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Select Committee "[Securing
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PROMOTING SUSTAINABLE FOOD

Dr Charlie
Clutterbuck

Who are You?



- You in very important place
HA is success story in all this..
- Most of Agric/Hortic structure I knew has gone
– and going to use my journey to show demise
- Who would say they are going to be part of the
‘thinking world’?
- Who would say they are going to be part of the
‘Doing world’?
- Aim today to spell out the relation between
each - regarding sustainable food...

State of Play today

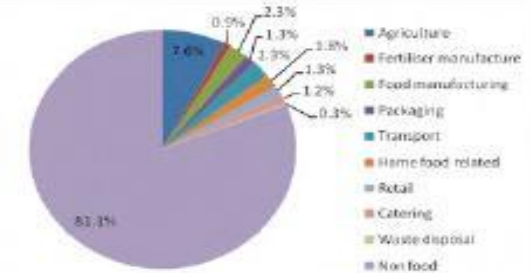


- Need to produce ‘More food more sustainably’
- This combines the food security and sustainability agendas. ‘Perfect Storm’
- Sustainable food is that which is ‘healthier for people and the planet’
- SF is broad – not just a bit of organic and fairtrade
- Challenges way we have ‘left it to the markets/supermarkets’ for last 30 years
- End of cheap food nigh

3 Elements of Sustainable Food

Environmental – 4 main issues

- 1/5 th of all UK GHGs
About half and half food and farming
Most emissions not from animals methane but Nitrogen fertilisers.
- Water – 20 Niles worth of water being passed around planet in food.
- Oil dependent system US citizen eats 500 gals of oil/yr – as food.
- Land Use – We require 5X our land space to produce our food according to [Food Footprint](#)



Elements



Social

- ❑ Fatalities on farms – worst record in UK
- ❑ High prop of migrant workers in food chain – hence Ethical Code
- ❑ Permanent population dying off
- ❑ Many developing country producers also go hungry – hence Fairtrade
- ❑ Globesity – just about everywhere.

Elements



Economic

- End of Cheap Food
- UK 40% dependent on imported crops
- Egypt 40% dependent on imported crops.
- World food price rise creating tension that led to uprising
- UK inflation (now 4.4) due to external food and oil rises
- UK importing £15B food we could produce ourselves
- Inflation will lead to interest hikes, real crisis
- When we could at least feed ourselves.

My Journey

- From early age wanted to 'feed the world', went to Newcastle University, Agricultural Zoology
 - studying pests and diseases (now IPM)No Agric science there now



- Wye College, London University MSc Tropical Crops, PhD Effects of Herbicides on soil fauna
Centre for world agric/hortic education.
Now up for sale!



Herbicides on Soil Fauna

- Looked to see if I could identify any toxic effects of the herbicides.
- Tried to distinguish any toxic effects from the direct effects of reduced herbage on fauna
- Despite counting $\frac{1}{2}$ mill and statistics with early computers, didn't succeed.
- All along felt I there was a fault, just hoped external wouldn't spot it.
- Nevertheless my external said I should publish



Advisory/Research Stations



- ADAS. Blight Advice. 6000 staff giving free advice. Now only 600 commercial
- Research Stations were 20 now only handful
Gone: Letcombe Laboratory 1985; National Institute for Research in Dairying 1986; Weed Research Organisation 1986; Hill Farming Research Organisation 1987; Plant Breeding Institute 1987; Grassland Research Institute 1992; Long Ashton Fruit Research Station 2003; Silsoe Engineering Research Institute 2006; Hannah Research Institute 2007. Glasshouse, Hops Research Wye Kent, Some survived by becoming businesses e.g East Malling Fruit
- My examiner - Kenneth Mellanby 'Can Britain Feed Itself' Head of Monkswood Terrestrial Ecology Research. That was = GOD – Gone..but was never perfect...

Kenneth Mellanby complained recently that he had been unable to interest ARC scientists in the claims of organic farmers. However this is no surprise as scientists tend to reject experience that does not come from scientific experiments. Where once farm practice evolved to incorporate the cumulative experience of farmers and their workers, creating local styles adapted to specific conditions, now scientific concepts are imposed mechanically.

Blame Barnes..



- World of free flowing information between research, ADAS, farmers gone..
- Unpublished ministerial Report, late 80's that identified 'Pure' – public pay OK, 'Applied' to be paid by industry(got lost)
- Thatcher loved it as fitted with her 'leave it to the markets' and 'reduce the state' philosophy.
- Closures have been quiet, as most involved are fearful of criticising the funders

Barnes Report

Scything farm R&D

THE GOVERNMENT has commissioned a one-man report by a civil servant on ways of slashing support for agricultural research. Chris Barnes, assistant secretary at the Ministry for Agriculture, Fisheries and Food will report on how all "near market" research can be ended or switched to industrial funding within two years. According to the Institution of Professional Civil Servants, this will threaten £75-million worth of research and 3700 jobs in science. Industry will not be able to absorb the extra costs, it says.

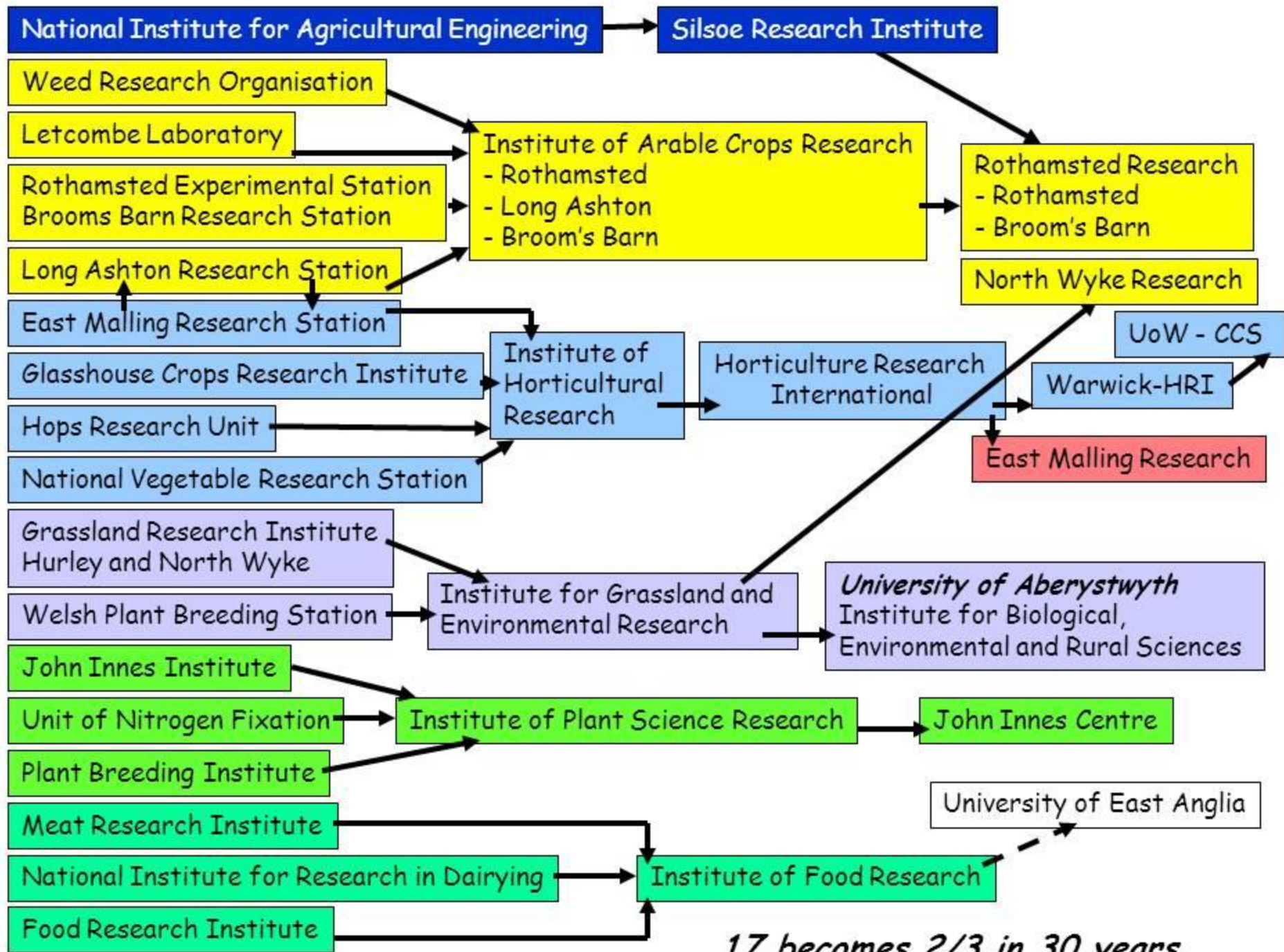
The term "near market" is not defined. The IPCS thinks it may mean any research that may lead to a marketable product within three to five years. This would encompass a large proportion of R&D in agriculture and food. Ironically, the Agricultural and Food Research Council has recently been encouraged by government to become more market-oriented.

The MAFF also wants farmers to bear 100 per cent rather than the current 20 per cent of the cost of ADAS, their advisory service. The study has been kept secret since its launch in November. Barnes will report directly to agriculture secretary John MacGregor and the Prime Minister. The findings will not be published. □

Does anybody know where I can get a copy?
tried DEFRA/Archive.

It was a Ministerial report and so not published.

Of the handful, just lost another digit...



17 becomes 2/3 in 30 years

Wellesbourne – Warwick (HRI)



- Of over 60 research staff redundant Oct 2010 . 1/3 gone to 'Life Sciences' - since early 90's done fine – basically laboratory science (is still a small Crop Centre)
- 'Agricultural' 'Horticultural' losers. Again unclear of boundaries
- Always refer to 'Applied' – what does it mean – pesticides are applied not the science.
- Why not a new name – Land Sciences? [More](#)
- Imperial College threatening at very time to close their plant Science Dept.
- For want of £2mil when DfID spending £80 mil on Ag R&D overseas – to 15 CGIAR research stations

Research Skills

Table 5: Analysis of researcher skills and expertise

Numbers of research leaders						
Discipline	Nature of science skills		Age range			
	Basic	Strategic/applied	20-30	31-50	51-60	61+
Agronomy						
General	0.4	3.1	1	2.1	0.4	2
Vegetables	0.5	5		2	5	
Glasshouse agronomy						
Top fruit	1.5	1		0.5	2	
Soft fruit		4		1	3	
Protected edibles		3.3		1.3	1	
Protected ornamentals	1	3		3	1	
Hardy nursery stock	0.5	3	1	1	1.5	
Physiology	5.6	9.4	1	11.8	3.3	
Crop improvement, genetics & genomics	16.2	12.1	2	21.8	8.5	1
Pathology	6	16.1		20.4	8.2	
Entomology	3	15	1	13.6	7.4	1
Microbiology	2.8	7.5		8	2.2	
Soil science & plant nutrition	1	6.7		5.7	3	
Biometrics	1	3.3		2.3	3	
Weed science	0.5	2.1		3.1	1	
Others (specify)						
Botany, taxonomy, biodiversity		0.6		2.6	2	
Environmental science			1			
Economics		2		3		
Nematology		0.4	0.2		0.2	
Horticultural technology		0.6		0.6		
Restoration ecology/bioremediation		1.4		1.4		
Operational research		0.3		0.3		
Quality and nutritional components				2.5		
Post-harvest technology		1	2	3	1	
Tropical crops	0.5					
TOTALS⁹	40.5	98.9	9.2	111	54.7	4

Consequences...



- Means we are not addressing many issues.
- Often seen as a battle between organic and GM.
- Big debate between Productionist v agro-ecology.
- Fails to address land use/labour and dozen other issues – IPM, plant ownership.
- Taylor Report ‘invigorate applied research’. Pesticides are applied – not research.
- Remember that PhD which I thought was flawed? 30 years later realised why...

Advisory Committee on Pesticides



- While discussing the similarities/parallels between pesticide approval and GM approval.
- Pesticide risk assessment considers only direct effects
- Whereas GM approval also requires indirect effects – secondary ones as consequence of GM use, but not directly due to GM
- Suddenly (30 years later) realised my soil animals didn't give a damn whether they were killed by pesticide or by loss of herbage. They were dead.
- Realised that it isn't the toxic effects of say glyphosate (pretty non-toxic). But intended effects – kill weeds.

Paradigm Shift



- What are the consequences of this?
What are the effects of weed killers in destroying vital soil functions.
- Each plant killed by a herbicide gets rid of many little 'carbon capture and storage units'
- What is the contribution of herbicides to global warming?
- Have any of you heard anybody ask that question?
- And who would fund it. Not Monsanto owners of glyphosate.
- Not the toxic impacts that now important. Were in 70's – Rachel Carson not long past, nor predatory birds decline due to diedrins..
- Now the concerns for the planet come from 'safe' chemicals – CO2 NOT CO.
- Similarly with nutrition – not additives/toxins main concern but naturally occurring carbohydrates are creating globesity.

Position we find ourselves



- Need more food more sustainably. But lost most of our public sector science, extension and advisory services. Dependent on commercial
- Investment still going the wrong way – out of the land and country into financiers and overseas.
- Speculators making money OUT of food instead of investing money IN food/farming
- As food still seen as cheap fuel for industry and commerce.
- And if we can use the rest of the world to provide our land and labour, we may be able to produce profitably.
- Notice that at end of his “[Budget for Growth](#)”, Osborne said:
- **We want the words 'made in Britain, created in Britain, designed in Britain, invented in Britain' to drive our nation forward," NO mention of 'Grown in Britain'.**

The way forward



Not coming from the top, but may come from the bottom. 'There is a growing call that we in UK should be producing more food - particularly fruit and vegetables, locally. This would not only reduce dependence on imported food, it would provide for a healthier diet and encourage investment in local industry. [IAASTD recommend](#) bottom/top approach The [World Health Organisation](#) (pdf p205-208) says:

"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...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."

‘Thinking’ & ‘Doing’



- 2 worlds – of ‘knowing’ & ‘doing’, long divided in this country.
- Knowing world – needs to ask a lot more questions.
- Doing world needs to embrace ‘sustainability skills’
- While developing learning materials for WHO on ‘Food & Nutrition Plans’ mate Tim threw up ideas, my job to catch them and turn them into things people can do.
- Vocational Qualifications do just that.
- Need to rebuild lost skills at school, home and work

Science and Skills



- Lots of questions need to be asked. Pretty for FAO has devised [Top 100 questions](#)
- Lost a lot of science but will still need more skills – eg IPM, Soil Sequestration, Water and Energy efficiency...not just technical fixes.
- Links with initiatives like [Food for Life](#) – eg Batley Girls, who can take VQ 2 in [Health & Nutrition](#)
- There is part of a vocational qualification – called [‘Promoting Sustainable Food’ \(level 2\)](#)
- This helps make concrete a lot of interlocking and sometimes conflicting ideas. As [SDC report](#) (Friday) said ‘have to see food as a system, rather than single issues.’

Thank You

- If you want to follow up any of the points,
- Go to www.sustainablefood.com
- Check out Reports page for regular update of reports on sustainable food.
- Or google 'sustainable food' where No 2!
- Beta version of Promoting Sustainable Food @ sf.com/develop/vq

