



LOWaste
LOCAL WASTE MARKET
for second life products

LOWaste Project
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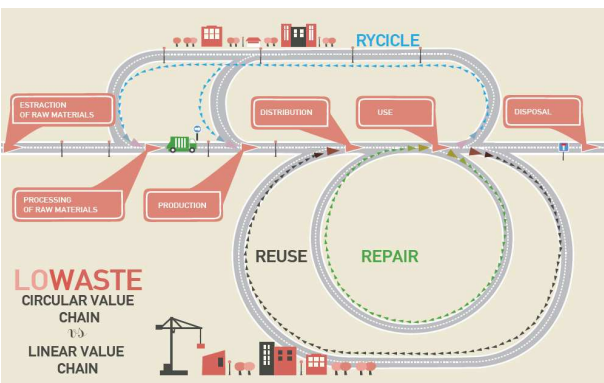
Municipality of Ferrara Vision



The Municipality of Ferrara has a strategic goal of reducing waste by acting mainly on prevention, reuse and recycling.

The idea was to create the conditions for a **circular economy district** based on locally produced waste.

The approach was collaborative, through **public-private partnerships** involving waste operators, small reuse and recycling platforms, artisans and SMEs engaged in the development of materials and manufacturing.



LOWASTE
CIRCULAR VALUE CHAIN

LINEAR VALUE CHAIN

RYCICLE

REUSE

REPAIR

EXTRACTION OF RAW MATERIALS

PROCESSING OF RAW MATERIALS

PRODUCTION

DISTRIBUTION

USE

DISPOSAL

Context: actors and partners



The project was developed between 2011 and 2014 and it was co-financed by the European Commission through the Life+ fund.

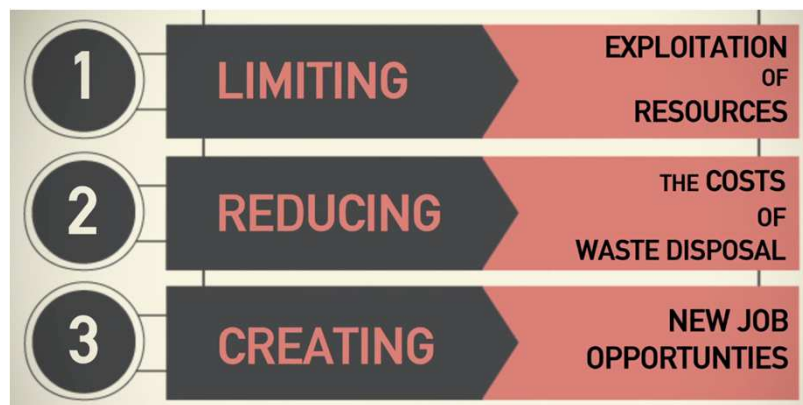
Project partners:


- Municipality of **Ferrara**,
- The social cooperative **La Città Verde**
- **Impronta Etica**, a network of Italian companies engaged in the promotion of Corporate Social Responsibility
- **RREUSE**, European network of social enterprises that operate in the recovery and recycling of waste
- **Hera Spa**, local utility



...and the LOWaste for Action Community...

The objectives






LOWaste the video

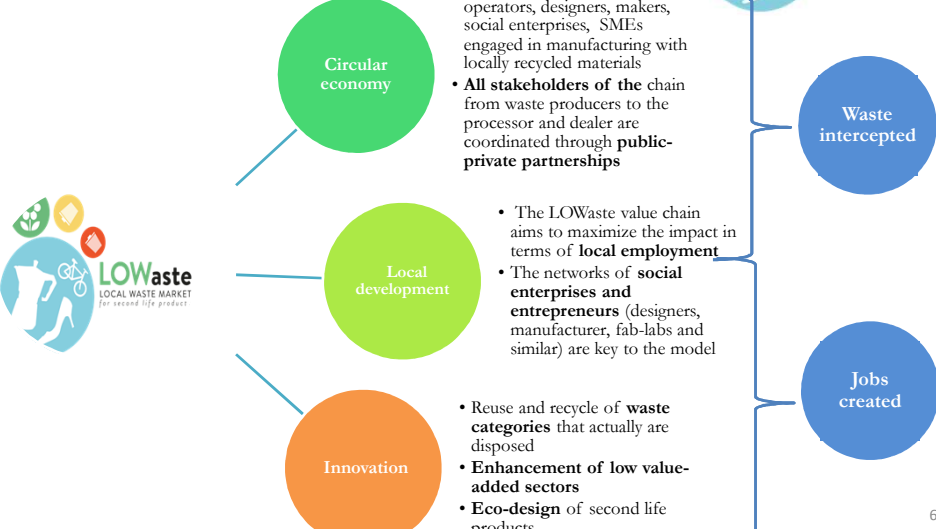
[Ferrara: the video!](#)

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

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Drivers and outcomes



Circular economy

- Local district of waste operators, designers, makers, social enterprises, SMEs engaged in manufacturing with locally recycled materials
- All stakeholders of the chain from waste producers to the processor and dealer are coordinated through **public-private partnerships**

Waste intercepted

Local development

- The LOWaste value chain aims to maximize the impact in terms of **local employment**
- The networks of **social enterprises and entrepreneurs** (designers, manufacturer, fab-labs and similar) are key to the model



Jobs created

Innovation

- Reuse and recycle of **waste categories** that actually are disposed
- **Enhancement of low value-added sectors**
- **Eco-design** of second life products

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The governance model





Virtuous model of **public-private partnership**:

- **Synergies and collaboration** between individuals with divergent visions
- **Integration** between an industrial approach to waste management and local initiatives for innovation
- **Exchange of know-how and technical expertise** alongside the creation of a stable relational assets

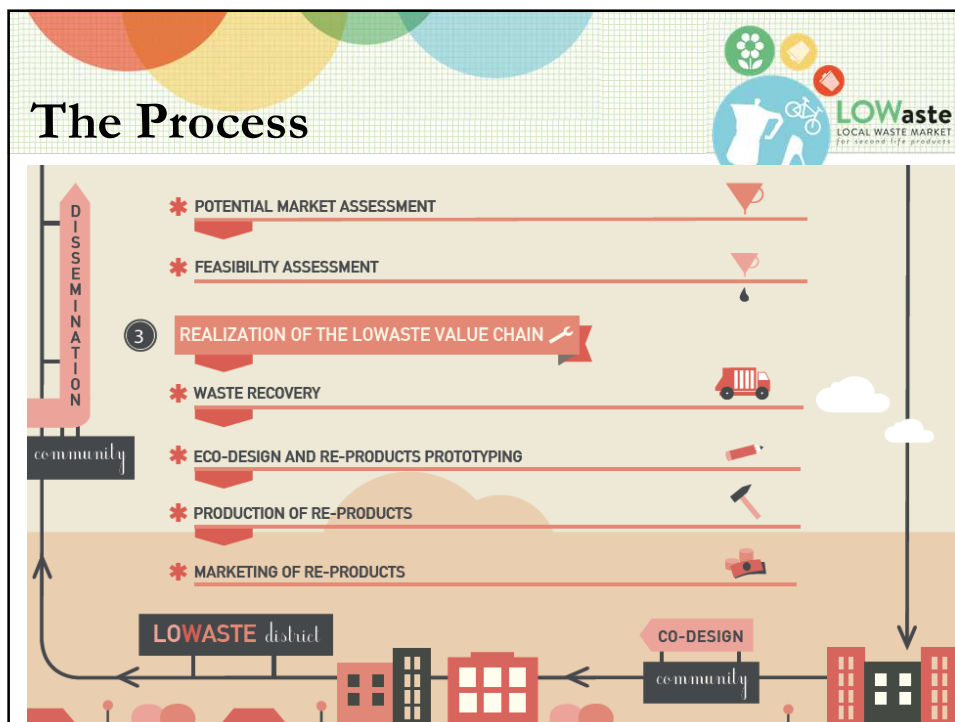
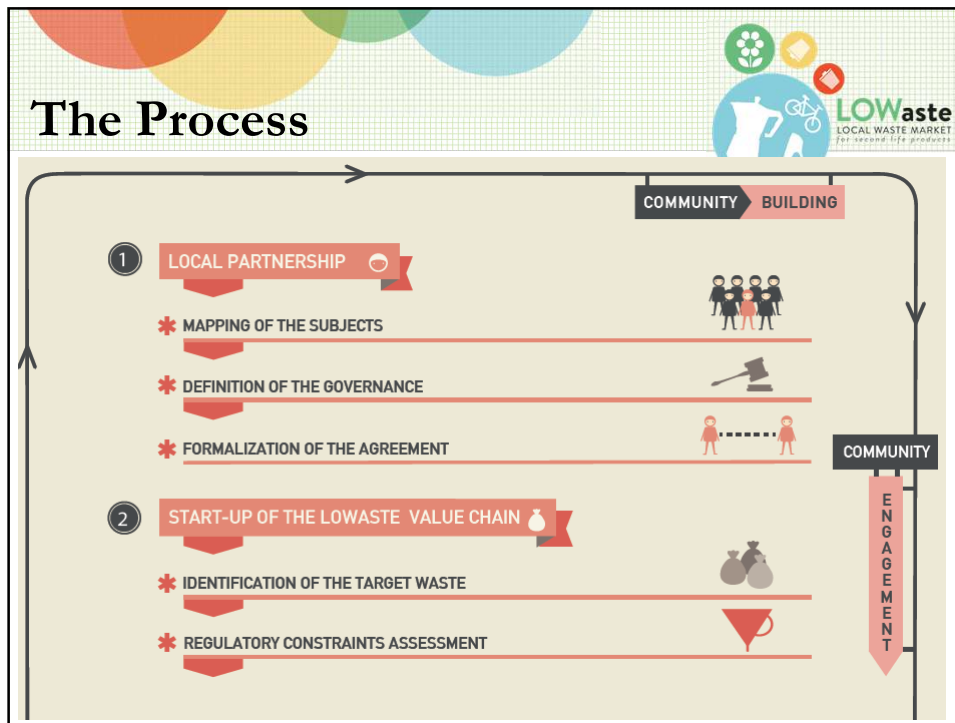
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Project steps and milestones





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LOWaste for Action Community





200 subscriptions

60 candidates

40 selected participants to the co-design phase

7 scalable projects

- prefabricated panels with recycled inert from building
- engineering prefabricated panels for floors/facade
- semi-finished textiles
- fab-lab low-tech
- training and awareness program
- exhibition design for the marketplace
- ...

13 products prototypes

- carpets
- bags carrier
- first aid cabinets
- curtains for windows/showers
- pocket medical tool bag
- camping kit
- footwear and accessories
- accessories for children
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LOWaste pilot projects



WASTE STREAMS SELECTION → PRODUCTS IDENTIFICATION → SECOND LIFE PRODUCTS PROTOTYPES → MARKET



TEXTILE FROM HOSPITALS



OIL AND FOOD WASTE



AGGREGATES FROM DEMOLITION




STREET FURNITURE AND PLAYGROUND EQUIPMENT



REUSE CENTER

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An example of pilot: hospital textile


STARTING WASTE MATERIAL:
Textile from the operating room

SUBJECTS INVOLVED:
Servizi Ospedalieri Spa
Social cooperative La Piccola Carovana
Social cooperative La Città Verde

REPRODUCTS:
gadget for fairs
bags, cases and pouches, furniture (chairs and cushions), technical clothing (sea and mountain)


➔



Shoes by Cartavetrata



An example of pilot: hospital textile

The number of the value chain

- 32** projects identified and **24** prototyped;
- 23** designers and makers involved in the design;
- 90** tons per year of medical textile savable from disposal;
- up to **67** tons of CO₂e saved for the non-disposal;
- 90** tons of raw material avoided for the production of new products;
- up to **2.159** tons of CO₂e saved using secondary raw materials



An example of pilot: aggregates from demolition





STARTING WASTE MATERIAL
Materials resulting from the demolition and construction of buildings


SUBJECTS INVOLVED:
Various Construction Companies
Social cooperative la Città Verde

REPRODUCTS:
Road foundations fills
Panels for cladding facades



Reazione Interte – Petricor Studio

An example of pilot: aggregates from demolition



The number of the value chain

- 2 projects and 1 prototype of cladding panel
- 1 project for communication, training and awareness creation related to specific targets
- 1 project for the creation of an information platform for the supply of recycled aggregates
- 11 designers and makers involved in the design
- 1 pilot test made by the Municipality of Ferrara: 1,5 km of roads made amounting to 4.090 cubic meters of aggregates
- 11.200 tons of potential recycled aggregates per year
- up to 107 tonnes of CO2eq avoided preventing landfill
- up to 486 tonnes of CO2eq avoided by not using aggregates produced in quarries.



LOWaste requirements



LEGAL COMPLIANCE

- End-of-waste
- Certified requirements for marketing

RATE OF RECYCLING / REUSE

- Typology and % of recycled materials
- Typology and method of reuse

Technical Requirements

IMPACTS ON THE ENVIRONMENT

- Waste prevention (e.g. kg of waste intercepted)
- Resource saving (e.g. CO2 emissions avoided)

SOCIAL IMPACTS

- Territorial scale (e.g. Km of transports)
- Employment benefits

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Thank you!

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