SCI Horticulture Group

Response to Government Education and Skills Paper:

This response to the recently published Government paper on Skills is made by the Horticulture group of the Society of Chemical Industry (SCI). SCI was established in 1881 as an organisation to link Science and Industry and so has long been committed to developing the application of science in a business context. Agriculture, horticulture and plant science underpin global food production and are at the core of nutrition and ultimately health and medicine and so have long been part of SCI's activities. SCI achieves its aims through the medium of a series of specialist groups and committees of which the Horticulture Group is one. The current membership of the SCI Horticulture Group includes scientists working at both fundamental molecular and practical levels in both academic institutions and industry. It has members working on both temperate and tropical food crops (fruits and vegetables); horticultural crops make up a significant proportion of the UK diet, and plants raised for ornamental, amenity and urban forestry applications. Horticulture and its crops thus provides significant underpinning for both physical and mental health.

We would comment on the recent government paper in the following terms:

1. We welcome the White Paper's emphasis on skills reform, but for the sector which we represent it does not address the acute deskilling in plant and horticultural education nor the structural weaknesses which this leads to in local food production, processing and supply chains. Practical plant science, propagation, postharvest handling and small-scale processing skills are disappearing from FE/HE and apprenticeship pathways. For this to be remedied the Reports predominately employer led approach needs to be matched by mandated, funded curricula and clear progression routes for horticulture and plant science specialisms. There is a need for real clarity in terms of how the suggested reforms will work at a local level and in relation to SMEs.

2. We welcome the production of a report which identifies that there are significant current issues in relation to both education and skills acquisition which need to be addressed.

3. We also welcome the linkages made in the report between the requirement for skills development and both the economy and national prospects for future growth. An emphasis on developments in IT and the generation of knowledge and innovation is potentially positive but also reflect some of the dangers of a continued drift from an appropriate prioritisation of both manufacturing and land-based activities which without action will increase in importance as a national issue.

4. The emphasis in the Report on the provision of short courses may provide flexibility but against the background of decline in manufacturing industry if it is to be significant part of a genuine up skilling process it must be augmented by and articulated with a sound theoretical and practical base of related learning and understanding. We fully support the idea of the Lifelong Learning Entitlement scheme (1.3, 3.4) and the short courses (1.1,

1.2) at intermediate levels (levels 2 – 5). This is a great opportunity to introduce more specialist courses (such as horticulture, agriculture, botany, plant science) which have otherwise largely disappeared over the previous decades. V Levels (2.2) should also offer plant science courses for students to choose after completion of their GCSEs. However, who will provide and teach these courses?

5. It is important that the individuals teaching these courses (whichever level) should be appropriately qualified. This will require, in our sector, significant upskilling of those teaching in the areas of Horticulture and Plant Science. How this might be enacted is a significant challenge. With the introduction of more specialist course there will be need to appoint individuals with relevant qualifications in that subject area. Introducing specialist courses taught by appropriately qualified individuals at a range of course levels/lengths is needed to address current skills gaps in horticulture and plant science.

6. Both the need for areas such as horticulture and plant science to contribute to economic growth and the requirement for appropriately trained teachers emphasise the need for a clear curriculum for these sectors. There are clear and important parallels to disciplines such as medicine and nursing which have defined curricula for professional qualification.

7. The Report identifies deficiencies in current provision in generic areas such as English, mathematics and digital skills. These have however been significant challenges over many decades. The impact of the provision of training in these areas has been impacted by changing Government priorities and periods of low unemployment when such training seemed less important. Developing an appropriate and sustainable balance between training in such generic areas and in specialist areas of applications of science must be a significant driver of skills development for economic growth.

8. The paper emphasises the numbers of young people who are neither in education or employment. It suggests a need for training at higher technical levels and a need to develop provision in the FE sector. These are however sectors which have traditionally been under-resourced and undervalued. Linkage of FE provision to Local Authorities whose budgets have traditionally been under stress because of the range of things they need to cover has resulted in skills training lacking the secure and dependable funding required for sustainable business planning or the availability of appropriately qualified teachers.

9. The report suggests that there are unhelpful disparities between what an individual chooses to study and the needs of the economy. This we think indicates an overly short-term approach to the need for a planned long-term approach to employment and what whole lifetime professional and skills development is likely to require. There may be value in the creation of a lifetime skilling passport which could be tuned to future employment needs.

10. Funding and security of funding is a real and serious issue. Employer funding has long been a serious issue with huge variation in commitment and practice. If employers are to commit then incentives matter and long-term commitment by Government, regardless of its political make up, to support such training is critical. The words used in section 1, “Working

with employers" includes under this heading a number of measures which have been tried in the past but dropped as a result of a need for "austerity measures".

11. The emphasis in the Report reflects the situation which prevails with larger employers. Large Employers have the scale and ability to provide skills training. Many smaller employer, SME's, do not have the appropriate training skills and so need much of the training for their apprentices and other trainees to be provided out with their business. We are aware that this is a key issue in the sector which we represent. While Horticulture does include some of the worlds largest businesses, in the UK a significant proportion of horticultural businesses are SMEs. They will want to provide specialist training related to the role of the business, which may relate to a single minority crop species, but still require this to link to more generalised skills training in relation to wider horticultural practices. Currently such provision and at all levels, including the University sector, is under threat, a point we develop later in this submission, and which has recently been documented by a recently published study by the SCI Horticulture Group.

12. The report suggests need for new data collection. Having appropriate data is important but a bringing together of the significant amount of what is already known seem likely to be the highest priority. The approach in this section of the report is granular rather than truly strategic and co-ordinated.

13. The above suggestions and criticisms have a particular resonance for Horticulture. Horticulture is among the most varied of our industries. It is unparalleled in the range of inputs it has to food production and food supply. Food production companies may be small employing 1-3 people or may be large with many employees some employed for only a period in the year. Employees of both need constant refreshment and the ability to cope with new digital technologies but also with areas such as molecular diagnostics. This requires good basic education designed to be extended though shorter modules but with the provision being designed not ad-hoc. Horticultural foods impact health making it important for such links to be built into employment and training. The parallels between medicine and related disciplines and horticulture in terms of the combination of theory and practical and diagnostic skills are striking. This suggests the need for defined curricula for horticulture at all levels.

14. SCI Horticulture Group has identified a significant deficit in plant science and horticulture teaching at a higher education level (https://scijournals.onlinelibrary.wiley.com/doi/10.1002/jsf2.70001). It is vital that the UK has robust plant science higher education courses and that these courses are taught by individuals with appropriate qualifications and interest in the subject. At the core of this deficit is pressure on University budgets which has driven a rise in a need to develop modules capable of being used over a range of degree programmes rather than degrees being based on a high proportion of specialised modules. Generic modules have value but often do not represent the appropriate way to deliver professional training and skills development. The development of curricula for professions such as horticulture and plant science is essential in plotting a way ahead.

15. Being able to deliver this requires stable employment in the technical sector. The language describing educational facilities and those delivering education needs to be reconsidered. It seems important to question whether the terms HE and FE are currently helpful or a reflection of past distinctions between academic and more applied approaches. Horticulture extends beyond food into amenity and ornamental horticulture both of which impact the urban environment and impact mental health and well-being. Again this sector is represented by large companies such as Tesco/Dobies and B&Q but also by very many SMEs. It is unclear just how the provision out lined will be able to cope with this level of diversity and with the need for stable delivery.

16. Section 2 of the plan deals with “specialist and prestigious further education. It is not clear whether it is helpful to distinguish this from University level education. For the horticulture and plant science sectors there is clear need for a system which works together rather than being fixed within boundaries which may have had some merit in the past but which now seem more linked to professional status than to the requirements of the AI and molecular ages and their skill requirements. This is important for all types of industry but again has a particular resonance for horticulture. Just as medical surgeons need continuing theoretical and practical training so do those in Horticulture which suggests that a system which allocates the delivery of theory and the practical skill to different types of institution is inappropriate for the current world. Provision for those with SEND issues is important but requires integration which does not constrain wider provision.

17. Section 3 of the report deals with “our world leading education sector”. It over-focuses on the role of universities in providing skills for employment and for the requirements of the economy. There is in addition a need to prepare people for life and for the changes required during a working life time and to cope with the stresses of life. The plan to involve the “Office for Students” in the regulation of FE Colleges who deliver higher education again re-emphasises the current barriers between the dated concepts of FE and HE rather than reconsidering whether these distinctions remain helpful.

18. One of the recommendations is that Universities should concentrate on what they are good at which could lead to the development of specialist centres. Analysis of HE provision of plant education reveals that only 9 institutions teach a significant amount of plant science and this is on specialist degrees (https://scijournals.onlinelibrary.wiley.com/doi/10.1002/jsf2.70001). 3 of these institutions have since closed these programmes. This means a loss of specialism. Failure to support specialist small degree programmes will undermine the governments aspirations to produce a skilled hi-tech economy. The development of clear curricula for professional areas such as horticulture is needed to prevent this decline.

19. We welcome the publication of the Report as a start to the journey but as we indicate in the above comments there is a real need to discuss the continued divide between HE and FE and the development of clear curricula for all of those professional areas seen as important to National growth.