

**Tirana, 19-20 July 2016**

**Session 5: Best practices to tackle land-based sources  
of Marine Litter**

**“Deposit, Return and Refund System (DRS) pilot  
implementation for beverage containers in Cadaqués  
(Catalonia)”**

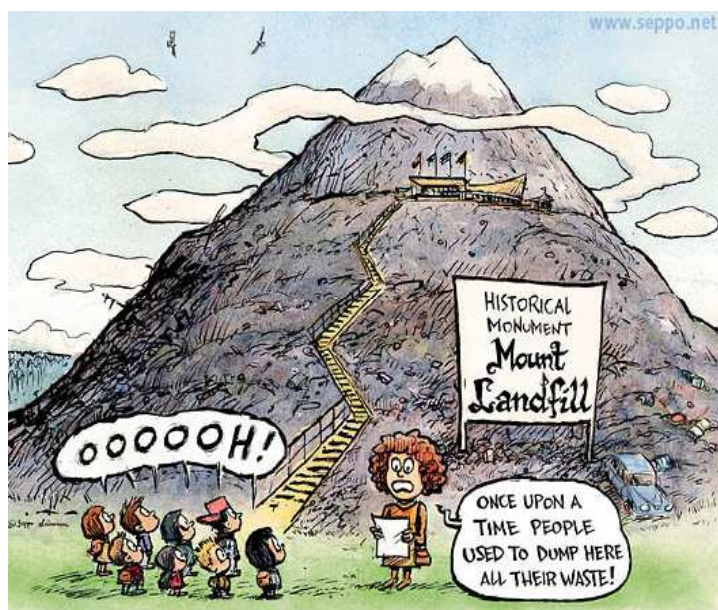
Regional Meeting on the Further Implementation of  
the Regional Plan for the Management of Marine  
Litter in the Mediterranean



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## Foundation for waste prevention and responsible consumption



## Memberships

Direction Board of ARC (Catalan Waste Agency)  
as representative of the environmental associations

EEB (European Environmental Bureau)

European Zero Waste Foundation

ACR+ (Association of Cities and Regions for  
Recycling)

**Finalist of the 2013 European Waste  
Prevention Award** (Desembruta-Clean up Day  
in Costa Brava)



Promotes projects, campaigns, studies and policy proposals to move towards a **zero waste society** (waste prevention, resource efficiency, sustainable production and consumption).



Engaging **many stakeholders** in campaigns for waste reduction:

Reduction of  
disposable bags



Green shops



Zero Waste  
strategy:  
multisectorial



Regulatory  
measures like  
Deposit-Refund  
systems



## Weak Producer Responsibility

**2/3 of beverage packaging are not managed through EPR**

**Some costs are not met by Green Dot Systems:**

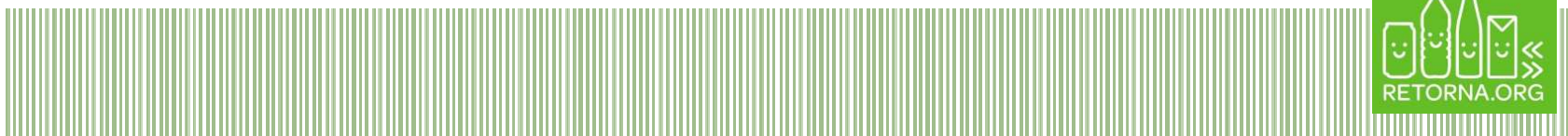
Littering (beaches!)

Disposal

**Separate collection at a standstill**

Glass below objective set by European Packaging Directive

Lightweight packaging on the verge (very low objective)





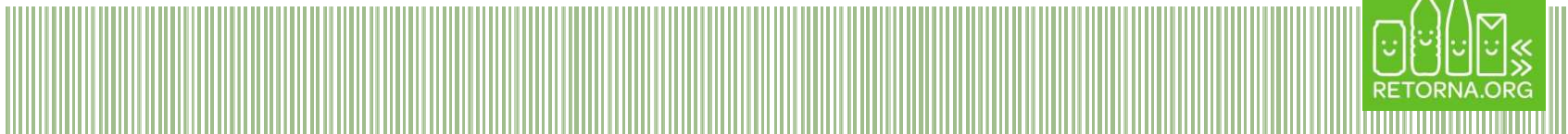
## Economic Instruments & Waste Management

- In the European survey “Use of Economic instruments and waste management” (2012), it is stated that the adoption of economic instruments helps to improve the performance of waste management
- Among the economic instruments should be considered:
  - Charges for waste disposal and treatment (landfill & incineration taxes)
  - Pay-as-you-throw (PAYT) schemes
  - Extended Producer Responsibility (EPR) Schemes for specific streams (packaging, ELV, WEEE, batteries, etc.)
- [The Deposit, Refund & Restoration System \(DRRS\) fits in the EPR Concept](#)



## The Deposit, Refund & Return System (DRRS) CONCEPT

- The **producer** or **packager** establishes a system to make possible the recovery of their packaging.
- To ensure this recovery, the **producer** or **packager**, thorough the **seller**, establishes a **DEPOSIT** (an economic value associated with each container) that **costumer** must pay in advance.
- Once the **costumer** deliver back the empty container to the system (shop or authomatic machine), the amount advanced is fully **REFUNDED** to the **costumer**.
- **RETURN** means that the container can return to the production line, for reusing or recycling, closing the cycle, where there is no waste but resources.



## Cadaqués, the Island Village

Located in North Catalonia

With only 3.000 inhabitants, its geographical characteristics give it a character of island at all levels



## Main Targets

### ● GENERAL TARGETS

- To show the feasibility of a DRRS.
- To assess the impact of DRRS on local waste management from environmental and economic point of view.
- Showcase for retailers, companies, NGO and administration.
- To assess return rate with deposit.

### SPECIFIC TARGETS

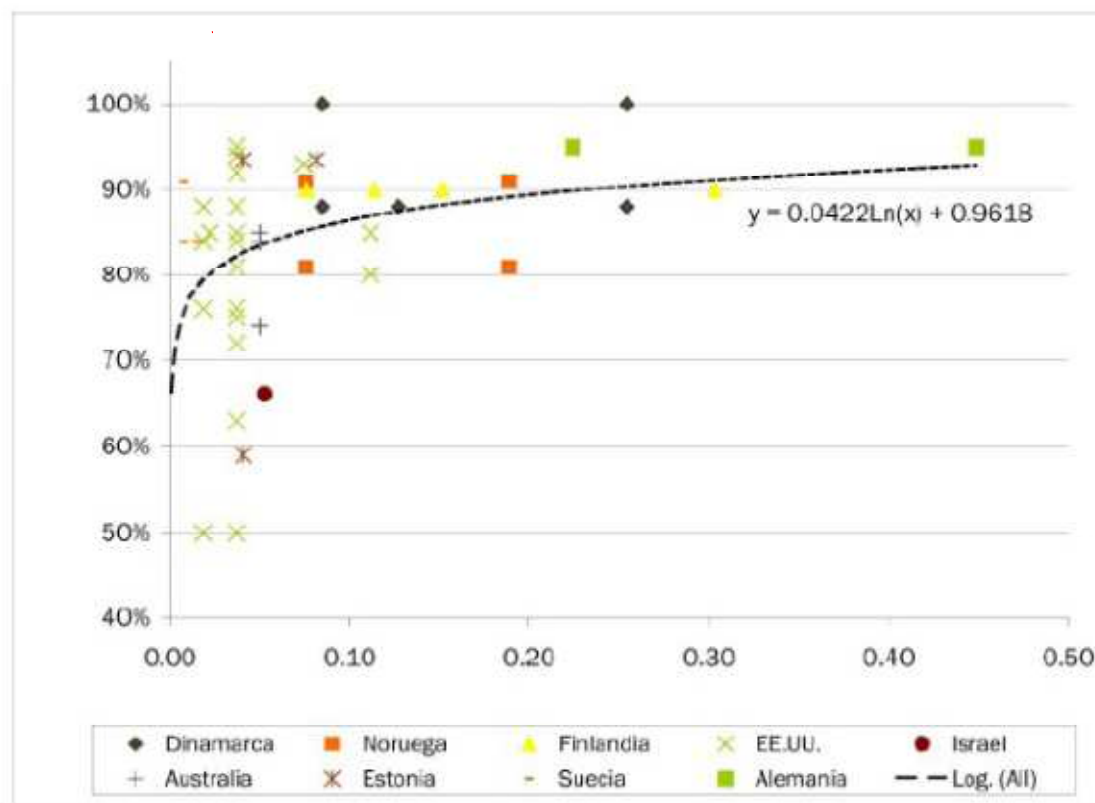
To assess return level with 5 € cent deposit.

To assess the general acceptance by the population

To assess impact in littering and current waste collection system.



## The expected performance of a DRRS



## Stakeholders involved & Political Support

- **RETORNA**
  - Fundació Prevenió de Residus (FPRC)
  - Gremi de Recuperació (GRC)
- **Technological Partners**
  - Tomra
  - Rhenus

### Other Stakeholders

Cadaqués Council  
Waste Agency of Catalonia  
Local retailers  
2 Supermarkets  
VALVI  
NOVAENDA  
8 Small shops

## What's the pilot project about?



- Temporary DRRS for one-way beverage containers: April 15th - June 30th, 2013
- Containers with 5 € cent deposit:
  - Packaging:
    - Plastic (PET) (< 3 liter)
    - Cans
  - Beverages:
    - Water
    - Juices
    - Beer
    - Soft drinks

## Local Retailers involved

- 2 supermarkets with automatic return machines
- 8 shops with manual return system





Consumers left a deposit of 5 euro cents for each container when bought their drinks



When returning each container, either manually or through the automatic machine, the consumer recovered the 5 euro cents of the deposit.

The ticket of the automatic machine is discounted from the next purchase or delivered in cash.



Containers collected from shops where stored in bags and labeled with a barcode to recognise which shop the containers came from



## Counting center

The bags were transported to the counting center, located in the industrial area of Cadaqués, where they were compacted in bales



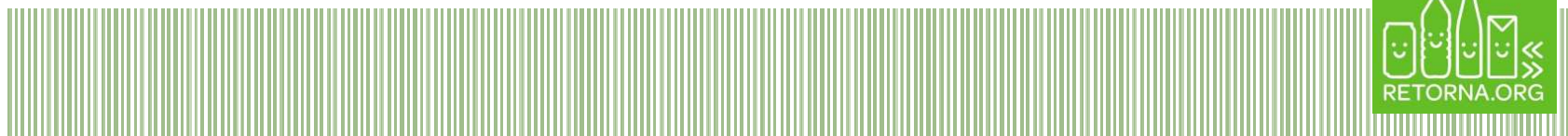


## Quantitative Results

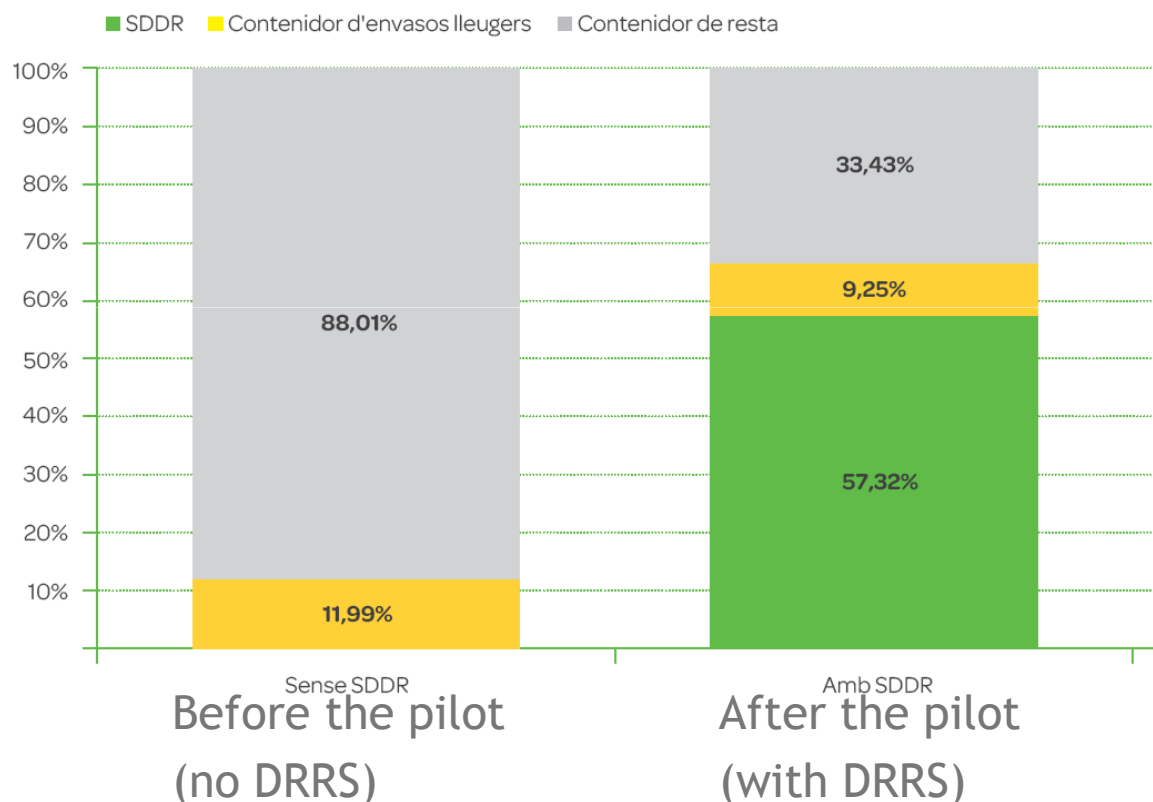
### Sales and Return of containers subjected to DRRS by months (15 April–30 June)

	April	May	June	TOTAL
Return of containers (ut)	10.246	31.223	39.714	81.183

1. The return level was growing overtime, with uneven behaviour between weeks due to climatic factors (rainy days during Easter) and tourist fluctuation.
2. Last week of June the level of return reached 91 %.



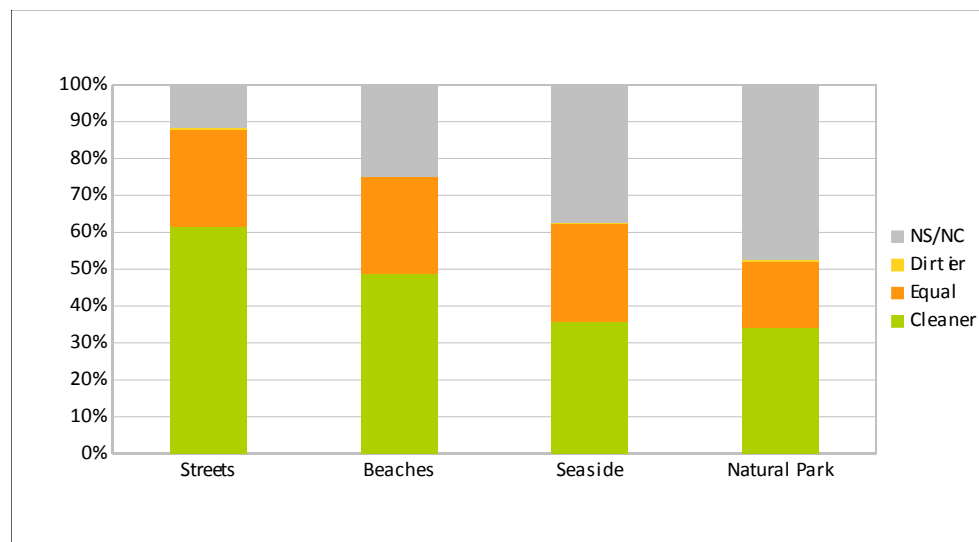
## Effect on Separate Collection & Recovery of Packaging



**The Separate Collection and Recovery of Packaging increased from 12 % to 66,6 %, which means multiply by 5 the existing levels of separate collection & recovery before the introduction of DRRS pilot project.**

## Results: littering reduction

The financial incentive helps to clean the town: giving an economic value to beverage containers it becomes more difficult to find them abandoned the town, beaches and natural areas.





## Qualitative Results



Better quality material for recycling

Usual quality  
materials

High Quality  
materials

Aluminium cans

0,75 €/kg

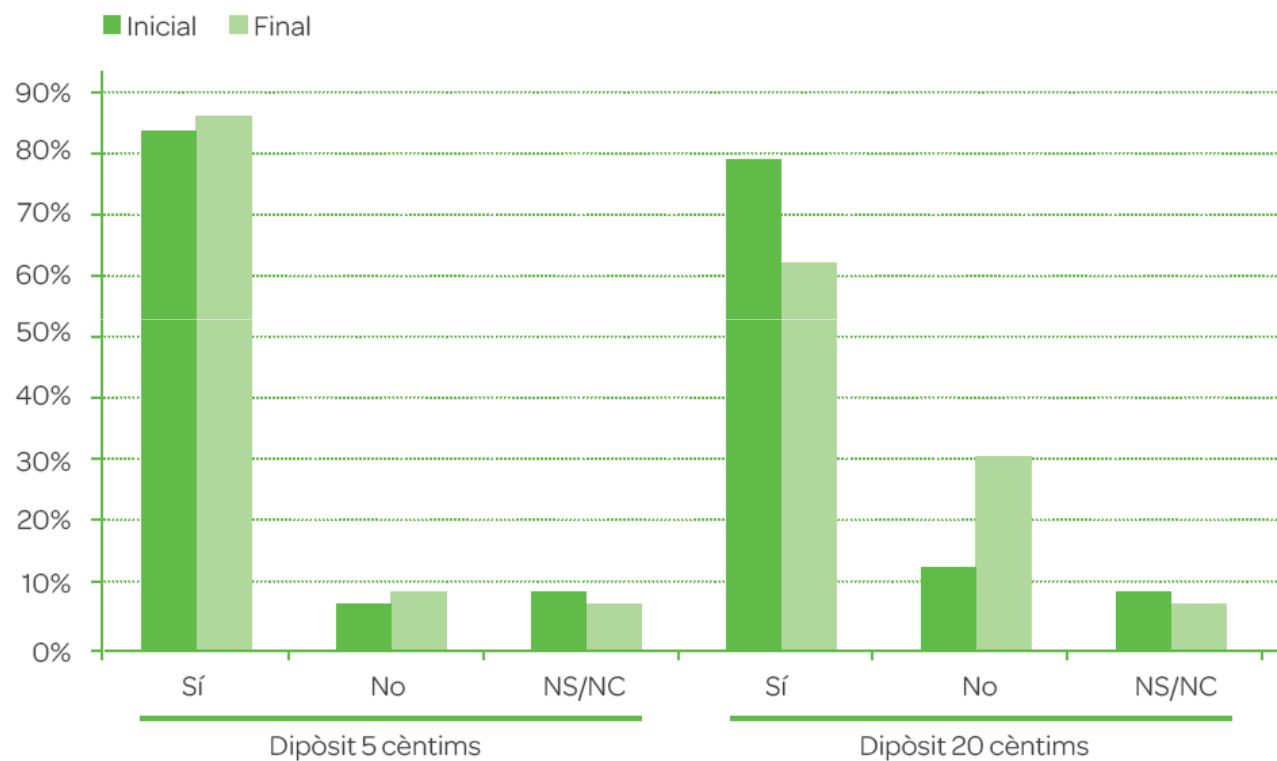
1,37 €/kg



## Other Considerations

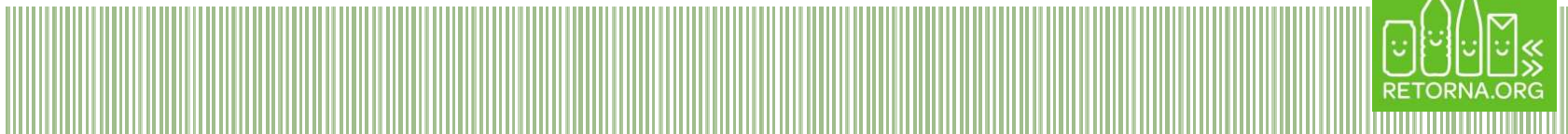
- Reduction on the amount of waste to be collected and treated (light packaging, residual waste).
- Reduction of marine littering.
- Reduction of streets and beaches cleaning.
- Savings due to the reduction of all these services, estimated in 7% - 9% of annual cost of collection and treatment.
- Higher economic value in the market of high quality materials (steel, aluminium and PET) in relation to medium-low usual quality materials

## Survey of citizens perception (**before** and **after** Pilot Project)



Survey of retailers perception (**YES**, **NOT** or **Don't know/Don't answer**)

## Other Considerations. III



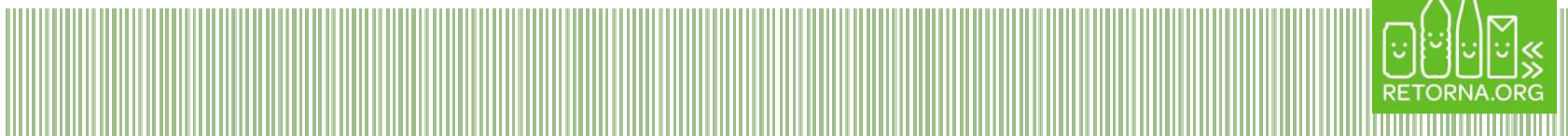
## Conclusions

- High level of return (92% in the peak)
- Selective collection x5 and reduction of littering
- Positive impact in the municipality budget
- Zero cost for the administration that implements the system
- High quality recycling (materials, upcycling bottle-to-bottle)
- High acceptance by the population and retailers



## Primera prueba del Sistema de Retorno de envases en España (4 min)

<https://www.youtube.com/watch?v=1Vmnu78wxxM>



## And after the pilot, what?

- Political will
- Included in the new Waste Program 2013-2020
- «Study on the technical, environmental and economic feasibility of the implementation of a deposit, refund and return system for beverage containers disposable in Catalonia» in progress  
(commissioned by the Catalan Waste Agency)





Thanks for your attention!



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