

Agriculture and climate change

22nd November 2019

Keith McWhinnie & Michael O'Neill

What will be covered

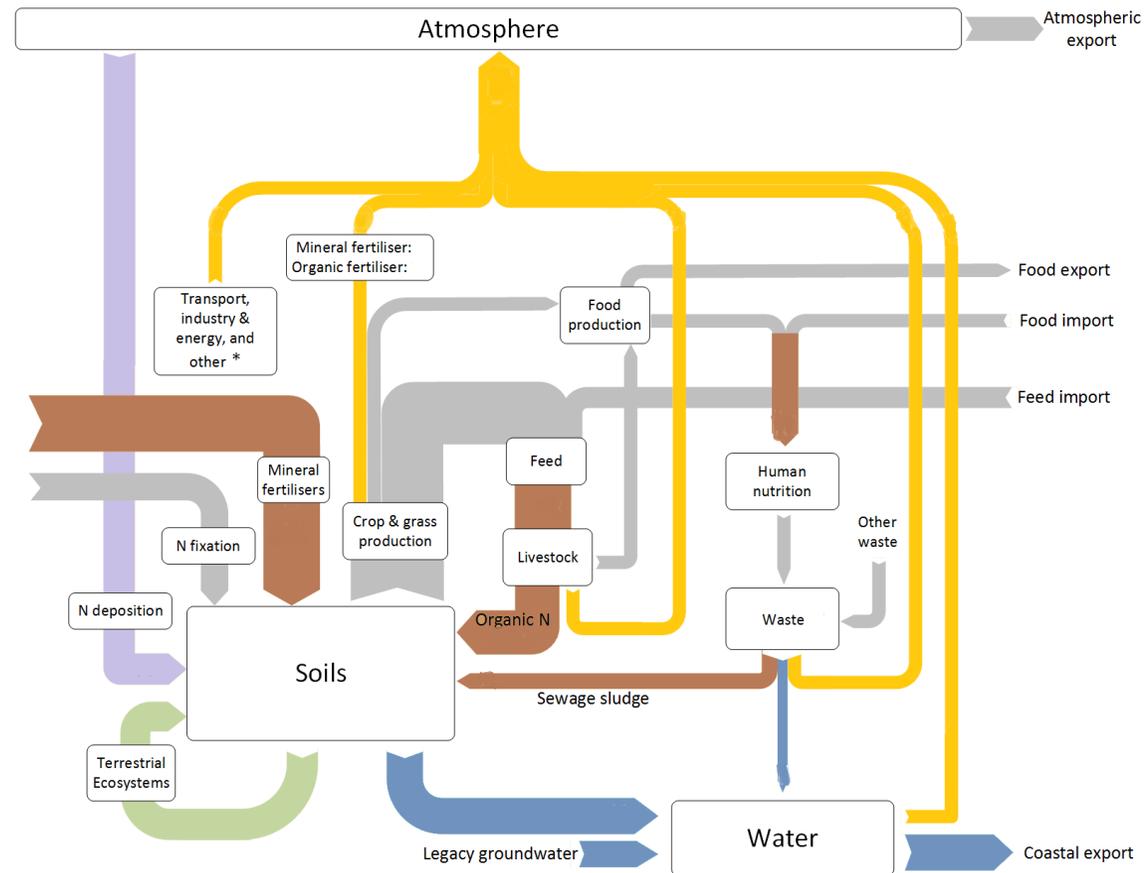
- ▶ Climate Change Bill amendments relevant to agriculture
- ▶ Nitrogen balance sheet
- ▶ Current Climate Change Plan
- ▶ Updated Climate Change Plan
- ▶ Mitigation actions, they haven't changed
- ▶ Links between climate change, bio-diversity and air and water quality.
- ▶ Programme for Government 2019/20

Relevant Climate Change Bill Amendments

- ▶ Scotland now has a requirement to produce a national nitrogen balance sheet within the next 18 months.
- ▶ Agriculture will be a significant contributing sector and we are working closely with central climate change colleagues on this.
- ▶ The Scottish Government is required to set out in the next new climate change proposals and policies to deliver a system to demonstrate whole farm emissions accounting.
- ▶ Work is currently underway to establish a whole farm emissions accounting system as
- ▶ The Scottish Government is required to set out in the next new climate change proposals and policies as the establishment of an agricultural modernisation fund.
- ▶ Discussions are already underway.

What is a Nitrogen Balance sheet.

- ▶ A nitrogen balance sheet will allow for a better understanding of the flow of nitrogen within the economy. In essence it will quantify nitrogen inputs, emissions and removals throughout the whole of Scotland.
- ▶ It can then be used to monitor progress of nitrogen use efficiency in any given sector and as a nation.



Current Climate Change Plan.

- ▶ There are five overarching outcomes that the plan set out to achieve by 2032.
- ▶ Farmers, crofters land managers and other primary producers are aware of the benefits and practicalities of cost-effective climate change mitigation measures.
- ▶ Emissions from nitrogen fertiliser will have fallen through a combination of improved understanding, reduced application and better soil.
- ▶ Work with Quality Meat Scotland and others to reduce emissions from red meat and dairy through improved emissions intensity.
- ▶ Emissions from the use and storage of manure and slurry will have been reduced.
- ▶ The carbon content of soil and agricultural land will have been improved through carbon sequestration and expanded woodland/forestry and hedgerows.

Updated climate change plan

- ▶ At this time I do not have specific details.
- ▶ The TIMES model will once again be used as we look to identify the least cost pathway to achieving the reductions needed across the whole economy.
- ▶ We have worked with SRUC to refine the agricultural data.
- ▶ Final decisions will be taken by Cabinet.
- ▶ There are no sector specific targets.
- ▶ Everyone will have to play their part across the board.
- ▶ Remember that new targets mean that Scotland has to achieve a emissions reductions of 75% of the 1990 figure by 2030.
- ▶ In 2017 statistics we are sitting at a 39% reduction from the 1990 baseline i.e. this has taken 27 years to achieve. New targets mean that Scotland needs to reduce emissions by a further 36% in the next 10 years (less than half the time).

Mitigation Actions, they haven't changed.

- ▶ Moving forward we will need our farmers, crofters and land managers to adopt **ALL** on-farm mitigation measures that are applicable to them.
- ▶ This includes such things as:
 - ▶ Ensuring soil is in optimal condition (pH and organic matter).
 - ▶ Changes in the make up of livestock rations to reduce methane emissions.
 - ▶ Improved livestock health.
 - ▶ Changes to slurry application (move away from splash plate)
 - ▶ Use nitrogen fixing crops and clovers in rotation.
 - ▶ Ensure fertilisers are applied at the rate the soil and the crops can use.
 - ▶ Maximise the use of slurries, manures and composts.
- ▶ **All future projections and modelling show agriculture becoming the single largest emitting sector. Agriculture must show that the actions that can be taken are being taken.**

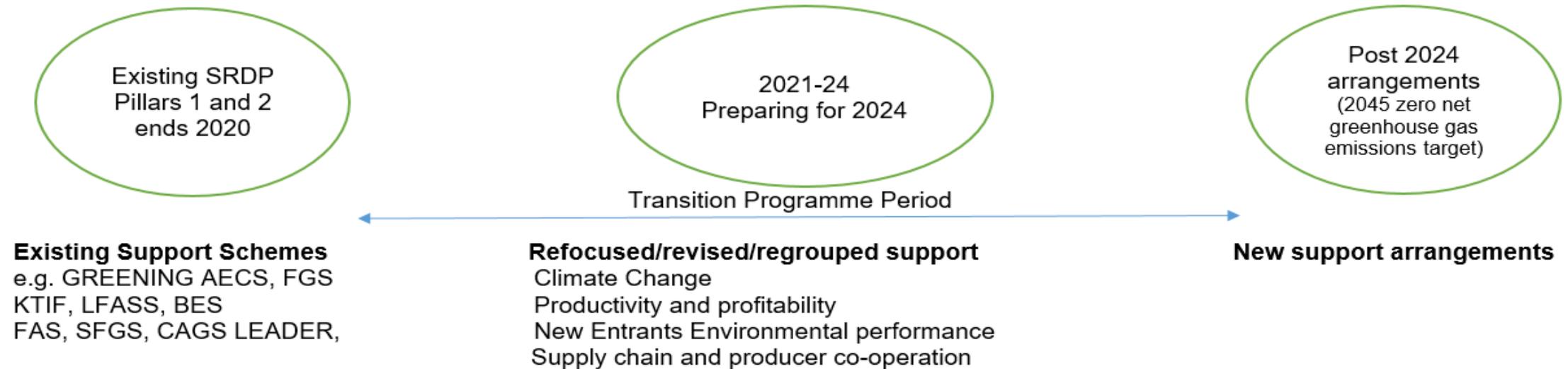
Linkages between Climate and other environmental priorities

- ▶ Agriculture is somewhat unique, it can provide positive benefits across a whole host of areas.
- ▶ However, if too much focus is given to anyone of them the others may suffer.
- ▶ Climate Change, Bio-diversity and Air and Water quality are linked. We must ensure that actions taken to improve one is not at the detriment to the others.
- ▶ There are win-win actions, for example around slurry and manure management, the application of synthetic fertiliser, crop rotations and grazing management and practices.
- ▶ We need to make sure these actions are being embraced.

Programme for Government 2019/20

- ▶ We shall create a new Agriculture Transformation Programme for our farming and food production focused on sustainability, simplicity, profitability, innovation, inclusion, productivity and reducing emissions. Work begins this year work to
- ▶ Commission independent advice on options for changing land use patterns and practices within Scotland.
- ▶ Develop a national nitrogen balance sheet.
- ▶ Develop pilot schemes to reduce greenhouse gas emissions from agriculture
- ▶ Encourage more tree planting across Scotland including woodland integration and agro-forestry on Scottish farms
- ▶ Promote and encourage the multiple benefits of good grassland and livestock management in Scotland including the protection of our historic carbon sinks.
- ▶ Encourage more farmers to invest in renewable energy including bio-energy to meet their energy needs.
- ▶ Explore the development of models to demonstrate and promote carbon neutral farms.

Agricultural Transformation Programme 2021- 2024 Initial Thoughts



Trade-off: moving from 2021-2024 stability vs change

Climate change: PfG Commitments, plus more to come?

Environmental performance: considerable current support. What needs refocussed and how?

Productivity and profitability: minimise inputs for maximum output?

Supply chain and producer co-operation: balancing producers' interests against those for processors and the supply chain.

Intervention logic to be developed and will need to be clear

Strong set of objectives required for programming period. Programme period is short 3 years. Suggests smaller number 5/6 that agriculture industry prepare best for circumstance post 2024?

Monitoring, evaluation and data requirements need to be made clear from the start

Common thread: all actions in programme need to support climate change mitigation