

## Climate change series

### General opportunities and challenges

Climate change presents a number of opportunities and challenges for farmers. It is important to be aware of how farming will be affected and how to adapt to and combat climate change.

#### OPPORTUNITIES OF CLIMATE CHANGE

##### Productivity

- Longer growing seasons allow earlier maturity and harvesting
- Improved crop growth due to warmer weather (with adequate water supplies)
- Opportunity to introduce new or novel crops (e.g. soya, navy beans, sunflowers, peaches, apricots, grapes)
- Increased growth rates for some crops (e.g. onions)
- Reduced frost damage as frosts become milder and less frequent
- Rising carbon dioxide levels may encourage photosynthesis and increase yields (dependent on water and nutrient availability)
- The north west may become more suitable for arable crops and the south west may become more suitable for novel crops
- Changing yields and geographical range of some crops (especially those that are limited by temperature) e.g. maize suitable regions are likely to increase and move northwards)
- Increased possibilities of introducing new livestock species e.g. hair sheep, ostrich etc

##### Costs

- Warmer weather may reduce energy costs for buildings, especially new builds
- Warmer weather may reduce the need for livestock housing

#### Markets

- Opportunity to supply new markets e.g. non food crops for bioenergy, new/different food crops
- Increasing consumer connection between field and fork, increasing demand for local food and farmers markets
- Longer growing seasons allow longer supply and greater availability of home-grown produce
- Altered lambing and calving patterns to fit grass growth enable longer market supply
- Increasing temperatures in cities may cause people to travel to the countryside at weekends and public holidays to escape the heat and enjoy rural landscapes, offering increasing rural tourism and business opportunities such as accommodation, leisure activities, refreshments, farm shop sales etc
- Global markets may be affected more severely by climate change, allowing English farmers to take advantage of new markets

#### CHALLENGES OF CLIMATE CHANGE

##### Productivity

- Reduced soil moisture in the growing season may affect growth
- Reduced cold weather may affect vernalisation, germination and senescence
- Timing of maturity, crop uniformity and produce quality may be affected by temperature change
- Potential for reduction in soil quality due to top soil loss from run off
- Greater yield variability due to increasingly unpredictable weather

- Increases in 'very windy' days could cause problems with crop spraying, spring crop establishment and lodging of mature crops
- Extreme events may lead to more yield variability, increasing the need to plan, extend the range of crops and potentially increase 'speculative' planting
- Increasing temperature related issues with livestock

## Costs

- Increasing costs for livestock housing from heating and ventilation
- Autumn cultivations may be threatened by wetter winters and autumns
- Potentially increased insurance costs
- Potentially increased farm adviser costs

## Pests/diseases

- Temperatures may not be cold enough to reduce pests, diseases and weeds, leading to larger surviving and breeding populations, creating more resilient populations and more of a management concern for farmers
- Pest-predator and carrier relationships affected
- Possibility of new pests/diseases invading 'safe' areas
- The current geographic range of pests and diseases could change significantly (some research suggests that species may shift northwards by 50-80 km per decade)
- Greater problems with pesticide resistance due to increased number of generations per year (allowing time for resistance build up) and warmer winters improve the survival chances of the pesticide resistant pests
- Changing composition of weed communities

## Resource management

- Need to reassess timing of resource intensive periods during harvesting and planting
- Risk management of droughts, floods and extreme weather events becoming more important
- Need to plan water management and irrigation to manage costs and water availability
- Increased risk of flooding – find out more: [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk)
- Increased risk of drought
- Rising numbers of tourists could increase environmental damage, traffic congestion and raise access issues



For news, events, and links to stories about how other farmers are managing climate change on their farms, please visit: [www.farmingfutures.org.uk](http://www.farmingfutures.org.uk)

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