

Fiscal Approaches to driving the circular economy

Stephen Hinton

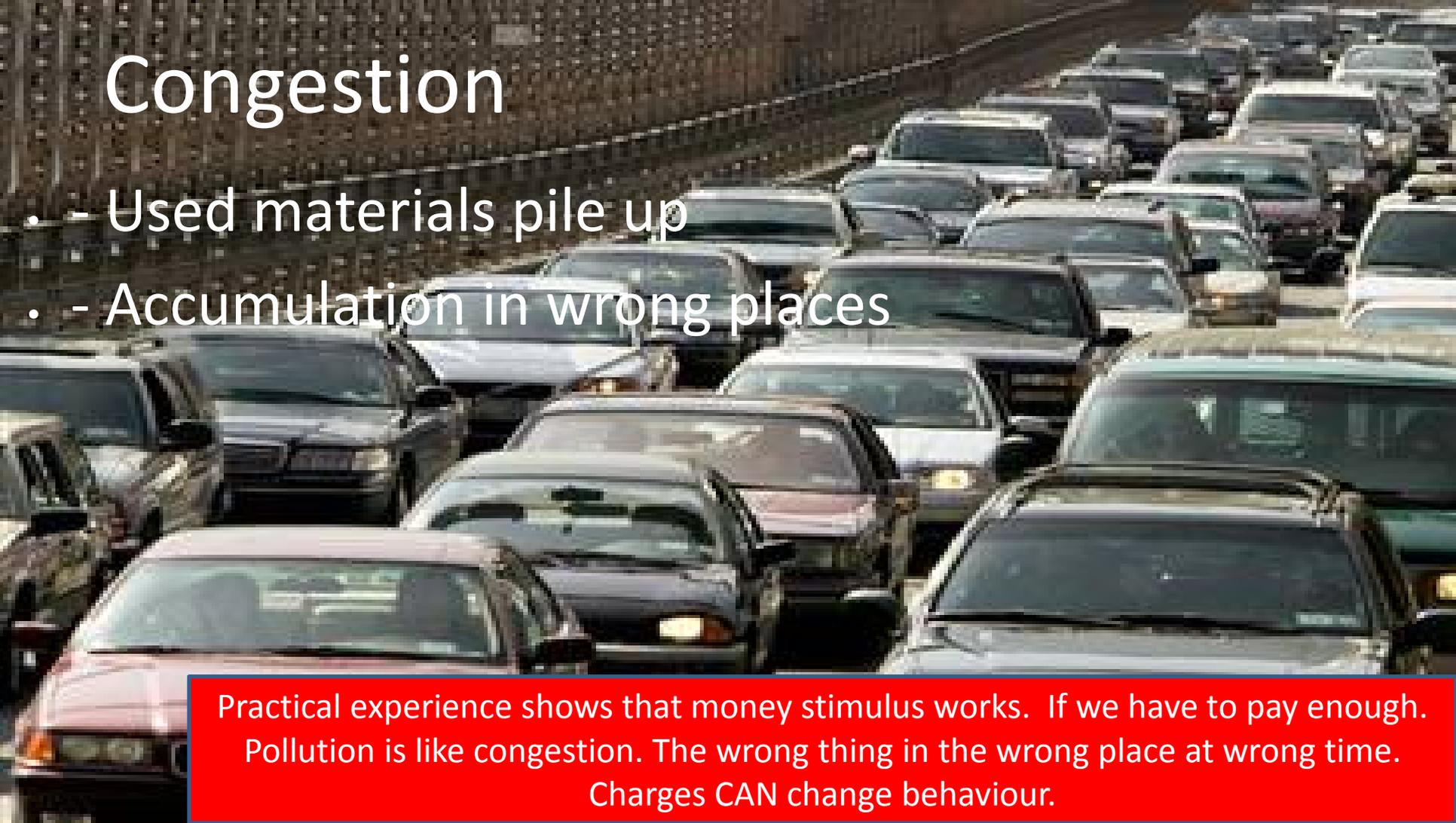
The Swedish Sustainable Economy Foundation

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- Aims to understand how the economic system can drive sustainability
- Works to present alternative views on economy to help sound decision making

Congestion



- - Used materials pile up
- - Accumulation in wrong places

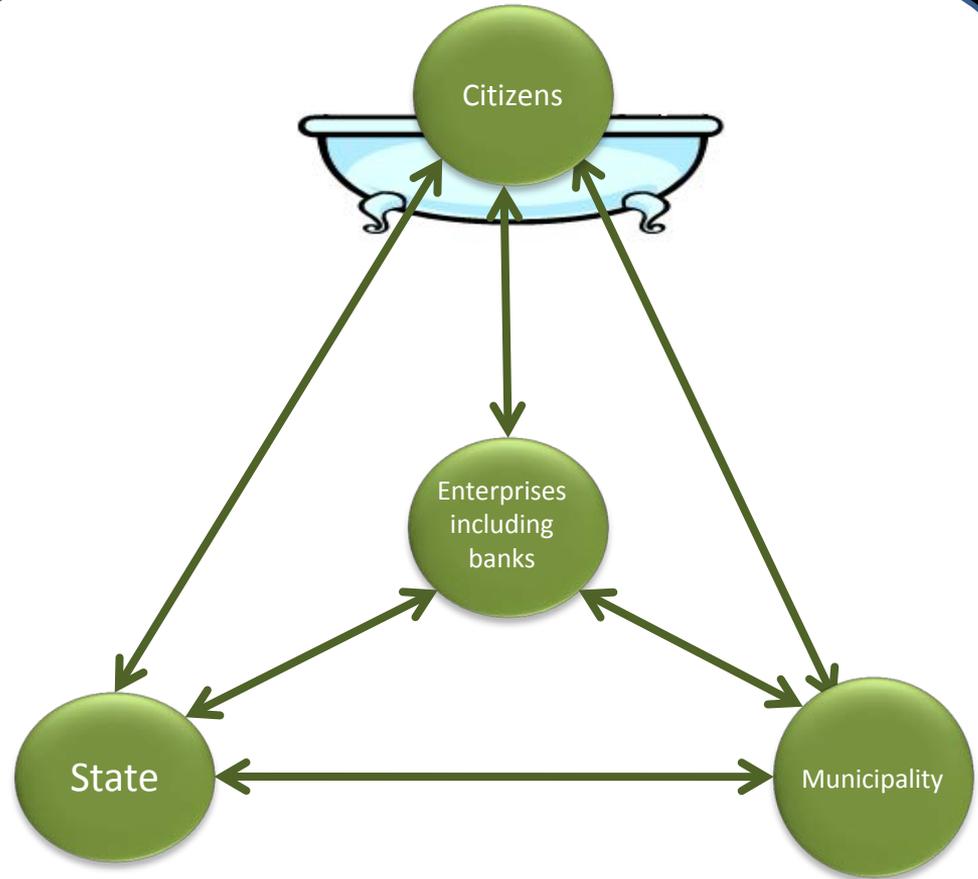
Practical experience shows that money stimulus works. If we have to pay enough.
Pollution is like congestion. The wrong thing in the wrong place at wrong time.
Charges CAN change behaviour.

The bath tub model of the economy emphasises how important it is that citizens have money in their pockets to buy products.

Economic models should ensure the overall flow of money is maintained.

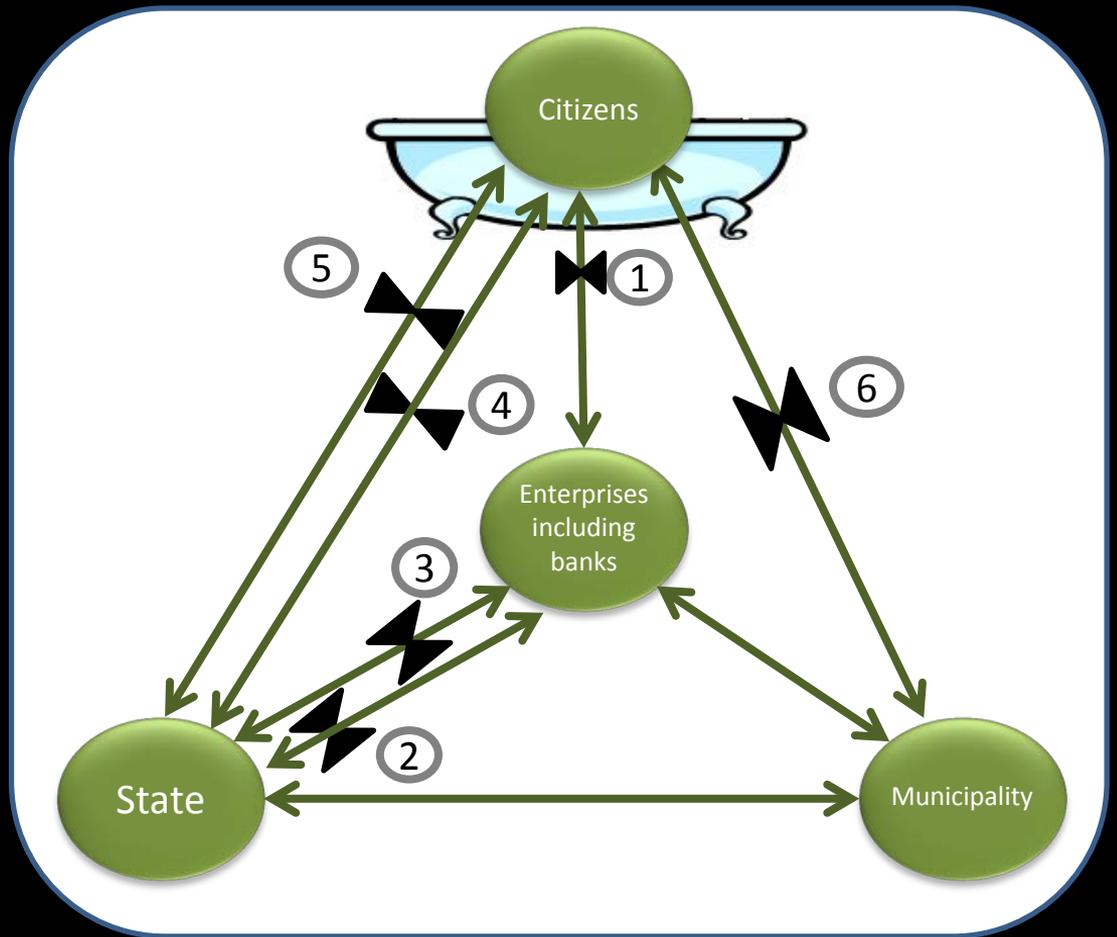
For the circular economy to arise, taxes on raw materials need to be high.

Paying back levies collected directly to tax payers reduces overall negative personal economy effects.



ATTENUATORS/Surcharges

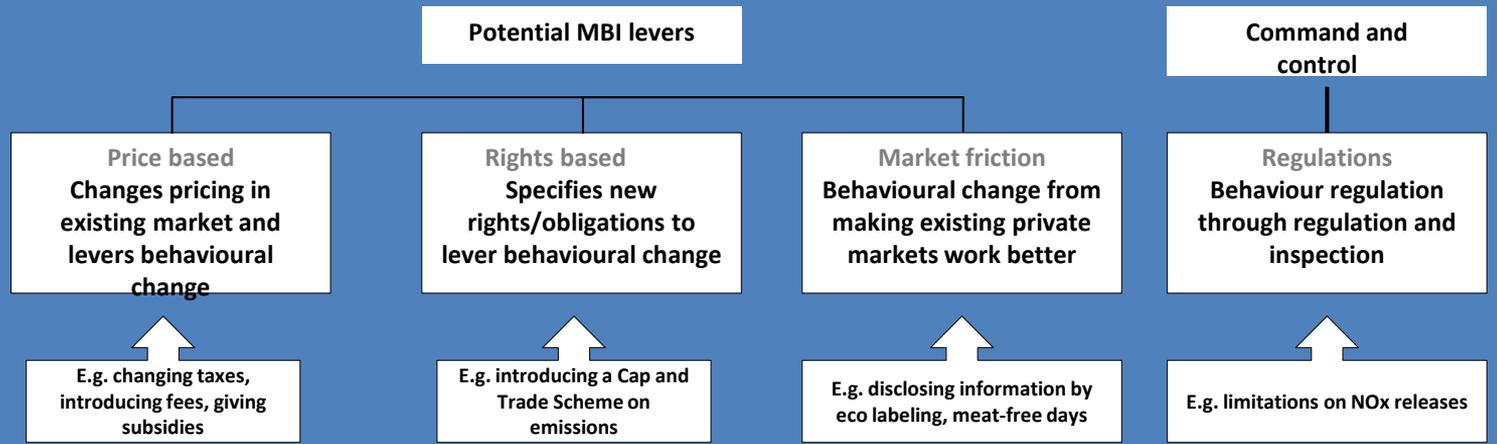
1. VAT RATE CHANGES
2. IMPORT FEE ON POLLUTANTS
3. INTEREST RATE FEE ON MORTGAGE
4. Dividend to citizens
5. Property deed transfer fees
6. Municipal charges



We identified 6 categories of taxes/fees that could be surcharged

- Recent papers analysing the potential for taxation of non-renewable resources, including my own investigation for the Swiss Government and the Ekerman report ¹ for the EEA point out
- Taxation levels on non-renewables, phosphorus in particular, are currently very low in EU Member States.
 - Case studies show that the price of the raw material is a small part of the final product so the tax would have to be very high to make a significant impact.
 - Entry into the economy (extraction, import) is the most convenient place for the levy. Border tax adjustments can compensate secondary import (i.e. mined phosphorus in food)
 - Resource levy design is politically difficult and far from simple

¹ Eckermann, F., Golde, M., Herczeg, M., Mazzanti, M., Zoboli, R., & Speck, S. Material resource taxation.



Change type

Case studies

Change type	Case studies		
Types of food			Fat taxes
Amount of N applied	Fertiliser taxes		Surplus Taxes
Land use change	Land use subsidies and payments	Emission rights trading	
Infrastructure adaptation	Surplus Taxes		Surplus Taxes
Demand for Recycled N	Fertiliser taxes	Surplus Taxes	

RECENT WORK: experience with market based instruments for Swiss Gov.

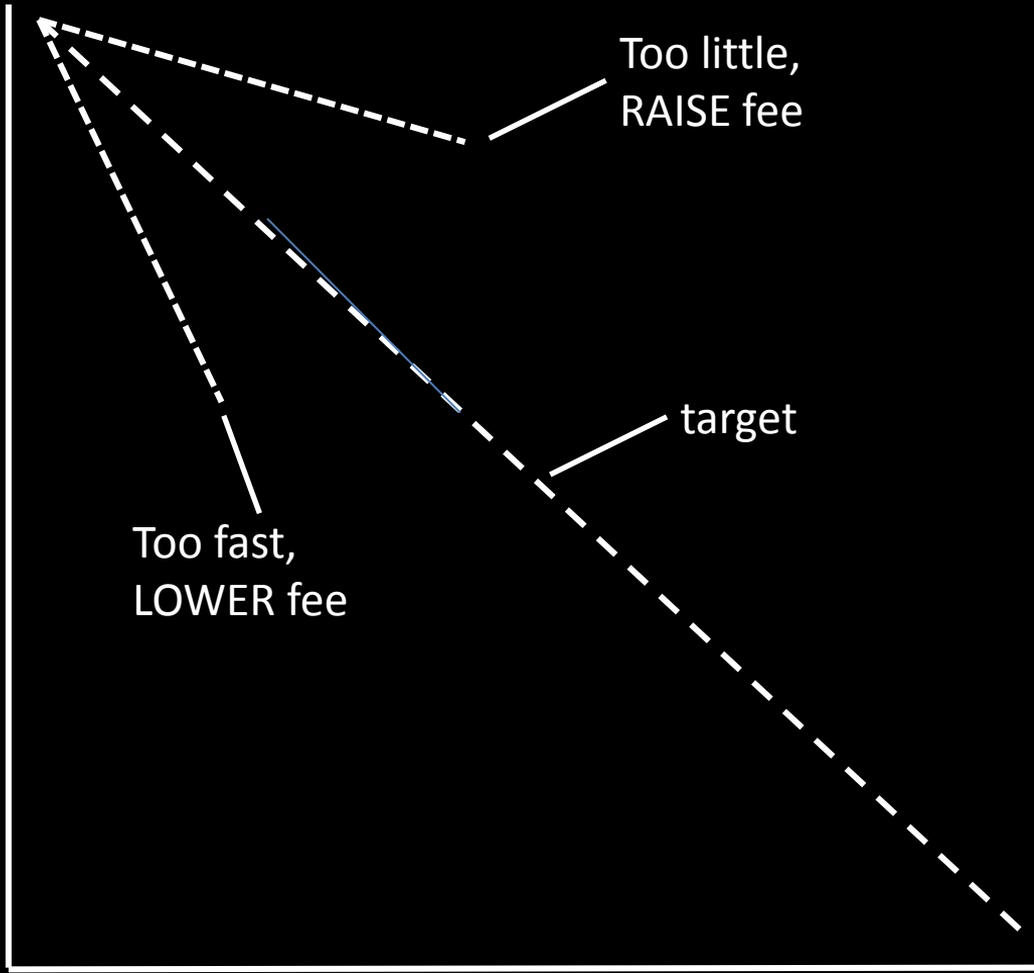
CAN WE GET MODERN?

Then

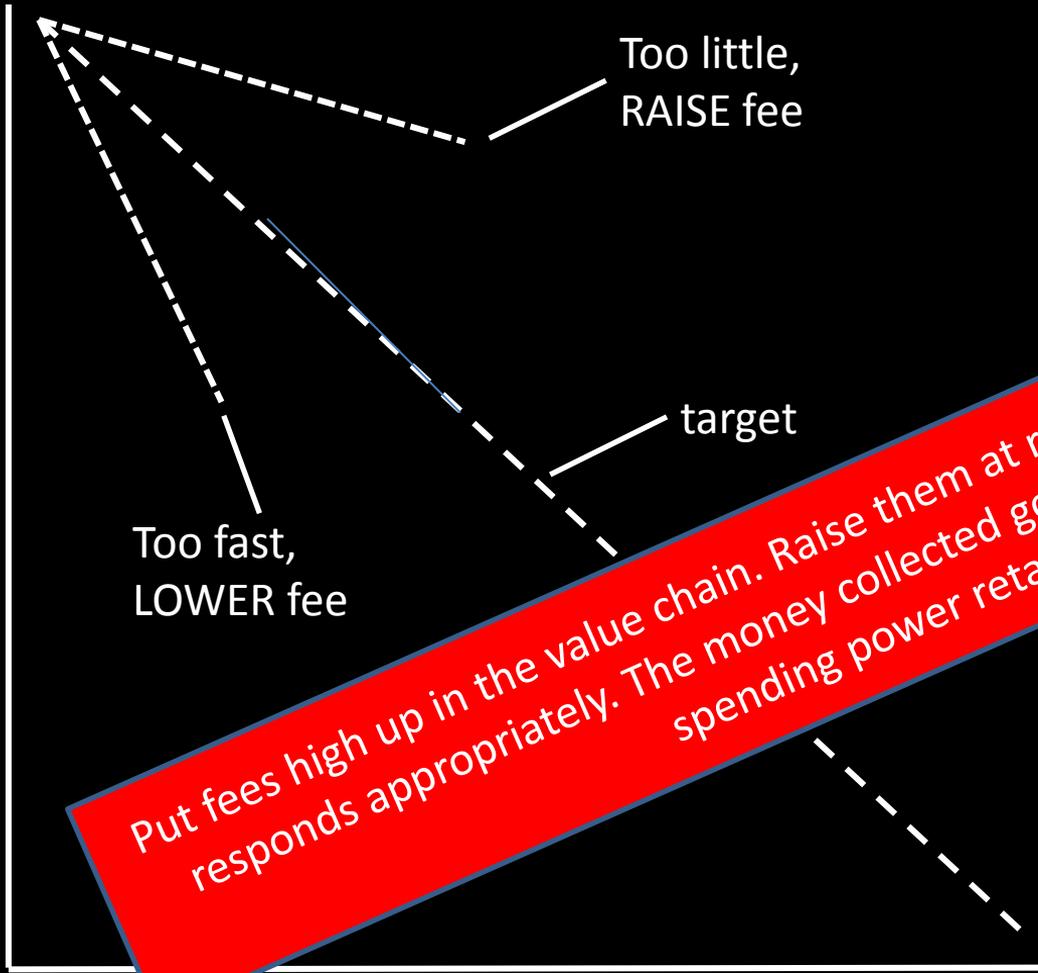
- Paper document based trading, with long lead times for accounting
- Minimum of statistics
- Long and slow methods of communication (e.g. surface post)
- Labourious calculations required

Now

- Computerised trading and tax system
- Multiple statistics collection points
- Fast communication
- Calculations can be handled by modern computer technology



DIVIDEND-BEARING POLLUTANT SURCHARGES



Too little,
RAISE fee

Too fast,
LOWER fee

target

DIVIDEND BEAR STANT SURCHARGES

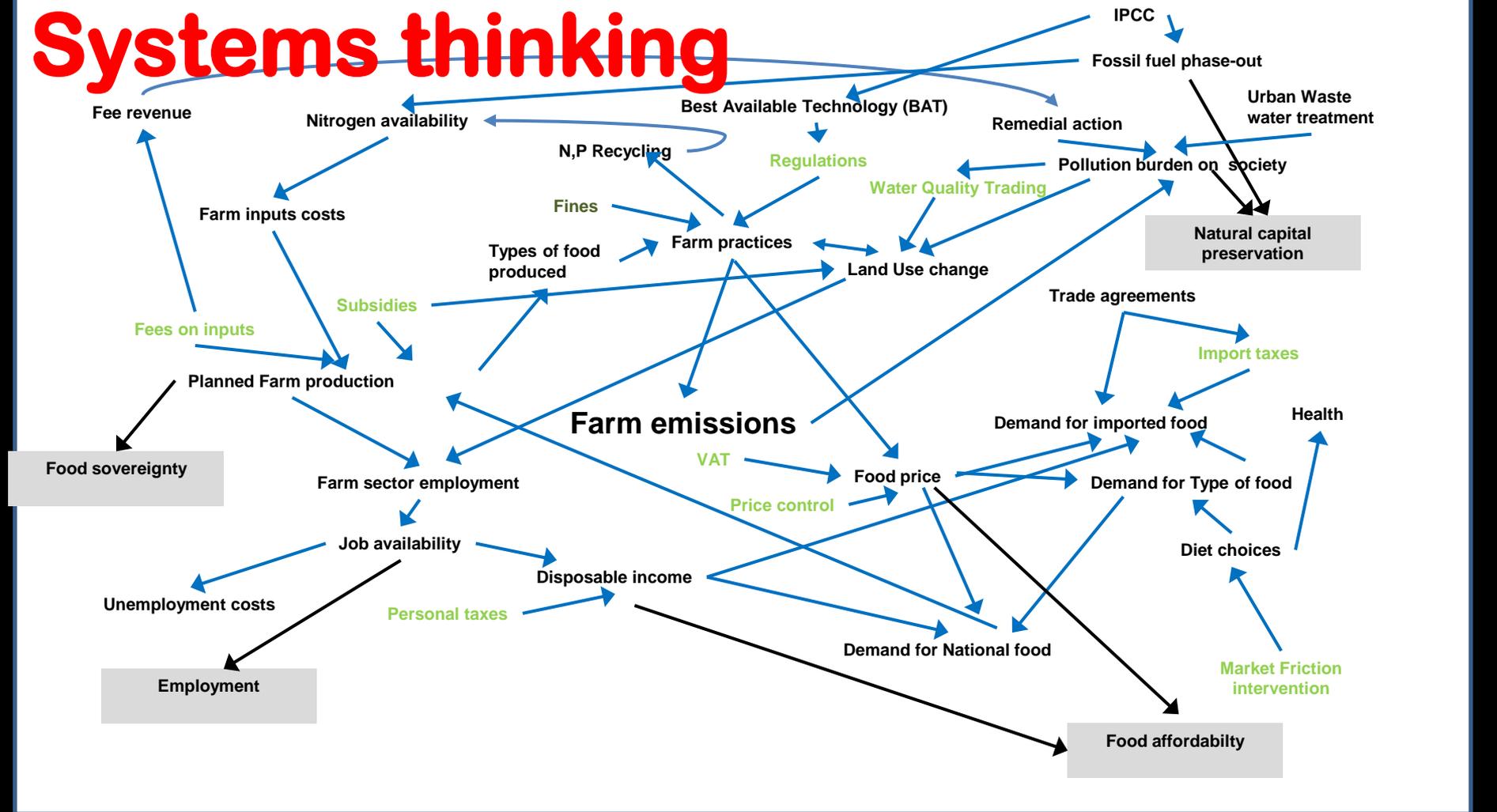
Put fees high up in the value chain. Raise them at regular prices until the market responds appropriately. The money collected goes back to citizens to ensure spending power retained

- # Externalisation
- Buying- in fertiliser exports jobs
 - Jobs exported means pollution imported (often)
 - Levying fees raises prices
- HOWEVER with dividend on fees redistributed people can afford the food

Systems approach

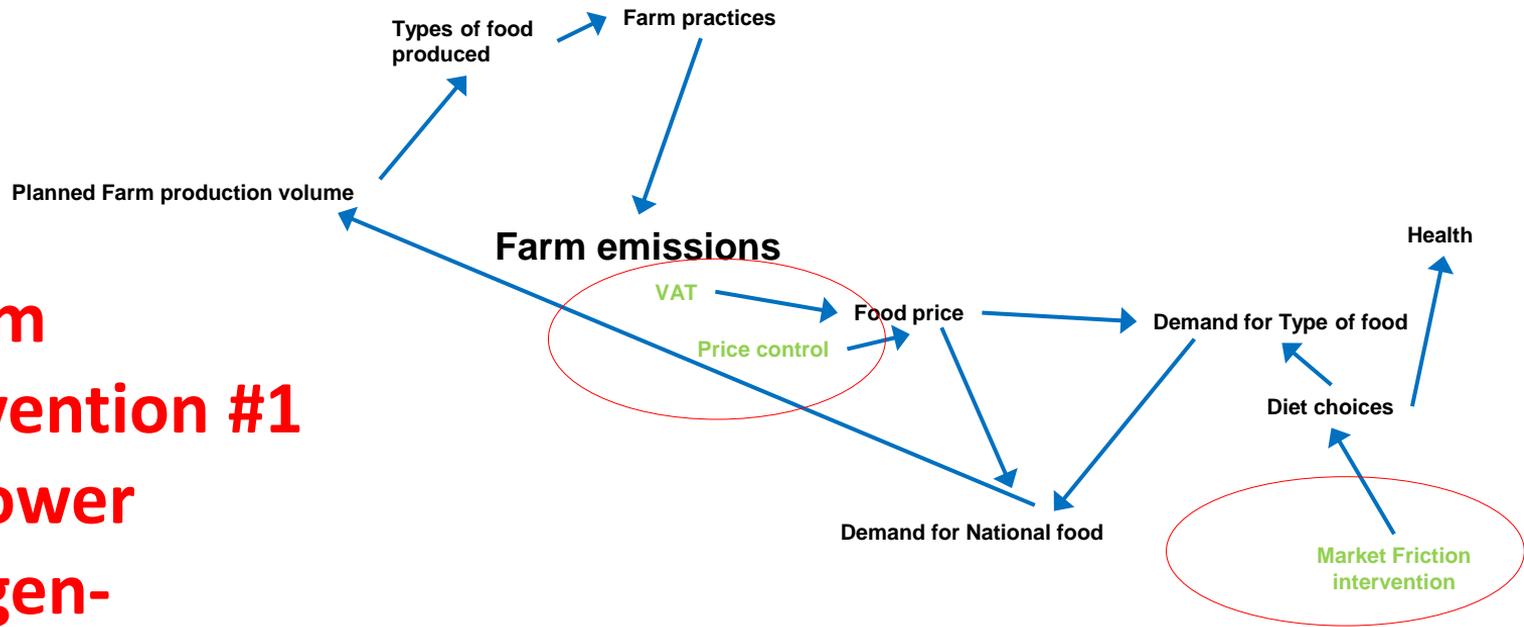
- We collated experience and ideas found in the literature in a systems influence diagram. As in all complex systems there are points to intervene that have the potential to change the whole system.
- Conclusions
 - Tax and forget must be replaced by communicate, levy a fee, monitor and adjust
 - There is no one golden solution in the form of a tax

Systems thinking

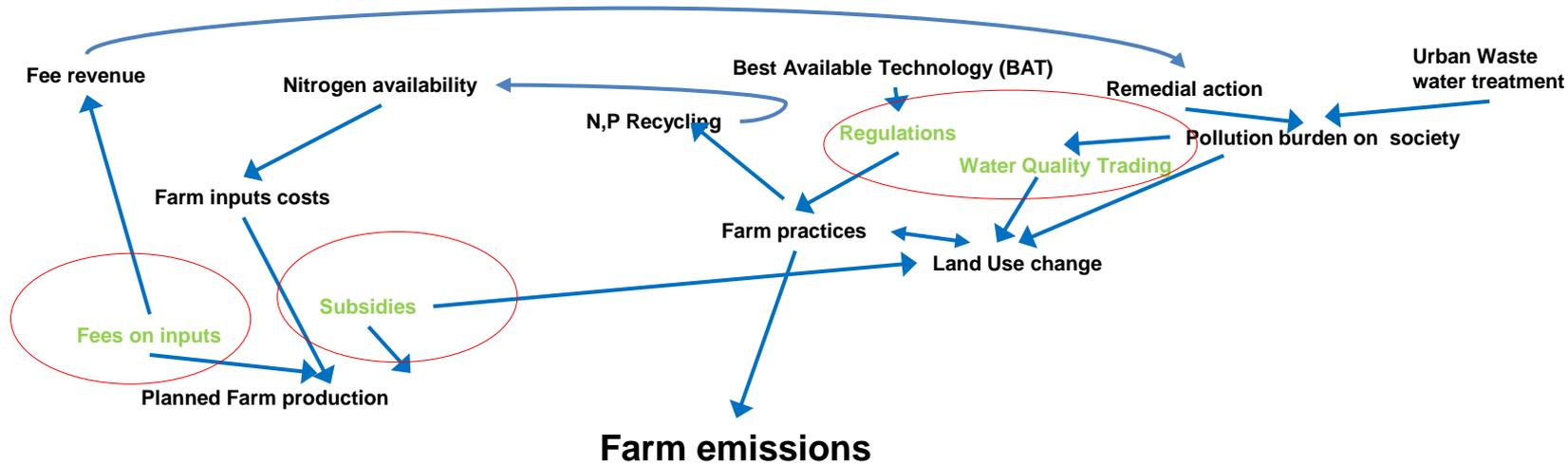


System intervention #1

The lower nitrogen-demanding diet



The low nitrogen- demanding diet radically reduces farm emissions as meat and dairy farming emit proportionally more. A combination of price controls (e.g higher VAT on meat products) and information campaigns could influence demand.



System intervention #2 The nitrogen-accumulating land area

Paying for the public good of nutrient capture creates jobs in rural areas and creates a potential to recycle the nitrogen and phosphorus captured.

Some take-aways

It is an economic and societal **SYSTEM**

Explore a modern route with:

- **Dynamic control**
 - **Digital power**
 - **Healthy diet**
 - **Land function**
- The Swedish Sustainable Economy Foundation
 - [TSSEF.se](https://tssef.se)
 - Stephen.hinton@tssef.se