



# Are GM crops fit for purpose? If not, then what?

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# Feeding The World...

## Are GM Crops Fit for Purpose?

### If not, then what?

#### Aims

2. Broad overview of world hunger/security
3. Role of GM research
4. Possible UK government role



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Hosts [www.sustainablefood.com](http://www.sustainablefood.com) , which is No 1 when  
you google “sustainable food” !

# Double Burden



“Properly” means dealing with what the WHO calls the “Double Burden” -

Where about a billion people go hungry (FAO stats)

While a similar number are overweight (WHO last week are 400m obese, 1.6 overweight).

There are 70,000 early deaths in UK due to diet related disorders.

The two are linked by the overall drive for “cheap food”.

Despite the “cheap” food, 1bn people cannot afford to join our markets.

# Sustainable Food



Can see it is about health, and also the environment..

Sustainable Food is that which is healthier for people & the planet. NB Health included in definition.

While the definition of “sustainable development is usually about balancing “environmental, social and economic concerns”, for “sustainable food”

Really battle between land, labour & capital. These are main *ingredients* for the sustainable meal. Just as the proper main ingredients – carbohydrates, proteins and fats, determine the individual health of people. These largely determine what is grown where and why.

# Labour & Land



- Labour is major determinant. The biggest cost is labour.
- When we examine what is grown where in the world – and most world crops are now grown on the other side of the world from which they originated...
- We discover the main (but not only) reason tea is grown in Sri Lanka or coffee in Brazil, is the role of labour – and usually migrant labour – in case of Sri Lanka – Tamil workers from India, and in Brazil, Italian workers from Europe.

# Food as a Commodity..

"Food is not a commodity like others,"  
Bill Clinton said on World Food Day.

"We should go back to a policy of maximum food self-sufficiency. It is crazy for us to think we can develop countries around the world without increasing their ability to feed themselves."



# Why Food Security?



Clinton was probably referring to developing nations, yet we in the UK also need to “feed ourselves” called Food Security”

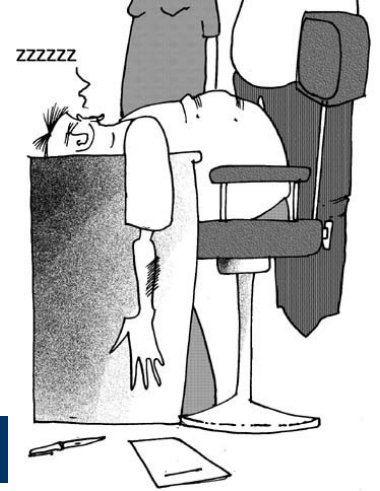
Now it applies also to the UK. We have about 3 days supply of food in the country at any one time. If the lines of logistics fail for any reason, we are about “9 meals from anarchy”.

AND...

Using Ecological Footprinting, we use more than 5X own land for food production.

PM's Strategy Office Report [Food Matters](#) & [Proposed Food Policy Council](#)

# Productivity



UK particular (ex imperial) position. Ever since Repeal of Corn Laws looked for Cheap Food to fuel industry.

The driving force is increased “productivity” to produce cheap food for a market of only those who can afford to buy...

We need to focus much more on national production primarily for more local fruit and vegetable and grain production.

Need to stop treating our farmland like a townies garden.



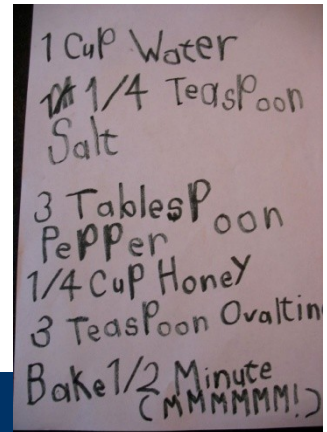
# Where People & Planet meet...

(WHO) run Food & Nutrition programmes that address the "double burden" of hunger and obesity ([European Action Plan for Food & Nutrition Policy '07 - '12](#)).

**“Fortunately, the strategies needed to create desired changes in nutritional and environmental patterns are often complementary and, as a whole, provide cost-effective, sustainable development for agricultural land....**

**In addition, local strategies that seek to improve the availability of, access to and consumption of locally produced foods, particularly fruits and vegetables, also increase the interdependence and thus the social cohesion between urban and rural dwellers”**

# Recipe for success



We need a new mix of land, labour and capital, where..  
We make better use of our land, where..  
We pay people decent rates for working, where  
We don't just feed profits..

Where the capital builds up on the land –  
Rather than in the finance sectors of East London.  
This means more investment throughout the food chain.

We don't need more science (but could be useful)

## So where does GM fit?



Among those major ingredients of land, labour and capital, GM – or rather GE, as it is engineering of DNA we are talking about, is a bit like salt on the sustainable meal.

It can have a noticeable affect, but it isn't really necessary in everything and may cause some harm..

So what does GM do?

# Technical fix?



Neither as a “Technical Fix” – a magic wand fixing all the problems.

Nor is it a “Technical Frankenstein”. There are not bits of GM moving through the food chain, like there are with pesticides. It is not “science gone wrong”

It is normal science. And if we don’t like the science, need to ask what is behind it

# Precautionary to Control



Up till now we have used the Precautionary Principle to give time to see where the problems may lie.

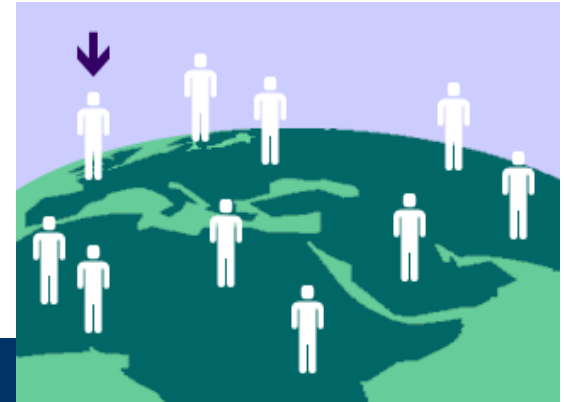
As a trade unionists often said “NO”, then eventually negotiate controls..similar here.

Have been able to exert controls on GM Crop introduction – broadly similar with those for Pesticide Approval.

As a member of Advisory Committee on Pesticides, we discussed the differences between pesticide approval and that for GM

And that lead me to totally reappraise my own pesticide research..important lesson

# Direct/Indirect Effects



With GM there has to be consideration of both direct effects *and indirect* effects, which opens up all sorts of possibilities.

My own research many years ago on the effects of herbicides on soil animals tried to identify the direct effects. (Rothamsted) Only 30 years later realised that indirect rather more important.

Instead of looking at only the effects of toxicity, you look at the “whole farm approach”, and that has a lot of potential.

# Productivity again.



- Chemical & GM research dominate:
- GM Fabulous technology, shame it is in wrong hands. Just one company really – Monsanto.
- Look at what [Monsanto want GM](#) for..  
“Monsanto of the US and Germany's BASF are to collaborate in a venture designed to boost farm **productivity** by 20 per cent” FT
- All the talk about feeding the world is secondary....**productivity** is what counts.
- This is dominant “Paradigm”. Tim Lang in “[Food Wars](#)” calls it “Productionist paradigm”..

# Productivity



**Overall aim of GM is to increase productivity – getting more out of what you put in. That sounds sensible, until recognise what costs are ignored.**

**And as labour is main cost, that is what GM technology will do – reduce labour costs whether of scientists/advisers/labourers..**

**This is the basis of most of the science that goes into producing “cheap food”.**

**It ignores all the social and environmental costs of production.**

**(I notice that one of Obama’s promises is ‘to negotiate only trade deals which include social and environmental protection’.)**

# What should UK government do?



Against this backdrop, the amount of government research on practical agricultural and horticultural research has plummeted – just when we need it most. There is a virtually shutdown of practical agricultural and horticultural research. Wye College virtually demolished, East Malling Fruit Research privatised – and - worst of all, Hop Research Station gone.

RASE “Soil & Water Management” [Review of Hortic R&D '08](#)

Need a free Extension Service to give advice/provide skills (ADAS).  
Wales has!

# Get real

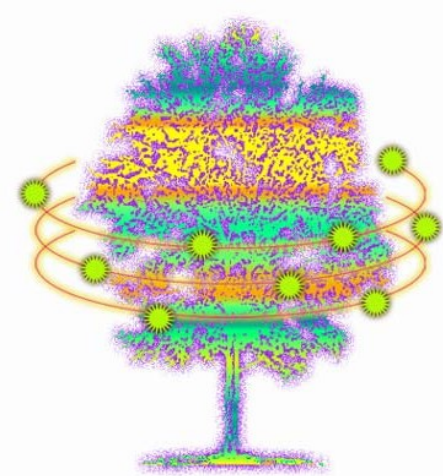
DEFRA now invest only in “Blue Sky” thinking (ie What are effects of Climate Change on pests), whereas now we want “Green Fields” thinking – helping growers use less pesticides and fertilisers....



are signs... [New government agency](#):

"to provide robust evidence, rigorous analysis and professional advice to Government, international organisations and the private sector, in order to support and develop a sustainable food chain, a healthy natural environment, and to protect the global community from biological and chemical risks."

# Invest in GE



So the government should be re-investing in the whole agric/hortic infrastructure, of which GE could play a part. When that occurs we would come up with a vast range of issues and options, that we are only now beginning to address.

While GE talk of a second generation of “sustainable GM”, (re drought resistant, less fertiliser) they are looking only at a few crops - the main commodities.

But remember what Bill said food is not a commodity like others – it is far more important.

# GM for real sustainability



We want to do research on a whole range of crops – particularly fruit and vegetables in this country that can deliver all sorts of tastes at all sorts of times suitable for all sorts of different places.

Make your own suggestion for novel fruit/veg – where..Patio Pineapples

If GM can help that, great. And if the government fund it we can better decide where the R&D goes

Most importantly of all – we will have Crown copyright of the products.

# Way Forward



- We need political debate – akin to debate of the [Repeal of the Corn Laws](#) of 150 years ago.
- In light of recent market machinations, stop investing in debt derivatives, invest in real improvements.
- [UNEP today](#) suggests a Global Green New Deal where we invest in green jobs – can you imagine how many making more sustainable food?

# The IAASTD says...

International Assessment of Agricultural Knowledge, Science and Technology for Development says

“Business as usual is no longer an option. This leads to rethinking the role of AKST in achieving development and sustainability goals; one that seeks more intensive engagement across diverse worldviews and possibly contradictory approaches in ways that can inform and suggest strategies for actions enabling the multiple functions of agriculture.”

# Thank You



For access to this presentation...

[www.sustainablefood.com/GMpurpose.htm](http://www.sustainablefood.com/GMpurpose.htm)

Lots more...

just google “sustainable food”

[charlie@epaw.co.uk](mailto:charlie@epaw.co.uk)

[www.epaw.co.uk](http://www.epaw.co.uk)

More resources  
available at the website  
[www.feedingtheworldconference.org](http://www.feedingtheworldconference.org)



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