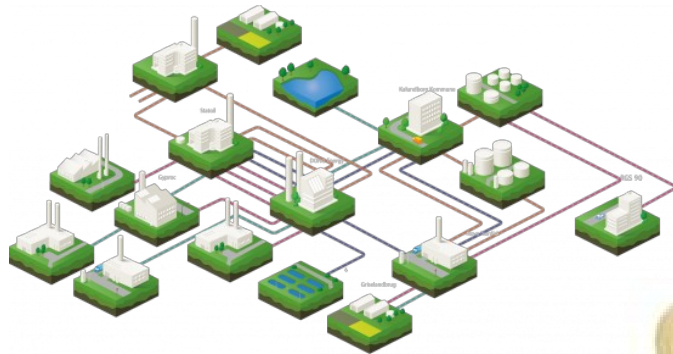


HERAKLION 2019



The Water-Waste-Energy
Nexus: Closing the loop
while contrasting the
nimby syndrome



G. Mancini, A. Luciano,
P. Viotti, D. Fino
giuseppe.mancini@unict.i



Heraklion
June 26th 2019

Issue or Resource?



Cortesia grafica di
prof. Raffaello Cossu

The issue of posing easy questions....



**---is that then you expect simply
answers...**

Before

After



**but most of the time you do not
get the (complete) truth**

Before

...Never



The mean quality of the information and the “miracles” it promises



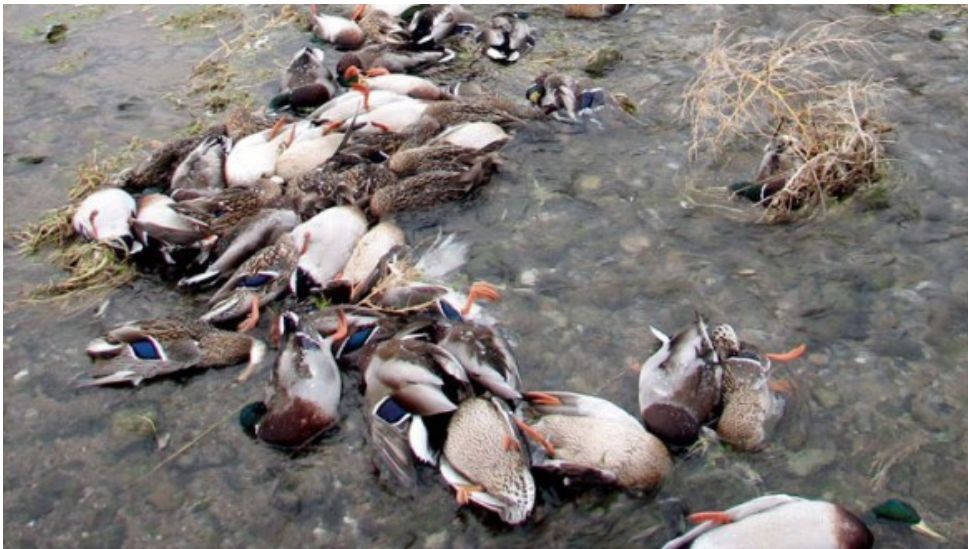
This is **PAOLA**. She weighted 140 kg.
She went to the doctor, started the diet and the
gym and she lost 4 kg in 8 months.
The girl next to her is her cousin **MARTA**

And the «holy» man who profess it

Waste do
not exist



Nature doesn't know the term "waste"



Humans are today less simple and “natural” and a little bit ‘PICKY’

THE EVOLUTION OF MAN

BY C-SECTION COMICS



The zero-waste (uncompromising) approach

 Zero Waste Athens 



Zero Waste Athens
@zerowasteathens

Home

Informazioni

Foto

Post

Community

[Crea una Pagina](#)

 Segui  Condividi  Salva 

Foto

LINEAR ECONOMY

Take
↓
Make
↓
Use
↓
Waste



RECYCLING ECONOMY

Take
↓
Make
↙ ↘
Recycle Use
↖ ↗
Waste



CIRCULAR ECONOMY

Take
↓
Make
↙ ↘ ↗
Recycle Use Return
↖ ↗ ↘
Repair Reuse



Merry Zero Waste Christmas to all!





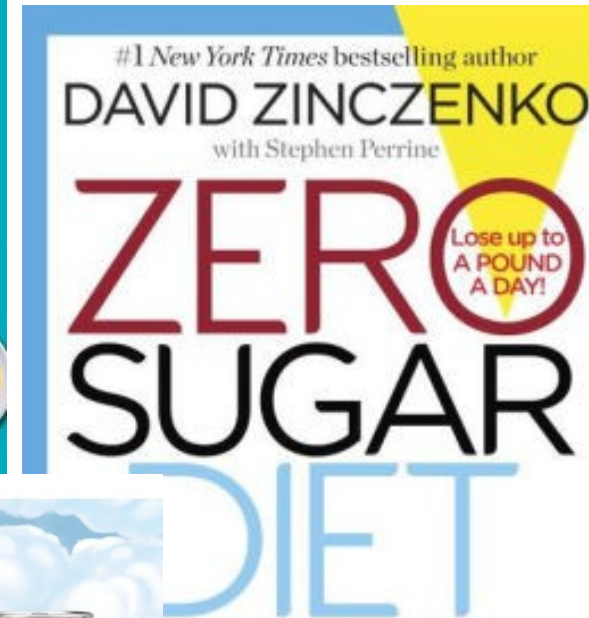
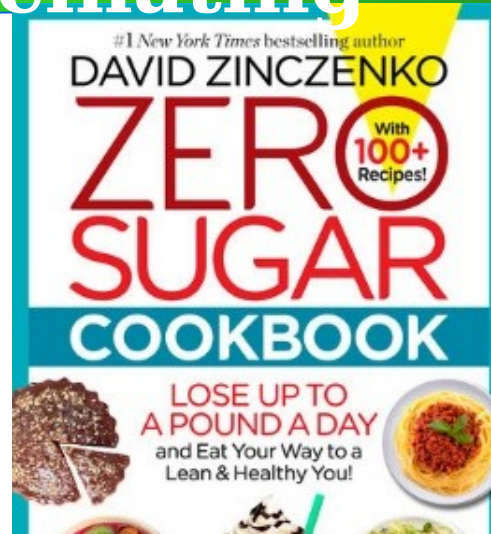
[Mostra tutto](#)

Post

Let admit it.....zero approach is fascinating



**zero
SUGAR**



The 14-Day Plan to
FLATTEN YOUR BELLY,



But also the “FREE” approach has its charm



Spreading of the ‘FREE’ approach



What are the ingredients in Nutella?





elba
plastic
free

The latest 'FREE' fashion

31 DAY PLASTIC FREE CHALLENGE

Get started on living plastic free by completing these challenges.

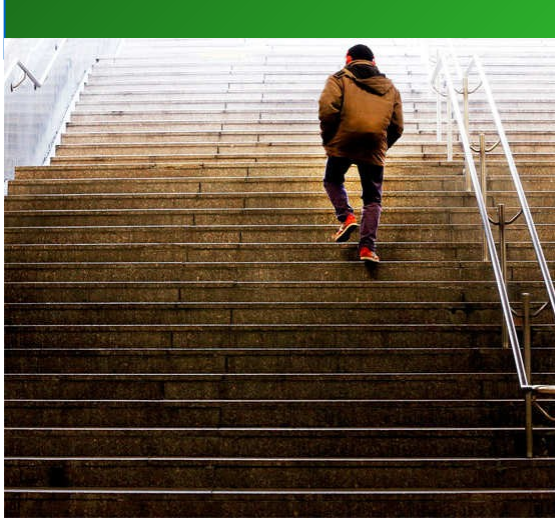
Ordinanza del Sindaco Enzo Alfano



Castelvetrano plastic free



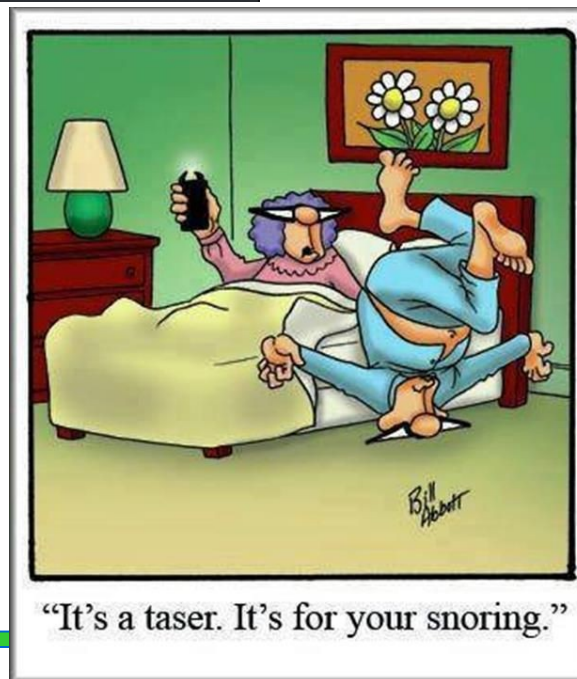
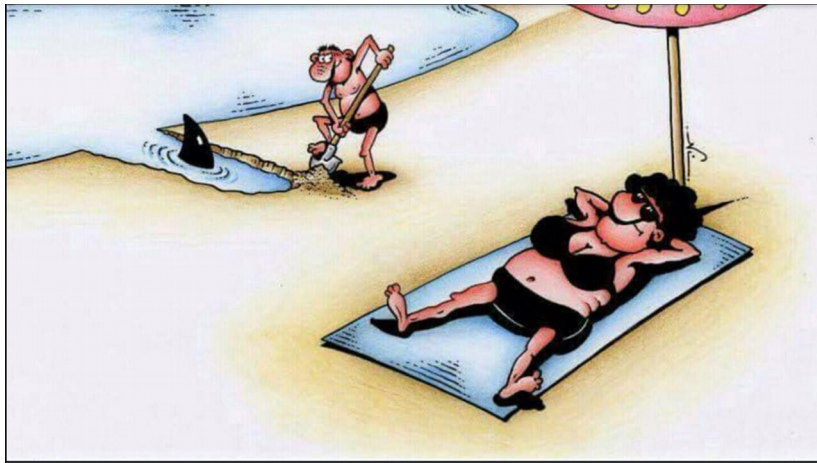
What's next?.....ELEVATOR FREE???



What's next?.....CAR FREE???



What's next?.....WIFE FREE???

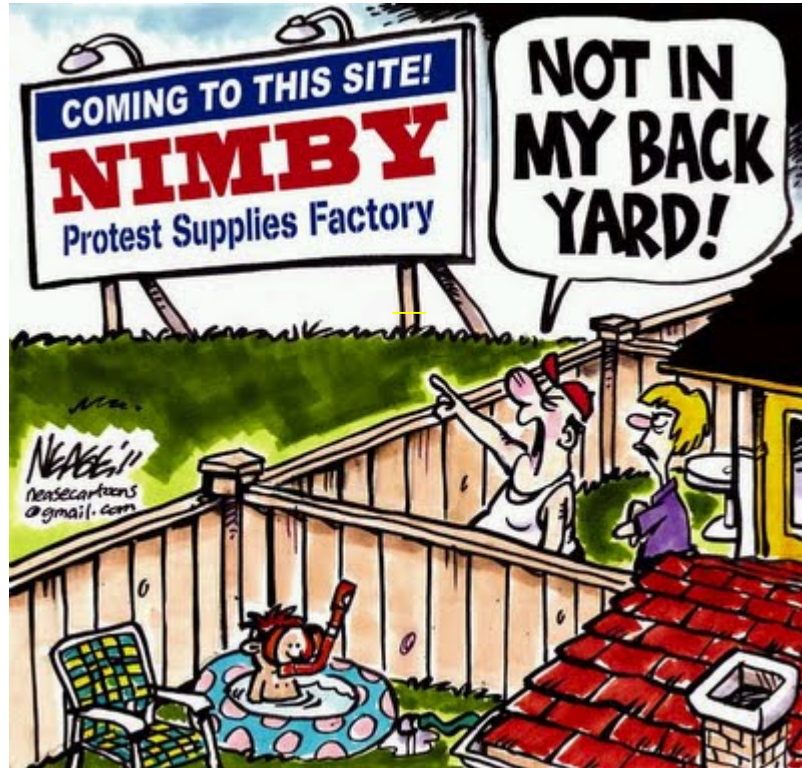


The NEXT could be.....From NIMBY to.... BANANA



B.A.N.A.N.A

(**B**uild **A**bsolutely **N**othing
Anwhere **N**ear **A**nyone)



The risks of B.A.N.A.N.A. syndrome



RETE NAZIONALE
RIFIUTI ZERO



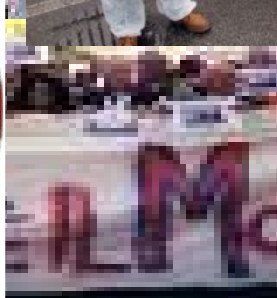
lacasadelleliberta.splinder.com

L'INCENERITORE MINIMA RIFIUTI
NÉ A PONTICELLI NÉ ALTROVE



MANIFESTAZIONE
Viale Margherita (dalla via degli Pombelli)
DOMENICA 10 OTTOBRE
ORA 10.00

NO
INCENERITORI
L'ALTERNATIVA C'E'



SOS PIETRAVAIRANO
NO CAVE
NO CEMENTIFICIO



NO
al
PONTE

I SAY
NO



Presidio Permanente
No Discariche



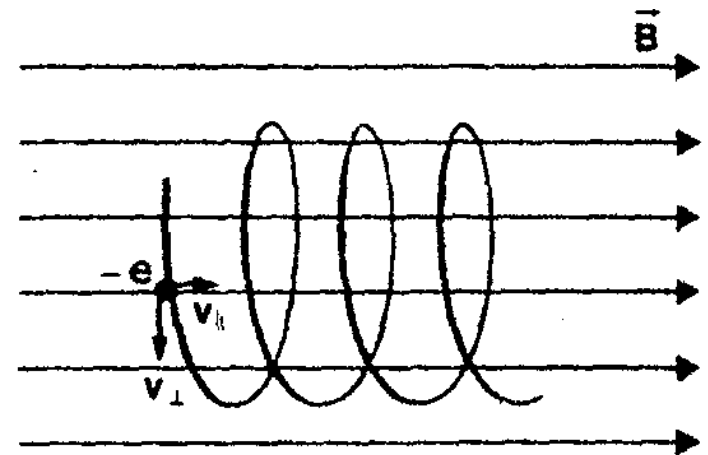
KEIN BBT



Circular economy is a very important (fundamental) part of the solution but it is not 'the' (unique) solution



Sustainable Circular Economy



Scientific and public (???) concern



Home is where the toxins are - the hidden poisons we live with

Some houses can be susceptible to a buildup of formaldehyde created by cleaning products. Which other everyday items can leave a harmful chemical trail?



Source: theantidotelife.com, Guardian, Forbes, The Independent

The FANTASTIC FOUR iper-technology solutions for URBAN waste man

**Molecular
Dissociation**



Pyrolis



Gassification



PLASMA



Better to know or not to know????



Shamans

«holy waste man»



People

Stakeholders



Engineers

Scientists

Background

- Area = 25,711 km²
- Population = **5,045,176** inhabitants
- Density = 196.23 inh/km²
- MSW production = about **2,727,570** t/y
- MSW production per capita = 520 kg/cap
- Current separate collection level 12%

2



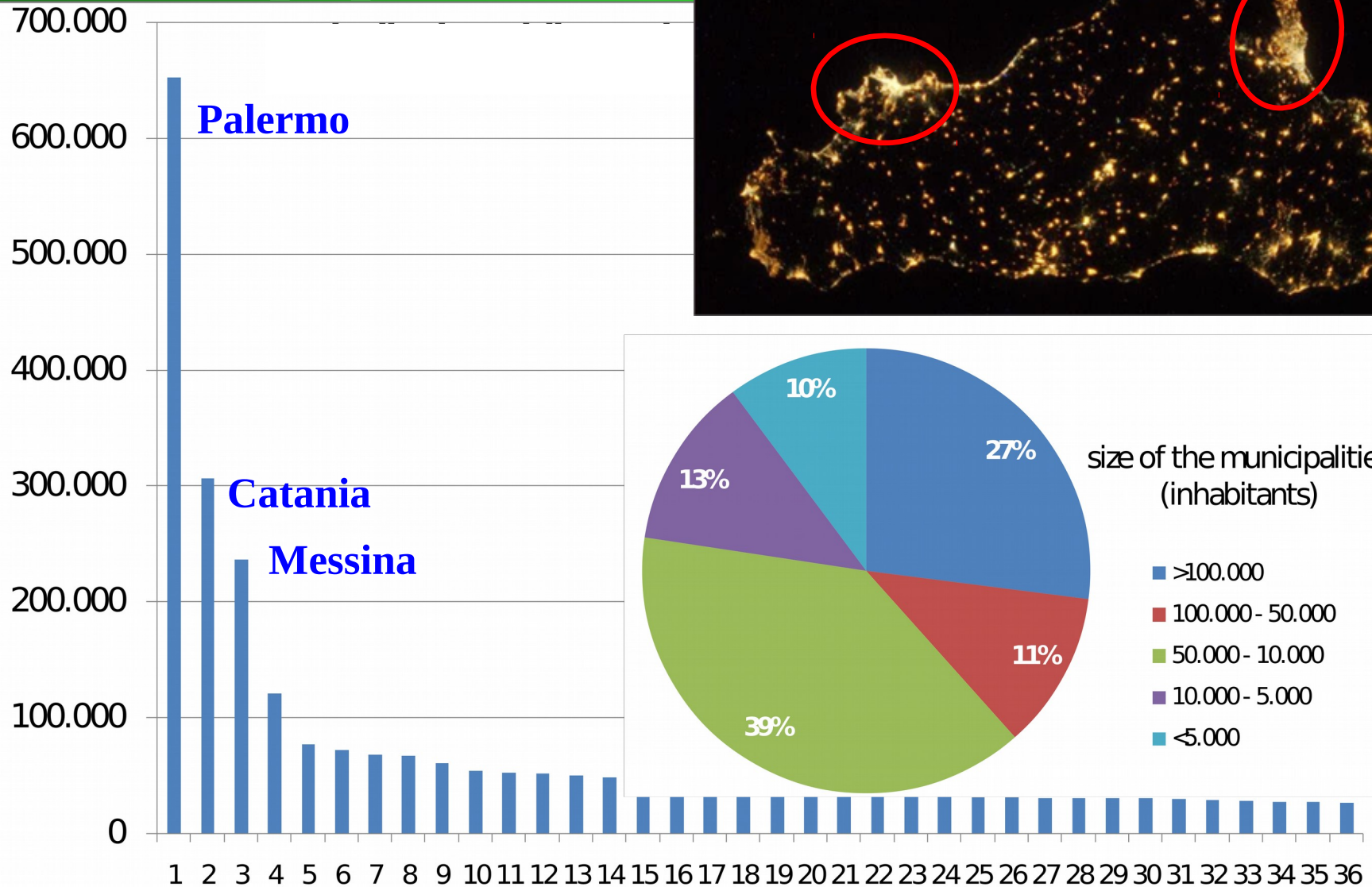
Dominant solution for MSW disposal



↓
Landfills
(**about 90%**)



Distribution of Sicilian population



Waste “separate” collection in Catania



Waste “separate” collection in Catania



Waste “separate” collection in Catania



Waste commuting...



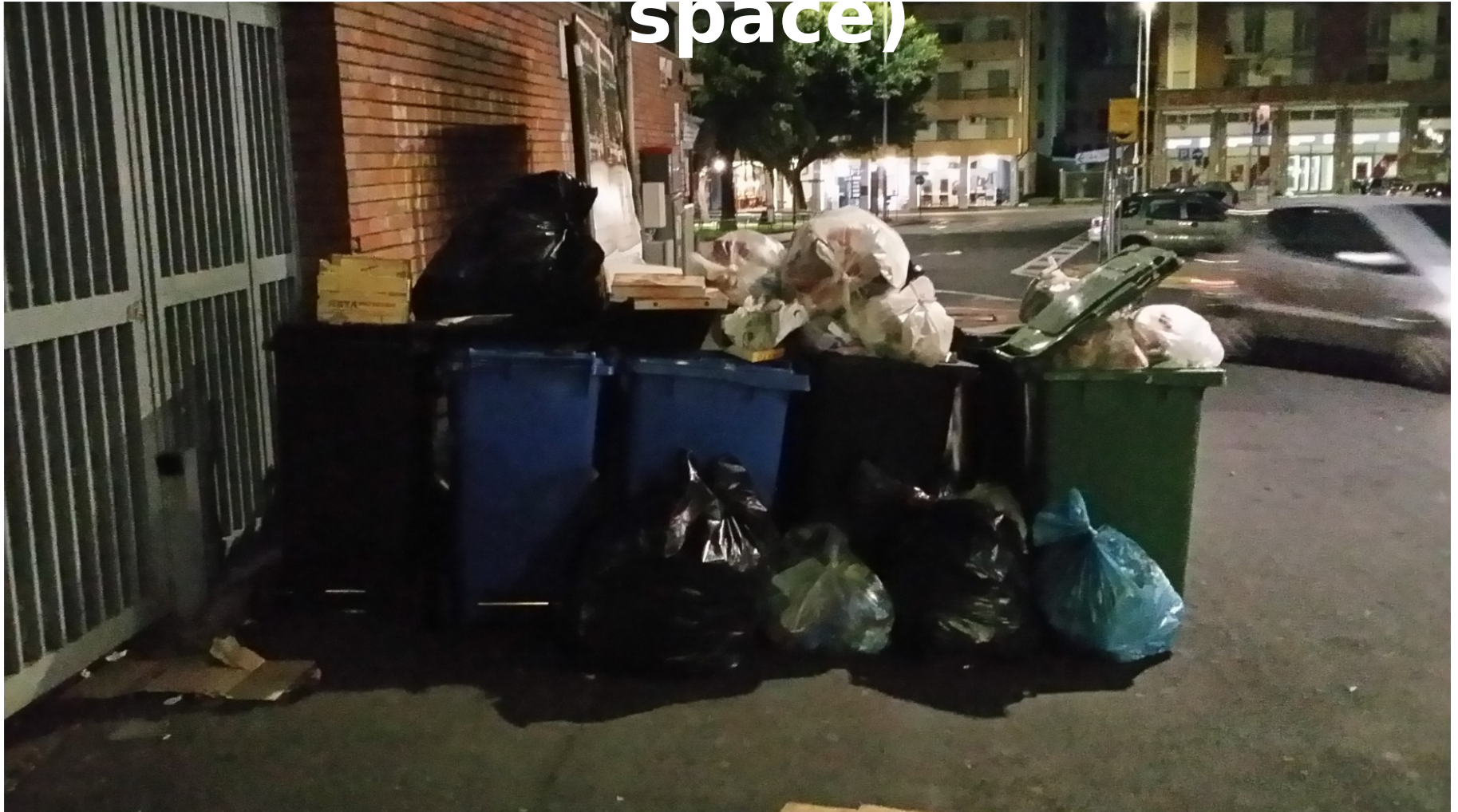
...and its results



...and its results



Door to door (consierge+internal space)



Door to door (consierge+internal space)



Door to door (consierge+internal



Door to door (consierge+internal space)



Door to door (consierge+internal

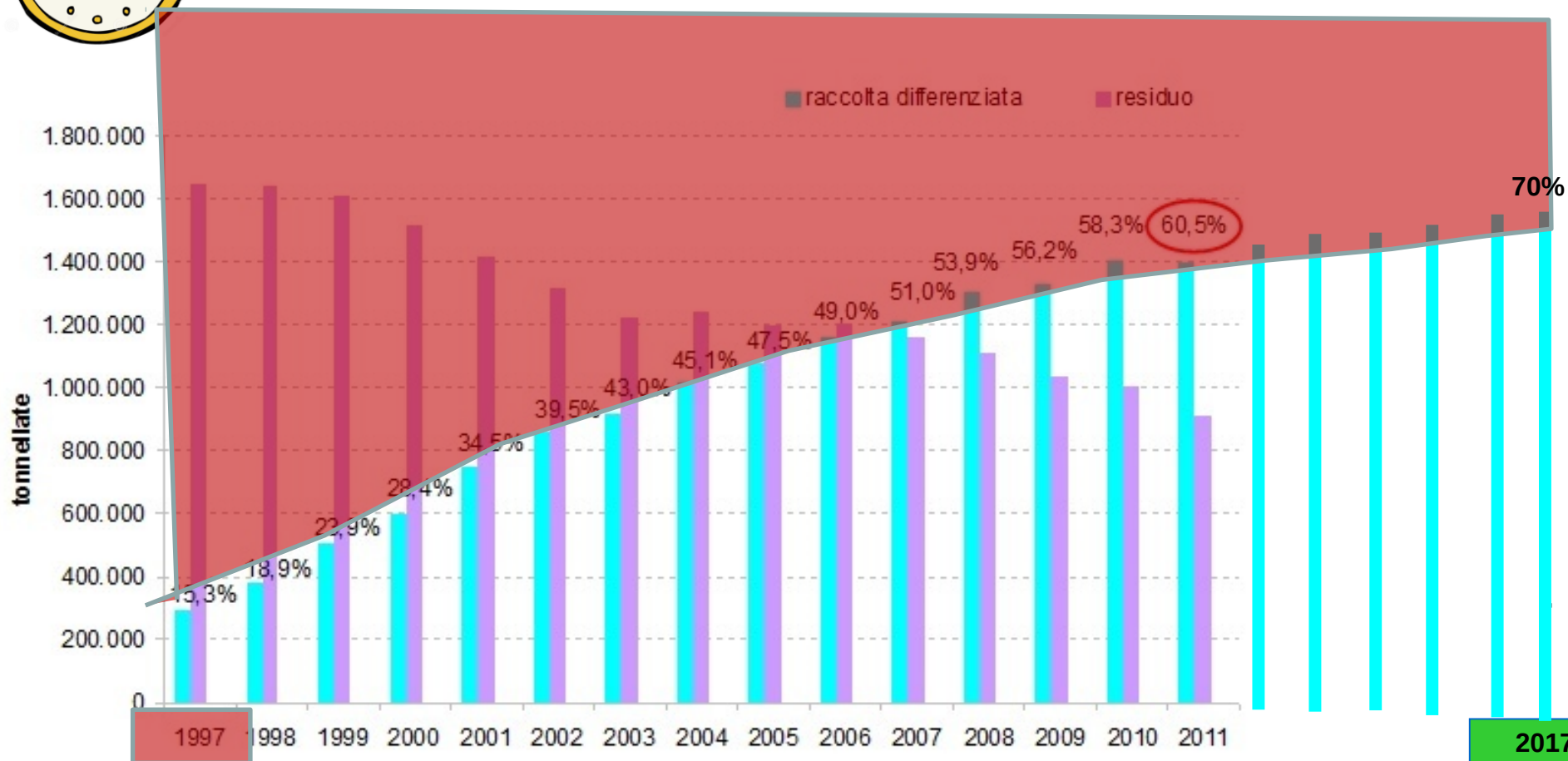


and furthermore....how about the timing it
will take to be perfect in South Italy?



..... (the timing of Veneto)

100%

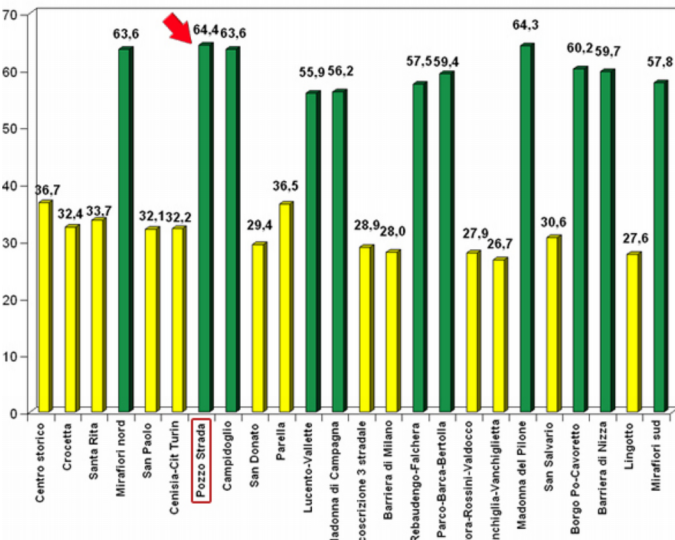


he timing of Turin

100%

57%

43%

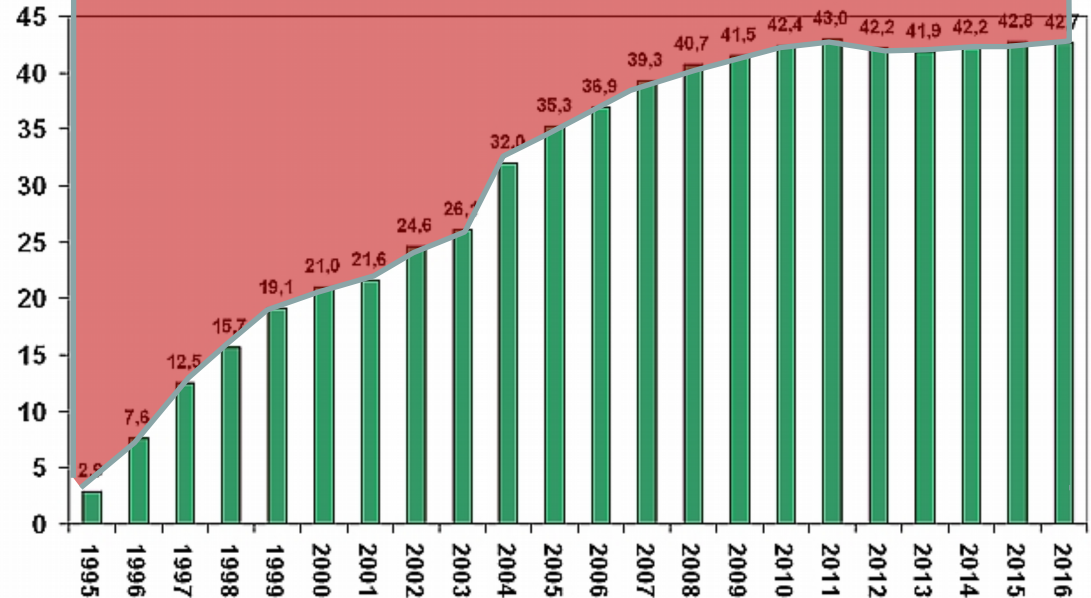


"porta a porta"
ATTIVO

"porta a porta"
MOMENTIVO

% Raccolta differenziata

Percentuale di Raccolta Differenziata nella Città di Torino



Nota: % calcolata secondo metodo normalizzato Regione Piemonte a partire dal 2003

Plastic waste selection process



Scraps from plastic waste selection



Scraps from plastic waste selection



Composting



Scraps (hidden) from composting



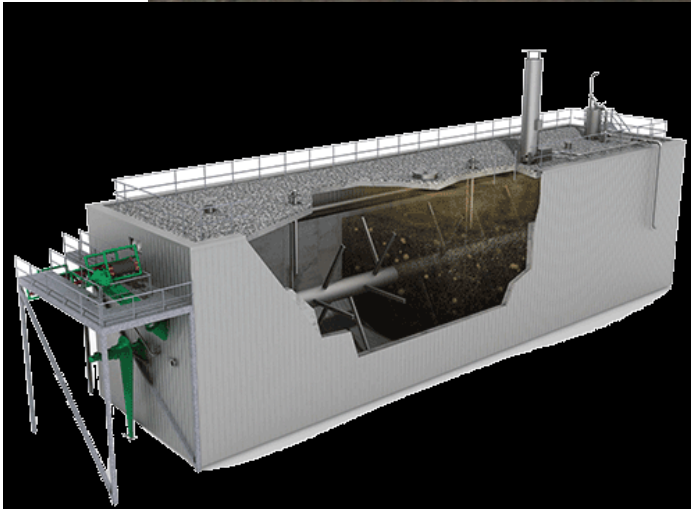
Scraps from composting



Scraps from anaerobic digestion



Scraps from anaerobic digestion



Scraps from anaerobic digestion

**The quality of
separate collection
is the KEY**

Primavera 2000

Lavorazioni
all'interno dei
digestori
intasati

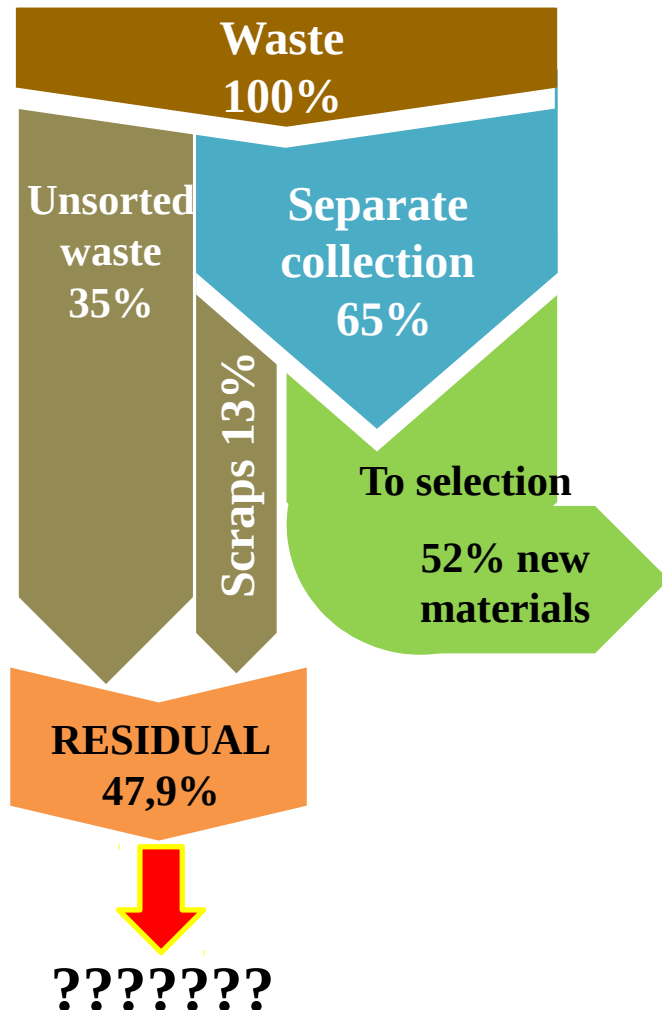
Sono state
smaltite diverse
centinaia di
tonnellate di
materiale
"inerte"



Then we still have the unsorted waste



How much is the residual waste (unsorted + scraps) and how to manage Residual waste???? The first fork



Main destination of (residual) waste in Sicily

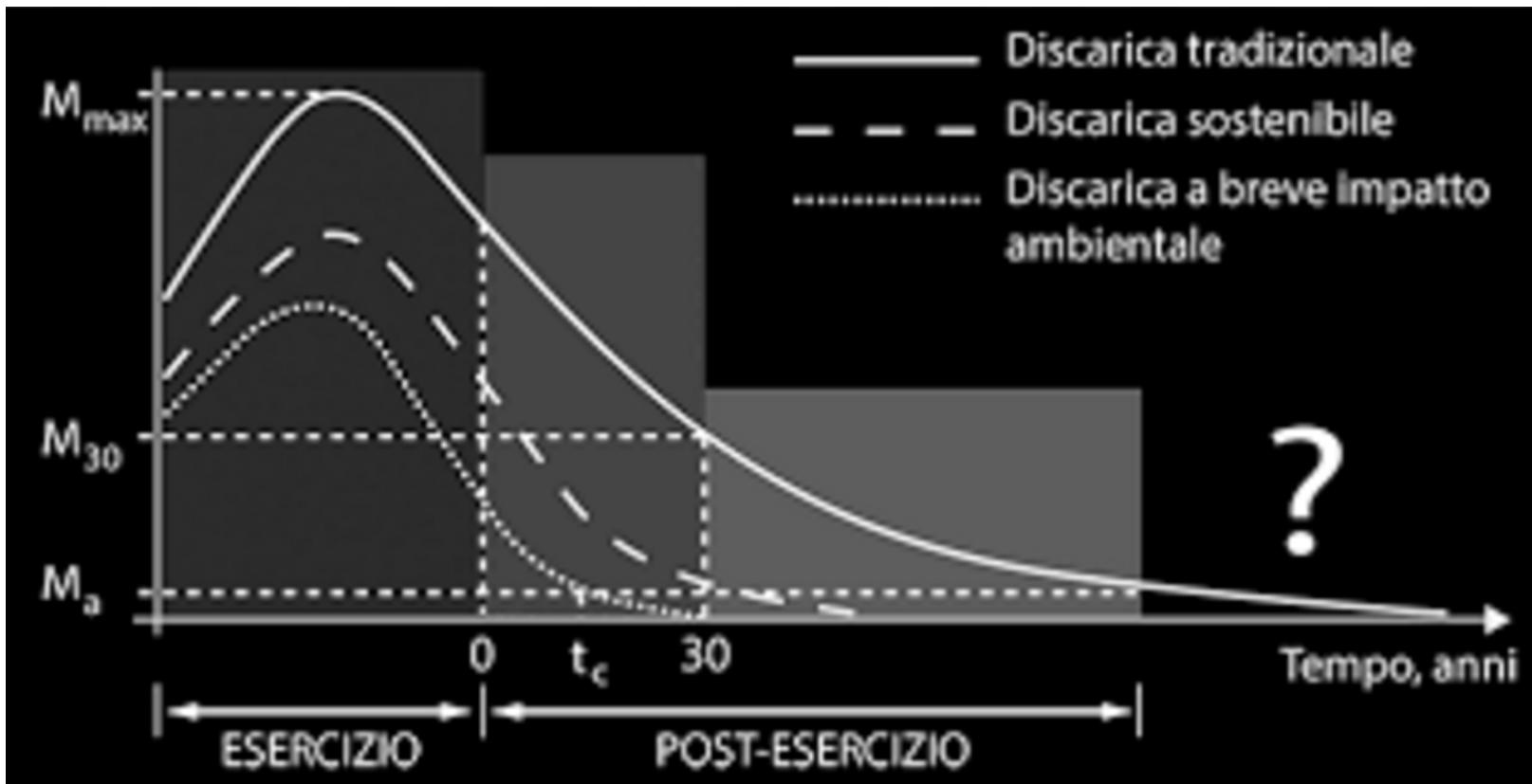




...and its results for the environment





Long lasting impacts



Climate issues



← → ↻ www.cop21paris.org


SUSTAINABLE INNOVATION FORUM 2015 |  

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The real reason for people to reduce landfill



Minimizzazione
Recupero materiali
Recupero energia
Discarica

Let's go back to the fork : Our first conclusion is: NO Landfill!!!!

https://www.facebook.com/events/57594909590309



MAG
30

BASTA discariche a Scicli

Pubblico · Organizzato da I love Scicli

✓ Mi interessa ▼

➦ Condividi ▼



30 maggio – 31 maggio



Corso operatori di canile

domenica 22 aprile presso Volo...

119 partecipanti

Mi interessa · Parteciperò



Giornata dell'alimentazione

Domani presso Centro Estetica ...

132 partecipanti

Mi interessa · Parteciperò



Drum Circle12°Drumstrong-to...

sabato 19 maggio presso Via Al...

224 partecipanti

Mi interessa · Parteciperò

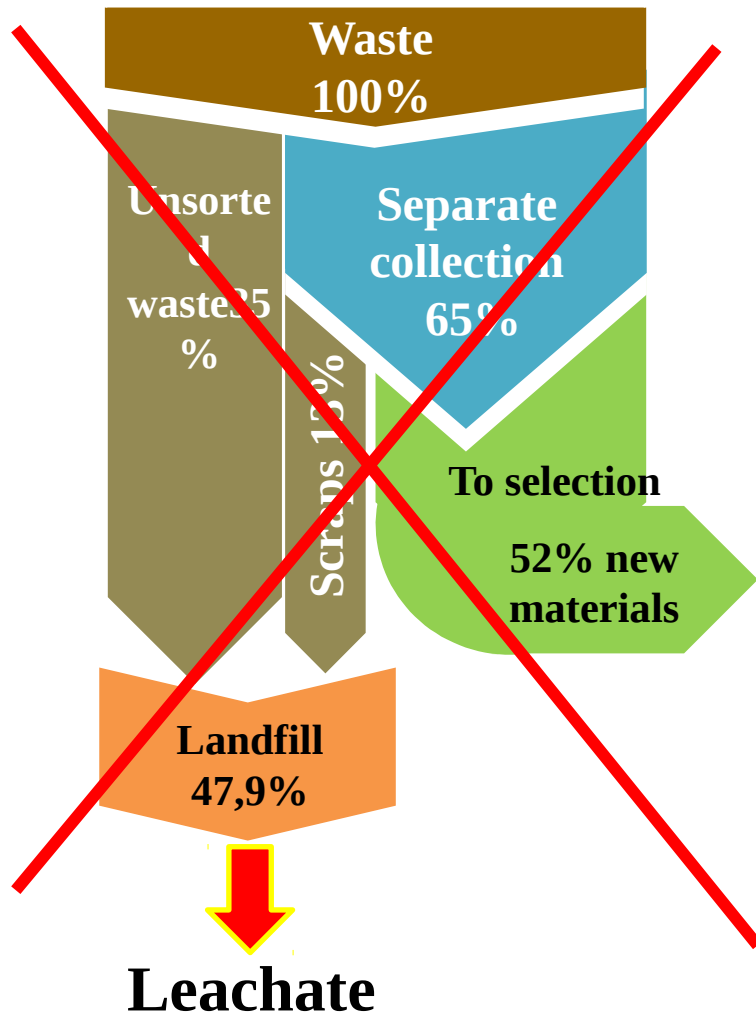


Escursione Alla Riserva Dell'

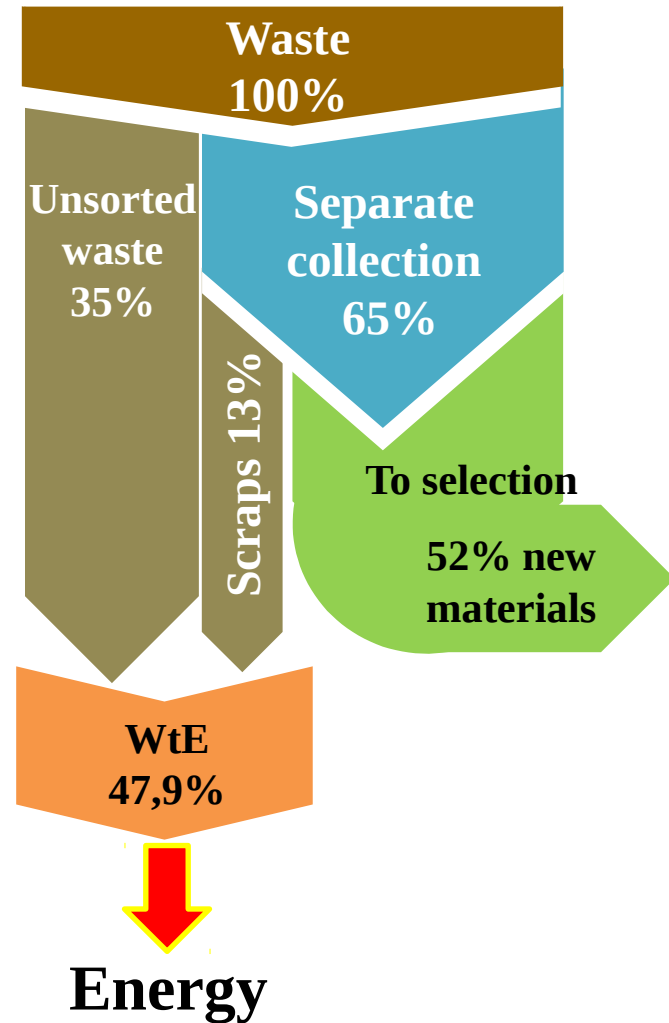
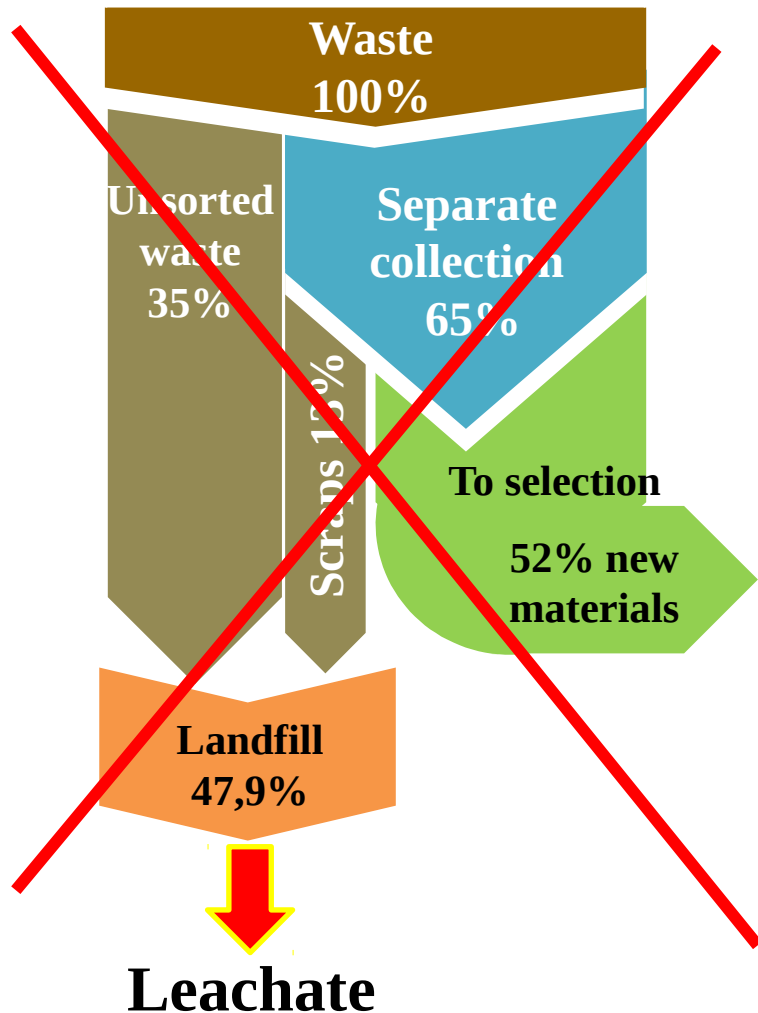
● Chat (39)



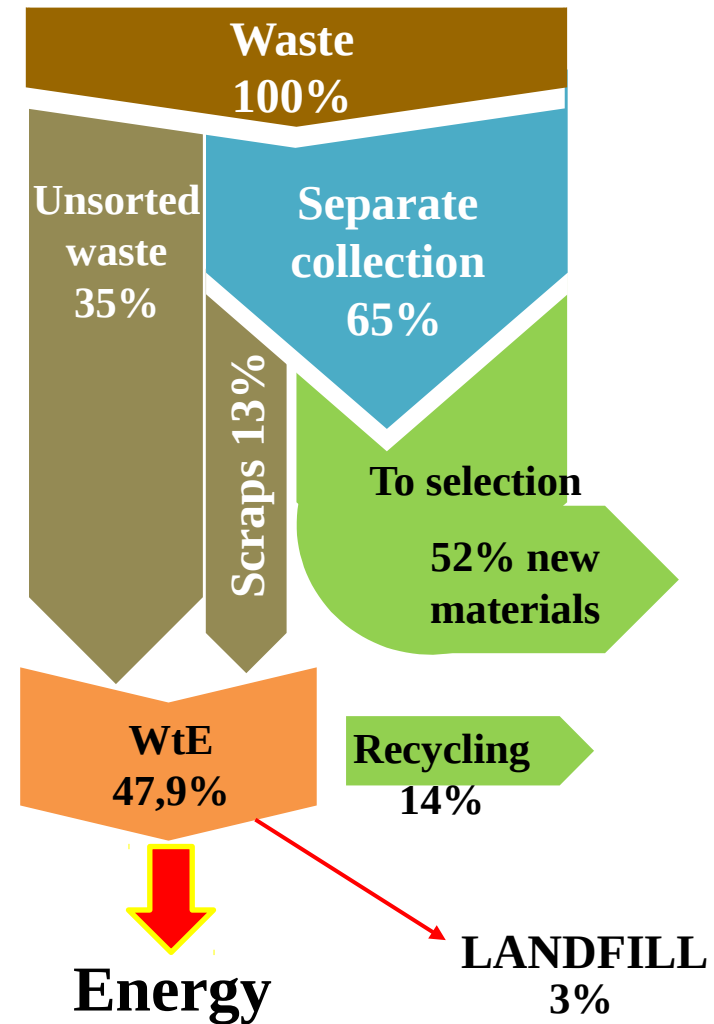
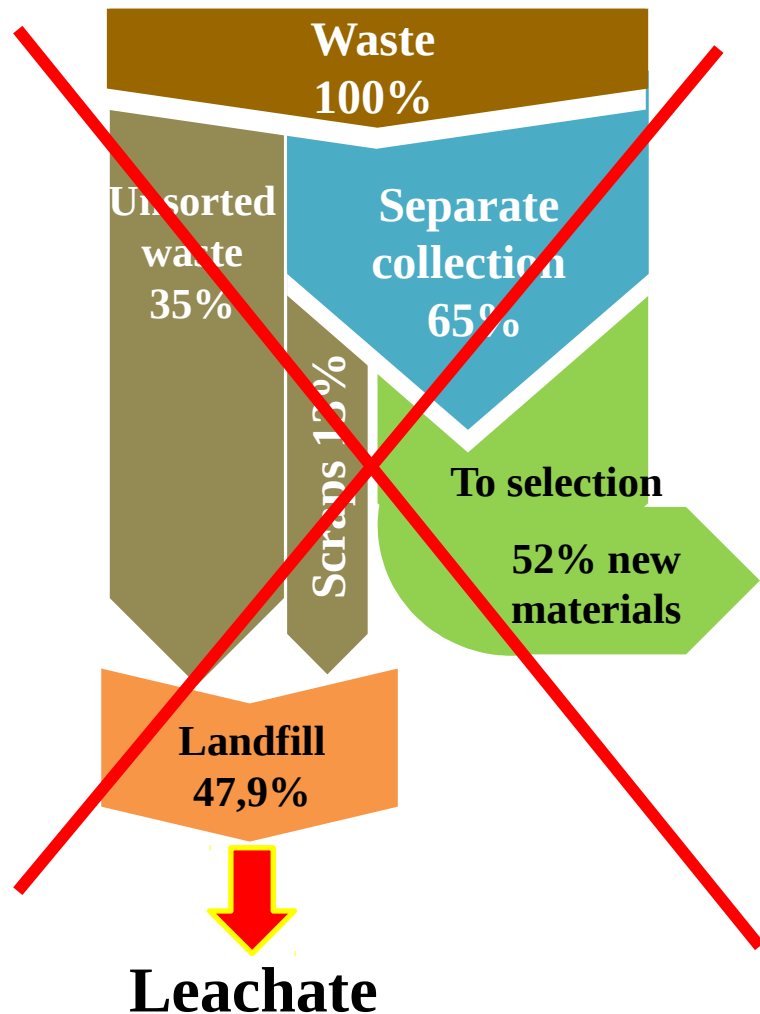
Residual waste to landfill (less than 10% al 2035)



What about WtE management of this residual waste?



WtE INCREASE RECOVERY to Fulfill the EU goal of 10% landfill at 2035



Let's go back to the fork : the second conclusion is: NO WtE plants

Gazzetta del Sud
SICILIA

HOME [SICILIA](#) MESSINA CATANIA SIRACUSA RAGUSA TELE GAZZETTA MESSINA ANTENNA DELLO STRETTO



»Sicilia

EMERGENZA

Rifiuti, la Sicilia affonda

14/12/2017

Protesta dei cittadini di San Filippo del Mela contro l'inceneritore. Il governatore Musumeci: "Va evitata la paralisi e l'unica strada è la differenziata"



«In Sicilia la soluzione immediata, anche se non definitiva, ha un solo nome: raccolta differenziata. Se continuiamo a portare nelle discariche cinquemila tonnellate di rifiuti vari al giorno, ci resteranno soltanto 6/7 mesi, dopodiché si arriverà inevitabilmente alla totale saturazione».

Il governatore Nello Musumeci in un'intervista alla "Gazzetta" lancia l'allarme molto



Si apre la corsa alle presidenze di quartiere
di Emanuele Rigano



"Borgo dei Borghi", la splendida Castoreale è seconda
di Massimo Natoli



Vola Questo nostro amore 80 con i gemelli messinesi Vita
di Antonio Sangiorgi

[Gazzetta del Sud Online - Attualità](#)

The national government VS the regional government.

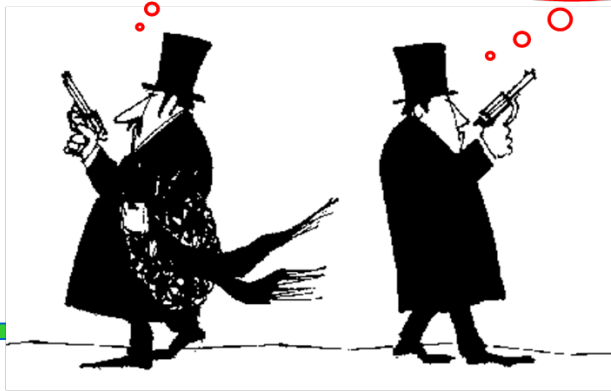
Sicily must increase recovery and have 2 WTE plants, one in Catania and one in Palermo (700.000 tons)

Better 6 to 8 “small” gasification plants close to the existing landfills to reduce transportation costs and impact on the traffic



WTE=Incinerators
NEVER

WTE or death....Your death



Zero waste

Zero brain



Inceneritori Campania, scontro Lega-M5s. Salvini: "Farli, coi 'no' vince la camorra". Ma Di Maio: "E' business per i clan"



Il vicepremier leghista rilancia sulla costruzione dei termovalorizzatori: "Occorre il coraggio di dire che ne serve uno per ogni provincia. Non vorrei doverli imporre". Di Maio: "Non sono nel contratto. Quando si parla di terra dei fuochi si dovrebbero tener presenti storia e difficoltà di questo popolo. Il disastro è dovuto ai rifiuti tossici". M5s fa blocco contro l'idea di Salvini. Costa: "Quando si arriva all'inceneritore, il ciclo dei rifiuti è fallito"

Waste management is not a football match



TAKE NEWS Recycling versus WtE



**Landfi
II**



Is more a kayak DOUBLE

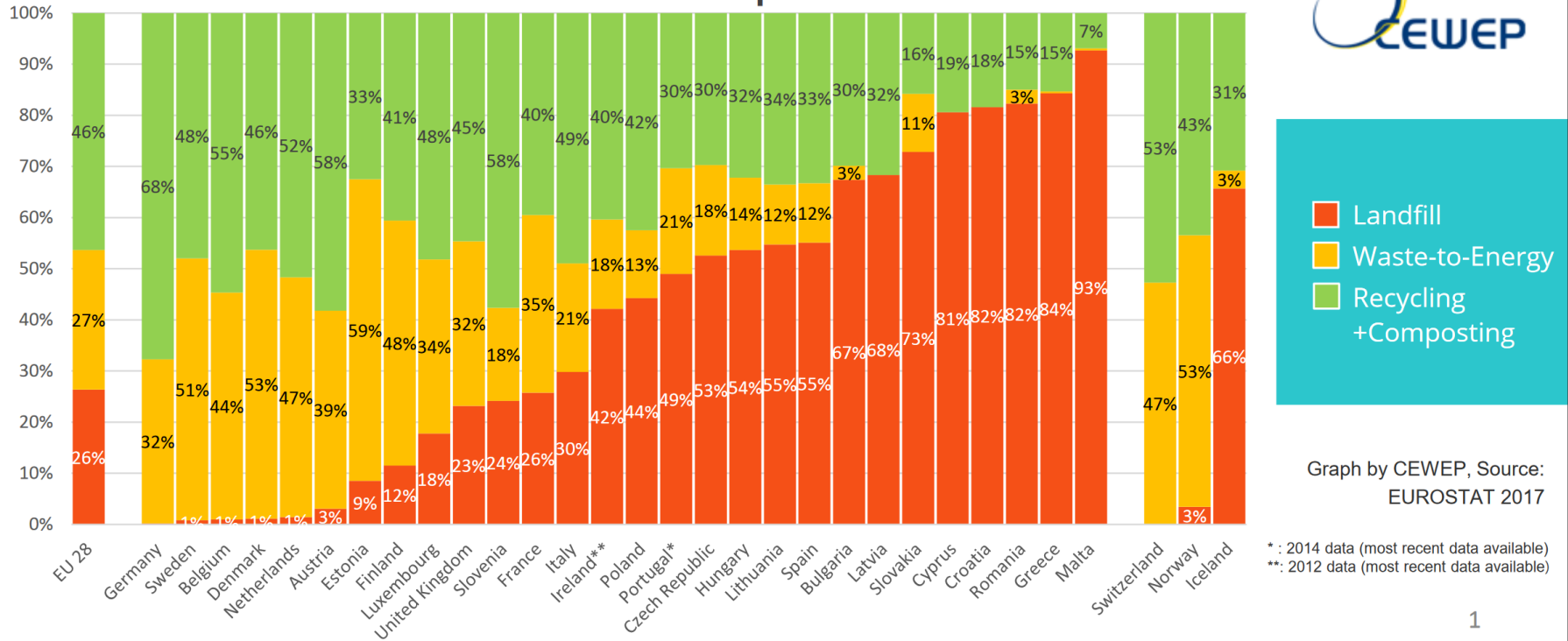


WtE is not against recycling



Recycling & WtE complementary to divert waste from landfills

EU 28 + Switzerland, Norway and Iceland
Municipal waste treatment in 2015



FAKE NEW Nobody construct new WtE plants....ever



Located on the outskirts of Shenzhen - the Shenzhen East Waste-to-Energy Plant will incinerate 5,000 tonnes of waste per day, generating 550 million kWh every year. With a population of 20 million Shenzhen produces 15,000 tonnes of waste a day, a number that is increasing approximately 7% per year. To counteract this Shenzhen Energy wish to build a new plant that not only uses the most advanced technological processes in waste incineration but also act as a source of education for the citizens of the city.

NO WtE

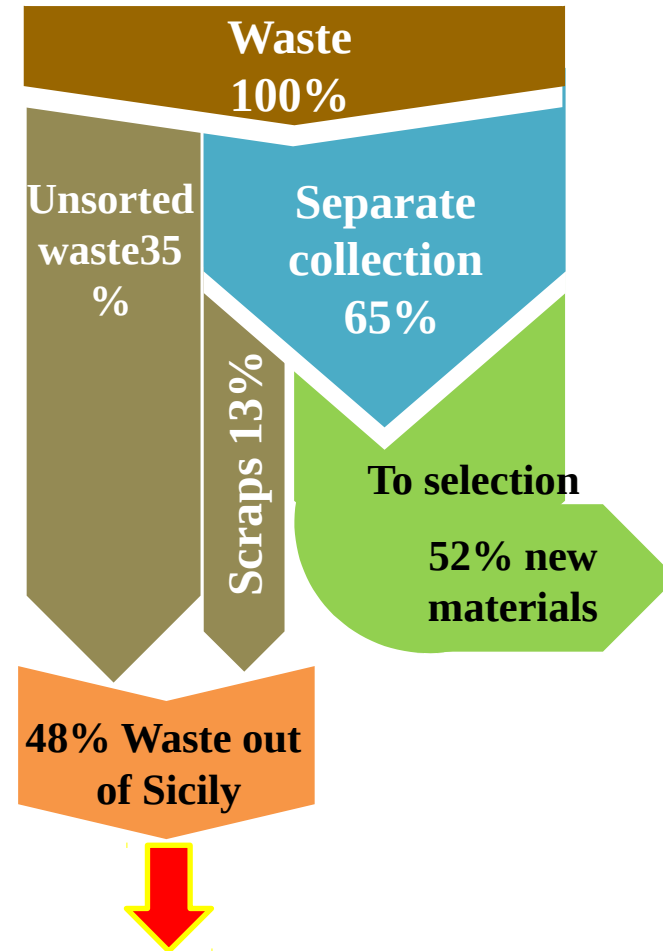
NO Landfill ...is there any other way?



**Residual waste from
65%separate collection
48Kg over 100 kg
can go to.....**



The third way... abroad



Economic losses... and RESILIENCE losses

Talking about resilience.... Something

has changed in the very last year



bottles at a garbage recycl
:O. 2014.

**following-foreign-trash-
iste-war/4241099.html**



FILE - A laborer works at a paper products recycling station in Shanghai, China, Nov. 17, 2017.

A man transports a tricycle load of many waste plastic bottles for recycling at a reclamation depot in

Qingdao city

Source: AAP

the risks of the global waste market



How China's foreign waste ban has spurred the recycling industry



ePaper Postal Delivery Photos Competitions Newspaper Archive Advertise With Us **Shop** Death Notices Find a... Home Job



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SEARCH SITE

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HOME » VIEWPOINTS

China to reject our waste: Rubbish veto may make us face reality

f SHARE

14

TWEET

Google+

+ SHARE

Wednesday, August 16, 2017

Irish Examiner editorial

...ent is still at the have-their-



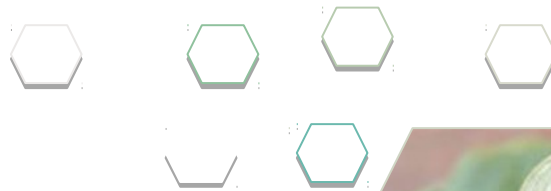
Alitalia: 20% di Sconto

HOW TO CHANGE THE WASTE MANAGEMENT PARADIGM IN SICILY?



Symbiosis....a lesson from the Nature....

The term 'symbiosis' builds on the notion of mutualism in biological communities where at least two otherwise unrelated species exchange materials, energy, or information in a mutually beneficial manner

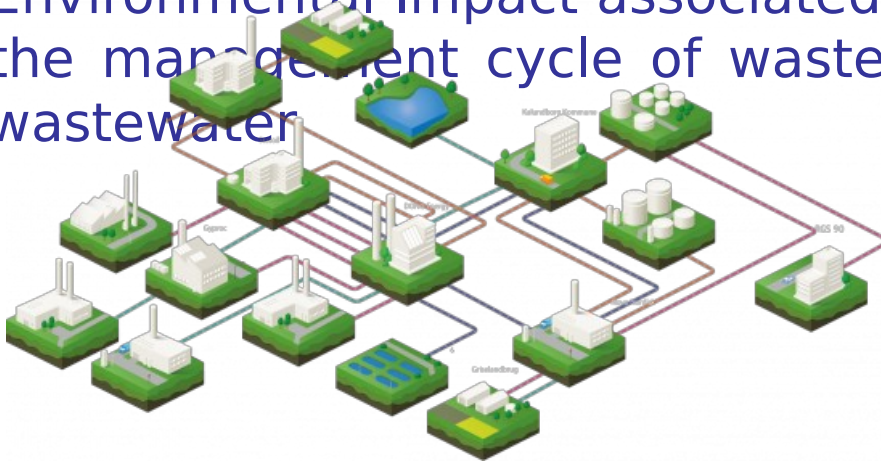


HOW TO CHANGE THE WASTE MANAGEMENT PARADIGM IN SICILY?

Proposing a Holistic Approach

Achieve a strong Industrial Symbiosis

Prevent and Reduce the Environmental Impact associated with the management cycle of waste and wastewater



CO₂

CO₂

From the current scenario



Energy →

Air pollution

CO₂

CH₄



WASTEWATER

sludge

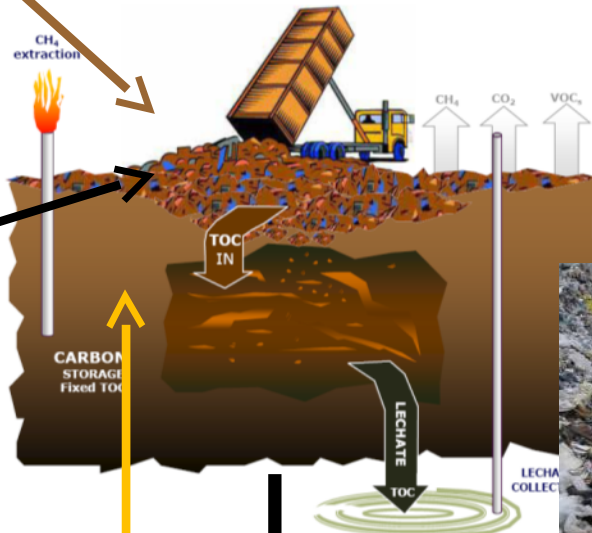
WASTE



"Organic" fraction

Mechanical separation

Dry fraction



Water bodies pollution

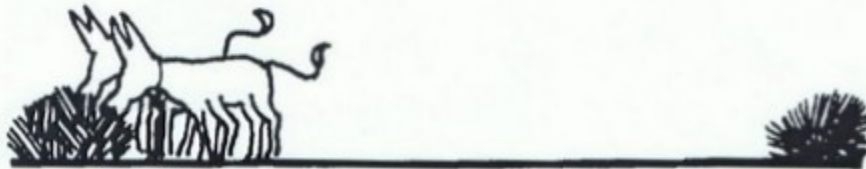
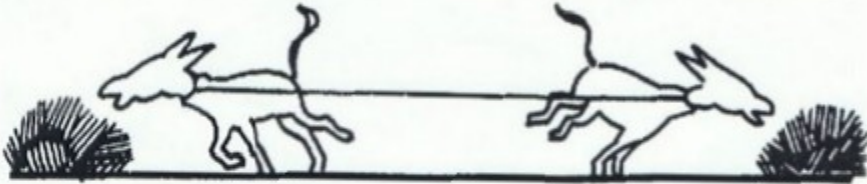
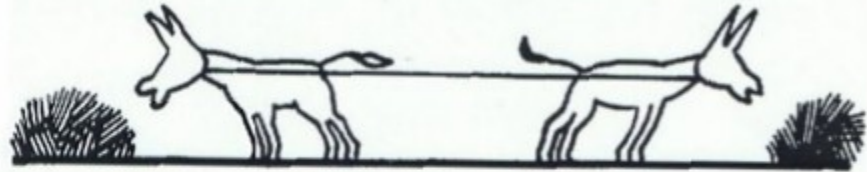
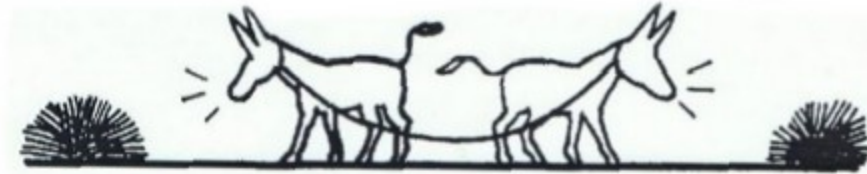
To the proposed Sustainable one



Take Home Message.....



Stop ideologically fighting and simply start working (and thinking) like a Donkey



**Thanks for
your kind
attention**



**Separate waste
collection in
Castelbuono
(Sicily)**

