ISWA
Working Group on Communication and Social Issues (WGCSI)

Communication Measures in the European Packaging Collection Sector

Vienna, August 2002
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1 Foreword

Christoph Scharff
President, International Solid Waste Association

In 1994, an Austrian initiative under Gerhard Gilnreiner lead to the creation of an international Working Group on Communication and Social Issues within ISWA. In the beginning, many waste managers thought that this was going a little too far beyond the traditional tasks associated with waste management.

In the past decade, however, the concept of waste management - which is at the same time a branch of economic activity, a municipal task and a field of scientific activity - has undergone significant changes. It has been enlarged and adapted to a newly defined function in its economic, social and environmental context.

Today, we as waste managers understand that all we do or leave undone has an impact on the environment: water, soil, air and climate. Waste management has charge of society's metabolism. We are constantly striving to create and maintain a flowing equilibrium between the generated waste substances and nature's capacity to cope with them. This change of perception has resulted in a more self-confident and also more responsible approach to the task of waste management.

These tasks encompass much more than the traditional tasks of waste collection and disposal. Waste generators, trading companies and consumers are seen as closely connected to the system. This new approach is documented in the respective EU legislation of the last few years: Packaging Directive, legislation in the field of waste electric and electronic devices, abandoned cars etc. Other new important players in this formerly purely science- and technology-oriented field are the authorities, the media and the general public. They all fulfil specific functions in a system of divided responsibilities and tasks.

Waste management is thus no longer regarded as a system for the mere transportation and treatment of waste. It involves the management of mass streams, which are invariably accompanied by financial transactions and information exchange. The latter is the focus and field of activity of ISWA's Working Group on Communication and Social Issues.

The same three factors – flux of material, financial transactions and the social context - are also the core issues of sustainable development as demanded in Agenda 21 of the Rio de Janeiro summit.

The collection and recovery of packing waste was a very productive field of research for the analysis of successful communication projects in the field of waste management due to its dynamic development, its economic and ecological significance and the high level of interest displayed by the general public.

A few years ago, the terms public relation and communication stood for building bridges, whereas today these concepts mean something quite different: the bridges have turned into networks. We of ISWA have successfully participated in this development for more than 30 years in the field of waste management. Today, we are dealing with local, international and global networks. Public
relations and communication in the field of waste management fulfil an valuable task as they render an important service to this sector.

Just a few years ago, technological aspects were the most prominent topics, but today PR activities in the field of waste management clearly focus on conceptual and strategic approaches. In addition, the examples mentioned in this study reveal the broad range of approaches regarding scope and design of packaging waste collection systems and the specific way of realising these systems depending on the cultural background of the countries in question.

The common goal of all efforts can be easily identified: to promote acceptance of integrated waste management plans, collection systems, facilities, and a sustainable consumer and disposer behaviour.

This study by ISWA’s *Working Group on Communication and Social Issues* specifies a large number of strategies and instruments to be used by waste managers in the collection of packaging waste which will make communication with our customer, the general public, even more successful:

- In order to be successful, we have to validate our partners' desires and requirements, their value systems, beliefs, associations, and emotions. This goes for consumers and co-workers alike. If we cannot agree on a value system, it will be very hard to agree on common targets or strategies.

- In addition, we have to utilise the latest findings in the field of communications to actively influence the value systems and beliefs as well as the cognition mechanisms of our partners.

- This includes the utilisation of the full scope of modern communication techniques to realise the objectives of successful waste management. After all, we are competing with an overwhelming information flood in our effort to make our specific message heard. It is highly important that we increase the visibility of our work. A solution is good if the project in question fulfils its functions efficiently. It is striking if this achievement is also adequately presented to the public.

- If we want to create relations based on mutual trust with our customers, we have to render invariably truthful, unbiased and reliable information to them. This aim can be obtained only if we are also able to provide the infrastructure required for sensible solutions in the waste disposal sector: if we promote separate collection of waste substances, we have to provide simple, sensible and attractive systems for it.

- In order to be successful, we have to use the instruments of defining operational targets and implementing efficiency reviews and market research. Since we use considerable financial resources, in many cases public funds, we are responsible for the sensible and efficient allocation of these funds.

- Another factor in this context – unthinkable only a few years ago- is the critical review of our own positions. If we consider that the implementation periods for waste management projects may last for several years (for instance for the introduction of collection systems or waste treatment plants) and that the developments in our branch are sometimes very dynamic, we have to admit that our own point of view may become obsolete in the course of a project.

In the name of the *International Solid Waste Association*, I wish to express my gratitude to the members of the *Working Group on Communication and Social Issues* headed by Sandra Schopf for their commitment and their dedicated work on this project.
This is the first ISWA monograph in the field of communications and PR and was made possible by ARA AG and Christian Stiglitz, CEO, by providing financial support and human resources. The ARA System has always been forward looking and investing in research and development beyond mere technical and logistical aspects of packaging waste management. ARA and ARGEV have held leading positions in the field of package waste collection, market research and communications in Austria for many years. They have kindly made their know how available to the working group and aim at improving their services through international exchange of experiences.

The study was strongly supported by the division Waste Management headed by Leo Zahrer of the Austrian Ministry of Agriculture and Forestry, Environment and Water Management.

My thanks also go to ISWA Austria and its president Peter Bortenschlager. This National Member of ISWA has initiated and actively supported the Working Group on Communication and Social Issues for years.

This study specifies conceptual differences, gives insight into operative details and describes structural differences of public and private operators. But most importantly, it clearly shows one indisputable truth: if waste managers do not take into consideration the bigger picture including factors as public opinion and communication, they will not only fail to reach the goals of sustainable waste management, they will also fail to fully understand these goals.

We cannot deny the fact that our activities as waste managers – planners, operators or administrators – have an impact on society. This is neither good nor bad. It’s simply a fact. Walter Seitter put it in a nutshell in his work Physics of Existence: „All facts are facts – even those we would rather ignore“.
2 Introduction

Dear reader,

Like every Working Group within ISWA, the Working Group on Communication and Social Issues heavily relies on active and committed members in order to be able to produce good results and serve the large community of waste experts to the best of their ability. Since the foundation of the working group, some of the hard core of active members have unfortunately dropped out of the group for work as well as family reasons and have left a large gap. The group of members that were originally involved in this project shrunk to a few that had to take over the tasks left to them to fill this gap. This also explains why some of the statistical figures included in the questionnaire do not relate to the same period as the material gathered for this project has been collected over a period of three years ranging from 1997 until 2000.

Luckily we found many supporters outside the working group that devoted their time and effort to helping us finish this project. On behalf of the Working Group on Communication and Social Issues I would like to take the opportunity and say thank you to all these people – without their substantial input this study wouldn’t be in your hands today.

It also needs to be said that most of the people working on this project are busy people with a tight work schedule and very little time. Yet they decided to dedicate their valuable time to helping us without any remuneration. This once again underlines how many people in this industry understand the overriding importance of communication and social issues for waste management.

A lot of the great variety of original documents were provided to us in a language other than English and due to a lack of time and resources not all of them could be translated and included in the study.

Despite these difficulties, we still hope that not only experts in the waste packaging industry but decision-makers and stakeholders in all waste-related fields will find this document a valuable reference and a source of fruitful ideas and incentives.

Sandra Schopf
Chair
ISWA Working Group on Communications and Social Issues
3 Executive Summary

The goal of this study was to draw up a comparative overview of the experiences made with public communication programmes in the sector of packaging waste collection among a group of selected European countries.

The concept was to gauge the performance of packaging collection programmes, identify successful communication concepts and make them available to a wider expert audience. The major questions arising in this context were:

- What were the background conditions that contributed to the success of specific communication activities?
- What sort of activities were these and what impact did they have?
- What approaches were found to be ineffective?

What had to be considered was that the individual countries tend to have different waste management programmes and a different social and legal background. Whereas some countries have a nationwide packaging collection system that is centrally organized and regulated by federal laws, others operate their packaging collection systems at a local level where responsibility mainly lies with regional or local authorities. There is also a difference in the collection systems proper, the way they are operated and funded, and what is being done to communicate information to the public and industry.

In order to take these criteria into consideration and obtain comparable, evaluable, and usable information, it was decided to base the study on a dual approach.

The first section comprises a list of questions that serve to collect general background data on packaging collection programmes in the respective countries. The questions primarily focus on the existing legislation relating to recyclables and packaging collection, the allocation of duties, the collection systems that are in operation, as well as any relevant figures on collection quantities. Those countries that do not have any uniform nationwide structures were asked to provide examples of typical or particularly interesting regional projects.

The second section is concerned with local, regional, or national case studies. The purpose of this section is to give a detailed description of the specific background of the collection area, the particularities of the collection system, and the components and impact of public communication programmes.

Experiments and surveys that reflect public acceptance of packaging collection programs or depict changes in the consumer collection behaviour and the resulting impact on the quantity and quality of the collected packaging materials shall also be provided.

The survey comprises data from the following countries (in alphabetical order):

Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Portugal, Spain, Sweden, Switzerland, United Kingdom
4 Questionnaire

Section 1

General information

- Country background
- Inhabitants
- Annual figures on total quantities of household waste, commercial waste and packaging waste
- What types of packaging disposal schemes are currently operated in your country? (Incineration, landfilling, recycling)

Legal background

Is there a legal regulation governing the disposal of packaging waste material? (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)

Rough description of kerbside collection programmes

- Do you have any nation-wide systems of packaging collection and recovery in your country?
- What types of packaging materials are collected separately?
- What types of collection containers are used?
- Are collection sites and containers densely placed? Are they effectively spread all over the collection area?
- How is the packaging collection programme funded?

Basic questions relating to communication matters

Are there any legal regulations governing the scope of authority of the communication and public relations sector? If yes, please specify. If no, what public education measures are taken to communicate information on waste separation, packaging disposal, recycling, etc. to the general public?

- Are there any nation-wide public communication programmes?
- What type of information channels and advertising media are usually used to communicate information?
- What are the main contents of communication? (e.g. call for public participation in collection, waste minimisation, avoidance of contaminated fractions, improved quality of collection, information on recovery, etc.)
• What are the major problems in communication?

**Section 2**

**Case Studies on Public Communication**

Examples of specific (regional or national) public communication projects that are intended for presentation:

• Information campaigns on packaging collection
• Introduction of separate packaging collection
• Introduction of return systems
• Campaigns aimed at improving the quality of the collected materials
• Campaigns aimed at improving the use of collection containers to capacity
• Campaigns to promote waste (packaging) minimisation
• Information campaigns at schools

Apart from focusing on communication strategies and measures, the individual case studies should also contain information on the **effects and results** of the above-mentioned projects (outcome of public enquiries conducted in the wake of communication programmes, such as public acceptance of separate packaging collection programmes, packaging quantities, changes in the collection materials, etc.).
5 Austria

5.1 Section 1

5.1.1 Country background


Annual amount of packaging waste: approx. 1.2 million tonnes

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfilling, recycling)

More than 90% of the total packaging waste collected by the ARA System is material recycled. Paper, glass, and metals are only material recycled. Plastic packaging is partly material recycled and partly used for energy recovery. From 1993 to 2001, the Packaging Ordinance has set targets for decreasing landfill volumes of packaging. These targets have been individually set for the various packaging materials and must be met by the Austrian economy. Until now all targets have been met, landfilled packaging has been decreasing from 1994 to 1998 at about 50%. The Landfill Ordinance, which will come into effect in June 2004, will forbid landfilling for all materials with an organic content (TOC) of more than 5% by mass.

5.1.2 Legal background

Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)

The Austrian Packaging Ordinance („Verpackungsverordnung“) forms the legal basis that obligates producers, and/or distributors, importers, fillers and retailers to take back all the packaging material they put on the market and to recover it according to the regulation. The Packaging Ordinance applies to companies that put packaging, products that are directly processed into packaging, or packed goods on the Austrian market. Thus, trade and industry have taken over the costs for the collection and recovery of packaging since 1993. By becoming partners of ARA, they pass on their legal duties to ARA.

The Austrian Packaging Ordinance was established on the basis of the Waste Management Act. It has been in force since October 1, 1993, and requires producers, distributors, and importers that put packaging or packed goods on the Austrian market to take back their packaging free of charge and recover it. In 1996, the Packaging Ordinance was revised for the second time. The new Packaging Ordinance has been effective since December 1, 1996.

The financing of the ARA System is based on the license fees that ARA license partners pay to ARA for the reported packaging volumes they put on the market. These fees reflect the actual costs for collection, sorting, and recovery activities depending on the packaging materials. The revenues are passed on by ARA
to the collection and/or recycling companies and further to operative partners, disposal companies, and communal waste associations.

Also, there exist special recovery and reuse quotas for beverage packaging laid down in a so called “Target Ordinance”.

<table>
<thead>
<tr>
<th>Category</th>
<th>Quota in %</th>
<th>1997</th>
<th>2000</th>
<th>2001*</th>
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<tbody>
<tr>
<td>Mineral, soda, &amp; other drinking waters</td>
<td>92</td>
<td>96</td>
<td>80</td>
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<tr>
<td>Beer</td>
<td>92</td>
<td>94</td>
<td>80</td>
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<tr>
<td>Non-alcoholic beverages (soft drinks; non-alcoholic hops &amp; malt drinks)</td>
<td>80</td>
<td>83</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Fruit juices; beverages made from fruit juices</td>
<td>60</td>
<td>80</td>
<td>80</td>
<td></td>
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<tr>
<td>Milk &amp; liquid dairy products</td>
<td>60</td>
<td>80</td>
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<td>Wine</td>
<td>80</td>
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<td>Champagne &amp; hard liquors</td>
<td>70</td>
<td>80</td>
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* Current draft for a new Target Ordinance

Also, the Austrian Ministry for Environment has determined the following collection and material recycling quotas for collection and recovery systems:

<table>
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<tr>
<th>% of licensed quantity</th>
<th>Collection Quota</th>
<th>Material Recycling Quota</th>
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<tbody>
<tr>
<td>Commercial/Industrial</td>
<td>90</td>
<td>75</td>
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<tr>
<td>Household</td>
<td>80</td>
<td>75</td>
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Finally, the Ordinance prescribes residual quantity targets for all other packaging which may be deposited in landfills. During 1998 and 2001 no more than the following residual quantities of waste and other packaging materials may be deposited on landfills:

<table>
<thead>
<tr>
<th>Material</th>
<th>1998</th>
<th>2001*</th>
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<tbody>
<tr>
<td>Glass</td>
<td>54,000 tons</td>
<td>38,000 tons</td>
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<td>Plastics</td>
<td>90,000 tons</td>
<td>60,000 tons</td>
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<tr>
<td>Paper, carton, cardboard, corrugated board</td>
<td>140,000 tons</td>
<td>99,000 tons</td>
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<tr>
<td>Metals</td>
<td>36,000 tons</td>
<td>17,000 tons</td>
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<tr>
<td>Composite materials</td>
<td>50,000 tons</td>
<td>30,000 tons</td>
</tr>
</tbody>
</table>

* The current draft for a new Target Ordinance determines 25,000 tons.

5.1.3 Rough description of kerbside collection programmes

Do you have any nation-wide systems of packaging collection and recovery in your country?

Yes, the ARA System operates comprehensive nationwide collection and recycling systems for the various packaging materials on the market. The ARA System has been in operation since October 1993. We are running this nationwide collection and recovery scheme very successfully for the household sector as well as for the industrial/commercial sector.
What types of packaging materials are collected separately?

According to the Packaging Ordinance, all packaging materials, except for biological materials, have to be taken care of.

- Plastics
- Glass (separated into white and coloured glass)
- Paper, paperboard, cardboard (transport and sales packaging)
- Metals (ferrous metals; aluminium)
- Composite Materials
- Wood
- Textiles
- Ceramics

What types of collection containers are used?

Nationwide, the ARA System has developed a uniform colour system for the collection of packaging:

- **Yellow** refers to the lightweight fraction. Lightweight packaging is collected in yellow bags and/or containers with a yellow lid. The lightweight fraction includes plastics, composite materials, wood, textiles, and ceramics.

- Containers with a **blue** lid are used for metal packaging.

- **Paper, paperboard, and cardboard** is collected in the **red**-lid container.

- **White glass** is collected in containers with white lids, **coloured glass** in containers with green lids. The new combined container (COMBICON) has two separate chambers, one chamber for each glass fraction.

The size of the containers are usually 240 l, 720 l and 1,100 l for the household collection.

Are collection sites and containers densely placed? Are they effectively spread all over the collection area?

Yes, they are. In all, the ARA System provides approximately 870,000 containers. Additionally, 830,000 households participate in the so-called "yellow bag collection", a very convenient kerbside collection system.

How is the packaging collection programme funded?

The collection is exclusively funded by the license fees that license partners pay to ARA. These revenues are passed on by ARA to the collection and/or recycling companies and further to disposal companies and communal waste organizations.
ARA determines fees per kg of packaging materials, which are calculated separately per material, based on the specific costs for collection, sorting, treatment, and recovery of these materials.

5.1.4 Basic questions relating to communication matters

Are there any legal regulations governing the scope of authority of the communication and public relations sector?

The Austrian Packaging Ordinance requires the existing collection and recycling systems to properly inform the public about

- the separate collection of packaging materials,
- the possibilities of the final user to return packaging,
- the appropriateness of a proper return of packaging,
- the possibilities of recovery

Are there any nation-wide public communication programmes?

Yes, there are. In a joint effort with the eight branch recycling companies within the ARA System, ARA launches a comprehensive communication program on a nationwide level. Such “interdisciplinary information activities” are devised on an annual basis.

What type of information channels and advertising media are usually used to communicate information?

Basically, the target groups determine which information channels and media we use. Our communication activities focus on the below targets:

- Consumers
- License Partners
- Opinion Leaders (economy, administration, politics, interest groups ...)

<table>
<thead>
<tr>
<th>Consumers</th>
<th>Media</th>
<th>Information Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Annual awareness campaign on separate packaging collection (improve quality of collected material; improve use of containers in terms of capacity ...)</td>
<td>- National consumer-oriented media with a wide reach</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Regional media</td>
<td>- 130 waste associations, including the 200 waste consultants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Communication and cooperation with schools and governmental organizations</td>
</tr>
</tbody>
</table>
What are the main contents of communication?

The communication activities towards the consumers focus on proper and separate collection. The messages are, for example, to better use the container capacities by folding cartons or squeezing PET-bottles, to throw the materials into the proper containers.

Waste avoidance is an important topic in regional campaigns launched by regional waste associations (City of Vienna; Lower Austria).

Also, see above chart in paragraph 3.

What are the major problems in communication?

Separate collection of packaging materials has become an everyday routine for a large part of the society (approx. 90 percent collect separately on a regular basis). However, awareness towards environmental matters seems to have been slowly decreasing in face of other emerging social problems such as unemployment. Also, trends towards single-households and convenience products cause an increase of wastes. It is, therefore, important to sustain the high level of sensitivity and motivation towards separate packaging collection and to let the consumers know that their contribution makes a difference with respect to preserving natural resources. The consumers need to know that they are the crucial factor without whom the system of packaging collection and recovery would not work.

5.2 Section 2

- Ads of the 1999 and 2000 consumer campaign
- List of give-aways accompanying the campaigns
- Results (charts) of a post-test which examined the understanding of the messages and their appeal
- 3rd edition of brochure “The Green Dot in Europe”
Further information on ARA web site www.ara.at.
Examples of ARA information material
Other campaign material towards the construction business
6 Belgium

6.1 Section 1

6.1.1 Country background

Inhabitants: 10.2 million

Annual amount of packaging waste: 1.45 million tonnes

<table>
<thead>
<tr>
<th>Materials</th>
<th>Household</th>
<th>Industrial</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass</td>
<td>325</td>
<td>15</td>
<td>340</td>
</tr>
<tr>
<td>Paper/Board</td>
<td>157</td>
<td>365</td>
<td>522</td>
</tr>
<tr>
<td>Steel</td>
<td>77</td>
<td>50</td>
<td>127</td>
</tr>
<tr>
<td>Aluminium</td>
<td>12</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>Plastic bottles and flasks</td>
<td>60</td>
<td>87</td>
<td>147</td>
</tr>
<tr>
<td>Beverage cartons</td>
<td>20</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Other</td>
<td>112</td>
<td>168</td>
<td>280</td>
</tr>
<tr>
<td>Total</td>
<td>765</td>
<td>685</td>
<td>1,450</td>
</tr>
</tbody>
</table>

Marketed amount of packaging – Packaging material in tonnes per year (1998)

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfilling, recycling)

Belgium is a federal state, made out of three regions. Each region is responsible for environmental matters and more specifically waste handling. The federal state is still responsible for all products related to normalisation and fiscal implications.

The 589 communes (local authorities) are autonomous for all operational aspects of waste collection including sorting. They are operationally organised in 42 “intercommunales”, regrouping several communes, to which these have delegated some of their responsibilities. Since 1995, an “interregional” decree has regulated the use and recovery of packaging for the whole country.

6.1.2 The collection and sorting scenario

In principle, all packaging and packaging materials are recyclable; in practice, some are more easy to recycle and at a lower price than others. In addition, energy recuperation is an economically and ecologically viable valorisation option.

Belgium is well equipped with waste incineration; 40% of all household waste (and thus packaging) is thermally recycled.
On the basis of the market, the waste infrastructure, the EU directive's requirements and taking into account what existed in Belgium, what was done abroad and ERRA's experience, an optimal collection scenario was defined.

The scenario consists of 3 flows of empty packaging:

- Glass bottles and jars - exclusively through igloos, at least 1 site per 1000 inhabitants, 2 colour separations. Much attention is given to aesthetics, cleaning igloos & sites, site location, frequency of emptying etc.

- Paper and cardboard packaging mixed with newspapers and magazines - kerbside collection once a month (no recipients!) The non-packaging share (75%) is financed by the local communities themselves.

- Lightweight packaging PMC (plastic bottles and flasks, metallic packaging and beverage cartons) is collected in a blue transparent plastic bag in a kerbside system where collection is carried out twice a month. The bag is sold in the distribution channel between 5 and 10 BEF per unit; the profit made on the sale is for FOST Plus. The bags used for residual waste collection cost from 0 to 60 BEF per unit.

In addition, Belgium is well equipped with guarded container parks (± 400 for 589 communes). All 3 fractions can be brought to those as well.

The collection scenario and the type of packaging focused on, represent ± 90% of all household packaging. The remainder (mixed plastics, yoghurt cups, plastic foils and bags, dirty or non-recyclable paper, aluminium foil, etc.) is proscribed from our scenario, remains in the waste stream and is intended for energy recuperation where a respective facility exists.

With very few exceptions, the above scenario is being implemented progressively all over the country with satisfactory results.

6.1.3 Legal background

Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)

As of the late eighties, but mainly the very early nineties, there was a very active discussion between the 3 regions and the private sector, which resulted in voluntary agreements concerning financial and other efforts in the field of packaging waste prevention and packaging waste treatment. Three covenants were signed between 1990 and 1992 with Flanders, Brussels and Wallonia, respectively, and a co-ordination body, the Prevention and Recycling Organisation for Packaging (PRO), was set up.

1 ERRA: European Recovery and Recycling Association - Brussels
An important change in the Belgian constitution, further regionalizing the federal state, required a two-third majority in the federal parliament. The government could only get this majority by "buying" a few votes from the ecologists during summer 1993. The price? An eco-tax law on certain products like one-way shaving devices, throwaway cameras, pesticides, beverage packaging, disposable batteries, etc.

The constructive dialogue between the private sector and the federal and regional politicians and administrations became very difficult, and still is. The federal politicians did not want to lose face and wanted the eco-tax law to be implemented; the regions started to prepare the transposition of the EU Packaging Directive into their legislation and the private sector speeded up its voluntary approach.

The legal frame

Without going into detail:

- The EU directive 94/62/EC has come into force on 30th June 1996.
- The eco-tax law came into force on 16th July 1993 and has been modified several times. In its latest version, it came into force on 1st January 1996. Originally, a beverage could be exempted if it reached a combination of growing refillable targets and recycling targets for the one-way version(s) of the product. As of 01/01/96 and for the next 5 years, there is only a recycling target by material, but these targets are extremely high (up to 70 - 80 % by material). The list of beverages was also extended and includes now also fruit juices and milk. The tax is equal to 15 BEF (half a US Dollar) per packaging unit sold. Refillable packaging is exempted. Although the law is in force, there are indescribable problems in the implementation and not less in the control. The inventors of the law, both majority and opposition, are far from being proud of their invention but they haven’t taken the right decision yet: if you can’t control it, don’t implement it!
- The Interregional Co-operation Agreement. In summary, it can be said this agreement translates the EU directive into the Belgian law.

The main elements are:

- The filler or importer is responsible for the packaging he puts into circulation; he can fulfil the requirements himself, a third party can do it for him (but he remains responsible), or he can delegate his responsibility to a certified organisation.
- There is an obligation to take back packaging and an obligation to cover the full cost of collection, sorting and recovery. The take-back obligation is limited to the level necessary to reach the recycling targets.
- The targets to be reached are global and surpass the EU Directive: 50 % recycling and 80 % recovery in the year 1999, and a minimum of 15 % by material as of 1997.
- A certified organisation for household packaging waste must work through the communities and “intercommunales” and respect the autonomy of local communities.
- In terms of industrial waste, the conditions are the same, but there is no obligation to work via the local communities.

One could summarise that as far as household packaging waste is concerned, all competences lie with the local authorities and all responsibilities (including severe penalties) with the industry.
The companies have reluctantly accepted the law that was imposed on them and have put their hope on the conditions under which its organisation (FOST Plus) would be certified.

The law came into force on March 5, 1997.

- A federal law on product normalisation was published in December 1998; it contains a major chapter on packaging and would allow the minister almost anything through royal decrees.

As can be seen from the above enumeration, there have been plenty of legal initiatives so far, but few attempts to harmonize between the regional and federal level.

In addition, the 3 regions have published regional waste plans with a scope of 5 to 10 years which, as far as packaging is concerned, are not necessarily in line with the federal or interregional legislation.

### 6.1.4 Rough description of kerbside collection programmes

**Do you have any nation-wide systems of packaging collection and recovery in your country**

There are 2 nation-wide systems: one dedicated to household packaging recovery (FOST PLUS), the other dedicated to commercial and industry (VAL I PAC).

#### 6.1.4.1 FOST Plus

**1. Conception**

The early voluntary commitment expressed in the covenants with the three regions rapidly gave birth to FOST in 1992 (FOST stood for Fund for Sorting). Before this new commitment was implemented, the political and legal developments resulted in a further commitment from the private sector: it announced the creation of FOST Plus (the Plus standing for doing more than originally planned) in April 1993.

Taking into account what was planned at the EU level, looking at the birth of DSD in Germany and wanting to prove to the political world that the private sector did not need an eco-tax law to come to grips with the packaging waste issue, the industry and distribution sector announced their commitment to set up a system and organisation that would promote, co-ordinate and financially support the valorisation of household packaging waste. Three federations took the lead, the FEVIA (the Belgian Food Federation), FEDIS (the Belgian Distribution Federation) and DETIC (the federation of Detergents).

Twenty six leading companies of the 3 federations and material and packaging producers made a public commitment, hired a consultant (Coopers & Lybrand) and started an intensive co-operation effort in May 1993 which, after several men-year meetings at technical and top management level under the leadership of Mr. Ph. Stroobant - Delhaize, led to the birth of FOST Plus on 29th March 1994 as a voluntary action.

**2. Structure**

Originally a co-operative, but since 1st January 1996 a non-profit organisation (requirement of the Interregional Co-operation Agreement), FOST Plus has 57 associate members from 3 'industry families': the material and packaging producers, the fillers and the distribution.
The fillers retain the majority in the Board of Directors, which is composed of 32 seats. The day-to-day management (45 employees, including 4 directors and a general manager, member of the Board) is supervised by a direction committee and an Executive Committee (7 members, 2 of which must be Board members).

The basic work is done by 10 working groups which only consist of representatives of the associate members; these working groups meet 6 times a year on average and make recommendations on any major issue.

The management structure consists of a General Manager assisted by a Finance & Administration Director, a Marketing & Communication Director, a Project Director (responsible for collection and sorting), and a Technical Director (Responsible for R&D, Recycling and Valorisation).

3. Legal status

After a short accreditation term of one year in 1998, FOST Plus has now been accredited (for household packaging) for 5 years starting on 1st January 1999.

4. Basic Principles

The basic principles of FOST Plus can be summarised as follows:

- **Progressivity**
  Learning lessons from the German experience, it was decided to apply a progressive approach, both geographically (adding 15% of the population to intensive selective collection every year) and by type of waste (starting with household empty packaging).

- **From incremental cost to total cost**
  Many initiatives by private and public sectors existing, it was decided to only pay for the incremental cost. Since September 1995, FOST Plus has been paying the total cost. The main reasons for giving in to these political requirements were:
  - the eco-tax law in force required coverage of full cost
  - paying the incremental cost puts those local communities that were the most active at a disadvantage
  - the draft interregional decree of March ‘95 imposed full cost.

**Solidarity**

A strong industry-wide initiative requires solidarity. The eco-tax law by focusing on some beverage packaging only and by imposing recycling and refilling rates differing by material or sector created discrimination and was perhaps an attempt to divide the private sector.

As a reaction and a proof of solidarity, the companies involved in setting up FOST Plus wanted to demonstrate the opposite: there should be no discrimination between:

- product sectors

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2 For industrial packaging, Val-I-Pac has been accredited since 31 March 1999 until 31 March 2001.
• packaging materials

• waste treatment technologies

• **Uniformity**

  Keeping in mind the regional structure of Belgium and the autonomy of local communities in waste matters, Coopers & Lybrand expected a solid risk of heterogeneous approach and patchwork. Because of economy of scale, national communication and to increase the sensitivity of the citizen, it was opted for a uniform approach wherever feasible, much to the disenchantment of the communities that are autonomous in waste matters.

### 6.1.4.2 VAL I PAC

The non-profit organisation VAL -I- PAC is an initiative of Belgian companies, of about 20 professional associations and of the "V.B.O.", the "U.W.E.", the "V.E.V." and the "U.E.B.".

The non-profit organisation VAL -I- PAC is an accredited organisation that implements the legal recovery and information obligations regarding the industrial packaging waste of its members, responsible for industrial packaging. Those obligations are defined in the inter-regional co-operation agreement (published on March 5 1997).

VAL -I- PAC is a "multi-sectoral and multi-material" system that operates using the existing waste collectors, recycling-structures and recuperation companies and offers a realistic and economically feasible solution for all the concerned parties in the three Regions.

VAL- I- PAC is operational since mid-July 1998 and officially recognised by the Belgian government (I.R.P.C) since the end of March 1999.

More than 100 private operators have a partnership with VAL -I- PAC to collect information about the recycling and valorisation of industrial packaging waste.

More than 3000 small, medium and big-sized companies from all sectors have decided to entrust the implementation of their obligations regarding recovery and information to VAL -I- PAC.

This represents a total of about 300.000 tons of industrial packaging waste, some 40% of the global volume of industrial packages that are annually used by the Belgian companies.

All information about VAL -I- PAC and its functioning can be obtained on the following web site: www.valipac.be.

**What types of packaging materials are collected separately?**

The interregional decree requires the separate collection of packaging as a mean to achieve the decree’s objectives. The two nation-wide collection schemes cover:

• Paper, cardboard and corrugated board (for households, is most often part of an overall paper and board scheme)

• Glass (a dedicated container system for household glass)
- Lightweight packaging (metals, plastics, composites) for household waste
- Specific commercial and industrial source separated materials (wood, board, metals, plastics)
- Metals after incineration

*What types of collection containers are used?*

(See FOST Plus above:)

- Igloos for bottles and jars
- No recipients or a yellow disposable plastic bag for paper and board packaging mixed with newspapers and magazines
- A blue transparent disposable plastic bag for the light weight packaging
- Container parks: all fractions are received

*Are collection sites and containers densely placed? Are they effectively spread all over the collection area?*

- Glass igloos: 1 site per 1000 inhabitants, 2 colour separation
- Other: door-to-door collection

80 % of the population covered at the end of 1999, 100 % coverage scheduled for 2001;

*How is the packaging collection programme funded?*

The packaging collection programmes are financed out of the licence fees charged by FOST PLUS AND VAL-I-PAC to packaging users (fillers, packers, importers and producers). These revenues are passed on to the local authorities for household packaging and to operators for industrial packaging.

FOST PLUS basic agreement:

FOST Plus is not an operator itself; it does not collect, sort or recycle; it does not own any truck or other investment and never becomes owner of the collected material. Rather than being a competitor, FOST Plus is a partner of all partners involved.

**Member partners:** the individual companies putting packed products on the market sign a long-term agreement (5 years) for all their household one-way packaging and commit themselves to pay the yearly contribution. FOST Plus commits itself to fulfil the requirements of the Interregional Co-operation Agreement collectively.

Intercommunales - partner: the agreement covers a period of 5 years during which the local authorities and FOST Plus join forces to reach the valorisation targets.

The “Intercommunales” organise the tenders on the basis of agreed specifications or do the collection and sorting themselves on an agreed basis.
FOST Plus is paying the total direct cost of all agreed operations and the very important communication campaigns. For a more expensive system or a collection system with a higher frequency, FOST Plus only pays a reference price.

**Acquirers**

Originally, the materials were sold through material organisations. Our accreditation conditions, however, require either the “Intercommunales” themselves or the certified organism to do this under control of a supervisory board including representation from the “Intercommunales”, the IVCIE$^3$ and FOST Plus.

**Value of green dot**

After much study, discussion and taking into account the experience in Germany and France, in February 1994 it was decided to start straight away with a material diversified contribution system taking into account real cost but also the individual materials efforts in reaching the global recycling rates. The keyword is solidarity: some materials do efforts beyond the imposed recycling requirements, others do financial efforts beyond their real cost to finance others; the highest contribution is paid by those packagings and packaging materials for which FOST PLUS has no recycling guarantee and are therefore not collected. The present price-list valid for 2000 is as follows:

<table>
<thead>
<tr>
<th>Materials</th>
<th>Price per kg excl. VAT in BEF$^4$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass bottles and jars</td>
<td>0.78</td>
</tr>
<tr>
<td>Clean paper and cardboard at least 85% pure</td>
<td>1.52</td>
</tr>
<tr>
<td>Steel &gt; 50%</td>
<td>2.34</td>
</tr>
<tr>
<td>Aluminium packaging with at least 50% alu &amp; &gt; 50µ</td>
<td>6.45</td>
</tr>
<tr>
<td>PET bottles</td>
<td>14.04</td>
</tr>
<tr>
<td>HDPE bottles and flasks</td>
<td>14.04</td>
</tr>
<tr>
<td>Beverage cartons</td>
<td>9.18</td>
</tr>
<tr>
<td>Other packaging waste that can be valorised</td>
<td>16.06</td>
</tr>
<tr>
<td>Other packaging waste that can not be valorised</td>
<td>16.67</td>
</tr>
</tbody>
</table>

In order to cover the total territory, the Green Dot will have to increase by another 20 % over the next 2 years.

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$^3$ Interregional Packaging Commission
$^4$ 1 € = 40.3399 BEF
VAL-I-PAC Basic agreement

![Diagram of VAL-I-PAC Basic agreement]

\[ \text{Recyclage} \% = \frac{\text{Quantity recovered packaging}}{\text{Quantity of packaging placed on the market}} \]

**VAL-I-PAC Tariffs**

Contribution per kg of packaging material:

<table>
<thead>
<tr>
<th>Material</th>
<th>1998</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper, paperboard, metal, wood, glass, textiles, other recyclable materials</td>
<td>0.42 BEF</td>
<td>0.49 BEF</td>
</tr>
<tr>
<td>Plastics and not currently recyclable materials</td>
<td>1.42 BEF</td>
<td>1.49 BEF</td>
</tr>
<tr>
<td>Reusable packaging</td>
<td>0 BEF</td>
<td>0 BEF</td>
</tr>
</tbody>
</table>

**6.1.5 Basic questions relating to communication matters**

*Are there any legal regulations governing the scope of authority of the communication and public relations sector? If yes, please specify. If no, what public education measures are taken to communicate information on waste separation, packaging disposal, recycling, etc. to the general public?*

The Interregional Packaging Decree and the FOST PLUS and VAL-I-PAC licences require that all communication activities be financed by the licensed organisations and that communication programmes be approved by the Interregional Packaging Commission.

Since 1995, FOST PLUS has run several nation-wide sensitisation programmes (Newspapers, National and Regional TV programmes).

Yearly, FOST Plus starts up its so-called new projects for ± 1.5 million inhabitants balanced in the 3 regions.
One year ahead of the launching date, FOST Plus invites all remaining 'Intercommunales' to become candidates for a new project and fill in an application dossier with the basic date required before the end of the year. Once the candidates are known, FOST Plus evaluates the project together with the respective regional environment administration and establishes a priority list taking into account regional criteria (is there a landfill problem existing or expected) and FOST Plus criteria (mainly the respect of the collection scenario).

On that basis, the projects for the next year are chosen; a letter of intent containing the basic principles of the co-operation is then signed.

As of then, an intensive co-operation period starts resulting in specifications, contracts, tenders for collection, sorting, plastic bags, communication plans, sales contracts for collected materials, etc.

This way, FOST Plus presently covers 6.3 million inhabitants, a figure that will grow to 8.3 million (80 % of the population) by the end of 1999.

The launch is characterised by a heavy promotion campaign (28 BEF/inhabitant in the first three months), press conferences, school campaigns, etc. After three months the project usually reaches orbit, but keeps growing gradually afterwards.

Since the whole population contributes via the green dot and since only part of the population can participate in the intensive selective collection system, a temporary (maximum 5 years) subsidising system has been installed for the rest of the population. Any quantity of household packaging material collected through any system gets from 400 to 10 000 BEF support per ton, depending upon the material against a certified written statement of sale for recycling.

VAL-I-PAC provides its affiliates with indication on how to handle used packaging and connects them with a network of operators.

VAL-I-PAC operators:

- Sorting centres: 27
- Recyclers: 54
- Collectors: 27
- Energy recovery: 3

Are there any nationwide public communication programmes?

FOST PLUS organises nation-wide communication programmes at least once a year. As mentioned in 1), local programmes using a national template and relating to the national standard system are used at the time of launch and during the programme operation in relation with the results of each programme.

What type of information channels and advertising media are usually used to communicate information?

In Belgium, newsprint, TV and radio broadcasts are the most effective media to communicate and to spread education programmes. Besides, a launch kit has been distributed to all households at the moment local
separate collection is started. Free municipal journals are generally distributed to keep the population informed on the programme’s development.

What are the main contents of communication?

At launch, the communication concentrates on the why and how of separate collection. It immediately emphasizes on quality of source-separated materials and indicates the do’s and don’ts. This includes how to clean used packages and how to handle them to reduce space while keeping them easily sortable. The second life of the packaging material after recovery is made easily understandable.

The average citizen is very much motivated to participate in the intensive collection system. More than 90% are actively participating and return over 55 kg/resident/year of empty packaging in addition to 45 kg/resident/year of old paper, which together represent ± 20% of the total household waste. At present, the total cost per Belgian inhabitant is ± 270 BEF per year. Once the total territory is covered (in 2002), the cost will be around 400 BEF/inhabitant/year. This is higher than in countries with less stringent legal requirements (France, Spain, UK), but significantly lower than in Germany and Austria, i.e. where the legal requirements are more stringent.

What are the major problems in communication?

Each year, a systematic survey of public attitude by region is conducted and current results are compared with the results of the preceding year.

This survey assesses:

- Evolution of attitude in existing projects
- Motivation (positive and negative)
- Satisfaction
- Participation (national, by regions, by type of consumers)
- Knowledge of source sorting specifications (by region)

End of 1999 results:

Although at depressed prices, the material collected and sorted finds its way into the European recycling industry. In 1999, close to 500 million kilograms of empty packaging will be recycled, which meets the requirements of the challenging Belgian law.
6.2 Section 2

6.2.1 Communication Cases - FOST PLUS

The FOST Plus communications strategy with regard to the sorting system and selective collection of household packaging waste can be divided into two major components: national or global communication and local communication. This division is created by the specific structure of authority in Belgium, with regard to waste management (see section 1). Waste management is the responsibility of the three regions in Belgium, the operational execution of which is carried out by the relevant local authorities (municipalities and inter-communal organisations) who enjoy a great deal of autonomy with regard to determining the deployment of means. As a result, there are important differences in the choice of means between the various local entities.

In spite of the efforts by FOST Plus towards a uniform scenario for the sorting system and the selective collection of packaging waste, it is often required within its joint ventures to take specific local structures into consideration. These specific local structures naturally have an important impact on the communications strategy: in addition to national communications campaigns, FOST Plus is also obliged to carry out local campaigns orientated towards local specificity. Even considering the diversity of context, FOST Plus continues to strive towards uniformity of communications, with the local campaigns being largely similar in content.

In addition, FOST Plus’s progressive approach in recent years, whereby the collection scenario will only be implemented in the entire Belgian territory by the end of 2001, does not allow for national campaigns to be organised around actual sorting instructions, as these are currently not applicable throughout the entire country.

6.2.2 National communications

However, from the moment the selective collection was introduced in more than 50% of the Belgian territory, FOST Plus considered it necessary to organise communication campaigns on a national level. These were aimed to stimulate general awareness and acceptance of the principle of the sorting system and the selective collection of household packaging waste (A).

In addition to this, permanent, interactive information channels dealing with the sorting system, selective collection and the recycling of packaging waste were developed for the public (B).

(A) Ad hoc campaigns & activities

TV campaign: “No sorting could lead to serious consequences” (1996)

General awareness of sorting household packaging waste

Poster- & magazine-campaign: “It’s good that you sort” (1997)

A campaign that emphasised on the importance of a (correct)

sorting system for recycled materials and was meant as an
encouragement for those sorting

  
  Open Door Days for the public at various companies involved in selective collection, the sorting system and the recycling of household packaging waste.

Although the national campaigns undoubtedly contributed to the general positive attitude towards the sorting of packaging waste, it was decided in 1998 to discontinue this approach since the degree of collaboration from the population, once a program of selective collection was set up, seemed not to be a problem. It was decided to concentrate the communication efforts on the practical implementation of selective collection, in order to obtain an upgrading of the quality of the collected materials (the quantity being satisfactory shortly after the launch of a new program) and to gradually establish a correct and permanent sorting behaviour. As this strategy proved to be more effective on a local scale, the communication efforts since 1998 have been principally locally oriented.

The success of the Open Door Days in 1998 led to the decision to repeat this initiative every few years.

(B) Permanent information channels

“0800” telephone line (free) providing consumers with comprehensive information concerning packaging and packaging waste.

Web site with important sections for the public.

Participation “Living Tomorrow”: the integration of sorting facilities in the demonstration building “House of the Future” (general public).

Sorting module in the “Houtopia” educational centre (children 6 – 12 years).

These information channels are permanently promoted on a local level and form the logical link between national and local communications.

6.2.3 Local communications

At local level the communication campaigns tend to be more informative and motivational, with a view to optimising participation in the selective collection system for household packaging waste.

6.2.4 Cases

At the launch of every new project:

- door-to-door distribution of an introduction pack including information leaflet, sorting guide, collection schedule, free PMD bags
- production of glass bottle-bank stickers / truck panels
- guide for municipal personnel / local politicians
- dependent on local situation: support via local press / radio / television

At a later stage:

- Regular publication in door-to-door distributed newspapers, with collection results / information concerning recycling/explanations
- The provision of information for own municipal information folders
- Dependant on local situation: reminders (sorting instructions) via local television
- Annual collection schedule with repeated sorting instructions
- Distribution of training materials + video among primary and secondary schools
- Distribution of CD-Rom to all schools

1999-2000: activities for the improvement of the PMD: periodic intensified use of refusal stickers (= stickers with the correct sorting instructions, stuck on PMD bags with incorrect content, by garbage collectors) + information and training of relevant target groups, with adjusted tone of voice & target group orientated special accents: local uniform application of nationally conceived material.

A systematic efficiency evaluation of the communications activities does not take place. The communications strategy however, is evaluated every two years via the “Milieubarometer” (cf. section 1). In addition to this, the monthly evaluation of the quantitative and qualitative collection figures per inter-municipal authority enables an indirect evaluation of the communications strategy on the one hand, while on the other hand it can lead to the development or adjustment of local communications planning.
Examples of FOST Plus sorting Guidelines
Examples of FOST Plus sorting Guidelines
7 Denmark

7.1 Section 1

7.1.1 Country background


Annual amount of packaging waste:

Annual figures relate to total quantities of household waste, commercial waste and packaging waste (in metric tonnes)

<table>
<thead>
<tr>
<th>Year</th>
<th>1994</th>
<th>1995</th>
<th>1996</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household waste</td>
<td>558,000</td>
<td>628,000</td>
<td>777,000</td>
</tr>
<tr>
<td>Commercial waste</td>
<td>3,395,000</td>
<td>3,936,000</td>
<td>4,462,000</td>
</tr>
</tbody>
</table>

We have defined „commercial waste“ as a combination of waste from institutions, the trade, offices, industry incl. building and construction.

Packaging supply 760,916 (~)

The packaging supply in 1994 can be broken down as follows:

- Paper and cardboard: 52%
- Glass bottles and jars: 18%
- Plastics: 17%
- Wood: 8%
- Iron and metal: 5%
- Textiles: negligible

Slightly over 50% of the packaging waste is assumed to be transport packaging.

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfilling, recycling)

In 1996, the distribution on treatment alternatives concerning the total amount of waste generated was 60% recycling, 20% landfilling, 19% incineration and 1% special treatment.

General: As of 1st January 1997 landfilling of combustible waste has been banned.

Paper and cardboard:

There are recycling schemes in operation for mixed paper from households and at dedicated collection sites and for cardboard from supermarkets, retail chains and shops. Most of the transport packaging of paper and cardboard is recycled - the rest is incinerated with energy recovery as part of the municipal solid waste and the commercial waste.
Glass bottles and jars:

Glass bottles for beer and beverages are to a high degree recycled 30-35 times in a national deposit system. Cullet and worn down bottles from the breweries are recycled via remelting. Glass bottles for wine and spirits are to a high degree recycled for refilling abroad and to a certain extent in Denmark. Cullet and unmarketable bottles are remelted. All glass jars are recycled as cullet via remelting.

Only a small percentage of packaging-glass goes via the household waste to incineration and consequently to landfilling as part of the ashes.

The non-deposit bottles and all jars are collected through a number of mandatory and voluntary schemes. The municipalities are obliged to establish collection schemes for glass packaging from private households. This is done at local container sites and dedicated central recycling sites. Furthermore, a number of voluntary organisations (sports clubs, the scouts, etc.) collect and sell bottles to the glass recycling sector.

Plastic packaging:

Most of this goes to incineration with energy recovery, as part of the municipal and commercial waste.

Wood packaging:

Probably all of this goes to incineration with energy recovery, as part of the municipal and commercial waste.

7.1.2 Legal background

Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)


The general framework is implemented through a number of Departmental Orders (Bekendtgørelse), Guides (Vejledning) and Circulars (Cirkulaere).

F. Inst. glass packaging is governed by:

- Bekendtgørelse nr. 600 af 18-9-1987 om mærkning af genanvendelsesemballager (Labelling of packaging for recycling)
• Bekendtgørelse nr. 623 af 30-06-1994 af lov om afgift af visse detailsalgspakninger og visse poser af papir eller plast m.v. (Excise tax on certain retail packaging and certain bags of paper or plastic, etc.)

• Bekendtgørelse nr. 582 af 24-6-1996 om visse krav til emballager (Certain demand on packaging)

• Bekendtgørelse nr. 299 af 30-4-1997 om affald (on waste)

**Who is responsible for the return of waste packaging material?**

The municipalities are obliged to set up collection systems and/or to advise consumers, institutions, industry etc. on the proper recycling or disposal facilities to use.

Further, the government has initiated and concluded 13 voluntary agreements/ accords/ covenants with various industrial sectors on the fulfilment of certain recycling goals. These agreements make the sectors at least morally responsible for dedicated concerted action towards meeting the goals.

The relevant agreement is »Aftale om genanvendelse af transportemballage« (recycling of transport packaging) of 16-8-1994, between the Minister of the Environment and Energy, and the Confederation of Danish Industries, the Packaging Industry/the National Confederation of Paper and Board Converters, and the Danish Plastics Federation. The goal is to recycle 80% of all transport packaging by year 2000.

Two basic conditions are that the increase in recycling should be realised through expansion of the existing waste management systems and through a commitment of the sectors (federations) to work for the establishment of the necessary recycling capacity. By May 1998, there were not yet statistical data available to determine whether the goal is attainable.

**Who finances the system?**

The Danish recycling and disposal system for packaging materials is in general tax-driven. Taxes are levied on production and sale, collection and recycling/disposal.

**Are there any mandatory or political goals for the collection and recovery of packaging materials?**

The government has since 1986 issued a number of action plans regarding general recycling goals for waste.

• Action plan 1986 advocated increased recycling and reduced landfilling.

• Action plan 1990-92 set a goal of 50% recycling of all waste during the nineties.

• Action plan 1993-97 set the goal of 54% recycling of all waste before year 2000, 25% of the waste to be incinerated and max. 21% to be landfilled. By 1996 60% was recycled, 19% incinerated, 20% landfilled and 1% for specially treated.

• Currently action plan 1998-2004 (Affald 21) is under development. The new general goals proposed are 64% recycling, 24% incineration and 12% landfilling by 2004.

Denmark has chosen not to establish one separate packaging management system. Instead the focus is on how best to utilise the various recyclable materials from the various sectors, including the packaging waste.
The following specific recycling goals for 2001 are presented in the draft plan: Cardboard and paper packaging 55%, plastic packaging 15%, metal packaging 15% and glass packaging 65%.

7.1.3 **Rough description of kerbside collection programmes**

*Do you have any nation-wide systems of packaging collection and recovery in your country?*

No, with the exception of the beer and beverage bottle deposit system.

*What types of packaging materials are collected separately?*

- Cardboard (primarily at supermarkets, etc.)
- Beer and beverage bottles (through the deposit system)
- Wine and spirits bottles and glass jars
- Plastic films/foils from transport packaging
- Steel drums from industry

*What types of collection containers are used?*

Cardboard and plastic film is usually baled and placed in tub-type transport containers used by or leased from the waste management company.

The beer and beverage bottles with deposit are collected in plastic cassettes at supermarkets, stores, restaurants, etc.

Bottles and jars are collected in bottle banks of FGRP or sheet steel of various designs.

*Are collection sites and containers densely placed? Are they effectively spread all over the collection area?*

Yes, they are in general densely placed and in most cases spread all over the collection area.

*How is the packaging collection programme funded?*

The general consumer or household pays a general waste disposal fee either as part of the rent or as part of the property taxation. Larger residential compounds under common administration generally have contracts with municipal or private waste management companies for the collection and disposal of mixed and source-separated waste. Commerce and industry generally have contracts similar to residential compounds.

7.1.4 **Basic questions relating to communication matters**

*Are there any legal regulations governing the scope of authority of the communication and public relations sector?*

Any communication or public relations measures taken - campaigns or otherwise - have to stand within the general law of marketing and framework of the criminal code.
What public education measures are taken to communicate information on waste separation, packaging disposal, recycling etc. to the general public?

Different courses and training programs with focus on environmental issues have appeared in recent years, in the educational system. A number of universities offer subjects like Waste Technology and Waste Management. Furthermore, children in the lower secondary school have Nature Science in their curriculum. Nature Science encompasses learning about the environment and about waste separation and recycling.

Municipalities and local authorities launch, on a frequent basis, Green festivals, where the general public in a certain area can get information on waste separation, learn about the impact of waste on the environment, recycling, etc.

Also most municipalities initiate for groups of students to visit waste disposal companies, incineration plants or recycling companies.

Are there any nation-wide public communication programmes?

Denmark does not have any nation-wide public communication programmes.

All campaigns are organised at local level in the respective municipalities. This allows for more flexibility and consideration for regional differences in the existing collection schemes. The Danish Environmental Protection Agency (EPA), residing under the Ministry of Environment and Energy, and administering legislation on the environment, follows up on the municipalities’ experiences with packaging collection. The Danish EPA has also opened an Environment Information shop, Miljøbutikken, who supplies information on all kinds of environmental matters, to the municipalities as well as to the public.

What type of information channels and advertising media are usually used to communicate information?

In Denmark, the mass media is in general extremely active when it comes to environmental matters, especially through newspaper articles and television. Also many professional papers and technical periodicals on environment and waste management have surfaced in recent years. Much information is being distributed through homepages on the Internet.

The municipalities and public owned waste disposal companies distribute pamphlets and other information material on a regular basis, on the various waste collection systems, and for all types of waste. This communication channel is widely used in Denmark. Furthermore, many state-financed organisations and NGO groups spread information.

What are the main contents of communication?

The idea of entrusting the municipalities with the full responsibility to collect and handle all types of waste is widely supported in Denmark. Therefore this model of organisation has been upheld as the framework for Danish implementation of the packaging and packaging waste directive from EC. Denmark has in other words not opted to introduce a separate waste management system for packaging waste, thus no uniform nation-wide structure exists.

Likewise the task of informing the public has been decentralised, operating at local level with no national interference. Therefore it is difficult to give a collective picture of the main content of information. However, in general, the Danish EPA calls for public participation on waste separation. Basically, the public is advised on
how to separate and what to do with the different types of waste. Much information is also provided on how to minimise waste, avoid contaminated fractions, and so on. But again, the information on packaging waste is not differentiated from the information and communication strategies for all other types of waste, as for most municipalities.

**What are the major problems in communication?**

It is hard to say anything in general about the Danish packaging collection system, for the reasons mentioned above. Likewise, it is difficult to define the major problems in communication on this issue. Perhaps this could be seen as a problem when engaging in an international comparative analysis.
7.2 Section 2

7.2.1 Case Studies on Public Communication in Denmark

Denmark has chosen to primarily focus on waste management in relation to national initiatives for prevention. The reuse of packaging is a logical and efficient way of preventing waste generation.

Denmark has selected beverage packaging as a special area for initiatives, as this packaging type potentially represents a very significant amount of packaging waste due the large volumes.

In the national action plan for waste "Waste 21", which was launched in 1999, the government sets action on new initiatives for packaging:

7.2.1.1 Paper and cardboard

Collection from private households and industry and commerce will be extended and made more efficient, and after year 2000, kerbside collection of paper will be established. Local councils will ensure that regulation on separation of paper and cardboard in enterprises are complied with.

7.2.1.2 Cardboard packaging

Recycling of packaging will be increased. Citizens will be able to separate cardboard for recycling.

Separation and recycling schemes will be established for cardboard packaging from households. It will also be studied whether and how plastic drums can be collected and sold for recycling. The schemes may be established in conjunction with bulky waste schemes.

7.2.1.3 Collection of waste glass

Will be increased through better information to citizens. Information campaigns will be launched to increase collection of packaging glass and reduce incorrect separation. The possibility of reducing the rate of cullets of collected glass through better collection equipment will be evaluated.

Furthermore, the market for reuse of wine bottles and environmental impacts of bottle export will be evaluated.

The Danish return bottle system ensures a high reuse rate of packaging and thereby a considerable reduction of both waste generation and resource consumption.

Concerning the national information campaign on collection of packaging glass The Environmental Protection Agency is to start a project to evaluate the existing collection schemes, to develop new ones and to start an information campaign for the citizens.

“Green flag – Green School” is a nationwide campaign dealing with environmental themes, among them also waste and waste minimization. However, it does not deal with packaging as a separate topic.

In Denmark municipalities are responsible for the collection and handling of commercial, industrial and household waste. The collection and handling of waste is financed through municipal taxes and fees.

Household waste collection schemes may be operated either by the municipalities themselves or private waste contractors. The collection and handling of commercial and industrial waste is generally carried out by private contractors.

The idea of entrusting the municipalities with the full responsibility to collect and handle all types of waste is widely supported. Therefore, this model of organisation has been upheld as the framework for Danish implementation of the packaging and packaging waste directive.

Denmark has, in other words, not opted to introduce a separate waste management system for packaging waste.

However, for many years we have had separate collecting and recycling schemes for a number of materials, such as glass, paper and cardboard. The implementation of the targets of the directive has been based on these existing schemes along with the introduction of new ones.

This implies that through the Statutory Order on Waste the municipalities to a large extent carry the obligation to ensure that the necessary schemes are in place, even though it is a Member State obligation to assure that the targets of the directive are met.

At the same time, this administrative framework has made it irrelevant for Denmark to directly transpose the specific targets into the Statutory Order on waste.

The municipalities are obliged to set up separate collection and recycling schemes for glass from households. Through these schemes the majority of wine and liquor bottles are collected together with other glass packaging.

Apart from glass, Denmark has chosen to focus almost entirely on transport packaging in order to reach the 15% recycling target of the directive.

In 1994 the Danish Minister of Environment entered into an agreement on recycling of transport packaging with:

- the Confederation of Danish industries
- the Danish Plastics Federation
- the National Confederation of Paper and Board Converters
It is the objective of the agreement that 80% of the volume of transport packaging should be collected and recycled.

The agreement is based on some fundamental prerequisites:

- Material recycling of transport packaging shall be increased.
- The increase in recycling shall be based on existing waste management systems.
- The Confederation of Danish industries assumes the obligation to take the necessary initiatives to ensure sufficient recycling capacity.

In other words, there has been broad agreement in Denmark that it is most appropriate to focus almost entirely on transport packaging in order to reach the 15% recycling target of the directive.

The municipalities are obliged to set up separate collection and recycling schemes for plastic transport packaging. Collection and recycling shall start no later than July 1st 1998.

Today, most of the plastics that are recycled include soft plastic films and plastic crates, especially for beer and soft drinks bottles, and other reusable transport crates.

The Danish EPA has recently issued a guideline on collection and recycling schemes for plastic transport packaging. Different surveys of the amounts of transport packaging have indicated that the largest unexploited potential is soft plastic films made of polyethylene (LDPE). Therefore, the Danish EPA recommends that municipalities – at least to start with – concentrate on localising enterprises with certain amounts of this type of waste.

The municipalities are similarly obliged to set up schemes for collection and recycling of metal transport packaging (steel drums).

Municipalities are also obliged to set up separate schemes for collection and recycling of paper and cardboard from retailers and public institutions. This includes packaging waste, primarily transport packaging waste. From July 1st this year these schemes have been extended to include all enterprises (commercial as well as industrial).

On 1st January 1997, the Danish Government introduced a ban on landfilling of combustible waste. The municipalities are hereafter obliged to set up separate schemes for collection and incineration of all waste suitable for incineration, including packaging waste.

The administrative instruments set up to ensure the waste hierarchy are supplemented by a number of economical instruments, among others a waste tax/charge. A waste tax is levied for all waste being incinerated and landfilled.

The aim of the waste tax is to reduce the total quantity of waste produced, to increase the quantity of waste being reused and recycled, and to reduce the quantity of waste being landfilled and incinerated. Therefore, there is no charge on waste that is recycled.
8 Finland

8.1 Section 1

8.1.1 Country background

Inhabitants: 5.1 million

Area: 330 000 km²

Population density: 15.4 inhabitants / km²

Annual amount of packaging waste:

Municipal solid waste: 2.1 million tonnes

Packaging waste: 0.4 million tonnes

<table>
<thead>
<tr>
<th>Packaging waste per material</th>
<th>tonnes 1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>glass</td>
<td>52,000</td>
</tr>
<tr>
<td>paper, cardboard, corrugated board</td>
<td>243,500</td>
</tr>
<tr>
<td>plastics</td>
<td>90,000</td>
</tr>
<tr>
<td>metals</td>
<td>31,000</td>
</tr>
</tbody>
</table>

Note: We have well working reuse systems for glass, plastic and metal packaging (bottles, crates, boxes, caskets, etc.) with commercial refilling systems. This is why the amounts of packaging waste are not as high as they might be without our systems.

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfilling, recycling)

When the Council of State Decision on packaging and packaging waste came into force in December 1997, the packaging sector was setting up and running the necessary producer organisations, eight in all, and the umbrella Environment Register of Packaging PYR Ltd. was established. The producer organisations are handling the local collection and transportation of the material either by companies of their own or together with local entrepreneurs, depending on the material collected. Paper, cardboard and corrugated board are recycled, glass is recycled, some plastics are incinerated, and the rest is landfilled.

8.1.2 Legal background

Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)
The Council of State Decision came into force in November 1997. The Council of State Decision is the implementation of the EU packaging and Packaging Waste Directive 94/62/EC into Finnish legislation. The packers, fillers and importers are responsible for the recovery of packaging waste, local authorities are responsible for the part coming from consumers to normal household waste. There are material-based fees which the packers, fillers and importers have to pay according to the amounts of packaging material they put on the Finnish market.

Mandatory targets for 2001

- Prevention: 6 % compared to the amounts of packed products used in 1995.
- Reuse, recycling, recovery: 82 %.
- All materials: 61 % recovery, 42 % recycling.
- Paper, cardboard, corrugated board: 75 % recovery, 53 % recycling.
- Plastics: 45 % recovery, min. 15 % recycling.
- Glass: 48 % recycling.
- Metals: 25 % recycling.

8.1.3 Rough description of kerbside collection programmes

Do you have any nation-wide systems of packaging collection and recovery in your country?

Waste in general is collected from households and households separately collect paper. There are several local systems, where households are required to separate their waste: bio-waste for organic recovery, combustibles for energy, in some areas also some recyclables, the rest for landfilling.

There is a long tradition of paper collection in Finland; over 60 % of newspapers are collected.

For the time being, the packaging waste systems are more concentrating on trade, industry and institutional packaging waste. Collection from consumers has been started in the largest cities.

corrugated board: from trade and industry (over 80 % collected), some bring system collection sites for consumers

deposit system: over 90 % returned

glass: kerbside collection and deposit system (60 % collected), deposit system is working for the refillables

metals: only starting from consumers

plastics: only starting, several trials during the last 10 years.
8.1.4 Basic questions relating to communication matters

The Council of State Decision is stating that consumers have to be informed on the acts taken. The information has to be given by all the parties, both authorities and industries.

There have been several information campaigns in newspapers, TV and a range of different printed material. PYR has a web site.

There is no nation-wide public communication programme, but the local authorities are responsible for local information.

Most of the problems are related to the financing of communication programmes.

(Source: Annukka Leppänen-Turkula, Association of Packaging Technology and Research, Mannerheimintie 156, FIN-00270 Helsinki)
9 France

9.1 Section 1

9.1.1 Country Background

France measures about 1 000 kilometres from north to south and from east to west for its continental part. The total area is 549 000 km² and the population is 58,000,000 inhabitants. The climate is moderate except in some mountains areas; except for the mediterranean part, it is an « atlantic » climate. The 45th parallel cuts France almost through the middle.

Industries are principally concentrated:

- in the surroundings of Paris : various mechanical and electronical industries
- in the North and North East : the heavy steel industry
- in the lower valley of the Seine : petrochemical and chemical industries
- in the triangle Lyon-Grenoble-Saint Etienne : petrochemical, chemical and electricity industries
- also in the surroundings of Marseille (steel and oil), Toulouse (aeronautics) and Bordeaux.

The agricultural industry has a special development in Brittany and in the Centre of France, but it exists almost in every part with some nuances.

9.1.2 Waste Generation And Management

Every statistics in this field must be read carefully because the figures depend on the classification and also because this classification is continuously in evolution. In France, the classification is mainly stated according to the authority in charge of management. The table below gives some examples.

<table>
<thead>
<tr>
<th>Responsible of management</th>
<th>Waste category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local authorities</td>
<td>Urban waste including waste water treatment, sludge market and street cleansing</td>
</tr>
<tr>
<td>Industrial companies, workshops, commercial activities</td>
<td>Industrial waste</td>
</tr>
<tr>
<td>Hospitals, laboratories, veterinary activities</td>
<td>Health care waste</td>
</tr>
<tr>
<td>Agriculture and food industries</td>
<td>Agricultural waste</td>
</tr>
<tr>
<td></td>
<td>Hazardous waste of domestic activities</td>
</tr>
</tbody>
</table>

The amount of sludge is in relation with water content: 1 kg of dry material corresponds to 1 m³ at the exit of a settle tank, 2 kg after an efficient drying system and only 0.3 kg after incineration! The problem of
agricultural reuse is now very difficult due to the new requirements for heavy metals, organo-chlorinated and other micro pollutants. Nevertheless, they are not considered as hazardous waste.

Concerning urban waste, the amount is about:

- Domestic waste and similar: 20.5 million tonnes
- Bulky waste: 3 million tonnes
- Waste of parks and garden: 0.4 – 0.6 million tonnes
- Domestic waste water sludge: 3 million tonnes
- Vehicles: 2 million vehicles

The inventory of industrial waste presents other difficulties. For example, if the incineration of one tonne of waste results in 0.2 tons of slag and ashes, should the inventory mention 1 tonne, 0.2 tonnes or 1.2 tonnes?

Inert waste: Principally demolition waste and waste of mining industry are about 100 million tonnes a year.

Common waste (in French « déchets banals ») is waste of industries similar to domestic waste. The total amount is about 45 million tonnes a year. Packaging is a large part of the annual amount. The recycling and recovery of packaging are managed through a national organisation (Eco-Emballages). In the French systems, local authorities are involved.

The ratio of recovery is currently the following one:

<table>
<thead>
<tr>
<th>Material</th>
<th>1992</th>
<th>Forecast 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass</td>
<td>34%</td>
<td>63-70%</td>
</tr>
<tr>
<td>Paper, cardboard (including energy recovery)</td>
<td>59%</td>
<td>75%</td>
</tr>
<tr>
<td>Plastics (including energy recovery)</td>
<td>32%</td>
<td>65%</td>
</tr>
<tr>
<td>Steel</td>
<td>28%</td>
<td>70%</td>
</tr>
<tr>
<td>Aluminium</td>
<td>5%</td>
<td>65%</td>
</tr>
</tbody>
</table>

Of course, energy recovery is only allowed in plants which are equipped in conformity with the most recent requirements.

Agricultural waste: The amount of this category of waste is very hard to estimate. Some materials must be considered as waste depending on their destination: local reuse or treatment in other places.

Different categories can be considered:

- Waste due to the exploitation: manure, animal dejection, wood residues.
- Waste coming from production: leaves of vegetables, fruits or others impossible to sell.
- Waste from food industries and slaughter-houses including fishing and mussel industries.
- Waste from industries such as paper mills or tanneries.
Quantities are often considerable.

For example, for waste coming from breeding (million tonnes per year):

- cattle : 200 (150 of manure)
- pigs : 40/50 (mainly dejections)
- sheep and goats : 15
- poultry : 6

For other industries:

- 3.5 million m³/year of vine residues
- 0.2 million of canned meat
- 0.8 million tonnes of canned vegetables

etc.

9.1.2.1 Municipal Solid Waste, General

In 1995, the total amount of collected domestic waste was 24.4 million tonnes, including 1.6 million tonnes via separate collection, quantities are now more than 2 million tonnes.

The share-out of the various treatments is the following:

<table>
<thead>
<tr>
<th>Treatment</th>
<th>% of Municipal Waste</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composting</td>
<td>7%</td>
</tr>
<tr>
<td>Recycling</td>
<td>6%</td>
</tr>
<tr>
<td>Incineration without heat recovery</td>
<td>10%</td>
</tr>
<tr>
<td>Incineration with heat recovery (steam and electricity)</td>
<td>30%</td>
</tr>
<tr>
<td>Landfilling</td>
<td>47%</td>
</tr>
</tbody>
</table>

9.1.2.2 Packaging waste:

40% of the humid weight and 47% of the dry weight of domestic waste are coming out of packaging. The three main components (83% of the total) are glass, plastics and cardboard.

The share-out is the following:

<table>
<thead>
<tr>
<th>Waste</th>
<th>% of Municipal Waste</th>
<th>% of packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Humid weight</td>
<td>dry weight</td>
</tr>
<tr>
<td>Paper</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Cardboard</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Composites</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Plastics</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>
9.1.3 What Is A Curbside Collection Programme

The main problem for the elaboration of a new collection programme is public acceptance. According to the results of an inquiry published at the end of 1998, three aspects are essential for this acceptance:

1. **Material** – The storage capacity is a very important item. The containers must be large enough and the surrounding space must be sufficient. The case of high and dense dwelling is really difficult for a lot of reasons, the lack of space being perhaps the main one.

2. **Demographic factors** – The most careful part of the population are the households of 35 – 40-year-old people with only older children. Young people and couples are not so available, especially if they have babies. On the other end of the scale are very old people who, in spite of souvenirs from the last war, have often difficulties to adopt such habits, even more when they are disabled.

3. **Socio-cultural factors** – Generally speaking, well-off and educated people are more often ready to make some efforts for a good collection. The difference is slightly decreasing and the middle class is becoming aware of the importance to accept the constraints of sorting.

9.1.4 Follow The Operation

The follow-up of the operation is important. If the people have the feeling that separate collection renders poor results, the efforts decrease rapidly and the start of a second operation will be much more difficult.

Among the possibilities, the most accepted sorting processes are:

- dry and clean packaging
- "mono-material" packaging, especially glass, metals, cardboard and plastics, though it is often an illusion because most of them are composite materials even if they seem homogeneous.

The materials are naturally mixed, which generates difficulties (for example labels, taps and of course the remaining content).

9.1.5 Importance Of Public Relations

It is important that the contact with the citizens is as close as possible.

The first essential thing to do is to define a programme that is as clear as possible, including the final destination of the collected materials. It must be remembered that the sorting is the first step of a whole process, even though it is not the most difficult technically. Bad sorting cannot be made up by the following treatment process.
The second thing to keep in mind is that putting in order a large operation must be progressive. The economic aspect must be well known, the question is not to earn money but to spend less. The commitment of the local authorities is very important.

The third thing is the instructions given to the operators, especially to the people directly responsible for the collection. The citizens must get the impression that separate collection is cleaner than ordinary collection. The containers and their surroundings must be kept in perfect condition, the maintenance of the containers is highly important.

In big cities, a frequent difficulty is the exiguity of the premises dedicated to the containers. Most of them must be restored. In the dwellings, the rubbish chute is a special and difficult problem. Some of them had to be shut for sanitary reasons...this is very positive for a selective collection! Special agreements have to be concluded with small industries and workshops that are allowed to give their refuse to the city through the common collection.

After the beginning of the operation, it is useful to regularly check the maintenance of the materials as well as the acceptance by people and also the efficiency of the collection, considering the quality of the material recovered. Also, it is not forbidden to check that the cost remains bearable!

9.1.6 Agenda For Installing A Separate Collection

Briefly, the essential criteria of such an agenda are:

- Approval of a general but sufficiently accurate concept; 2 to 3 half years are a good period.
- A presentation and awareness campaign requires about 6 months, taking into account the part of the population not involved in the first phase.
- For the "so-called" consolidation period, during which the citizens get used to this new process, a minimum of one year is required.

So, between the first decision and a properly functioning separate collection, a period of three years is necessary.

9.1.7 Final Remarks

Today, the recycling industry deals with 22 million tonnes of waste coming principally from industries and workshops (about 50% of industrial waste are thus recycled), providing the industry with 40% of the non-energetic raw materials. The recycling industry employs 26,000 people. The industries are very interested because recycling is quite economically interesting, and this in spite of the variations of raw material prices.

Nevertheless, a big danger remains because of unfair competition at the European level. Some countries subsidize the export of so-called "secondary raw materials", essentially for electoral reasons. At the national level, there is a similar phenomenon; cities and local authorities partly grant subsidies for the recycling of municipal solid waste that is of poorer quality than some industrial or workshop wastes.

The result is a paradox: high-quality waste is landfilled as the lack of subsidies makes recycling too expensive.
The recent increase in landfill taxes in France leads to a taxation of the residues of recycling processes, then to an increase in the price of operation. The large-scale recycling of municipal waste, generally a mixture of many elements, results in secondary raw materials of a lower quality. Too much recycling kills recycling! In any case, if the final cost is too high, uncontrolled landfills will have a promising future.

Several solutions have been considered, but the most important one still is to adapt the efficiency of recycling to the economic and financial reality of the secondary raw material market.

Bibliography

"Comment améliorer la participation des habitants aux collectes sélectives des déchets" (Rapport du groupe AGHTM, 83 avenue Foch 75761 Paris Cedex 16) - May 1998

*Conditions pour le développement du recyclage (FEDEREC, 75017 Paris) - January 1999

(Author : Jean-Bernard Leroy)
The partner for your performance, SARP Industries publication

Article from AGHTM's TSM on new technology in the city of Rouen
10 Germany

10.1 Section 1

10.1.1 Country background


Annual amount of packaging waste: refer to “Mengenstromnachweis 1999” (German waste flow documentation 1999)

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfilling, recycling)

Recycling of recoverable waste, incineration and landfilling of non-recoverable residues.

For more details refer to the German waste flow documentation “Mengenstromnachweis 1999” and the amended German packaging ordinance (Federal Law Gazette No. 56/1998).


10.1.2 Legal background

Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)

The packaging ordinance constitutes the legal framework for the collection and recovery/recycling of packaging waste materials in Germany. Producers and wholesalers/retailers have the responsibility to take back and recycle all packaging materials they put into circulation. By becoming partners of the Dual System, these companies pass on their legal duties to Duales System Deutschland AG.

For further details refer to the brochure “Komm` zum Punkt” and to the Federal Law Gazette No. 56/1998.

The cost of a nation-wide collection, sorting and recovery/recycling system for waste packaging materials is covered by the licence fees charged by Duales System Deutschland AG. The licensees (producers or wholesalers/retailers) have to pay a charge per packaging unit according to a fixed scheme of graduated tariffs and label their packaging with the “green dot” to prove financing.

1. For further details refer to the brochure “Komm` zum Punkt”.

2. Details on national targets for the collection and recovery/recycling of waste packaging materials are provided in the 1997 financial report of Duales System Deutschland (“Geschäftsbericht 1999”).
3. An international survey of the existing packaging collection systems and a detailed description of the German Dual System will be provided in the brochure “The Green Dot in Europe”.

10.1.3 Rough description of kerbside collection programmes

**Do you have any nation-wide systems of packaging collection and recovery in your country?**

A comprehensive nation-wide system for packaging collection and recovery has been in operation since 31 December 1992.

**What types of packaging materials are collected separately?**

- Glass (separated into clear, brown and green glass)
- Paper, paperboard, cardboard
- Lightweight packaging (composites, plastic sheets and cups, plastic bottles, polystyrene, mixed plastics, tinplate, aluminium)

**What types of collection containers are used?**

There are:

- yellow bins, bags and containers for lightweight packaging;
- blue bins and containers for paper, paperboard and cardboard;
- colour-marked containers for glass.

Apart from the above mentioned containers, there is also a variety of system alternatives tailored to the local necessities of the collection system (e.g. recycling centres, containers with deviating colour codes, collection of paper in bundles).

**Are collection sites and containers densely placed? Are they effectively spread all over the collection area?**

Yes. A nationwide collection system has been in operation since 31 December 1992.

**How is the packaging collection programme funded?**

Payments effected by the Dual System to public-sector and private-sector disposal companies are regulated in performance agreements based on the respective collection system and its particularities. As a rule, only 25 % of the costs of paper collection are covered by the Dual System (corresponds to the percentage of packaging in paper collection). All other costs are covered through public waste collection fees.

10.1.4 Basic questions relating to communication matters

**Are there any legal regulations governing the scope of authority of the communication and public relations sector?**
Although public communication activities are not regulated by law, a definition of the responsibilities relating to communication activities is provided in the service agreements between the Dual System and its public-sector or private-sector disposal contractors. The disposal company is, as a rule, obliged to carry out communication activities at local level (in particular public education programmes which inform the residents about their local collection system).

Are there any nation-wide public communication programmes?

Duales System Deutschland AG carries out public communication programmes at national level and also supports communication efforts undertaken by partners at local level. Such “interdisciplinary information activities” are updated every year.

What type of information channels and advertising media are usually used to communicate information?

The tables that are displayed in section 2 illustrate the key issues of programmes and measures between 1996 and 1998. Most of the listed measures show a structural continuity (e.g. launch of consumer information campaigns as local “action days”); the content and the formal framework are continuously developed with focus on creativity, individuality, and efficiency and adjusted to the current needs.

The bold-typed projects are available in the form of case studies. Separate additional documentation is available for most of the projects. In cases where no detailed figures on the impact and outcome of a project were gathered, the following success indicators should be taken into consideration:

- The “German consumer barometer” (Deutsches Kundenbarometer - EMNID) – an independent study
- Public opinion polls conducted by Institut für Demoskopie, Allensbach (long-term study carried out on behalf of the Dual System)

What are the main contents of communication? (no answer)

What are the major problems in communication?

The major problems in communication are political, administrative and structural obstacles that are beyond the control of Duales System Deutschland AG. They partly tend to conjure up incalculable risks and therefore increasingly complicate communication and weaken its status. Besides, they are a constant threat to persuasion and credibility and hinder the improvement of the system’s image.

Despite this unfavourable background, the image analyses with journalists, media and the public carried out since 1991 have painted a very positive picture. A sound overview of the waste management and political background is provided in the brochure “Chronik der Kreislaufwirtschaft” (chronicle of a closed-loop economy).
10.2 Section 2

10.2.1 Survey of selected key issues of programmes and measures 1996 - 1998

<table>
<thead>
<tr>
<th>Consumer Recycling Day</th>
<th>Disposal company</th>
<th>Licensees/retailers</th>
<th>Politics/multipliers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action Days</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campaign</td>
<td></td>
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<tr>
<td>Touring</td>
<td></td>
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<tr>
<td>Exhibition</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Co-operation of schools</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

“Zirkus Punkti”

Programmes for children, young people and teachers

Advertising

TV commercial “Zug um Zug”

Duales System Deutschland AG launched between 1996 and 1998 a number of communication campaigns to improve collection and sorting results and increase public acceptance of separate packaging collection and packaging recycling such as:

- Information campaign on packaging collection
- Campaigns to improve the quality of the collected material
- Information campaigns to improve the use of containers to capacity
- Campaign on (packaging) source reduction
- Information campaigns at schools

Key issues not typed in bold letters are irrelevant to the requirements set out in the questionnaire.

All programmes and measures are aimed at target groups: the communication policy of Duales System Deutschland AG focuses on the information habits and interests of the various target groups and develops a specific language for each in order to successfully translate the contents that are relevant for the individual enterprise.

As Duales System Deutschland AG aims to spread its communication activities at national level (local campaigns are left to the disposal partners), the presented case studies do not contain any topographical, economic or demographic data. As a result, most of the representative results of analyses and surveys have been gathered at national level.

All quoted publications are available from Duales System Deutschland AG (see reference literature and contacts).
Information material on campaign days
11 Italy

11.1 Section 1

11.1.1 Country background

Inhabitants: 57.5 million

Annual amount of packaging waste: 11.1 million tonnes

Market amount of packaging waste

<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>Glass</td>
<td>2,249,000</td>
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<tr>
<td>Plastics</td>
<td>1,850,000</td>
</tr>
<tr>
<td>Paper</td>
<td>4,105,000</td>
</tr>
<tr>
<td>Aluminium</td>
<td>59,000</td>
</tr>
<tr>
<td>Steel</td>
<td>467,000</td>
</tr>
<tr>
<td>Wood</td>
<td>2,404,000</td>
</tr>
<tr>
<td>Total</td>
<td>11,134,000</td>
</tr>
</tbody>
</table>

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfilling, recycling)

The law in force requires the separate collection of all waste packaging materials from households, commercial and industrial sources. Separately collected packaging materials are banned from the landfill. All material fractions are mechanically recycled. Aluminium, paper and plastics are in part mechanically recycled and in part subjected to thermal treatment (waste-to-energy). Only packaging materials contained in the residual waste stream are landfilled.

11.1.2 Legal background

Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)

The Italian regulations on waste have been radically changed by the coming into force of the Legislative Decree 22/97 (the “Ronchi Decree”), which incorporates three European Directives (91/156/EEC on waste, 91/689/EEC on hazardous waste, and 94/62/EC on packaging waste), and by the subsequent Legislative Decree 389 of November 8, 1997, which made several modifications and additions to the Decree.
11.1.3 Rough description of kerbside collection programmes

Do you have any nation-wide systems of packaging collection and recovery in your country?

The principal changes introduced by the new regulations include those relating to the packaging waste sector (Section II of Legal Decree 22/97). In particular, this relates to the setting up of CONAI and of -The National Packaging Consortium - consortia for the recovery and recycling of these materials.

CONAI has been set up to ensure that the overall objectives of recovery and recycling of packaging materials indicated in the Ronchi Decree are achieved, and to guarantee the necessary link with separate collection of packaging materials undertaken by the public administration.

What types of packaging materials are collected separately?

The Packaging Decree requires the separate collection of all types of packaging materials. The nationwide collection scheme covers:

- Paper (part of the collection scheme for newspapers and magazines)
- Glass
- Steel
- Aluminium
- Wood
- Plastic

What types of collection containers are used?

The following types of containers are mostly in use:

- Blue or green containers (for glass, steel and aluminium)
- Yellow containers (for plastics)
- White containers (for paper, cardboard, corrugated board)

Are collection sites and containers densely placed? Are they effectively spread all over the collection area?

The services cover almost all the territory with different concentration and levels of data collection.

How is the packaging collection programme funded?

CONAI draws up a program agreement with ANCI (National Association of Italian District Councils), establishing the amount of the costs of separate collection to be paid to the district councils and the methods of collection, based on the requirements deriving from recycling and recovery activities. If district councils have no intention of setting up a separate collection service, CONAI can organize this activity on public land.
11.1.4 Basic questions relating to communication matters

Are there any legal regulations governing the scope of authority of the communication and public relations sector? If yes, please specify. If no, what public education measures are taken to communicate information on waste separation, packaging disposal, recycling, etc. to the general public?

The Ronchi Decree requires that the community should be informed of all matters relating to the proper handling of packaging waste. It also requires the existing collection and recovery systems to provide adequate information about the proper separation of packaging materials and the available pathways of recovery. It also establishes shared responsibility among companies (packaging manufacturers, importers, fillers and distributors).

CONAI is actually intensively engaged in public education and communication activities, as are the Environment Ministry and the six consortia for the recovery and recycling of packaging materials. In the beginning, focus was mainly on informing the involved companies of their new duties; CONAI has also launched a large-scale campaign to provide information to the general public and local authorities for initiating and developing collection systems.

Are there any nationwide public communication programmes?

Communication campaigns launched by the Environment Ministry are always organised on a national basis. The “umbrella campaigns” that are launched by CONAI are to provide general information about the importance of a separate collection of packaging materials.

More specific campaigns are organised at local level by the communities and waste associations sustained by advertising campaigns on the part of the six consortia for packaging material recovery and recycling to support collection activities in all provinces.

What type of information channels and advertising media are usually used to communicate information?

The most popular mass media for spreading public education campaigns are newsprint, radio broadcasts, posters, but also other material as brochures and information folders and educational materials for schools. Due to regional differences in the collection systems, detailed information about how to properly separate waste packaging materials is mainly spread through trade journals and official gazettes issued by municipalities and local waste associations, also with Information folder.

What are the main contents of communication?

Now that all legal targets of the Packaging Decree have been met, the main message of CONAI’s communication to the public is how separate collection of packaging really works.

After having already reached a high level of public acceptance, the goal is now to achieve trust in recycling activities.

What are the major problems in communication?

The results of public surveys among consumers reveal that the majority of families are satisfied with the information they get on separate collection, but they are not satisfied with the information they get on
recycling activities. They do not know exactly what happens after collection and would like more transparency with regard to recycling efforts.

Tasks to be accomplished in the future:

Future communication strategies aim not only to improve collection, build up trust in the recovery and recycling of all materials, but also show that, even now, the most commonly used objects are made by using recycled materials.
11.2 Section 2

11.2.1 Examples Of National Communication Campaigns On Waste Packaging Collection In Italy

Law Decree 22/97 is the reference regulation for waste management in Italy. The Decree attaches great importance to recovery and recycling of packaging. To that end it was decided, among other things, to establish both a consortium for each typology of packaging material and CONAI (National Packaging Consortium).

Both national consortia and CONAI count among their tasks that of creating communication companies in order to enhance packaging recovery and recycling activities. Many of the activities set in motion are carried out in co-operation with Municipalities or with the companies managing waste collection, recovery and disposal services.

Particularly interesting is the communication campaign realised by CO.RE.PLA. (National Consortium for Plastic Packaging Collection, Recovery and Recycling).

The campaign revolves on the headline “posa plastica” (“plastic pose”) and it shows separate collection of plastic packaging as a gym where one can tone one’s body as well as the mind. A concept which encapsulates quite well the nature of collection: a healthy exercise which, practised every day, bears visible fruit and must be proudly shown as an example for the whole community to follow.

The campaign includes: the publication of appropriate messages on national press; the creation of a communication kit for Municipalities; the realisation of mobile information points for informative material distribution; 70 X 100 cm. advertising posters to be put up in public spaces; the realisation of educational material for schools.

The communication kit specifically includes:

- information brochures on correct plastic packaging collecting systems to be sent to both citizens and traders;
- house stick-on memos with the description of packaging to be collected;
- stickers for collection street containers.

CO.RE.PLA. information and images of the “plastic pose” campaign can be obtained on the web at www.corepla.it.

Further material on the above mentioned campaign will be forwarded by mail.

Another very important national campaign is the one organised by COMIECO (National Consortium for the Recovery and Recycling of Cellulose Packaging).

The aim of this initiative is to supply Municipalities (either single or combined into a consortium) meeting all the necessary requirements - and once they have signed the convention for collecting and transferring to COMIECO their cellulose waste - with a communication “package” addressed to the citizens of the area they serve.
The package studied by COMIECO is rather flexible and modular, offering different solutions according to the typology of the public it is addressed to. It is divided into four different kits which each municipality, or group of municipalities, will be able to use in the way most befitting local reality.

Communication tools are addressed mainly to families, but also to shops, craftsmen and small businesses.

COMIECO has thought of specific instruments also for the wide press and association world, which are often the mainspring behind citizens’ ecological conscience.

And, lastly, the school, which represents a great opportunity to teach correct waste management and to mould tomorrow’s citizens.

The family kit includes posters and bills to be put up in appropriate spaces, stickers, leaflets and a letter giving detailed instructions on separate collection.

The shop and business kit contains a window-bill, a sticker and a leaflet informing on collection service operational procedures.

For the schools, COMIECO prepared a complete set of material for primary school pupils and teachers of the municipalities having signed the convention. This kit includes a videotape that tells the story of paper and cardboard, and it illustrates the advantages of recovery and recycling. In addition, each class will receive a small case containing a Teacher’s Handbook and 25 diaries with a bookmark.

FEDERAMBIENTE and COMIECO have signed an agreement on communication that is attached below.
11.2.2 Agreement On Communication Federambiente – Comieco

The task of environmental communication is to satisfy the need of information, to guarantee transparency and visibility, to be a social instrument of integration and active participation.

It is therefore important to make awareness grow, in order to maintain consciousness and environmental demand high; it is advisable to divulge pros and cons of each technical and managerial solution; it is necessary to obtain citizens’ co-operation so that plants can find a location, services be used at their best and information procedures be widespread and correct.

One has to set in motion a real participation to environmental sustainability, and to initiatives of separate collection, energy conservation, and rational use of resources; to accustom citizens to communicate with service suppliers, both facilities and operators; to teach young people to value environment, to learn about the various problems, to use natural resources correctly; to favour the knowledge of plants and technologies in order to erase unjustified fears and to judge the various processes with full knowledge; to shift from the concept - mostly liturgical - of environmental education to the culture of welfare, of life quality, of friendly cities, of efficient and transparent services, of integrated systems, of industrial policy and of economy.

These basic concepts are, in brief, represented in Law Decree 22/97, both in its first articles (art 2 aims paragraph 1 and art 3 prevention) which point out how waste management is a public interest activity and how one should set in motion a greater consumers’ awareness also through the promotion of specific agreements, and in the Packaging information Criteria (art 36), as well as in ANCI-CONAI agreements whereby parties are committed to an intensive and effective communication action.

On these bases, Comieco and Federambiente acknowledge the importance of communication as a significant lever towards the achievement of their aims and believe that this agreement provides a great opportunity to develop the subject of communication in general, besides specifically offering a significant chance to encourage a growing mutual co-operation.

In due respect of the interested parties, these shared principles can in fact seize some practical opportunities in order to develop a growing environmental awareness and education by using some tangible analysis and co-operation tools.

In particular, with this agreement we believe we can open a period of exchange, use both the experience and professionalism of the parties, better learn about territorial communication needs, analyse different communication systems, and monitor results and improvement criteria in time.

We believe that the present programme agreement signed between Comieco and Federambiente to obtain a better communication can, in its initial phase, be set out in the following issues:

- Definition of communication procedures and instruments, in close co-operation with the Communication Council (exchange of ideas and experiences)
- Analysis of territorial activities (geographical differences and different local needs); comparison and integration of Comieco and area Companies communication programmes (and commitment of the people in charge of communication), presentation of informative material, gadgets and collection rewards (e.g. schools)
• Monitoring and control of active communication initiatives (joint working group for three-monthly analysis)

• Defining and bringing into action formative and training courses for company staff and involving teachers (e.g. arrangements with Local education Authorities)

• Realisation of common projects (regional and national) such as visits to selection plants and paper-mills, seminars on recycling, studies and researches

• Co-operation (and support to technicians) for recycling certification, waste paper valorisation, control of separate collection materials, mass balances, and area or sector environmental reports.

• Co-operation, information exchange and presentation, Web sites/Internet exchange and availability of experts for communication activities, environmental education, answering queries, chat-lines, etc.

• Comieco involvement and participation in Federambiente communication initiatives, such as Bica, Galli Award, satellite TV, etc.

The present agreement, now at an experimental stage, will be updated and improved in time on the basis of experiences and results obtained.

FEDERAMBIENTE

COMIECO
11.2.3 Other Information On Environmental Communication Initiatives Of Federambiente

11.2.3.1 Open Plants

Come and see what “one doesn’t usually see”

One doesn’t always realise how many “public services” are used everywhere, every day.

At home, in the office, at school and everywhere in town, there is an activity that is hardly visible (or tends to become visible when it does not function properly), which enables citizens to open a tap to get water, to switch on the light, not to drown in their waste, to have gas, heating and a series of other “comforts”, which have become essential in our everyday life.

This is the very aim of the campaign “OPEN PLANTS”, now in its second year, trying to make a small part of the work carried out every day by over 1200 companies and 210 thousand employees “visible” for a few days.

Last year, about one million visitors were welcomed in the plants of 160 companies in over 1,000 municipalities.

This year - thanks to a wider publicity among schools and to the support of the Ministries of Education, Environment, and Trade and Industry – these figures are bound to increase.

From 5th - 7th May, community service plants will be opened and explained to the public all over Italy.

It will be possible to see and learn about the operation of disposal plants, dams, waterworks, power stations, landfills, gasworks, incineration plants and all other large and small facilities that are in operation day and night to let citizens lead a “normal” life.

And it’s just the normality with which they carry out their work that represents the strength of the member companies of “Confservizi Cispel”.

Companies that are able to enter citizens’ homes with professionalism all over Italy, supplying ever improving services, technically advanced plants, safety and the widest usability of the resources they manage, taking account of the territory, environment and the needs of the municipalities where they operate.

Our invitation to all citizens to go and visit these plants is, therefore, an invitation to become aware of what happens in the public service world every day.

A walk through an “invisible world” which, we are certain, will slake people’s curiosity and make them look at everyday life in our homes and cities through different eyes.

11.2.3.2 CONFSERVIZI CISPEL

CONFSERVIZI CISPEL is the company union that represents, promotes and safeguards companies and bodies that manage local public services.
It is the embodiment of the 8 national federations of the sector - with over 1,200 companies and bodies – and of the 17 regional associations.

CONFSERVIZI member companies manage services related to the following sectors:

- water
- gas
- environmental hygiene
- electricity
- local transport
- housing
- chemists
- hospital services
- cultural and tourist services
- funeral services

CONFSERVIZI represents:

- special and city-owned companies
- joint-stock companies
- co-operative companies and consortia
- municipalities
- provinces

11.2.3.3 FEDERAMBIENTE

FEDERAMBIENTE comprises multi-service public utilities in the energy and environment sectors, municipalities directly managing waste collection and disposal services, consortia, provinces and environmental study and planning companies.

Member companies: 224

Municipal solid waste collected: about 18 million tonnes per year

Inhabitants served: 29 millions

Municipalities served: about 1,600
Yearly turnover: 4 thousand billion liras

Sector employees: over 31,000

11.2.3.4 GLOSSARY

Environment

Biogas

Gas resulting from the anaerobic fermentation of waste in landfills or in special plants. It consists of 50 percent methane as well as nitrogen, carbon dioxide and steam.

Co-generation

Generation of different forms of energy, such as electric (power) and thermal (heat), in a single plant.

Thermal energy is often obtained at a minimum additional cost by tapping warm residual fluids (low pressure steam) after electric power production.

Composting

Controlled fermentation of waste organic fraction in appropriate plants to obtain compost for use in agriculture.

First class landfill

A plant for the ground disposal of municipal solid waste guaranteed by suitable techniques (the waste is, in fact, “buried”).

Second class landfill

A plant for the ground disposal of special waste produced by industry, commerce and agriculture guaranteed by suitable techniques.

Ecological platform

Integrated plant for receiving and disposing of (or loading on long-range transport facilities) different types of waste, such as the various recoverable municipal waste fractions or different classes of hazardous waste.

Transfer station

Plant where waste is unloaded from collection vehicles (usually small ones) and then loaded on long-range vehicles (e.g. lorries, railroad wagons, etc.) for transfer to final disposal plants.

Storage

Temporary waste storage with due safety precautions (transitory storage).

Longer, or even indefinite, storage is usually called “confinement”.

Longer, or even indefinite, storage is usually called “confinement”.

Communication Measures in the European Packaging Collection Sector 74
Thermodosposal
Waste incineration in appropriate plants.

Thermoreduction
Waste volume reduction as a result of incineration in appropriate plants, where materials are reduced to ash and slag.

Energy-from-waste
Recovery and use of waste-derived energy, harnessing the heat of incineration gas and avoiding its dispersion into the atmosphere.

Thermal valorisation of waste
It is a particular form of energy-from-waste, where energy recovery from incineration yields a higher revenue of heat recovery and transformation costs, so that this disposal system becomes economically more convenient with respect to those usually utilised (e.g. landfilling). In this case, notwithstanding the current disposal tariffs, the thermal utilisation operator makes a profit or, if the advantage favours users, the tariff is lower.

GAS

Gas decompression cabin
Plant where pressure is reduced in order to facilitate the use of gas in a network.

Gas cabin
Plant where activities such as decompression and odorisation take place in order to use gas in a supply network.

Gasworks
Rather large plant where one or more components facilitate the distribution/utilisation of gas.

Methane measurement and reduction gas storage station
Plant where gas coming from methane pipelines is “stored” and “measured” for both contract and tax purposes. The pressure is then “reduced” to facilitate supply in a distribution network.

Thermal power station
Plant transforming fuel into electric power, either by producing steam or combustion-derived gases. In the first case, the main machines are thermal power plants, steam generators, condensers and alternators. The second class of machines are compressors, combustion chambers, gas turbines and alternators.

Gas tower
An old-fashioned plant that is nowadays valued only as industrial archaeology and used to calibrate, normally at a regular rate, the gas that is produced and comes from a pipeline on the needs of the users. It is usually highly concentrated only at certain times of the day.

Gas odorisation

It is the process through which a smell is “put” into methane gas. It is a safety measure that lets us smell the presence of gas that in nature has no smell at all.

Town gas production works

Old-fashioned plant, nowadays valued only as industrial archaeology, which is used to produce gas from coal or fuel oils by means of high-temperature chemical-physical processes.

Pouring station

Plant where liquefied petroleum gas (LPG) coming from tank trucks is transferred to local storage tanks usually intended for vehicles. This type of plant is seldom used for town distribution networks.

Water

Waterworks

All the works that are necessary to convey water from the source to the final users.

Industrial waterworks

All the works necessary to draw and convey water for industrial use, which has different characteristics than water used for human consumption.

Waste drawing

Wastewater resulting from human activities. It is usually collected through underground sewerage systems.

Water collection

The term refers to the collection of underground or surface water destined for consumption.

Tele-control centre

A station where data on network control and management are collected and processed.

Waste water purification

Treatment meant to eliminate unwanted substances from the wastewater. These processes, which are used to feed water back into the natural cycle without any environmental damage, can be mechanical, chemical or biological processes.

Dam
This is a barrage created to build up water supplies. These supplies are then used as consumption water or for hydroelectric power stations.

**Distribution**

It is the supply of water to all users according to specific pressure, capacity and quality rates. The water network is made of pipes, tanks, pumps, etc.

**Collection**

See water drawing.

**Water intake**

A series of masonry works, bulkheads and mechanical appliances through which water is collected.

**Water purification**

Treatment meant to eliminate unwanted substances from surface and underground water, so as to make the water usable for human consumption.

**Pumping station**

A series of pumps used to get water out of wells or other underground basins.

**ELECTRICITY**

**Hydro-electric power station**

Plant transforming river or dam water into electric power. The main machines used are water turbines and alternators.

**Combined cycle**

Plant producing electric power cascading two different kinds of plants. The most common combination is between a gas turbine and a steam cycle.

**Power station**

Once produced, electric power must be transferred and sorted out to the various uses. This is done, like with water mains, conveying it along primary and secondary cables. All these operations take place in power stations.

**Transformation cabin**

Small-sized power station where medium voltage power is transformed in low voltage power. It usually concerns a specific industrial user or a specific district of civil users.

**District heating**
Heat supply system for house heating through district or town networks. Heat is derived from methane, coal, oil, biogas, co-generation plants, etc.

11.2.3.5 CONAI

11.2.3.5.1 Enterprises for the environment

Laws and EC directives on waste, adopted in Italy in 1997 by the “Ronchi” Decree, are the result of a new way of thinking and tackling the problem of environmental impact caused by goods production, distribution and consumption processes. Apart from the production-induced impact, companies are now also responsible for the whole life cycle of the product.

Packaging, in particular, has been the first testing ground of this new philosophy. The modern production and distribution system has in fact increased its diffusion, turning it from a useful item to “move commodities in time and space” into an actual marketing instrument for the differentiation, information and identification of a brand.

It is therefore not surprising if nowadays packaging adds up to more than one third of the municipal solid waste volume and about one fourth of its weight: 9,800,000 tonnes of paper, plastic, glass, steel, aluminium and wood which, once they have reached the end of their service life as containers, casings or transportation packs, would mostly be landfilled if there was no recovery, valorisation and recycling of materials.

To this end, the Ronchi Decree established the Packaging National Consortium, an organism which, representing the whole entrepreneurial world (industry, traditional trade and large-scale retail trade, co-operatives and craftsmen, small and large-sized companies), could act as a guarantor of the passage from a management system based on landfilling to a new integrated system based on reuse, recycling and recovery of packaging waste, as well as on the reduction of waste production and hazardousness.

Within the new management system based on the principles of “shared responsibility” and “polluter pays”, CONAI is the instrument guaranteeing the necessary connection between Public Administration – in charge of separate collection – and the six consortia whose responsibility is to actually recover and recycle packaging materials (steel, aluminium, paper, wood, plastics and glass).

In less than two years of existence, CONAI has already achieved significant results.

Today CONAI has in fact over 1,300,000 member companies. In addition, thanks to the implementation of an “environmental contribution”, about 400 billion liras have been raised in slightly more than one year, a proof of the practically unanimous participation of Italian companies in the project.

In 1999, 3,800,000 tonnes of packaging were recovered. The estimated amount for 2000 is 4,300,000 tonnes, 2,400,000 of which come from separate collection directly managed by municipalities.

By enforcing the Frame Agreement, signed in July with ANCI (National Association of Italian Municipalities) and implemented by way of an agreement with the Consortia, the overall economic benefits for local administrations for 2000 is about 260 billion liras.

Hence, the system set in motion by the birth of CONAI acknowledges the ability of companies to manage also common interest issues in an efficient and responsible way.
11.2.4 Environment

Where does our waste end up after it has been collected from the containers where we put it?

We must, first of all, distinguish between the various types of waste.

Municipal Solid Waste: waste produced at home, at school, in working places, public places.

Special Waste: all other waste, such as waste produced by industry and agriculture. Hazardous Waste: non-domestic, environmentally harmful, inflammable, poisonous, corrosive and carcinogenic waste.

Statistics say that every Italian resident produces about one kg waste per day, which amount to over 26 million tonnes per year. Who collects it? In Italy the various tasks are divided among different facilities. State and regional authorities, through their laws, give clear directions on who does what. The most recent regulations are contained in the Law Decree 22/97, the ‘Ronchi Decree’, named after the Minister of Environment.

The Ronchi Decree requires the following: environmental protection in recovery and disposal activities; reduction of waste production; reuse, recycling and recovery of raw materials; and waste use for energy production.

Provinces actually organise all necessary actions to collect and dispose of waste on their territory. Waste collection and disposal are entrusted to Municipalities which can either organise it on their own or, together with neighbouring Municipalities, assign their town cleansing service to one of their public utility companies or to a private company.

Waste, once collected, must also be “disposed of”. There are various separate collection systems for paper, glass, plastic, wood and metals; these materials are recovered and reused as raw materials. Organic waste is treated in composting plants and compost is used in agriculture as a fertiliser.

The remaining waste can be incinerated in waste-to-energy plants or landfilled. The biogas extracted from landfills can be recovered as energy, too.

Hazardous waste is treated in special plants.

11.2.5 The “Eliano Galli” Award

The “Eliano Galli” Award was established by FEDERAMBIENTE in 1992, on the suggestion of AMIU Modena, now META S.p.A. This award commemorates one of the environmental communication pioneers and encourages the planning of quality education in this sector. It is an annual exhibition contest for informative, communicative and promotional productions – preferably integrated communication projects – formulated and realised by the bodies associated to one of the CISPEL member federations.
Various campaign material
Examples of CO.RE.PLA information material
12 Netherlands

12.1 Section 1

12.1.1 Country background

Inhabitants: 15.6 million (1997)

Annual amount of packaging waste:

<table>
<thead>
<tr>
<th>Packaging Material (tonnes p.a.)</th>
<th>1996</th>
<th>1997</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass</td>
<td>469,000</td>
<td>469,000</td>
</tr>
<tr>
<td>Plastics</td>
<td>618,000</td>
<td>611,000</td>
</tr>
<tr>
<td>Paper/cardboard</td>
<td>1,413,000</td>
<td>1,449,000</td>
</tr>
<tr>
<td>Ferrous metals</td>
<td>196,000</td>
<td>196,000</td>
</tr>
<tr>
<td>Non-ferrous metals</td>
<td>18,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Total</td>
<td>2,730,000</td>
<td>2,745,000</td>
</tr>
</tbody>
</table>

(Source: RIVM, 1998)

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfilling, recycling)

The currently operating treatment and disposal schemes comprise recycling, incineration with energy recovery, and landfilling.

12.1.2 Legal background

Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)

Producers, municipalities and the national government have signed a covenant. The municipalities are obliged to collect glass and paper from households separately. They are also financially responsible for this kind of collection. The producers are responsible for the transport and recycling of materials. Depending on the market price and the costs, they have to pay the municipalities.

The recycling goals that have been agreed upon are 85 % for paper and cardboard, and 90 % for glass.

12.1.3 Rough description of kerbside collection programmes

Do you have any nation-wide systems of packaging collection and recovery in your country?
There are currently no nationwide systems for packaging collection and recovery available in the Netherlands.

**What types of packaging materials are collected separately?**

In terms of household waste, the packaging materials that are collected separately are glass, paper, textiles and – on an incidental base – plastics.

**What types of collection containers are used?**

The types of containers in use are underground as well as above-ground containers of all different sizes and systems.

**Are collection sites and containers densely placed? Are they effectively spread all over the collection area?**

The recommended container density is one container per 650 inhabitants. Approximately 54% of all municipalities managed to comply with this density in 1997.

**How is the packaging collection programme funded?**

The cost of packaging collection is covered by the local communities and households.

If the municipalities have to pay more for the transport and treatment than they earn through the revenues, the shortage has to be paid by the producers.

### 12.1.4 Basic questions relating to communication matters

**Are there any legal regulations governing the scope of authority of the communication and public relations sector? If yes, please specify. If no, what public education measures are taken to communicate information on waste separation, packaging disposal, recycling, etc. to the general public?**

There are no legal regulations governing the scope of authority of the communication and public relations sector in the Netherlands.

**Are there any nation-wide public communication programmes?**

There is an advertising campaign that has been initiated by the Ministry of Public Health, Planning and the Environment.

Apart from this, almost all the various municipalities inform their own citizens on an individual basis.

**What type of information channels and advertising media are usually used to communicate information?**

In the Netherlands most of the information is spread through television. At federal level, it is the Ministry that broadcasts information through television and issues information folders to the public. At local level, municipalities distribute folders and advertise in the various local newspapers.
What are the main contents of communication?

The communication campaigns launched by the Ministry mainly focus on information about common environmental policy and call for improvements of the citizens’ ecological behaviour.

Municipalities tend to spread information about waste performance in the municipalities, about the days when waste is collected, and about the places where citizens can deposit their waste.

What are the major problems in communication?

The communication problems arising at municipal level are:

- the individualisation of waste collection and information

- the communication of new waste collection systems; this, for example, applies to the development of “bring” sites for small electrical devices and electronic equipment, bulky waste as well as construction and demolition waste.

12.2 Section 2

There are currently no examples or case studies of public communication projects in the Netherlands available.
13 Portugal

13.1 Section 1

13.1.1 Country background


Annual amount of packaging waste: approx. 1.2 million tons

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfill, recycling)

The Portuguese Green Dot System, managed by Sociedade Ponto Verde, is based essentially on mechanical recycling of packaging waste, despite experiences of some local partners considering organic recycling (composting). Two major Municipal Associations (VALORSUL and LIPOR, integrating Lisbon and Porto) have also an incineration system from which energy is recovered as well as metal slag that finally is also submitted to mechanical recycling.

On the other hand, the Portuguese Government has established a successful policy of closing uncontrolled waste dumping sites substituted by new and environmentally controlled Landfills.

13.1.2 Legal background

Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)

The implementation of the European Directive 94/62 in Portugal was achieved throughout the creation of a national legal framework which comprises the Law-Decree No. 366-A/97 and the Regulation Ordinance No. 29-B/98. These were passed, respectively, in December 1997 and January 1998, and aim at establishing the basic principles and functioning rules of a Packaging and Packaging Waste Management System meant to embrace all types of packaging (reusable and non-reusable).

As a result of this framework the fillers/importers and distributors of household packaging must either set up a Deposit and Take-Back System (for reusable packaging) or develop an Integrated Recovery System (for non-reusable packaging). Without fulfilling such requirements companies are not allowed to operate in the market place since the referred legal framework came into force on January 1st 1998.

Within the scope of the Integrated Recovery System and in accordance with the aforementioned legislation, manufacturers, fillers/importers and distributors have the right to transfer their recovery obligations to a nationwide system-operating organisation that, however, has to be approved by the Ministries of Environment and Economy.
Still within this system it is worthy to point out that marking of packaging is mandatory: non-reusable packaging must be marked with a symbol defined by the system-operating organisation. That symbol on a packaging means that, for such packaging, a financial contribution has been paid to a national packaging recovery company that has been set up in accordance with the principles defined in European Directive No. 94/62 and its national law.

The Integrated Recovery System is a key instrument of the national Strategic Plan for Municipal Solid Waste and aims at achieving the recovery targets set forth by the EU Packaging Directive for Portugal: by the end of 2005 50% of the overall packaging weight must be recovered and 25% of this must be recycled, with a minimum goal of 15% per material.

Founded by private initiative in 16th of November of 1996 and officially approved in October 1st 1997, Sociedade Ponto Verde, S.A. became entitled to set up and run the Integrated Recovery System on behalf of industry and the retail trade.

Since September 1999, SPV has been licensed to run the so-called VERDORECA – a specific recovery system designed for the HORECA sector. And since October 2000 Sociedade Ponto Verde is also authorized to manage industrial packaging and packaging waste.

13.1.3 Rough description of curb side collection programmes

Do you have any nation-wide systems of packaging collection and recovery in your country?

Sociedade Ponto Verde is helping to establish an effective integrated Municipal Solid Waste management in Portugal by providing financial and technical support to municipalities willing to implement multi-material collection programmes.

The way packaging materials are collected is determined and organized by local authorities. The majority will probably offer so-called “Eco-points”, i.e. voluntary bring systems, for all types of packaging materials. There are also some experiences based on door-to-door collection.

Up to now an increasing number of municipalities were undertaking multi-material collection programmes. The main advantages offered by the SPV system to local authorities are a stable financial support to cover the additional costs of multi-material collection, and the guarantee of effective recovery and recycling. In December 2000, the Green Dot System in Portugal covered 186 municipalities representing 80% of the Portuguese population and 52% of the territory.

What types of packaging materials are collected separately?

- Plastics
- Glass
- Paper, paperboard, cardboard
- Metals (ferrous metals; aluminium)
- Composite Materials
**Wood**

*What types of collection containers are used?*

As the municipalities secure the local management of the recovery operations there are great variety concerning types of collection containers used.

Nationwide, the SPV tries to develop a uniform colour system for the collection of packaging:

- **Yellow** containers to recollect *plastics* and *metals*.
- **Blue** containers to collect *paper and cardboard*
- **Green** containers to collect *glass*.

*Are collection sites and containers densely placed? Are they effectively spread all over the collection area?*

Density and effectiveness of the containers geographical distribution cannot be evaluated as a whole figure for all the country. The performance of theses equipments must be evaluated considering the reality of the several entities, mainly municipal associations, managing regional collection circuits.

*How is the packaging collection programme funded?*

The SPV system is financed throughout the payments made by fillers/packers and importers in a clear adoption of the polluter pay principle.

The licence fees are calculated according to the weight of the respective packaging material.

SPV establishes annually the Green Dot licence fees as well as the Compensation fees paid to local authorities to support multi-material collection programmes.

**13.1.4 Basic questions relating to communication matters**

*Are there any legal regulations governing the scope of authority of the communication and public relations sector?*

No answer.

*Are there any nation-wide public communication programmes?*

Yes, there are. SPV has made significant efforts on large communication programs on a nation and local level. SPV develops communication programmes by its own as well as it supports communication campaigns developed by its local partners. Both have as the main target group and goal the consumer and his participation at the multi-material collection system.

*What type of information channels and advertising media are usually used to communicate information?*

The target groups determine which information channels and media we use. Our communication activities focus on the below targets:
- Consumers
- License Partners

<table>
<thead>
<tr>
<th>Consumers</th>
<th>Media</th>
<th>Information Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness campaign on separate packaging collection, (improve level and quality of consumer participation...)</td>
<td>National consumer-oriented media with a wide reach</td>
<td>Communication and cooperation with schools and Environmental Organizations</td>
</tr>
<tr>
<td></td>
<td>Regional media</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Web Site of SPV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Newspapers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fairs &amp; Exhibitions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Road shows all over the country</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>License Partners</th>
<th>Media</th>
<th>Information Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote new adhesions</td>
<td>RECICLA (Quarterly magazine of SPV System)</td>
<td>Work Shops</td>
</tr>
<tr>
<td>Improve satisfaction among partners</td>
<td>Web Site of SPV</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily Newspapers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fairs &amp; Exhibitions</td>
<td></td>
</tr>
</tbody>
</table>

**What are the main contents of communication?**

SPV’s communication campaigns basically aim at promoting consumer behaviour considering public participation at separation and disposal programs of packaging waste, turning it into a daily routine. Concerning consumers that already participate the goal is to improve their participation, in terms of quality and quantity. Concerning consumers that are still outsiders to this project the idea is to convince them to join the environmental and economical friendly cycle of recycling packaging waste.

**What are the major problems in communication?**

High environmental consciousness and awareness towards the value of recycling which seems to characterize the great majority of the consumers have no correspondence to their participation rates at separate collection programs. Although 54% say they do already separate and dispose packaging waste, it is known that this behaviour is partial, considering the potential individual consumption of packaged products. It is, therefore, essential to find key factors that might function as dispatchers of more significant or new participation behaviour amongst consumers.

Diversity of collection methods and infrastructures make the broadcast of more complex messages on a nation-wide basis and using mass media difficult. National mass communication has been so limited to general appeals to consumer participation, providing only information that fits to the majority of the situations, like the colour-material-collection bins association.
## Compared Results of Post-tests examining Consumer Campaigns of 1999 and 2000

<table>
<thead>
<tr>
<th>Consider the Green Dot</th>
<th>1999</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total respondents who have seen the Green Dot Symbol...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>in a Newspaper Article</td>
<td>64,3%</td>
<td>59,2%</td>
</tr>
<tr>
<td>on the Internet</td>
<td>3,3%</td>
<td>3,0%</td>
</tr>
<tr>
<td>On Packaging</td>
<td>68,1%</td>
<td>44,6%</td>
</tr>
<tr>
<td>in a TV advertisement</td>
<td>34,3%</td>
<td>51,0%</td>
</tr>
<tr>
<td>in a Cinema advertisement</td>
<td>-</td>
<td>0,3%</td>
</tr>
<tr>
<td>in a TV Program</td>
<td>-</td>
<td>4,1%</td>
</tr>
<tr>
<td>On Outdoors</td>
<td>12,9%</td>
<td>13,9%</td>
</tr>
<tr>
<td>At Public Transportation advertisements (Flash)</td>
<td>-</td>
<td>3,4%</td>
</tr>
<tr>
<td><strong>Designations associated to the Green Dot Symbol</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Dot</td>
<td>25,4%</td>
<td>36,6%</td>
</tr>
<tr>
<td>Recycling</td>
<td>42,5%</td>
<td>31,0%</td>
</tr>
<tr>
<td>Eco-Point</td>
<td>-</td>
<td>21,4%</td>
</tr>
<tr>
<td>No answer/ Does not know</td>
<td>21,2%</td>
<td>0,0%</td>
</tr>
<tr>
<td>Total respondents knowing the correct colours of the collecting bins</td>
<td>-</td>
<td>75,8%</td>
</tr>
<tr>
<td>Blue</td>
<td>-</td>
<td>59,4%</td>
</tr>
<tr>
<td>Green</td>
<td>-</td>
<td>74,0%</td>
</tr>
<tr>
<td>Yellow</td>
<td>-</td>
<td>59,0%</td>
</tr>
<tr>
<td>Another Colour</td>
<td>-</td>
<td>6,4%</td>
</tr>
<tr>
<td>Total respondents knowing what material should be sorted</td>
<td>-</td>
<td>82,6%</td>
</tr>
<tr>
<td>Metal</td>
<td>-</td>
<td>30,0%</td>
</tr>
<tr>
<td>Plastic</td>
<td>-</td>
<td>68,8%</td>
</tr>
<tr>
<td>Glass</td>
<td>-</td>
<td>80,4%</td>
</tr>
<tr>
<td>Paper/ Cardboard</td>
<td>-</td>
<td>74,2%</td>
</tr>
<tr>
<td>Batteries</td>
<td>-</td>
<td>4,0%</td>
</tr>
<tr>
<td>Total respondents knowing the correct colour-material association</td>
<td>-</td>
<td>50,4%</td>
</tr>
<tr>
<td>Yellow-Metal</td>
<td>-</td>
<td>11,1%</td>
</tr>
<tr>
<td>Yellow-Plastic</td>
<td>-</td>
<td>48,4%</td>
</tr>
<tr>
<td>Green-Glass</td>
<td>-</td>
<td>87,3%</td>
</tr>
<tr>
<td>Blue-Paper/ Cardboard</td>
<td>-</td>
<td>51,2%</td>
</tr>
<tr>
<td>Total respondents saying they do separate</td>
<td>71,0%</td>
<td>53,6%</td>
</tr>
<tr>
<td>Metal</td>
<td>26,2%</td>
<td>21,6%</td>
</tr>
<tr>
<td>Plastic</td>
<td>34,0%</td>
<td>47,8%</td>
</tr>
<tr>
<td>Glass</td>
<td>68,0%</td>
<td>72,2%</td>
</tr>
<tr>
<td>Paper/ Cardboard</td>
<td>43,0%</td>
<td>64,6%</td>
</tr>
<tr>
<td>Batteries</td>
<td>0,0%</td>
<td>2,2%</td>
</tr>
<tr>
<td>Others</td>
<td>0,7%</td>
<td>3,0%</td>
</tr>
<tr>
<td>Distance to the nearest Eco-Point from the consumers residence</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>until 100 meters</td>
<td>61,4%</td>
<td></td>
</tr>
<tr>
<td>100 to 499 meters</td>
<td>19,6%</td>
<td></td>
</tr>
<tr>
<td>500 and more meters</td>
<td>18,4%</td>
<td></td>
</tr>
</tbody>
</table>

**Observations:**

# 1999 test was conducted on sample of 300 consumers living in Lisbon (200) and Porto (100), by the Street Corner Method
# 2000 test was conducted on a sample of 500 consumers living in Lisbon (300) and Porto (200), by the domiciliary Method
# Not all items are comparable; directly comparable figures are presented in the same line
# In a major nationwide sociological study made for Sociedade Ponto Verde by the University ISCTE/GIESTA of Lisbon considering a sample of 2093, the average pointed to 54% of the population separating packaging waste, at least considering some of the possible packaging materials.
14 Spain

14.1 Section 1

14.1.1 Country background

Inhabitants: 39,852,651 inhabitants

Annual amount of packaging waste:

The solid waste stream amounts to 15 million tonnes, 5 million of which are packaging waste. Of those 5 million, more than half (approximately 3.2 million tonnes) is household packaging waste.

Household waste: 1 kg per inhabitant/day = 365 kg a year (15 million tonnes)

Packaging waste: household packaging waste = 3.2 million tonnes

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfilling, recycling)

Law 11/97 on packaging and packaging waste contemplates the following types of treatment for packaging and packaging waste:

Prevent: Reduction, especially through the development of non-contaminating products and techniques, of the quantity and of the impact on the environment of the materials and substances used in packaging and of packaging and packaging waste in the production process, commercialisation, distribution, use and elimination.

Reuse: Any operation in which the packaging, conceived and designed for a minimum number of circuits, rotations, or uses throughout its life cycle, is refilled or reused with the same purpose for which it was designed. These kinds of packaging will be considered waste when they are no longer reused.

Recycle: The transformation of packaging waste, within a production cycle, for its original use or any other use, including compost and biomethanisation, but not energy recovery. For some time now, glass, paper and cardboard packaging and packaging waste have been being recovered in Spain, but not lightweight plastic and metal packaging and beverage cartons - like Tetra Brik. The Integrated Management System (IMS) has been in operation since 1 May 1998, coinciding with the launching of lightweight packaging recycling, which has been progressing very satisfactorily.

Recovery: Any procedure that makes use of resources contained in packaging waste, including incineration that recovers energy without jeopardising human health and without using methods that can harm the environment.

This implies the transformation of packaging waste, within a production cycle, for its original use or any other use, including compost and biomethanisation, but not energy recovery.
Eliminate: Any procedure that aims to store or dump packaging waste either to totally or partially destroy it by incineration or other methods that do not involve recovery of energy. Lacking a European directive about landfills, they are still common practice in our country. (There are about 8,300 controlled landfills.)

14.1.2 Legal background

Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)

Law 11/97 of 24 April about packaging and packaging waste

This law incorporates the main lines of Directive 94/62/CE, about packaging and packaging waste.

The law establishes priority measures that tend to avoid the generation of packaging and packaging waste and foster their reuse, recycling or recovery. Objectives are to be met by 30 June 2001.

- To this purpose, packaging companies, traders in packaged products or, when the latter cannot be identified, those responsible for placing them on the market for the first time, have two options: set up their own deposit, return or refund system or join an Integrated Management System (IMS) like Ecoembes'. Then they can take advantage of the plans that the latter offer to the autonomous communities.

- Packaging companies must recover the used packaging of the products they commercialise unless they join an IMS. In this case, the Integrated Management System (IMS) ECOEMBALAJES ESPAÑA S.A is responsible for recovering the packaging waste and used packaging and its posterior value treatment. This Integrated Management System guarantees, where applied, the fulfilment of the recycling and recovering objects to the stipulated percentages and within the stipulated periods.

- The Integrated Management System is financed by contributions made by those responsible for placing the packaging on the national market for the first time. These contributions depend on the weight and the type of materials used in the packaging.

Reduction, recycling and recovery objectives

The following objectives are to be met within the territory of the State by 30 June 2001:

- Recover at least 50% and up to 65%, in weight, of the totality of waste packaging generated.

- Recycle at least 25% and up to 45%, in weight, of the totality of packaging materials, and at least 15%, in weight, of each material.

- Reduce at least 10%, in weight, of the totality of waste packaging generated.

14.1.3 Rough description of kerbside collection programmes

Do you have any nation-wide systems of packaging collection and recovery in your country?
The government, urged by the Ministry of Environment, approves a national programme for packaging waste and used packaging, integrating the programmes developed by the Autonomous Communities. The national programme will be included in the National Urban Waste Plan and affect the whole national territory.

What types of packaging materials are collected separately?

This is how the materials are separated:

Glass containers
- Lightweight packaging. (Plastic or metal containers and beverage cartons -Tetra Brik type)
- Paper – Cardboard

What types of collection containers are used?

- Blue container for paper and cardboard
- Green igloo-type container for glass
- Yellow container for lightweight packaging
*The size of the containers can be 3000, 1100 or 360 litres each.
*These are usually the colours of the containers used, although they may vary from one territory to another.

Are collection sites and containers densely placed? Are they effectively spread all over the collection area?

Currently, lightweight selective recollection containers have been implanted to service 6 million citizens, while more than twelve million people are reached with the paper and cardboard containers. The containers are distributed proportionately throughout the recollection area. The recommended container density is met in most areas and it is: three containers per area (Green, Blue, Yellow), one container per 600 - 700 inhabitants (3000-litre containers/3 litres per inhabitant, which vary from 360-litres to 1100-litres/10 litres per inhabitant). The effectiveness of selective recollection improves as the System develops due to citizens’ increasing awareness of the environment.

How is the packaging collection programme funded?

ECOEMBALAJES ESPAÑA S.A finances the extra cost of the local entities’ selective recollection of packaging waste, by contributing given amounts for:
- each kilogram of lightweight waste collected,
- each kilogram selected,
- loans for purchasing the containers,
- recollection construction,
- clean points (islands),
• recollection of paper/cardboard.

14.1.4 Basic questions relating to communication matters

Are there any legal regulations governing the scope of authority of the communication and public relations sector? What public education measures are taken to communicate information on waste separation, packaging disposal, recycling etc. to the general public?

ECOEMBALAJES ESPAÑA S.A makes an initial economic contribution to the autonomous communities and local entities (municipalities, consortiums of municipalities, provincial governments, etc.) during the first three years in order to inform the citizen and raise awareness.

Our Public Relations Activities include:

• Generation of articles/interviews either in local and national media
• Media exploitation of agreements and other Ecoembes activities
• One-to-one meetings with journalists
• Specialised plants visit program
• Newsletter sent to Member companies, Media, Public Administrations, Associations
• Corporate video and web site

Are there any nation-wide public communication programmes?

ECOEMBALAJES ESPAÑA S.A has developed its own campaign on separating household waste and makes it available to the autonomous communities and local entities. Nevertheless, they are free to create their own campaigns or use the campaign proposed by ECOEMBES. This campaign is already underway in the Autonomous Community of La Rioja, a region situated in the North of Spain with a census of 265,000 citizens. Campaigns are carried out as the IMS is implanted in different autonomous communities to avoid generating expectations among citizens before their zone has the containers and the necessary infrastructures to start up selective recollection.

What type of information channels and advertising media are usually used to communicate information?

The media used for informing and awareness-raising are: mass media communiqués and advertising on TV, Radio, Press, Hoardings, Banners, Brochures, Mailings, etc.

What are the main contents of communication?

The main objective of communication is to explain what to sort out and how to separate packaging waste.

The general message of the campaign is:

“Separate To Recycle”, “Separation is in your hands; recycling is everybody’s responsibility”. 
What are the major problems in communication?

The main problem we run up against in this area is decentralisation. With the Spanish State organised into Autonomies, each entity can freely choose its own communication, which, in some cases, leads to overlapping means and duplication of messages and campaigns.

14.2 Section 2

14.2.1 Public Communication – Case Study

The campaign proposed by ECOEMBES insists on the message about the importance of recycling and the process that entails separating packaging waste and used packaging. The citizens are duly informed of the importance of separating, which they must start doing in their homes, the placing of each material in its container and the type of waste that goes into each container, etc.

We at ECOEMBES feel that it is important to provide environmental education from early ages. This is why the proposal addresses part of the information to schools.

Based on the foregoing, ECOEMBALAJES ESPAÑA S.A pays special attention to the following issues:

- Information campaigns on selective recollection of packaging
- Informing the citizens about separating packaging waste
- Collaborating with Ministries in educational campaigns for schools

This campaign is currently being developed with the following approach:

- It must be didactic
- It must involve the citizens
- It must be effective
- It must make it easy to remember the colour code (to associate packaging waste with the respective container)

(Source: ECOEMBALAJES ESPAÑA S.A. ECOEMBES)
Campaign and information material on sorting
Campaign material on sorting.
15 Sweden

15.1 Section 1

15.1.1 Country background

Inhabitants: 8.9 million

Annual amount of packaging waste:

Packaging material in tonnes (1997)

<table>
<thead>
<tr>
<th>Material</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass</td>
<td>150,000</td>
</tr>
<tr>
<td>Paper/cardboard packages</td>
<td>190,000</td>
</tr>
<tr>
<td>Plastics</td>
<td>200,000</td>
</tr>
<tr>
<td>Corrugated board</td>
<td>330,000</td>
</tr>
<tr>
<td>Metals</td>
<td>50,000</td>
</tr>
</tbody>
</table>

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfilling, recycling)

When the legislation on producer responsibility for packaging came into force on 1st October 1994, the Swedish business community started one material handling company for each of the packaging materials. These five companies jointly formed Svenska Förpackningsinsamlingen AB, whose main task it is to handle co-ordination and information to the general public.

The materials handling companies have separately signed agreements with local entrepreneurs to take care of the local collection and transportation of the material. The collected material is transported to different recycling industries that have specific agreements with the material companies.

The collection system is basically a bring system, and the system is now active in all the Swedish municipalities. In total, there are about 7,000 collection sites in the country. The density is calculated to one collection site per 1000 -1500 inhabitants.

15.1.2 Legal background

Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)

The legislation on producer responsibility for packaging came into force on 1st October 1994, after a decision in the Swedish parliament. All producers (i.e. companies who import, produce, fill or sell a packed product) have a legal responsibility to take care of collection and recovery of the used packages.
Packages, recycled paper, and tires were the first areas of producer responsibility. Other areas to come in the near future are batteries, building construction waste, electronic equipment and electrical devices, and cars.

### 15.1.2.1 Recycling goals

The legislation states different recycling goals that shall be achieved by the producers:

<table>
<thead>
<tr>
<th>Packaging material</th>
<th>1/1 1997</th>
<th>30/6 2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass</td>
<td>70%</td>
<td>70% recycled</td>
</tr>
<tr>
<td>Paper/cardboard packages</td>
<td>30%</td>
<td>70% (at least 40% recycled)</td>
</tr>
<tr>
<td>Plastics</td>
<td>30%</td>
<td>70% (at least 30% recycled)</td>
</tr>
<tr>
<td>Corrugated board</td>
<td>65%</td>
<td>65% recycled</td>
</tr>
<tr>
<td>Metal</td>
<td>50%</td>
<td>70% recycled</td>
</tr>
</tbody>
</table>

### 15.1.3 Rough description of kerbside collection programmes

**Do you have any nation-wide systems of packaging collection and recovery in your country?**

The packaging collection system is organised by the material handling companies. They have signed agreements with entrepreneurs in all the local municipalities. The entrepreneurs are responsible for emptying the containers and transporting the collected material to the recycling industries.

The material handling companies are also responsible for agreements with the recycling industry. The collected material is sold to a variety of companies, which use the material in new production.

**What types of packaging materials are collected separately?**

- white glass
- coloured glass
- soft plastics (soft plastics are not collected in some municipalities)
- hard plastics
- metal
- paper/cardboard packages, together with corrugated board

**What types of collection containers are used?**

The type of containers that are used in the system differs, depending on which entrepreneur is responsible for the collection. In some municipalities, the local authorities have decided on specific design of the containers (in co-operation with the material handling companies and the local entrepreneurs).

**Are collection sites and containers densely placed? Are they effectively spread all over the collection area?**
The density of the collection sites is one site per 1000-1500 inhabitants. The ambition is to place the collection sites as centrally as possible, according to the normal movements of the inhabitants.

**How is the packaging collection programme funded?**

A packaging fee funds the whole collection system. The fee is determined by each of the materials handling companies and is paid by the fillers and importers.

**15.1.4 Basic questions relating to communication matters**

*Are there any legal regulations governing the scope of authority of the communication and public relations sector? If yes, please specify. If no, what public education measures are taken to communicate information on waste separation, packaging disposal, recycling, etc. to the general public?*

There are no legal regulations in the communication and public relations sector. However, the Minister of Environment has made public demands concerning the information to the general public, especially concerning the need for keeping the collection sites clean.

Förpackningsinsamlingen has made several major information campaigns directed to the general public. Every household in Sweden has received a detailed information brochure on the legal regulations, how to separate the packages, where to find the collection sites, and so on.

Other information campaigns:
- TV advertisements
- ads in all daily newspapers (several times)
- information material directed to schools
- sponsoring of TV programmes
- public information service (free of telephone charge)
- printed magazines enfolded in major daily newspapers (several times)
- web sites
- a range of different printed material (free of charge)

Förpackningsinsamlingen is at present sponsoring local recycling information that is produced by the local municipalities.

Together with the Swedish Association of Local Authorities, Förpackningsinsamlingen is head of a major unemployment project. During the past two years, 4000 unemployed individuals have taken part in local environmental information projects. Each project has engaged eight to ten persons during a period of six months. The Swedish government funds the salary, and the local authorities fund the local administrative costs. Förpackningsinsamlingen is responsible for education, information material and central project administration.
Are there any nationwide public communication programmes?

Yes, there is a nation-wide information plan that is revised every year, according to the need of directed information depending on the collection results.

What type of information channels and advertising media are usually used to communicate information?

(See above).

What are the main contents of communication?

The main ambition of providing general information has been to motivate the general public to take an active part in the collection of used packages. During the last year we have combined this with information about what is actually happening to the materials after the collection. We believe that the general public needs to know what will happen to their packages, in order to keep the collection motivation high.

We have also been active in giving media information on collected amounts, recovery, and so on.

What are the major problems in communication?

The major problem is to find an economically acceptable way to renew the information. We believe that the general public needs to get renewed information in order to keep their motivation as high as possible.

Other problems are to communicate the fact that we do not want to have misplaced material in the containers.

(Source: Göte Andersson, Svenska Förpackningsinsamlingen AB)
15.2 Section 2

15.2.1 Swedish Packaging Collection Communication Initiatives

15.2.1.1 Activities 1996-2000

Förpackningsinsamlingen, The Swedish Packaging Collection, a subsidiary of the material companies, is responsible for most of the information initiatives regarding the collection of packaging. However, the material companies also undertake their own activities and initiatives, which have not been included here.

15.2.1.2 Activities 1996-1997

15.2.1.2.1 Distribution of brochures to all households

During the summer of 1995, a household information package was produced, which included a brochure and a sticker outlining producer responsibility for packaging and the way in which packaging should be sorted. The package was distributed to all households in the country, around 4.2 million copies in total. Distribution began at the turn of 1995/96 and continued for around 18 months.

15.2.1.2.2 Information Campaign “We Meet Again”

15.2.1.2.3 TV advertising

Three films advertising the material companies MetallKretsen (Metal Loop), Plastkretsen (Plastic Loop) and Svensk Kartongåtervinning (Swedish Cardboard Recycling) were produced and broadcast on national television during the autumn of 1996. The aim was to show that collection of packaging was going ahead and that packaging can be recycled and form part of a closed loop.

15.2.1.2.4 Newspaper advertisements

In connection with the above mentioned commercials, a number of full-page advertisements were also placed in nearly all of the country’s daily newspapers. The advertisements showed that packaging collection was in full swing all around the country, and that packaging can be recycled and form part of a closed loop.

15.2.1.2.5 “The Myriad”

During a period ranging from autumn 1996 until winter/spring 1997, for the first time a school campaign, “The Myriad”, was launched; this campaign was aimed at intermediate schools. The campaign comprised guidance to teachers and a competition asking pupils to either draw or write an essay about packaging collection. The aim was to incorporate information about the collection and recycling of packaging into the curriculum. 300 classes took part.
15.2.1.2.6 Environment Information Officers

In the period from 1996 until 1998, a project was organised to initiate/strengthen local Agenda 21 activities in the communities. The project was jointly run with the Swedish Association of Local Authorities and a total of 6,000 people participated, each for a period of at least six months. The purpose was to provide information on a local basis and to increase knowledge about the way in which packaging collection should work.

15.2.1.3 Activities 1998

15.2.1.3.1 Information Campaign "We Meet Again"

The 1996 information campaign was repeated and slightly modified; as a new feature newspaper inserts were added, showing what happens to recycled packaging and how packaging should be sorted and returned.

15.2.1.3.2 TV advertising

Three different films, all with the general message that waste packaging is being recycled and can – if sorted and returned – form part of a closed loop, were broadcast. This was partly done in connection with the TV programme “Bingolotto” throughout the autumn of 1998, and partly during two periods of intensive advertising in September/October and December. A total of 400 spots were shown.

The priority target audience comprised adults of the age group between 25 and 59. Evaluation of the TV advertising showed that as many as 84% of the target audience had seen the advertisement. When asked to identify the advertiser, only 14% answered correctly, compared to an average of 37 percent for similar commercial advertising. On the other hand, as many as 67% of viewers had understood the message correctly compared to an average of 52% for similar commercial advertising.

15.2.1.3.3 Advertisements in 5 x 105 daily newspapers

Roughly coinciding with the period of intensive TV advertising, advertisements were also placed in 105 local, daily newspapers all around the country. This took place on 5 different occasions, amounting to a total of 525 advertisements in the daily press. The message was that waste packaging is being turned into new packaging/new products.

Evaluation was carried out in two newspapers within FLT (United Provincial Newspapers); the first evaluation was carried out following the first advertisement on 24 September, another evaluation was conducted after the fifth and final advertisement on 22 October. The result was extremely positive. The observation figure for the first advertisement was 31%, i.e. 31% of those asked had seen the advertisement. This should be compared to a normal average of 30%. The second evaluation produced an even better result. This time, the observation figure was up to 47%, which is the highest ever registered by FLT in any comparable context.

15.2.1.3.4 Inserts in daily newspapers

During the campaign period, also three inserts for daily newspapers were produced and published in Expressen, GT (Göteborgstidningen) and Kvällsposten (The Evening Post). Around 460,000 copies of each insert were printed; each insert focused on one of three different material types: plastics, paper/cardboard,
and metals. The message centred on what happens to recycled packaging as well as on how and which 
products to sort.

Evaluation produced an observation figure of 48% for the first insert, 51% for the second, and as much as 55% percent for the third.

Like the evaluation of the newspaper advertisements, this shows that repetition substantially increases the 
value of advertising.

At the beginning of November, a fourth insert was published in the two major daily newspapers, Dagens 
Nyheter and Svenska Dagbladet. This time approximately 500,000 copies were printed and the content was a combination of the previous three inserts.

All in all, a total of around 1.9 million inserts were produced and distributed.

15.2.1.3.5 Local Information

In November, work began with local authorities to provide further information to households. This co-
operation is based on the idea that local authorities are reimbursed (annually per inhabitant) for including information about packaging collection and recycling in their own regularly distributed waste information leaflets. The information is general and explains why packaging should be collected, how this should be done, what happens to the packaging and who is responsible for collection and recycling. A total of 14 municipalities included packaging information in their waste information leaflets.

15.2.1.3.6 “The Myriad”

The Myriad was organised once again. This time more than 3,000 teachers requested the teacher guidance package and around 500 classes took part in the competition; a requirement of the contest was to draw an advertisement for packaging collection. The län (regional administrative province) winners had their entries published in local newspapers while that of the national winner was published in the national press.

15.2.1.3.7 Educational film "The Return"

During 1998, and in collaboration with SVT, a series of eight educational films were produced and shown in three instalments on national TV.

15.2.1.4 Activities 1999

15.2.1.4.1 Sweden's Recycling Municipality of the Year, 1999

In collaboration with Kommunförbundet (Association of Local Authorities), RVF – Renhållnings-
verksföreningen (Associated Municipal Cleaning and Refuse Collection Services) - and the foundation, Håll Sverige Rent (Keep Sweden Clean), Förpackningsinsamlingen for the first time highlighted and encouraged environmental management by choosing "Sweden's Recycling Municipality". 35 interested municipalities registered and were nominated for the distinction. The municipality of Trollhättan was chosen. The winner was named by the Minister for the Environment, Kjell Larsson, at the Stockholm Konserthus in May. The prize consisted of an outdoor artist's gala arranged for the local inhabitants in their local area.
15.2.1.4.2 Local Information

Household information activities continued and 99 local authorities included packaging collection and recycling information in their own waste information leaflets.

15.2.1.5 Activities 2000

15.2.1.5.1 New web site

A newly developed web site has been launched as a source of information for municipalities, contractors and consumers.

15.2.1.5.2 Local Information

Work with local authorities to provide information to households continues.
Campaign on sorting
Myriaden campaign material

Campaign material on recycling
16 Switzerland

16.1 Section 1

16.1.1 Country background


Annual amount of packaging waste: 800,000 t (1996) - estimate

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfilling, recycling)

Just like all other waste fractions, packaging waste materials should be (mechanically) recycled wherever possible. It needs to be stressed, however, that recycling only makes sense if it entails a lower environmental burden than the disposal of wastes and the generation of new waste. Besides, recycling has to be economically viable in the long run. This implicates that recycling can only be a reasonable way of waste disposal if, apart from the ecological criteria, also economic factors are taken into consideration.

In 1997 the following packaging material fractions were separately collected and recovered/recycled in Switzerland:

<table>
<thead>
<tr>
<th>Material</th>
<th>Amount</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper and cardboard</td>
<td>1,003,461 t</td>
<td>(63 % of total consumption)</td>
</tr>
<tr>
<td>(packaging share 15 %)</td>
<td>150,000 t</td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>283,208 t</td>
<td>(91 %)</td>
</tr>
<tr>
<td>PET beverage bottles</td>
<td>17,086 t</td>
<td>(80 %)</td>
</tr>
<tr>
<td>Tinplate</td>
<td>11,450 t</td>
<td>(61 %)</td>
</tr>
<tr>
<td>Aluminium from households (incl. cans)</td>
<td>2,200 t</td>
<td>(19 %)</td>
</tr>
<tr>
<td>Only cans</td>
<td>1,310 t</td>
<td>(88 %)</td>
</tr>
</tbody>
</table>

In 1997, 2.55 million tonnes of the municipal solid waste stream were incinerated (77%) or landfilled (23%). The municipal solid waste stream consisted of 29% of paper and cardboard, 3% of metals, 2% of textiles, 6% of compound goods, 15% of plastics, 4% of compound packaging, 3% of glass, 8% of minerals, 8% of natural products, and 22% of compostable wastes. The packaging share in mixed municipal solid wastes amounted to 30 %.

As of 1st January 2000 the direct landfilling of municipal solid wastes will be legally prohibited.

16.1.2 Legal background

Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)
Swiss waste legislation does not only focus on packaging waste. In the event that legal regulations relate to products, they are aimed at materials, no matter whether the materials are used for packaging or other products and articles. The legal ordinance relating to beverage packaging is the only one to contain regulations that are exclusively concerned with beverage packaging.

One-way packaging is mainly a fraction of the municipal solid waste stream. MSW disposal falls within the competency of the cantons (environmental protection law, art. 31b). The cantons, in turn, have delegated all disposal matters to the respective communities, who are also burdened with the cost of disposal. In general, however, it is the waste owner who has to pay for disposal (environmental protection law, art. 32).

As far as the recoverable fractions of municipal solid waste – glass, paper, metals and textiles – are concerned, the cantons or communities have to make sure that those are separately collected and recycled as far as possible. The instrument of anticipated waste disposal fees shall help reduce the financial burden on communities by burdening the waste producer instead. There is a trend to use this financial instrument for the collection of batteries (already implemented), glass (under preparation) and paper/cardboard (planned).

The management of packaging waste as well as that of any other products shall be based on the following criteria:

- preventing the generation of waste in the first place
- recovering/recycling any generated waste materials
- treating or landfilling the non-recoverable fraction in an environmentally sound and reasonable manner within the country

16.1.3 Rough description of kerbside collection programmes

*Do you have any nation-wide systems of packaging collection and recovery in your country?*

The recoverable wastes are separately collected according to specific waste fractions.

*What types of packaging materials are collected separately?*

See above.

*What types of collection containers are used?*

This depends on the respective area. More detailed information can be obtained from the private organisations IGORA, PRS, or FERRO Recycling.

*Are collection sites and containers densely placed? Are they effectively spread all over the collection area?*

Separate collection is operated throughout the national territory.

*How is the packaging collection programme funded?*
Communities assume responsibility for paper/cardboard, glass, aluminium (in general), and metals (in general); changes are meanwhile being effected for paper/cardboard and glass. As for PET beverage bottles, aluminium cans and tin cans, the respective branches of industry are responsible.

16.1.4 Basic questions relating to communication matters

Are there any legal regulations governing the scope of authority of the communication and public relations sector?

It is the task of the environmental departments in the various cantons to inform and advise the public on matters concerning the disposal of municipal solid waste, source reduction, and waste treatment and recycling (TVA technical instructions on waste management, art. 4).

Waste collection programmes that are organised by the private sector industry are advertised and promoted by the organisation in charge (posters, brochures, newspaper advertising, radio and TV commercials).

Are there any nation-wide public communication programmes?

The Federal Government launched a five-year nation-wide waste campaign in the early nineties.

What type of information channels and advertising media are usually used to communicate information?

Waste communication avails of the traditional media – newspapers, radio and TV broadcasting – and today, of course, also uses the Internet for spreading information. Various consultancies specialising in waste matters (e.g. eco-centres) are contracted for public education campaigns at local and regional level.

What are the main contents of communication?

The main issues that are addressed in communication relate to the collected material, cleanliness, the importance of avoiding impurities, and the resulting benefits.

What are the major problems in communication?

- Tapping into people’s psychology
- Great variety of different languages and ethnic groups
- Indolence and laziness
- Surfeit of information
- Cost

Case study material on section 2 is available in the form of folders and brochures.
Various information material
17 United Kingdom

17.1 Section 1

17.1.1 Country Background

Inhabitants: 58 million

Annual amount of packaging waste: 9.2 million tonnes

Market amount of packaging waste

<table>
<thead>
<tr>
<th>Packaging material</th>
<th>in tonnes pa (1999)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass</td>
<td>2,155,000</td>
</tr>
<tr>
<td>Plastics</td>
<td>1,600,000</td>
</tr>
<tr>
<td>Paper</td>
<td>3,855,000</td>
</tr>
<tr>
<td>Metals</td>
<td>859,000</td>
</tr>
<tr>
<td>Compounds (included above according to main material)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9,200,000</td>
</tr>
</tbody>
</table>

What types of packaging treatment and disposal schemes are currently in operation? (incineration, landfilling, recycling)

<table>
<thead>
<tr>
<th>Material</th>
<th>Recovery '98</th>
<th>Recovery '99</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>1,888,000</td>
<td>1,769,088</td>
<td>49,814</td>
</tr>
<tr>
<td>Glass</td>
<td>657,810</td>
<td>451,407</td>
<td>131,170</td>
</tr>
<tr>
<td>Aluminium</td>
<td>14,517</td>
<td>15,402</td>
<td></td>
</tr>
<tr>
<td>Steel</td>
<td>182,499</td>
<td>123,524</td>
<td>101,654</td>
</tr>
<tr>
<td>Plastics</td>
<td>126,739</td>
<td>160,821</td>
<td>24,904</td>
</tr>
<tr>
<td>Wood</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>n/a</td>
<td>n/a</td>
<td></td>
</tr>
<tr>
<td>Recovery EfW</td>
<td>448,354</td>
<td>468,972</td>
<td>(approx. 50:50 plastics and paper)</td>
</tr>
<tr>
<td>Total</td>
<td>3,322,715</td>
<td>3,322,424</td>
<td>(including exports)</td>
</tr>
</tbody>
</table>

Sources: various, including Increasing recovery and recycling of packaging waste in the United Kingdom: the challenge ahead, a Forward Look for Planning Purposes.

The 1998 figures include exports but the figures are not as accurate as those figures for 1999.

17.1.2 Legal Background

Is there a legal regulation governing the disposal of packaging waste material?

Since February 1997 the Producer Responsibility Obligations (Packaging Waste) Regulations 1997 have been in force. The regulations require certain businesses to undertake, or have undertaken on their behalf,
recovery and recycling of packaging waste to fulfil the minimum requirements of the EU Packaging and Packaging Waste Directive. Therefore those businesses that are producers of raw materials for packaging, converters, packers/fillers, sellers and importers of packaging materials, packaging products or packaged products have a turnover of more than £2m (E2.65m) and pass on more than 50 tonnes of packaging have responsibility to recover and recycle packaging waste.

17.1.3 Rough description of kerbside collection programmes

Do you have any nation-wide systems of packaging collection and recovery in your country?

There are no national systems for the collection of packaging wastes.

What types of packaging materials are collected separately?

Paper packaging is collected mainly from commercial and industrial sources. Households in a limited no of municipalities <10% can include paper packaging with newspapers and magazines.

Metals are collected mainly from industrial sources. Household metal packaging waste is processed mainly either after incineration or from separate collections, both can banks and kerbside collection. Some aluminium cans are reclaimed through the use of buy-back schemes.

Plastics are collected mainly through bank systems but also from kerbside collections.

Beverage cartons are only collected in limited numbers and only rarely separately.

What types of collection containers are used?

The following types of containers are in use:

- Blue containers for paper, mainly newspapers and magazines.
- Orange containers are used for plastics.
- Green, brown and white containers for the three main "colours" of glass: green, amber and flint (clear).
- Only very exceptionally are packaging materials collected.

The container colours referred to above are for collection banks/ drop-off containers located at shopping centres and other public places. Very occasionally wheeled blue bins are used specifically for paper collections from households.

Are the collection sites and containers densely placed? Are they effectively spread over the collection area?

Glass banks (containers) are located in all municipalities within the UK but density is only one site for every 7,5000 population. However, more than 95% of sites have three-colour separation. Can containers and energy recovery can separation provides coverage for >45% of the population for metal containers.

How is the packaging collection programme funded?
The various collection programmes are mainly funded through the value of the material. A total of £35m (E50m) was generated by PRNs and PERNS (Packaging waste Recovery Notes and Packaging Export waste Recovery Notes) in 1999. This money is supposed to be used for the enhancement of reprocessing capacity, collection of recyclable materials and marketing of reprocessed materials.

17.1.4 Basic questions relating to communication matters

Are there legal regulations governing the scope of authority of the communication and public relations sector? If yes, please specify. If no, what public education measures are taken to communicate information on waste separation, packaging disposal, recycling, etc. to the general public?

The only legal regulation is an amendment to the 1997 regulations passed in December 1999, which requires those businesses classified as sellers to provide their customers with information about recycling schemes.

Are there any nation-wide public communication programmes?

There is a wide-ranging environmental communication campaign “Are you doing your bit?” However, this does not focus solely on recycling or even the recycling of packaging waste items. Recycling is a component, but packaging waste is not explicitly singled out.

What type of information channels and advertising media are usually used to communicate information?

In the UK the most popular mass media for spreading public education campaigns are newsprint and TV broadcasts, but also other material as brochures and leaflets to local needs are in use. Due to local differences in collection systems, detailed information about how to separate waste packaging materials properly is mainly spread through leaflets issued by municipalities and to a lesser extent waste management contractors.

What are the main contents of communication?

The main content of communication is to encourage the use of waste collection systems provided by municipal authorities.

What are the major problems in communication?

The major difficulty with communications on recycling is that they have to compete against so many other messages that are broadcast and circulated for public consumption. Getting these recycling messages through to the public and accepted is becoming increasingly difficult.

Tasks to be accomplished in the future:

The main aims for the future will be first to increase the participation rate for existing schemes and secondly ensuring that all participating are segregating material for either banks or kerbside collection.
WORKSHEET 1
Litter survey in school grounds
You can find out if litter is a problem in your school grounds.
Fill in, to see how bad the problem is.

**Key**
- buckets
- other waste
- drink cartons
- plastic bottles
- paper

- Take some gloves, a littering bag, a pen and notebook into the school grounds.
- Each time you find a piece of litter:
  - put it in your bag
  - write where it was found

- Keep a tally of how much waste is left and the collection time.

**LITTER IN SCHOOL BUILDINGS**

<table>
<thead>
<tr>
<th>Date</th>
<th>Number of litter</th>
<th>Total weight of litter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st April</td>
<td>3</td>
<td>0.2 kg</td>
</tr>
<tr>
<td>2nd April</td>
<td>5</td>
<td>0.3 kg</td>
</tr>
</tbody>
</table>

WORKSHEET 3
Sam hurts his paw

WORKSHEET 4
Make recycled paper

PACKAGING REDUCTION

Two-litre PET* plastic soft drinks bottle

<table>
<thead>
<tr>
<th>Material</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic</td>
<td>300</td>
</tr>
<tr>
<td>Cardboard box</td>
<td>200</td>
</tr>
<tr>
<td>Aluminium foil</td>
<td>50</td>
</tr>
<tr>
<td>Plastic bottle</td>
<td>40</td>
</tr>
</tbody>
</table>

*PET (Polyethylene Terephthalate)
Recruit A Friend

Don't make a special trip - Add Recycling to your Shopping List - It's easy - Recruit a friend, neighbour or relative.

These are all skills, some familiar, some perhaps new that we used during our involvement in the Tour de France in 1997, that saw us visit every major supermarket recycling site throughout Cornwall, and which are still relevant in the world of bottle and cans recycling today.

Cornwall is the most beautiful county and it is the far south-west of Great Britain. It's three major populations centre on 473,000 people. It is the most rural county in the UK with 1,700 square miles of agricultural countryside. The coast from Falmouth to the South coast is a strip of land and to the North is a strip of water. Our work is voluntary and we get the satisfaction of knowing that we are doing something useful and needed in a small but significant way.

For some years now, Cornwall has been committed to reducing waste through a local authority campaign to get local authorities to provide for the recycling of materials in the waste stream. This campaign has involved the provision of recycling points under the legislation of the Environmental Protection Act 1990. The County Council for Cornwall will soon be providing new points for these materials and the setting of standards for recycling as well as the development of new standards for the reduction of waste and pollution.

Eco-Schools

Environmental Review

The Checklist:
Litter and Waste Management

Do your school have a clear policy on litter?
Is it used?
Are there enough bins in the school?
Are there enough signs?
Are they in the right places?

In-house paper recycling for office use?
Are old newspapers available for students to recycle?
Are old newspapers available for teachers to recycle?
Are old newspapers available for students to recycle?
Are old newspapers available for teachers to recycle?

Is there a recycling box for office use?
Does the school have an adequate recycling box?

What is the capacity of the recycling box?
What is the capacity of the recycling box?

Do you recycle waste? Do you recycle waste?

Do you collect waste?
Do you collect waste?

Do you use the waste service?
Do you use the waste service?

Do you collect waste?
Do you collect waste?

Do you have a recycling scheme?
Do you have a recycling scheme?

Do you have a recycling scheme?
Do you have a recycling scheme?

Information material on littering
18 Summary

18.1 Section 1

18.1.1 Country background

<table>
<thead>
<tr>
<th>Country</th>
<th>Inhabitants</th>
<th>Packaging waste (t/a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria:</td>
<td>8.1 million</td>
<td>1.2 million</td>
</tr>
<tr>
<td>Belgium:</td>
<td>10.2 million</td>
<td>1.45 million</td>
</tr>
<tr>
<td>Denmark:</td>
<td>5.3 million</td>
<td>760.000 (50% transport p.)</td>
</tr>
<tr>
<td>Finland:</td>
<td>5.1 million</td>
<td>400.000</td>
</tr>
<tr>
<td>France:</td>
<td>58 million</td>
<td>2.2 million (recovery)</td>
</tr>
<tr>
<td>Germany:</td>
<td>81.8 million</td>
<td>82 kg/capita (sales packaging)</td>
</tr>
<tr>
<td>Italy:</td>
<td>57.5 million</td>
<td>11.1 million</td>
</tr>
<tr>
<td>Netherlands:</td>
<td>15.6 million</td>
<td>2.7 million</td>
</tr>
<tr>
<td>Portugal:</td>
<td>10 million</td>
<td>1.2 million</td>
</tr>
<tr>
<td>Spain:</td>
<td>39.8 million</td>
<td>3.2 million</td>
</tr>
<tr>
<td>Sweden:</td>
<td>8.9 million</td>
<td>920.000</td>
</tr>
<tr>
<td>Switzerland:</td>
<td>7.1 million</td>
<td>800.000</td>
</tr>
<tr>
<td>UK:</td>
<td>58 million</td>
<td>9.2 million</td>
</tr>
</tbody>
</table>

Almost all countries could provide us with specific data on packaging waste quantities. Only the French data were based on municipal solid waste figures in general, but provided detailed percentages of the humid and dry weight of packaging waste materials.

What types of packaging treatment and disposal schemes are currently in operation? (Incineration, landfilling, recycling)

Austria: paper, glass, metal (recycled), plastics (recycled, WTE), residual (landfilled) – 94-98: landfilled packaging reduced by 50 %;

Belgium: 90% of household packaging (glass, paper, lightweight) covered by collection; packaging remaining in waste stream is thermally recovered where possible;

Denmark: 60% recycling, 20% landfill, 19% incineration, 1% special treatment

Finland: paper, glass (recycled), plastics (incinerated), rest (landfilled);

France: composting, recycling, incineration, WTE, landfilling (MSW);

Germany: recycling; residual waste: incinerated, landfilled;

Italy: recycling, WTE, residual (landfilled);

Netherlands: recycling, WTE, landfilling;
Portugal: recycling, composting, incineration, landfilling;

Spain: prevention, reuse, recycling, recovery, incineration, landfilling;

Sweden: high percentage of recycling (5 material handling companies in charge of recovery) – 2001 goals: 70% recycling for all materials;

Switzerland: recycling, incineration, landfilling (1 Jan 2000: no direct landfilling);

UK: 3.3 million (1/3) of packaging recovered (incl. exports);

In most countries packaging waste is primarily recycled or at least thermally recovered, and only packaging material that is not separated out from the waste stream goes to the landfill.

18.1.2 Legal background

*Is there a legal regulation governing the disposal of packaging waste material? – (Please give a short description of the legal background of packaging disposal. Who is responsible for the return of waste packaging material? Who finances the system? Are there any mandatory or political goals for the collection and recovery of packaging materials?)*

Austria: Packaging Ordinance 93 (revised in 96), ordinance on targets for landfilling of material (1998-2001)

Belgium: EU packaging directive, eco-tax law (latest version 1 Jan 96) on certain one-way products, Interregional Cooperation Agreement (translates EU Directive into Belgian law);

Competences lie with local authorities, responsibilities lie with industry;

Plenty of legal initiatives, but still lack of harmonisation between regional and federal level;

Denmark: Environmental Protection Law, Recycling and Waste Minimisation Law, law implementing the EU Packaging Directive; tax-driven system;

Finland: Council of State Decision (Nov 1997) implements EU packaging directive into Finnish legislation;

Producer responsibility (recovery), material-based fees; mandatory targets for 2001;

France: Lalonde Decret No. 92-377 of April 1st, 1992 (target: recovery of 75 % of household packaging by 2002) gave rise to formation of Eco-Emballages S.A.; Transport Packaging Ordinance (Decret No. 94-609) and Household Waste Ordinance (Decret No. 96-1008) contain quotas set by EU Packaging Directive;

Germany: Packaging Ordinance (Dual System Deutschland);

Italy: Ronchi Decree 22/97 (incorporates 3 EU directives on waste, hazardous waste and packaging waste), Decree 389 of 8 Nov 1997 (modifications and amendments);
Netherlands: Covenant (municipalities are responsible for glass and paper collection, producers are responsible for transport and recycling and have to pay municipalities);

Mandatory goals: 85% paper, 90% glass

Portugal: Law-Decree No. 366-A/97 and the Regulation Ordinance No. 29-B/98;

Spain: Law 11/97 on Packaging and Packaging Waste (companies have two options: they can set up their own deposit and return system or join an Integrated Management System);

Sweden: law on producer responsibility (1994), mandatory goals 2001 (70 % recycling for almost all materials);

Switzerland: legislation on waste in general (not only packaging); responsibility of waste disposal lies with cantons, communities burdened with cost of disposal (waste owner pays); anticipated waste disposal fees burden waste producer;

UK: Producer Responsibility Obligations Regulations 1997

Most of the surveyed countries have modelled their national laws around the EU Packaging Directive and have introduced the concept of producer responsibility. The legal requirement for producers to assume responsibility for the packaging materials they put into circulation has in general forced trade and industry to take action. Many of them have therefore founded centralized and authorized collection and recovery systems.

18.1.3 Rough description of programmes for the separate collection of packaging from households

Do you have any nation-wide systems of packaging collection and recovery in your country?

Austria: ARA System (eight branch recycling companies);

Belgium: 2 nationwide systems: FOST PLUS for household packaging recovery and VAL-I-PAC for industrial and commercial packaging recovery;

Denmark: no, only nationwide beer and beverage deposit system;

Finland: paper (nationwide) over 60% of newspapers: separate collection from households only started (focus on industrial and commercial sector);

France: EcoEmballages S.A.;

Germany: Dual System (DSD);

Italy: National Packaging Consortium CONAI;

Netherlands: no

Portugal: Sociedade Ponto Verde S.A.;
Spain: Integrated Management System (IMS) Ecoembalajes Espana SA;
Sweden: Svenksa Förpackningsinsamlingen AB (and the respective material handling companies);
Switzerland: yes, separation by waste materials;
UK: no

Wherever these centralized systems have been established, responsibilities are normally subdivided into material handling companies or recycling organizations for the individual waste materials.

What types of packaging materials are collected separately?

Austria: glass, paper, metal, lightweight (compounds, plastics, wood, textiles, ceramics)
Belgium: paper, cardboard, glass, lightweight, metals, comm./ind. packaging
Denmark: cardboard, glass, transport plastics, steel drums
Finland: paper (60%), board, glass, metals, plastics
France: steel, aluminium, paper/cardboard, plastics, glass
Germany: glass, paper, lightweight
Italy: paper, glass, steel, aluminium, wood, plastics
Netherlands: glass, paper, textiles, plastics
Portugal: glass, paper, plastics, metals, composites, wood
Spain: glass, lightweight, paper, cardboard
Sweden: glass, plastics, metals, paper
Switzerland: paper, glass, PET, tinplate, aluminium
UK: paper, glass, metals, plastics, beverage cartons (rare)

One can say that in all countries recyclable materials are sorted out from the waste stream. These materials are mostly glass, paper and cardboard, metals and lightweight packaging materials (plastics, compounds, wood, textiles, etc.).

What types of collection containers are used?

Austria: yellow (lightweight), blue (metal), red (paper), white/green (glass)
Belgium: igloos (glass), yellow bags (paper), blue bags (lightweight)
Denmark: containers (cardboard, plastics), plastic cassettes (deposits), bottle banks
Finland: blue and yellow bins (paper)
France: “bac bleu” - blue (metals, plastic bottles, cartons), “bac vert” – green (glass), brown containers for other waste
Germany: yellow (lightweight), blue (paper), colour marking (glass)
Italy: blue or green containers (glass, steel, alu), yellow (plastics), white (paper)
Netherlands: underground and above-ground containers
Portugal: yellow (plastics/metals), blue (paper, cardboard), green (glass)
Spain: blue containers (paper), green containers (glass), yellow (lightweight)
Sweden: varies by municipalities
Switzerland: depends on area
UK: blue containers (paper), orange (plastics), green, brown, white (glass)

The answers have revealed that most countries use a great variety of containers or bags (Belgium). Some use fully coloured containers, others use containers with coloured lids, or coloured bags. But the colour codes for the various containers are not the same. In some countries, like Spain, colour codes even differ from one territory to the other. It remains to be discussed and probably depends on a lot of factors whether it is reasonable or manageable to introduce a uniform colour code system in all countries. The question also remains whether the different colours play a role in transboundary waste management, as there might be confusion for tourists or immigrants from other countries, who are not used to the colour codes of the respective country they are in. In any case, the different colours of the bins or lids need to be accompanied by clear and easily comprehensible labelling (preferably symbols and writing). Some of the countries have come up with excellent examples of container design, which has proved very effective in tackling the problem of impurities.

Are collection sites and containers densely placed? Are they effectively spread all over the collection area?
Austria: yes, containers and bags
Belgium: progressive approach: 80% by end of 1999, 100% in 2001;
Denmark: yes
Finland: no
France: no answer
Germany: yes
Italy: service covers almost entire territory
Netherlands: 54% of municipalities comply with recommended container density
Portugal: container density not be evaluated on a national basis
Spain: recommended container density in most areas
Sweden: yes
Switzerland: throughout national territory
UK: yes for glass, 45 % metal

In most countries container density is satisfactory. Containers are usually set up throughout the national territory. Only some countries, like Belgium, have a progressive approach where the system is introduced in different areas step by step and not the entire population participates in the system. This may affect the content of nationwide communication campaigns.

**How is the packaging collection programme funded?**

Austria: licence fees charged by ARA (weight-based);
Belgium: licence fees charged by FOST PLUS/VAL-I-PAC to licensees, passed on to local authorities and operators;
Denmark: households pay waste disposal fee, companies and larger residential buildings have contracts with collectors; taxes;
Finland: producer responsibility, material-based fees for packers, fillers, importers;
France: licence fees charged by Eco-Emballages;
Germany: licence fees charged by DSD, public waste collection fees;
Italy: CONAI draws up agreements with district councils and establishes amount of cost to be paid to councils;
Netherlands: cost covered by communities and households; if municipalities pay more than they earn, shortage is covered by producers;
Portugal: licence fees charged by SPV;
Spain: ECOEMBALAJES finances extra cost of selective collection carried out by locals, contribution per type of material;
Sweden: packaging fee paid by fillers and importers;
Switzerland: communities (paper, glass, aluminium, metal), industry (PET bottles and cans);
UK: through value of material, through PRNs and PERNs (packaging -export- waste recovery notes);
The packaging collection programmes in countries with centralised collection and recovery systems are usually funded through the licence fees that companies (producers, fillers, importers) are required to pay in line with the producer responsibility concept. The money is passed on to the municipalities that carry out collection.

### 18.1.4 Basic questions relating to communication matters

**Are there any legal regulations governing the scope of authority of the communication and public relations sector? If yes, please specify. If no, what public education measures are taken to communicate information on waste separation, packaging disposal, recycling, etc. to the general public?**

<table>
<thead>
<tr>
<th>Country</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Packaging Ordinance requires information of the public about the system, ways of public participation, importance of proper separation, recovery options;</td>
</tr>
<tr>
<td>Belgium</td>
<td>Interregional packaging decree and FOST PLUS/VAL-I-PAC licences require all communication activities to be financed by the licensed organisations – approval of Interregional Packaging Commission required;</td>
</tr>
<tr>
<td></td>
<td>Progressive approach: one year before launch: search for new candidates, project evaluation, priority list, intensive cooperation; at launch: promotion campaigns, press conferences, school</td>
</tr>
<tr>
<td>Denmark</td>
<td>Communication measures must meet general law of marketing and framework of the criminal code;</td>
</tr>
<tr>
<td>Finland</td>
<td>Council of State Decision requires information to consumers by authorities and industry;</td>
</tr>
<tr>
<td>France</td>
<td>No specific response</td>
</tr>
<tr>
<td>Germany</td>
<td>Communication activities not regulated by law, responsibilities laid down in DSD service agreements; disposal companies are responsible for communication at local level;</td>
</tr>
<tr>
<td>Italy</td>
<td>Ronchi Degree requires that community is informed on proper waste handling, requires collection system to provide adequate information, establishes shared responsibility among companies;</td>
</tr>
<tr>
<td></td>
<td>CONAI first informed companies of their new duties, then also large-scale campaign to inform general public and authorities;</td>
</tr>
<tr>
<td>Netherlands</td>
<td>No</td>
</tr>
<tr>
<td>Portugal</td>
<td>No answer</td>
</tr>
<tr>
<td>Spain</td>
<td>ECOEMBALAJES contributes in first three years by: articles and interviews in media, journalist meetings,</td>
</tr>
<tr>
<td>Sweden</td>
<td>No, Environment Minister demands info to public; several household campaigns, F. sponsors recycling info by municipalities; unemployment project;</td>
</tr>
<tr>
<td>Switzerland</td>
<td>Environmental departments of cantons are responsible for information; private sector in charge of their own collection programmes;</td>
</tr>
</tbody>
</table>
UK: amendment to 1997 regulations requires sellers to provide their customers with information about recycling schemes;

*Does your country have a nationwide public communication programme?*

Austria: Yes, ARA System launches annual nationwide communication campaigns;

Belgium: Yes, at least once a year; when collection comprised more than 50% of territory, start of national campaigns to arouse general awareness;

Denmark: no nationwide programs, campaigns organised at local level to allow more flexibility;

Finland: no, local authorities are responsible;

France: no specific response

Germany: Yes, DSD launches national communication programmes;

Italy: national campaigns by Environment Ministry, umbrella campaigns by CONAI (general information);

Netherlands: advertising campaign by Ministry of Environment (other local);

Portugal: Yes, SPV launches national communication programmes and supports campaigns developed by local partners;

Spain: ECOEMBES has own campaign, also available to autonomous communities (voluntary basis);

Sweden: yes, revised every year;

Switzerland: 5-year nationwide campaign in early 90s;

UK: environmental campaign “are you doing your bit?” (does not focus on recycling);

Many countries organize nationwide campaigns and revise them once a year depending on public feedback. National campaigns or umbrella campaigns provide the public with general information on the collection systems and on environmental awareness. But for a more detailed and specific information tailored to local communities’ needs, all countries rely on local communication. Some of the Northern countries, like Denmark and Finland, say they organize communication at local level only because this allows for more flexibility.

*What type of information channels and advertising media are usually used to communicate information?*

Austria: depends on target groups: consumers (national and regional media, waste consultants and associations), licence partners and opinion leaders (print media, website, exhibitions, conferences, work groups);

Belgium: newsprint, TV, radio, launch kit for households at moment of collection start, municipal journals keep population informed; free hotline, website, integration of sorting facilities into “model houses of the future”; educational centers for children aged 6-12;
Denmark: mass media, technical papers and periodicals, internet, pamphlets;
Finland: newspaper, TV, printed material, PYR website;
France: no specific response
Germany: mass media, open days, schools, press seminars, trade fairs, waste consultant seminars, programmes for children young people and teachers;
Italy: mass media, etc.
Netherlands: TV, information folders (federal), folders, local newspapers (local);
Portugal: depends on target groups (consumers and licensees) – exhibitions, papers, websites, workshops, etc.
Spain: mass media, TV, radio, press, banners, brochures, mailings
Sweden: mass media, TV sponsoring, information at schools, free hotline, newspaper specials, websites, print
Switzerland: mass media, internet, consultancies (local and regional);
UK: newsprint, TV, brochures, leaflets;

All countries rely on the traditional mass media (newspapers, TV, radio) to distribute information. What information channels and advertising media are used also depends on the target groups that need to be addressed. The Austrian ARA System, for example, distinguishes between consumers, licence partners and opinion leaders. Some systems have established a free telephone hotline service and organize open days for the public. There is a growing trend to move onto the Internet and spread information through websites. Many countries have identified the need to promote waste education at schools and organize training courses for teachers and issue training kits for the younger generations. Brochures, leaflets and information folders are set to households.

What are the main messages in communication?

Austria: focus on proper and separate collection (avoidance of impurities, better use of container capacity), waste avoidance;
Belgium: at launch: why’s and how’s of separate collection, immediate emphasis on quality of source separated material, indication of does and don’ts (how to clean, how to reduce volume);
Denmark: information along with other types of waste (no specific information on packaging waste collection), how to separate and minimise waste, different types of waste, how to avoid impurities;
Finland: no specific response
France: no specific response
Germany: improve quality of collected material, improve use of containers to capacity, source reduction;

Italy: how separate collection really works, build trust in recycling;

Netherlands: national campaign focuses on common environmental policy and ecological awareness, local information focus on collection details;

Portugal: promote consumer behaviour, improve consumer participation, convince inactive consumers to join in;

Spain: what to sort out, how to separate, “separate to recycle”, “separation is in your hands”, “recycling is everybody’s responsibility”;

Sweden: active participation, what happens to material after collection (transparency keeps motivation high);

Switzerland: collection material, cleanliness, avoidance of impurities, benefits;

UK: encourage use of waste collection systems provided by local authorities;

The most important messages that the systems want to convey include:

- Why it is important to separate waste materials
- How waste materials are properly sorted and cleaned
- Clear definition of the types of material that need to be sorted out
- That it is more important to focus on quality of the separated material than on the quantity (impurities need to be avoided)
- That containers need to be used to capacity, because it is a decisive cost factor in disposal (proper folding of cardboard, squeezing of bottles)
- That it is important to avoid waste at the source (environmentally friendly shopping, buying low-waste products, products with little packaging)
- Building of trust among the public is important (they need to be reassured that their efforts produce positive results and that they are doing well (feedback and appraisal are important)
- That the waste people separate is actually recycled
- What happens to the materials after their separation (recycling pathways need to be transparent to keep motivation high)
- What the benefits of separate collection are (people also need to be told about the cost and negative environmental implications of failure to separate)
• That people’s active participation is required, that they are essential players in this field, that things don’t work without their help

**What are the major problems in communication?**

Austria: trend towards single households and convenience products leads to waste increase – environmental increase decreases in the face of other social problems (i.e. unemployment, racism etc.)

Belgium: annual systematic survey of public attitude by region, comparison with previous year results; local authorities have great deal of autonomy – difference in choice of means, specific local structures;

FOST PLUS aims at uniformity of local campaigns;

Progressive approach (step by step introduction of collection until end 2001) does not allow for national campaigns on sorting instructions, as they are not applicable throughout the country;

Denmark: due to decentralisation of information, difficulties to draw general conclusions, problem in international comparative analysis;

Finland: financing

France: no specific response

Germany: political, administrative and structural obstacles beyond the control of DSD conjure up incalculable risks and weaken status of communication; constant threat to persuasion and credibility and hinder the improvement of the system’s image;

Italy: people are not satisfied with information on recycling activities, would like more transparency on recycling efforts;

Netherlands: individualisation of waste collection and information, communication of new waste collection systems;

Portugal: environmental awareness does not correspond to participation rates; diversity of collection methods and infrastructures difficult to harmonize at national level;

Spain: decentralisation, autonomies, free choice leads to duplication of messages and campaigns;

Sweden: economically acceptable way of information renewal; renewal is indispensable to keep motivation level high; impurities;

Switzerland: tapping into people’s psychology, variety of languages and ethnic groups, cost, laziness, surfeit of information;

UK: competition against other messages for public consumption;
Although for most people the separate collection has become a daily routine, there is a trend towards single households and convenience products, which fosters the growth of waste and makes communication efforts more difficult. Another big problem is that the looming social problems (unemployment, cuts in social spending, etc.) make the people focus more on what they feel are their urgent needs. It is obvious that their interest in environmental matters and waste separation decreases.

Most countries identify decentralisation of competencies as a problem in communication. In Spain, where local authorities have a great deal of autonomy, free choice may lead to duplication of messages and campaigns. Countries like Belgium and Switzerland, which have a variety of different languages and ethnic groups, are challenged to tailor their campaigns to regional or local needs, sometimes even using different regional accents and dialects in their campaigns.

It is very difficult to tap into people’s psychology and regain trust, once the effectiveness of a system starts being doubted. Germany has identified political, administrative and structural obstacles beyond the control of their system. These obstacles conjure up incalculable risks and weaken the status of communication. They identify a constant threat to persuasion and credibility and hinder the improvement of the system’s image.

Surveys in Italy have revealed that people are not satisfied with the level of information they get on recycling activities, they would like more transparency on recycling efforts.

It is also an acknowledged fact that communication requires continuity to remain successful. It has been found that one-off campaigns can never render the same results as continuous and consistent communication campaigns.

Another crucial factor is funding. A sound balance between consistency and economic viability needs to be found.

And finally, it was considered a problem that information on waste management has to face strong competition in today’s information-overloaded world, and is challenged by the saturation and must compete against other messages for public consumption.

**What lessons can be learned for the future?**

- Efforts need to be concentrated on the practical implementation of selective collection.
- The quality of collected material needs to be upgraded.
- A correct and permanent sorting behaviour needs to be established.
- It is important to understand that after one-off campaigns public interest tends to fade very quickly. To keep people motivated, a continuous communication effort is needed. Campaigns should be evaluated and revised depending on feedback.
- Communication must be didactic, effective and involve citizens. Colour codes on containers and the use of clear symbols shall make separation easier for the people.
- Campaigns need to focus on the improvement of the quality of collected material.
- Campaigns need to focus on the improvement of container use.
• Campaigns need to focus on source reduction.
• Waste education at schools to start motivation at early age.
• Participation rate for existing schemes needs to be increased.
• It is important to build trust and make the pathways of recovery and recycling as transparent as possible.
• Show that most commonly used objects are made of recycled materials.
• Necessity to find key factors that lead to improved or new participation behaviour amongst consumers.

18.2 Section 2

The second section provides a detailed description of local, regional, or national case studies and partly illustrative material on the respective campaigns. The idea behind this case study approach is to describe the specific background of the collection area, the particularities of the collection system, and the components and impact of public communication programs.

Various pictures and illustrations have been included to provide a good overview of the communication programmes developed and launched out in these surveyed countries.
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Waste management is no longer regarded as a system for the mere transportation and treatment of waste. It involves the management of mass streams, which are invariably accompanied by financial transactions and information exchange. The latter is the focus and field of activity of ISWA's Working Group on Communication and Social Issues.

The goal of the study on Communication Measures in the European Packaging Collection Sector was to draw up a comparative overview of the experiences made with public communication programmes in the sector of packaging waste.

The first section of the report comprises a list of questions that served to collect general background data on packaging collection programmes in the countries in question.

The second section is concerned with local, regional or national case studies in order to provide a description of the collection area, the collection system and the components and the impact of public communication programmes.

The report covers Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherlands, Portugal, Spain, Sweden, Switzerland and United Kingdom.