



# GREENING TAXATION

*Approaches to Agriculture*

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*24<sup>th</sup> April TFIAM/TFRN*

# Certainties



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# **TAXES AND GREEN TAXES IN EUROPE**

# Principal Function of Taxation

## To Raise Revenue



- ❖ Support wealth redistribution
- ❖ Influence economic activity
- ❖ Provide society with services and infrastructure



## Other Functions of Taxation

The creation of incentives and disincentives...





## Simplified Notions for 'green' taxation

**Discourage undesired behaviour or technologies**



**Discourage actions contributing to undesired outcomes**

**Encourage adoption of alternative behaviours or technologies**



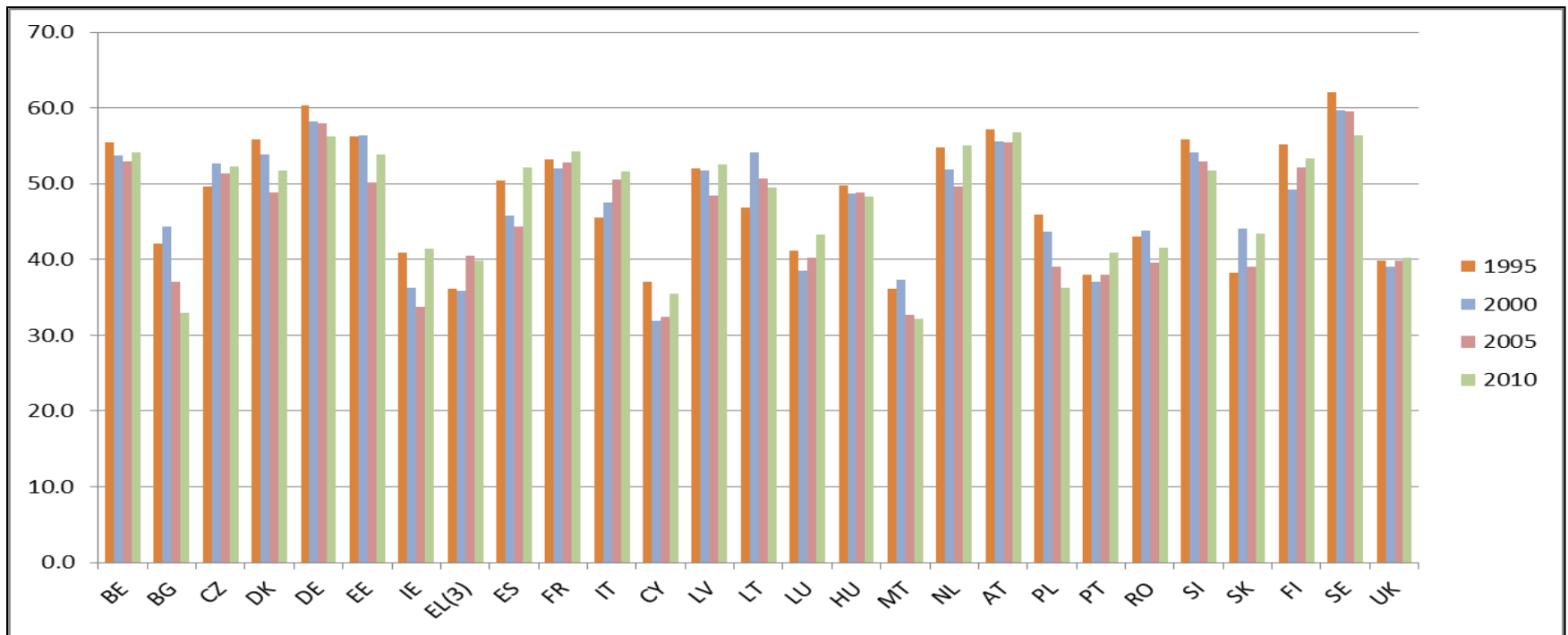
**Encourage innovation to address undesired outcomes**



# European Tax Trends

Source: [http://ec.europa.eu/taxation\\_customs/taxation/gen\\_info/economic\\_analysis/tax\\_structures/index\\_en.htm](http://ec.europa.eu/taxation_customs/taxation/gen_info/economic_analysis/tax_structures/index_en.htm)

## Labour Taxes as % of Total Taxation



❖ *Average trend is flat*

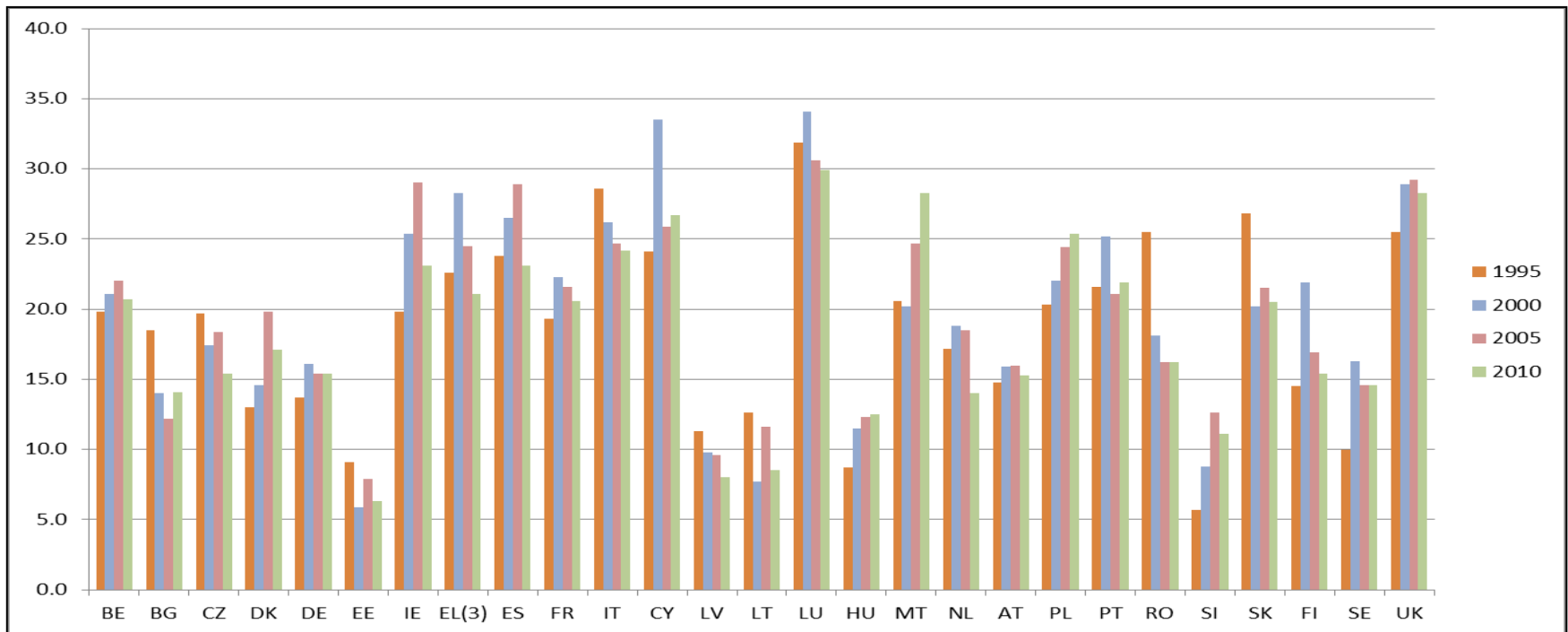
❖ *Share of total tax take still very high at around 47%*



# European Tax Trends

Source: [http://ec.europa.eu/taxation\\_customs/taxation/gen\\_info/economic\\_analysis/tax\\_structures/index\\_en.htm](http://ec.europa.eu/taxation_customs/taxation/gen_info/economic_analysis/tax_structures/index_en.htm)

## Capital Taxes as % of Total Taxation



❖ *Slight downward trend and somewhat more variable across nations*

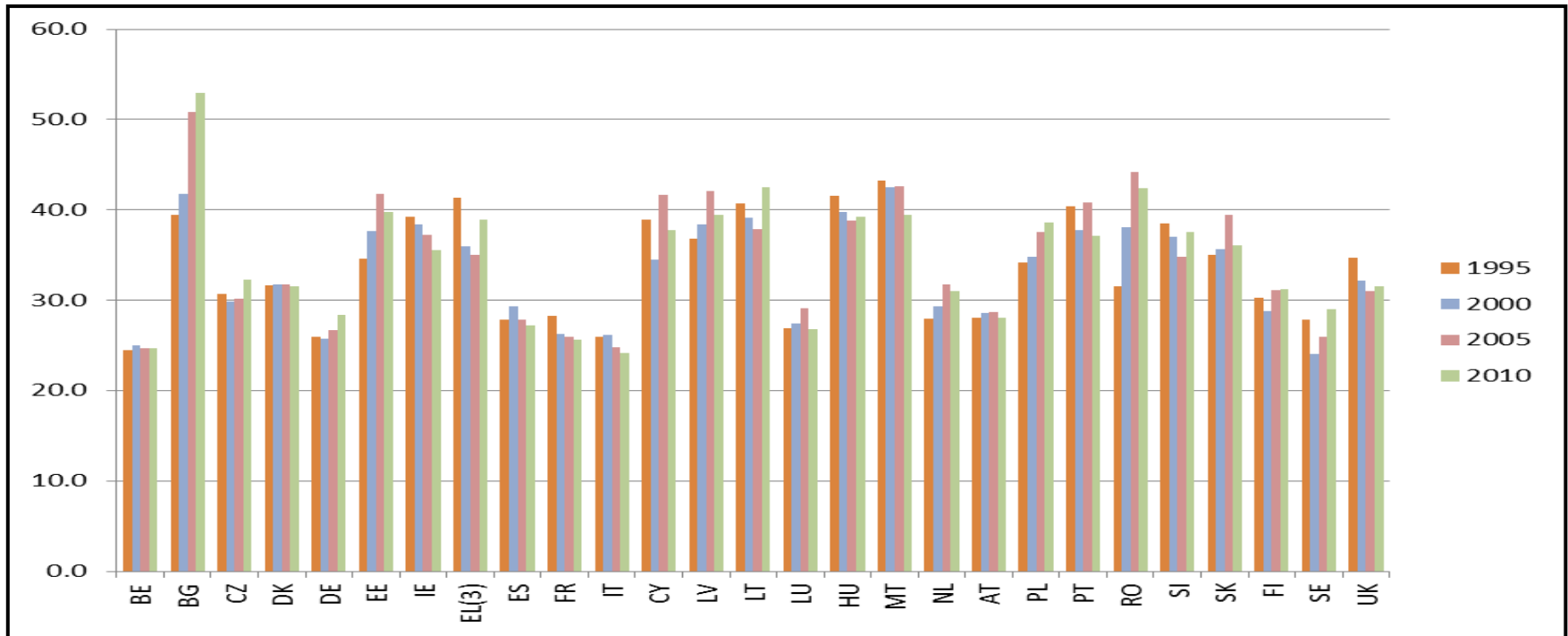
❖ *Share of total tax is roughly around 18%*



# European Tax Trends

Source: [http://ec.europa.eu/taxation\\_customs/taxation/gen\\_info/economic\\_analysis/tax\\_structures/index\\_en.htm](http://ec.europa.eu/taxation_customs/taxation/gen_info/economic_analysis/tax_structures/index_en.htm)

## Consumption Taxes as % of Total Taxation



- ❖ Average trend is reasonably flat for consumption taxes
- ❖ Share of total tax take is approximately 35%

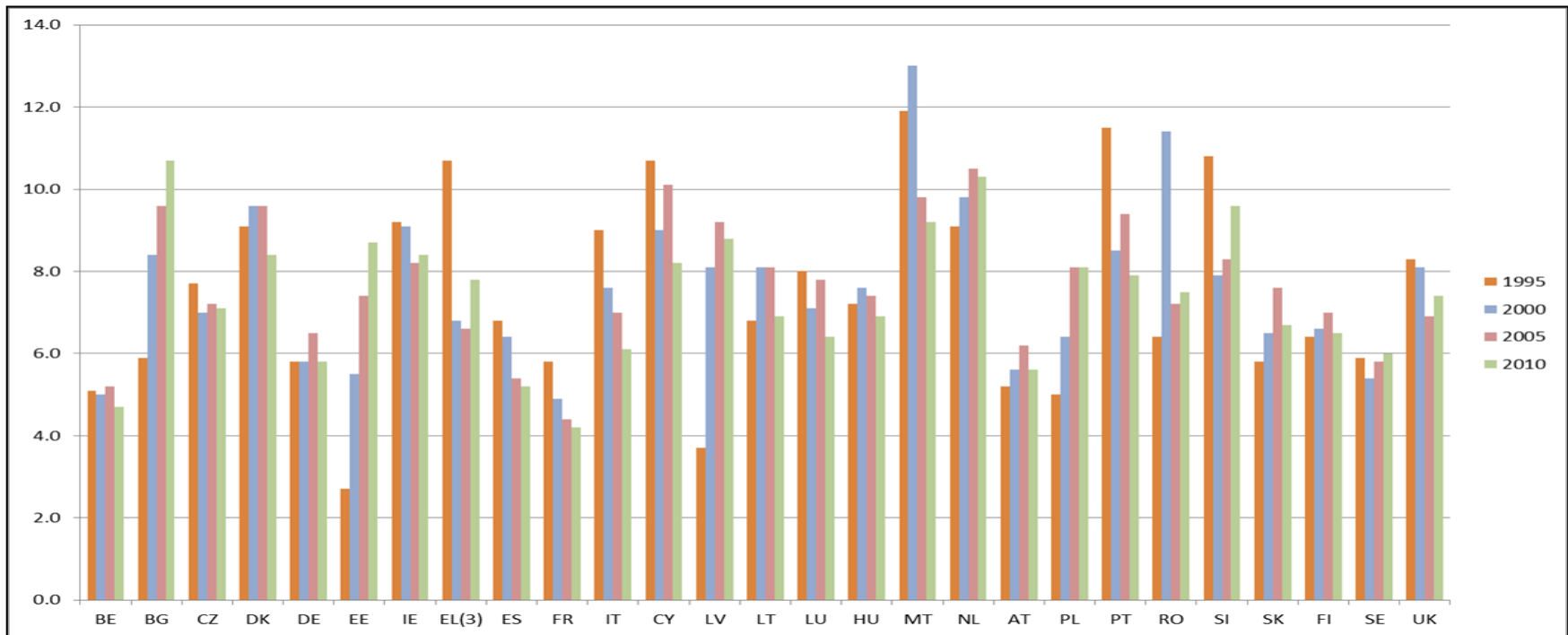




# European Tax Trends

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## Environmental Taxes (subset of others) as % of Total Taxation



- ❖ Again a reasonably flat trend from 2000 to 2010 with a **share of total tax averaging 7.5%**
- ❖ Of that share an average of 75% of the take in Europe is from environmental energy taxes and of those energy taxes an average of 85% of the take is from transport fuel taxes
- ❖ Across Europe on average only **0.3% of total taxes are drawn from pollution/resources**



# Tax Review Summary



1. We still do not make extensive use of environmental taxes in Europe
2. Consumption taxes have been increasing, but there is no strong evidence of corresponding cuts in labour taxes
3. Environmental tax reform can go further but the principals of hypothecation and reinvestment of funds are highly relevant to the societal dividend and acceptability of taxation
4. Hypothecation is not exactly flavour of the month with most Finance ministries around Europe ...
5. New forms of taxation are not exactly flavour of the month with most citizens around Europe ...

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# TAX REFORM

# Environmental Tax Reform (ETR)

- ❖ Ekins and Speck – Environmental Tax Reform (ETR)  
Oxford, 2011
- ❖ Evidence available in a European Context
- ❖ ETR requires data, knowledge, political will and is enhanced through some degree of hypothecation
- ❖ Pressure and justification for ETR can be found on many fronts



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# **AGRICULTURE**

# Agricultural Components

## Upstream

### *Major Inputs*

Energy and Fuels	Capital Investments
Feed and Fertiliser	Water
Labour and Land	Animals

## On the Farm

### *Important Actions*

Land Uses	Practices
Housing	Spreading
Grazing	Burning

## Downstream

### *Principal Outputs*

Animal Exports  
Food Products  
Other...

### *Emissions to Air (AQ/GHG)*

*Emissions to Water  
(eutrophication)*

*Black Carbon  
Ozone*

*Soil erosion*

*Amenity impacts*

*Biodiversity impacts*

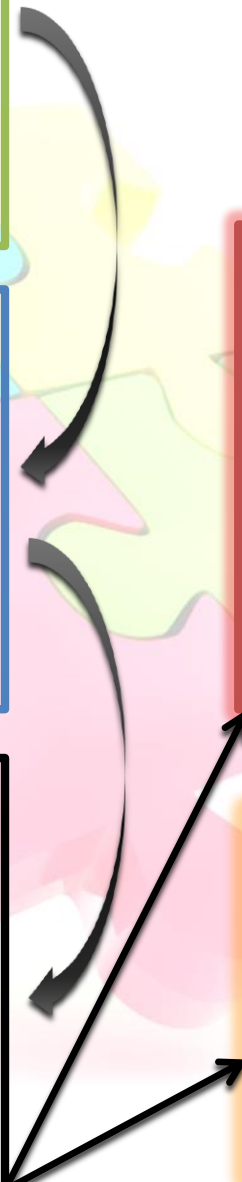
*Rural Employment  
Secondary Employment*

*Amenity values*

*Habitats*

*Food Security*

*Economic Activity*



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# **THE SELECTED OPTIONS**

# Selected Options for **Greening** Agriculture

**Water Tax**



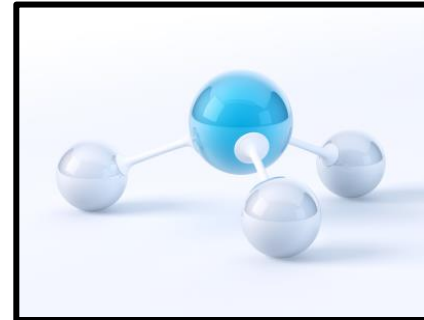
**Agriculture Fuel Tax**



**Food Tax**



**Surplus Nitrogen Tax**

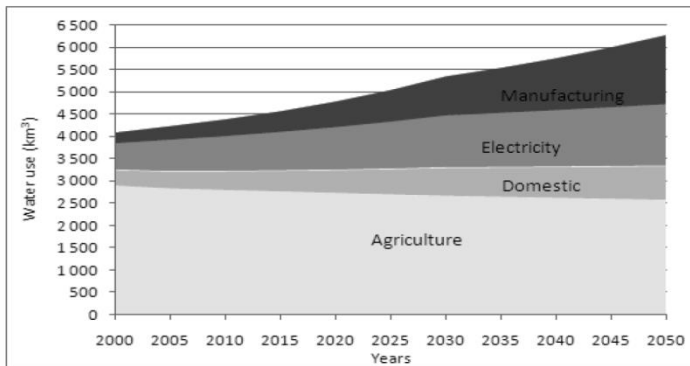






- ❖ Water is a valuable resource
- ❖ Agricultural Water demand is large
- ❖ Agriculture influences water pollution

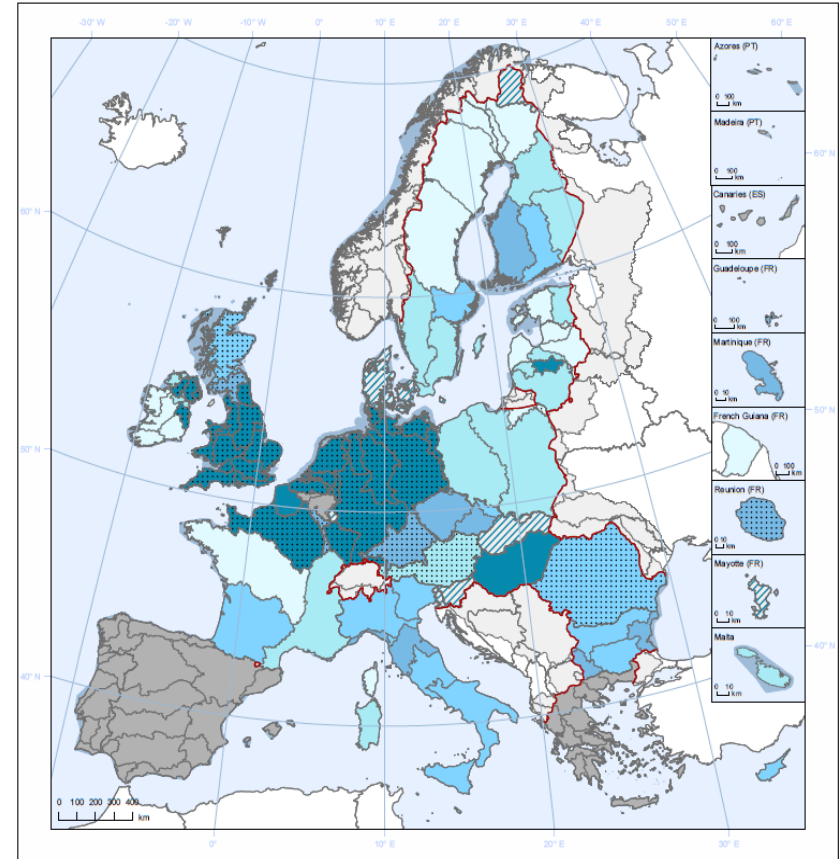
Figure 2.8. Projected world water withdrawals by sector: 2000-50



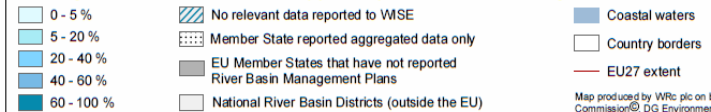
Source: OECD (2008b), *Environmental Outlook* baseline.

### Map of surface water bodies affected by pollution pressures associated with agriculture

Version 29 October 2012



#### Percentage of surface water bodies affected by pollution pressures associated with agriculture



Map produced by WRc plc on behalf of the European Commission, DG Environment, 2012

Source : EC Environment > Water > WFD



## Water Framework Directive



Article 9 of the WFD requires member states to take account of the recovery of costs of water services – including environmental and resource costs – and to adopt water pricing policies which create incentives for efficient water use. These pricing mechanisms should allow for analysis of the economic valuation of investment costs, variable supply costs, changes in demand and supply and so forth. The pricing structures should be further structured to offer appropriate pricing levels by different classes of user e.g. domestic, agriculture and industry. In turn these cost estimates should inform the choice of the most cost-effective combination of measures to be included in the programme for action.



## How to Progress?

- ❖ Full cost pricing requires full cost knowledge which requires:
  1. *Monitoring of resource use and availability*
  2. *Analysis for related non-market costs and benefits*
  
- ❖ Management is at river basin scale and therefore there needs to be ownership, engagement and understanding at this level
  
- ❖ Interim actions could involve a flat charge that appropriately incentivises the support of stakeholders in monitoring such that volumetric charging becomes the standard



# Taxing Agricultural Fuel

Presently we are quite far removed from this option in Europe

- ❖ Notable source of NOx and relevant to GHGs
- ❖ Emission standards exist - Directive 2005/13/EC through to Directive 2010/22/EU. Fleet turnover relevant in the same way as for passenger fleet
- ❖ Taxation **focused on fuel** can **support the use of more efficient machinery** on the farm generally

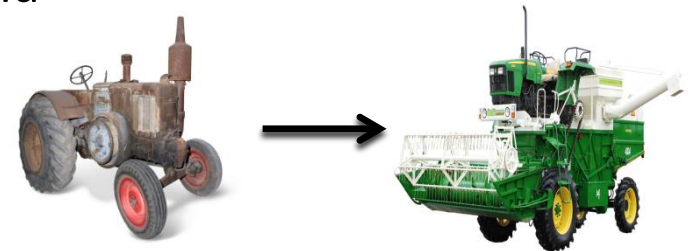
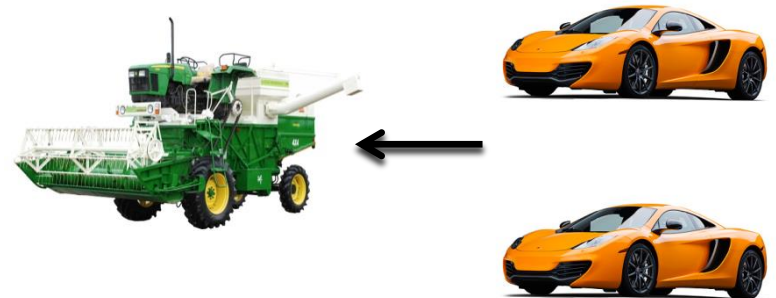


# Taxing Agricultural Fuel

There have been discussions and EC Proposals (2011) on removing the tax exemptions for fuel used in agricultural machinery (red diesel) as early as 2013

## Considerations

- ❖ Agricultural machinery is expensive
- ❖ Cost and access to capital are concerns
- ❖ Hypothecation for Scrappage/Replacement could facilitate change
- ❖ Do not target ownership of older machinery





# Taxing high nitrogen foods

- ❖ Downstream option - If innovation and technical progress will not significantly alter the basic hierarchy then the next option is to drive behavioural change to reduce demand
- ❖ Food hierarchy from a nitrogen perspective could be used to inform level of the tax
- ❖ Food taxation proposal would be particularly sensitive. Expect reaction from
  - Suppliers
  - Consumers
  - Rural groups
- ❖ Communication would be critical – it is not about eradicating choices, just rebalancing the incentives for them
- ❖ What level of potential is there?



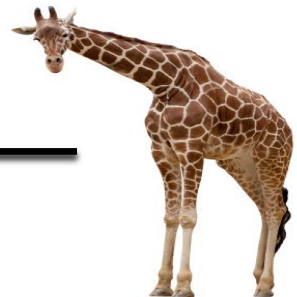


# Taxing high nitrogen foods

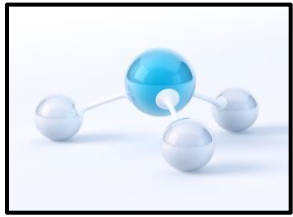
An N related tax on foods would influence purchase decisions and consumption behaviour



This could be augmented by supporting appropriate informational campaigns to encourage dietary change



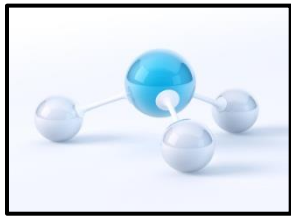
These influences could then incentivise a **movement along the spectrum** ... *but raise complex issues for unilateral policies and competition*



# Surplus nitrogen

- ❖ Tax on fertiliser is one option
- ❖ But we don't mind fertiliser – we mind impacts
- ❖ Levy on surplus N is pigouvian ... but monitoring is the challenge.
- ❖ **NL MINAS Example** - Changes to timing, method and quantity of fertiliser used. Ambitious programme with survey focused on surplus use – but complex and now *closed*
- ❖ Focus on surplus N seems most appropriate and tax would ideally be tailored to varied contexts as not all farmers will have same cost and benefit profiles. But how?
- ❖ VAT is one approach – utilise VAT data on fertiliser along with supplementary information to identify excess usage over time and thereafter charge.





## What are the options for the farmer?

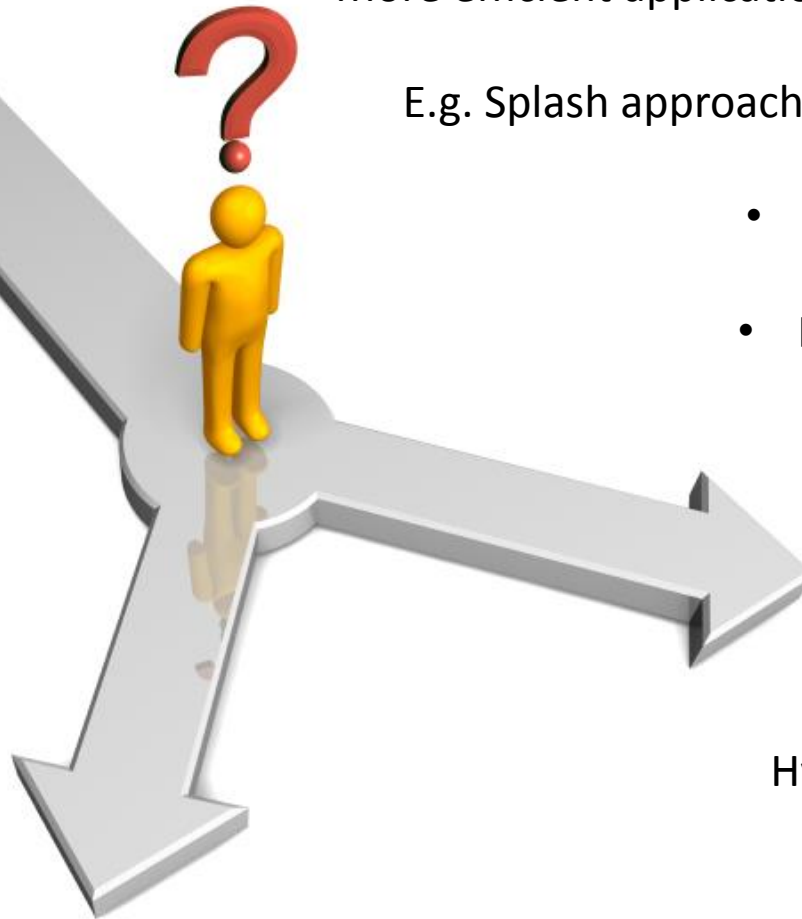
- More efficient application of urea fertiliser to land
- More efficient application of animal manures to land

E.g. Splash approach to trailing shoe, slot injector

- Improved storage of manure
- Improved housing of animals
- Lower nitrogen feed

## Responses

“high costs already”  
“price volatility”  
“incomes low”  
“how to expand?”



## Potential Solutions

Hypothecation to support :

1. Capital investments
2. Education and training
3. Monitoring programmes

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# **SUMMARY POINTS : GREEN TAX REFORM**

# Summary Points



- Agriculture is a crucial sector for society and the environment
- There are tax related options to support and manage the relationships between agriculture and the environment (water, land, air). The EU has shown leadership on this topic – **CAP Note**
- The sector is not homogenous and there are different opportunities and possibilities depending on the nature of the farm, location of the farm and scale of the farm.
- The complexities associated with taxation options often relate to data and knowledge gaps. These complexities should be viewed as challenges to be tackled, not justification for inaction. There are technology development and industry initiatives in regards to data collection and education. **Glanbia Note**
- Agriculture as a sector has been characterised by many examples of financial support and the transition to greened taxation would be challenging. Transparent examples of hypothecation would facilitate greater acceptance and progression.



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