



Policies and tools for the bio-nutrient circular economy Chris Thornton - European Sustainable Phosphorous Platform







ESPP: a coalition for action

- Bring together industry, R&D, public authorities, stakeholders
- Shared vision for sustainable phosphorus in Europe
- Dialogue & networking of expertise and experience
- Mediation and not advocacy
 - not taking positions or campaigning
 - enable dialogue, foster innovation
 - develop shared proposals for policy and regulators





Nutrient recycling success stories

- Ostara / Thames Water
- NuReSys
- Severn Trent
- Food waste Italy
- REVAQ sludge quality
- COOPERL manure to fertiliser
- ICL Fertilisers

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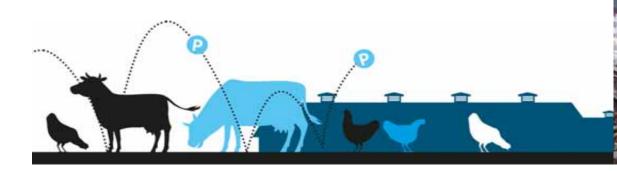
1 **9** II++



What are the drivers for these successes?

- Waste management / disposal obligation
 - food / green waste
 - regional nutrient excesses
 - waste disposal costs
- Improving sewage works operation
 - struvite recovery in biological nutrient works only

→ NOT price of recovered nutrients





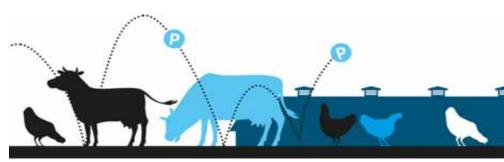


Bio-nutrient circular economy, Brussels, 2/12/15

First criterion for farmers is price *

- Production costs **
 - mineral fertilisers = 1,8 2,4 €/kgP
 - phosphorus recovery = 2 − 8 €/kgP
- Mineral fertilisers
 - "commodity"
 - mass logistics

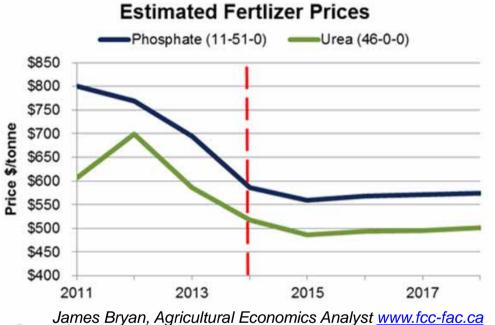
 * INEMAD survey of 555 famers in 8 EU countries <u>www.inemad.eu</u>, EIP-AGRI workshop Finland 11/2015, COPA-COGECA, P-REX
 * FHNW / P-REX, see SCOPE Newsletter n ° 108

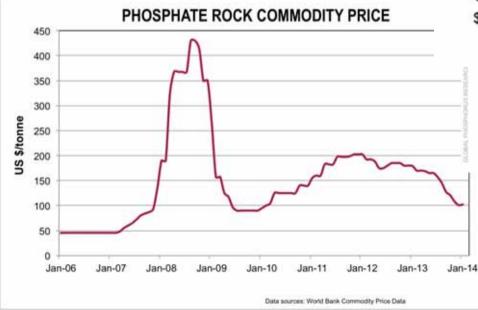
















Bio-nutrient circular economy, Brussels, 2/12/15

Productive use

FIGURE 29 STRUCTURAL WASTE IN THE FOOD SYSTEM



LAND DEGRADATION: **30-85%** of European agricultural land is affected by soil degradation (range depending on definition and data set used)

Ellen MacArthur Foundation / McKinsey, Growth Within, 2015 www.ellenmacarthurfoundation.org



European Sustainable Phosphorus Platform

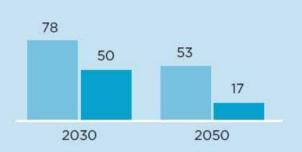
Bio-nutrient circular economy, Brussels, 2/12/15

Ellen MacArthur Foundation / McKinsey, Growth Within, 2015 www.ellenmacarthurfoundation.org

FIGURE 31 POTENTIAL ECONOMIC AND ENVIRONMENTAL IMPACT OF CURRENT DEVELOPMENT SCENARIO VS CIRCULAR SCENARIO

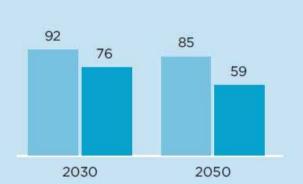
Current development scenario
 Circular scenario
 EU-27, indexed (2012 = 100)

GHG EMISSIONS

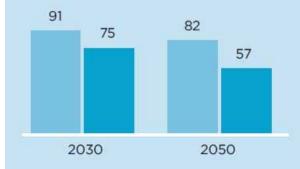


SYNTHETIC FERTILISER AND

PESTICIDE CONSUMPTION

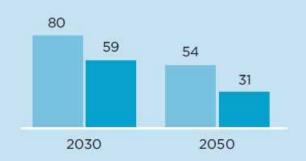


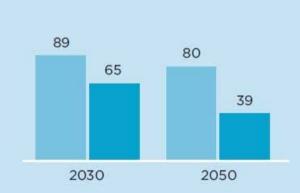
FUEL AND ELECTRICITY



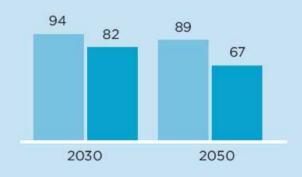
WATER CONSUMPTION

AGRICULTURE LAND





HOUSEHOLD EXPENDITURE ON FOOD AND BEVERAGE¹





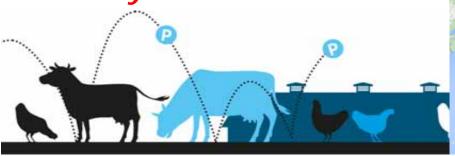
Potentials of a bio-nutrient circular economy

- Resource consumption and food security
 - dependency on imports (phosphate rock, natural gas)
- Synergies
 - reducing nutrient losses (eutrophication)
 - biogas and biofuels
 - precision farming
 - restoring soil organic carbon
- Farmers income: reducing costs / secondary income
- Distributed employment
 - nutrients in biomass, sewage, manures are in rural areas
 - Innovation: EU world leader in technologies systems



What level of ambition?

- Remove regulatory barriers
 - \rightarrow "low hanging fruit" only
 - nutrient recycling in case of local drivers:
 - waste challenges,
 - specific operating configurations
 - production of high-value products
 - \rightarrow or wider ambition ?
- ... need to modify economics



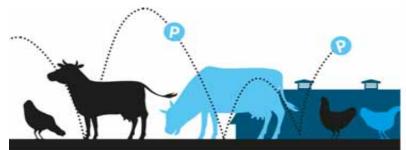




Removing regulatory obstacles

- Revision of EU Fertilisers Regulation
- Quality standards for secondary nutrient products
- Innovation, full-scale demonstration, value-chain actions, through H2020 and EU Investment Fund
- Public Procurement
- Support for risk assessment of recycled nutrient products

* BSAG – EBA – ECN – ESPP joint paper to Jyrki Katainen, European Commission Vice-President, 13/11/2015





European

A. Context and problem definition

- (1) What is the political context of the initiative?
- (2) How does it relate to past and possible future initiatives, and to other EU policies?
- (3) What ex-post analysis of existing policy has been carried out? What results are relevant for this initiative?

(1) Political context



Wider ambition: addressing economics

- Low cost of mineral fertilisers vs. high cost of labour in recycling
- Pressures on farmers' incomes vs. difficulty to pass on costs to supermarkets / consumers

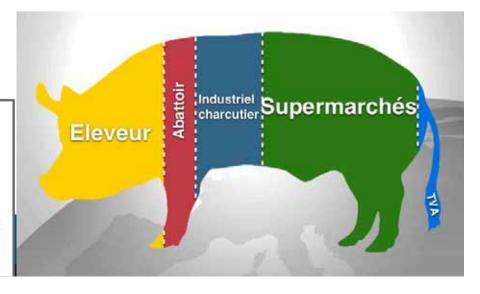
http://www.metronews.fr/info/prix-de-la-viande-elevage-grande-distribution-intermediaires-qui-gagne-quoi/mogu!Ptj6WbgEBIAuY/

A / Bretagne / Côtes-d'Armor

Un marché du porc breton sous tension à 1,389€ le kg

Une nouvelle fois, Bigard et Cooperl ont boycotté le Marché du Porc Breton (MPB) ce jeudi. Sans la présence de ces deux gros acheteurs, plusieurs milliers de porcs n'ont pas trouvé preneur. Le cours est resté stable à 1,389€ le kg. Les éleveurs se sont mobilisés à Plérin.

Par Thierry Peigné | Publié le 20/08/2015 | 13:15, mis à jour le 20/08/2015 | 15:24





Possible economic / policy tools

- Waste disposal obligations, landfill tax, recycling targets
- Tradable nutrient "credits" or recycling "feed-in" tariffs
- CAP incentives or "cross compliance" requirements
- RDF (Rural Development Fund) support
- IED (BAT), EMAS
- Extended polluter responsibility / externalities
- Natural capital accounting *
- Farm nutrient balances
- Dynamic standards

* Netherlands Government, "Further proposals for a new circular economy package", 30/4/2015 https://zoek.officielebekendmakingen.nl/blg-536079.pdf



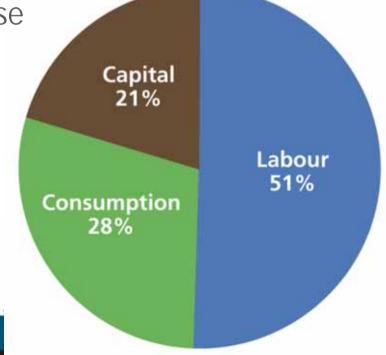


Crediting Farmers for Nutrient Stewardship: Assessment by The Climate Trust



Potential for fiscal reform

- Circular economy is job intensive
- Social security, training, pensions,
 VAT and income tax
 penalise employment
- In the past, labour was stable tax base
- Ex'TAX proposes tax shift:
 - transfer tax to resources, pollution
 - zero VAT on recycling
 - remove employers contributions
 - = administrative obstacle to jobs



EU27 tax base (2012)

from European Commission Taxation Trends in the European Union 2014 in Ex'TAX "New era. New plan. Fiscal reforms for an inclusive, circular economy." 2014 http://www.ex-tax.com/news/extax/groundbreaking-extax-report/



Data to support decision making

- Nutrient impacts, nutrient challenges are locally specific
- Voluntary sustainability indicators
 - e.g. Farm-to-Market, The Sustainability Consortium
- Farm nutrient use efficiency "big data"
- ESPP DONUTSS: data on nutrients to support stewardship http://phosphorusplatform.eu/DONUTSS







