



# Farm Resilience Planning

Farm Resilience Planning is a concept developed by Cheviot Futures as part of the project aim to assist farmers and land managers throughout the Cheviot Hills area of north Northumberland and the Scottish Borders to adapt to the climate changes predicted for this area.

## What is Farm Resilience Planning?

The idea of Farm Resilience Planning is to look at the impacts that predicted climate change effects may have upon an individual farm business and the enterprises that it supports.

Using climate change predictions researched through national science programmes such as UKCP09, indicative scenarios and predicted trends are utilised to identify what issues may be relevant to individual farm businesses as a result of climate change. There are likely to be both challenges and opportunities that are presented by changing climatic conditions in the medium to long term future.

By identifying the challenges and opportunities, the farm resilience planning approach then seeks to identify what adaptations or resilience works may be suitable to assist the farm in addressing the negative impacts, and making the most of the positive impacts of climate change predictions. Advice and guidance from a wide range of sources is tailored to the circumstances of the individual farm.

## What does a Cheviot Futures FRP involve?

Completing a Farm Resilience Plan requires, as a minimum, a discussion with the Cheviot Futures project officer to identify what the impacts and issues are likely to be for the individual farm. It is advantageous to combine this with site visits to specific areas or identified problem locations on the farm to gather further information for the plan.

The FRP report will comprise a full report and detailed maps, with identified issues and potential solutions marked up, as well as relevant additional information, drawing upon suitable advice and guidance.

Where applicable, additional plans will be produced alongside the FRP – for example detailed farm flood and fire plans.

The farm resilience plan will:

- Identify the impacts and effects of predicted climate change on the enterprises that make up the farm business

- Assess the vulnerability of the farm business in parts and as a whole to the effects of climate change
- Identify potential adaptation actions or resilience works which could be undertaken to reduce the vulnerability and increase the resilience of the farm business
- Recommend ways to implement potential solutions – some actions will be up to the farm business to consider and implement as they see fit, others may be eligible for additional support to develop and undertake works.

## What are the benefits of doing a FRP?

By taking a long-term look at the management of the farm holding and considering the impacts of climate change, the FRP will identify options to improve business resilience. This can be through land management and capital works opportunities which can be implemented in the short term. Such options can bring benefit in the longer term to maximise the resilience and sustainability of the farm business.

Some adaptations may help the farm to save energy, benefit management and even reduce production costs, at the same time as building resilience and contributing to environmental stability.

Once the impacts have been detailed (taking account of the considerations mentioned below), the next step is to identify what potential solutions may be available to the farm to become more resilient. These may involve changes in the way land is managed or certain operations are carried out, or involve investment in capital works or additional equipment.

Issues and solutions identified through the resilience planning work may be suitable for direct implementation as a Cheviot Futures funded project. These works tend to be the new, innovative ideas that lend themselves to trialling and demonstration.

Other works or opportunities identified may be eligible for funding support through other means – such as agri-environment agreements, woodland arrangements or other supported projects. Cheviot Futures is well-placed to assist applications and justifications for additional funding.

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## Key Resilience Planning Considerations

Climate change predictions (using various sources e.g. UKCPO9) for the Cheviot Hills suggest that we will be dealing with scenarios of increased temperatures, reduced summer rainfall, increased winter rainfall and more severe weather events as a result of climate change. Predicted scenarios look ahead to the medium term (2020s) and longer term (2050s to 2080s) and although climate science, modelling and predictions are variable

and extremely dependent upon global action to reduce greenhouse gas emissions.

The key to farm resilience planning is to assess the impact that these generalised trends are expected to have upon the farm enterprises in their current management – this will highlight the level of vulnerability for that farm.

Climate change effect	Potential Impacts – livestock enterprises	Potential Impacts – arable cropping
<b>Increased temperatures</b>	<p>Increased incidence of heat stress</p> <p>Changes in pest and disease patterns; introduction or northwards shift in new threats (e.g. bluetongue, schmallenberg)</p> <p>Longer growing season and improved productivity of grassland – improved forage quality/quantity</p> <p>Changes in breeding patterns</p>	<p>Changes in pest and disease patterns and management; northwards shift of current and emergent vectors.</p> <p>Potential lengthened growing season or suitability of climate and soils for new varieties or crop types</p>
<b>Reduced summer rainfall</b>	<p>Reduced availability of water for livestock drinking; reduced carrying capacity of pasture</p> <p>Decreased availability of soil water for grasses – loss of productivity and burn off of vegetation; associated drop in feed value</p>	<p>Reduced availability of water for irrigation, alongside an increased requirement</p>
<b>Increased winter rainfall</b>	<p>Increased incidence of liver fluke in both sheep and cattle</p> <p>Increased requirement to house stock</p> <p>Enhanced difficulties of supplementary feeding – poaching issues and soil compaction</p>	<p>Difficulty in getting crops established</p> <p>Soil compaction through field operations in wet conditions</p> <p>Increased soil compaction and surface water runoff and associated loss of soils, nutrients and diffuse pollution risk</p>
<b>More extreme weather events</b>	<p>Increased flood risk to riparian and floodplain land used for grazing; accessibility to safely evacuate stock</p> <p>Riverbank erosion leading to land loss and exacerbated sediment disturbance by livestock access</p>	<p>Increased flood risk to riparian and floodplain land used for cropping; losses, damage and yield impacts of waterlogging and deposited sediments and other debris</p> <p>Increased risk of lodging of semi mature crops; potential impacts on harvest of extreme summer storms</p>
<b>Combined or cumulative effects</b>	<p>Increased risk of wildfire to upland moorland habitats</p> <p>Animal welfare and farm health planning implications, including resistance to worming and fluke treatments</p>	<p>Difficulty of long-term rotation management and effects of difficult harvest conditions upon following crops etc.</p>

## Examples of Farm Resilience Planning in action

Cheviot Futures has completed a number of Farm Resilience Plans for holdings throughout the Cheviot Hills project area.

In many cases the resilience planning approach has led to direct implementation of adaptation and resilience works, either through Cheviot Futures or by securing assistance from elsewhere, further information is available on the Cheviot Futures website and in associated case study publications.

For example:

- Windbreak planting works at North Doddington, Northumberland, to address loss of soils by windblow identified through the FRP. The work was completed with funding input from Cheviot Futures, alongside securing of additional capital works items within an existing agri-environment agreement.
- Riverbank repair works at Clifton-on-Bowmont, Borders, to address issues of loss of valuable arable land to riverbank erosion identified through the FRP. The work was completed using funding input from Cheviot Futures, alongside contributions from the farm business.
- Securing of suitable agri-environment management options at Eililaw, Northumberland, addressing a range of issues identified through the FRP

alongside valuable community resilience flood management works on the holding.

- Improved and alternative water supply at Mowhaugh, Borders to address issues of water availability and sustainable supplies identified through the FRP. The work was completed with funding input from Cheviot Futures, alongside contributions from the farm business.
- Strategic planting works at Burradon Mains, Northumberland to address issues of shade and shelter provision identified through the FRP. The work was completed with funding input from Cheviot Futures alongside contributions from the farm business.



Completed flood resilience works, Eililaw, Northumberland



Completed windbreak works, North Doddington, Northumberland