

Working on Zero Waste

*From global vision to local practice:
rationale, approaches, results*

Enzo Favoino



Scuola Agraria del Parco di Monza



Chair, Scientific Committee, ZeroWasteEurope

A few questions to answer

- **What is Zero Waste**
- **How does Zero Waste work**
- **Does it work? Possible achievements**

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Zero Waste: the global role



- Zero Waste a strategy devised to maximise short- and long-term efficiency in resource management
- A codified, peer-reviewed Zero Waste Hierarchy is kept by ZWIA (Zero Waste International Alliance)
- Ongoing recognition/certification programmes for ZW Communities and ZW businesses. Minimisation of residuals the key goal (and metrics)





60%



27



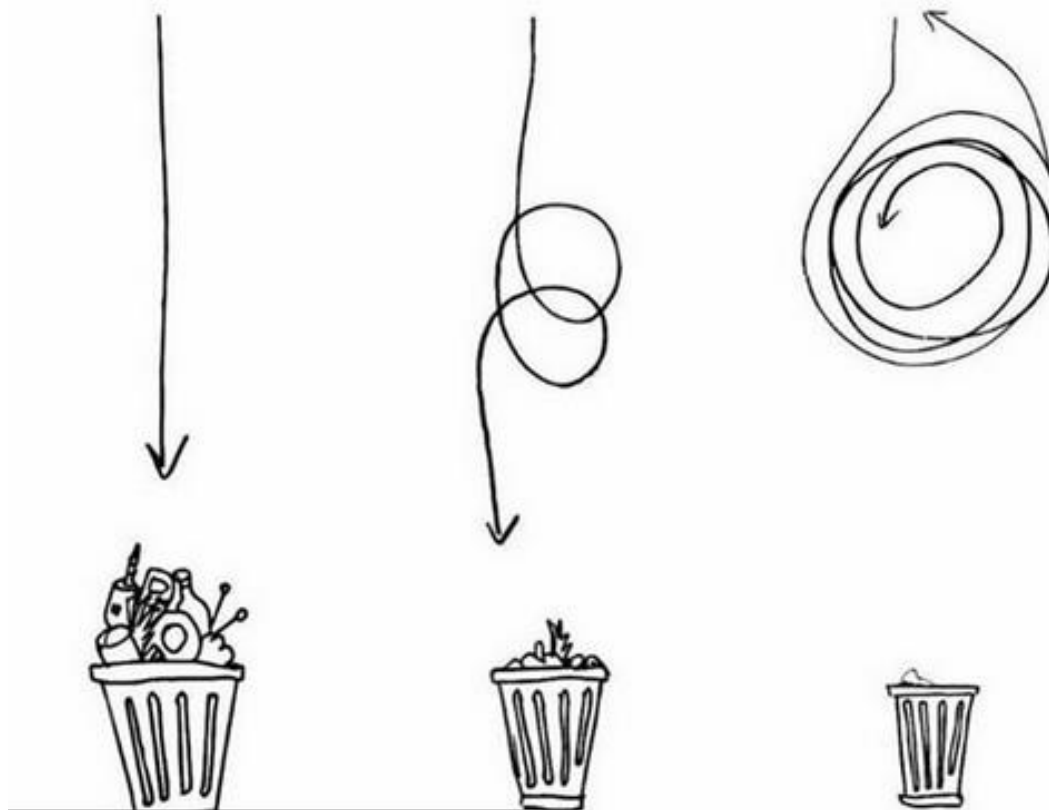
5000 kg

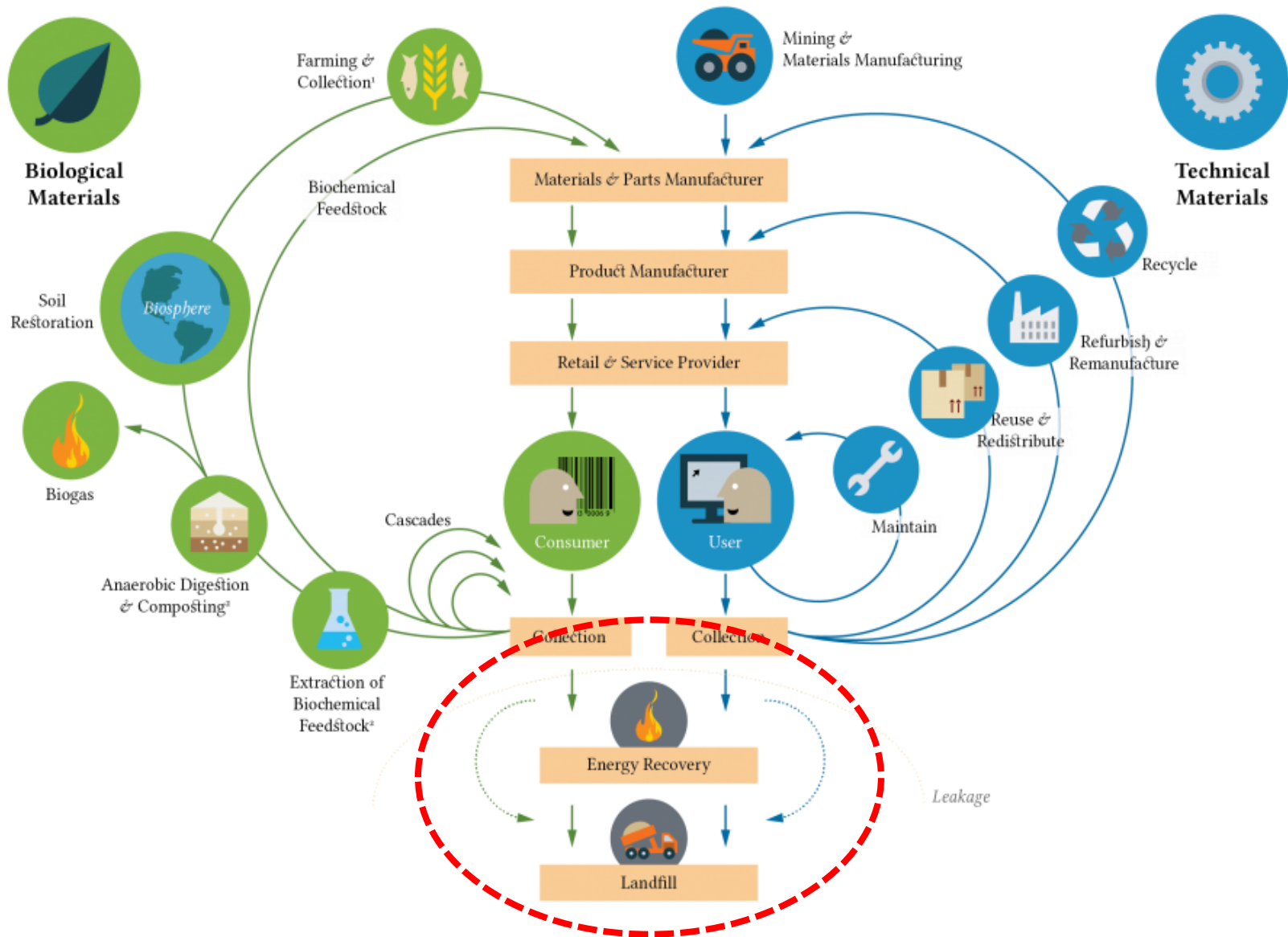
Circular economy made simple

LINEAR ECONOMY

RECYCLING
ECONOMY

CIRCULAR
ECONOMY







Key provisions of the Circular Economy Package

- **Material recovery goals: 65% (2035)**
- **For packaging waste: 70% (2030)**
- **Consolidated EPR**
- **Ecodesign** (durability, repairability, no planned obsolescence, less resource-intensity)
- **Mandatory separate collection of organics (2023)**



EUROPEAN
COMMISSION

Brussels, 2.7.2014
COM(2014) 398 final

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

**Towards a circular economy:
A zero waste programme for Europe**



**Commissioner Vella
(Feb 2016) makes reference
to Zero Waste schemes
(Capannori, Treviso, Parma)
as *“living examples of
operational implementation
of principles tabled in the
Circular Economy Package”***

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The principles of Zero Waste: the 4 “R”s



- *Reduce*
- *Reuse*
- *Recycle*
- ***Re-design***

A basic ZW workprogramme

- Kerbside collection – include the organics!
- Waste prevention practices at local level
- Pay-as-you-throw
- Check composition of residual waste
 - Redesign collection for continued optimisation
 - Feed back to producers in order to address non-reusable/recyclable materials

A basic ZW workprogramme

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The key role of organics

- **QUANTITATIVE:** fundamental to achieve highest material recovery rates
- **OPERATIONAL:** minimising organics in residual waste makes it possible to shrink collection rounds
 - cost-optimisation
 - further driving effect for increased separation of dry recyclables, too)



Dedicated collection of foodwaste at high-rises



Philippines 40.780

Egypt 35.902

China 26.889

Peru 19.590

Sri Lanka 16.068

Romania 14.546

Ecuador 13.229

Ukraine 8.209

Morocco 8.152

Bangladesh 7.563

Poland 1.009 (8.600 in Lombardy)

The importance of Feeding back paving the road to minimisation of Residual Waste





A few questions to answer

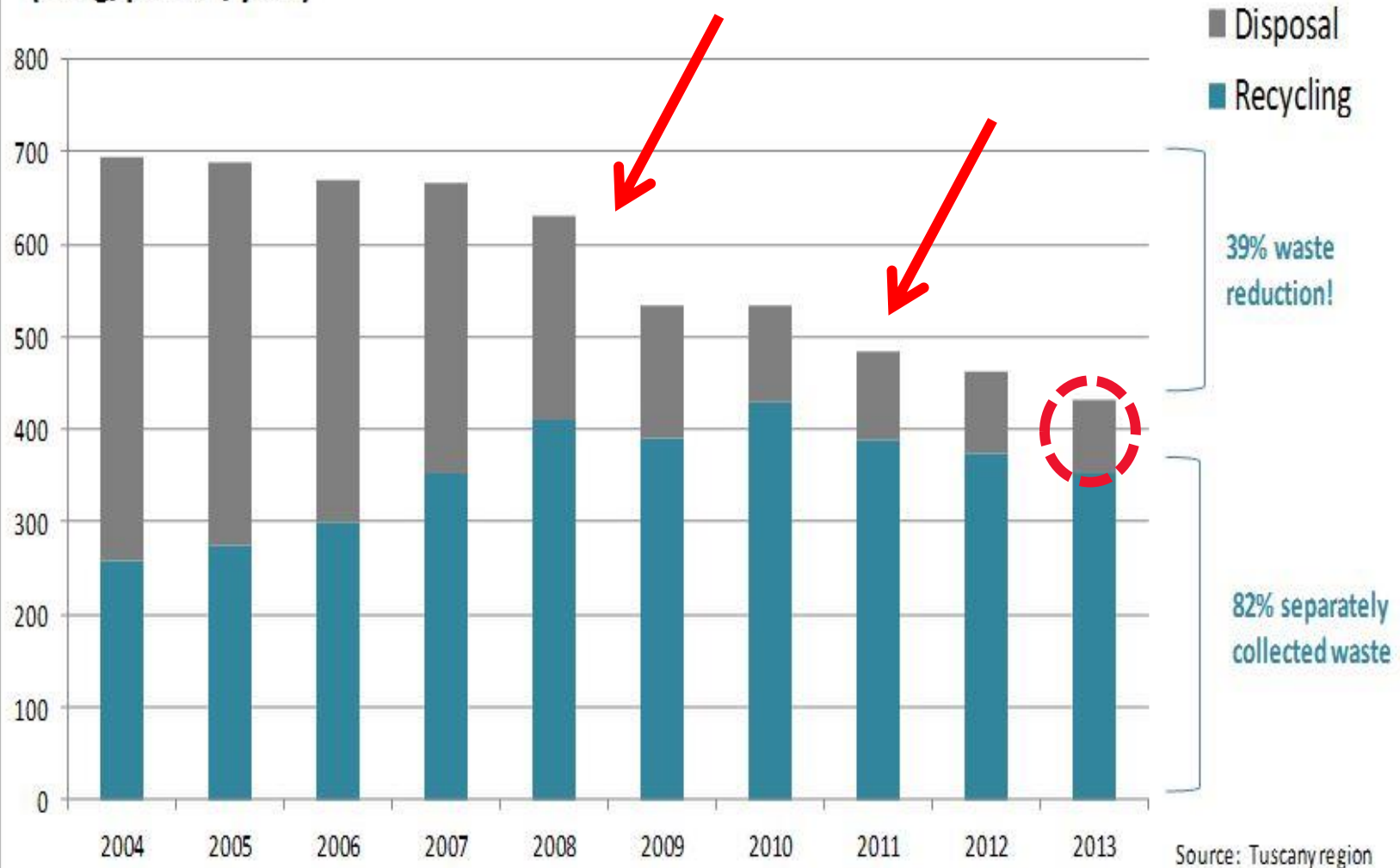
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Evolution of separate collection and waste generation in Capannori 2004-2013 (in Kg/person/year)



Ljubljana – 1st EU capital to declare ZW in Europe



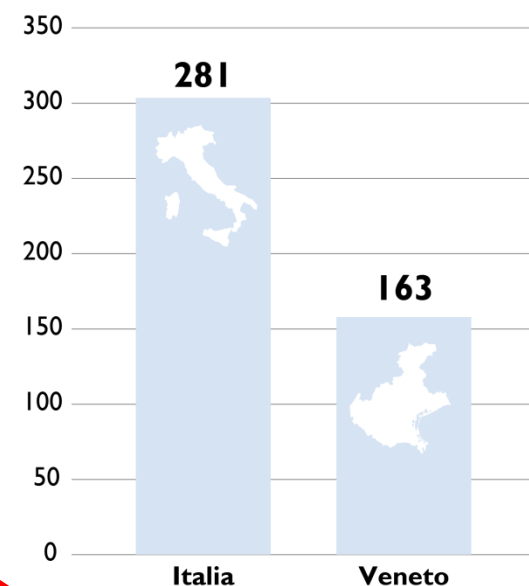
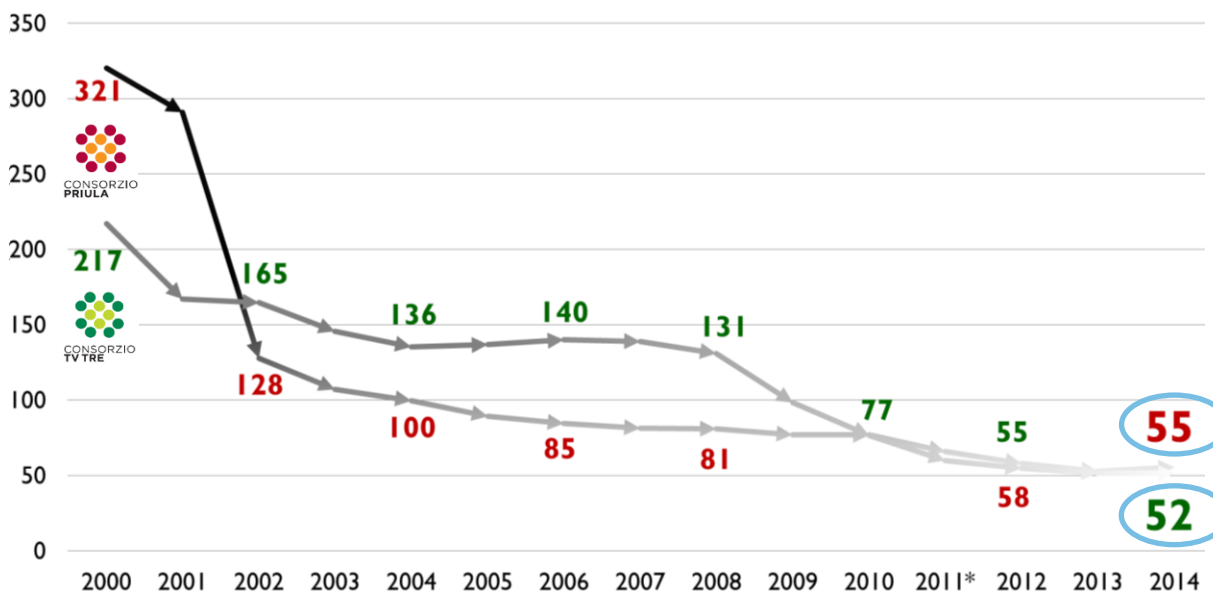
Present and future ZW plans in Ljubljana

- Current situation:
 - Separate collection rate: 65 %
 - Amount of residual waste: less than 100 kg / person / year
- Commitments:
 - Separate collection rate by 2025: 78 %
 - Separate collection rate by 2035: 80 %
 - Amount of residual waste by 2025: 60 kg / person / year
 - Amount of residual waste by 2035: 50 kg / person / year

ITALY

- Separate collection rates:
 - Around 1000 Municipalities above 70%
 - Around 300 Municipalities above 80%
 - A few above 90%
- The new metrics! Minimised residual waste in kgs/person.year
 - Hundreds Municipalities below 100 kgs
 - 510 Municipalities below 75 kgs
 - Many below 50 kgs
 - Lowest ones around 20 kgs

Residual waste in Contarina (2 sub-districts, 50 Municipalities, pop. 530.000) (kg*inhabitant/year)



SOURCE

dati Contarina 2014 (Media annuale aggiornata a Giugno),
Rapporto Rifiuti ISPRA 2014 (dati 2013 Italia); Relazione Rifiuti Urbani ARPAV (dati 2013 Veneto)

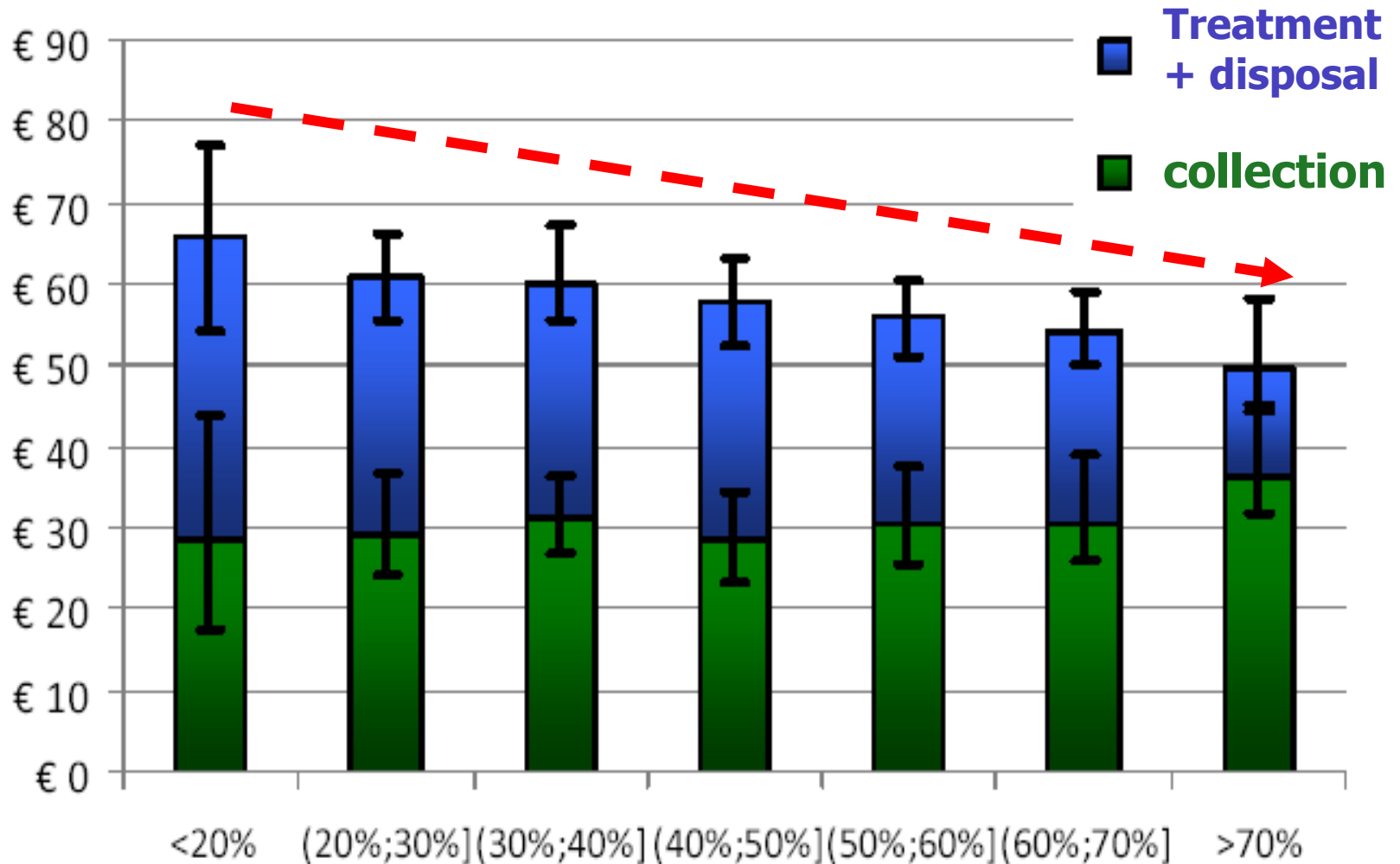
**mid-term goal:
- 80% Residual
Waste by 2023**

Cost optimisation

(Lombardy, pop. 10M, 1547 Municipalities)



**Cost of collection (green bars)
and cost of treatment/disposal (blue bars)**

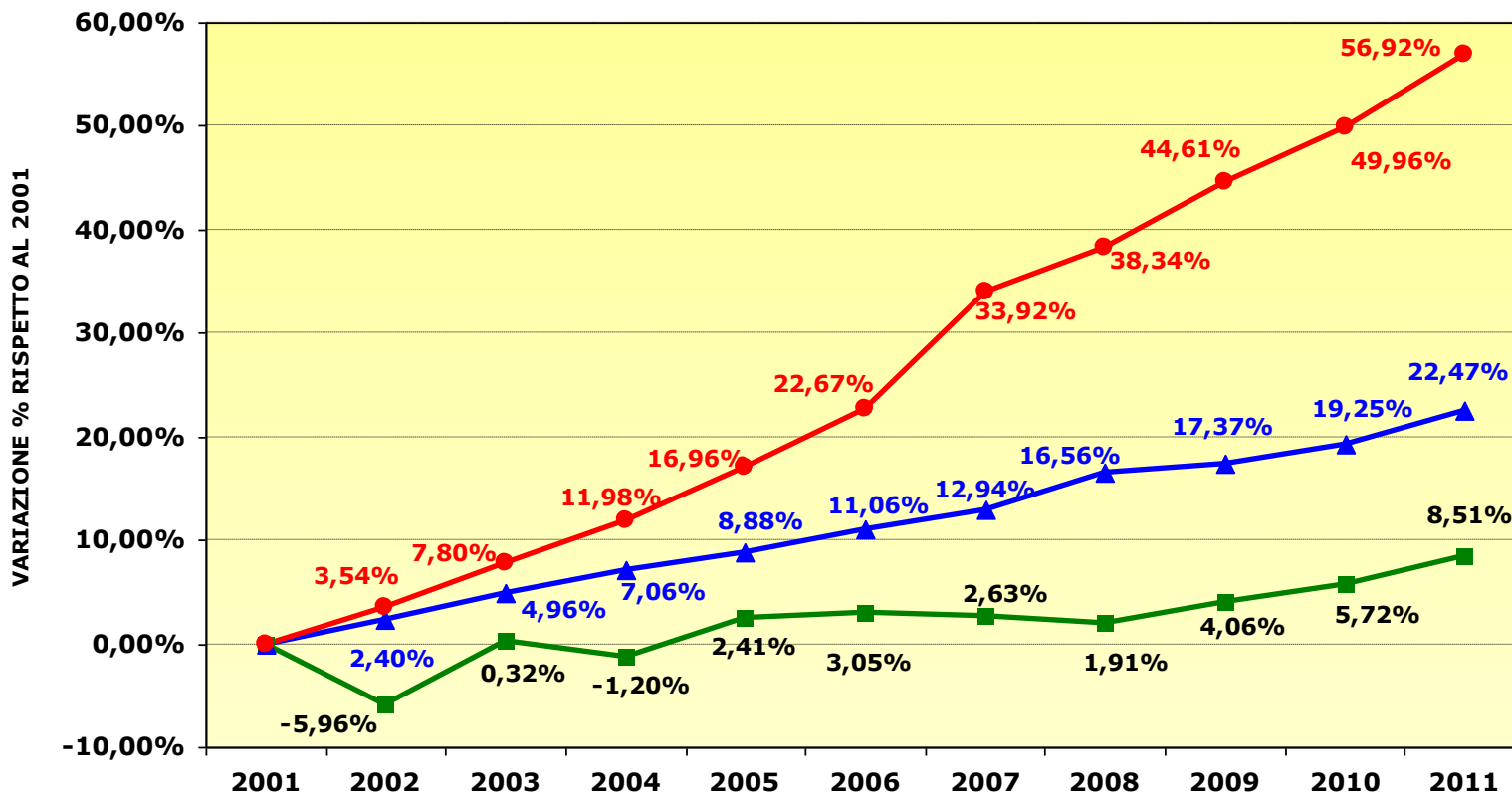


Trends in cost

Average national cost of waste management (red line)

Cost of life /inflation (blue line)

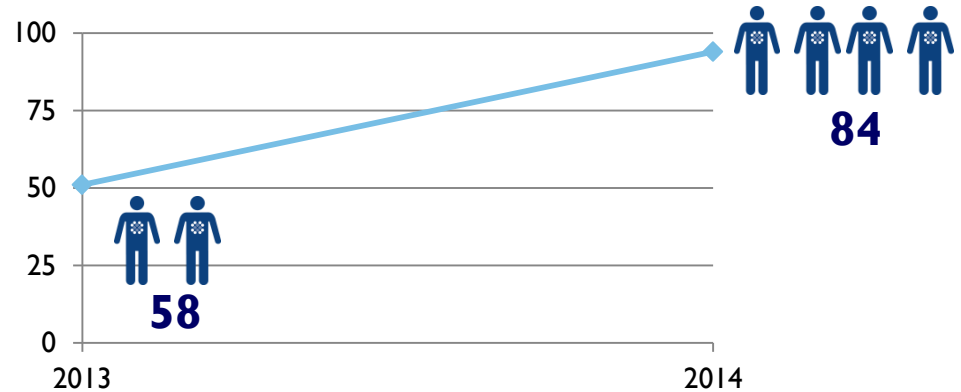
Cost of waste management in high recycling schemes (green Line)



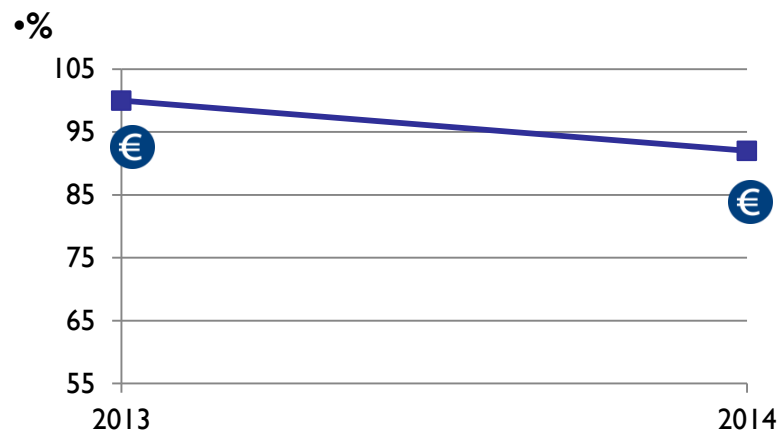
- TARIFFA DOMESTICA CONSORZIO PRIULA variazione % rispetto anno base (2001)
- ▲ INDICE NAZIONALE PREZZI AL CONSUMO ISTAT FOI variazione % rispetto anno base (2001)
- EVOLUZIONE MEDIA TARIFFE RIFIUTI IN ITALIA -variazione % rispetto anno base (2001)

'Green jobs' after rolling out curbside collection in Treviso (pop. 80.000)

Staff



**Total costs
(management + disposal)**



Thanks for your attention



Enzo Favoino



Scuola Agraria del Parco di Monza

335.355446

favoinoenzo@gmail.com