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# APPG Ideas 1. Biorationals

## Issue

The need to reduce synthetic chemical fertilizers and pesticides in sustainable intensification is well documented:

- Pesticides; increased resistance, regulatory constraint, environmental and biodiversity impacts
- Fertilizers; production methods release GHG, NH<sub>4</sub> and N<sub>2</sub>O release in field, low nutrient efficiency, run off.

## Solve

Potential solutions are Biopesticides and Biostimulants to increase crop yields, resilience and sustainability:

- Biopesticides; improve biodiversity, C sequestration, soil fertility and natural pollination
- Biostimulants; increase yield, lower GHG through improved nutrient efficiency and reducing fertilizer use

## Block

Already used effectively in Horticulture **BUT** not translated to Broad Acre;

- Legislation EC 1107/2009 designed for CHEMICALS not Biologicals, inefficient and exclusive
- Biopesticides are regarded as “low risk substances” in EU it takes 5 years to pass v’s 18 months in LATAM/USA
- Require precision application (new capital equipment) due to cost and mode of action
- Innovation is SME driven so unable to invest in infrastructure individually

## Ask

**Specific Legislation for Biorationals and infrastructure to accelerate testing, validation, certification and demonstration**

# APPG Ideas 2. On Farm Clean Growth

## Issue

How can farms diversify, reduce their waste, improve their margins and improve UK food resilience?

- Only 2 of the 90m tonnes of farm waste is recycled
- CEA systems need low cost energy, power and nutrient input
- Alleviate growing land use pressure (Net Zero: afforestation, biomass production, food production)

## Solve

Combine new technologies (Anaerobic Digestion –Combined Heat and Power and Controlled Environment Agriculture) that will utilise farm waste streams to generate energy and recover nutrients for low carbon horticulture that will deliver new revenue streams. A new mixed farming model.

## Block

This requires multi-sectorial collaboration to bring different, new and developing technologies together **and** at a local farm scale. There is no collaboration or funding mechanism to design, build, validate and demonstrate the model. Also requires a systems approach to effectively balance and optimize resource use, uncover new opportunities for value added products

## Ask

**Funding to design, build and demonstrate a nutrient recovery and low carbon horticulture system that uses farm waste**

# APPG Ideas 3. Nudge healthier options

## Issue

Primary food production cannot meet the anticipated volume increase in protein demand from consumers globally. Current dietary imbalance cause health issues for individuals and cost implications for healthcare systems. Time is required to change cultural norms but it is possible. (Smoking cessation)

## Solve

We need to start changing consumer dietary habits soon to include new healthy protein sources, combined with a rebalance of the protein we produce (shift from animal to plant) and supplemented by alternative additional protein production for feed (e.g. replace soya) and food (alternatives to animal protein) to meet demand, improve health and reduce healthcare costs.

## Block

Concerns from consumers on interfering with their choices.  
Concerns from existing livestock producers on their future business.  
Reluctance to grow protein rich crops without guaranteed off take.

## Ask

**Initiate alternative protein strategy for public private partnership with all parties**