The Rangeland Journal
Lecture series
Structural change in UK’s pastoral agriculture: what is the end-game?

Dr John Milne,
The James Hutton Institute,
Aberdeen, UK
Aims of lecture

• to demonstrate that the rate of structural change in pastoral agriculture in the last decade has increased rapidly in the UK, compared to previous decades

• to explore what the implications of the current direction in change are and explore the mechanisms for deciding priorities and then implementing decisions on land use.
General objectives of Agricultural Act (1947)

- 'promoting and maintaining..., a stable and efficient agricultural industry capable of producing such part of the nation's food and other agricultural produce as in the national interest it is desirable to produce in the United Kingdom, and of producing it at minimal prices consistent with proper remuneration and living conditions for farmers and workers in agriculture and an adequate return on capital invested in the industry'.
Key dates

1947  Agricultural Act
1960  Move to import controls
1965  White Paper ‘Development of agriculture’
1973  Join EU and adopt CAP
1983  Wildlife and Countryside Act
1992  MacSharry CAP reforms
Index of UK farming income in real terms
UK agricultural labour force
Predictions of Prof. McInerney in 1998

• “There seems no reason to believe that - - - - the agriculture sector will be anywhere very different in 10 years’ time from where the extension of past trends would predict. There will be fewer full-time farms, larger enterprises, increasing part-time involvement, less labour employment, a smaller share of GDP and consumers’ expenditures, more new technologies, reduced market intervention and always a stratum of farms on the margin of economic survival who ultimately move out of the sector.”
Scotland from space
Rangeland sheep
Grassland sheep
Rangeland cattle
Grassland cattle
Blanket bog
## Decline in breeding sheep numbers (m)

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<tbody>
<tr>
<td>Ewes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grassland</td>
<td>1.50</td>
<td>1.21</td>
<td>1.35</td>
<td>1.26</td>
</tr>
<tr>
<td>Rangeland</td>
<td>2.20</td>
<td>2.02</td>
<td>1.65</td>
<td>1.44</td>
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## Decline in cattle numbers (‘000)

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<tbody>
<tr>
<td>Suckler cows</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grassland</td>
<td>276</td>
<td>281</td>
<td>269</td>
<td>262</td>
</tr>
<tr>
<td>Rangeland</td>
<td>213</td>
<td>211</td>
<td>203</td>
<td>197</td>
</tr>
<tr>
<td>Dairy cows</td>
<td>196</td>
<td>195</td>
<td>198</td>
<td>182</td>
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# Agricultural labour force

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</thead>
<tbody>
<tr>
<td>F/t employment</td>
<td>15,785</td>
<td>14,253</td>
<td>13,296</td>
<td>13,469</td>
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<tr>
<td>P/t employment</td>
<td>7,000</td>
<td>6,922</td>
<td>7,062</td>
<td>6,524</td>
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<tr>
<td>F/t farmers</td>
<td>11,639</td>
<td>10,560</td>
<td>9,491</td>
<td>9,714</td>
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</tbody>
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## Number and size of livestock farms

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2006</th>
<th>2011</th>
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<tbody>
<tr>
<td>No. of dairy farms</td>
<td>2,161</td>
<td>1,874</td>
<td>1,514</td>
</tr>
<tr>
<td>Size of herds</td>
<td>92</td>
<td>106</td>
<td>120</td>
</tr>
<tr>
<td>No. of beef farms</td>
<td>16,024</td>
<td>9,766</td>
<td>9,241</td>
</tr>
<tr>
<td>Size of herds</td>
<td>49</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>No. of sheep farms</td>
<td>15,044</td>
<td>14,016</td>
<td>13,221</td>
</tr>
<tr>
<td>Size of flock</td>
<td>214</td>
<td>216</td>
<td>205</td>
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</tbody>
</table>
Predictions of Prof. McInerney in 1998

• “There seems no reason to believe that - - - - the agriculture sector will be anywhere very different in 10 years’ time from where the extension of past trends would predict. There will be reduced market intervention, fewer full-time farms, larger enterprises, increasing part-time involvement, less labour employment, a smaller share of GDP and consumers’ expenditures, more new technologies, and always a stratum of farms on the margin of economic survival who ultimately move out of the sector.”
Second aim of lecture

Explore what the implications of the current direction in change are and explore the mechanisms for deciding priorities and then implementing decisions on land use.
Major drivers of change are to deliver:

• strategies for renewable energy,
• targets for increasing the area of forestry and woodland
• objectives in relation to food security
• targets for environmental protection
• rural employment mainly through tourism.
• CAP and other EU policies
Ecosystem services

• supporting services (nutrient cycling, soil formation)
• provisioning services (agriculture, timber and water)
• regulating services (climate regulation, flood prevention)
• cultural services (recreation, landscape amenity value).
Principles of land use strategy for Scotland 2010

• Delivery of multiple benefits should be encouraged.
• Regulation should continue to protect essential public interests whilst placing as light a burden on businesses as is consistent with achieving its purpose. Incentives should be efficient and cost-effective.
• Where land is highly suitable for a primary use (for example food production, flood management, water catchment management and carbon storage), this value should be recognised.
• Land use decisions should be informed by an understanding of the functioning of the ecosystems to maintain the benefits of the ecosystem services.
• Landscape change should be managed positively and sympathetically, considering the implications of change at a scale appropriate to the landscape in question.
• Land-use decisions should be informed by an understanding of the opportunities and threats brought about by the changing climate.
• It should be a priority to examine options for restoring land to economically, socially or environmentally productive uses.
• Outdoor recreation opportunities and public access to land should be encouraged.
• People should have opportunities to contribute to debates and decisions about land use and management decisions.
• Opportunities to broaden our understanding of the links between land use and daily living should be encouraged.
Increase in red deer impacts

Reasons for increase in numbers from 1950-2000
• Reduction in frequency of severe winters
• Expansion of range
• More sporting stags required without decline in their sporting quality

Reasons for increase in impacts from 2000
• Culling targets to meet biodiversity objectives not being met
• Vacuum effect in increasing range
• Increase in forestry and woodland habitats
Red deer
Processes in delivering sustainable use

- Identify objectives
- Describe the carrying capacities to meet these objectives
- Prioritize the objectives
- Develop and implement a plan
Herbivore yield

Population Size

A  -  Ecological Carrying Capacity
B  -  Economic Carrying Capacity
C  -  Native Woodland Carrying Capacity
Prioritising of objectives

• Decision-making theory in combining socio-economic and ecological systems in its infancy
• Simulation approaches have been used to aid decision-making but require too much information
• Hence simpler approaches have to be used
Rules for managing a common resource

• What a stakeholder takes out of a resource has to be proportional to the input of stakeholder
• Usage should not damage health of resource
• All stakeholders have a say in the rules governing the management of the resource
• Monitoring abuses and conflict resolution more important than sanctions or punishment

Ostrom (1990)
New rural governance agenda

- Partnership between the state and private and voluntary sectors
- State as an enabler rather than a provider
- State at a distance
- Governing locally by empowering broader stakeholder groups to deliver and implement solutions
- Issue of scale and need for capacity building
Local sustainable deer management to deliver multiple objectives

- Need for statutory code for deer management groups to follow:
  - encompass the range of stakeholders
  - allow public objectives to be included
  - facilitate objective-setting process
  - facilitate delivery of objectives
  - increase the range of tools available to groups
What is the end-game?