

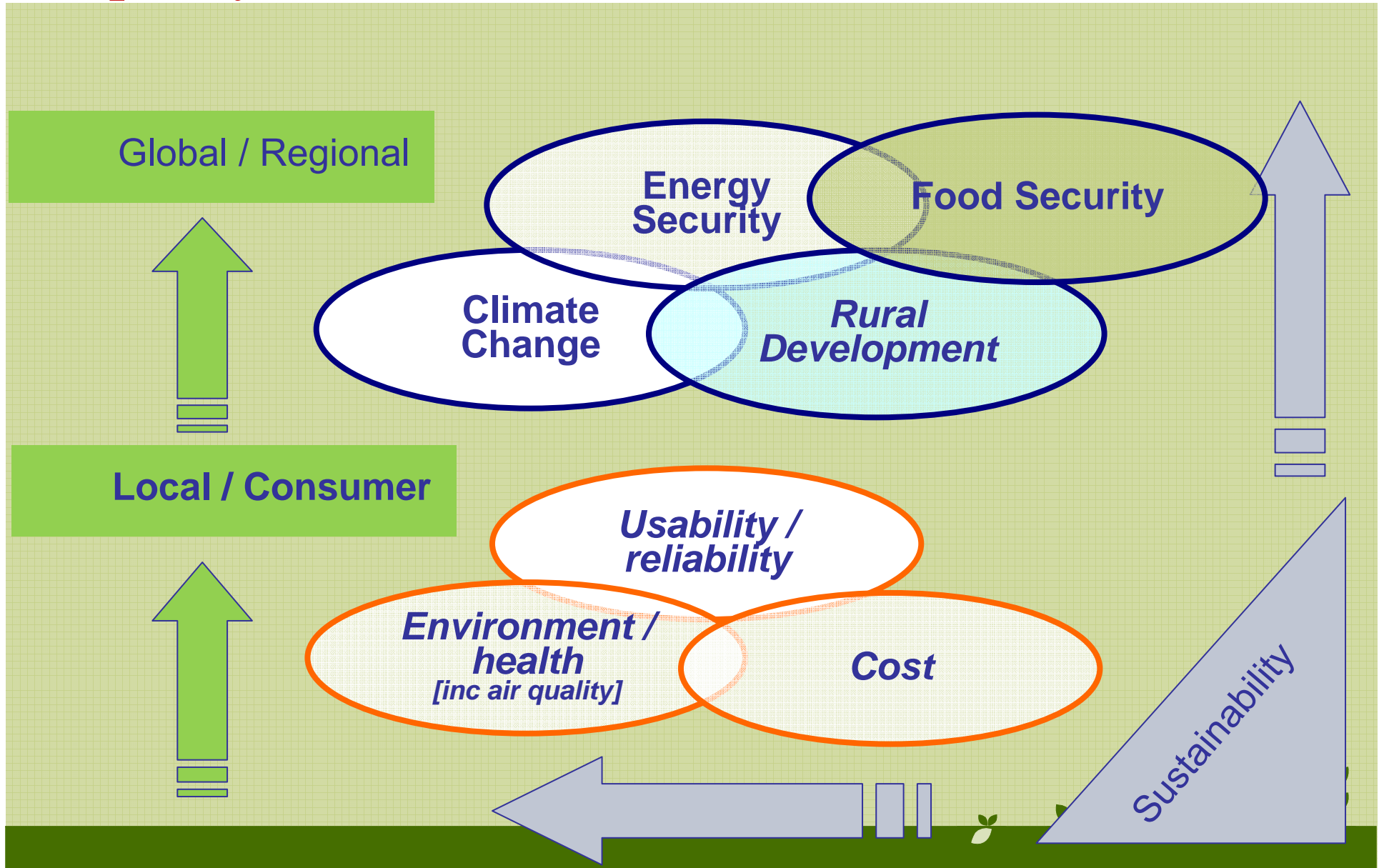
# Setting global standards for sustainable biofuels development

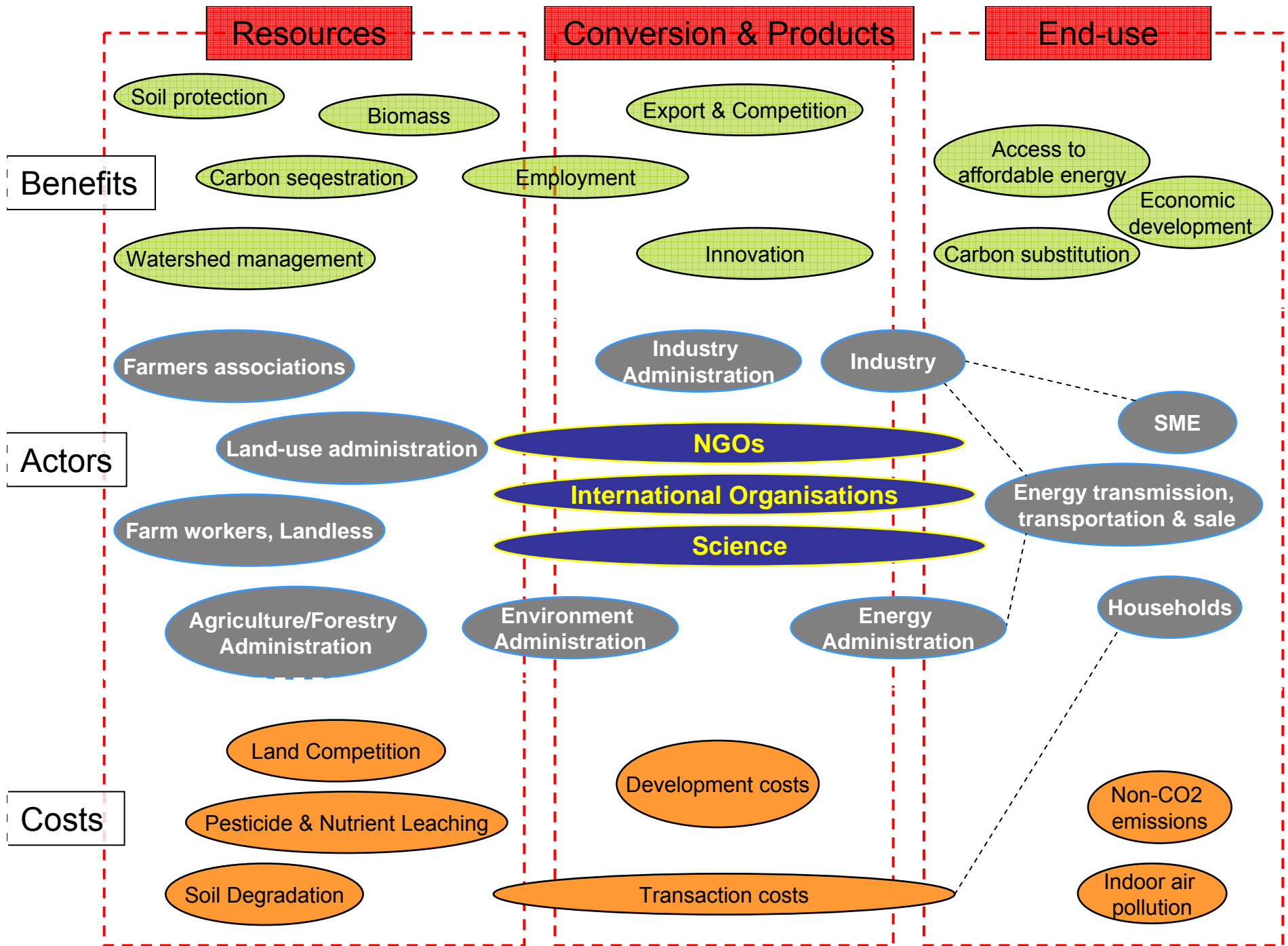
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Tel: +44 (0)20 7594 7315

Biofuels Ablaze  
AAAS Chicago  
15<sup>th</sup> February 2009

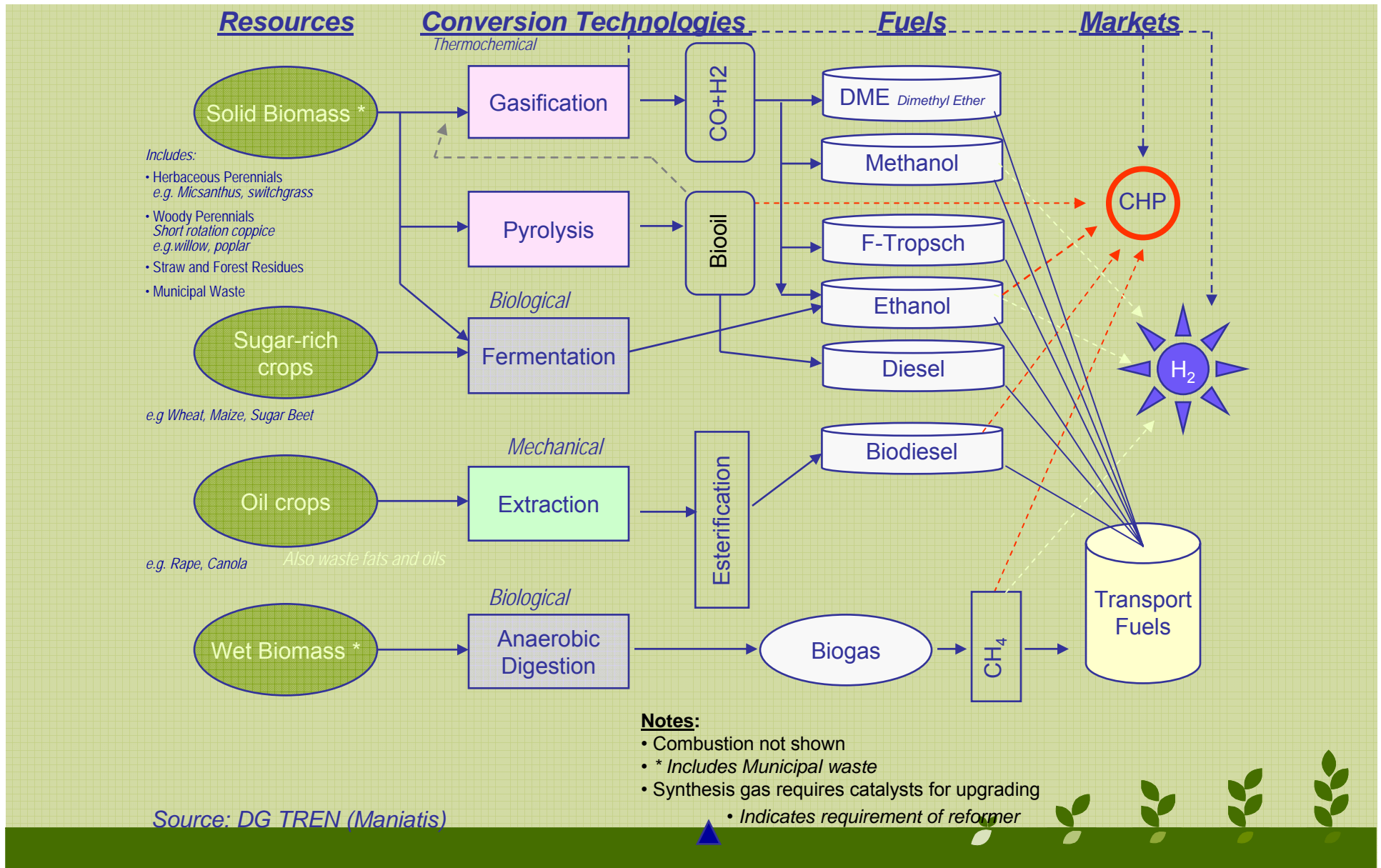


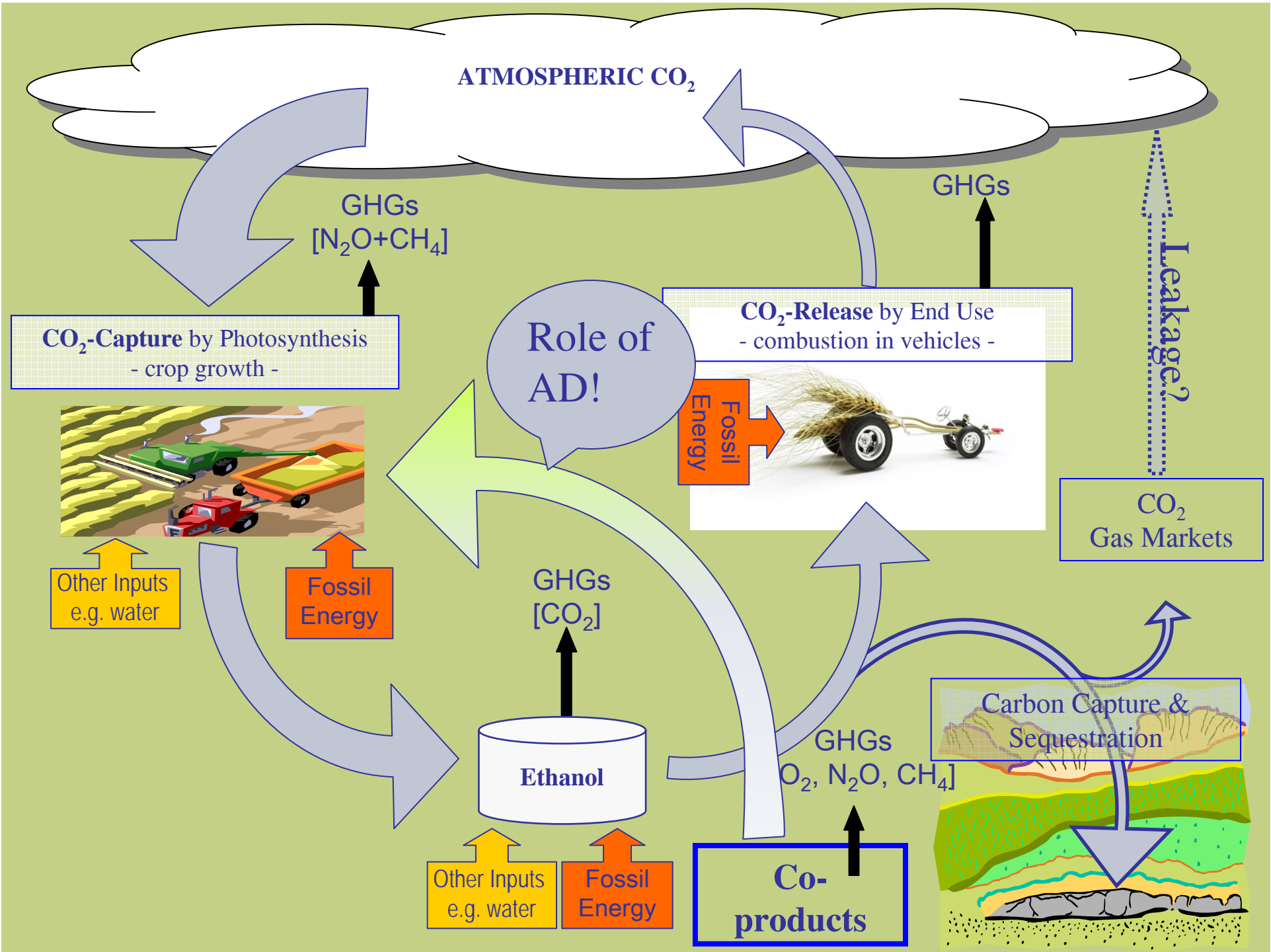
# Climate change and society: the policy context



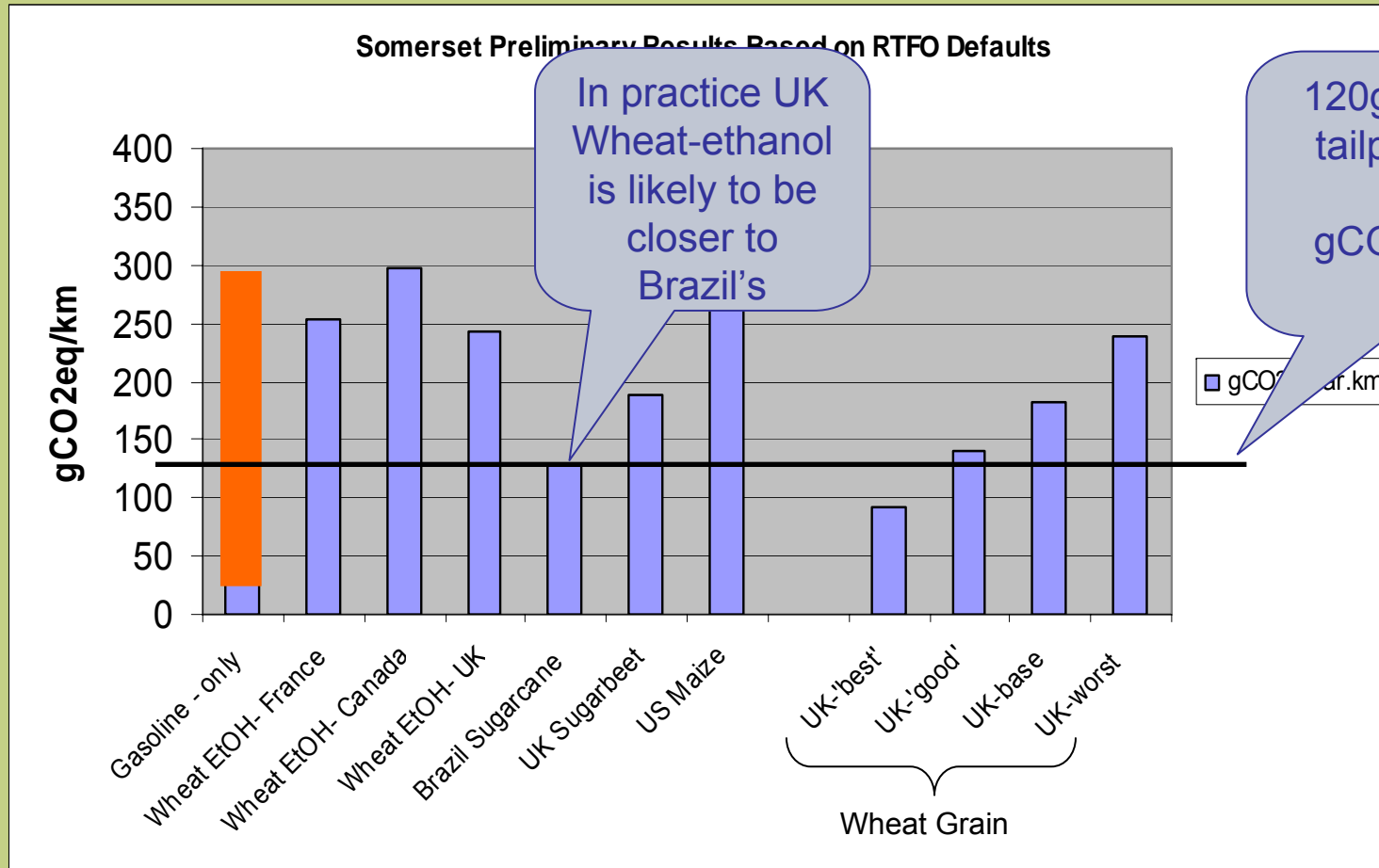


# Overview of Conversion Pathways (biomass and waste)





# UK- RTFO implications for E85 use in Somerset



‘Worst case’ GHG savings between 53% to -25%

Using ‘country level (conservative) default factors’ as defined by the UK-Renewable Transport Fuel’s Obligation Reporting Requirements (RTFO, 2007)





What are the components of a credible [sustainability] scheme?



- **Standards** or set of criteria which defines 'sustainable'
- Independent **certification** or verification to confirm standard is implemented
- **Accreditation** to control certification bodies
- Product **traceability** / supply chain control

See Nusbaum, Pro-forests, 2007: [www.ProForest.net](http://www.ProForest.net)



Standards → Principles → Criteria → Indicators



- Principles

*'general tenets of sustainable production'*

- Criteria

*'Conditions to be met to achieve these tenets'*

- Indicators

*How a farm, producer or company could prove that a particular criterion is met*

Need to distinguish between **'direct'** and **'in-direct'** impacts





# Principles and Criteria for Biofuel Crops

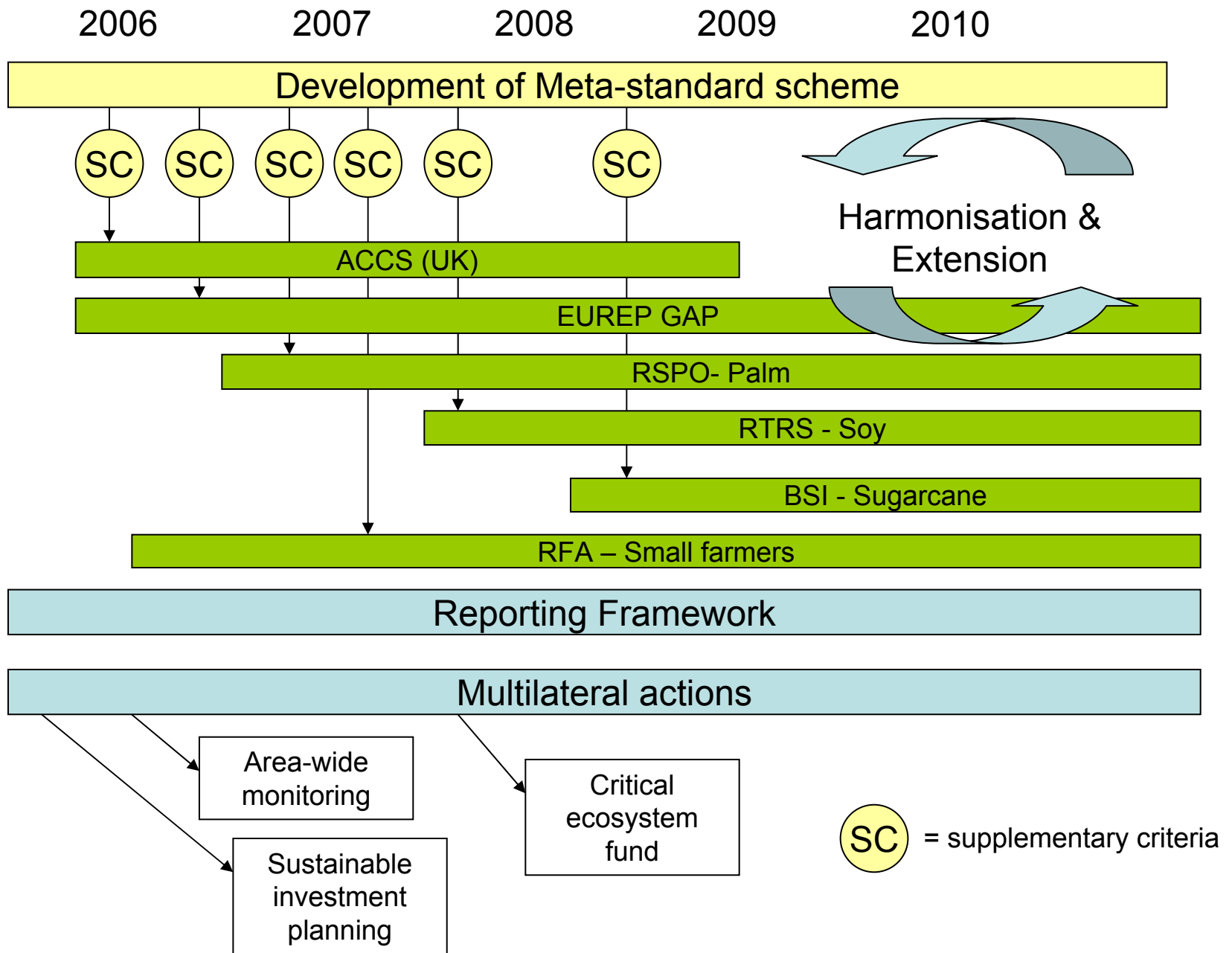


Environmental standards for **biofuel crops** comprise the following 7 “Principles”, “Criteria.”:

- **Conservation of carbon stocks**
  - *Protection of above-ground carbon*
  - *Protection of soil carbon*
- **Conservation of biodiversity**
  - *Conservation of important ecosystems & species*
  - *Basic good biodiversity practices*
- **Sustainable use of water resources**
  - *Efficient water use in water critical areas*
  - *Avoidance of diffuse water pollution*
- **Maintenance of soil fertility**
  - *Protection of soil structure and avoidance of erosion*
  - *Maintain nutrient status*
  - *Good fertiliser practice*
- **Good agricultural practice**
  - *Use of inputs complies with relevant legislation*
  - *Use of inputs justified by documented problem*
  - *Safe handling of materials*
- **Waste management**
  - *Waste management complies with relevant legislation*
  - *Safe storage and segregation of wastes*
- *[GHG emissions from biofuels- not discussed here]*



# Draft(ing) A Meta-Standard



After Tipper et al, 2006

# Measuring / Monitoring Direct & Indirect Impacts



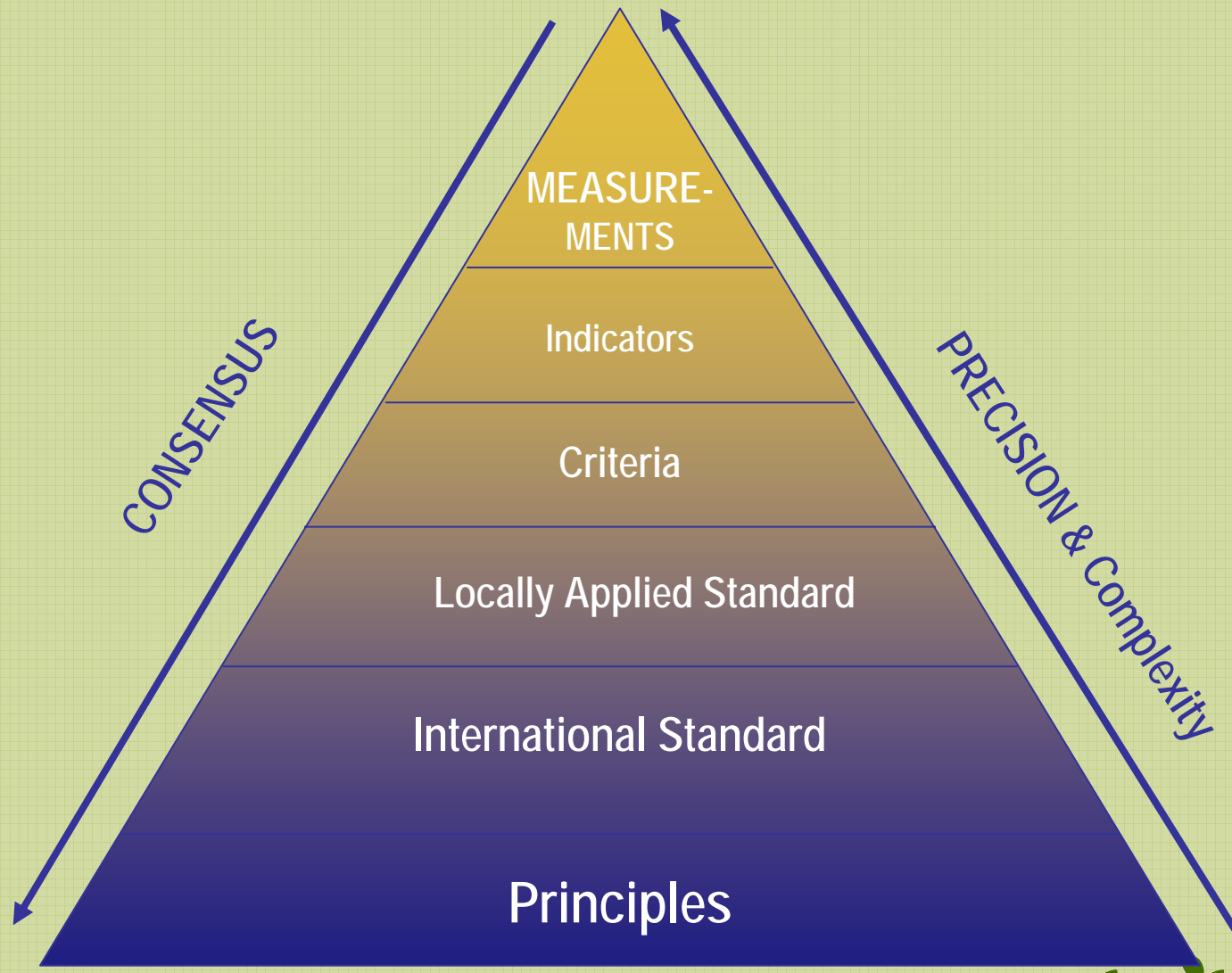
Some Principles and criteria require BOTH direct and indirect indicators, for example:

- Conservation of carbon stocks (Principle)
  - Protection of above-ground carbon (Criteria)
    - *No exploitation of protected land (indicator)*
      - *Reference date is very important here!*
    - *Crop type/ residue retention / yield as proxy*
    - *Good land management or agricultural practice...*
  - Protection of soil carbon (Criterion)
    - *Crop type (indicator)*
    - *Harvesting of residues?*
    - *Soil type*
    - *Good land management or agricultural practice...*
    - *Previous land-use type*
      - *Reference date/system is very important here!*



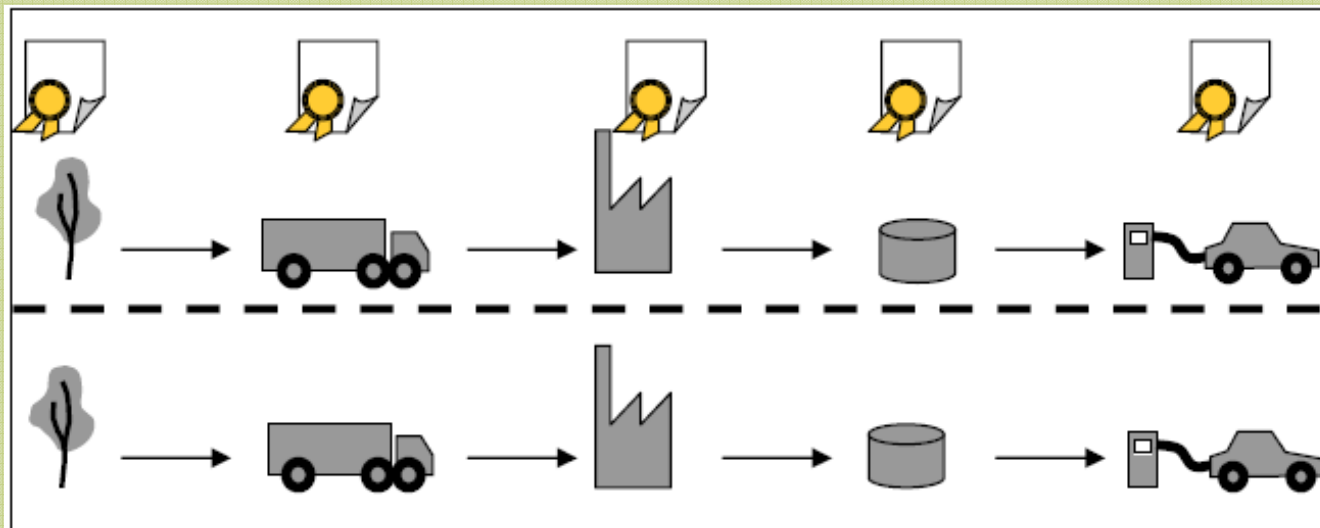
# Assurance Pyramid

– credibility and complexity –



# Auditing, verification and accreditation

- Tracking chain-of-custody:
  - Track and Trace
  - Book and Claim (equivalence)
  - Mass Balance
- Accreditation of certifiers
- Acceptability of the relationship between indicators / criteria and principles...

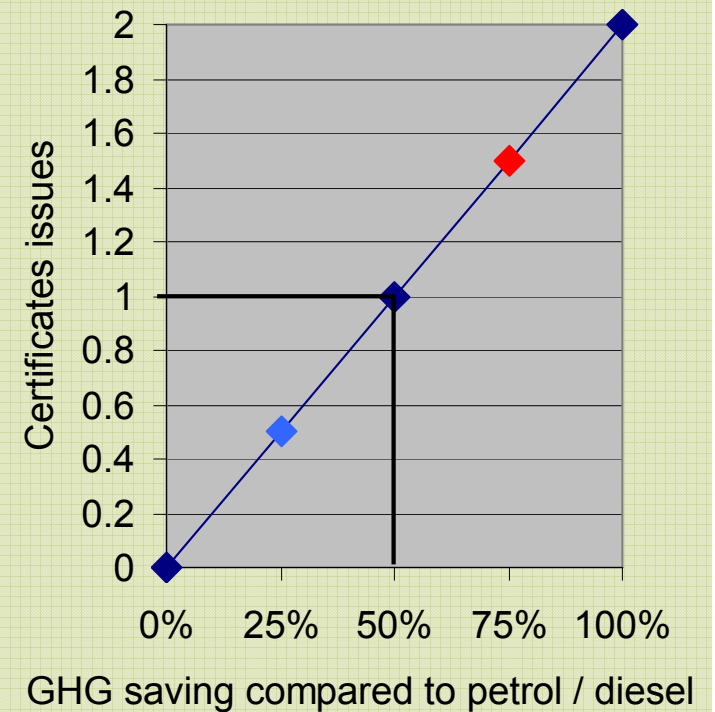


# Including GHG-certif<sup>n</sup> & sustainability assurance national policy



- Initial reporting requirements assess the scale of sustainability issues and quantify GHG savings
  - Reporting encourages corporate social & environmental responsibility from fuel suppliers
- Robust sustainability reporting & assurance systems are needed to manage adverse social / environmental impacts
  - Mandatory requirements may breach trade rules
- A future incentive scheme would link award of RTFO certificates to the biofuels C-intensity
- Reporting of GHG saving is appropriate for *testing* new systems, but without incentives:
  - The market will source predominately low cost fuels - with a low GHG balance
  - £ / t C saved will be higher
  - Higher GHG saving processes are not encouraged
  - No incentives for new (including advanced conversion / 2<sup>nd</sup> Generation) technologies

**Incentive scheme would link award of certificates to GHG saving**



◆ 1 certificate for 1l fuel with 50% GHG saving





# Rationale for certification



- Biofuel supply chains can be very **complex**
  - Geographically long and dispersed – almost all countries will be self-producers and importers e.g. Brazil
  - Very diverse and increasingly diverse
- For most indicators biofuels range from significantly better than the fossil fuel being replaced to worse than them
  - These indicators cover a very broad range of potential impacts – and they can be both direct and indirect
- International trade rules do not allow direct discrimination against imported products e.g. can't simply say Malaysian palm oil biodiesel is bad and so won't allow it (fuel or feedstock) to be imported.
- Biofuels are becoming cost-competitive – doing nothing is not an option
- Volumetric or production-based policy support may result in a race to the bottom
- Assurance and certification could act as the basis for a carbon-tax or other performance based reward systems.
  - It requires robust and practical methodologies
  - The continued involvement of the main stakeholders including scientists, industry – leading to public acceptability?



# Assurance – what it can and can't do



- Existing examples of EA capture most (if not all) of the indicators necessary, including; PEFC and FSC in the forestry sector

BUT:

- EA in forestry has not led to tangible reductions in deforestation or improvements to management outside the certified areas
- EA is unlikely to solve socio-environmental problems such as conflict over resources



# Assurance – what it can and can't do



- EA is not an effective substitute for good governance and regulation of natural resources. The best outcomes are achieved where good governance and EA go hand-in-hand
- Does not protect smallholders from the deflation of global commodity markets. Assurance schemes tend to advantage larger players,
  - “group assurance schemes” can facilitate small producer entry.
- The credibility of EA schemes, as perceived by major NGOs, is largely dependent on the degree of participation and consultation in standard development.
- “Good practice” in the development of environmental standards has been set out by ISEAL.





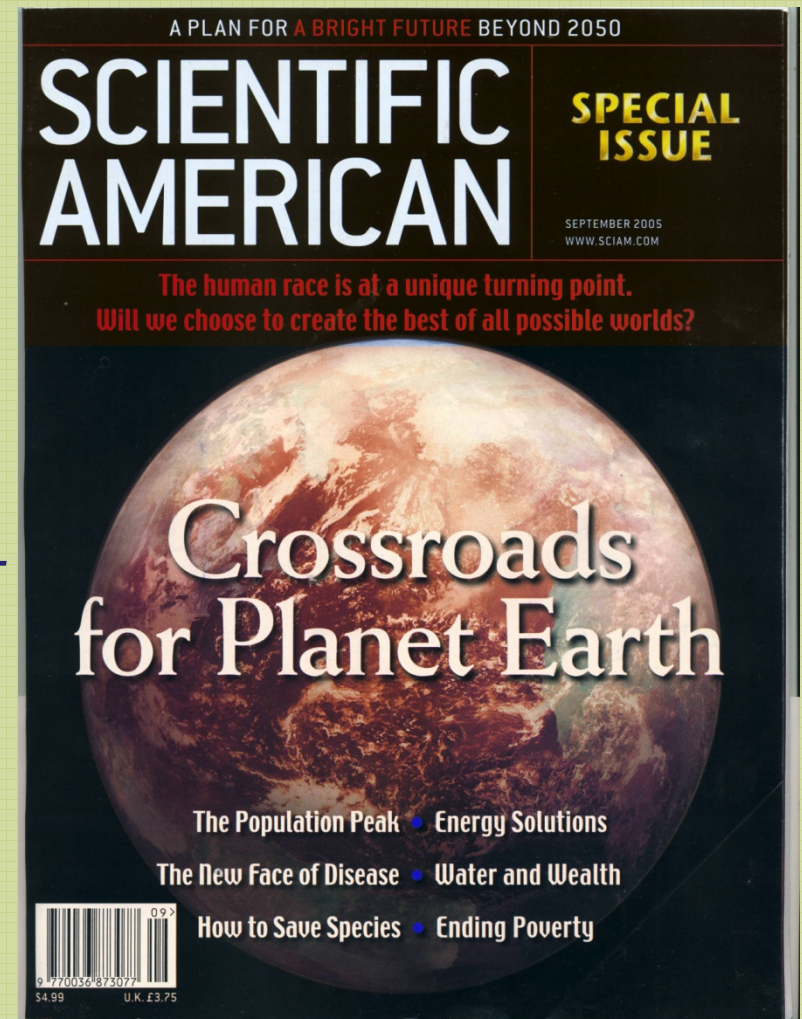
# Biofuels, Trade, Certif<sup>n</sup>



Herman Daly- 'Economics in a Full world'

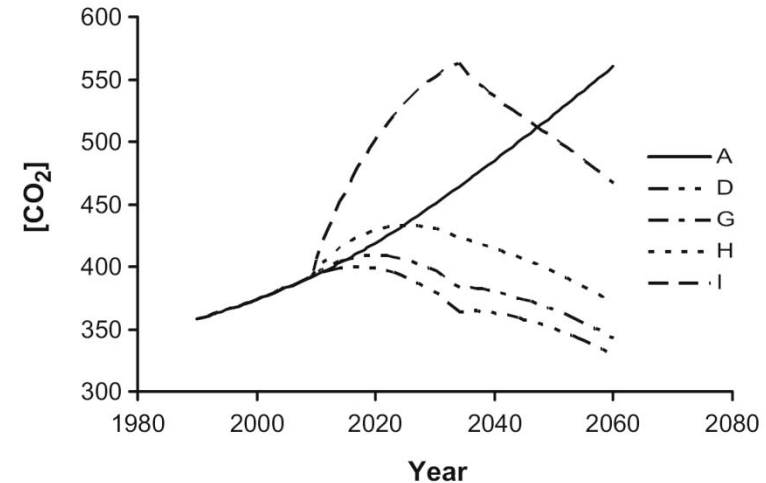
On Trade:

*'Free trade would not be feasible in a world having both sustainable and unsustainable economies, because the former would necessarily count many costs to the environment and future that would be ignored in the growth economies. Unsustainable economies could then under-price their sustainable rivals, not by being more efficient but simply because they had not paid the cost of sustainability. Regulated trade under rules that compensated for these differences could exist, as could free trade among nations that were equally committed to sustainability. Many people regard such restrictions on trade as onerous, but in fact trade is currently heavily regulated in ways that are detrimental to the environment.'*



# Mitigating Climate Change

- Economics (Stern, 2007)
  - Capital costs
  - Operation & Maintenance costs
  - Land ‘rental’ costs / social costs
  
- Understanding ‘Direct’ & ‘Indirect Effects’
  - Read (2007)
  - Searchinger et al + Fargione et al (2008)
  - Galbraith (2005)

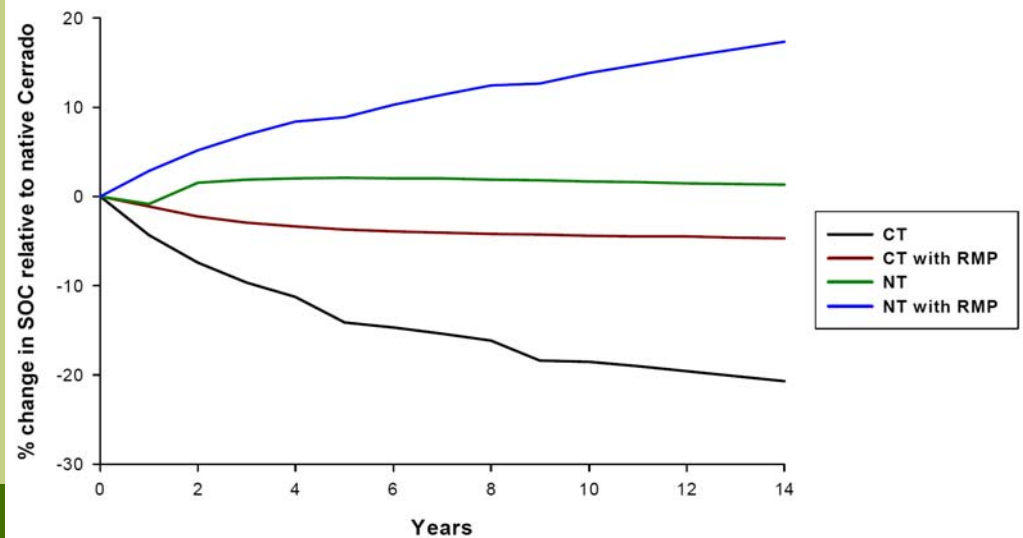


**Legend**

- A SRES-A2
- D SRES-A2 with sugar cane, switch-grass and forestry land use change activities but no CCS
- G SRES-A2 with three land use change activities and 30 tC per ha released through land use change
- H SRES-A2 with three land use change activities and 90 tC per ha released through land use change
- I SRES-A2 with three land use change activities and 300 tC per ha released through land use change

Fig. 2 CO2 in atmosphere (ppm) with CO2 release at time of land use change

**Figure 4.3: Mean modelled change in SOC for each management scenario (0-20 cm) for the first 14 years following conversion from Cerrado.**

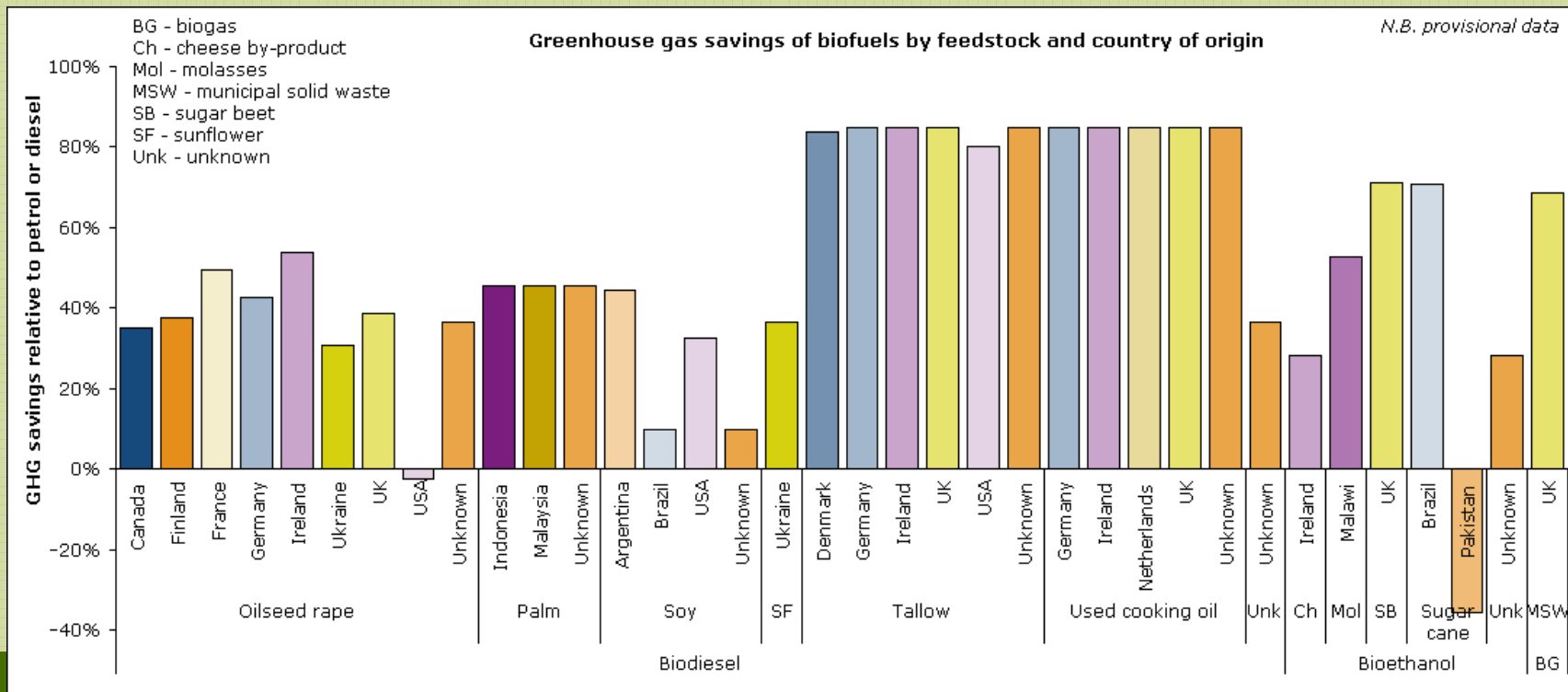


# UK RTFO policy targets



Annual RTFO Supplier Target	2008 – 09	2009 – 10	2010 –11
Percentage of feedstock meeting a Qualifying Environmental Standard	30%	50%	80%
Annual GHG saving of fuel supplied	40%	45%	50%
Data reporting of fuel characteristics	50%	70%	90%

Source: Carbon and Sustainability Reporting Within the Renewable Transport Fuel Obligation -Technical Guidance. RFA. 2008





# Main National / Global Programmes



- UK
  - Renewable Transport Fuels Obligation (April 2008)  
<http://www.renewablefuelsagency.org/>
- Netherlands
  - Cramer Commission (May07)  
[http://www.mvo.nl/biobrandstoffen/download/070427-Cramer-FinalReport\\_EN.pdf](http://www.mvo.nl/biobrandstoffen/download/070427-Cramer-FinalReport_EN.pdf)
- Global Round Table on Sustainable Biofuels
  - Steering Board request for feedback and comments on draft principles from stakeholders around the world (05jun07)  
[http://www.bioenergywiki.net/index.php/Roundtable\\_on\\_Sustainable\\_Biofuels](http://www.bioenergywiki.net/index.php/Roundtable_on_Sustainable_Biofuels)
- UN-FAO's Global Bioenergy Platform
  - [http://www.fao.org/sd/en2\\_en.htm](http://www.fao.org/sd/en2_en.htm)
  - Key input into the widely miss-quoted UN-Energy (2007) report
- G8+5 Global Bioenergy Partnership
  - [GBEP-Secretariat@fao.org](mailto:GBEP-Secretariat@fao.org) and coming soon:
  - [www.globalbioenergy.org](http://www.globalbioenergy.org)
- Porter Alliance (UK)
  - <http://www.porteralliance.org.uk>
  - Major UK research network dedicated to the sustainable exploitation of biomass



The END

