



WORLD CONGRESS
ISWA 2019
7-9 October Bilbao, Spain



UNIVERSITY OF LEEDS

PACKAGING RECYCLING SYSTEMS ON INFORMAL SECTOR: a comparative study

Jacqueline Rutkowski, DSc Eng



H2020-MSCA-IF-2017 – Project 792855 IRS-CESC

- Informal Recycling Sector are believed to
 - reduce overall recycling costs;
 - amplify recovered amounts of waste;
 - provide income to a poor and jobless urban population

Innovative solution for a social and environmental problem:
Social Technology + Solidarity Economy (Rutkowski & Rutkowski, WM&R, 2015)



How these informal operators should be invited to work with, rather than against, the Integrated Waste Management?

P-EPR : EU and Brazil



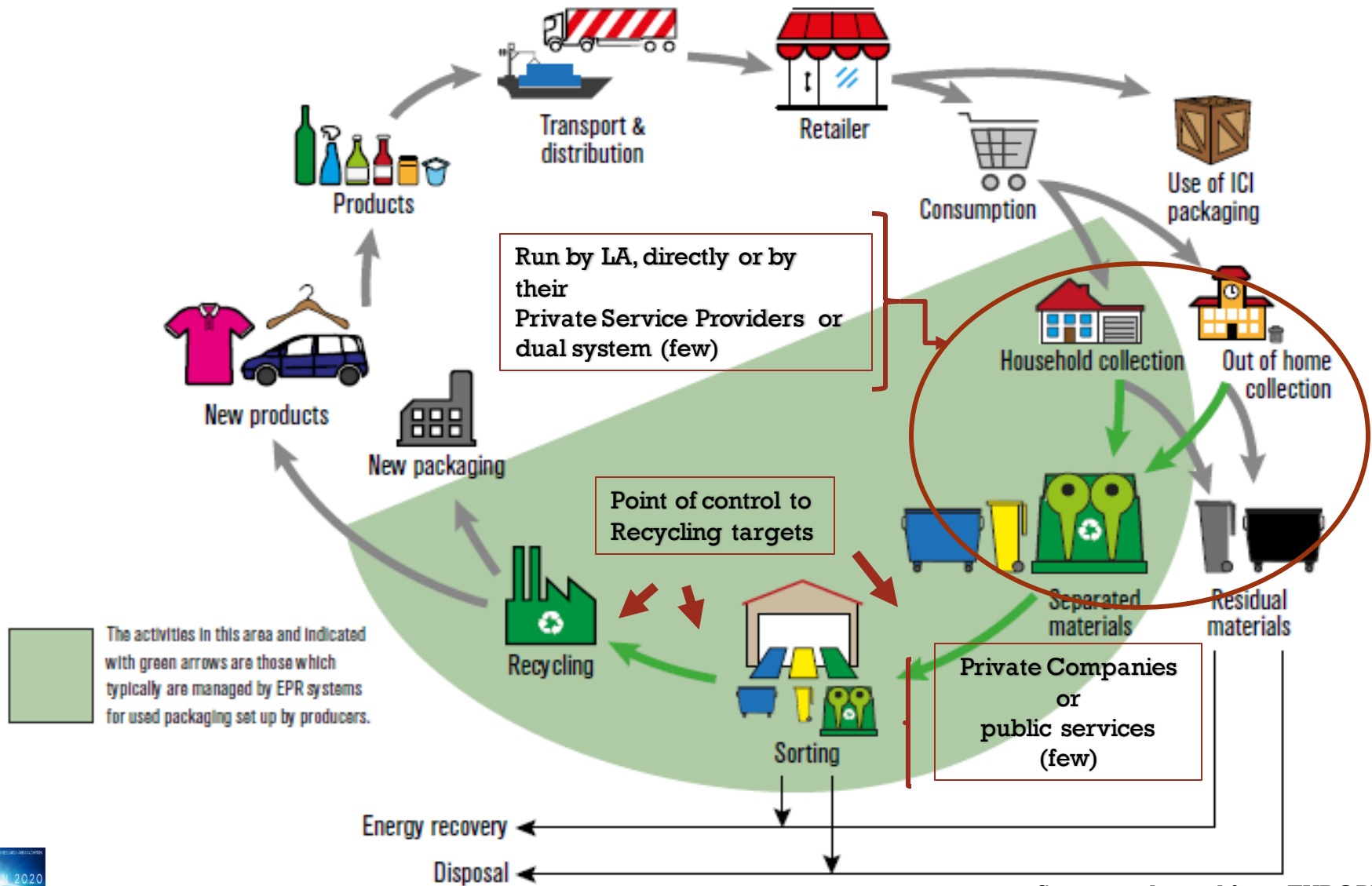
EPR Instruments	Usual approach	Way of implementation	Examples
Product take-back requirements	Recycling and collection targets defined for a product or material	Mandatory or voluntary	Most used scheme in the World, high transaction costs
Regulations and performance standards	Minimum recycled content on new products	Mandatory standards or applied by industries themselves through voluntary programmes	Danone announce: plastic bottles from 100% recycled plastic by 2025
Information-based instruments	Reporting requirements, labelling of products communicating to consumers about producer responsibility and waste separation, and informing recyclers about the materials used in products	Mandatory standards or applied by industries themselves through voluntary programmes	Indirectly support EPR programmes by raising public awareness
Economic and market-based instruments	Deposit-refund:	An initial payment (deposit) is made at purchase and is fully or partially refunded when the product is returned to a specified location	Concentrated on beverage container and lead-acid battery markets
	Advanced Disposal Fees (ADF)	Fees at purchase based on the estimated costs of collection and treatment, that may be collected by public or private entities and used to finance post-consumer treatment of the designated products	Used in 17% of the schemes in the World (PROs)
	Material taxes	Taxes on virgin materials (or materials that are difficult to recycle, contain toxic properties, etc.) to create incentives to use secondary (recycled) or less toxic materials	Appropriated for shifting innovation in design
	Upstream combination tax/subsidy (UCTS)	Tax paid by producers subsequently used to subsidise waste treatment	Associated to DfE, but not much used

EPR

- **Environmental target-oriented policy , “polluter- pays” principle: manufacturers responsibility for products’ cycle of life,;**
- **Aims:**
 - **increase collection and recycling rates of targeted products and materials;**
 - **incentivise Design-for-Environment (DfE) activities and innovation;**
- **Producers have taken over responsibility (financial, and/or organizational) for collecting or taking back used goods and for sorting and treating for their recycling/ recovery**

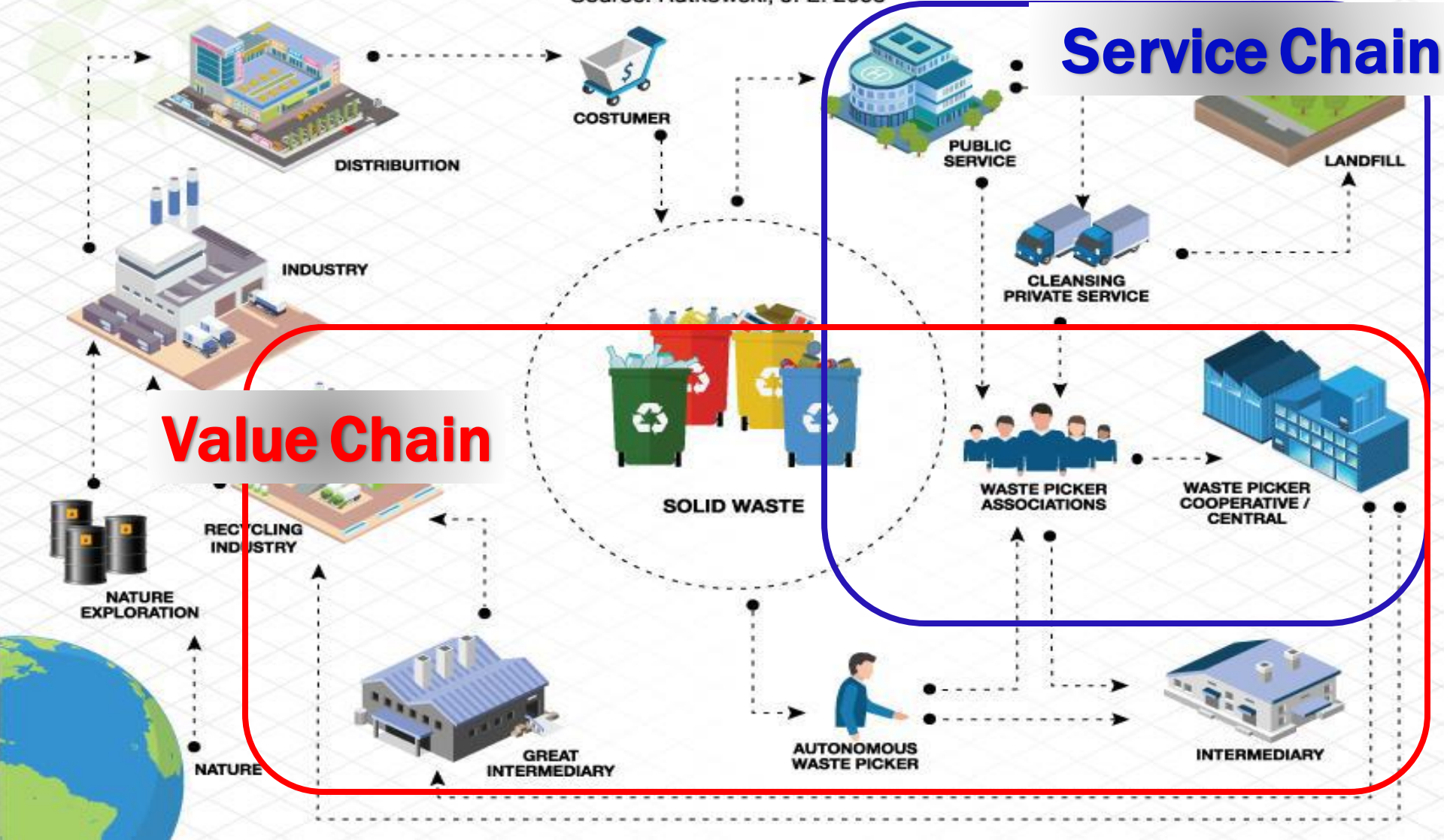


EU P- EPR



PRODUCTIVE CHAIN OF RECYCLED WASTE

Source: Rutkowski, J. E. 2008

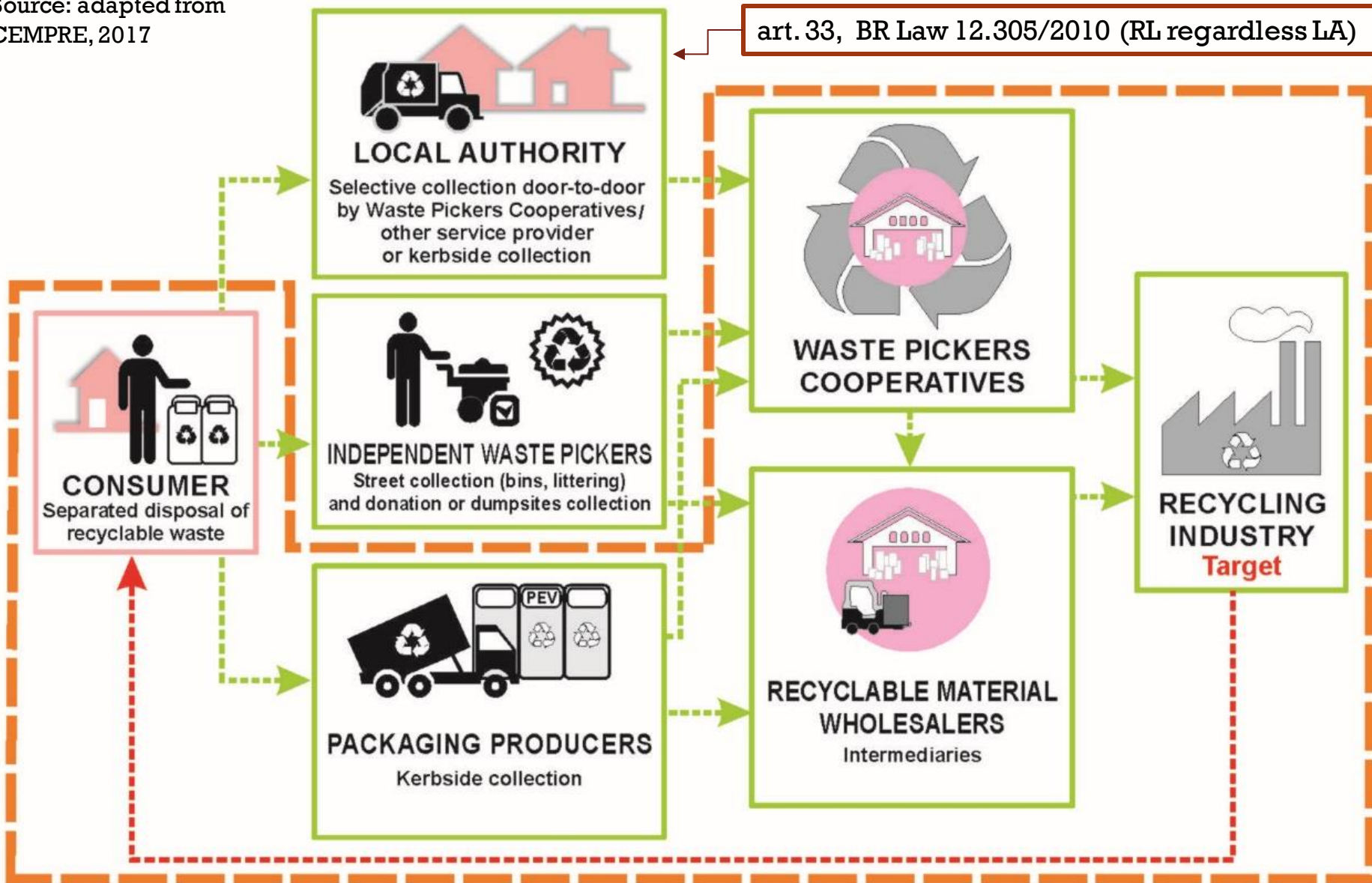


BR P- EPR



Source: adapted from
CEMPRE, 2017

art. 33, BR Law 12.305/2010 (RL regardless LA)



INNOVATION

- Different plastics, papers and metals recycled, regardless market value: improved household waste collection system and improved sorting processes;
- Compliance system traceability (database on recycled material traded): formalized registers of the informal sector; more reliable data on EPR; first Brazilian Yearbook of Recycling.
- Non-dependant system on LA or centralized operator : simpler operation, easier to disseminate.
- Mutual learning and support: DfE information (P); access to the recycling industry (WPs);
- Recognition of WP as actors in the system: partially supply lack of working capital, more sustainability.

EPR requisites

- *Define clearly **roles and responsibilities***
- *Establish measurable **targets***
- *Establish **reporting systems** (products placed on the market, collection, treatment, costs)*
- *Ensure **equal treatment**, and **non-discrimination** among implied actors*

(based in EU evidences)



BR P- EPR

CHALLENGES

- No relation to the costs of the collection and sorting services : *“Companies still do not pay for services, make donations...”*
- Many Municipalities that have implemented selective collection are not included in the scheme: WPs' co-ops as SC service providers for Municipalities and as sorting service providers for the Producers
- Bad governance: “ Weak” targets – not in all cities, no effective control on packaging marketed , no enforcement.

Quantitative analysis TBD...

EPR requisites

- *Define clearly **roles and responsibilities***
- *Establish measurable **targets***
- *Establish **reporting systems** (products placed on the market, collection, treatment, costs)*
- *Ensure **equal treatment**, and **non-discrimination** among implied actors*

(based in EU evidences)





WORLD CONGRESS
ISWA 2019
7-9 October Bilbao, Spain

H2020-MSCA-IF-2017 – Project 792855 IRS-CESC



UNIVERSITY OF LEEDS



**RECYCLERS
URBAN
SUPERHEROES**

SAVING TREES
BY RECYCLING
PAPER

PREVENTING
GREENHOUSE
GAS EMISSIONS

REDUCING
LANDFILL WASTE

**RECYCLERS
URBAN
SUPERHEROES**

PROVIDING MORE THAN 60%
OF THE RAW MATERIALS USED
IN THE RECYCLING INDUSTRY

COLLECTING BETWEEN
2 TO 4 TONS
OF RECYCLABLE
MATERIAL PER
RECYCLER PER MONTH

TRAVELING KILOMETERS
ON FOOT EACH DAY TO PROVIDE
A PUBLIC SERVICE

PREVENTING PLASTIC
FROM ENDING UP IN THE OCEAN

IRR Iniciativa Regional para el Reciclaje Inclusivo
Tel: 944 21 40 42
Fax: 944 21 40 43



Thank you for listening!

J.E.Rutkowski@leeds.ac.uk