



# KLIMAGUNE WORKSHOP 2014

## Opportunities and challenges for rural areas in the context of climate change

5) urban-rural duality and new socio-ecological  
land-use planning models



# Urban-rural duality and waste management

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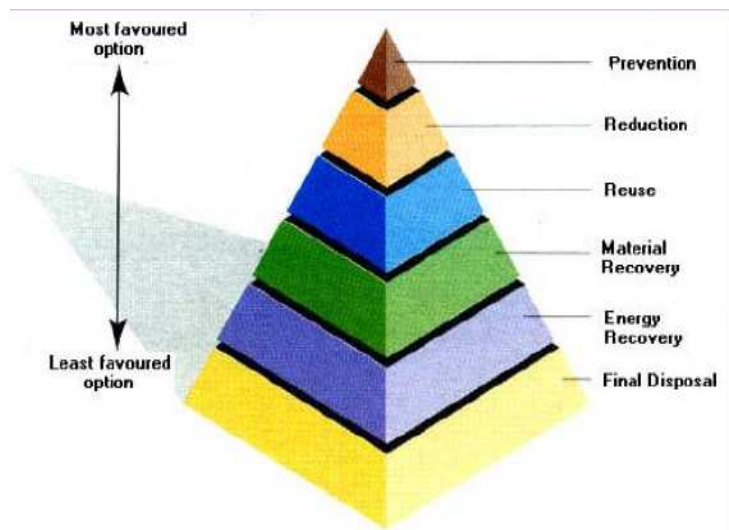


## Urban-rural duality and waste management

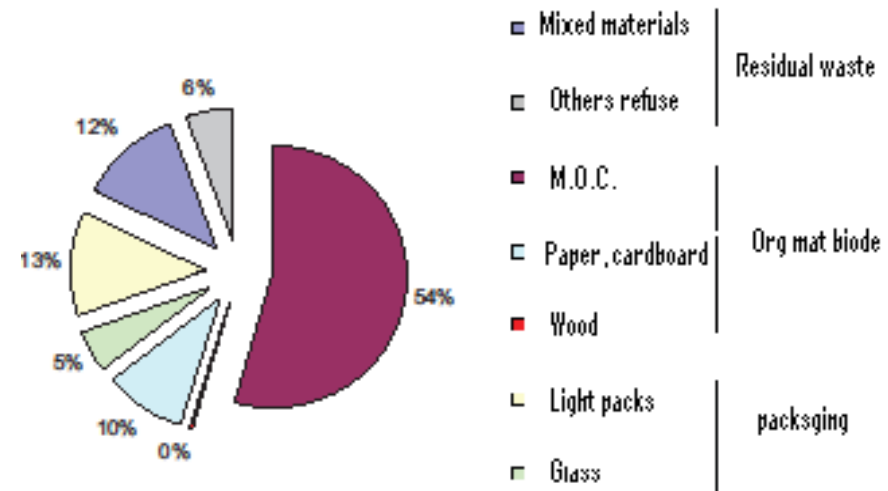
What waste means? BOE. 22/2011 Law, July 28

- **A - Waste:** 'Waste' are substances or objects, which are disposed of, or intended to be disposed of, or required to be disposed of, by the provisions of national law"
- **B - Municipal solid waste (MSW),** commonly known as **trash** or **garbage** (US), **refuse** or **rubbish** (UK) is a waste type consisting of everyday items that are discarded by the public.

2008/98/CE



The composition of municipal waste is ?



## Urban-rural duality and waste management

### DEFINITION of RURAL

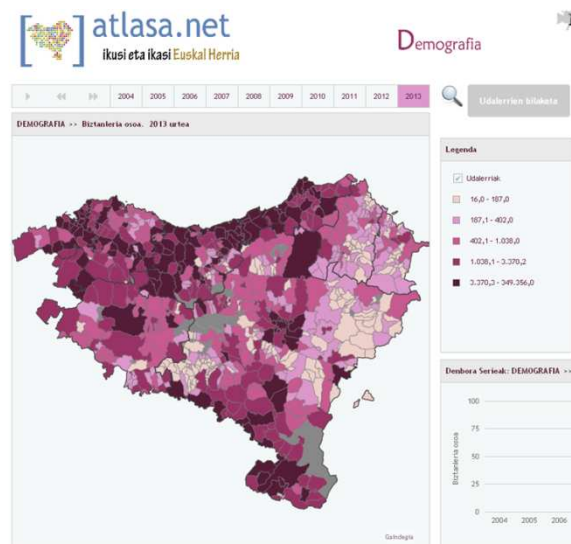
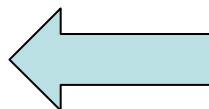
Municipal solid waste production and population :

Population	Production kg/citizen.day
<2000	0,70
2000-5000	0,85
5000-100000	1,0
>100000	1,2

1 - Ley Desarrollo Sostenible Medio Rural (LDSMR) Density <100 hab./Km<sup>2</sup>

- Medio rural: espacio geográfico formado por la agregación de municipios o entidades locales menores con población <30.000 habitantes y densidad <100 habitantes por Km<sup>2</sup>
- Municipio rural de pequeño tamaño: población <5.000 habitantes

Can you identify Rural areas in this map?





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### Keepin mind:

**From 1 kg MSW/person.day,  
50% is organic compostable**

Population in the Basque Country(?)

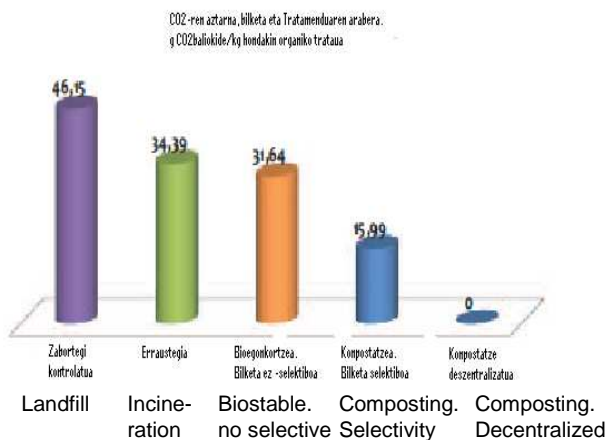
- Araba; 325.000 citizens.
- Bizkaia: 1.150.000 citizens.
- Gipuzkoa: 710.000 citizens.

# Urban-rural duality and waste management



## Waste management and treatment

g CO<sub>2</sub> e/kg organic waste



- Landfill (CH<sub>4</sub>?)
- Incineration with energy recovery
  - TMB (Organic biostable)
  - Composting

$$46,15 / 34,39 = 1,34$$

$$46,15 / 31,64 = 1,46$$

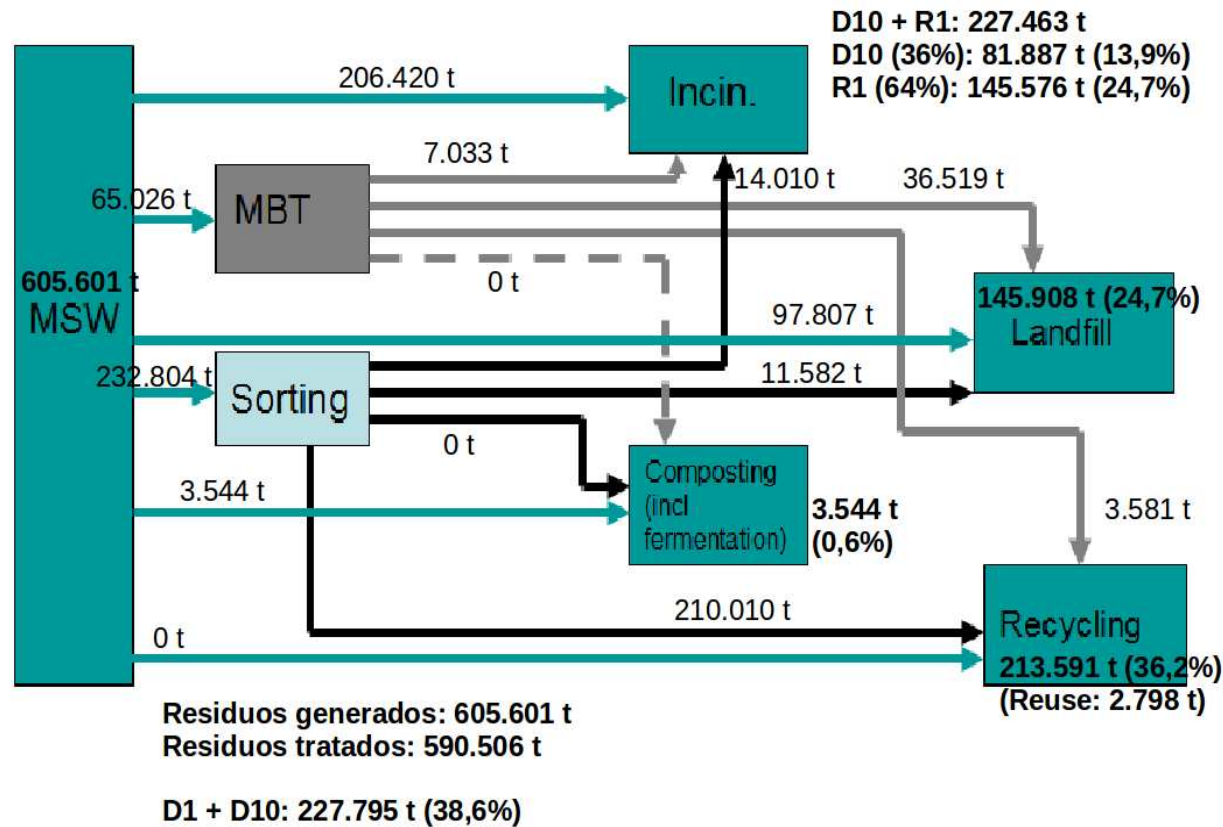
$$46,15 / 15,99 = 2,89$$

$$46,15 / 0 = \infty \text{ Is duality broken?}$$

## Urban-rural duality and waste management



BFA analysis conducted by Gorka Bueno

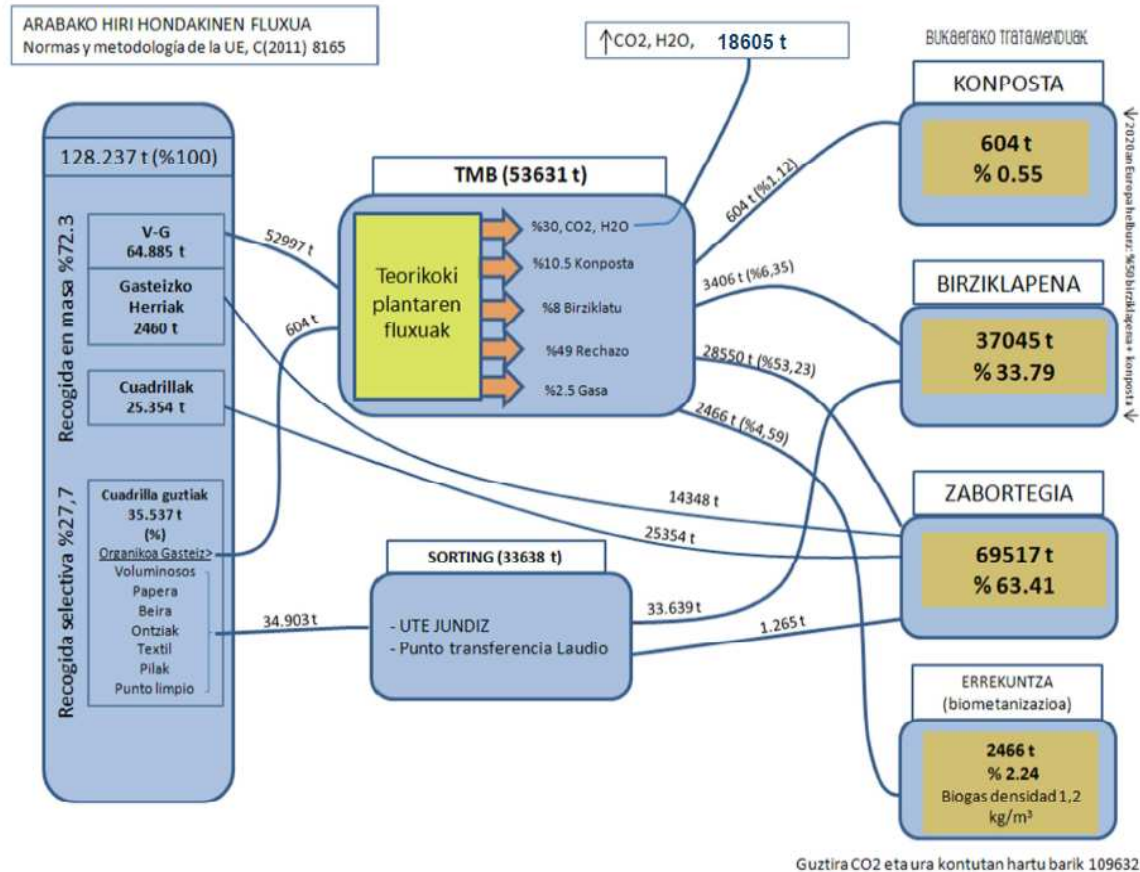




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AFA analysis conducted by Daniel Zuazagoitia







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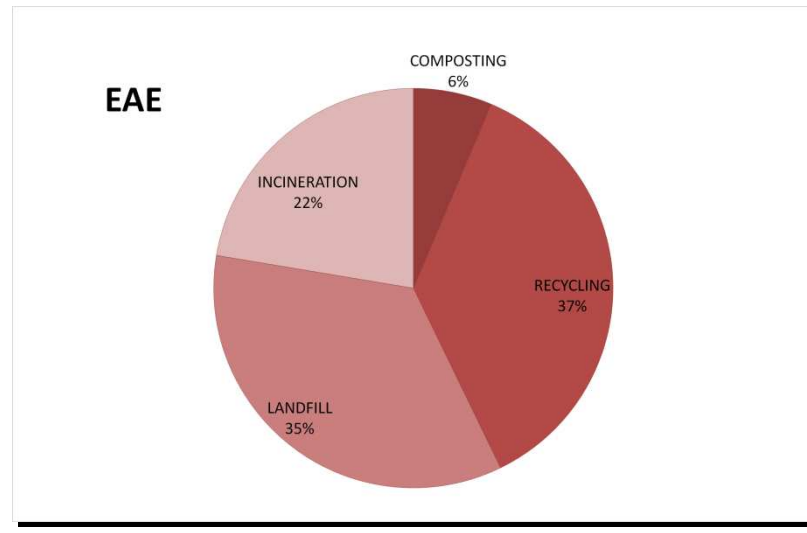
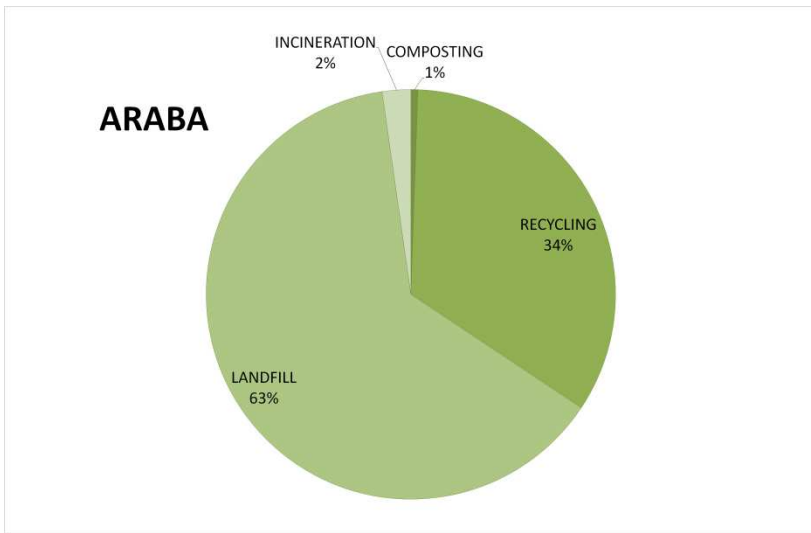
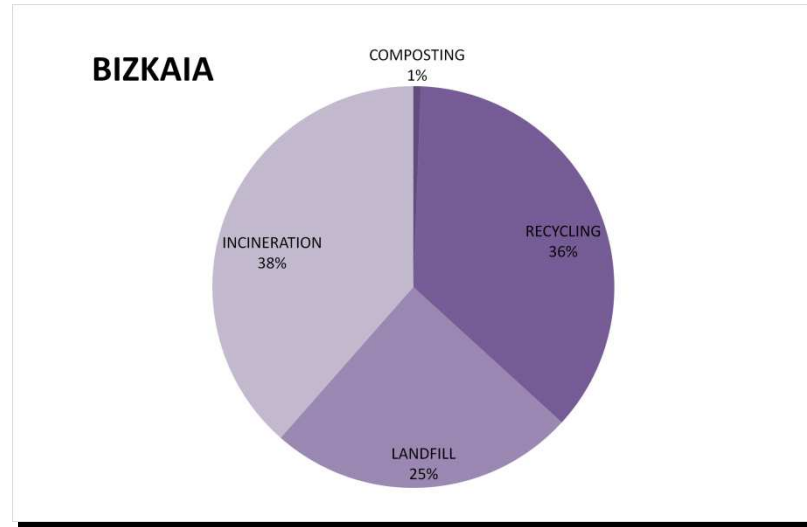
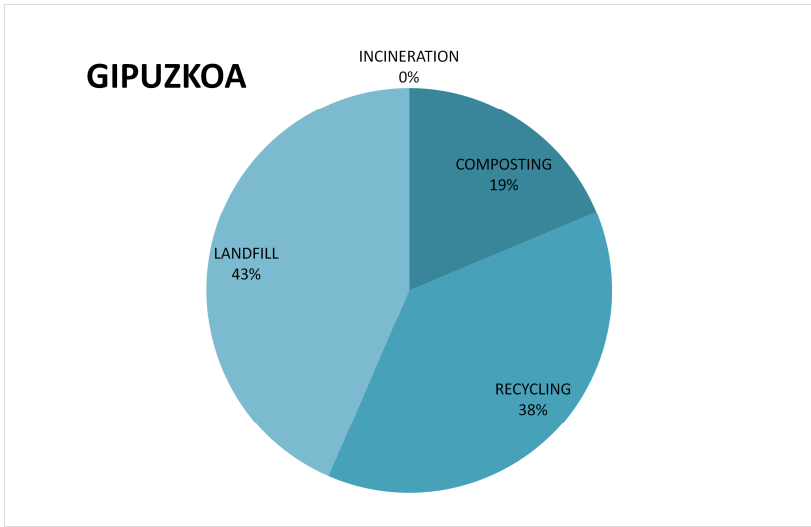
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### Items of Gipuzkoa

Recycling:	123.812	Tn /year	37,8%
Composting:	61.397	Tn/year	18,7%
Landfill:	142.459	Tn/year	43,5%

# Urban-rural duality and waste management



## Urban-rural duality and waste management



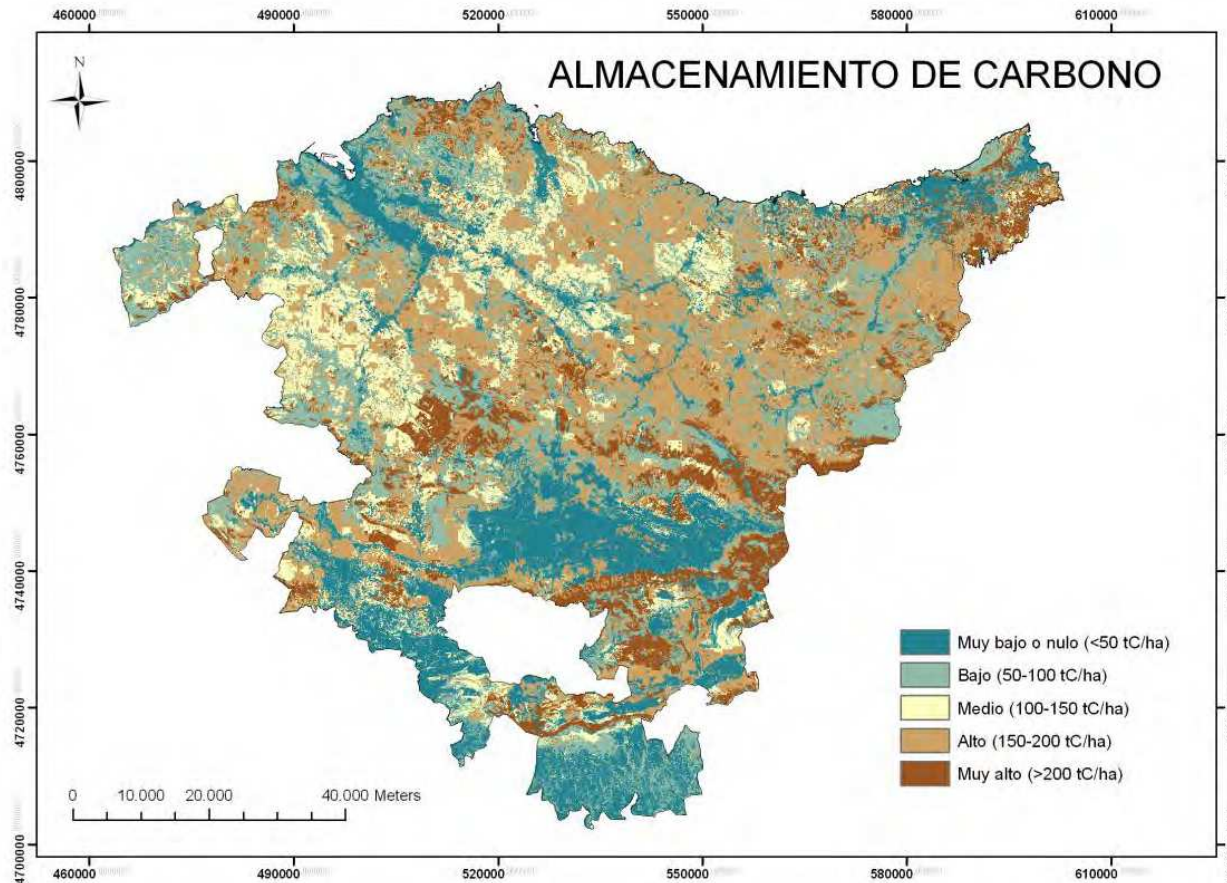
- Fourteen percent of all greenhouse gas emissions worldwide come from agriculture
- Not forget what E. Favoino eta D. Hogg reported: “Methane emissions from agriculture were 41% of all CH<sub>4</sub> emissions, while N<sub>2</sub>O were 51%”.
- The loss of organic carbon in soils has been one of the major environmental consequences of industrial agriculture.
- Arable top soils in Europe commonly contain 1-3% of organic carbon and it's going down.
- Nearly 75% of the total area analysed in Southern Europe has a low (<3,5%) or very low (<1,7%) soil organic matter content.

**Waste sector gives a 5% of total emissions of GEG in Spain.**

# Urban-rural duality and waste management



## CARBON SINK



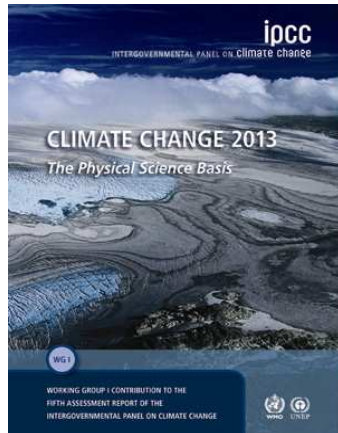
Cartografiado de los servicios de los ecosistemas. Cátedra UNESCO sobre Desarrollo Sostenible y Educación Ambiental de la UPV. Gobierno Vasco. Departamento de Medio Ambiente y Política Territorial. 2014.



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### Headline statements from the Summary for Policymakers\*

Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems.

Limiting climate change would require substantial and sustained reductions in greenhouse gas emissions which, together with adaptation, can limit climate change risks.



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The greenhouse effect, the climate change;

Aren't we noticing them already?. Aren't they to be true?.  
Are they really happening?

Why our policymakers don't face the facts?

What's stopping us from choosing a single answer to this Urban-  
Rural dual problem?

Why don't we want to plan our composting?

Eskerrik asko, Thanks a lot, Muchas gracias