

Written evidence submitted by Ms Isabel Webb (MSI0016)

I propose an inquiry into how the UK can utilise biological solutions to the global nitrogen crisis.

Agriculture and other human activities have introduced huge shifts in the global nitrogen cycle, through production and use of reactive nitrogen. There may be a biological solution to the nitrogen crisis.

Atmospheric and marine pollution is thought to be costing the EU up to €300 billion a year, mostly due to the effect on human health. Climate change may play a role in increasing these issues further, as will a growing population.

The nitrogen-fixing symbiosis associated with legumes such as beans and lentils may provide some relief for the pressures of nitrogen availability. Plant-associated bacteria are able to generate biologically available nitrogen in place of fertilisers. Legumes have been used in crop rotations for centuries because of this process. Cultivation of peas and beans is falling in the UK as more land is being used for higher profit crops.

Publically funded research from the BBSRC and others is investigating ways that biological nitrogen fixation can support agriculture. This includes inoculants, novel plant-bacteria associations and genetic modification/synthetic biology. Policy will be required to utilise the results of these projects and to support future work.

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