

# Report Sweden

<b>1. Reuse Packaging in Sweden .....</b>	<b>2</b>
1.1 Beverages consumption pattern.....	2
<b>2. How reuse developed .....</b>	<b>2</b>
<b>3. Description of reuse systems.....</b>	<b>3</b>
3.1 Reuse systems for beer, soft drinks and water .....	3
3.1.1 The glass reuse system.....	4
3.1.2 REF-PET- Bottle System.....	5
3.1.3 Other products in reuse packaging .....	5
3.2 Previous reuse packaging systems .....	5
3.2.1 Reuse of wine and spirit bottles.....	5
3.2.2 Reuse system for milk .....	6
<b>4. Distribution / redistribution of reuse packaging .....</b>	<b>7</b>
4.1 Distribution of beverages .....	7
<b>5. Number of trips for reuse packaging .....</b>	<b>8</b>
<b>6. Marking systems for reuse .....</b>	<b>8</b>
<b>7. Legal basis concerning reuse packaging.....</b>	<b>9</b>
Sources .....	10

The research in Sweden was carried out by:

Annaa Mattson, Göteborg, Sweden

## 1. Reuse Packaging in Sweden

The main products offered in reuse packaging are beverages. Beer, soft drinks, cider, mineral water etc.

Other products that are offered to the consumers in reuse packaging are jam, canned vegetables, and cooking fat. Typical for those products is that they are produced by small manufacturers, distributed by small wholesalers and sold in health shops, "green shops" or in home service-systems.

Health shops and "green shops" provide refill packaging for different kinds of detergents. The customer brings his own packaging or buys a bottle in the shop. Some home selling companies sell their "big packs" of detergents in returnable buckets and bottles.

Some small wholesalers of health foods, and canned and fresh vegetables return cardboard boxes from the retailers. Generally, there are no specially designed boxes in these rather informal systems. The Swedish environmental protection agency relates one example of a small manufacturer of plastic bottles who distributes his products in special returnable folding boxes to the retailers. 58 tons of corrugated cardboard are reused in a year's time and every box makes 3,5 trips. There might be more examples like this, but they are not many in number, so there are no official statistics on reused cardboard packaging.

Wooden crates/baskets are used by wholesalers for vegetables to deliver food to retailers. There are no official statistics on the reusing of wooden packaging.

### 1.1 Beverages consumption pattern

Sweden is one of the top five country in milk drinking in the EU (see table 1.2 of general report). Each Swedish citizen drink more than 150 litres of milk per year. Soft drinks are the second most frequently drunk beverage, along with a very small quantity of bottled water (only around 11 litres per capita and year).

The beer consumption of 54 litres per year is in the middle of the European consumption range, while wine is only around 13 litres, one of the smallest quantities in the EU.

## 2. How reuse developed

The actual reuse quotas for beverages are shown in Table S-1. Draught as a packaging for HoReCa is very small compared to the other member states. Even draught beer accounts for only 12,3%.

Reuse packaging still plays a certain role. Strong cider is sold by almost exclusively (96%) by Systembolaget along with bottled water (85%) which has a very small market capacity anyhow.

Reuse systems for beer have reached a marginal market position (27%). Soft drinks (mainly carbonised) still hold a market share of 60%. The latter is predominantly filled in REF-PET-Bottles of 1,5 litres, which may be responsible for the high market share as it is based on the filled quantity and not by the number of the packagings. This means that because their beverage packaging often have a small volume, one-way dominates the soft drink market today.

The very high share of REF-PET bottles for soft drinks and water is different from the situation in the other non Scandinavian member states.

**Table S-1:**

Market shares in percent of bottled (mainly carbonised) beverages (beer, soft drinks, water) sold and produced by members of the Swedish Brewers Association. (99 % of the market). 1997

Packaging	Beer	Strong cider	Soft drinks	Bottled water	Total
Draught	12,3	2,1	10,5	-	10,1
Reuse glass	26,9	95,9	27,1	60,1	30,9
Reuse PET bottles	0,2	-	32,8	25,2	18,6
One way-glass	0,5	1,6	3,5	0,4	1,9
Cans	60,1	0,4	9,0	6,4	29,4
PET bottles	-	-	12,1	7,9	6,7
Bev. carton	-	-	5,0	0,1	2,4

The decline of the reuse system for beer started in the middle of the 70's when cans came into the market. In 1979 the reuse glass bottles accounted for a market share of 46 % (see Table S-2 i.A.) which declined since then to 31%.

Long term figures for soft drinks are not available but glass reuse systems declined until 1991 to a market share of around 40% (see Table S-3 i.A.). After the introduction of the REF-PET bottles in the beginning of the 90's the share went up again to around 60%. As REF-PET in Sweden is restricted to the high volume bottles and 0,5 litre PET-bottles are one-way, the market share for reuse will certainly not cross the 60% level anytime in the near future.

For bottled water, there has been a decline of the glass reuse system even though it has not been as radical as for beer and soft drinks. The prospering REF-PET bottle in the water sector may end up stabilising the market share.

### 3. Description of reuse systems

#### 3.1 Reuse systems for beer, soft drinks and water

Approximately 99 % of products from Swedish breweries are produced by members of the Swedish Brewers Association. The association was formed in 1885 in order to create a common packaging system for beer. The association still exists and most of their members are connected to the system. The system includes both glass bottles, plastic bottles, aluminium cans and plastic crates.

### **3.1.1 The glass reuse system**

There are two types of returnable glass bottles, the 33 cl glass bottle that weighs 305 grams and a 50 cl bottle that weighs 356 grams. The smaller bottle is a standard, agreed to in 1886, today's SIS standard SS 845 220 (see Chapter 5.1 of the general report). The bottle has changed a little since then, but the basic shape is the same.

#### **Facts about the 33 cl system from the Brewers Association**

One billion refillable bottles are sold in Sweden every year.

Some 285 million bottles circulate in the system.

The bottles are transported in 13.7 million red crates.

The deposit on bottles is 60 Sw öre.

The level of returning is 98 %.

The system started in 1885.

The system is steadily losing market shares.

#### **Facts about the 50 cl system**

90 million refillable bottles are sold in Sweden every year.

Some 30 million bottles circulate in the system.

The bottles are transported in 1.8 million blue crates.

The deposit on bottles is 1 Sw. crown.

The level of returning is 90 %.

The system started in 1994.

Some breweries had their own 50 cl return bottles which were withdrawn when the standardised 50 cl bottle was introduced in 1994.

Two companies, Svensk Returglas 33 cl AB and Svensk Returglas 50 cl AB, are responsible for the system of reusable glass bottles.

Some members of the Brewers Association have their own reuse packaging system. The most important glass bottle is Coca Cola. The bottle with the typical profile is distributed mainly to restaurants. The returnable bottle is sold in very few shops. (No statistics from Coca Cola).

In 1999, a new returnable bottle for Fanta and Sprite is introduced in Sweden. The company has recently changed all glass bottles from 25 cl bottles to 33 cl bottles. The glass bottle needs a special crate. The Swedish Food Workers Union has issued a warning about the new crate. A full crate of 24 bottles weighs 20,1 kg which is really too heavy to carry. The union wants to stop the crate from being established - so far the warehouse workers and the drivers have got new lifting restrictions.

Some smaller breweries have their own returnable glass bottles. I.e. Kooperberg delivers a special "long neck bottle" to restaurants. The bottle is also sold at Systembolaget and is returnable there. But as Systembolaget only takes it back if it is delivered in crates - and customers very rarely buy these beverages in crates - there is practically no common reusing of these bottles.

One way glass bottles have very small market shares. Out of the beverages produced in Sweden by members of the Brewers Association only 1,9 % were filled in one-way glass bottles. The total consumption is higher, though, as there are imports of beer in glass bottles and small breweries often have their own one-way glass bottles. There is no widespread common one-way system for glass bottles. The most typical one-way glass bottle is a "profile bottle", like the Swedish soft drink "Festis" or the Czechian beer "Urquel".

### **3.1.2 REF-PET- Bottle System**

There are common systems both for recycling and reusing of PET bottles.

Svenska Retur PET AB is the company which is responsible for the system of refillable plastic bottles.

#### **Facts about the 150 cl REF-PET-system:**

- 134 million refillable bottles are sold in Sweden every year.
- There are four rather similar looking bottles approved on the market, different goods can be filled into them.
- The bottles are transported in 3.6 million yellow crates, 570 000 red ¼ pallet re-trays and 320.000 silver-grey ½ pallet re-trays.
- The deposit for the bottle is 4 Sw. crowns.
- Level of reusing is 98 %.
- The PET return system started in 1991 and since then the volume is steadily increasing.

### **3.1.3 Other products in reuse packaging**

There are very small quantities of articles (food) other than beverages being offered in reuse packaging also they have not been seen in any official statistic.

One manufacturer of cooking oil, soya sauce and other liquids is using the common 33 cl returnable glass bottle for his products.

Some small manufacturers of jam and canned vegetables use returnable glass jars in two sizes. The customers pay a deposit and return the jars to the shop. The wholesaler collect the jars - and cardboard boxes - from retailers and directly from customers (backdoor delivery). This is a small business - a local wholesaler says he is handling about 25-50 jars a week and that he finds his customers more and more interested in the system.

## **3.2 Previous reuse packaging systems**

### **3.2.1 Reuse of wine and spirit bottles**

In 1996, wine and spirits were sold in 32.699 tons of reused glass bottles. Before the reuse system of Systembolaget was given up, there existed four types of reuse bottles for wine and spirits:

- 375 ml and 750 ml white and green glass for wine and
- 350 ml and 700 ml for spirits.

They were easily recognizable by the bunt mark "return bottle" on the bottom.

In Sweden wines and spirits, strong beers and strong cider are only sold in speciality shops, the Systembolaget (400 shops). There is an old tradition in Sweden of returning bottles to Systembolaget. Many school children have made good pocket change from collecting bottles.

In 1998, the biggest supplier of wines and spirits Vin & Sprit AB gave up their reuse packaging system. When the system was given up the returnable bottles lost market shares rapidly. In 1992 their market share was 80 %, in 1996 it was only 35 %.

One reason for this was the change in the tax system in 1992. The tax on alcohol was changed so it was no longer based on the price of the bottle of wine, but on the volume of alcohol. This lowered the price differences between imported and national wines.

This is one aspect, but the main reason from V&S's point of view was that the monopoly for importing alcohol ended in 1995. Up until then, V&S had a monopoly on importing alcohol. In 1997, there were suddenly 250 different importers of wine and spirits. None of them, except for V&S, were offering return bottles. V&S asked the other importers to go into the system but this was met with very little interest. Of course, this is the official statement, it is not known how serious those offers were.

Consumers choice is another reason. Consumers make their choices from a showcase in shops or in self-service shops (not many too many in number). The consumers prefer bottles with profiles rather than standard bottles which can get scratched after reusing.

In the law from 1994 which outlined the producer's responsibility, the goal for the reusing of glass bottles for wine and spirits filled in Sweden was to reach 90 % by 1/1 1997. By January 1997, the reusing level was just 80 %. However, the official level for 1997 was 88 %. By this time, only a very small portion of the bottles were reusable, but still the system did not reach the goal until it was closed down. The recovery level will probably remain high as the bottles are taken care of in the recycling system. Bottle banks are nowadays often strategically placed outside Systembolaget. Even if deposit is paid for all old return bottles until the end of 1999 all of the bottles are handled as one-way bottles.

Of course, you can ask why the system stopped when there was a law about the producer's responsibility including goals specially for reusing of bottles for wine and spirits. But there is nothing in the law that bind the producers to keep their systems. And there are no sanctions like pecuniary penalties for the producers who do not fulfil the goals.

The reason why the return bottles lost shares and why Vin & Sprit gave up the system are many - and have been discussed. The loss of the monopoly on selling alcohol to Systembolaget is one reason, consumers changed buying and drinking habits another - "consumers want nice bottles". The critic says that Vin & Sprit did not work very hard to keep the system - their main interest was to keep the market share. Among the critical voices are environmental organisations, leading politicians, the Environmental Protection Agency and Systembolaget who officially will state that they would prefer a common reuse packaging system for the EU.

### **3.2.2 Reuse system for milk**

The reuse packaging system for milk was given up in the 60's. But since then there have been some small scale experiments. One of these was the "steel cow" in some supermarkets, a milk tank shaped like a cow from which the customers could fill their milk into bottles. The cow was given up because of "too much work" and "customers were not really interested".

For a while, a private dairy, producing eco-milk, delivered 20 litre tanks to retailers (especially "green shops"). Customers could either bring their own bottles or buy a special bottle in the shop.

## **4. Distribution / redistribution of reuse packaging**

Reuse packaging is on the market all over the country - but of course there could be differences in the small scale projects and experiments. I.e. most of the back door delivering is a rather small business or very informal and remains distant from official statistics.

Returnable plastic crates are used all over the food stuff producing, wholesaling and retailing area. There are no geographical differences in the system. The crates are distributed to retail shops, to restaurants and other kinds of catering service business.

### **4.1 Distribution of beverages**

There are about 50 depot places for beverages all around Sweden. Their numbers are decreasing, i. e. the largest Swedish brewery Pripps has gone from 18 to 5 depots; Malmö, Växjö, Örebro, Sundsvall and Luleå. The two breweries are situated in Göteborg and Stockholm. Pripps has introduced a new system where an order is put together in special "cupboards" at the brewery and transported with long haul trucks to 14 different "breaking points" about 300 km from the breweries. Here the "cupboards" are put on other trucks for delivery to the customer.

Coca Cola cooperate with Falcon on distribution (a 100 year old Swedish brewery, which nowadays is more Danish than Swedish since Carlsberg possesses 60 % of the shares). The company DDAB has 17 depots around the country.

Even rather small breweries such as Zeunerts with 7 % market shares have their own distribution system. This includes distant and regional transportation and depots in six different places in south and central Sweden.

Many small breweries run their own distribution to in a small areas.

Breweries without or with a limited self run distribution distribute their merchandise via food wholesalers.

What they all have in common - big or small - is that the same people, and the same trucks are handling both the filled bottles and crates and the returned bottles from the retailers and other customers. It does not matter if the bottles are delivered from the brewery or from a depot - the empty bottles are taken back from the retailer by the same truck. Both crates and bottles are taken back to the brewery where they are sorted and washed before reusing

But even when are different companies are running the distribution, the members of the Brewers Association co-operate to minimise the transport costs. One example:

Pripps trucks pick up all "their own" return bottles from the retailers and take them back to a depot nearby. From there the Falcon trucks collect the bottles and take them to the Falcon brewery in Falkenberg (the biggest brewery in the south of Sweden). In the brewery, the bottles are sorted. The green bottles are kept in the brewery, but the white bottles are sent to Ramlösa mineral water brewery which is fairly nearby. The same system is used all over the country.

This optimum redistribution system is possible because of the very high level of standardisation in crates and bottles. Only three crates and two palette-trays (plus Coca Cola systems) cover most of the reuse systems.

## **5. Number of trips for reuse packaging**

The average use of a 33 cl return glass bottle is 40 times. (Brewers Association).

There is no comparable data on the 50 cl bottle as it has not been in use long enough.

One 33 cl bottle crate is making 3,5 trips/year on average.

One 50 cl bottle crate is making 2,9 trips/year on average.

One returnable PET bottle is making 3,5 trips a year

One PET bottle crate is making 3,2 trips/year.

## **6. Marking systems for reuse**

The EAN-code labels of the REF-PET-bottles shows that the bottle is connected to the Swedish system. The producer has paid his fees to the system and the customer will get his deposit for the packaging.

The customer cannot recognise if the EAN-code is right or not but the retailer and the retake machine can.

Breweries and importers of beverages in PET-bottles need certain permission from the government. To get this permission, the bottle must be connected to a system for reusing or recycling. That means the producer/importer must make an agreement with the official recovery company, Returpack PET AB. The company has constructed a manual and a specification for both the label and the bottle.

On the standardised 33 cl glass bottle, there are no reuse-markings on the labels, but the letters "33 cl" are minted in the glass near the bottom of the bottle. The bottle has been well known by consumers for more than 100 years.



There seems to be more problems with the 50 cl bottle even if there are letters in the bottom and often markings on the label. Consumers have not really got used to the bottle yet and there are a couple of one way bottles which are quite similar to the return bottle. Some consumers say: you have to look twice at the bottle to understand how to handle it.

## 7. Legal basis concerning reuse packaging

In the regulation about the producer's responsibility for packaging, (1994:1235) there are goals for recycling and reusing. The goals for reusing include return bottles for beer and soft drinks, return bottles for wine and spirits, and return PET bottles.

	<b>Goal</b>	<b>Result Dec 1997</b>
<b>Return bottles beer &amp; soda</b>	97 %	97 %
<b>Return bottles wine &amp; spirits</b>	90 %	88 %
<b>Return PET</b>	90 %	98 %

In 1997, the regulations were changed and the goals were set up so that they should be reached by end of June 2001. The recovery levels are not much higher, which is supposed to be an adjustment to the EU regulations. The great difference is that the new regulations only include recycling and energy recovery of material (this includes incineration). But the regulations and goals do not include reusing.

Both the regulation from 1994 and the one which was changed emphasise the importance of reusing, but there is no formal official support for reuse packaging. There are no reward systems like tax reductions, etc. The Swedish Environmental Protection Agency has underlined this in a report from November 1998. If the government really wants to keep the reuse packaging systems, there must be possibilities for both producers and consumers to gain advantages out of the system.

## List of contacts

- (1) Svenska Bryggareföreningen, Stockholm, 1998.  
Svensk Returglas 33 cl AB  
Svensk returglass 50 cl AB  
Svenska Retur PET AB
- (2) Vin och Spiritcentralen V&S
- (3) Swedish Cental Agency of Statistics, Stockholm, 1998.
- (4) Swedish Environmental protection Agency, Erik Westin, Stockholm.
- (5) Swedish Food Workers Union, Gerald Lindberg.

## Sources

Annual Report 1997, Swedish Brewers Ass., Stockholm, 1998

Swedish Brewers Association, web report „Packaging“

Swedish Environmental Protection Agency, Report 4748, Stockholm, 1996

Swedish Environmental Protection Agency, Report 4892, Stockholm, 1997

Mal och Medel, Swedish Food Workers Union, several issues, 1983-1998