



Report for Scottish Government: A National Grain Security Action Plan for Scotland

A report by **The Scottish Grain
Network Stakeholder Group**
www.edin.ac/sgsap

THE TARGET:

By 2030, double the amount of grain grown for food in Scotland to support achieving the Scottish Dietary Goals from local production

Why this target?

Grains are the foundation of Scottish diets, yet we have little data on the amount of grain grown for direct human consumption in Scotland. It is estimated that most grain grown is for livestock feed or distilling, not for processing into flours and other edible grain-based ingredients.

The government established the Scottish Dietary Goals in 1996 to describe a diet that will improve the health of people in Scotland. Since then, there has been little or no progress towards achieving the goals.

For locally produced grains to support people in Scotland achieving the Scottish Dietary Goals, the grains should be:

- 1 Consumed as whole grains to increase fibre intake
- 2 Minimally processed with few additives to decrease free (added) sugar, salt, and saturated fat intake
- 3 Minimise quantities distilled into alcohol
- 4 Reduce quantities fed to livestock to decrease red and processed meat consumption

THE MISSING DATA

In order to achieve the target of doubling production of Scottish grains that contribute to healthy diets, we must first establish the baseline amount of grain grown for this purpose in Scotland.

- At present, data are not publicly available on the amount of Scottish grain contributing directly to diets as edible foods
- Such data are necessary to coordinate efforts to increase Scottish grain production in order to support the Scottish Dietary Goals

The target: By 2030, double the amount of grain grown for food in Scotland to support achieving the Scottish Dietary Goals from local production

ROADMAP

- 1** Develop a compelling narrative to clearly communicate the health and environmental benefits of consuming minimally processed grains
- 2** Establish a sector space to support the development of Scottish grain networks
- 3** Fund participatory research into climate resilient cereal seed varieties suitable for Scotland
- 4** Fund and enable an innovation environment for R&D in grain processing
- 5** Design and implement sector specific training for professionals in Scottish grain networks
- 6** Contribute to public health by mandating procurement of minimally processed grains in schools and other public settings

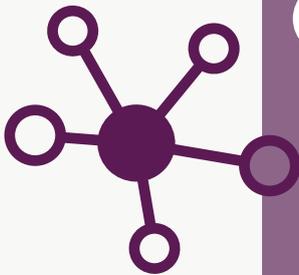


1

The foods we choose to eat are influenced by commercial marketing and the narratives that surround them. Narratives surrounding whole grains are mixed. Only 26% of UK adults understand whole grains to be more healthy than refined grains. Negative perceptions of carbohydrates are widespread. People also struggle to identify whole grain products due to the absence of a standardised definition.

Moreover, narratives on sustainable plant-based diets often overlook the important role of minimally processed grains. The carbon footprint of beef is nearly 100 times that of wheat and rye. And whole grains have a lower carbon footprint than refined grains due to the more efficient utilisation of cereals.

There is therefore an opportunity to develop and communicate positive messages around the healthfulness and sustainability of whole grains to the public.



2

Regional grain networks are geographically localised economies centred on the production, processing, trading, and consumption of cereal grains. They are essential to supporting local, sustainable food production. In Scotland, grain networks can facilitate sustainable food systems transitions by allowing actors to learn and develop through peer-to-peer dissemination of knowledge and practice.

External support from Scottish Government is required to enable these innovative spaces to exist. Establishing a designated space to support the development of Scottish grain networks within the wider arable sector will enable the emergence of sustainable practices throughout the Scottish food system.



3

Funding is needed to support participatory research into grain varieties suitable for human consumption and for cultivation in low-input and organic conditions in Scotland. Currently, such variety-choice is limited. At the same time, there is a pressing need to address the climate resilience of crops cultivated across Scotland. Beyond the farmgate, bakers in Scotland are increasingly seeking locally produced sustainable grains.

Developing inclusive breeding programmes, involving farmers, millers, bakers, the public, nutritionists, and GPs in cereal breeding research, would ensure Scottish grains that are appropriate for a full range of end-uses. This requires sufficient and accessible funding. Breeding programmes should enable a greater number and diversity of producers to grow new varieties; increasing the adaptability, resilience, and fairness of the food system in Scotland.



4

The infrastructure and technologies that exist for the current commodity grain system will not work for regional grain systems. Grain production, handling, processing and storage within regional grain networks requires the ability to handle smaller quantities and a greater diversity of grains. Producing grain for human consumption rather than distilleries or animal feed presents further challenges for the sector.

There is a pressing need to develop appropriate-scale grain processing machinery to support market development of sustainable and local grains. Reduced energy intensity coupled with smart technologies can provide a route to zero carbon emissions while improving the phytosanitary and functional quality of grains intended for minimally-processed human food.



5

Training for individuals entering the food professions – through academic and professional training institutions, as well as ‘on the job’ in values-led artisan businesses and apprenticeship programmes – could lay the foundations for participation in regional grain networks. At the moment, participation in regional grain networks is often limited to those who have time and an understanding of the role of the arable sector in climate change mitigation, ecosystem function and public health.

Implementing training in these topics for food and farming professionals could widen participation in regional grain networks. Training should be joined-up and interdisciplinary, covering farming, processing, retailing and consumption of grains, and include an understanding of the interrelation of food systems with climate change, ecosystems and society.

6

More than £130 million is spent each year in Scotland on public food procurement and this will increase with the ongoing roll-out of universal free school meals.



The prioritisation of public procurement of minimally processed foods made from Scottish grains would represent a significant opportunity to reduce ultra-processed food consumption amongst children and young people in Scotland, boost intake of essential vitamins and minerals as well as fibre, and support Scotland’s arable sector to grow grains for direct contribution to Scottish diets.

Why an action plan now?

A Rising risk of food crisis

The conflict in Ukraine, EU-exit, COVID-19 pandemic and climate crisis have exposed the fragility of Scottish food security.

Building resilience into the food system in Scotland is paramount to ensuring the wellbeing of Scots in the face of the rising risk of food crisis. The development of diverse, local food production systems is a key aspect of increasing overall food system resilience and food security.

B Falling healthy life expectancy

Scotland's healthy life expectancy is the lowest in the UK and has been falling in recent years.

Scots living in the most deprived areas spend more than a third of their lives in poor health, twice that of those living in the richest areas. Obesity is a leading contributor to these trends. Two out of three Scots is overweight or obese. Treating conditions associated with overweight and obesity is estimated to cost NHS Scotland between £363 million to £600 million annually. Transitioning to a diet rich in minimally processed whole grains instead of one rich in energy dense refined grains would significantly improve the health of Scots.

C Policy window

In July 2022, Scotland passed into Scots Law the Good Food Nation (Scotland) Act.

This is a first step towards becoming a Good Food Nation, 'where people from every walk of life take pride and pleasure in, and benefit from, the food they produce, buy, cook, serve, and eat each day.' Local grain networks can play a key role in the Good Food Nation Plans developed in the coming years.