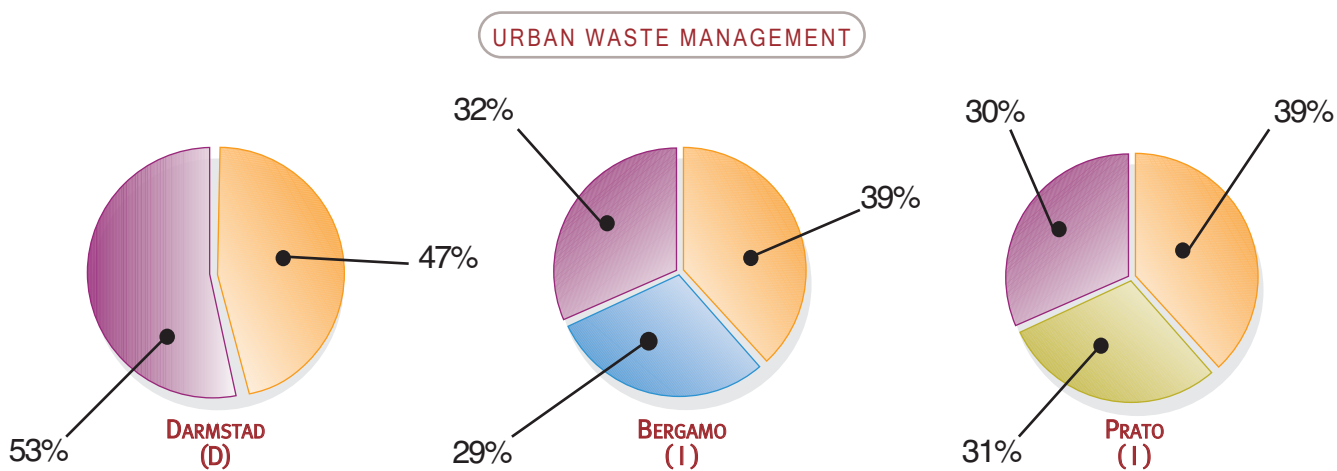


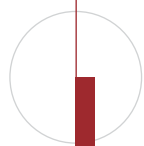
**Fig. 08 Comparison in Europe -**  
Medium-sized cities (Year 2004)

SOURCE: COMIECO, ERM



LANDFILL  
RECYCLING  
INCINERATION  
COMPOST





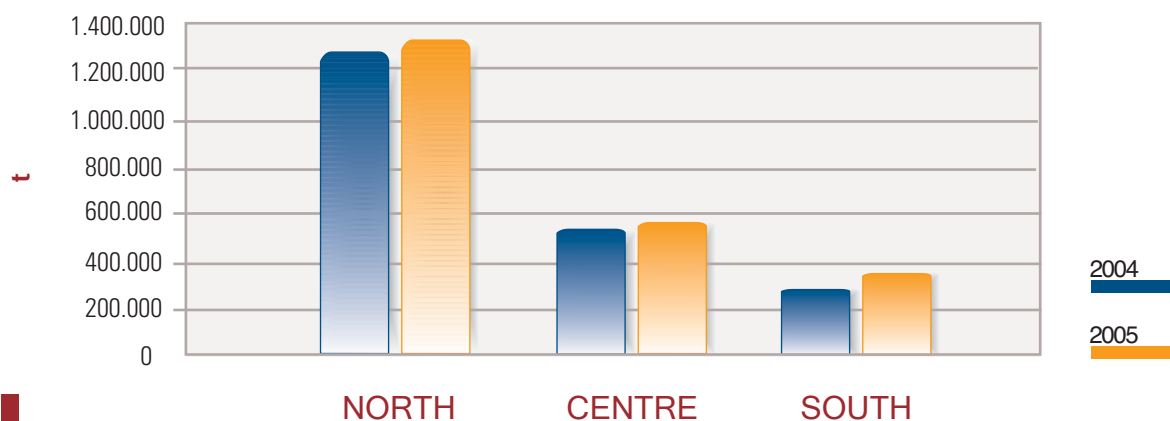
## Lab. 02 Trend of total separate paper and board collection by regions in the 2003-2005 period

SOURCE: COMIECO

REGION	2003	2004	2005	Δ 2004-2005	Δ 2004-2005
	t	t	t	%	t
Emilia Romagna	170.323,5	194.389,5	204.007,9	4,9	9.618,4
Friuli Venezia Giulia	45.391,9	51.222,4	51.348,1	0,2	125,7
Liguria	43.798,3	58.577,1	61.945,0	5,7	3.368,0
Lombardia	448.347,1	464.767,5	488.688,4	5,1	23.920,9
Piemonte	196.203,3	200.371,3	216.754,5	8,2	16.383,2
Trentino Alto Adige	54.809,0	62.401,9	67.131,5	7,6	4.729,6
Valle d'Aosta	5.384,3	5.998,5	6.718,0	12,0	719,5
Veneto	210.160,5	221.058,3	232.967,3	5,4	11.909,1
<b>NORTH</b>	<b>1.174.417,8</b>	<b>1.258.786,4</b>	<b>1.329.560,7</b>	<b>5,6</b>	<b>70.774,3</b>
Lazio	141.127,5	186.037,5	208.267,9	11,9	22.230,4
Marche	38.376,3	45.861,9	51.239,9	11,7	5.378,0
Toscana	212.307,0	261.034,9	273.326,8	4,7	12.291,9
Umbria	35.679,0	42.892,4	42.869,1	-0,1	-23,3
<b>CENTRE</b>	<b>427.489,8</b>	<b>535.826,8</b>	<b>575.703,7</b>	<b>7,4</b>	<b>39.876,9</b>
Abruzzo	21.088,5	25.565,0	31.841,2	24,5	6.276,1
Basilicata	7.076,6	9.083,5	12.256,8	34,9	3.173,3
Calabria	27.215,1	31.329,0	34.412,4	9,8	3.083,4
Campania	74.418,1	81.763,8	87.507,6	7,0	5.743,8
Molise	1.196,7	1.500,4	1.962,2	30,8	461,8
Puglia	74.238,2	82.732,7	94.241,1	13,9	11.508,4
Sardegna	6.789,0	13.152,2	20.496,3	55,8	7.344,1
Sicilia	56.706,9	67.851,8	77.977,6	14,9	10.125,8
<b>SOUTH</b>	<b>268.729,0</b>	<b>312.978,5</b>	<b>360.695,2</b>	<b>15,2</b>	<b>47.716,7</b>
<b>ITALY</b>	<b>1.870.636,6</b>	<b>2.107.591,7</b>	<b>2.265.959,5</b>	<b>7,5</b>	<b>158.367,9</b>

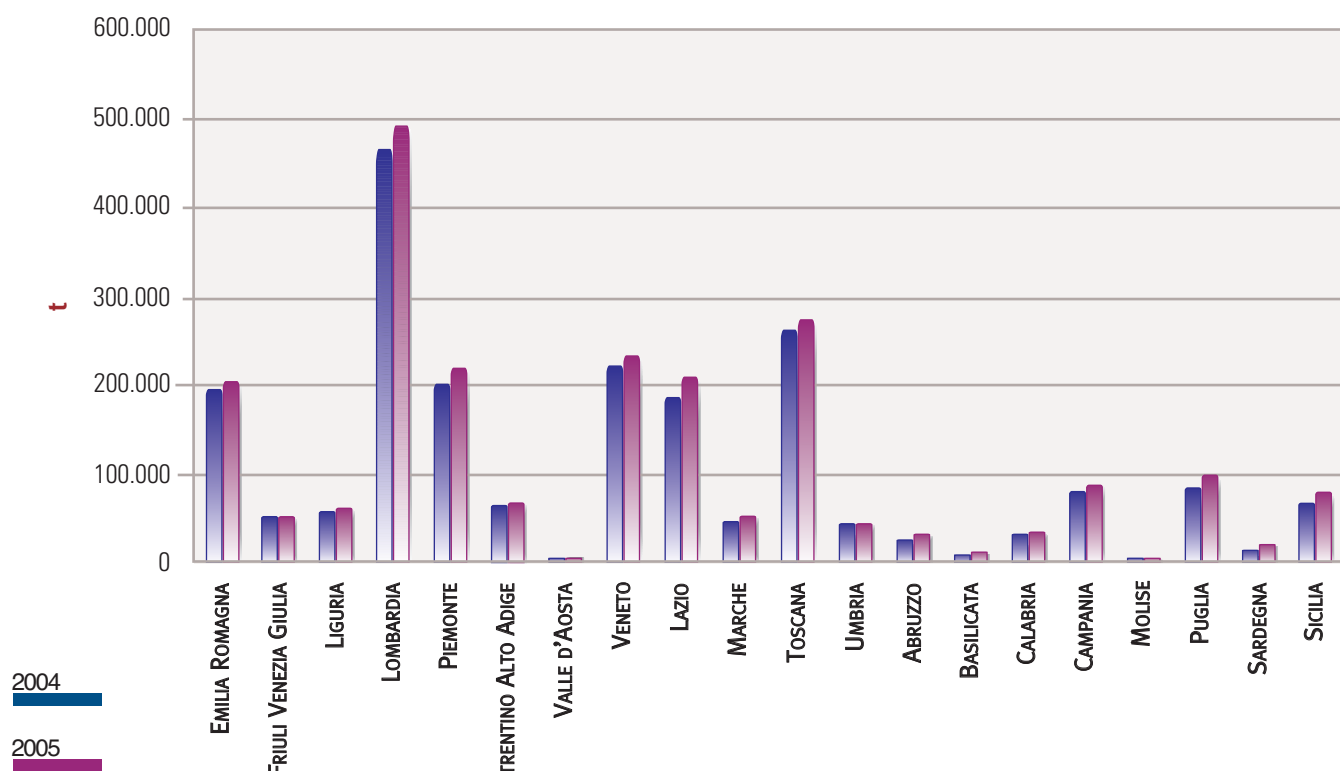
**fig. 09 Comparison of paper and board collection**  
among macro-areas in the 2004-2005 period

SOURCE: COMIECO



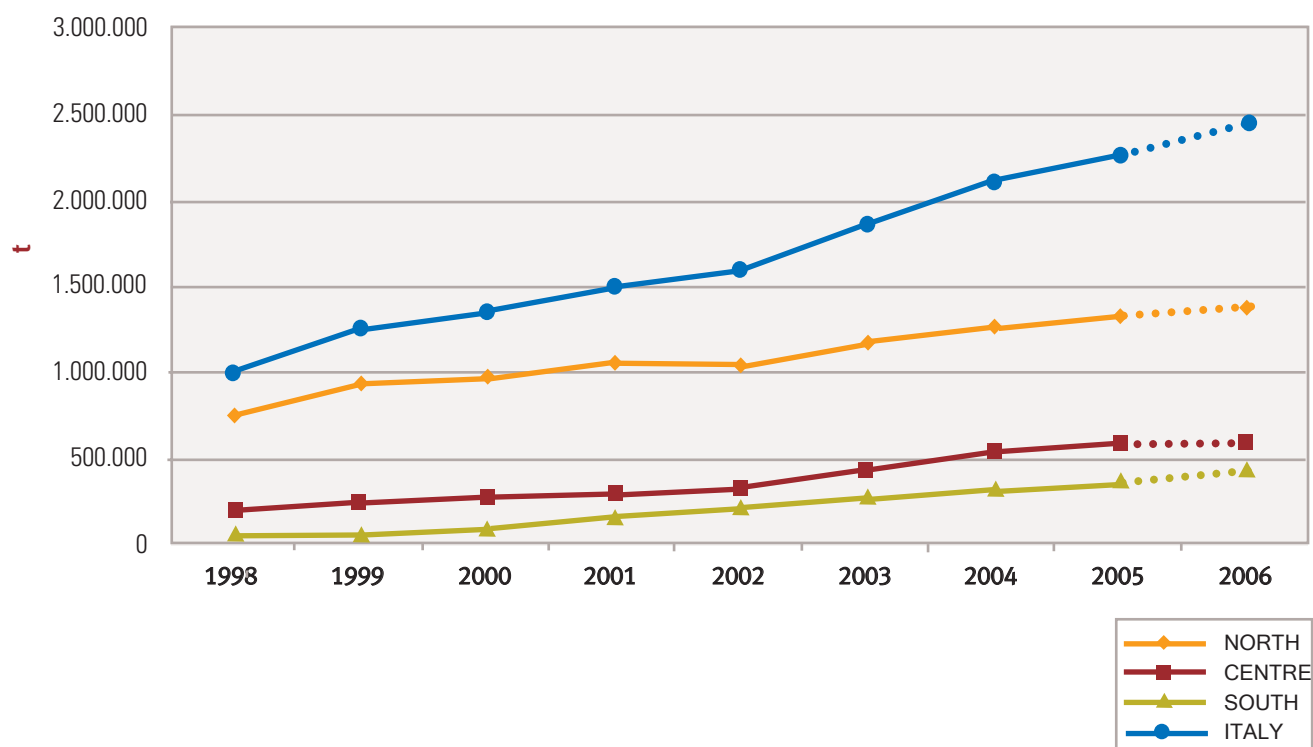
**fig. 10 Comparison of paper and board collection**  
among regions in the 2004-2005 period

SOURCE: COMIECO



**Fig. 11 Paper and board collection**  
in the 1998-2005 period and forecasts for 2006

SOURCE: COMIECO

**COLLECTION (t)**

	1998	1999	2000	2001	2002	2003	2004	2005	Forecasts 2006
North	756.813	933.687	981.687	1.056.582	1.041.535	1.174.418	1.258.786	1.329.561	1.384.218
Centre	193.953	242.497	278.472	290.074	325.625	427.490	535.827	575.704	606.289
South	50.222	70.587	88.794	153.985	222.390	268.729	312.979	360.695	432.191
<b>Italy</b>	<b>1.000.993</b>	<b>1.246.771</b>	<b>1.348.953</b>	<b>1.500.641</b>	<b>1.589.550</b>	<b>1.870.637</b>	<b>2.107.592</b>	<b>2.265.960</b>	<b>2.422.698</b>

**VARIATIONS (t)**

	1999	2000	2001	2002	2003	2004	2005	Forecasts 2006
North	176.874	48.000	74.895	-15.047	132.883	84.368	70.774	54,657
Centre	48.539	35.975	11.602	35.551	101.865	108.337	39.877	30.585
South	20.356	18.207	65.191	68.405	46.339	44.250	47.717	71.496
<b>Italy</b>	<b>245.778</b>	<b>102.182</b>	<b>151.688</b>	<b>88.909</b>	<b>281.087</b>	<b>236.955</b>	<b>158.368</b>	<b>156.739</b>



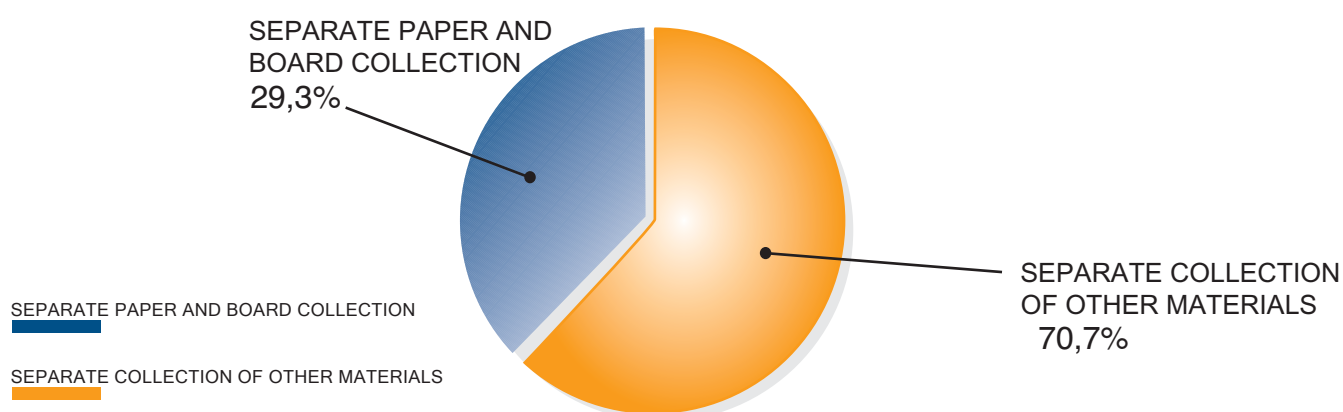
## Tab. 03 Comparison of urban waste production, overall separate collection, and separate paper and board collection in Italy in the 2004-2005 period

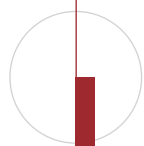
SOURCE: DATA PROCESSED BY COMIECO

		Year 2004 (data processed by Comieco)	Year 2004 (data by APAT)	Year 2005 (Comieco estimate)	Δ% '04-'05 (data by Comieco)	Δ% '04-'05 (APAT 04/ Comieco 05)
MSW	t	30.711.504	31.149.584	31.364.700	2,1%	0,7%
Total SWC	t	7.043.931	7.066.784	7.736.720	9,8%	9,5%
Paper and board RP	t	2.107.592	2.153.879	2.265.960	7,5%	5,2%
Total SWC / Total MSW	%	22,9	22,7	24,7		
Paper and board RP / Total SWC	%	29,9	30,5	29,3		

## Fig. 12 Share of separate paper and board collection on the total separate collection estimated for 2005

SOURCE: COMIECO





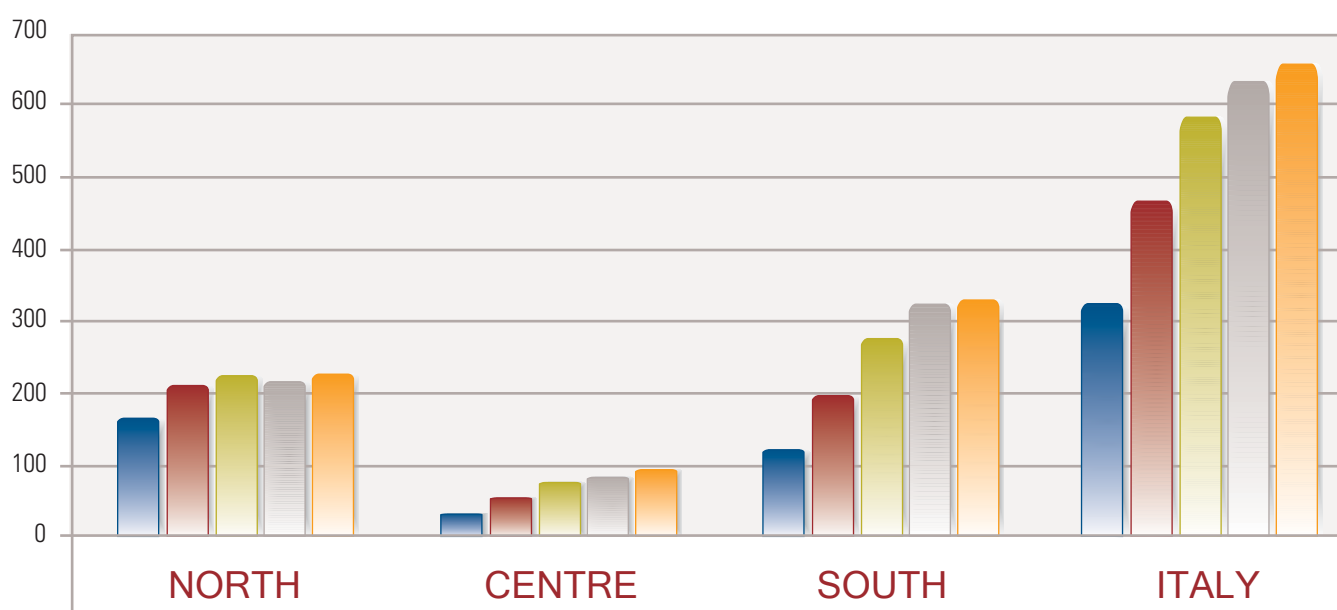
## Lab. 04 Comparison of the separate paper and board collection managed upon agreement and total separate paper and board collection

SOURCE: COMIECO

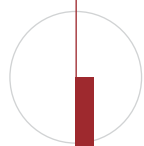
REGION	Agreements in 2004	Total 2004	% of agreements over the 2004 total	Agreements in 2005	Total 2005	% of agreements over the 2005 total
	t	t	%	t	t	%
Emilia Romagna	150.052,5	194.389,5	77,2	165.493,8	204.007,9	81,1
Friuli Venezia Giulia	47.218,1	51.222,4	92,2	46.202,2	51.348,1	90,0
Liguria	21.087,7	58.577,1	36,0	27.299,4	61.945,0	44,1
Lombardia	340.592,1	464.767,5	73,3	353.975,6	488.688,4	72,4
Piemonte	179.014,5	200.371,3	89,3	200.610,0	216.754,5	92,6
Trentino Alto Adige	53.878,4	62.401,9	86,3	57.345,6	67.131,5	85,4
Valle d'Aosta	5.998,5	5.998,5	100,0	6.718,0	6.718,0	100,0
Veneto	145.286,9	221.058,3	65,7	155.760,1	232.967,3	66,9
<b>NORTH</b>	<b>943.128,7</b>	<b>1.258.786,4</b>	<b>74,9</b>	<b>1.013.404,7</b>	<b>1.329.560,7</b>	<b>76,2</b>
Lazio	95.338,0	186.037,5	51,2	115.037,5	208.267,9	55,2
Marche	34.638,8	45.861,9	75,5	39.815,0	51.239,9	77,7
Toscana	203.688,0	261.034,9	78,0	225.016,7	273.326,8	82,3
Umbria	22.974,9	42.892,4	53,6	24.731,0	42.869,1	57,7
<b>CENTRE</b>	<b>356.639,7</b>	<b>535.826,8</b>	<b>66,6</b>	<b>404.600,1</b>	<b>575.703,7</b>	<b>70,3</b>
Abruzzo	22.395,2	25.565,0	87,6	26.747,8	31.841,2	84,0
Basilicata	4.250,3	9.083,5	46,8	6.175,6	12.256,8	50,4
Calabria	30.726,4	31.329,0	98,1	33.315,4	34.412,4	96,8
Campania	79.652,3	81.763,8	97,4	83.500,4	87.507,6	95,4
Molise	14,8	1.500,4	1,0	118,8	1.962,2	6,1
Puglia	75.587,3	82.732,7	91,4	91.211,0	94.241,1	96,8
Sardegna	9.053,9	13.152,2	68,8	15.835,0	20.496,3	77,3
Sicilia	62.617,1	67.851,8	92,3	72.614,6	77.977,6	93,1
<b>SOUTH</b>	<b>284.297,2</b>	<b>312.978,5</b>	<b>90,8</b>	<b>329.518,6</b>	<b>360.695,2</b>	<b>91,4</b>
<b>ITALY</b>	<b>1.584.065,6</b>	<b>2.107.591,7</b>	<b>75,2</b>	<b>1.747.523,4</b>	<b>2.265.959,5</b>	<b>77,1</b>

Fig. 13 Agreements signed in the 2001-2005 period

SOURCE: COMIECO



	North	Centre	South	Italy
2001	170	35	124	329
2002	215	59	197	471
2003	225	80	281	586
2004	224	88	328	640
2005	229	96	332	657



## Lab. 05 Territorial coverage by regions

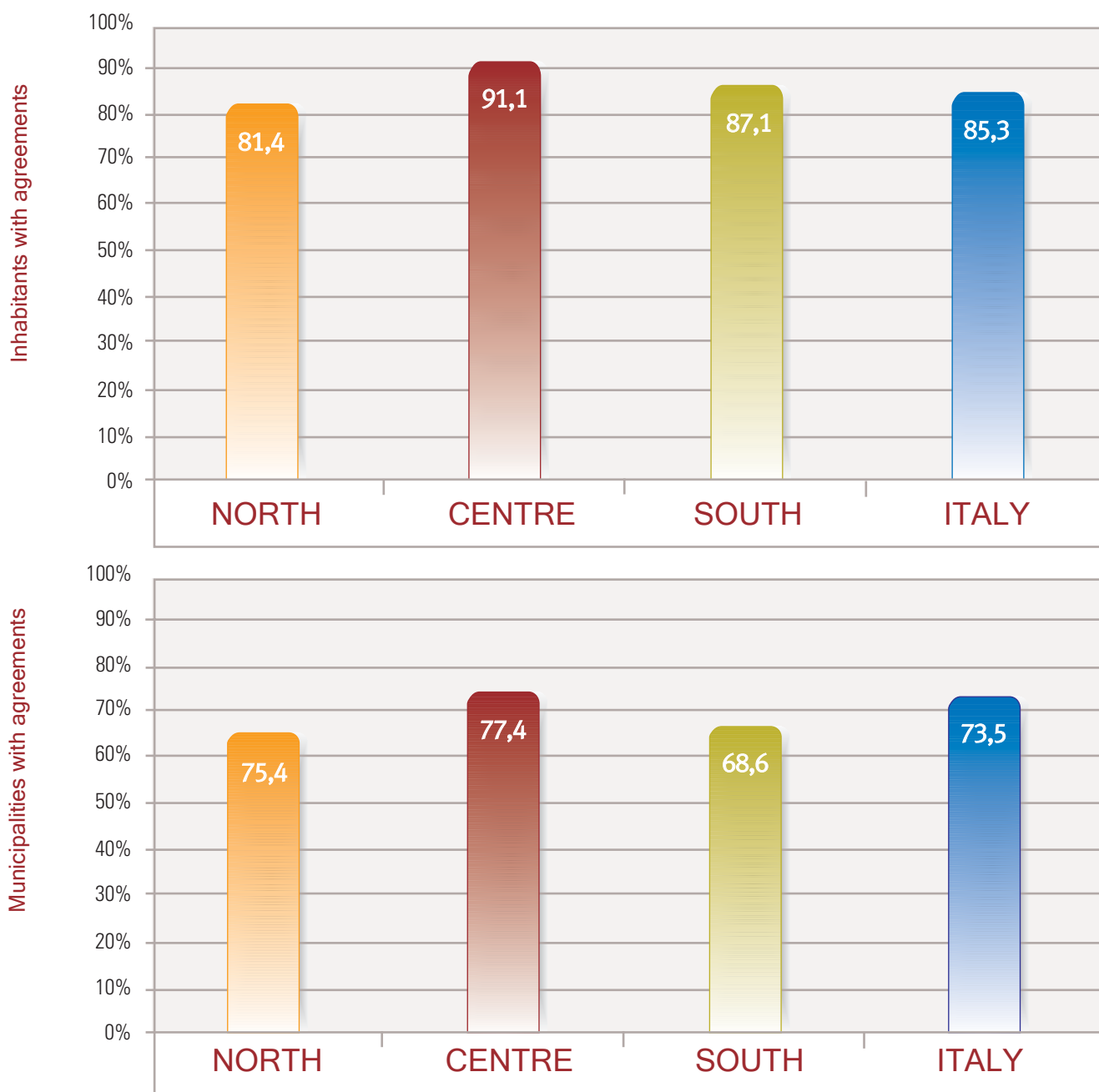
at December 31, 2005

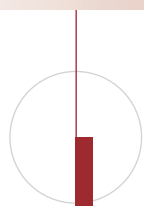
SOURCE: COMIECO

REGION	Inhabitants	Inhabitants with agreements	% of Inhabitants with agreements	Municipalities	Municipalities with agreements	% of Municipalities with agreements
	n.	n.	%	n.	n.	%
Emilia Romagna	3.983.346	3.786.623	95,1	341	319	93,5
Friuli Venezia Giulia	1.183.764	1.101.393	93,0	219	189	86,3
Liguria	1.571.783	1.268.456	80,7	235	116	49,4
Lombardia	9.032.554	6.565.275	72,7	1.546	963	62,3
Piemonte	4.214.677	3.840.883	91,1	1.206	1.068	88,6
Trentino Alto Adige	940.016	828.836	88,0	339	303	89,4
Valle d'Aosta	119.548	119.548	100,0	74	74	100,0
Veneto	4.527.694	3.313.305	73,2	581	394	67,8
<b>NORTH</b>	<b>25.573.382</b>	<b>20.824.319</b>	<b>81,4</b>	<b>4.541</b>	<b>3.426</b>	<b>75,4</b>
Lazio	5.112.413	4.653.279	91,0	378	280	74,1
Marche	1.470.581	1.141.951	77,7	246	171	69,5
Toscana	3.497.806	3.332.360	95,3	287	248	86,4
Umbria	825.826	804.590	97,3	92	77	83,7
<b>CENTRE</b>	<b>10.906.626</b>	<b>9.932.180</b>	<b>91,1</b>	<b>1.003</b>	<b>776</b>	<b>77,4</b>
Abruzzo	1.262.392	1.054.197	83,5	305	160	52,5
Basilicata	597.768	280.905	47,0	131	27	20,6
Calabria	2.011.466	1.947.534	96,8	409	388	94,9
Campania	5.701.931	5.325.217	93,4	551	500	90,7
Molise	320.601	92.240	28,8	136	19	14,0
Puglia	4.020.707	3.509.192	87,3	258	195	75,6
Sardegna	1.631.880	1.161.277	71,2	377	176	46,7
Sicilia	4.968.991	4.499.109	90,5	390	290	74,4
<b>SOUTH</b>	<b>20.515.736</b>	<b>17.869.671</b>	<b>87,1</b>	<b>2.557</b>	<b>1.755</b>	<b>68,6</b>
<b>ITALY</b>	<b>56.995.744</b>	<b>48.626.170</b>	<b>85,3</b>	<b>8.101</b>	<b>5.957</b>	<b>73,5</b>

Fig. 14 Territorial coverage by macro-areas  
at December 31, 2005

SOURCE: COMIECO





**Fig. 15 Incidence of the separate paper and board collection managed upon agreement in 2005**  
 collection managed upon agreement in 2005  
 on total separate paper and board collection in the same year.  
 Detailed breakdown by regions and areas

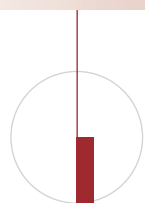
SOURCE: COMIECO



## Tab. 06 Resources transferred to the Parties subject to agreements - Year 2005

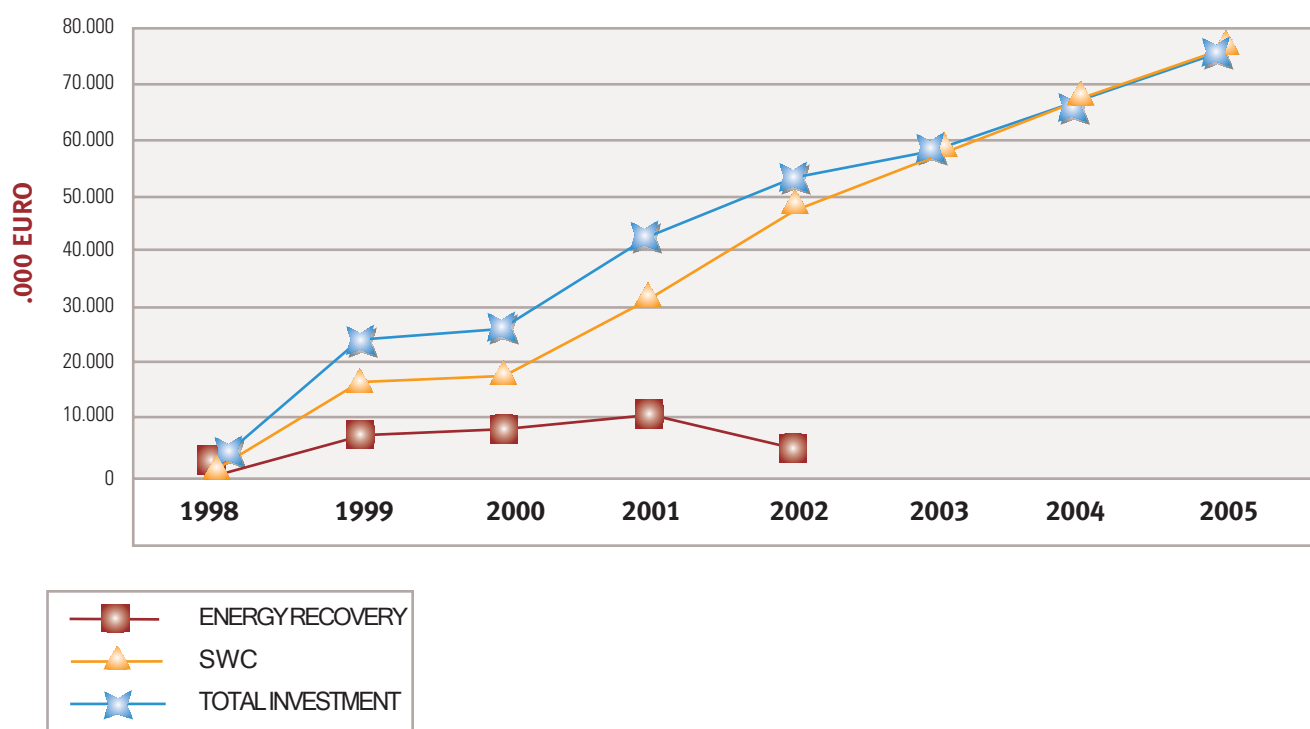
SOURCE: COMIECO

REGION	Inhabitants with agreements	Comieco's economic investment	Comieco's economic investment	Paper mills' economic investment	Paper mills' economic investment
	n.	euro	euro/Inhab. with agr.	euro	euro/Inhab. with agr.
Emilia Romagna	3.786.623	7.180.167,18	1,91	252.393,47	0,07
Friuli Venezia Giulia	1.101.393	2.613.627,63	2,39	53.115,89	0,05
Liguria	1.268.456	1.470.136,55	1,17	27.465,23	0,02
Lombardia	6.565.275	12.361.641,77	1,90	718.907,53	0,11
Piemonte	3.840.883	6.588.921,52	1,73	430.677,28	0,11
Trentino Alto Adige	828.836	2.619.333,31	3,19	89.052,58	0,11
Valle d'Aosta	119.548	350.625,01	2,96	7.902,06	0,07
Veneto	3.313.305	5.738.623,06	1,75	289.179,97	0,09
<b>NORTH</b>	<b>20.824.319</b>	<b>38.923.076,04</b>	<b>1,88</b>	<b>1.868.694,01</b>	<b>0,09</b>
Lazio	4.653.279	4.663.586,61	1,01	197.152,81	0,04
Marche	1.141.951	1.866.087,14	1,65	48.046,22	0,04
Toscana	3.332.360	10.608.881,30	3,21	309.023,33	0,09
Umbria	804.590	927.713,82	1,16	42.563,32	0,05
<b>CENTRE</b>	<b>9.932.180</b>	<b>18.066.268,87</b>	<b>1,83</b>	<b>596.785,68</b>	<b>0,06</b>
Abruzzo	1.054.197	1.189.504,34	1,14	38.006,80	0,04
Basilicata	280.905	356.863,87	1,28	1.930,59	0,01
Calabria	1.947.534	1.928.127,59	1,00	27.836,47	0,01
Campania	5.325.217	4.259.191,88	0,81	97.842,68	0,02
Molise	92.240	2.362,91	0,03	320,22	0,00
Puglia	3.509.192	5.050.987,20	1,45	97.098,61	0,03
Sardegna	1.161.277	515.291,67	0,45	28.018,03	0,02
Sicilia	4.499.109	4.258.234,37	0,95	49.623,04	0,01
<b>SOUTH</b>	<b>17.869.671</b>	<b>17.560.563,83</b>	<b>0,99</b>	<b>340.676,43</b>	<b>0,02</b>
<b>ITALY</b>	<b>48.626.170</b>	<b>74.549.908,74</b>	<b>1,55</b>	<b>2.806.156,12</b>	<b>0,06</b>



**Fig. 16 Comieco's economic investment**  
1998-2005 trend

SOURCE: COMIECO



ECONOMIC INVESTMENT (.000 EURO)

	Energy Recovery*	SWC	Total Investment	Variation %
1998	0	2.198	2.198	
1999	7.000	17.027	24.027	993,1
2000	8.200	18.211	26.411	9,9
2001	10.500	31.515	42.015	59,1
2002	5.459	47.000	52.459	24,9
2003	-	57.117	57.117	8,9
2004	-	65.366	65.366	14,4
2005	-	<b>74.549</b>	<b>74.549</b>	14,0

\*Since 2003, no consideration has been provided for paper and board packaging used for energy recovery



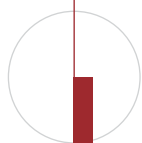
## Tab. 07 Paper and board handled upon agreement in 2005.

Share of mixed paper and board and corrugated board collection: comparison vs. 2004

SOURCE: COMIECO

YEAR 2005	Inhabitants with agreements	Total managed	1.01+1.02	1.01+1.02	1.04+1.05	1.04+1.05	Packaging managed	F.M.S.
	n.	t	t	%	t	%	t	t
Emilia Romagna	3.786.623	165.493,8	93.652,5	57	71.841,3	43	93.381,3	72.112,4
Friuli Venezia Giulia	1.101.393	46.202,2	19.709,1	43	26.493,2	57	31.026,3	15.176,0
Liguria	1.268.456	27.299,4	10.191,2	37	17.108,2	63	19.452,2	7.847,2
Lombardia	6.565.275	353.975,6	266.756,0	75	87.219,5	25	148.573,4	205.402,2
Piemonte	3.840.883	200.610,0	159.806,0	80	40.804,0	20	77.559,3	123.050,7
Trentino Alto Adige	828.836	57.345,6	33.043,6	58	24.302,0	42	31.902,0	25.443,6
Valle d'Aosta	119.548	6.718,0	2.932,1	44	3.785,9	56	4.460,3	2.257,7
Veneto	3.313.305	155.760,1	107.302,4	69	48.457,7	31	73.137,3	82.622,8
<b>NORTH</b>	<b>20.824.319</b>	<b>1.013.404,7</b>	<b>693.393,0</b>	<b>68</b>	<b>320.011,7</b>	<b>32</b>	<b>479.492,1</b>	<b>533.912,6</b>
Lazio	4.653.279	115.037,5	73.155,0	64	41.882,4	36	58.708,1	56.329,4
Marche	1.141.951	39.815,0	17.827,9	45	21.987,0	55	26.087,5	13.727,5
Toscana	3.332.360	225.016,7	114.665,4	51	110.351,3	49	136.724,4	88.292,4
Umbria	804.590	24.731,0	15.793,4	64	8.937,5	36	12.570,0	12.160,9
<b>CENTRE</b>	<b>9.932.180</b>	<b>404.600,1</b>	<b>221.441,8</b>	<b>55</b>	<b>183.158,03</b>	<b>45</b>	<b>234.089,9</b>	<b>170.510,2</b>
Abruzzo	1.054.197	26.747,8	14.102,7	53	12.645,1	47	15.888,7	10.859,1
Basilicata	280.905	6.175,6	716,4	12	5.459,2	88	5.624,0	551,6
Calabria	1.947.534	33.315,4	10.328,9	31	22.986,5	69	25.362,1	7.953,3
Campania	5.325.217	83.500,4	36.305,3	44	47.195,1	56	55.545,3	27.955,1
Molise	92.240	118,8	118,8	100	0,0	0	27,3	91,5
Puglia	3.509.192	91.211,0	36.029,2	39	55.181,8	61	63.468,5	27.742,5
Sardegna	1.161.277	15.835,0	10.396,3	66	5.438,7	34	7.829,8	8.005,2
Sicilia	4.499.109	72.614,6	18.413,0	25	54.201,6	75	58.436,6	14.178,0
<b>SOUTH</b>	<b>17.869.671</b>	<b>329.518,6</b>	<b>126.410,6</b>	<b>38</b>	<b>203.108,1</b>	<b>62</b>	<b>232.182,5</b>	<b>97.336,1</b>
<b>ITALY</b>	<b>48.626.170</b>	<b>1.747.523,4</b>	<b>1.041.245,3</b>	<b>60</b>	<b>706.278,1</b>	<b>40</b>	<b>945.764,5</b>	<b>801.758,9</b>

YEAR 2004	Inhabitants with agreements	Total managed	1.01+1.02	1.01+1.02	1.04+1.05	1.04+1.05	Packaging managed	F.M.S.
	n.	t	t	%	t	%	t	t
<b>NORTH</b>	<b>20.326.095</b>	<b>943.128,7</b>	<b>633.816,7</b>	<b>67</b>	<b>309.312,1</b>	<b>33</b>	<b>448.751,7</b>	<b>494.377,0</b>
<b>CENTRE</b>	<b>9.610.776</b>	<b>356.639,7</b>	<b>200.064,2</b>	<b>56</b>	<b>156.575,5</b>	<b>44</b>	<b>200.589,6</b>	<b>156.050,1</b>
<b>SOUTH</b>	<b>17.315.563</b>	<b>284.297,2</b>	<b>97.940,4</b>	<b>35</b>	<b>186.356,8</b>	<b>65</b>	<b>207.903,7</b>	<b>76.393,5</b>
<b>ITALY</b>	<b>47.252.434</b>	<b>1.584.065,6</b>	<b>931.821,3</b>	<b>59</b>	<b>652.244,3</b>	<b>41</b>	<b>857.245,0</b>	<b>726.820,6</b>



## Lab. 08 Trend of paper and board separate collection upon agreement in certain sample cities

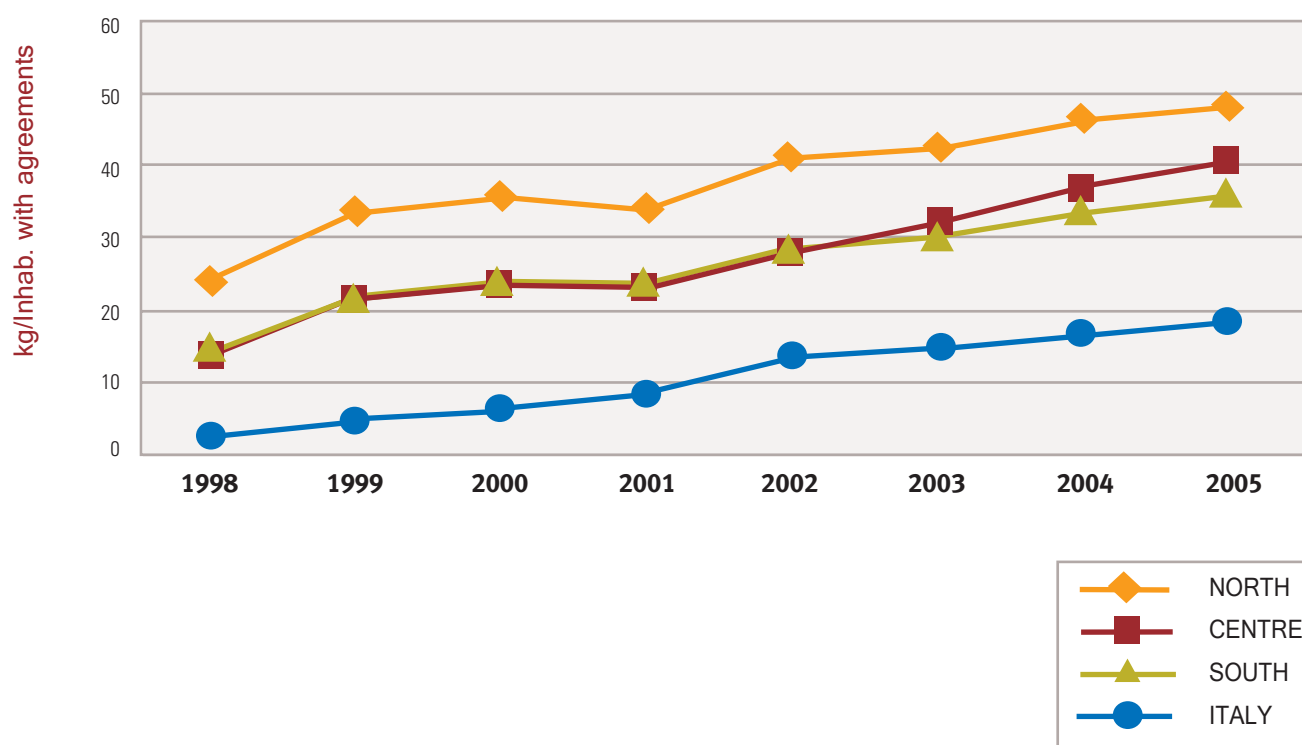
SOURCE: COMIECO

City	2001	2002	2003	2004	2005	1.01+1.02	1.04+1.05	Inhabitants	Per-capita	▲ '04-'05
	t	t	t	t	t	t	t	n.	kg/Inhab./year	%
L'Aquila	2.119	2.116	2.713	2.692	2.581	727	1.854	68.503	37,7	-4,1%
Napoli	12.077	15.428	13.653	14.737	17.492	11.383	6.109	1.004.500	17,4	18,7%
Salerno	3.577	3.553	3.175	3.490	3.702	1.805	1.896	138.188	26,8	6,1%
Bologna*	7.242	6.021	6.041	5.573	5.302	1.054	4.249	371.217	14,3	-4,8%
Roma	54.269	57.626	63.885	76.525	91.599	59.120	32.478	2.546.804	36,0	19,7%
Imperia	1.588	1.491	1.633	1.644	1.652	504	1.149	39.458	41,9	0,5%
Brescia	11.822	11.824	12.140	13.185	13.633	6.574	7.058	187.567	72,7	3,4%
Milano	74.487	74.783	78.021	83.735	94.498	76.153	18.345	1.256.211	75,2	12,9%
Torino	42.396	45.125	45.629	49.298	52.856	50.208	2.648	865.263	61,1	7,2%
Bari	11.667	12.380	13.784	13.639	16.284	7.411	8.872	316.532	51,4	19,4%
Palermo	5.401	4.874	9.051	12.332	15.599	7.295	8.304	686.722	22,7	26,5%
Firenze	20.968	24.138	26.920	29.439	29.990	24.234	5.756	356.118	84,2	1,9%
Bolzano	5.664	5.598	5.598	6.048	6.255	3.287	2.968	94.989	65,9	3,4%
Verona	10.225	10.900	11.139	12.854	13.484	9.947	2.769	253.208	53,3	4,9%

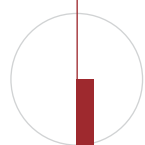
\*In Bologna, Comieco is only in charge of the separate paper and board collection share

**fig. 17 Per-capita collection by the parties**  
subject to agreements - 1998-2005 trend

SOURCE: COMIECO



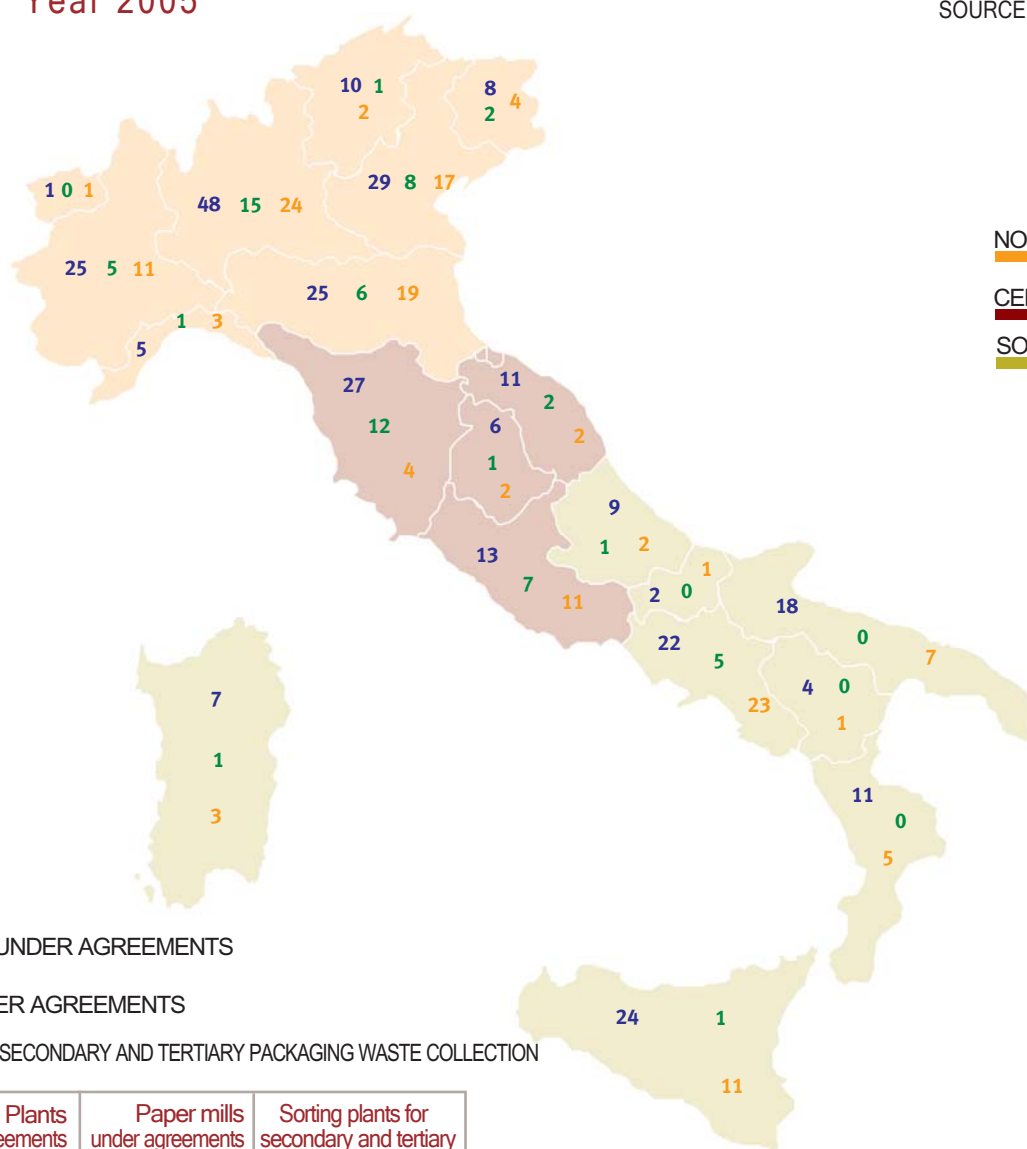
REGION	1998	1999	2000	2001	2002	2003	2004	2005
	kg/inhab. with agreements	kg/inhab. with agreements	kg/inhab. with agreements	kg/inhab. with agreements	kg/inhab. with agreements	kg/inhab. with agreements	kg/inhab. with agreements	kg/inhab. with agreements
NORTH	23,6	33,7	35,8	34,7	40,9	41,8	46,4	48,7
CENTRE	13,7	21,5	23,1	23,4	27,7	31,4	37,1	40,7
SOUTH	2,6	5,0	6,5	9,0	13,5	14,6	16,4	18,4
ITALY	14,3	21,4	23,2	23,3	28,7	29,8	33,5	35,9



**Fig. 18 The recycling network**  
Year 2005

SOURCE: COMIECO

ITALY



SORTING PLANTS UNDER AGREEMENTS

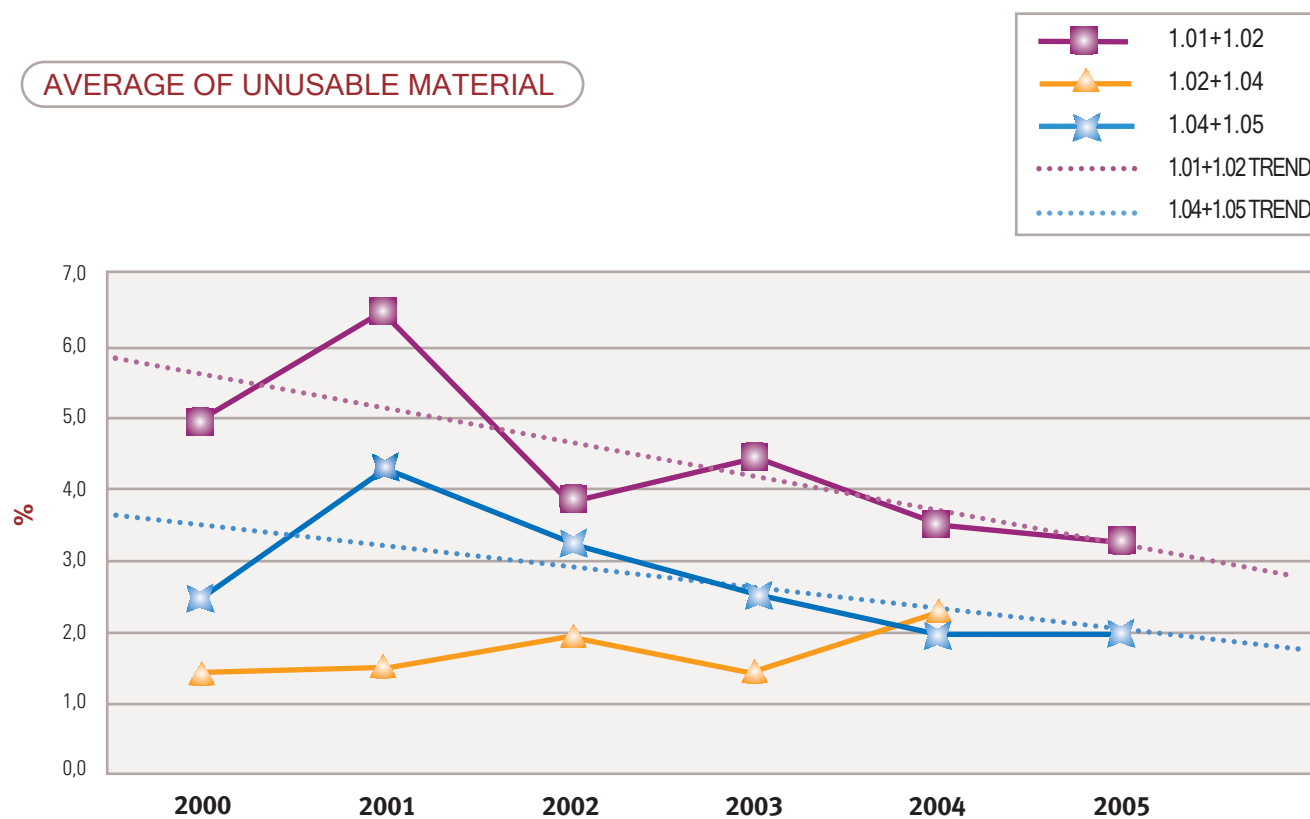
PAPER MILLS UNDER AGREEMENTS

SORTING PLANTS FOR SECONDARY AND TERTIARY PACKAGING WASTE COLLECTION

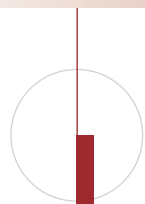
	Sorting Plants under agreements	Paper mills under agreements	Sorting plants for secondary and tertiary packaging waste collection
NORTH	151	38	81
CENTRE	57	22	19
SOUTH	97	8	53
ITALY	305	68	153

**Fig. 19 Quality of the collected material**  
2000-2005 period

SOURCE: COMIECO

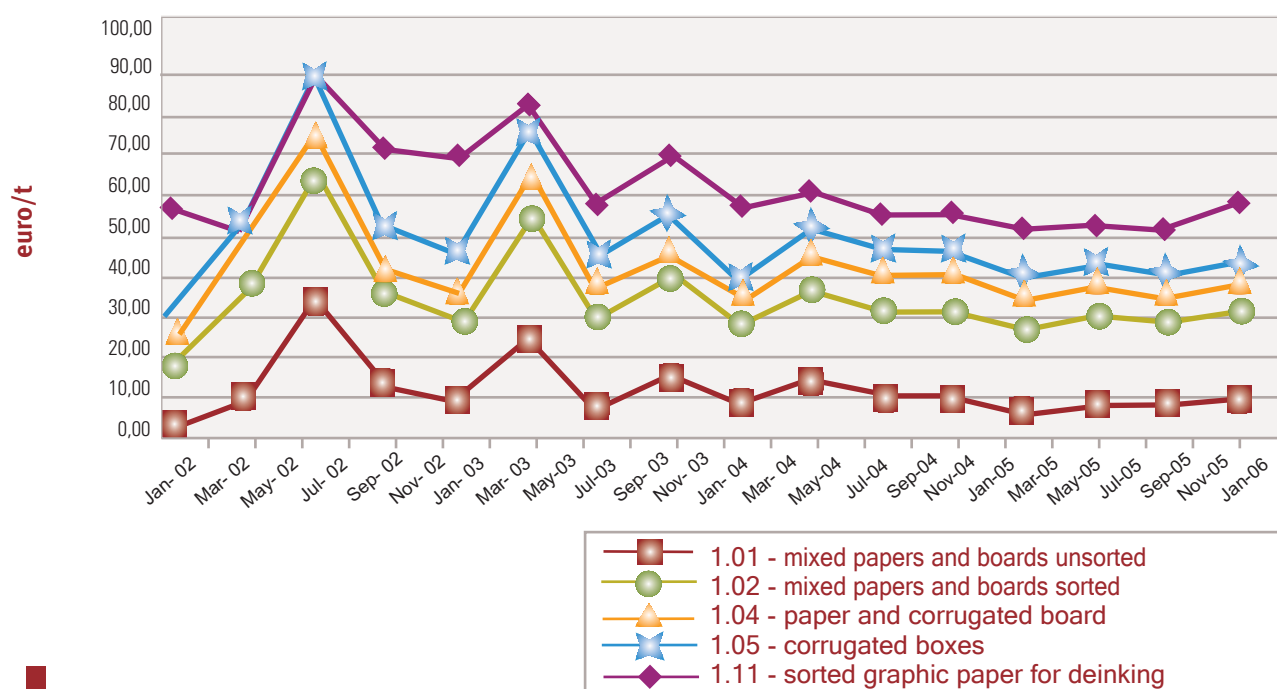


ITALY								
Collection	Data		2000	2001	2002	2003	2004	2005
1.01+1.02	Analyzed quantities	kg		26.166	42.657	119.814	103.884	76.609
	Unusable material	%	4,9	6,5	3,9	4,5	3,5	3,3
	Performed analyses	n.	27	171	275	533	443	321
1.02+1.04	Analyzed quantities	kg		1.647	1.635	17.504	4.604	n.a.
	Unusable material	%	1,4	1,5	1,9	1,4	2,3	
	Performed analyses	n.	10	24	77	44	15	
1.04+1.05	Analyzed quantities	kg		25.455	33.181	62.104	119.124	62.936
	Unusable material	%	2,5	4,3	3,2	2,6	2,0	2,0
	Performed analyses	n.	26	122	165	281	335	291



**Fig. 20** Monthly surveys by the Milan Chamber of Commerce:  
mean recovered-paper values (EUR/t)  
January 2002-January 2006

SOURCE: CCIAA MILANO



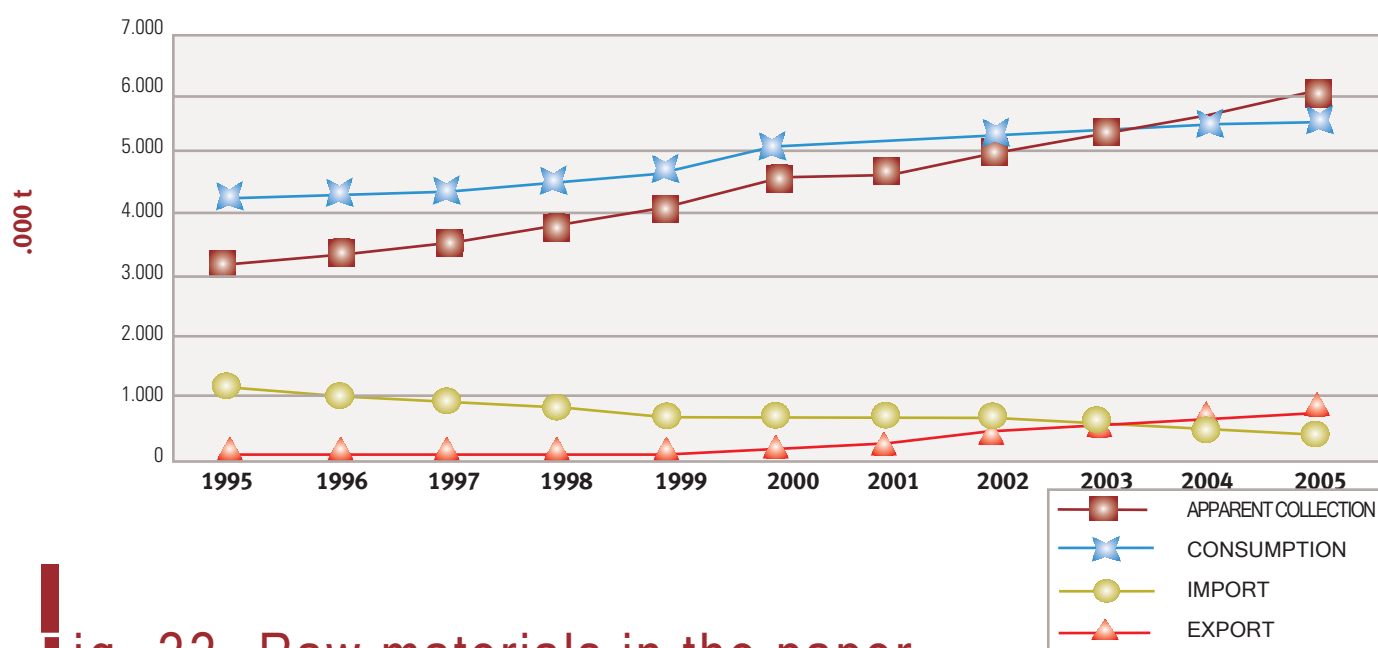
**Tab. 09** Paper and board production, import, export, and apparent consumption

SOURCE: ISTAT DATA PROCESSED BY ASSOCARTA AND ASSOCARTA ESTIMATES

Year 2005 values in tons	PAPER AND BOARD FOR PACKAGING			GRAPHIC PAPER	SANITARY PAPER	OTHER TYPES OF PAPER	TOTAL PAPER PRODUCTION
	Paper and board for corrugated board	Cardboard for boxes	Other wrapping and packaging paper and board				
PRODUCTION	2.774.006	652.315	1.114.784	3.470.095	1.439.490	548.681	9.999.371
IMPORT	1.280.770	501.663	472.436	2.598.121	64.563	68.862	4.986.415
EXPORT	248.488	411.213	446.024	1.524.176	731.920	85.891	3.447.712
APPARENT CONSUMPTION	3.806.288	742.765	1.141.196	4.544.040	772.133	531.652	11.538.074

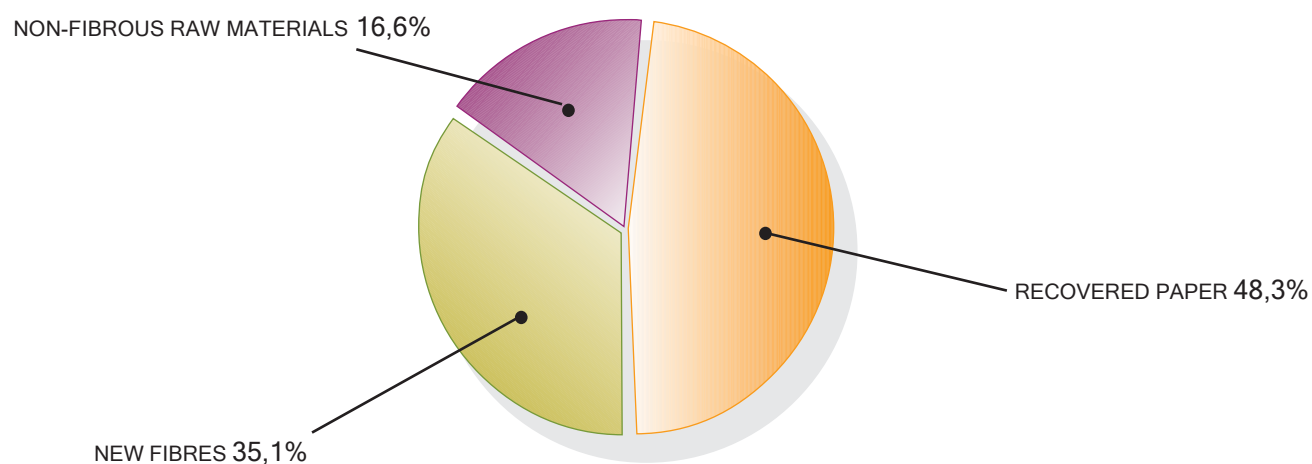
**fig. 21 Recovered paper consumption, apparent**  
collection, import, and export  
(1995-2005 period)

SOURCE: ASSOCARTA DATA  
PROCESSED BY COMIECO



**fig. 22 Raw materials in the paper**  
industry in 2005

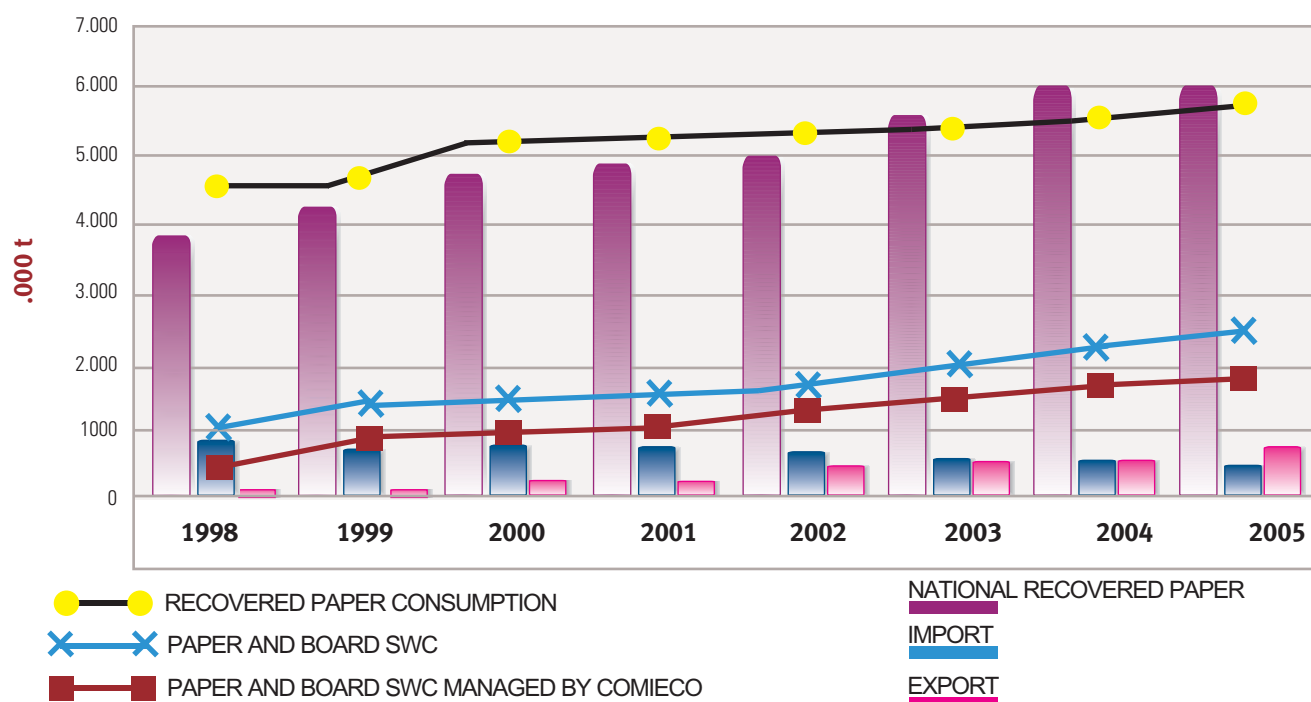
SOURCE: ASSOCARTA AND COMIECO



# fig. 23 Separate collection, recovered paper

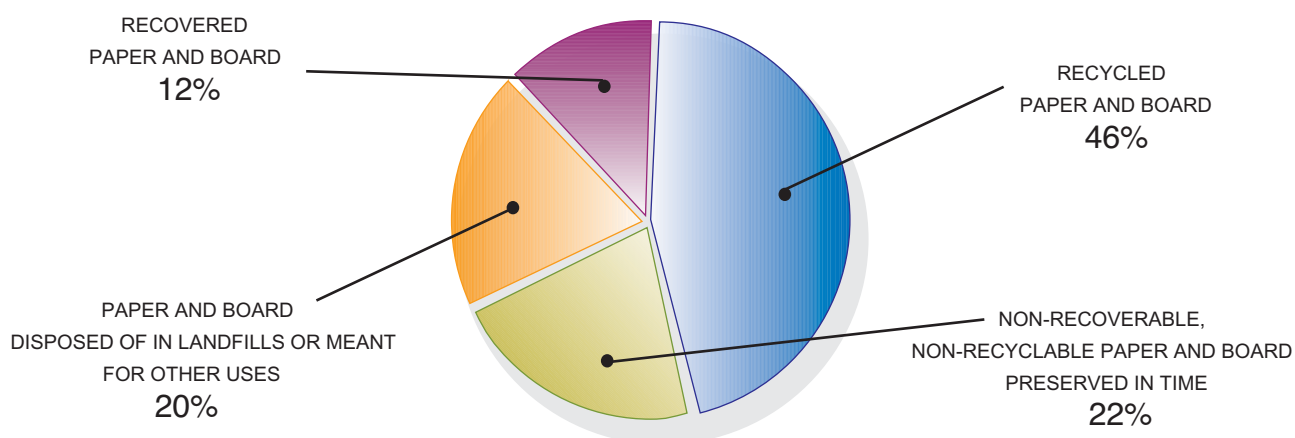
consumption, and available domestic recovered paper (.000 t)

SOURCE: COMIECO



# fig. 24 Destination of apparent paper and board quantities in Italy in 2005

SOURCE: ASSOCARTA DATA  
PROCESSED BY COMIECO





## II ab. 10 Packaging recovery and recycling achievements in 2005

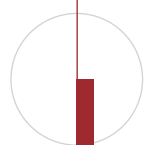
SOURCE: COMIECO

Recycling and recovery  
rate calculation

Year 2005

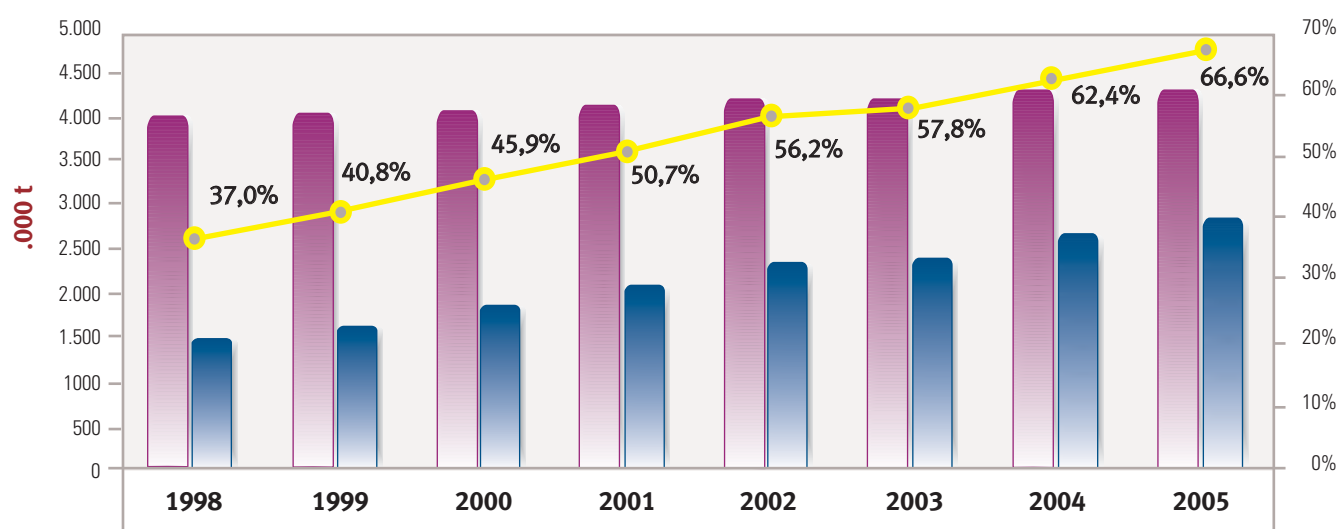
Packaging from public  
surface subject to  
Comieco agreements

APPARENT PAPER AND BOARD PACKAGING CONSUMPTION	t	4.315.353	
PACKAGING WASTE FROM MIXED PAPER AND BOARD COLLECTION	t	320.529	218.968
PACKAGING WASTE FROM CORRUGATED BOARD COLLECTION	t	2.330.220	705.769
PACKAGING WASTE SENT ABROAD FOR RECYCLING (ISTAT DATA)	t	223.896	
TOTAL PAPER AND BOARD PACKAGING WASTE FOR RECYCLING	t	2.874.645	924.737
<b>% RECYCLING</b>	<b>%</b>	<b>66,6%</b>	
PAPER AND BOARD PACKAGING RECOVERED AS ENERGY OR WASTE FUEL BASED	t	442.060	
TOTAL PAPER AND BOARD PACKAGING RECOVERED	t	3.316.704	
<b>% RECOVERY</b>	<b>%</b>	<b>76,9%</b>	



**Fig. 25 Recycling and recovery targets achieved**  
in the years 1998/2005 (.000 t)

SOURCE: COMIECO



**APPARENT PAPER AND BOARD PACKAGING CONSUMPTION**

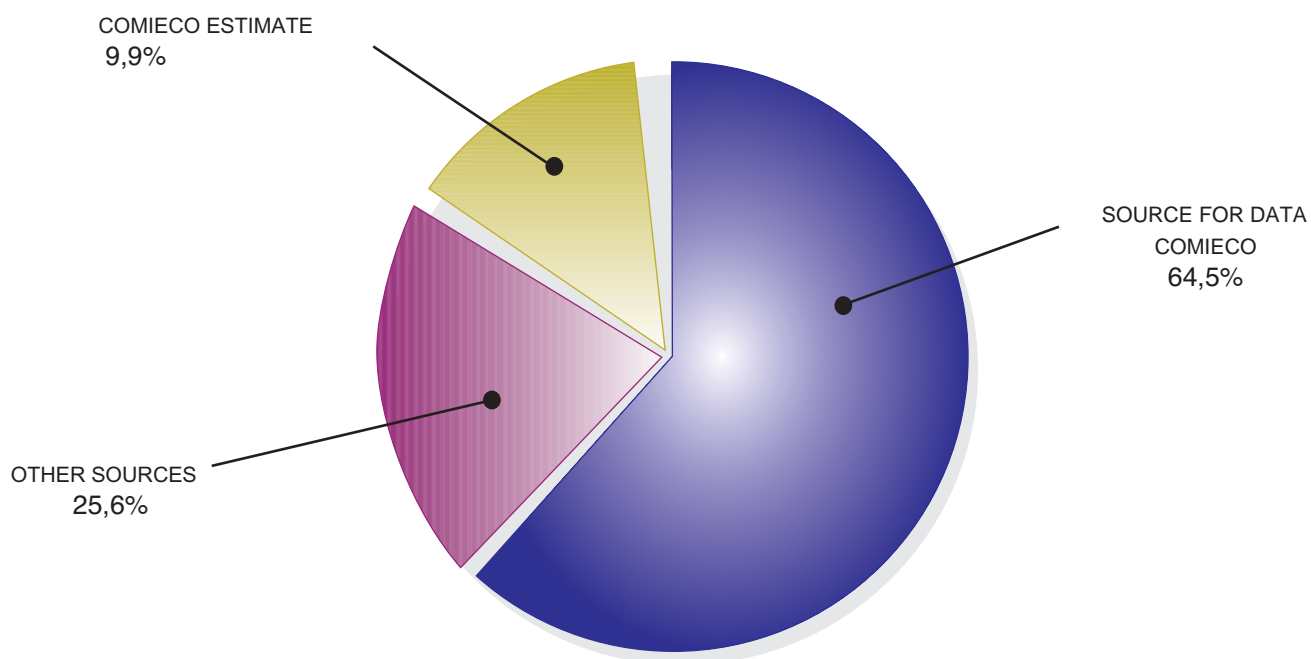
**TOTAL PAPER AND BOARD PACKAGING WASTE FOR RECYCLING**

**% RECYCLING**

	1998	1999	2000	2001	2002	2003	2004	2005
APPARENT PAPER AND BOARD PACKAGING CONSUMPTION	4.023	4.051	4.089	4.160	4.218	4.208	4.333	4.315
TOTAL PAPER AND BOARD PACKAGING WASTE FOR RECYCLING	1.489	1.652	1.877	2.109	2.369	2.432	2.703	2.875
% RECYCLING	37,0	40,8	45,9	50,7	56,2	57,8	62,4	66,6

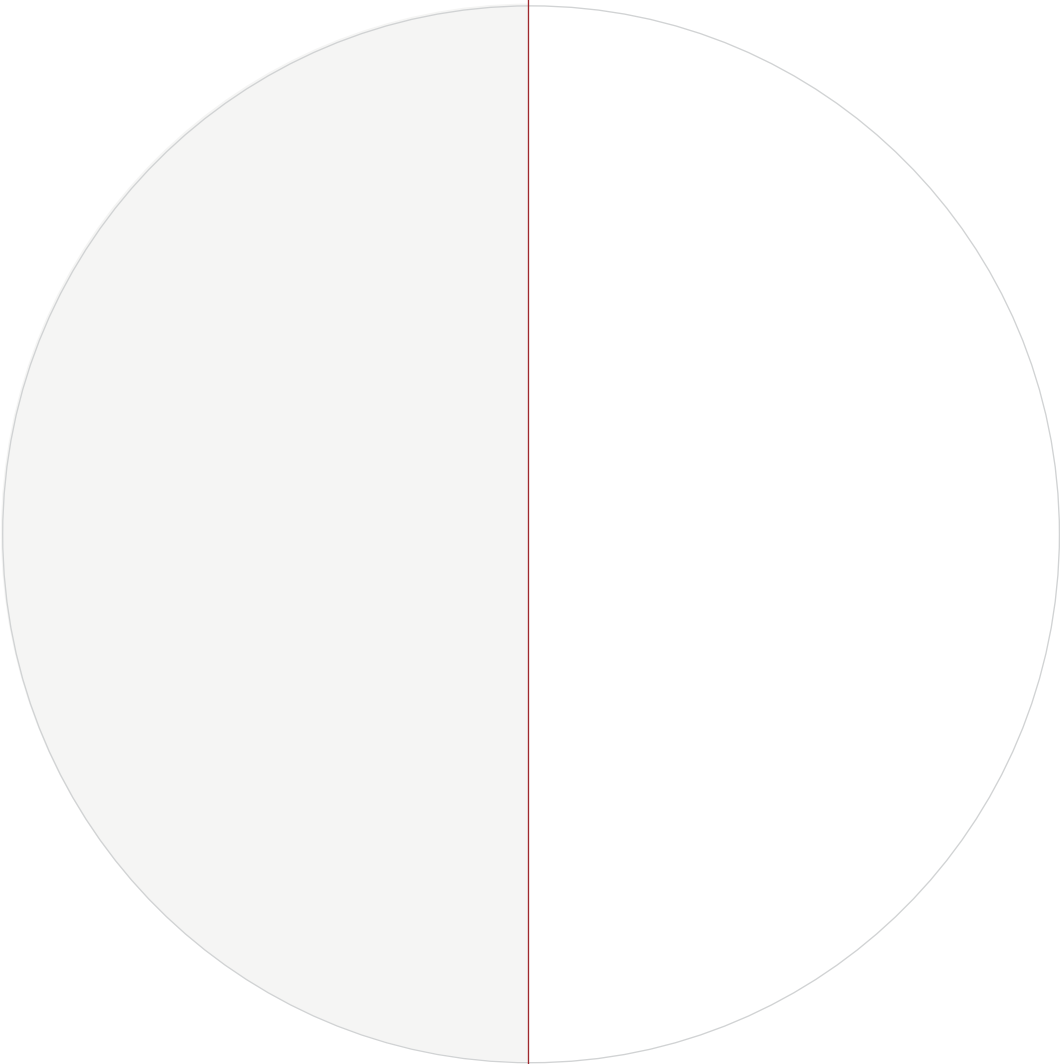
Fig. 26 Sources and method

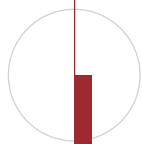
SOURCE: COMIECO



Group    % of inhabitants with agreements    % of inhabitants without agreements  
subject to checks on SWC implementation

A	INHAB. > 85%	minimum 25%
B	51% < INHAB. < 85%	minimum 50%
C	20% < INHAB. < 50%	minimum 75%





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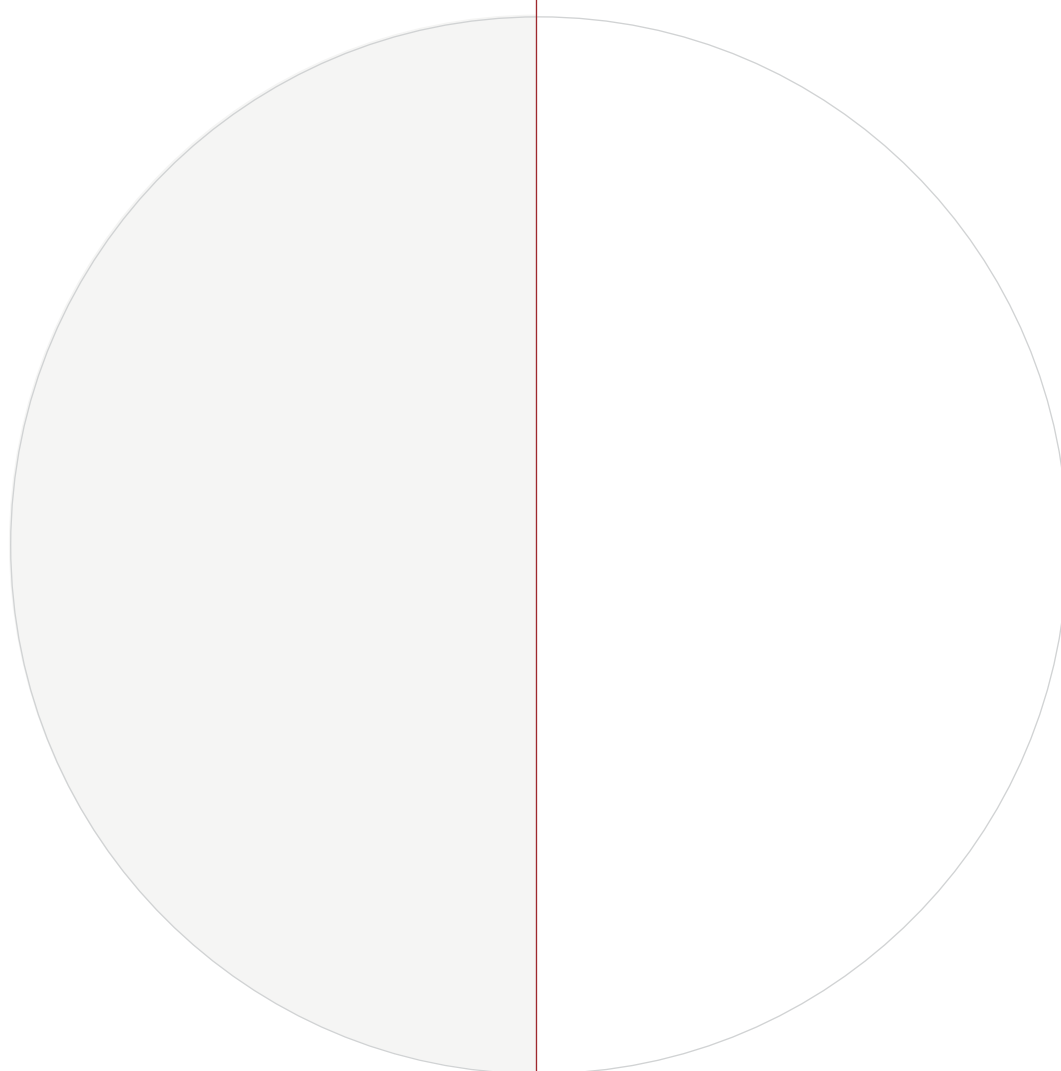


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