

Written evidence submitted by Professor Simon Pearson, Director of the Lincoln Institute of Agri-food Technology, The University of Lincoln and David Ross, Chief Executive Officer, Agri-EPI Centre Ltd (COV0149)

Accelerating Automation to Reduce Reliance on Migrant Labour for Harvesting Fresh Produce.

This evidence is submitted in a personal capacity.

Scope of the enquiry

The Committee is enquiring into food supply during the Coronavirus pandemic, including access to healthy food during periods of self-isolation and how disruptions in the food supply chain should be managed.

Executive summary

It is now well established that the UK fresh produce sector (fruit, vegetables and salads) is facing severe impacts from COVID-19 loss of access to seasonal migrant workers. This issue threatens the availability of >£1.5bn of UK produced food, the future of farmers producing it as well as those in the supply chain. The primary government response to this crisis has been the well-publicised and commendable “Pick for Britain” campaign. There is though uncertainty whether the campaign will secure farms with all the support required and at economic labour costs. Here we propose that the government invest in the acceleration of automation and robotic technologies as a second pillar to reduce reliance on labour in future. Mechanisation could reduce some sector reliance on labour through the COVID crisis but also provides an opportunity to permanently resolve the well reported linkage of the sector to seasonal migrant workers. A technology solution to this issue not only upskills the existing work force but also creates UK global leadership in advanced technologies that will be in high international demand post COVID-19, and stimulate new world-class technology export market opportunities from the UK.

Introduction

Simon Pearson leads the agri-robotics research theme at the University of Lincoln, which has received significant government and industrial support over the last 2 years, including the award of the £6.9M UKRI-ESPRC Centre for Doctoral Training in agri robotics (50 PhD's with Cambridge and UEA), the £6.4M UKRI Research England Lincoln Agri Robotics Centre and multiple Innovate UK backed projects across agricultural technologies. Prior to joining Lincoln, he was CEO of a UK farming company and worked for a multiple retailer. Dave Ross is CEO of the Agri-EPI centre one of the UK's 4 centre of excellence, born out of the the UK Strategy for Agricultural Technologies (2013), by the Agri-Tech Leadership Council, and co-funded through Innovate UK.. Agri-EPI has already direct involvement in the Hands Free Hectare project at Harper Adams, the subsequent £2M Hands-Free Farm project, and incubates a number of UK-based companies developing products for the autonomous systems market.

Background

1. Fresh produce supply chains have been severely disrupted by COVID-19, in particular access to essential seasonal migrant workers who harvest fruit, vegetable and salad crops. The ONS estimate that the UK agricultural sector employs 64,000¹ seasonal migrant workers. The majority of these work in the soft and top fruit picking industry (>40,000 estimated), with significant numbers in other produce categories such as the field vegetable, salads and the poultry sectors. An additional 121,000 EU27 citizens are employed in food manufacturing².
2. These serious losses in labour availability threatens UK food security, in particular the availability of fresh and healthy fruit and vegetables, essential components of the human diet. At stake are businesses generating £765M of UK fruit³ at farm gate value, £356M³ of protected vegetables (tomatoes, salads) and c. 35% of the field vegetable crop (c£450M)³ that relies on labour for harvesting (asparagus, broccoli, mushrooms, lettuce, etc); onward GVA is c. 6 fold greater as produce moves up the supply chain.
3. Current mitigation policy is focussing on the "Pick for Britain" campaign to substitute furloughed and redundant UK based workers for the seasonal migrant pool. This approach is an appropriate primary response but there is considerable uncertainty, evidenced by wide scale industry consultation, that it will deliver the comprehensive impact that the sector requires, in particular whether these workers will turn out for sustained periods (at least 2 seasons, 2020 to 2021). Given this uncertainty it is highly appropriate to devise additional mitigation measures. Drawing on the success of the ventilator challenge, our proposal mobilises the UK's agri-robotic and manufacturing community to accelerate automation solutions for the sector. We believe this is an appropriate strategy to mitigate COVID-19 impact. It mobilises the UK's globally leading excellence in agri-robotics, our manufacturing community and helps resolve a seemingly intractable dependency of the fresh produce sector on seasonal migrant labour. This dependency may well reoccur as the country moves forward with new immigration policies post Brexit. In addition, it will help secure the UK's position as leaders in agri-robotics and industrial automation; technologies that are likely to be in significant global demand post COVID-19.

Question 1. Have the measures announced by the Government to mitigate the disruptions to the food supply chain caused by the pandemic been proportionate, effective and timely?

4. We focus our evidence on existing policy to support access to labour for the UK fresh produce sector. DEFRA, in collaboration with the AHDB, NFU, Agricultural Labour Providers and British Growers have launched the "Pick for Britain" campaign to attract new, furloughed or redundant workers to pick seasonal fruits and vegetable crops.
5. This policy is highly commendable but our consultation with industry, which included a webinar hosted by the Knowledge Transfer Network (KTN) of Innovate UK attended by 84 participants from across the farming and technology sector, indicated that there was uncertainty as to whether this policy would completely resolve their labour challenges in the short to medium term. This uncertainty focussed on both whether people would turn out in the numbers required,

whether those who would turn out would continue over the season, and the impact of many untrained workers on overall harvesting cost.

6. In addition, this policy is unlikely to resolve the known dependency of the sector on seasonal migrant workers in the medium to long term (2021 onwards).
7. It is our view that a sensible option to help permanently resolve the dependency of the sector on labour is a complimentary policy pillar (to “Pick for Britain”) of significant investment in research, innovation and implementation of automation and robotics technology. This can help mitigate COVID issues and sustainably drives sector labour productivity.

Question 2. Are the Government and food industry doing enough to support people to access sufficient healthy food; and are any groups not having their needs met? If not, what further steps should the Government and food industry take?

8. As a consequence of significant public investments in agricultural technologies, advanced by the AgTech Catalyst⁴ program, as well as in advanced robotics⁵, the UK has a pipeline of globally leading expertise and SME’s who are developing robotics and advanced automation solutions to drive labour productivity, including for the Fresh Produce sector. Our KTN survey indicated that a number of companies have technologies that are near to market and that with concerted acceleration (similar to the Ventilator challenge) they could achieve significant industrial impact within the fresh produce sector from the end of season 2020 but in particular within 2021. This included 2 consortia working on strawberry picking robotics, one for blueberry crops, a number of companies with advanced technologies to automate packhouses, a vegetable harvesting consortia and opportunities for UK expertise to collaborate with international (US / Israel) programs (apple picking).
9. In addition, advanced robotics and automation permanently reduces the dependency of the sector on seasonal migrant labour. This drives up productivity in the sector, potentially reduces labour cost food inflation, upskills the sectors and helps the government secure immigration policy post Brexit. The global market for these technologies will be significant post Covid as global producers will also need to derisk labour dependencies.
10. To deliver the acceleration required, our consultation showed that a package of measures is required, including financial support for the robotics and automation SME’s, input of private sector industrial expertise for scaling the technology as well as loans and grants for farmers to purchase these and other off the shelf automation solutions.
11. The robotics SME community requested funding (combination of grants c. £12M plus loans c.£7M) to accelerate existing development pipelines, access to a larger pool of skilled engineers (from industry and academia), access to test beds on farms and support from the UK manufacturing community for scaling. As long as they could add value, some were willing to collaborate with larger international consortia.

Question 3. What further impacts could the current pandemic have on the food supply chain, or individual elements of it, in the short to medium-term and what steps do industry, consumers and the Government need to take to mitigate them?

11. Whilst the potential impact of the fresh produce sector is well reported and there is a tangible risk of business failure as well as a food security (and future UK balance of payments) issue as a consequence of access to labour issues. The impacts of COVID-19 on the UK SME agri tech and robotics sector are less well reported. We are aware of a number of companies who have delayed significant venture capital funding rounds (one postponed a £6M funding round) and others who now have financial concerns. There is little doubt that post COVID these companies, as long as their technology can be proven, could be highly successful. Global demand for their technologies will be high. We believe that government has a key role to help bridge these companies through the COVID crisis.

Question 4. How effectively has the Government worked with businesses and NGOs to share information on disruptions to the supply chain and other problems, and to develop and implement solutions? How effectively have these actions been communicated to the public?

12. The “Accelerated Automation” program has been run in conjunction with the NFU and KTN to gain consensus of demand (100 participants across the farm and robotics community), seek technologies that can be accelerated and to liaise with government to request support. The response to the program has been excellent and this has enabled discussions with government colleagues in BEIS, DEFRA, DiT and across UKRI (Innovate UK, EPSRC and BBSRC). Although we do not yet have clarity on whether there will be government support for the initiative, we wish to thank all those colleagues who have input their valuable time to the discussions.

Recommendations for action by the Government or others which you would like the committee to consider.

13. We request that the government should consider the support of an “Accelerated Automation program that de-links the fresh produce sector from its reliance on seasonal migrant labour. Focus should be given to support farming businesses to automate and mechanise, thereby permanently driving labour productivity within the sector. This program de-risks food security but also provides global leadership for the UK in agri-robotics, technologies which will be in high global demand post COVID.
14. We request that the program is supported with a combination of grants and loans to enable the completion of near to market technologies by key UK SME’s. These companies should collaborate with the farming industry and large UK manufacturers to ensure rapid scaling of the technology. The SME’s should have access to loans to enable large scale manufacturing. This proposal is under active discussion.
15. We request that the government provides rapid access to the farming community to labour productivity grants that enables them to rapidly purchase off the shelf automation equipment. The application process should be rapid and government should deploy UK support agencies (Innovate UK Ag Tech centres, Catapults etc) to provide implementation support.

¹<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/articles/labourintheagricultureindustry/2018-02-06#main-points>

² <https://www.fdf.org.uk/publicgeneral/Breaking-the-Chain.pdf>

³https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/876670/hort-report-30mar20.pdf

⁴ <https://www.gov.uk/international-development-funding/the-agri-tech-catalyst>

⁵ <https://www.ukri.org/innovation/industrial-strategy-challenge-fund/robots-for-a-safer-world/>