

The role of Big Society in AWRM and CC adaptation

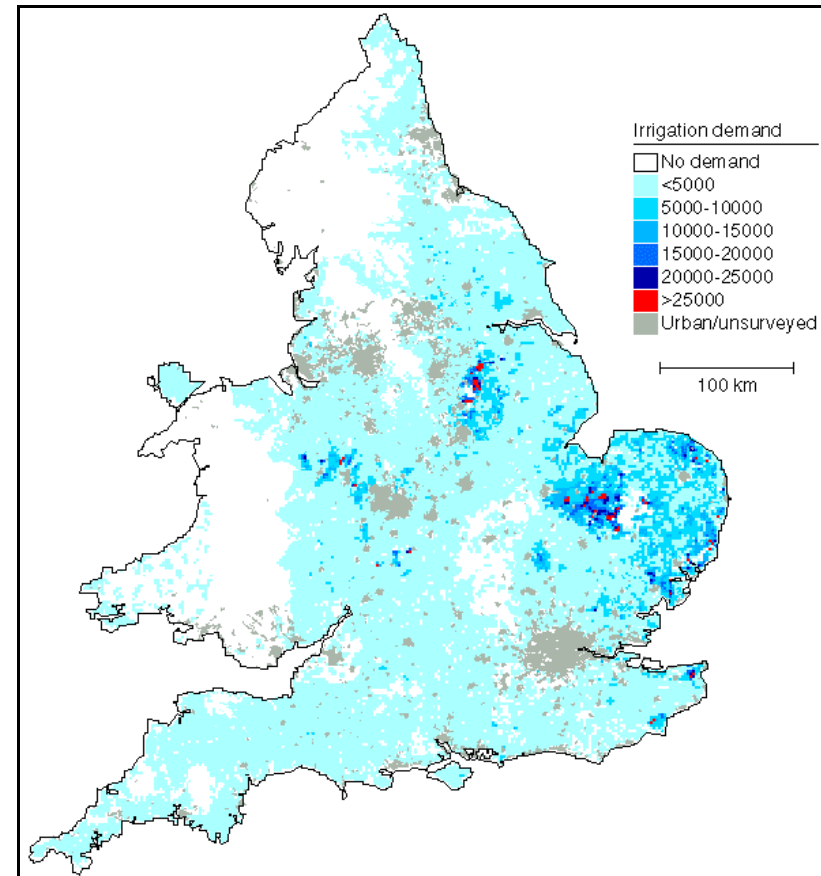
Keith Weatherhead
Cranfield University

CIWEM Annual
Conference 2011



Irrigation in England

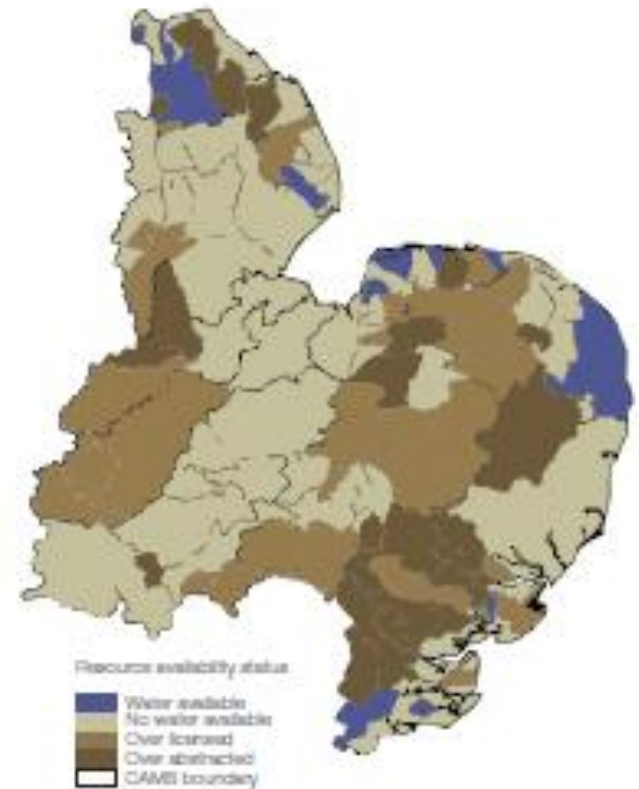
- Small but important sector
(~ 120,000 ha)
- High value crops – potatoes, vegetables, strawberries for supermarkets
- 50,000 livelihoods and £3bn in East Anglia alone
- Consumer demand for quality and consistency requires confidence in water supply (~ 95,000,000 m³)



The problem

- Most available summer water is already allocated
- Increasing water demand
- Decreasing water supply

Status of water resource availability



Increasing need for irrigation water

Current pressures:

Changes in consumer demand – salads, fruit

Changes in imports

Demand for quality, consistency, continuity of supply

Climate change

About 30% more for identical crop in UK in 2050s

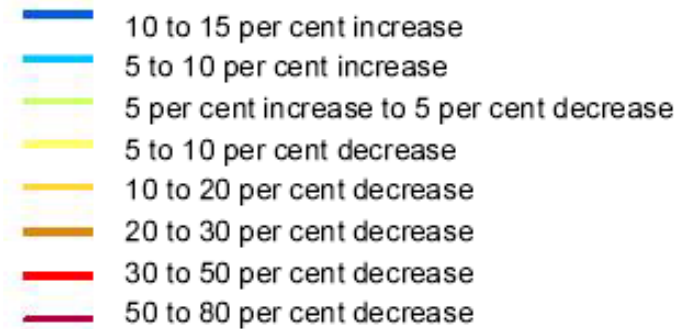
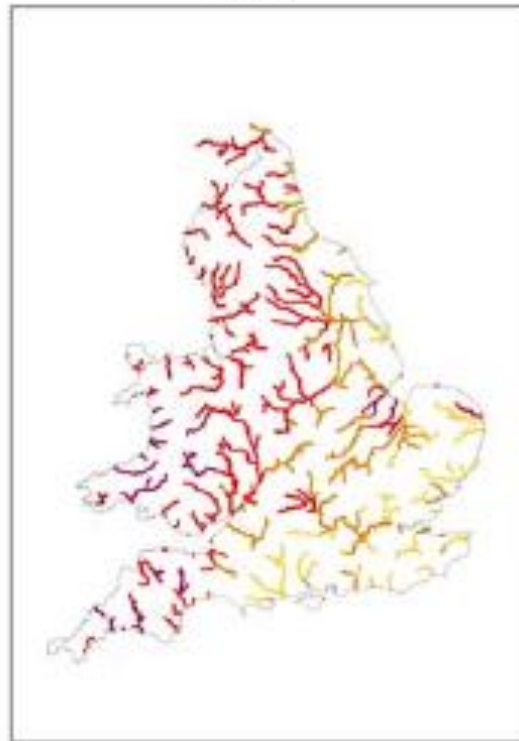
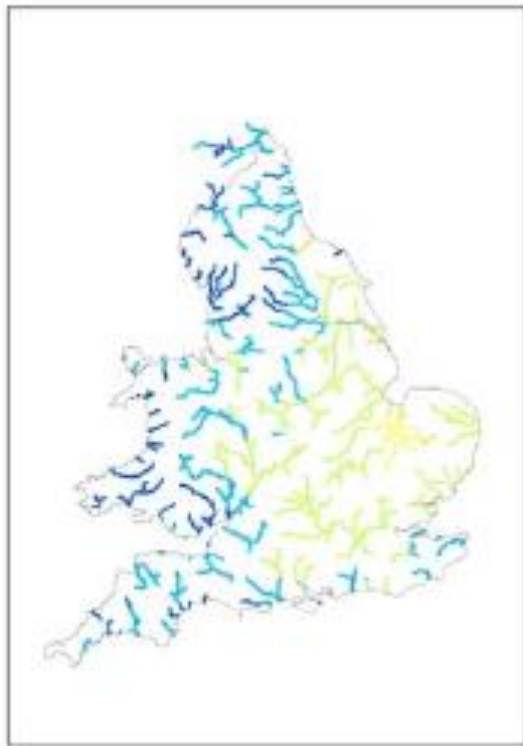
And extra crops will need irrigating

Increase of 25% to 180% by 2050s? (EA)

Decreasing supply: e.g. changes in river flow

January

July



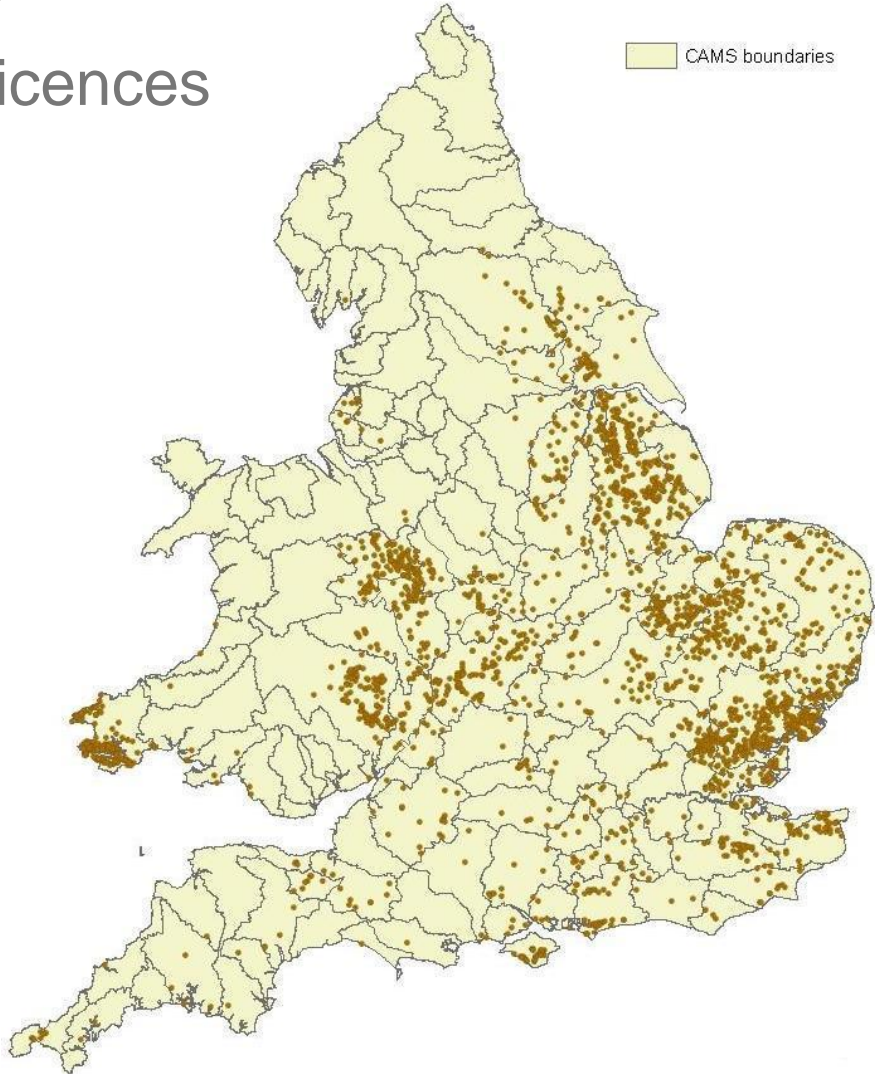
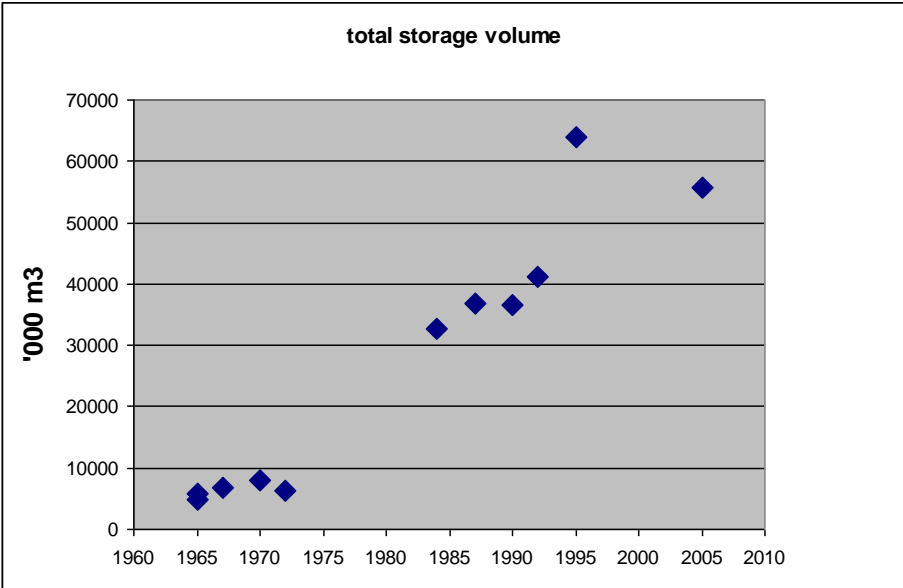
Percentage change in mean monthly flow between now and the 2050s using the medium-high UKCIP02 Scenario.

The opportunities

- Most licensed water is not used
- Much of the rest is not allocated to highest value use.
- Opportunities for conjunctive use are not used.
- Opportunities for cheap storage are not used

Environment Agency NALD

2306 “spray irrigation storage” licences
>100,000,000m³
(30% of total irrigation licences)



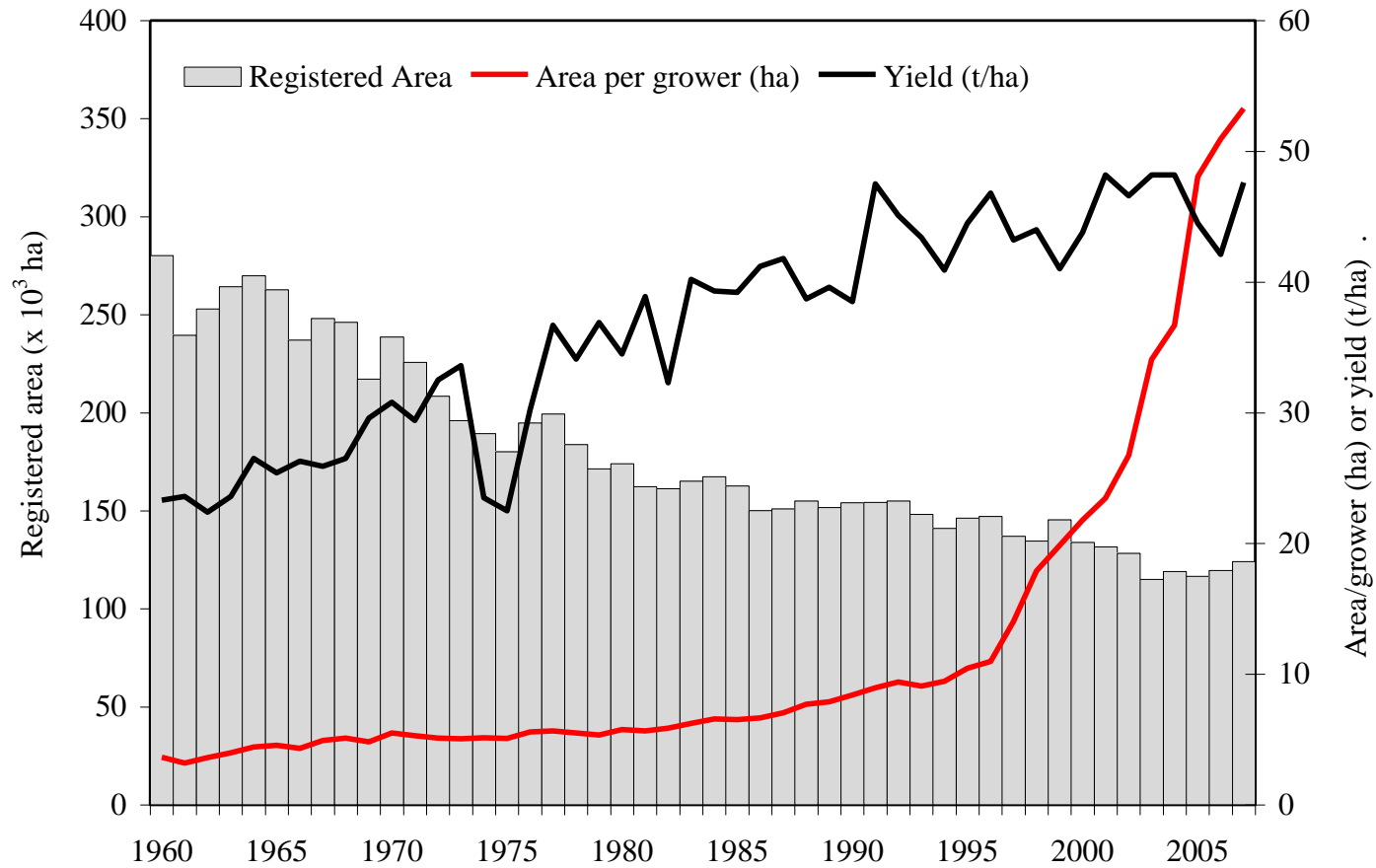
On-farm water storage



The ways forward

- Do nothing
- Top–down – reallocate water
- Economists’ approach – water pricing and trading
- Big Society

Do nothing – business as usual?



Reallocate water



Economic instruments

- Higher prices - opportunity costs
(but what would the effects be?)
- Water trading
(local grid?)
- Abstraction licence trading
(transfer through waterways)

Big Society

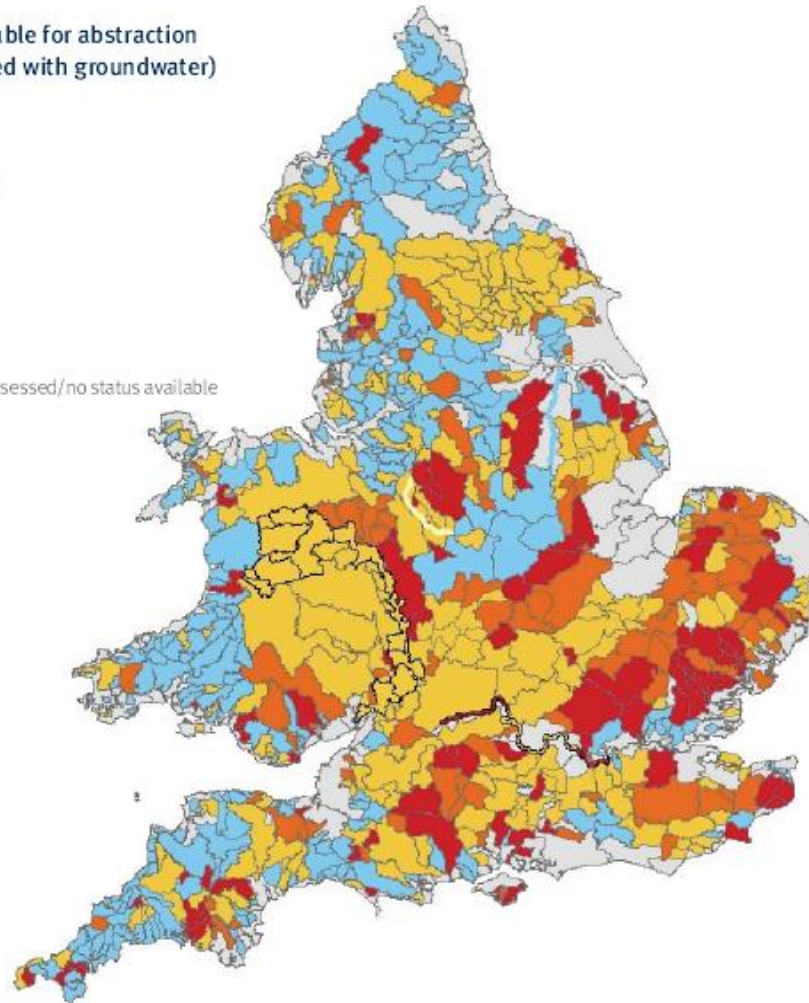
- Can we get everyone in a room and agree?
Conflicting interests?
- CAMS Stakeholders Groups
- Water Abstractor Groups (WAGS)

CAMS Stakeholder Groups

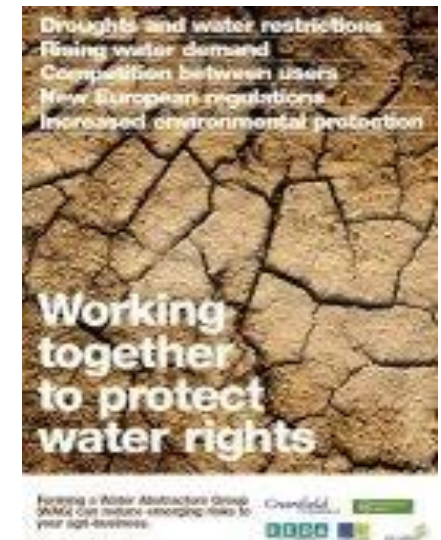
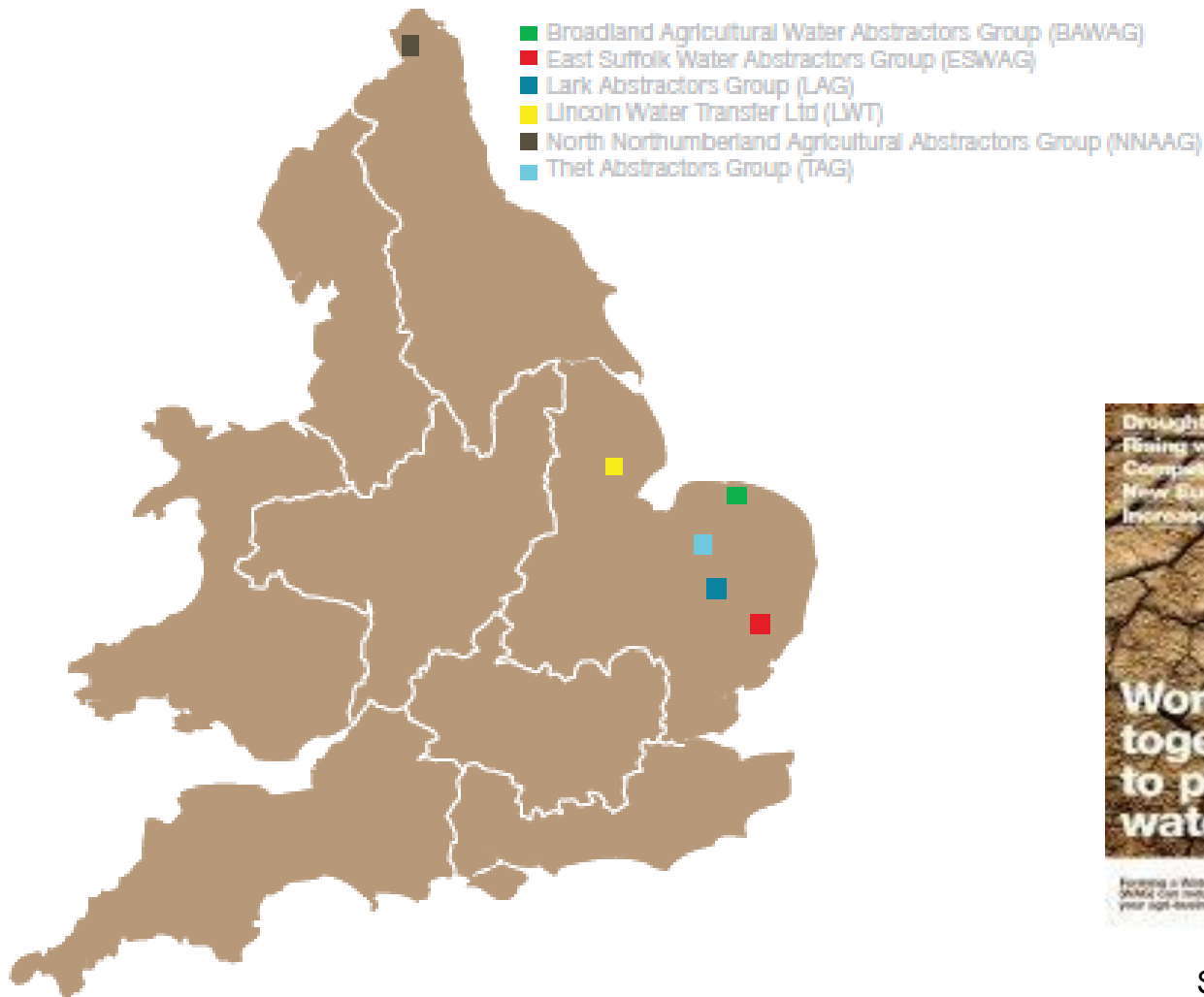
Figure 1.2: Water available for abstraction
(surface water combined with groundwater)

Resource availability status:

-  Water available
-  No water available
-  Over licensed
-  Over abstracted
-  Groundwater only/not assessed/no status available



Water Abstractor Groups



See www.ukia.org

[Leathes et al., 2008](#) W. Leathes, J.W. Knox, M. Kay, P. Trawick and J.A. Rodriguez-Diaz, Developing UK farmers' institutional capacity to defend their water rights and effectively manage limited water resources, *Irrig. Drain.* **57** (2008), pp. 322–331