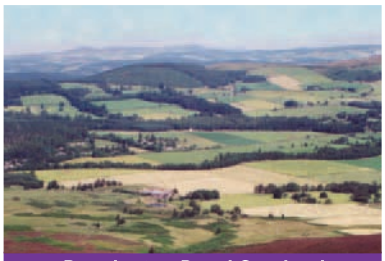

PROGRAMME 3
ENVIRONMENT – LAND USE AND RURAL STEWARDSHIP

Future climates: communicating climate change to land managers

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How will land management adapt?

Climate change is a high profile policy issue but one that is clouded by uncertainty in the nature, magnitude and timing of change and the responses of land managers.

There is the need for better communication of the state-of-the-art and implications of climate change research between researchers, policy makers and the wider communities of interest.

Methods

Local impacts case studies were developed based on downscaled data from the Hadley Centre regional climate model (UKCIP02) Figure 1.

A framework of agro-meteorological metrics were then piloted with stakeholders to find which metrics were useful as indicators (i.e. relate to management decisions). The piloting also refined the specification and the presentation format of the indicators.

Workshops and seminars were held with stakeholders providing an opportunity to debate the implications of the changes with the research team and between participants.

What did we learn?

The Table shows the direction of change for the climate change indicators rated as most important by the stakeholders for five case studies.

Indicator	Aberd'n	Mylnef'd	Galash'ls	Au'cruive	Confidence
Soil Type	50cm SZL	50cm SZL	50cm CL	50cm L	
Observed Period	1961-1990	1961-1990	1967-1997	1970-2000	
Average Daily Temp. (°C)	➤ 2.8	➤ 3.1	➤ 3.0	➤ 2.8	H
Average Annual Rainfall (mm)	➤ 36	➤ 26	➤ 16	➤ 70	M
Start of the Growing Season (day)	➤ 48	➤ 35	➤ 36	➤ 14	H
Tsum200 (day)	➤ 22	➤ 22	➤ 25	➤ 16	H
End of Field Capacity (day)	➤ 3	➤ 2	➤ 4	➤ 3	L
Last Air Frost in Spring (day)	➤ 42	➤ 41	➤ 32	➤ 37	M
Return to Field Capacity (day)	➤ 14	➤ 18	➤ 26	➤ 18	L
End of Growing Season (day)	➤ 17	➤ 17	➤ 20	➤ 20	H
Dry Soil (days)	➤ 3	➤ 11	➤ 12	➤ 0 ➤	L
Growing Season Length (days)	➤ 64	➤ 63	➤ 62	➤ 55	H
Access Period Length (days)	➤ 11	➤ 19	➤ 36	➤ 30	L
Access during Growing Season (days)	➤ 20	➤ 26	➤ 42	➤ 33	L

Figures 2 and 3 show a simple water balance model used to generate – access periods and estimate the length and severity of soil droughts. The Figure contrasts the soil water profile for two 10 years periods (1980 – 89 and 2080 – 89) using data from the Hadley Centre HadRM3-A2c scenario.

Outcomes

- An enhanced connection between research and practitioner communities with interests in climate change
- A more informed debate on how climate change is viewed, its relative priority as a driver of adaptation and identification of scenarios for future changes

Figure 1

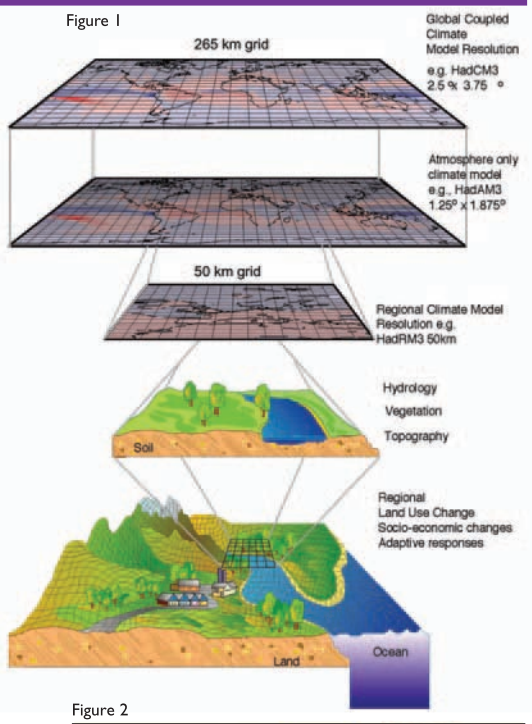


Figure 2

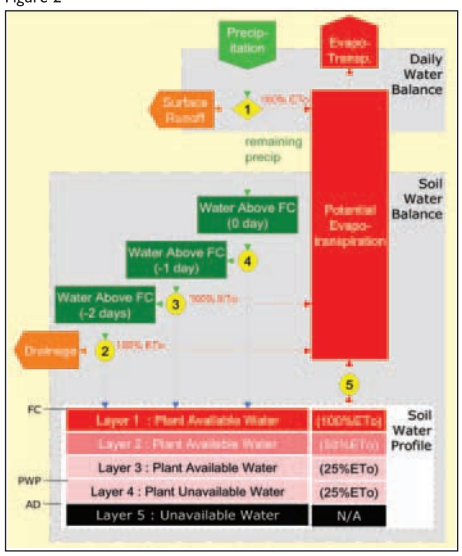
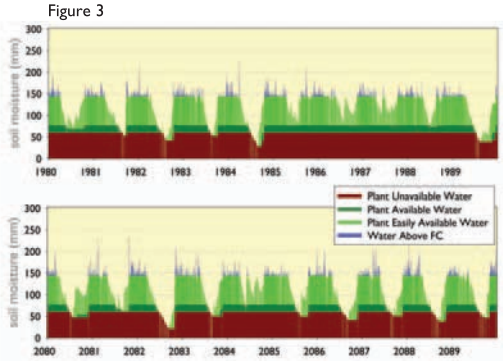


Figure 3



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