Re modelling agricultural landuse, with part ref to climate change

beyond RegIS2 (various papers published in 2008), there is Special Issue on the CLIMSAVE project ([www.climsave.eu](http://www.climsave.eu)) which assessed competing demands for land/water for people / food / biodiversity under alternative climate and socio-economic futures (including different assumptions regarding imports; dietary preferences, food demand; technology, environmental protection etc).  This work is being further developed in IMPRESSIONS (another FP7 project):

[www.impressions-project.eu/](http://www.impressions-project.eu/)

1. Holman IP, Harrison PA, Metzger MJ (2016).  Cross-sectoral impacts of climate and socio-economic change in Scotland - implications for adaptation policy.  Regional Environmental Change 16(1), 97-109 DOI: 10.1007/s10113-014-0679-8
2. Harrison PA, Holman, IP, Berry PM (2015).  Assessing cross-sectoral climate change impacts, vulnerability and adaptation: an introduction to the CLIMSAVE project.  Clim Change 128(3-4): 153-167  doi:10.1007/s10584-015-1324-3
3. All the CLIMSAVE papers cited within (2) including landuse paper by Eric Audsley.  These include:
   * Kok K, Sendzimir J, Bärlund I, Flörke M, Gramberger M, Zellmer K, Stuch B, Holman IP (2015) European participatory scenario development: strengthening the link between stories and models. Clim Change 128(3-4): 187-200.  doi: 10.1007/s10584-014-1143-y
   * Kebede AS, Dunford R, Audsley E, Harrison PA, Holman IP, Mokrech M, Nicholls RJ, Rickebusch S, Rounsevell MDA, Sabaté S, Sallaba F, Sanchez A, Savin C-M, Trnka M, Wimmer F (2015) Direct and indirect impacts of climate and socio-economic change in Europe: a sensitivity analysis for key land and water-based sectors. Clim Change 128:261–277 doi:10.1007/s10584-014-1313-y
   * Harrison P.A., Dunford R., Savin C., Rounsevell M.D.A., Holman, I.P., Kebede A.S. & Stuch B. (2015).  Cross-sectoral impacts of climate change and socio-economic change for multiple, European land- and water-based sectors.  Clim Change 128(3-4): 279-292 DOI:10.1007/s10584-014-1239-4
4. Harrison PA, Holman IP, Cojocaru G, Kok K, Kontogianni A, Metzger MJ, Gramberger M (2013) Combining qualitative and quantitative understanding for exploring cross-sectoral climate change impacts, adaptation and vulnerability in Europe.  Regional Environmental Change 13(4), 761-780 <http://dx.doi.org/10.1007/s10113-012-0361-y>

On GHG and Climate change

* Audsley, E., Angus, A., Chatterton, J., Graves, A., Morris, J., Murphy-Bokern, D., Pearn, K., Sandars, D. and Williams, A. (2010). Food, land and greenhouse gases. The effect of changes in UK food consumption on land requirements and greenhouse gas emissions. The Committee on Climate Change.<https://www.theccc.org.uk/archive/aws/CCC%20Food,%20land%20and%20greenhouse%20gases.pdf>
  + **This addessed GHGE and energy use on farms and I think used energy and GHGE per ha as a (poor) metric**.
  + Williams, A.G.; Pearn, K.R.; Sandars, D.L.; Audsley, E.; Parsons, D.J. and Chatterton, J.L. (2010) Analysis of the 2007/8 Defra Farm Business Survey Energy Module. <http://www.defra.gov.uk/evidence/economics/foodfarm/reports/>

The LCA model addresses land use and GHG directly

* Williams, A.G., Audsley, E. &.Sandars, D.L. (2006) Determining the environmental burdens and resource use in the production of agricultural and horticultural commodities. (IS0205). [www.agrilca.org](http://www.agrilca.org)

 It has been used in a number of studies part from the CCC one, e.g.

1. Williams, A.G.; Audsley, E.; Sandars, D.L. (2010) Environmental burdens of producing bread wheat, oilseed rape and potatoes in England and Wales using simulation and system modelling The International Journal of Life Cycle Assessment, 15 (8), 855-868  DOI: 10.1007/s11367-010-0212-3
2. Webb, J., Audsley, E., Williams, A., Pearn, K., Chatterton, J., 2014. Can UK livestock production be configured to maintain production while meeting targets to reduce emissions of greenhouse gases and ammonia? Journal of Cleaner Production 83, 204–211. doi:10.1016/j.jclepro.2014.06.085

Webb, J.; Williams, A.G.; Hope, E. (2013) Do foods imported into the UK have a greater environmental impact than the same foods produced within the UK? International Journal of Life Cycle Assessment, 18 (7), 1325-1343.   DOI: 10.1007/s11367-013-0576-2

Chatterton, J., Graves, A., Audsley, E., Morris, J., Williams, A., 2015. Using systems-based life cycle assessment to investigate the environmental and economic impacts and benefits of the livestock sector in the UK. Journal of Cleaner Production 86, 1–8. doi:10.1016/j.jclepro.2014.05.10