# COHERENCE AND SUSTAINABILITY: A REVIEW OF TERTIARY EDUCATION AND RESEARCH

Scottish Funding Council
Comhairle Maoineachaidh na h-Alba

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# FOREWORD

**by Dr Mike Cantlay, Chair of SFC**

We are living through unprecedented times. Colleges and universities were already facing financial sustainability pressures, but COVID-19 sent shock waves through the sector here and across the globe. We simply do not know what changes it will lead to internationally in terms of research priorities and collaborations, or student travel and study patterns. There are potentially major shifts on the horizon in the UK-wide policy and funding environment that may affect cross-border student issues, for example, around admissions, fee levels and lifelong learning entitlements, alongside the evolving research and innovation landscape. In addition, the Scottish Government plans to pursue potential changes in the constitutional relationship between Scotland and the rest of the UK, and with the European Union.

This means we are all operating within a context of unparalleled uncertainty. We pay tribute in this report to the continued flexibility, resilience and civic responsibility demonstrated by students and staff right across the sector. And we recognise the diversity, depth and strength of our tertiary education and

research system. Scotland's colleges and universities are among the best in the world and they are key to our economic and social renewal, a green recovery, and our ability to lead healthy lives and to flourish.

Against this backdrop of challenge and opportunity, I was delighted that Scottish Government Ministers commissioned the Scottish Funding Council to review how best we can fulfil our mission of securing coherent tertiary provision and excellent research in these changing times. The Review has been informed by the excellent Cumberford-Little and Muscatelli Reports; over 100 respondents to our call for evidence; widespread discussions with students, employers, unions,

representative bodies, academics; and by reference groups involving a wide range of interests. The process has been overseen by a Programme Board involving external experts, and the Review process has produced material in the phases leading up to this final report. I am immensely grateful to everyone who has helped shape this Review Report and our recommendations.

We have, by necessity, a complex and diverse system and no one-off, single solution will provide all the answers. Instead this Review aims to help design a smart environment that can respond to the partly unknown challenges and uncertainties that will continue to face tertiary education. It sets out how we can continue to develop a coherent tertiary education, skills and research system that is responsive to learners, and the economic, cultural and social needs of Scotland - a system that respects the autonomy and subsidiarity of individual institutions, while working collectively to remain sustainable, plan together and deliver good outcomes. Ultimately, we want to ensure public investment produces genuine public value. We all have role to play in achieving this.

We look forward to working constructively and collaboratively with the Scottish Government, colleges, universities and wider stakeholders in delivering next steps for the future.

PHOTO: MORAY COLLEGE

## REVIEW SUMMARY AND KEY RECOMMENDATIONS

The Scottish Funding Council (SFC) is the national, strategic body that invests £1.9 billion in tertiary education, research and knowledge exchange, through colleges and universities. In June 2020, Scottish Government Ministers asked us to review how we could best fulfil our mission of securing coherent, good quality, sustainable tertiary education and research in these changing times. This Review has been conducted over three phases, and in an inclusive, evidence-based and collaborative way that gathered views through an open call for evidence, and short-life advisory and reference groups. It stands on the shoulders of Scottish sector expert reports (such as the Cumberford-Little and Muscatelli Reports) and has benefited immensely from the generous insights and guidance of countless participants from across and beyond the sector who were also managing acute pandemic situations and many other priorities. We are grateful to everyone involved.

This Review is not intended to be an endpoint. There is no one simple answer to the commission, only hard choices in uncertain times. We have outlined the challenges and complexities we face collectively and the significant strengths and necessary diversity of the institutions, subjects, qualifications and research evident across Scotland. Given the importance of subsidiarity in decision-making and the autonomy and agency of institutions and other actors within the tertiary and research system, we highlight the importance of deeper collaboration and partnerships to effect change. We aim to balance ambition and pragmatism, pandemic pivots and long-term adaptation. Our recommendations, therefore, build logically from years of policy direction and investments that are particular to tertiary education and research in Scotland, to enable the system to evolve to be even more coherent, responsive and effective for the years ahead,

for current and future students, for the skills needs of employers and for wider social and economic goals. We provide an overview of our recommendations in this section, and all our detailed recommendations are threaded throughout this report and collated in Annex 1 of this Review Report.

The current system has many strengths that sit alongside our recommendations for the future. Colleges and universities are major national assets, with significant social, economic and cultural impact. Their excellent research catalyses ideas, innovation and economic growth; and they create a pipeline of skills across technical, vocational and critical thinking requirements at every level and from all walks of life. The return on investment for colleges and universities ranges between £6.50 and £11 for every £1 invested. They employ 62,000 people (with an additional 73,000 jobs supported by universities alone) and they help shape local communities and address social inequality and disadvantage. Their global reach is unparalleled, bringing reputation, investment, collaboration, talent and cultural diversity to Scotland. We are clear about what could be better but we understand the importance of what we already have.

## KEY RECOMMENDATIONS FOR SYSTEM CHANGE

**Develop a clear strategic, longer term vision and intent for the future of tertiary education and research undertaken by colleges and universities in Scotland, that incorporates multi-year funding assumptions and commitments, and a new National Impact Framework** to enable the sector to better plan provision for students and employers, secure excellent research and international reputation, and adapt business models and drive collaborations to remain sustainable and achieve desired outcomes.

**Protect excellent discovery research and develop mission-orientated research and knowledge exchange activities,** in order to create knowledge of immense social, economic and cultural value; and to maintain Scotland's associated international reputation which acts as a magnate for talent and investment, and is fundamental to the resilience and sustainability of the sector.

**Build capacity and a more systematic approach to the way we collectively plan coherent tertiary education and skills provision and investment, so that it responds better to current and f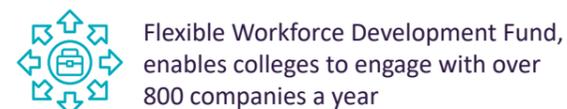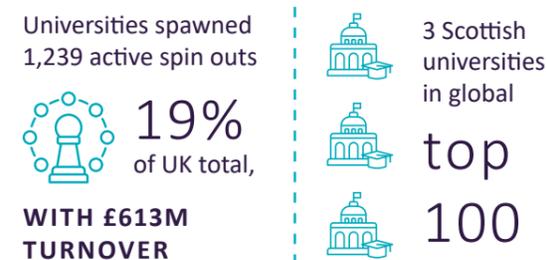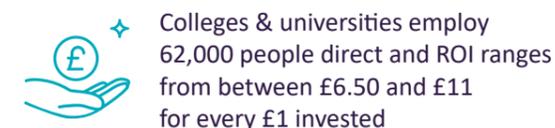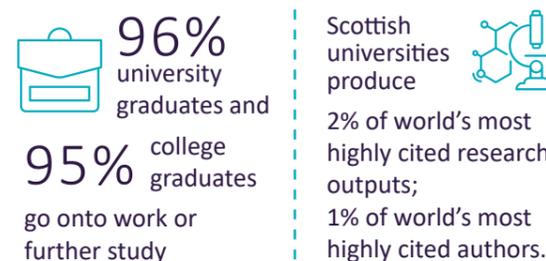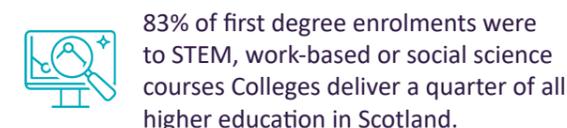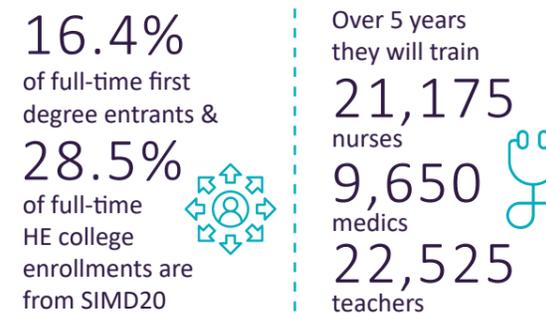uture needs** of pupils, students, employers and broader economic and social drivers, while holding in balance the policy imperatives of promoting fair access and equalities, and the journey to a net zero carbon future.

**Find better ways to support learning throughout life,** to enable people to reskill and upskill, as the labour market and the future world of work shifts, and to get credit for that learning, by reviewing existing targets, the assumptions that underpin existing funding models and student support, and qualification frameworks.

**Ensure the interests of current and future students are protected and promoted** in the development of standards, outcomes, blended and digital learning opportunities, equality and inclusion actions, participation frameworks, investment and approaches to accountability.

**Recognise more fully the importance of international education connections and global research standing** as an intrinsic part of Scotland's social and economic prosperity, the student and staff experience, and the success and sustainability of the higher education sector.

**Galvanise current and future leaders across tertiary education, skills provision and research to work together to effect system change,** building from our existing strengths, to tackle knotty long-term challenges and opportunities, and to develop the system for the future.

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**16.4%** of full-time first degree entrants & **28.5%** of full-time HE college enrollments are from SIMD20

Over 5 years they will train **21,175** nurses **9,650** medics **22,525** teachers

83% of first degree enrolments were to STEM, work-based or social science courses Colleges deliver a quarter of all higher education in Scotland.

**96%** university graduates and **95%** college graduates go onto work or further study

Scottish universities produce 2% of world's most highly cited research outputs; 1% of world's most highly cited authors.

Colleges & universities employ 62,000 people direct and ROI ranges from between £6.50 and £11 for every £1 invested

Universities spawned 1,239 active spin outs **19%** of UK total, **WITH £613M TURNOVER**

3 Scottish universities in global **top 100**

Flexible Workforce Development Fund, enables colleges to engage with over 800 companies a year

Regeneration projects involving colleges and universities are worth **£407 million** over 5 years

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## SURVIVING AND THRIVING WITH COMMITMENT AND IMPACT

• As we are still working through a pandemic that will ripple into the next two academic years, **we recommend the Scottish Government rolls forward the extraordinary measures and funding from AY 2021-22 into AY 2022-23 so that colleges and universities can play their full role in economic and social recovery.** This should include enabling SFC to design a new one-year intervention to support graduating students of all backgrounds into employment opportunities where necessary, with a focus on those most likely to be affected by the pandemic.

• **We recommend the Scottish Government sets out its overall strategic, longer-term intent for colleges and universities** in a way that articulates its vision and direction for tertiary education and research, and provides guidance for the development of associated frameworks.

• To enable colleges and universities, along with SFC, to undertake better strategic planning, adapt business models and collaborations, forge lasting and deeper relationships with industry and sector partners, and ultimately secure greater impact **we recommend the Scottish Government sets out multi-year funding assumptions and commitments across tertiary education and research.**

• A new overarching **National Impact Framework** for the sector should be developed by SFC, collaboratively with the sector, students and key stakeholder, to provide a more direct line of sight to Scotland's National Performance Framework and United Nations Sustainable Development Goals, and the government's strategic intent. This would provide greater clarity about expected outcomes for students, research impact, economic and social renewal, and leadership for the climate emergency, equalities and fair work. It would provide the overarching context for a more targeted Outcome Agreement negotiation between SFC and institutions. SFC is the first public body in Great Britain to develop a Memorandum of Understanding with the Equality and Human Rights Commission to increase scrutiny of the progress being made by colleges and universities to advance quality, diversity and inclusion, and to bring coherence to equalities reporting. This work will also inform the outcomes we should expect in the development of a National Impact Framework for all institutions and how best to report progress.

## TOWARDS A RESPONSIVE, COHERENT EDUCATION AND SKILLS SYSTEM

• We recommend the **introduction of a revised approach to strategic provision planning and skills alignment**, which would include **SFC convened Tertiary Provision Pathfinders** to better explore strategic planning and partnership working at a regional level, assessing demand and future tertiary and skills provision that balances the needs of students, employers and broader economic and social drivers. This would maintain a focus on widening participation; equality, diversity and inclusion; and the need to tackle the climate emergency.

• Given the need for deeper, long term and less transactional relationships between business, industry and academia, we recommend SFC works with the Scottish Government to develop a more strategic and comprehensive **Economic Recovery and Employer Engagement Investment Programme for colleges and universities** and that SFC establishes an **Employer and Industry Advisory Group** to work across the full spectrum of SFC's mission from coherent provision to research and knowledge exchange.

• In response to the post-pandemic planning and delivery challenge of providing inclusive and high-quality training for the health and social care professions, that meets the needs of diverse communities across Scotland, **SFC will develop and deepen strategic relationships with NHS Education Scotland (NES)** using shared data and our combined understandings of the demand for skills and the supply of college and university education to address it.

• As learning throughout life will become increasingly important and the pace of change in the jobs market will require people to undertake more frequent reskilling and upskilling (while too many people still have few or no qualifications), **we recommend the development of shorter, sharper courses to support learning throughout life** to be

enabled in part by further work by SFC, the Scottish Government and partners to revise existing activity targets and model different planning assumptions for our funding. **We also recommend SFC pilots a National Micro-Credential Framework and Delivery Plan for Scotland** to certify this bite-sized learning and explore how modules can be combined to form larger qualifications over time. The Scottish Government should also consider with us what further flexibilities in student support will be required to fully support learning throughout life.

• Given the significance of the college and university estate to Scotland's built environment, cultural identity, economic and community development, and the creation of economic activity, **we recommend that the Scottish Government should work with SFC and the sector to develop a national vision and strategy for the college and university estate that prioritises areas for collaboration (between institutions, and potentially with industry) and between regional partners**. This should include joint planning on national infrastructure and estate planning for future digital requirements; on a route map to achieve net-zero emission goals; and to respond to changing student expectations. **We also recommend the Scottish Government reviews its current funding for low carbon estates projects to support colleges and universities and considers multi-year funding; works with SFC and the finance industry to investigate new funding vehicles for capital funding; and supports incentives for collaboration activities between colleges and universities.**

• In line with the Scottish Government's ambition to achieve a modern, high-value, inclusive economy, **SFC we will evaluate the progress the sector is making towards adopting Fair Work First criteria** that aim to generate work that offers people an effective voice, opportunity, security, fulfilment and respect.

## PROTECTING AND PROMOTING STUDENTS' INTERESTS

• The pandemic experience has been unprecedented for students, and for the academic and support staff who have worked so hard to respond effectively to the needs of students throughout this remarkable crisis. We have captured snapshot feedback from student representatives of the lived experience of students across Scotland, to sensitise policy-makers, funders and decision-makers to the issues that should affect preparations for AY 2021-22. We also draw out the shifting patterns of expectations that will affect how institutions engage, respond to and support students whose experience will vary depending on their circumstances and shared protected characteristics.

• We invest around £34m each year in the delivery of learning in schools across Scotland. We will work with the Scottish Government to enhance pathways and more efficient routes that reduce unnecessary levels of study so that we can direct our investment in schools to best effect. **We will introduce a National Schools Programme for Tertiary Education in Scotland** to develop existing successful projects that act as a bridge between Senior Phase school and tertiary education into a recognisable, visible and coherent programme.

• It is a testament to the focus of SFC and committed staff and governors across the sector that we have made significant collective progress in the delivery of the Widening Access Commissioner's Blueprint for Fairness, not least achieving ahead of time the interim target that students from the most deprived communities should represent at least 16% of full-time first-degree entrants. **We recommend working with the Scottish Government on how best to take our widening access work further**, including the way we measure and invest funds, set targets and track widening access, and the role of a commissioner for the future. **We also recommend**

working with students and institutions to develop a refreshed set of institutional expectations on fair access pathways, ensuring that proper account is given to outreach and representation.

• Excellent online and blended learning delivery for students is no longer nice-to-have, but will now be part of the core strategy of every educational institution, regardless of the continued importance of residential and campus life. The rapid pivot to online learning in 2020 was only possible because of the brilliance, flexibility and dedication of teaching and support staff. **We will work with sector agencies to realign SFC's investments to support the digital skills of educators** so that they are equipped to develop and deliver high quality online and blended learning that meets the needs of students; and we will support the change agenda within our colleges and universities by **working with JISC to explore the creation of a national digital consultancy service for senior leaders in tertiary education**, reflecting Institutions' own plans for development and SFC's investment, to inform future decisions and investment priorities so that we can accelerate change and implement good practice together. **We further recommend the Scottish Government improves the provision of equitable digital connectivity on and off campus to enable students in post-16 education to take up technology-enhanced learning opportunities.**

• While there is widespread support for external scrutiny of quality, the current bifurcated approach for colleges and universities no longer provides the oversight needed for a more integrated tertiary system. **We recommend the development of a single framework for quality for colleges and universities**, to uphold academic standards and secure enhancement of the learning experience of students. This framework should have at its heart making Scotland the best place to be a student within a college or university and sharing good practice across tertiary education. **We will work with partners to develop a national level standard for online and blended learning**, to ensure students and quality assessment frameworks are clear about expectations and effective practice.

## SUSTAINING RESEARCH AND ENHANCING KNOWLEDGE EXCHANGE

• Scotland's universities deliver consistently cutting-edge research that creates knowledge of immense social, economic and cultural value. We are genuine world leaders across key areas of research and **we recommend that the Scottish Government continues to protect excellent discovery research funding and that SFC maintains the current concentration of research across the sector, funding excellence where we find it.** We will change our approach to evaluation and gather better evidence of how universities are using our core funds for research, and how we account for spill-over benefits.

• Given the excellence of our research base and the collective challenges we face, we outline the need to mobilise funding and action, across disciplines, to coalesce around particularly knotty societal problems. **We recommend developing mission-orientated research and knowledge exchange themes and funding** at a national level to catalyse cross-sector working and collaboration that maximises resources and expertise to tackle long-term challenges (particularly the climate emergency and net-zero carbon). This missions-based approach would be co-created and developed with a range of partners including active researchers, and sit alongside our investment in discovery research, and would galvanise our knowledge exchange investments.

• As we compete for global talent and open up research careers to a wider range of people, promoting diversity and inclusion, and attracting all the talents, **we will work with the sector to develop a blueprint for establishing a positive research culture in Scotland**. We also outline a suite of recommendations to better **support the postgraduate research student experience**, with more rounded expectations about the acquisition of skills in leadership, business acumen, and entrepreneurship; and consolidate our support for national graduate

schools as important communities that can foster collaboration and a positive culture.

• SFC's Research Pooling Initiative has secured significant investment in cross-institutional collaborations to achieve critical mass in key disciplines, like informatics, life sciences, marine science. **We recommend that SFC recommissions Research Pools, creating next-generation networks** with a focus on challenge-oriented research collaboration, leveraging additional funding and fostering early career researcher communities and training.

• To build on our research excellence, and to make the most of the research, skills support and knowledge base of colleges and universities, we have invested in Innovation Centres, Interface and other major facilities, to help encourage businesses to invest in Research & Development (R&D), to benefit from innovation and to raise ambition and wages. We intend to centre our knowledge exchange and innovation support on the top priorities of a green recovery, a well-being economy and transition to a net-zero carbon society; and **we recommend SFC relaunches our flagship knowledge exchange investments, Interface and the Innovation Centres, establishing a new overarching Knowledge Exchange Advisory Board, a more stable investment relationship, and redefined metrics of success. We also recommend that SFC works with the Scottish Government to create a new Knowledge Exchange and Innovation Fund for universities and colleges**, to provide underpinning support to contribute to national and regional economic and social goals.

• **We recommend co-designing an Entrepreneurial Campus Strategy** to dramatically increase the flow of entrepreneurs into technology and other innovation ecosystems; and continue to develop the capacity of the academic community to train entrepreneurs and business leaders to themselves teach the entrepreneurs of the future how to scale up successful businesses.

## INTERNATIONAL EDUCATION

• Universities and colleges are assets for Scotland in terms of their international reach and activity. They are exporters of education; secure partnerships across the globe; attract investment and talent; enrich the experience and cultural environment for students; and rely on their international reputation to attract international students as a fundamental part of their growth and financial sustainability strategies. The excellence of university research underpins that reputation (given its importance in international league tables). So, highly ranked, research-intensive universities are fundamental to the resilience and sustainability of the sector as a whole and provide wider benefits for Scotland given their global standing. The Scottish

Government has committed to developing an **International Education Strategy** that positions Scotland as a primary destination for international students and recognises the international education delivered by universities and colleges as an intrinsic part of Scotland's economic and social recovery strategy. We suggest elements to consider in the development of that strategy, including the need to maximise connections and collaboration across alumni networks, within international missions, through exchange and mobility schemes, and government overseas engagements.

• Given the competitive international environment, **we recommend the Scottish Government works with the sector to develop a strong marketing strategy for the Scottish tertiary education and research brand**, with urgency, particularly across prime digital channels, that showcases beacon institutions and emphasises Scotland as a safe, welcoming, supportive, socially progressive, environmentally aware destination.

## SUSTAINABILITY AND COLLABORATION

• While the financial impact of the pandemic has been unpredictable and unprecedented, exposing fragilities and the reliance on international student income, it has demonstrated the success of mitigation strategies across the sector. Institutions will adapt to changing times to fulfil their missions, although Boards and Courts will face difficult decisions in that process. As we emerge from this pandemic and develop themes from this Review **SFC will work with the sector to intensify collaborative and integrated working, consolidation, and shared support services** to accelerate the delivery of good outcomes for students, employers, and regional economies, as well as ways of securing institutional sustainability. We make recommendations

throughout this Review that should support sustainability, particularly the need for longer-term planning assumptions to provide clearer signals to enable institutions to adapt their business models.

• **We recommend the Scottish Government provides additional year-end flexibility to assist financial management in colleges and considers the benefits and risks of a different classification of colleges.**

• **The Scottish Government should work with SFC in responding to the recommendations for change relating to multi-college regions we set out in our Phase One Report.** We can advise government about developments since those recommendations were made in October.

• We recommend the **Scottish Government makes the case for SFC's continued strategic oversight of replacement European funds from the UK Government that affect the delivery of programmes in colleges and universities.**

## FRAMEWORKS FOR THE FUTURE

• We will operationalise the Scottish Government's strategic intent and the proposed National Impact Framework through four inter-linked and mutually reinforcing activities – investment; quality assurance; impact and accountability; and analytics and insight – across tertiary education, research and knowledge exchange, and our investment in related infrastructure.

• **We will work with the sector to revise our approach to Outcome Agreements**, to ensure our investment is providing the right mix of diverse education and skills provision; and **we will enhance data, analytics and evidence sharing** to secure public confidence in the sectors and enhance our collective ability to make good decisions and invest wisely for the future.

• The implementation of national bargaining in the college sector has heightened variations in investment patterns between regions. While our funding should be responsive to particular circumstances and policy drivers, **we recommend the SFC convenes a working group, to include the Scottish Government and the college sector, to agree a plan to move towards a fairer model of distribution of teaching investment across the sector.**

• To support the development of integrated approaches to tertiary education, **we recommend that the Tertiary Provision Pathfinders explore the necessary conditions for a more integrated tertiary funding model between institutions** and that we pilot more integrated funding and target-setting with our two most integrated tertiary institutions, the University of the Highlands and Islands (UHI), and Scotland's Rural College (SRUC).

• We will work with the sector to review the way we fund premiums as policy incentives and develop further our approach to performance-based funding. SFC currently provides "non-core" funding to a wide range of organisations, initiatives and programmes. There may be an opportunity to use some of these funds as transformation funding, to support institutional change and collaboration, strategic improvement and efficiencies, and to explore options for the future.

## CONCLUSION: SYSTEM LEADERSHIP FOR THE FUTURE

• While this Review has articulated the dynamic uncertainties we are living with, the difficulty in predicting with precise specificity what we need from the tertiary and research system, and the complexity of sustaining and changing this system, we have made recommendations that build from existing strengths in a measured and evolutionary way and will improve the way the system functions.

• Every day dedicated staff, students, researchers and governing bodies solve problems and make improvements and adjustments. To develop the sort of coherent, responsive and sustainable system that Scotland needs for the future requires a different sort of adaptive, collaborative leadership. We should invest in the leadership that will make change happen. We will explore the establishment of a National Leadership Programme that would bring together colleges and universities to invest in adaptive leaders who will become the innovators we need to develop our system for the future.

• For SFC itself, if we are to fulfil the ambition expressed by participants in this Review and work collaboratively with partners on these recommendations, to be a key adviser to government and the strategic authority for tertiary education and research, the Scottish Government and the sector, together, need to invest in SFC and its capacity to be an agent of change that can hold in tension the often delicate dynamics of public policy, institutional autonomy, and pressured funding rounds.

• We have a truly world-leading tertiary education and research system. It will be increasingly challenged to deliver what Scotland needs. But we have solid foundations and a unique set of building blocks that should enable us to respond effectively and at pace, and set ambitious pathways to the future.

PHOTO: UNIVERSITY OF ST. ANDREWS

## SETTING THE SCENE

### BACKGROUND AND REMIT

1.1 The Scottish Funding Council (SFC) is the national, strategic body that funds further and higher education, and research, in Scotland. Our purpose is to invest £1.9BN wisely, to create and sustain a world-leading system of tertiary education, research and knowledge exchange that changes lives for the better, enriches society, and supports a well-being economy. Our main statutory duties and powers come from the Further and Higher Education (Scotland) Act 2005. We have two core statutory functions: to secure the coherent provision by post-16 education bodies of high quality and fundable further and higher education; and to secure the undertaking of research.

1.2 In June 2020, we were asked by Scottish Ministers to review how we could best fulfil our mission in these changing times:

a) To consider how best to achieve coherence and sustainability in the delivery of further and higher education during the COVID-19 crisis, European Union (EU) exit transition, and beyond, while maintaining and enhancing quality.

b) To ensure the sectors can address the outcomes we need to achieve in Scotland.

c) To propose changes needed to SFC's funding, operations, and accountability frameworks in order to respond effectively to new challenges and opportunities.

d) To provide advice, where appropriate, to Scottish Ministers on relevant changes to policy, funding and accountability frameworks for tertiary education and research in Scotland.

1.3 We have conducted the Review over three phases (Phase One: July-October 2020; Phase Two up to March 2021, and Phase Three to June 2021), with reports and other published material available on our website. We stand on the shoulders of Scottish sector experts and several commissioned authors whose work has helped guide and shape our thinking, in particular:

- The Cumberford-Little Report: One Tertiary System: Agile, Collaborative, Inclusive (Feb 2020).

- The Muscatelli Report: Driving Innovation in Scotland – A National Mission (Nov 2019).

- The Report of the Advisory Group on Economic Recovery to the Scottish Government (June 2020).

- A Sub-Group of the Enterprise and Skills Strategic Board Report on measures to mitigate labour market impacts (July 2020).

- Commissioner for Fair Access' annual report (Aug 2020).

- Accelerating Articulation: Final Report from the National Articulation Forum (Aug 2020).

- The Logan Review: The Scottish Technology Ecosystem Review (Aug 2020).

- The Heathwaite review: The Independent Review of the SFC's Research Pooling Initiative (Sept 2019).

1.4 We have aimed to be inclusive, collaborative, evidence-based and connected to other relevant wider developments across the rest of the UK and further afield. We have used desk-based research, drawn on other reviews and reports, assessed over 100 responses to our initial call for evidence, hosted round-table discussions and reference groups with stakeholders and experts from many other sectors, used short-life advisory groups, and engaged with a wide range of existing groups and forums.

1.5 We have all been buffeted by unforeseen COVID-19 cross-winds and the need to respond to unfolding events in order to deal with restrictions and support students, researchers, and institutions to survive and thrive in these extraordinary times. We are immensely grateful to everyone who gave us their time, insights and guidance while managing acute situations and many priorities. This Review Report is not intended to be an endpoint – because there is no one simple, right answer to the commission, we are unlikely to find consensus on some of the hard choices it presents, and because we are living in such uncertain times. It is a Review Report that demands we keep pulling threads from it, collaboratively on the many challenges and opportunities we face, mediating many interests, and understanding the underlying assumptions and trends that will strengthen tertiary education, research and knowledge exchange into the future.

## OUR STARTING PRINCIPLES

1.6 **We are proud of our world-leading tertiary education and research system** – and the response to this Review shows just how widely that feeling prevails. We pioneered regionalised colleges, capable of providing strong community anchor points, playing their full role in local economies and reaching people furthest away from the labour market. They support top-level professional talent and college students can compete anywhere on the world stage in technical skills. We have world-leading universities with cutting-edge research, and brilliant small specialist institutions., and two integrated tertiary institutions. We have free (at the point of access) college and university tuition for Scottish domiciled students, a strong commitment to widening participation in higher education from disadvantaged communities and people who are care-experienced, and three universities in the top 100 in the world all of whom improved in the latest 2022 QS world university rankings, alongside the Royal Conservatoire of Scotland (ranked third in the world for performing arts education) and Glasgow School of Art in the global top ten for art and design. Indeed, universities have educated people in Scotland since the early fifteenth century and are essential bearers of culture and learning across the generations. Our universities are as innovative now as they were then through the formation of partnerships with industry and others, expanding opportunities and supporting talent. We are trailblazers and beacons of excellence, and we have a deep footprint in the intrinsic value we attach knowledge and education. We're clear and open about what could be better but we understand the importance of what we've already got.

1.7 **We are unique but our challenges are universal.** Our tertiary education and research system is specific to Scotland, but the problems we face and the questions we ask ourselves are not only eternal conundrums, they face all nations. We are going through a profound shock in dealing with the COVID-19 pandemic. The next 50 years will bring further profound change everywhere – Industry 4.0 will bring greater automation and artificial intelligence as new engines of growth and we will need to keep up-skilling and reskilling ourselves. This will mean developing new entry points, qualifications, methods of delivery, curriculums and funding approaches to respond effectively and to compete in the world. We will need to acquire new knowledge and speed up its transmission to keep up with the pace of change, ensure social and economic benefit, address global challenges such as climate change, and support future health and wellbeing. Our system needs not only to respond to these changes, but also to help shape our future.

1.8 **We believe in requisite variety.** The diversity and complexity of our tertiary education and research system enable Scotland's colleges and universities to address the wide range of problems and opportunities – we need and value this diversity and complexity. Having a repertoire of responses, which is at least as nuanced as the challenges we face, is a strength within our system. One size and over-simplified solutions will not do it for us. In that vein, we believe in the importance of the arts and humanities, and social sciences just as much as STEM (Science, Technology, Engineering and Mathematics). We emphasise this to show the nature of some of the false dichotomies we face.

"The central importance of the role of education in the reconstruction of the economy is unarguable, and the breadth of what this means needs to be reconsidered. We need to accelerate existing concepts being developed in schools to prepare some children for their later years for vocational roles and apprenticeships. We must strive to ensure that learning is designed to match the skills we need in Scotland in future. Reskilling and lifelong learning will be vital too. Our universities are the envy of many around the world. We must protect them but also leverage them to greater effect; we must transform acknowledged world-class research into comparable levels of development, and, in turn, large-scale commercialization. We need an education-led recovery."

TOWARDS A ROBUST, RESILIENT WELLBEING ECONOMY FOR SCOTLAND, ADVISORY GROUP ON ECONOMIC RECOVERY

1.9 For our future prosperity we must understand the importance of STEM subjects, and work-based and profession-focused learning (83% of first-degree enrolments are in STEM, work-focused professions or social sciences) and do more to address STEM skills shortages we are likely to face, but we must also consider our ability to flourish as individuals, and to think about the arts and humanities and social sciences as essential to our ability to make sense of the world around us, to help develop public policy, learning lessons from the past, and bringing critical thinking to complex problems. Increasingly, we need to blur traditional disciplinary boundaries and combine them. For example, Scotland's gaming industry is a fusion of different disciplines and knowledge – coders and computer programmers working alongside musicians, artists, and storytellers.

1.10 Creativity and curiosity will be vital sparks for our future prosperity and wellbeing, alongside the need to re-energise our STEM capabilities; and that, of course, will challenge our current systems and ways of delivering education as will the need to re-skill throughout our entire lives. The ability of tertiary institutions and researchers to work across sectors, with governments and industry, across borders, and across traditional academic disciplines to bring together different fields of knowledge, will be vital to our ability to address our big current and future challenges – pandemics, the climate emergency, poverty, the rise of artificial intelligence, conflict and security.

1.11 **We must harness all our talents as a country.** We know education changes lives – it develops people who are curious, open to ideas and able to interpret the world around us and our complex lives. It unlocks opportunities not just for one person, but by changing expectations, it passes to their children and on through generations. There are many bright, talented people who simply haven't been encouraged to think about themselves as people with talent and prospects. In AY 2019-20, 16.4% of Scottish-domiciled full-time, first-degree entrants to universities were students from the 20% most deprived areas, equating to around 1000 more students from these disadvantaged areas than four years ago. Colleges provide opportunities to many people furthest away from jobs and qualifications, and around 34% of entrants students studying full-time further education courses to come from the 20% most deprived areas, with over 29% of full-time higher education students coming from this background in higher education at colleges. In addition, 42% of students from the most disadvantaged backgrounds go to university from college. Our education and skills system is at the heart of Scotland's focus on improving public health through tackling inequalities and can support all learners to succeed and change intergenerational prospects. Our research community can be diverse and open to all talents.

1.12 **Colleges and universities are vital in the drive for economic and social renewal and a green recovery.** Colleges, universities and small specialist institutions, shape our well-educated working population, with dedicated professionals teaching around half a million people every year, and provide a pipeline of skills across technical, vocational and critical thinking requirements, developing people from all walks of life, workers who need to reskill for different jobs, researchers who will help us live better lives, the leaders of tomorrow, our healthcare professionals, teachers and technicians, artist and designers– the full spectrum of talent that Scotland needs.

1.13 Brilliant people in these institutions catalyse ideas and new discoveries through research, knowledge exchange and innovation; they put that know-how to good use; and they are a vital ingredient in our global reputation and competitive advantage. Indeed, Scotland consistently performs well in terms of attracting Foreign Direct Investment (FDI) projects, ranking second behind London across the UK, with the quality and availability of researchers cited as key factors for locating R&D activities.

1.14 In tackling the climate emergency, and given the importance of the United Nations (UN) Climate Change Conference (COP26) in Glasgow, colleges and universities are key in the achievement of the green economic recovery, a just transition to a net-zero economy that is fair for all, and a sustainable future, through the provision of educated and skilleds people to take up new and emerging jobs, jobs affected by the transition to net-zero, and existing jobs that will be needed in greater numbers; by being at the leading edge of academic practice that attracts discerning students, inward investment and low-carbon spin-out formations; by creating solutions through research and knowledge exchange; and by decarbonising campuses and providing leadership in sustainable commitments, and the just transition, as anchor institutions within their regions and communities.

1.15 Colleges and universities are also big businesses in their own right, employing 62,000 people directly, with an additional 73,000 additional jobs supported by universities alone. In recent years there were around 1,240 active university spin-out companies in Scotland (19% of the UK total), generating around £613 million. In general, for every £1 of public investment in Scotland's universities, the benefit to the Scottish economy is £11; and for colleges the return is around £6.30. Every public £1 invested in R&D creates £7 of net benefits and leverages around £2 of private sector investment. They are part of the built environment and community assets.

1.16 We need a **whole-system view of coherence** because so many elements are inter-connected – when you tinker with one bit of the system, you affect another. For example, around 44,000 secondary school students are part of school-college link programmes; colleges enroll around a fifth of higher education students across Scotland; and 42% of SIMD20 Scottish entrants to a degree course at university obtained a Higher National qualification at college first. We have a huge opportunity to build accessible and integrated pathways for learners over their lifetimes, to make connections to regional and place-based strategies – community learning and development, schools, economic growth, inward investment; to better match the pipeline of talent with the employability skills and role-specific skills employers need; to translate our research strengths into knowledge that makes a difference; and to keep our sector competitive across the globe. Review participants were clear that we should take a whole-system view that goes beyond the institutions to also include current and potential future students, businesses and the communities they interact with. Commonly defined attributes of a comprehensive, coherent system are captured in the box below, and link to Scotland's National Performance Framework, underpinned by the United Nations Sustainable Development Goals.

1.17 **Accelerated and deeper collaboration is the key to the future!** The sector has evolved significantly over the past decades through conscious policy and legislative change, cost reduction, to achieve sustainability, and to provide more coherent geographic provision. It is important that colleges and universities are successful in their own right, while maximising opportunities for collaboration, and recognising a shared commitment to a sustainable future. This means encouraging a greater exploration of different structures and models to secure sustainability and more coherent provision and collaborative research. If we collaborate for change – colleges, universities, students, employers and key interests - in an iterative way, we firmly believe we will bring forward better options for the future than imposed national structural change.

1.18 We believe in **subsidiarity, autonomy, and agency** beyond government and national bodies. Local and national governments, and national bodies, can work together to help create the conditions for good decisions and outcomes by institutions, students, and at different spatial levels and through collaborations. Every part of our system has a role to play and can be part of delivering the success Scotland needs.

1.19 We are attempting to **balance ambition and pragmatism, pandemic pivots and long-term adaptation.** There is an appetite for change, a massive opportunity to take good lessons from the pandemic response, but huge uncertainties and many shifting tectonic plates. There are destabilising forces at play just now. We want to provide stability while signaling future directions of travel. Therefore, we are working at two speeds – the here and now, and the longer term. We are still in a pandemic and need to deal with immediate issues that will have a long tail of inequality and unknown consequences. This is a sector that can be agile and pivot quickly to make rapid adjustments, but more profound change takes time and ongoing effort to build a resilient, responsive, sustainable system.

*"Scotland's universities are among the best in the world, with a social impact that is felt right across the globe – at the vanguard of work that is leading the way in helping to meet some of the major social, economic and environmental challenges of the 21st century... in creating a skilled workforce...attracting FDI, translating research into new products for the private sector, creating spin-out companies and generating export income through international research."*

DRIVING INNOVATION IN SCOTLAND – A NATIONAL MISSION: THE MUSCATELLI REPORT

## FOR A LEARNER, A COHERENT SYSTEM MEANS:

• You have learning, skills and qualifications that provide knowledge and attributes that are transferable, updatable and relevant internationally.

• Wherever you live and wherever you come from, you have regional access to education up to SCQF level 8 (Higher National Diploma, Diploma for Higher Education).

• You have opportunities for learning and training that contribute to Scotland's social and economic prosperity over your lifetime, irrespective of mode or level of study.

• You take fewer wrong turns, dead ends, and repeats, and you have effective guidance and information to help you find an efficient path through your learner journey.

## FOR AN EMPLOYER OR BUSINESS, A COHERENT SYSTEM MEANS:

• Whatever the size and nature of your business, there are channels for you to engage with the expertise of colleges and universities, when and where you need it.

• You have access to an educated and skilled workforce that is ready for the world of work and can quickly develop new or specialist skills when you need them.

• You have opportunities to develop the expertise to optimise your business performance and productivity through connections with colleges and universities.

• You can work with colleges and universities to accelerate and grow through knowledge exchange and technology transfer, and to plan for the skills you need to change and innovate.

## FOR SCOTLAND, THE COHERENT SYSTEM IS:

• Resilient for the future.

• Affordable in the short and long term.

• Effective: it provides a diverse and required mix of provision at regional and national level; is capable of delivering new insights, quality provision, employable graduates, excellent research, innovation & enterprise; and tackles inequality.

• Efficient: it operates at the right scale, and with others, to minimise duplication, optimise digital technology, and tackle the climate crisis.

• Able to deliver research and teaching at world-class level with global impact, making Scotland an attractive place to invest in, study, research and locate your business.

• Strengthening communities and building partnerships that collectively address the challenges and opportunities for economic and social transformation.

This view of a coherent system provides a succinct definition of the attributes Review participants want us to consider as we share our findings and make recommendations.

"Colleges in Scotland are nowadays metropolitan, regional, and rural powerhouses for pre-employment and technological education, sector-specific training and in-work reskilling and upskilling; they are beacons for social and human capital development and inward investment; they are bulwarks for social mobility, for continuing education and for lifelong learning. In Scotland, they are an essential lifeline to help some of the most vulnerable, fragile and marginalised in society onto pathways...are major economic catalysts... and are often first responders when firms collapse..."

TERTIARY SYSTEM: AGILE, COLLABORATIVE, INCLUSIVE: THE CUMBERFORD-LITTLE REPORT

## WHAT HAVE WE LEARNED FROM THE PANDEMIC?

It has been a tough, unpredictable year financially for colleges and universities which has exposed both the financial fragility and underlying structural weaknesses of the sectors, as well as highlighting the success of mitigation strategies and measures put in place to cope with an unprecedented financial shock.

1.20 We have all been tested through this pandemic and our response has demonstrated **collective resilience, adaptability, perseverance, leadership and civic responsibility** by students, institutions, staff, governments, and representative bodies. It has forged closer partnership working and mutual support networks and shared good practice. While there have been significant challenges, we have learned from each other, as we have responded rapidly to changing circumstances, policies and processes, and as we have put our shoulders to the national mission. People across the sector led a fantastic response to get campuses COVID-19 safe, while lecturers, teachers and support staff went online rapidly, and researchers continued to write papers from home, win grants and do research. We learned to connect across different time zones and different corners of the world. There will be digital and environmental silver linings if we capitalise on the learnings and opportunities and build from them - for all of us. For students, the pandemic experience could transform quality blended learning. Our collective challenge for the future is how we hold onto that ability to coalesce collaboratively around significant issues and demonstrate continued leadership for the future.

1.21 The pandemic has **sparked and accelerated innovation and creativity**, often rooted in years of bedrock investment. No-one should take for granted in future the importance of the science and research base – it has been, and remains, vital to our very survival and wellbeing through this global pandemic. Research, knowledge exchange and innovation pivoted towards tackling coronavirus – medical science, engineering, social and behavioural science, researchers working on ventilators, vaccines, PPE, statistics, epidemiology. From the outset, staff in all sorts of organisations picked up the challenge - Interface managed requests from government and business for resources, help, equipment, advice from universities and colleges; the Digital Health and Care Innovation Centre moved into medical consultations, test and protect; the Precision Medicine Scotland Innovation Centre lent their lab, staff and machines to Glasgow Lighthouse Covid testing.

1.22 The pandemic has demonstrated the **enduring appeal and benefits of colleges and universities while also profoundly affecting the student experience**. Governments around the globe prioritised education in the balance of harms caused by the virus, and as society opened up following restrictions. People have continued to want to study, to get their qualifications, to experience on-campus living. Demand from students has held up through it all. However, responding to Covid-19 will have affected the student experience in complex ways and this has, undoubtedly, been a really difficult year to be a student. While many will have gained resilience by facing multiple responsibilities and challenging situations, students have also been variously blamed for partying, struggled with being socially isolated at times, will be left with enduring mental health effects, did not always receive the in-person learning and support they expected; and for many, will have taken on debt for an experience that simply is not comparable with previous years. It is increasingly apparent that students' expectations are changing. They will be more attuned to their rights, sharper about the quality of teaching, sceptical about who is acting in their best interests, need more support to address resilience, mental health and wellbeing concerns, digital poverty or the ability to keep up with evolving technology. Huge numbers of academic and support staff worked tirelessly to respond to the unprecedented situation we faced, as it challenged us all to consider student interests.

1.23 This pandemic has not affected everyone equally and it is likely that Scotland's economic and social recovery will be hugely uneven, with variations and issues lurking below top-line statistics. Covid-19 has **amplified existing social and economic inequalities**, with more detrimental impacts for poorer and more disadvantaged students and communities. The effects on retention and success rates, progression, widening access, digital poverty, and reduced opportunities may ripple through coming years. For some, their formative education has been significantly disrupted and we will need to address learning loss and the need for additional support in particular cohorts accessing college or university. For many, the completion of practical requirements in qualifications will have been challenging and may need to be made up during a planned second year of study or undertaken over another academic term. We also recognise the considerable impact of the pandemic on women and black, Asian and minority ethnic people. It will be important to consider these inequalities when we experience the expected economic bounce-back. Not everyone and everywhere will bounce back. We may face longer term scarring and legacy effects for many young people (youth unemployment stands at 13% as at Q4 2020 – up from 8.3% as at Q4 2019) and for people at risk of losing their jobs, unemployed, facing increased debt or dealing with long-Covid. Activity within sectors has been affected in different ways, with hospitality, tourism, culture and the arts seeing a slower pace of recovery, and particular places and geographies have been affected by restrictions and sectoral impacts, alongside displacement activity (for example the continued shift to online shopping with impacts on city, town and retail centres).

1.24 It has been a **tough, unpredictable year financially** for colleges and universities which has exposed both the financial fragility and underlying structural weaknesses of the sectors, as well as highlighting the success of mitigation strategies and measures put in place to cope with an unprecedented financial shock. International student recruitment in aggregate has held up well (although below the headline position, several institutions haven't managed to sustain pre-pandemic levels) and we have ended the year in a far better financial position than we predicted in the early days of Covid. That said, institutions are likely to be further tested through another unforgiving year. This year has thrown into sharp relief institutions with financial ballast and real enduring international appeal within the university sector – starker points of differentiation. So, this year has been less about chaotic collapse, and more about a sharpening of focus, readjustment, and reshaping. It should challenge institutions to take a long hard look at what they do and the viability of different activities, and to know about the cost base of their organisations using robust data that enables them to decide on strategies for the future. **We recognise Boards and Courts will face difficult decisions** and should be considering areas for consolidation, collaboration and shared support services. This Review – and SFC through its work and support of institutions - aims to effect and support adaption, in partnership with the sector.

# DEALING WITH THE EMERGENCY YEARS

1.25 As the vast majority of adults will be vaccinated by the time colleges and universities return in September, and we transition to increased blended and in-person teaching, our top collective priority must remain keeping students, staff and communities safe during this global pandemic. This continues to involve extensive collaborative action to constantly balance benefits and harms in terms of health and safety, economic and social recovery, while at the same time providing opportunities in the form of education and training, purposeful activity for those finding it hard to find jobs, and talent and trained people for employers and research.

1.26 It will be vital for an education led recovery that **governments continue to prioritise education in the balance of Covid-related harms** being considered by clinicians and policy-makers in setting and lifting Covid-19 restrictions. We operate within an inter-connected UK university system and Scotland's competitive position, both within this arrangement and from an international perspective, is particularly affected by travel policy and social distancing measures. It is very positive that international students will now be included in Scotland's vaccination programme.

**HEALTH AND SAFETY**
• Public health focused;
• Guidance developed and followed;
• Assurance;
• Responsiveness;
• Community engagement.

**FLEXIBILITY & SUPPORT**
• Immediate adjustments to provision, focus, funding;
• Address student hardship, digital poverty & retention
• Reduce bureaucracy;
• Joined up government & agency support

**ECONOMIC & SOCIAL RECOVERY**
• Best use of new/existing funds;
• Research & innovation focused on recovery;
• Co-ordinated education, skills, economic response
• Productive sheltering
• Regional partnerships
• International Strategies

**STABILITY & SUSTAINABILITY**
• Funding clarity & stability
• Institutions adapt business models & engage funders
• Research & science strategy, with UK-wide lens
• Coherent tertiary education & skills planning.

## WE RECOMMEND THE GOVERNMENT:

1.27 **We must shelter and support young people who will leave different stages of education or need to transition to further study or employment.** We must avoid the risk of longer-term scarring for this generation. Therefore, we recommend the government:

• Continues to fund additional places at university for Scottish domiciled students into AY 2022-23, recognises the impact of school assessments on grades and expectations, and enables young people to engage in productive learning, tailored for a challenging labour market. This commitment should recognise that these learners will be in the system for several years.

• Recognises, in funding settlements into 2022-2023 and beyond, the role of colleges in school partnerships, for local school-leavers, and with local employers.

• Provides appropriate funding to support Foundation and Graduate Apprenticeships, to maximise places into 2022-23 (recognising the displacement that might otherwise occur in courses for young people in colleges and universities), while assessing how public funds should support the development of apprenticeships as a valued core part of provision.

• Introduces a new one-off scheme to provide learners completing their studies with the opportunity to gain an internship or short employment to moderate the impact of a difficult labour market and to build experience for the future.

1.28 In addition, we must:

• Support students from colleges in particular, whose learning has been considerably disrupted, to complete their studies, gain qualifications or progress to the next stage of study.

• Recognise the need for additional support for mental health and wellbeing strategies for students, researchers and staff.

• Provide greater opportunities for upskilling and reskilling, such as short college courses for people facing unemployment, tailored college courses for employers to support their workforces adapt to post-Covid challenges; and accessible university modules in critical  skills areas to support economic recovery. This includes recognising colleges and universities as key delivery agents in supporting economic recovery, and building upon the success of initiatives such as the Young Person's Guarantee (YPG) and the National Transition Training Fund (NTTF).

• Provide continued support for students in hardship and digital poverty, as casual job opportunities are more pressured and blended learning will be an ongoing feature of their learning experience.

• Recognise the differential impacts of the pandemic within the research community, and support those in the early stages of their careers or with caring responsibilities.

• Protect Scotland's research and science base, to continue to develop new knowledge for our health and prosperity, and to keep our competitive edge and international reputation. Encourage collaborative international marketing to remain attractive to students, sustaining a competitive advantage, and the development of policies that mitigate the short-term effects of leaving the EU.

• Keep connecting academia, students and business to find solutions for productivity and other specific challenges.

• Support institutions to continue to adjust and adapt business models in order to remain immediately viable and sustainable beyond the pandemic.

• Ensure SFC and government support a mix of stability measures with on-going flexibility to adapt to the current situation and its longer tail-end effects and engage with institutions as they consider their post-Covid business plans, including taking account of this Review.

## TOWARDS A RESPONSIVE, COHERENT EDUCATION AND SKILLS SYSTEM THAT DRIVES ECONOMIC AND SOCIAL RENEWAL

### DRIVERS FOR CHANGE

2.1 The education and skills system in Scotland is complex. Therefore, the drivers for change will vary by geography, sector, international markets and many other factors. Based on insight from our partner agency Skills Development Scotland (SDS), the Scottish Government and other recent economic and social recovery reviews and reports, this section identifies the drivers for change.

2.2 The need for **meta-skills**, the timeless, higher-order skills that create adaptive learners and promote success in whatever context the future brings. These form a critical part of Scotland's future skills mix. SDS classifies these under three categories: self-management – managing the now; social intelligence – connecting with the world; and innovation – creating our own change. Our collective challenge remains to ensure that learners recognise the need to develop these skills and are confident to deploy them, while the system around them makes sure they are embedded into learning and skills training, formal qualifications and interdisciplinary learning.

2.3 Mega trends such as globalisation, technological progress and a fourth industrial revolution, climate change, and demographic factors, will alter our understanding of what work looks like and how our labour market operates. SDS highlights that significant numbers

of jobs in the UK will be at high risk from automation, mostly in middle-skill occupations. In future, jobs that remain completely untouched by automation and artificial intelligence will be the exception rather than the norm. As we have found during this pandemic, the boundaries between work and personal life are blurring as work-life balance is increasingly moving towards work-life integration. This will continue to bring forward ideas like the four-day week and a universal income, Fair Work and just transitions and will continue to change our perceptions of work as we have known it in the past. Remote learning and working in digital spaces and virtual workplaces have underscored the need to improve our digital skills and address digital poverty and inequality. Allied to the need for digital skills, other mega trends point to the need for data and AI literacy, and the skills associated with green jobs and the shift to net-zero carbon. And, of course, this challenges our use of buildings and space within communities.

2.4 Despite Scotland's high qualifications and skills levels, the economy still struggles with the productivity challenge, skills under-utilisation, and a lack of investment in training by employers. Over a third of organisations report at least one employee with skills and qualifications more advanced than required for their current role. This is allied to the fact that just under one in three Scottish employers provide no training for their staff, and even higher numbers in the private sector providing no training and development. The importance of learning throughout life will become ever more obvious, as people will need to continue learning, upskilling and reskilling, to keep up with rapidly changing working environments. This is likely to require different products and approaches to learning, and a greater emphasis on work-based and work-integrated learning pathfinders.

2.5 In terms of the new high-growth sectors within Scotland and internationally, we are likely to need to invest in higher education and skills that help us in the transition to a net-zero carbon economy, life sciences (including precision medicine and health technology), coding, health and social care, early years, construction, data science and technology, quantum and nanotechnology, engineering, mathematics, design subjects (STEM-D), and the creative industries. Many of these will require cross-disciplinary graduate and postgraduate skills, working together in areas where Scotland can lead the world.

2.6 The impact of the UK's exit from the EU will be far-reaching and some of the consequences are yet to be recognised. It will impact particular sectors that had high proportions of EU nationals, such as manufacturing, hospitality, health and social care, rural industries, and STEM professions. Pre-Brexit around 21% of academic staff in Scottish universities were EU nationals (with EU research staff at 28%), working primarily in STEM, languages and business subjects, while EU students were concentrated in STEM subjects. Latest admissions figures suggest that the number of EU applicants to full-time undergraduate study at Scottish providers declined by nearly 40% (6,870

fewer applicants), which may have significant workforce implications if Scottish-domiciled students do not take up the same courses[1].

2.7 There are industries and key areas that anticipated skills shortages – both before and as a result of the COVID-19 crisis – including construction; digital technology; food, drink and agriculture; health and social care; and early years. Re-skilling and upskilling programmes may likely need to prioritise these particular sectors. There will also be differential impacts across geographies and in society generally from the COVID-19 crisis. Local authority areas that are rural or mainly rural have a slightly higher share of jobs in the most exposed sectors; although the number of jobs in the most exposed sectors is highest in Glasgow, Edinburgh and Fife. We also know that the COVID-19 crisis will disproportionately affect young people, women, vulnerable groups, BAME communities, and those in disadvantaged areas and with lower skills. Colleges and universities will have an important role to play in responding to these social impacts and redressing inequalities.

2.8 Scotland's Future Skills Action Plan and the work of the Enterprise and Skills Strategic Board centre around:

• The need to better define meta-skills

• Increasing system agility and employer responsiveness

• Enhancing access to upskilling and retraining opportunities

• Ensuring sustainability across the skill system

• Accelerating implementation of the learner journey review, to avoid duplication and provide efficient productive pathways for learners through the education and skills system.

PHOTO: FIFE COLLEGE

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1   2021 CYCLE APPLICANT FIGURES

## HOW TO EFFECT SYSTEM CHANGE

2.9 To best meet the needs of learners, employers, and Scotland as a whole, and to recognise the inherent tensions between what learners themselves want to learn, and what employers and Scotland may want from the whole system, various actors in the education and skills (and careers advice) system need to make judgements about the main objectives and targets to be achieved, and the best interventions to meet those objectives. For colleges and universities, those judgements should be founded in good analysis, and will be affected by a range of factors such as their missions, sustainability drivers, funding environment, government policy, capabilities and scope for adaptability, and appetite for partnership working. It is a dynamic process because the environment in which colleges, universities and other stakeholders, including employers, are operating evolves and shifts all the time: a new inward investor wants to locate within a research and innovation-rich cluster; a business closes and people need to be reskilled; a local school wants their Senior Phase students to have access to linked college provision; an industry, sector or economic development partnership develops a plan to shift into a low carbon future etc. We need to ensure:

a) Institutions have a good handle on their best current offers and strategic interventions, what courses, and at what volumes; and the continuing capacity to observe, analyse, engage and react to change and opportunity. We know from our work on skills alignment with SDS and through this Review the importance of apprenticeships and the appetite to see them grow and evolve.

b) Institutions work together at the regional and national level, with other relevant players, articulate how they want to see the education and skills system in their region evolve, planning with a range of partners for adaptations in provision and to influence demand, routes for learners, and responses to employers.

c) National agencies, alongside central and local governments, have a shared understanding with partners; align objectives and funding; facilitate co-operation in sharing analysis and expertise; provide the environment that enables local decision-making to thrive within a clear overall ambition; and collectively exploit the opportunities that emerge through multi-agency co-operation

d) Central government is clear about its strategic intent.

2.10 This requires a strategic planning process that enables institutions to assess how the regional and national skills and education system is functioning; to set and review their own objectives and mission; to assess their current provision and offer in terms of courses and volumes; to consider their place within that system; and to identify priorities for new or different provision or to adapt existing provision. This process will also be key to influencing other participants within the education and skills and labour market systems (at the regional and national level, and with national agencies) to meet shared objectives, and work together to ensure collective activities and resources are used to best effect. The cornerstone of this approach is the alignment of provision with a good understanding of current and emerging trends, to make explicit, defensible assumptions about the future needs of students and employers, and to work with others to fashion co-operation and joint endeavours in provision. It is for institutions to assure themselves that their provision meets demand and to demonstrate this to us and other stakeholders, and it will be important that this assurance takes place through institutions working in partnership together.

## DEVELOPING A REFRESHED APPROACH TO SKILLS ALIGNMENT AND TERTIARY PROVISION PLANNING

2.11 In the Enterprise and Skills Review: Report on Phase 2 – Skills Alignment, SFC set out a vision "to align the relevant functions of the Scottish Funding Council and Skills Development Scotland to ensure that Scotland's people and businesses are equipped with the right skills to succeed in the economy, not just now but in the future". A detailed implementation programme for skills alignment was built around a five-step planning model, with a joint post and teams. The programme has helped develop analytical tools and provided publications on skills assessments in sectors and regions. Moving forward, we are proposing a refreshed approach to skills alignment.

2.12 The Scottish Government introduced a series of new measures to change the education and skills landscape in 2021-22 and these will guide our ongoing work with SDS:

**GRADUATE AND FOUNDATION APPRENTICESHIPS:**
The Scottish Government asked SFC to work with SDS to embed foundation and graduate apprenticeships into SFC's tertiary education funding approach, in a move away from the current SDS commissioning model for colleges and universities. This involves a major change programme between the two agencies into the future, and will be a critical element in national skills alignment planning. We know from our work on skills alignment and through this Review the importance of apprenticeships and the appetite to see them grow and evolve. We will work with SDS, the Scottish Apprenticeship Advisory Board and providers on how this provision can be further embedded in the wider education and skills offer, to secure and further develop the commitment and investment made by colleges and universities to support the delivery and ongoing development of these programmes. We are committed to their long-term future success and will work with others to assess demand in the system for the programmes, to evaluate effective practice, equity of provision, equalities, pedagogy and the development of future provision and delivery.

**NEW SKILLS PROGRAMMES:**
The government also asked us to focus on new responses to the pandemic, working in close collaboration with all partners, including SDS, on national skills programmes (Young Person's Guarantee, National Training Transition Fund, Flexible Workforce Development Fund). We make a recommendation about the more strategic use of this investment later in this report.

**CLIMATE EMERGENCY SKILLS PLANNING:**
The Scottish Government published its update to Climate Change Plan 2018-2032 in December 2020. To support this, SFC and SDS jointly led the development of a Climate Emergency Skills Action Plan (CESAP) which was published on 16 December 2020. A draft implementation plan has now been developed and significant inter-agency work is underway. This plan

will set out a clear direction for the changes needed in the skills system, and signals the role that industry, communities and individuals across Scotland will play in achieving this. The focus is on the key actions needed over the next five years to 2025.

### DEVELOPING ESIF

The Education and Skills Impact Framework (ESIF) is a long-term analytical exercise to enhance the evidence base around the impact of investment in post-school education and skills in Scotland. The project is being delivered collaboratively by SFC, SDS and the Scottish Government and will seek to better understand the benefits which accrue to individuals, employers and the exchequer from Scotland's substantial investment in human capital development through apprenticeships, and teaching and learning in colleges and universities. There are several strands to the work. For example, ESIF will make use of the Longitudinal Educational Outcomes (LEO) dataset which links individual data on the level of qualifications gained with HMRC records to provide estimates of the employment outcomes for individuals with particular levels of qualification. Recognising the wider benefits of participation in education and training, the project will also explore the links to personal well-being and wider societal returns. Initial results from the project are expected later in the year.

2.13 Through this Review, respondents were clear that strategic planning for provision and change needs to focus not only on work between two national agencies, but should primarily consider **the need for planning at an institutional and regional level, with institutions collaborating and having the capacity to engage with employers and other partners**. Of course, many universities operate within a complex national, UK and international context. Nevertheless, they are significant within their local regions and many are particularly rooted in the needs of their local and regional communities.

2.14 We outline in the rest of this chapter a refreshed approach to skills alignment and provision planning which, alongside our work with SDS on apprenticeships, new skills programmes, climate emergency skills planning, and the ESIF framework, will incorporate the following:

- Clearer articulation of expectations of institutions in a new National Impact Framework

- A revised approach to SFC's Outcome Agreements with colleges and universities

- Tertiary Provision Pathfinders to explore better strategic planning at regional level

- Enhanced relationship with NES (NHS Education for Scotland) on health and social care workforce planning

- Investing in relationships between institutions and employers

- A focus on learning throughout life – through a new framework for micro-credentials; and changing our approach to investment and target.

## TERTIARY PROVISION PATHFINDERS

2.15 While we expect all institutions to meet the expectations outlined above, we recommend we convene more active engagement across all partners in this more fundamental approach to strategic planning for provision at a regional level, taking into scope a focus on transitioning to a low carbon economy, and working through the alignment of national training initiatives, such as apprenticeships, YPG, NTTF and FWDF. It would also encompass our commitment to widening participation and consider equalities and diversity in all aspects of provision; and the relationship with the Senior Phase of school, community learning and development, and articulation routes for learners between further and higher education and into other skills provision and employment. To kick-start this work, we propose we lead a small number of Tertiary Provision Pathfinders, where we can build on the strong foundations of existing partnerships, to secure more coherent provision that meets the needs of learners, employers, regional and national needs. The pathfinders will explore what further needs to be done in very practical ways to make the education and skills system responsive, integrated and to support economic recovery and inclusive growth in each region.

2.16 This is likely to involve the development of a strong evidence base, including demand, provision, progression and outcome data; agreement on the metrics and interpretation of data; significant partnership working with key stakeholders on economic and social strategies that are relevant for current and future provision; and collaboration to agree a coherent provision plan that provides a route-map for the future across participating institutions and stakeholders. SFC and SDS can provide data and local market intelligence, provision material where appropriate, and will be key partners in supporting the translation of analysis into tangible actions across our responsibilities. We will ask institutions in these areas to work closely with us and to be involved from the outset in considering how provision will evolve into the future. The process of undertaking the pathfinders will enable us to provide better guidance on strategic planning for coherent provision for others, including the use of data sources, collaborative approaches to tertiary education planning, and how to track impacts over time. It should challenge our own approach to funding and engagement, and we will share learnings in real-time so that others can benefit from early findings and respond in an agile and iterative way.

2.17 Many participants in our Review asked us to recognise these key issues within the development of this complex system, and these will be important considerations as we design the pathfinders with partners:

a) The importance of developing long-term, strategic business/industry/academic relationships, so that along the company-institution axis can flow many interactions, as well as skills alignment - knowledge, curriculum and course design and content, internships, employment, upskilling, research directions, intellectual property, and incubation spaces for businesses. Rather than pursue transactional relationships around a particular product or programme, respondents emphasised the need for an immersive and symbiotic, deeper and longer-term, investment in these relationships – and the capacity to make that happen.

b) The artificial distinctions often made between innovation, knowledge exchange and skills – they must be considered as interlinked if we are to succeed.

c) The need to recognise the role of colleges and universities beyond business, industry and SMEs into the very considerable workforce planning needs of essential public service employers, for example, for health and social care services, and initial teacher training.

d) The fact that Scotland has a range of small and medium-sized businesses, a smaller business base relative to its population than other EU countries, and fewer high growth businesses to boost economic productivity. So, while skills alignment is very important, ultimately, Scotland needs more registered businesses, and an increase in the number with high growth ambitions to export, innovate and invest in research and development to affect significant change in its economic prosperity.

e) We can sometimes confuse a lack of skills with an underlying problem of a lack of job openings or people being made redundant from existing jobs for reasons other than their particular skill-set. So, it is essential that underlying demand is stimulated, alongside helping people through education and skills training to be ready for the job openings that arise. Alongside a strategy that stimulates demand, we must do all we can to ensure that strong demand signals are picked up quickly by schools, careers services, colleges, universities and students and parents themselves, across the whole education system, and that there is a mix of provision, including taught post-graduate courses, shorter college modules, or micro-credentials that support transitions and the pipeline closer to market.

f) The challenge we face collectively involves harnessing the different strengths of colleges and universities, alongside private training providers and other initiatives, to build a broad spectrum of skills for business, industry and other employers, operating at different levels and speeds, and to ensure that, alongside short-term and emergency responses to economic and social recovery, we provide longer-term skills investment that nudges and incentivises the alignment of skills into the

right areas and the right study mode. This, therefore, is about system change as much as it is about specific skills alignment programmes or specific products; and it is important that the agency of decision-makers within institutions and locally is understood and that they are empowered to make the practical changes necessary for greater alignment. The importance of colleges and universities within regional planning systems has been a clear and consistent thread throughout this Review.

g) Meeting the needs of employers and aligning the "outputs" of colleges and universities with the future needs of the labour market is not a simple task. Employers can find it difficult to forecast and specify the type or quantity of skills they will need in future, different organisations and sectors of the economy are often in competition with one another for what they believe to be a finite pool of talent, and there can be a major problem with creating and sustaining talent pipelines. At one end, there is the need to attract sufficient numbers of students who can benefit from the relevant courses. This is often dependent upon individual subject choice decisions that are not always easy for colleges and universities to influence, as they are often formed relatively early in life or through the interventions of careers services – and students may switch subjects and disciplines in their early years of study. At the other end, the pipeline can leak. For instance, many students whose subject is engineering choose not to enter the engineering profession, but rather take their talents into other occupational areas, such as management consulting and the finance sector. So, even when we have reasonably precise forecasts of the volume of future skills needed (the number of x), 'matching' that demand does not mean recruiting and educating x number of students, as in some instances a substantial proportion will make career and labour market choices that do not lead to them entering the sector that originally forecast the skill need.

## SCOTLAND'S HEALTH AND SOCIAL CARE WORKFORCE

2.18 At the heart of SFC's mission is the enabling of the coherent provision of education in colleges and universities. One specific and important setting in which we do this is in support of the staffing of NHS Scotland for our national health and wellbeing. Our work with the college and university providers of education in medical, nursing, allied health professions and social care is carried out in partnership with NHS Education Scotland (NES), the NHS specific education and training body (and special health board) for Scotland.

2.19 Together we remain committed to high-quality education, widening access to medical and health professions and to responding to the evolving demands for, and on, the NHS workforce across health and social care. The pandemic has impacted significantly on medical, dental, nursing and allied health training and we have worked together and with Scottish Government, to ensure the university and college sector can adapt their teaching, as far as possible, in the interest of students.  As we respond to the expected future needs of patients and the NHS in Scotland, the effects of the pandemic on cohorts of students will need to be considered for some years.

2.20 Our joint work in preparing for the workforce needs of the post-pandemic NHS will embrace the diversity of educational opportunity available to us as courses and qualifications respond to local and national demand for social care, mental health support and an evolving NHS workforce. To best support the Scottish Government and NHS in its changing needs, we will work together on the use of data for demand and supply and harness the expertise of our institutions in data, AI and other relevant research fields to ensure that they and we have the tools to deliver the best educational and technical support for the NHS.

2.21 **SFC will develop and deepen strategic relationships with NES** on the planning and delivery of inclusive and high-quality training for the health professions, using shared data and our combined understandings of the demand for skills and the supply of college and university education to address it.

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PHOTO: ROBERT GORDON UNIVERSITY

# BUILDING LONG-TERM RELATIONSHIPS WITH EMPLOYERS AND INDUSTRY

2.22 This Review has highlighted the need to develop long-term, strategic business, industry and academic, not simply transactional relationships around a particular product or programme. Review participants emphasised the need for a deeper and longer-term investment in these relationships, but colleges, in particular, highlighted that they often lacked the capacity to develop those deeper relationships. We make recommendations on knowledge exchange and innovation that are relevant to this Review finding.

## WE RECOMMEND

The development of a more strategic and comprehensive Economic Recovery and Employer Engagement Investment Programme for colleges and universities.

2.23 In the first instance, our ambition should be to bring together different funding initiatives and support their development into a more comprehensive and flexible approach to employer engagement that supports these more systemic relationships and the responsive approaches to the co-creation and co-development of employer-focused skills offers, as recommended in the Cumberford-Little Report. This will require reviews and evaluations of the existing funding streams, and further consultation with partners and employers to determine the shape and scale of this future programme. It will also build in connections to the Scottish Government's rural and future skills strategies, Fair Work agenda and plans for a Centre for Workplace Transformation.

2.24 The Flexible Workforce Development Fund (FWDF) is a Scottish Government initiative that enables employers to address priority workforce development requirements and skills gaps in their organisations by accessing funding to create training

programmes that meet their needs. These programmes can be delivered in partnership with their local college, The Open University in Scotland (OUiS) or an independent training provider. SFC administers the scheme as it delivers through colleges and OUiS, while SDS administers the scheme on behalf of independent training providers.

2.25 The FWDF was introduced four years ago and has evolved over that period to broaden its scope to include SMEs, and increased the funding that individual apprenticeship levy paying employers can access. Working with the Scottish Government and stakeholders we will review the scope and impact of the fund to determine the future direction and fund operation to support economic recovery and the re-skilling agenda. The Cumberford-Little Report recommended that adjustments to the FWDF would enable colleges to work more effectively with SMEs. The subsequent expansion of FWDF for colleges (for 2020-21) and its redevelopment to support SMEs is a good example of our ability to respond effectively to changing upskilling and employer needs. That said, there are further enhancements that could provide continued flexibilities, scale and ambition.

2.26 A primary outcome of the FWDF review will be to consider the fund in the round with other SFC upskilling and reskilling investments, to explore more fully the potential to develop a future Economic Recovery and Employer Engagement Investment Programme. The review presents an opportunity to focus our investments to take account of coherent provision principles, including access to skills provision, geographic coverage, equalities (including targeting of hardest to reach groups) and economic recovery impact. Consideration will also be given to the funding methodology.

2.27 Colleges and universities have responded at pace to support the implementation of both the NTTF and the YPG by developing and delivering new provision focused on meeting the needs of employers, young people and those individuals

who have recently been made redundant or unemployed. Much of this provision has been brought online by colleges and universities as they faced huge disruption to their operations demonstrating the commitment of the sectors to ensuring provision is flexible and agile to meet a wide range of needs.

2.28 We will work with Scottish Government and the sectors to undertake a review of the additional provision and funding to assess the value and outcomes of the existing investment in YPG and NTTF, the added value to employers and individuals, and to identify and share good practice in delivery. Outcomes from the review will be shared with Scottish Government and the sectors to develop guidance on future provision and delivery as part of the future Economic Recovery and Employer Engagement Investment Programme.

2.29 This Review has made us reflect on our own connections with business and industry. While strong in particular programmes, we do not have a sufficiently systematic or strategic engagement across all areas of interest. We also understand - and welcome - the appetite from business and industry for greater engagement with SFC. Therefore, **we recommend the establishment of an SFC Employer and Industry Advisory Group** to work with us across the full spectrum of SFC's mission from coherent provision to research and knowledge exchange, to help us develop our framework and approaches, advise on the further commissioning of research and insights, and provide expert input to operational policy development. **We also recommend the Scottish Apprenticeship Advisory Board invites SFC representation at Board level and SFC's inclusion in its secretariat**, in light of our new role and accountability for Foundation and Graduate Apprenticeships and to enable us to bring coherence across planning, funding and policy development functions.

## LEARNING THROUGHOUT LIFE: QUALIFICATIONS AND TARGETS

2.30　Learning throughout life will become increasingly important and the pace of change in the jobs market will require more frequent reskilling or upskilling. Participants in our Review highlighted a greater requirement for shorter sharper courses over our working lives, through bite-sized ways of keeping pace with technological change, supporting career transitions, or in response to redundancy or sector-specific developments.

2.31　In addition, despite Scotland's highly educated and skilled workforce, and despite a fall in the proportion of the working-age population in Scotland with few or no qualifications (from 19% to 11.6% since 2004), there are still too many people with low or no qualifications or people from particular groups in society who are less likely to have jobs than within the population as a whole. In a successful country, we must harness all our talents and provide opportunities for everyone to flourish.

### RECOGNISING LEARNING THROUGHOUT LIFE IN QUALIFICATIONS

2.32　To support the move towards greater opportunities for recognised learning throughout life, industry and business-focused upskilling and reskilling, and the need for bite-sized chunks of learning and modular, credit-bearing courses, we should seize the opportunity in Scotland, through our credit-based qualifications structure, to find ways to certify these smaller, modular courses and design ways in which they can be combined to form larger qualifications over time. Building on the significant work undertaken at sectoral, national and international level we recommend piloting a National Micro-credential framework and delivery plan working with the sectors to develop a comprehensive approach to upskilling and reskilling that spans sectors and works across the tertiary system.

2.33　The Cumberford-Little Report made clear the demand for national agencies including SQA, SFC and SCQF to ensure the sector's provision meets the needs of industry for credible and agile provision and employers' demand for short and bite-sized learning interventions. A National Micro-credential Framework will develop a collaborative and coherent approach to the development of micro-credentials that will respond to regional and national stakeholder needs and meets the lifelong learning aspirations for Scotland.

2.34　SFC introduced the University Upskilling Fund in 2019 to provide shorter, more flexible provision to enable institutions to respond to the needs of learners and business; and other employer-focused interventions have developed at pace. We will review how this new fund has supported the recovery mission and future skills needs, and its place in this approach to micro-credentials.

### TARGETS AND INVESTMENT FOR LIFELONG LEARNING

2.35　As well as the specific employer programmes outlined above or ring-fenced upskilling funds, colleges and universities provide opportunities that range from Foundation Apprenticeships in school to adult literacy and numeracy classes, vocational courses in areas such as construction or engineering, to degree, postgraduate or Doctorate courses in areas from philosophy to medicine. Some courses can be completed in a few hours (health & safety for example) while some will take several years of full-time study to complete, and many working people will look to study through day release or other arrangements with their employer, or in their own time.

2.36　As a funder, our investment model is attuned to student numbers, and in an education and skills system that has been changing and will increasingly need to flex and vary over the coming years, we account for this by setting targets for full-time equivalents (not full-time students per se). This means institutions have choices about the balance of their provision. Overall, our funding provides for around 250,000 full-time equivalent (FTE) places per year. Our assumption is that we should continue to give priority to ensuring sufficient places for school-leavers who wish to study at college or university (within the capped limits placed on full-time undergraduates). The 16-year-old population changes from year to year, although there has been a long-term decline since 1992 when there were 62,700 16-year-olds. Numbers are on the rise again and are set to peak at around 64,000 by 2027 (around 10,000 higher than in 2019 when there were 54,000 16-year-olds in the population). The proportion of school leavers who progress to college or university has risen from 40% of school leavers in 1992-93 to around 67%

pre-COVID-19. This increased participation rate is attributable to several factors, including the number of jobs requiring higher qualifications, raised levels of ambition in young people as well as school and parental influence. As we deal with the consequences of COVID-19 on employment for young people, there are likely to be fewer jobs for those with few or no qualifications and this, along with the higher number of school leavers, will increase the demand for college and university places – not just for the young, but older people who lose their jobs and are looking to upskill or re-skill.

### WE RECOMMEND THE SCOTTISH GOVERNMENT

2.37　Explores with SFC and stakeholders the consequences of the rising school leaver population and the need to provide greater opportunities to deliver learning throughout life, by reviewing the current approach to existing targets and our underpinning policy assumptions.

This would involve the Scottish Government considering with us and key stakeholders the removal of absolute FTE targets (i.e. the volume target for colleges of 116,000 FTE equivalents) and alternative strategic planning assumptions, for example, around the proportion of school leavers we expect to be able to progress to study a tertiary course at a college or university or the number of graduates we need from across the variety of tertiary course. We would

also need to explore whether changing our baseline assumptions would enable us to invest more in supporting greater learning throughout life, upskilling and reskilling from our core funds; and to reach people with low qualifications whose prospects and productivity could be increased through enhanced skills. This work should include:

a) Further modelling to explore our collective underpinning assumptions about a more efficient learner journey, with more school pupils moving direct to university study, as well as seamlessly progressing from Higher National qualifications to degree courses. This would help reduce the pressure for additional places due to increased school leavers.

b) Considering our assumptions about the proportion of 25-64-year-olds in the workforce qualified to SCQF level 7 or higher we might need for the future, recognising that our current proportion of 53% is third in the OECD behind Canada and Russia. This work will be as much about the numbers taking courses up to levels 7 and 8 as it will be about the percentages that the economy might need to progress to tertiary education[2]. We recognise the importance of colleges in improving the qualifications held by school leavers by the time they reach the workforce, and for older employees who will increasingly need to return to education later in life. By offering lifelong learning opportunities to those with low-level qualifications we should be able to help increase their employment rates and help address changing skills needs by offering upskilling /reskilling opportunities where appropriate.

c) To provide more lifelong learning opportunities (alongside the FWDF and other upskilling provision) we would need to work with colleges to recalibrate the balance of provision, including between school leavers and lifelong learning interventions.

d) Considering the implications of lifelong learning policy and investment shifts for student support policies and funding.

2.38 This work would also require improved provision planning and alignment regionally, with universities and colleges working together where appropriate. In all of this, key goals would include collaboration and articulation, reduced competition, reduced duplication and increased efficiency. We recognise that universities and some of our larger colleges provide national and international provision while supporting teaching and learning in their regions and that many learners are mobile between regions and nations.

2.39 This improved planning, drawing on past and projected demographics and taking account of proposed economic development interventions would provide evidence to support the size and shape of the tertiary sector and teaching grant provided by SFC, but would also inform future estate needs and capital funding. It would also be important to involve community learning and development partnerships. While this work is primarily aimed at improving our planning and distribution assumptions, it should enable and be informed by institutions' own business plans and collaboration activities.

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2  Adult Education Level

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LIFELONG LEARNING THROUGH COMMUNITY LEARNING AND DEVELOPMENT

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2.40 Community Learning and Development (CLD) ensures that people individually, and within communities, can reach their full potential through lifelong learning, mutual self-help and community organisation. There must be effective links between learning in the community and tertiary learning if we are to secure a coherent system in all respects. The Scottish Government has been clear that Community Planning Partnerships should maximise the contribution of colleges and universities and that they, in turn, should contribute to local CLD plans and establish joint delivery plans with Community Learning Partnerships. We expect colleges to work with CLD partnerships to share intelligence and analysis that should strengthen provision planning and develop learning pathways from community settings for those with no or few formal qualifications, including access to vocational programmes, to ensure no one is left behind. These should build on the success of widening access into social care and early years settings; the delivery of English for Speakers of Other Languages (ESOL) and working with learners and communities in local spaces, to maximise local resources (eg digital assets). Review participants highlighted the importance of regional planning to secure guaranteed pathways through community, vocational and university programmes.

## BROAD ECONOMIC AND SOCIAL RECOVERY THEMES IN A RESPONSIVE TERTIARY SYSTEM

### FAIR WORK

2.41 The Scottish Government has been clear that creating a well-being economy means creating more resilience through a thriving business environment, innovation and good quality jobs. Fair work is, therefore, part of the Scottish Government's strategy for achieving a modern, high value, inclusive economy. Fair Work practices aim to guide employers and workers in agreeing fair and flexible working practices that balance the rights and responsibilities of workers and employers; and they can be summarised as generating work that offers individuals an effective voice, opportunity, security, fulfilment and respect.

2.42 Not only is SFC committed to embedding Fair Work within our own organisation and supply chains and procurement, but the Scottish Government expects us to ensure that colleges and universities, and the other bodies we fund to deliver infrastructure or to fulfil our statutory mission, are progressing towards adopting the five Fair Work First criteria:

• Appropriate channels for effective voice, such as trade union recognition;
• Investment in workforce development;
• No inappropriate use of zero-hours contracts;
• Action to tackle the gender pay gap and create a more diverse and inclusive workplace; and
• Providing fair pay for workers.

### WE RECOMMEND SFC

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2.43 Undertakes work this year to ensure these expectations are clear for the bodies we fund or procure, and will assess the progress the sector is making towards Fair Work First criteria.

## THE IMPORTANCE OF PLACE

2.44 This chapter underscores the importance of colleges and universities as anchor institutions, at the heart of towns, cities and regions, which means they have a key role in acting with agency and civic purpose to sustain and renew places and communities. Similarly, we recognise the value that investment in research and innovation brings to our institutions, who in turn, by taking a place-based approach to collaboration, support regional collaborations and clusters with industry, which are critical to the economic health of the economy.

"Place is where people, location and resources combine to create a sense of identity and purpose, and is at the heart of addressing the needs and realising the full potential of communities. A more joined-up, collaborative, and participative approach to services, land and buildings, across all sectors within a place, enables better outcomes for everyone"

SCOTTISH GOVERNMENT,
PLACE PRINCIPLE

## A SUSTAINABLE TERTIARY EDUCATION ESTATE TO SUPPORT ANCHOR INSTITUTIONS AND COLLABORATIONS

2.45 With a total built area of more than 4.75m square meters, the college and university estate makes up a nationally significant part of Scotland's built environment. It covers a huge variety of estates, and includes the full range of building types, age and condition, dispersed across every region of Scotland, alongside many examples of Scotland's most iconic architecture and cultural identity. They form an important and integral part of the place in which they are situated, often defining the town or city skyline, inseparable from the local economy, history and cultural memory. They matter to local communities and each estate is a living, dynamic place. They also create economic activities in their own right, through construction, repair and maintenance works. They also host a wide range of businesses, knowledge exchange and creative activity, vital to local and national wellbeing, beyond the institution's core operations. Any collective approach to estates must respect and work with this diversity, while encouraging greater collaboration, shared resources and local facilities, and work towards a digitally enabled, low carbon future.

2.46 Colleges and universities are operating in an increasingly tight financial environment, heightened for institutions most reliant on international and commercial income. SFC's capital allocations contribute to backlog maintenance and lifecycle maintenance. Universities spend an estimated 12% to 16% of their income on maintenance and Capital expenditure, making the estate the second-highest area of expenditure after staffing costs, financed largely through cross-subsidisation and borrowing. Our programme of Financial Transactions offers low-cost loans for low carbon capital investments in university estates. But colleges are significantly constrained in their ability to borrow or carry cash reserves for new investment in their estates. The COVID-19 pandemic has also resulted in delays and reductions in estates programmes.

🗒 WE RECOMMEND

2.47 that there should be a national vision and strategy for the college and university estate that prioritises areas for collaboration (between institutions, and potentially with industry) and between regional partners. This should include joint planning on national infrastructure and estate planning for future digital requirements; on a route map to achieve net-zero emission goals; and to consider how student expectations are developing through the pandemic. It could set out demonstration sites for novel low emission and energy-efficient solutions.

## WE ALSO RECOMMEND THE SCOTTISH GOVERNMENT:

2.48 a) Reviews its current funding for low carbon estates projects to support colleges and universities (eg funding for low carbon district heating, implementing projects under the Non-Domestic Energy Efficiency Framework or Transport Scotland's EV funding) and considers multi-year funding;

b) Works with SFC and the finance industry to investigate new funding vehicles for capital funding (eg through mutual investment models and the Scottish National Investment Bank); and

c) Supports incentives for collaboration activities between colleges and universities.

PHOTO: ABERDEEN UNIVERSITY

## PLACE THROUGH ALL OUR ACTIVITIES

2.49 The emergence of a new UK Government policy of investing in 'places', building on the potential of localities to harness research, commercial and public assets to create jobs and lasting value fits well with the existing Scottish Government support for regional economic development. The UK Government is considering how its place-based R&D policy will help direct UK investment as part of the repeated commitment to reach an R&D spend of 2.4% of UK GDP. We expect Scotland's participation in this new UK investment portfolio to be strong, building on successful City Region Deals and the UK Strength in Places Fund.

2.50 Just as we support diversity in the universities and colleges we fund, we similarly recognise the diversity of their economic and social settings. Universities and colleges are, typically, anchor institutions in their localities, in addition to the national and international reach which many of them demonstrate. The opportunity to work locally, to convene partner institutions and work with local authorities and appropriate enterprise agencies has been seized in City Region Deals and specific projects such as the Michelin Scotland Innovation Parc and the Orkney Research and Innovation Campus.

2.51 The support for a place (large, small, urban or rural) by universities and colleges may encompass R&D, skills provisions, infrastructure sharing or planning and many other aspects. We will, as part of our enhancement and development of our Innovation Centres and Interface, continue to work closely with all three enterprise agencies to ensure that regionally specific support is in place for emerging opportunities, including those supported by UK Government and UKRI place-based funding. We will include place thinking in our work on emerging entrepreneurial campuses, recognising the diversity of start-up ecosystems that Scotland can and should benefit from. We will align our thinking on coherent provision of education and the skills supply with city, rural and regional partners to ensure a collaborative team approach to the needs and opportunities of Scotland's diverse communities.

## RESPONDING TO THE CLIMATE EMERGENCY

2.52 The Scottish Government declared a climate emergency in 2019. It has set an ambitious target to reduce carbon emissions to Net-zero by 2045, which will shape the future development of the Scottish economy, the operations and missions of organisations and institutions, and change the lives of Scotland's people. Colleges and universities are vital to driving this change through their significant contributions to sustainability and climate action. They achieve this through the activities of their students, through research and innovation for a greener Scotland, providing the scientific advice needed to inform policy and their own delivery of estates strategy. The Sustainable Development Goals are increasingly visible as a point of strategic orientation for institutions, as can be seen in the development of new institutes to co-ordinate inter-disciplinary work on sustainability. In the research section of this report, we discuss opportunities to increase the focus of our research and innovation funding around such grand challenges through mission-led research.

2.53 With COP26 coming to Glasgow in November 2021, there is an opportunity to showcase our world-class research and innovation on sustainability to a global audience: to attract international research partners and inward investment, and as a platform to build public engagement with climate issues in Scotland. Beyond COP26 we must take this momentum and catalyse the large scale-collaborative action required to tackle the climate emergency and deliver a just-transition.

2.54 SFC has reduced emissions from our own operations by over 70% since 2008, and we will continue to support and encourage institutions to commit to meeting the Scottish Government's climate targets. Scotland's Colleges published their Net-zero commitment (and roadmap) in May, and we are working with Scotland's universities on a similar statement.

2.55 We will use our convening and strategic capability to drive change in the sector and work closely with our institutions to deliver their own ambitious strategies. We will embed climate action and the just transition to net-zero in our forward strategies, our accountability framework and our investments. We will seek to work with our wider stakeholders, Scottish Government and industry to accelerate climate action and bring the wide-ranging expertise of our universities and colleges to the table to deliver a prosperous, low-carbon future for Scotland and the world.

## EQUALITY, DIVERSITY AND INCLUSION

2.56 Equality, diversity and inclusion are central to the success of the work we do, and are threaded through our expectations of funded bodies. The promotion of equalities, diversity and inclusion are central to a well-being economy. We are the first public body in Great Britain to work with the Equality & Human Rights Commission (EHRC) to develop a Memorandum of Understanding (MoU) designed to increase understanding of the progress being made by colleges and universities to advance equality, diversity and inclusion, and to support improvement.

2.57 The MoU is supported by an Action Plan that commits SFC and EHRC to a range of actions designed to ensure we are working together to reduce the bureaucratic burden often associated with equality reporting and to ensure that colleges and universities can confidently take action to advance equality for college and university students and staff. Our joint action plan commits us to work to:

• Identify the most pressing inequalities that the sector should be taking action on, setting national equality outcomes and providing oversight of progress towards these equality outcomes.

• Support universities and colleges to develop evidence-based equality outcomes and associated measurement frameworks so that they and we can track the impact of their work

• Strengthen SFC performance of public sector equality duties

2.58 Alongside our work on persistent inequalities, we have worked with the sector on the issues raised in EHRC's report about racism

on campus: Tackling racial harassment: Universities challenged published in October 2019. Our project was facilitated by AdvanceHE and led by an Expert Group of equality and diversity practitioners, academics and college and university staff and students, and focused on the lived experiences of students and staff and webinars discussing race, racism and whiteness to provide practical resources and material to help us all have better and inclusive conversations about racism and to develop institution-wide strategies for race equality and racial harassment: Tackling racism on campus: Raising awareness and creating the conditions for confident conversations' project.

2.59 As a result of COVID, our work to identify the most persistent inequalities has pivoted to ensure that this work considers not only the inequalities that have persisted in the sector, but also to scope out which inequalities may present themselves or persist specifically because of the impact of the pandemic. We commit to prioritising our activity to address these pressing inequalities and will encourage the Scottish Government and other partners to explicitly reference how any future policy or funding decision or request will contribute to improving outcomes for people.

2.60 We already know that experience of mental ill-health has a negative impact on the student experience and retention compared to students who report positive mental health. We were already working to ensure support is in place to improve outcomes for students. The pandemic means that many more students studying at colleges and universities are coping with grief, fear and loneliness at a time when our usual support mechanisms are unavailable. These feelings are compounded by worry in the immediate terms about finances and future career plans. We also know that some groups are experiencing the pandemic in very different ways. Staff



PHOTO: UNIVERSITY OF ST. ANDREWS

and students who have, or are perceived to be of, Asian heritage have experiences of appalling racial harassment directly linked to COVID-19 and that these experiences affect people's feelings of safety and that this trauma affects people mental health and wellbeing. Staff and students from Black, Asian and Minority Ethnic backgrounds are more likely to have acquired COVID-19 or have family members who have become ill or passed away. Staff and students who may have been shielding, or living with people who have been shielding, will have had a very different experience throughout the pandemic and may have additional concerns and levels of anxiety about the return to face-to-face teaching. We are, therefore, committed to making sure that the support we put in place is appropriately equality impact assessed to both recognise and address these different experiences.

2.61 Our work with EHRC on the MOU has informed the outcomes we should seek in the development of a National Impact Framework for all institutions, and it will help us set appropriate expectations and report effectively on the impact

that colleges and universities are making to advance equality.

2.62 As part of commitment in the Action Plan to conduct thematic reviews, we have started by reviewing the equality outcomes set by institutions. We are assessing the extent to which the equality outcomes set are likely to drive forward action against identified inequalities. We will share our findings with the EHRC and together we will work with institutions to make improvements where necessary and to share examples of positive practice.

2.63 We have committed in our Public Sector Equality Mainstreaming Report to put more emphasis on how we equality impact assess our work and we will be taking steps to ensure that our oversight function assesses the effectiveness of colleges and universities to consider how different characteristics affect the experience and outcomes for different groups of staff and students.

## PROTECTING AND PROMOTING STUDENTS' INTERESTS

### THE LIVED EXPERIENCE OF STUDENTS

3.1 Throughout this Review, we have considered what students want from their education and how they have experienced learning and teaching throughout the pandemic, to protect their interests and ensure their lived reality shapes our approach to the way we fund and work with institutions to enhance quality. We work closely with NUS Scotland and bodies representing student interests on an ongoing basis to understand what students want and expect from the education and skills system. We fund Students Associations in colleges and we invest in sparqs (Student Partnerships in Quality Scotland) to enable students to make a difference to their own and others' educational experience by getting involved in quality processes and enhancement planning in our colleges and universities. During this Review, we worked with NUS Scotland and sparqs to set up a Student Engagement Advisory Group to enable us to connect better with the student voice through existing structures and events, and to work with them to understand better the lived experience of students through the pandemic.

3.2   In general, students have told us that they are looking for a mix of these attributes from their educational experience:

- A sense of belonging and place.

- Value for money.

- Benefit from the reputation and standing of the institution they attend.

- A deeper understanding of a particular subject or the pursuit of talent for itself alone.

- Enhanced online and blended learning, alongside greater consistency in the quality of that offer.

- The ability to progress to further study.

- Good jobs and career progression.

3.3   The top drivers for international students in choosing where to study include teaching quality and up-to-date technology that prepares them for the modern workforce; the prospect of an excellent student experience and graduate outcomes; pre-existing connections with an institution through friends or family; and course choice.

3.4   When we talked to students who had progressed from college to universities (known as articulation), they highlighted:

- The importance of having supportive staff at the institutions who knew about articulation.

- The need for a broader range and choice of articulation routes at both local and national levels and better information about available routes and funding options.

- The role of secondary schools and careers advice in giving equal priority to university and college, and articulation routes.

3.5   However, the pandemic experience has been unprecedented for students and for the academic and support staff who have worked so hard to respond effectively to the needs of students throughout this remarkable crisis. What follows summarises feedback from student representatives across Scotland's universities and colleges, integrating snapshot views from four selected cohorts identified as most likely to have had unique experiences at college and university during the pandemic: postgraduates; students with parental/caring responsibilities; apprentices and work-based learners; and medical and health care students. We have also taken account of the UPP Foundation's Student Futures Commission, looking at how universities can take action to support students from September 2021 to make the best of their remaining time at university and support those who are starting their journey in higher education this year. Although focused on English students, it provides food for thought alongside our work in Scotland and mirrors many of our findings from student representatives. We also thread through recent YouthSight polling data

*What follows summarises feedback from student representatives across Scotland's universities and colleges, integrating snapshot views from four selected cohorts identified as most likely to have had unique experiences at college and university during the pandemic*

from students at Scottish universities. The material summarised here is not intended to be exhaustive, but rather illustrative of the issues students faced through this extraordinary time to sensitise policy makers, funders and decision-makers to continuing issues to the conclusion of this AY and for the coming AY 2021-22.

**BLENDED LEARNING EXPECTATIONS**
Students recognise the huge amount of work that has been undertaken by staff to move to online learning. Feedback suggests that students like the flexibility of a mix of online interactive 'live' sessions and the use for asynchronous content (i.e. content that can be engaged with in their own time, like recorded lectures), particularly those with additional responsibilities or part-time jobs. Around 80% of recently polled students agreed or strongly agreed that more in-person learning should be a priority within COVID-19 restriction easing. Many students are keen to continue with an element of 'blended learning', with a mix of in-person and online learning.

**DEALING WITH PRACTICAL ELEMENTS:**
While recognising the positive progress made to allay students' concerns about their ability to complete courses and progress to further study or employment, many students remain concerned about being able to complete their course, particularly in programmes with significant practical components. Many postgraduate students reported good support with additional efforts from supervisors and departments to keep in touch, and feel that vivas have been working well online. Apprentice feedback indicates general confidence that they will stay with employers at the end of their apprenticeship, with general concerns that small to medium-sized companies will not be able to keep apprenticeships if there is another lockdown.

**DIGITAL EXCLUSION:**
Throughout the pandemic, student representatives have continually highlighted the issue of digital exclusion – both in terms of access to equipment and of students' digital literacy. Students welcomed the funding allocated to institutions to purchase equipment for students while reporting local issues around waiting lists, the limitations of some of the equipment, and the label of 'hardship' funding that can deter some students in need. Where specialist courses require particular software or equipment, students have welcomed the introduction by institutions of 'remote labs' to allow students to access specialist software.

**LEARNING FACILITIES:**
Students have lost access to more centralised facilities, such as libraries and study spaces, as well as specialist spaces including labs, art studios and theatres; and have welcomed the introduction of apps and webpages where they can book study space on campus, knowing that many students simply do not have appropriate space or resources to allow them to work from home.

**PASTORAL CARE:**
Students have often been impressed by the speed at which academic, pastoral and careers support moved online.  Students shared many examples of innovative practice on the social side of student life, with many creative examples of student societies moving activities into the digital space and staff and students running course/department-based social events online. Nevertheless, some students have expressed challenges with establishing a community, meeting new people and making friends during the pandemic. Around 71% of recently polled students said they had missed out on socialising and meeting friends. Student parents and carers note that barriers to learning already existed and the pandemic has just changed, and in some cases, exacerbated the pre-existing issues.  Student parents noted struggles to undertake practical work with the closure of nurseries and schools increasing childcare and home-schooling responsibilities.

**PARTICIPATION AND TRUST:**
Student representatives have welcomed the opportunity to be involved in senior, strategic decision making around the pandemic. Several sit on their institution's COVID-19 group alongside senior university staff. Engagement in the course representation role has been varied. Many students' associations have updated their course rep role descriptions to reflect the nature of the role during this uncertain period. Several students' associations have successfully implemented online spaces for course reps to interact with each other and many have already decided that these spaces will remain post-pandemic as they have proved popular and useful among the student body. Representatives highlighted the important relationship between communication and trust and the need for institutions to maintain a regular, honest and open dialogue with students.

**INDUCTION AND TRANSITIONS:**
Many highlighted the need for inductions and refreshers events to transition back to in-person and hybrid teaching: students have had a large period away from in-person academic study, at school, college and university level. Representatives raised the need to support students as they moved from online teaching back to in-person delivery, especially for those who may not yet have experienced in-person teaching at university, prospective students may not have been able to attend an in-person open day or even have visited the local area or city before. Representatives are keen for institutions to work closely with their students' associations to plan induction events and 'refreshers' events for students in higher years.

**MENTAL HEALTH AND WELLBEING:**
Some students expressed concern over the capacity of mental health services, and that important information can be lost in email communications due to pandemic email and digital fatigue. Where institutions have indicated they may introduce automated student services to respond to simpler student queries, some worry that this could remove an opportunity for relationship building between staff and students.

**ASSESSMENT:**
No-detriment policies have remained a key topic of focus for students throughout the pandemic. Students have welcomed both these approaches and appreciated where institutions have adapted their existing special circumstances policies and procedures to specifically reflect the COVID-19 circumstances.

**FEELING PREPARED FOR NEXT STEPS:**
Many students have expressed a general concern about feeling unprepared to enter the workforce or lacking confidence in their abilities.  Because of the reduced clinical skills sessions, some medical and healthcare students also reported feeling 'unprepared' for placements and more anxious about undertaking them. Even where students have been able to complete courses and progress to the next level of study, many report a lack of confidence in their skill level and a feeling of 'imposter syndrome' over the next stage of their academic journey. Many students who are planning to go into the workplace also worry that employers will perceive them as being less competent and proficient than previous cohorts.

3.6 Early findings from the USS poll of over 2000 students echo many of the issues we have recorded from student representatives across Scotland:

- 59% of those polled see face-to-face learning as a priority for 2021.

- While 48% feel they have not missed any aspect of teaching, 63% believe they are below where they would expect to be academically and 56% want to see their lecturer in person.

- 75% of students quote a lack of access to a stable internet connection as challenging for home learning.

- 64% want recorded lecturers in future – it was the most popular element of online learning to enable people to check key points.

- 45% want a blend of in-person and online learning (very similar to office worker expectations) but very few want all in-person learning.

- 72% are neutral or satisfied with the management of student assessments.

- Over half of students have not participated in extra-curricular activities.

- 80% of students report a negative mental health impact due to the pandemic this year.

- 50% of students are confident about the job market but 65% think their time at university will help them.

3.7 The feedback in this section of our Review report highlights the fact that the student cohorts from 2019-20 have gone through a fairly unique experience, are still going through it, and is instructive in terms of how well institutions are engaging with students about their experience to enhance plans for AY 2021-22. NUS Scotland also pointed to the need to track particular issues faced by international students, and the general importance of international exchange and mobility programmes.

3.8 We are immensely grateful to the Student Engagement Advisory Group, NUS Scotland and sparqs, and to the student representatives who provided views and input. While the ability to respond directly to student feedback rests primarily with institutions, this Review has highlighted the need for the SFC itself to ensure it has a more appropriate balance of focus, that seeds and protects student interests, and their lived experience, across our work and through our developing accountability frameworks. We will develop this further to ensure our operational policy work,

investments, and future funding consider more fully student representation, wellbeing, support and the lived experience of students.

3.9 Our work with students and representative bodies has helped to shape the early development of student-focused elements of the new National Impact Framework referred to earlier in this report. These specific elements are outlined below. These outcomes aim to define what we expect from colleges and universities for students.

### WE RECOMMEND

Working in partnership with students to further develop a National Impact Framework, alongside institutions and other partners, and to build on early work to define the outcomes we expect for students from colleges and universities and a more detailed set of expectations.

| EXTRACT FROM A PROPOSED DRAFT NATIONAL IMPACT FRAMEWORK OUTCOMES FOR STUDENTS | |
|---|---|
| FAIR ACCESS AND TRANSITIONS | Education is accessible to learners from all background and students are supported through successful pathways |
| QUALITY LEARNING, TEACHING AND SUPPORT | Students receive a high-quality, safe and supportive learning experience that enables them to succeed in their studies |
| LEARNING WITH IMPACT | Students are equipped to flourish in employment, further study and lead fulfilling lives |
| PARTNERSHIP, PARTICIPATION AND STUDENT EXPERIENCE | Students find it easy to participate, have their voice heard and valued, and influence their educational and student experience |
| EQUALITIES & INCLUSION | Every student has their individual needs recognised in terms of protected characteristics; and everyone is treated fairly and with respect |



PHOTO: MORAY COLLEGE

## SCHOOLS AND TERTIARY EDUCATION – SUPPORTING TRANSITIONS, OVERCOMING DISADVANTAGE IN THE LEARNER JOURNEY

3.10 Education Scotland defines the Curriculum for Excellence as divided into two phases: the broad general education and the Senior Phase. The Senior Phase takes place from S4 to S6 in schools and includes ages 16 to 18 out of school. It is the phase when a young person will build up a portfolio of qualifications and continue to develop the knowledge, skills, attributes and capabilities of the four capacities of Curriculum for Excellence: successful learners; confident individuals; responsible citizens; and effective contributors. Scottish Government Ministers have described it as a three-year experience in which young people would be encouraged to remain at school for longer and engage in deeper learning with a broader range of opportunities to develop skills that are relevant to the wider world.

3.11 In its submission to the Scottish Parliament, Education Scotland also highlighted that the Senior Phase allowed for a mix of qualifications to be undertaken by pupils:

The four capacities of Curriculum for Excellence: successful learners; confident individuals; responsible citizens; and effective contributors.

"There are no pre-conceived notions about the number or types of qualifications taken at which stage of the senior phase. The guiding principle is that qualifications, awards and achievements are taken at the right stage for the individual young person over the senior phase which can be up to three years. This allows learners to build up a bespoke portfolio of qualifications, awards and skills by the time they leave school and move on to their next stage of learning in, for example, apprenticeships, employment, further or higher education. It follows from this that the right time to view the overall achievements of young people is at their point of exit from the senior phase, rather than in any individual year. This is a key difference in approach to the previous system."

3.12 This sets the backdrop to the fact that SFC makes a considerable investment in school provision, particularly in the Senior Phase. In 2019-20, we invested £34m in school level provision with around £28.5m being delivered to the Senior Phase (32,700 enrolments), including an investment of £7.3m for 8,800 enrolments in Senior Phase vocational pathways pupils. There were also other programmes to support widening access objectives supported by SFC such as the Schools for Higher Education Programme (SHEP), Access to High Demand Professions (AHDP), Advanced Higher Hub at Glasgow Caledonian University (GCU) and The Open University in Scotland (OUiS) Young Applicants in Schools Scotland (YASS).

3.13 The average cost of our investment per student varied depending on the pupil's stage and type of activity. The average cost for primary school activity was £180 per pupil, compared with £690 for secondary school pupils overall. Within secondary school, the average cost per Senior Phase student was £873 and for those specifically on Senior Phase vocational pathways, it was £827. Many participants to this Review asked us to examine the Senior Phase of school and SCQF levels 6-8 in terms of duplication, connections, transitions, and funding overlaps. We have undertaken work to assess the current level of investment in the school system and the outcomes we are seeking to achieve, and our ongoing work, in this area is developing under five broad themes that should support future engagement on the improvements we can make together to achieve a more coherent, connected tertiary education and skills system. These themes also align with the recommendations of the Scottish Government's Learning Journey report:

**SUPPORT, ADVICE AND GUIDANCE:**
ensuring all pathways and articulation routes are communicated and understood through careers advice, information and guidance. SDS has commissioned a review of careers advice. Our engagement throughout the course of this Review has emphasised the importance of careers advice within the overall system. We look forward to working with SDS as they conduct this complementary piece of work.

**REDUCING DUPLICATION:**
supporting recognition of prior learning to remove barriers and improve participation.

**DATA AND PERFORMANCE:**
improving data sharing to increase understanding of performance and support learners' progress and better understand student and employer demand for pathways.

**QUALITY:**
exploring how our ambitions for quality assurance and enhancement can support both improvements to the student experience and the development of a more coherent tertiary system.

**FUNDING:**
how future funding arrangements can enable increased access, improved learner pathways and achieve greater efficiencies.

3.14 The recommendations from the OECD report: Scotland's Curriculum for Excellence: Into the Future were published on 21 June (with a further report expected in the Autumn), and will be particularly relevant to our next steps, alongside the evolution of the Scottish Government's Developing Scotland's Young Workforce – Youth Employment Strategy and Learner Journey considerations including the Ministerial Learner Journey taskforce.

3.15 We intend to work closely with the Scottish Government to support discussions about how best to enhance pathways and more efficient routes that reduce unnecessary levels of study in light of the OECD reports and the government's response. This will enable us to reshape and realign our investment to enable us to direct our future investment towards Senior Phase pupils who:

- Have progressed into the tertiary system to enable them to thrive and succeed.

- Plan to transition into the tertiary system to ensure there are strong enabling bridges and support.

- Have been most impacted by the pandemic to enable any gaps in learning to be identified and rectified.

3.16 Many participants in this Review discussed the connections between schools and tertiary education, and we believe there is more we can do to support those coming into the tertiary sector who are disadvantaged, who may be impacted by lost and disrupted learning at school, and who need additional measures to take advantage of the opportunities offered by further and higher education. The two existing SFC funded schools programmes

referred to above, SHEP and AHDP, have successfully helped Senior Phase students progress to higher education at college or university, moving beyond schools with low progression rates. There are opportunities to build on this progress to build a more consistent Scotland-wide school offer that provides a bridge between school and the tertiary education system, particularly for pupils from disadvantaged backgrounds and/or communities; to simplify the outreach programme landscape for young people and their parents; to provide a more integrated tertiary education and skills offer in Senior Phase; and to ensure our investment is aligned to wider education priorities. Additionally, we believe a more consistent offer is important for the future delivery of the Scottish Government's response to both the Commission on Widening Access (CoWA) and Developing Scotland's Young Workforce (DYW). It will enable a more effective response to pupils most impacted by COVID-19.

📋 **WE RECOMMEND SFC**

Develops a National Schools Programme for Scotland to enhance access to the tertiary system for pupils in the Senior Phase of school working closely with experts across universities, colleges and schools, and taking account of recent reviews.

## FAIR ACCESS AND TRANSITIONS: STUDENT-FOCUSED, WITH MANY PATHWAYS

3.17 We are committed to investing in education that is accessible to learners from all backgrounds. We do this in several ways, and all of our actions contribute to delivering the targets and recommendations outlined in the "A Blueprint for Fairness " published in March 2016:

a) We use targeted investment within our core funds for colleges and universities, alongside a Widening Access and Retention Fund and a Disabled Students Premium in the university sector, and an Access and Inclusion Fund (the need to review the allocation and way these funds are invested is highlighted later in this report) and student support funding in the college sector.

b) We invest over £3.4m in access programmes to directly assist school pupils in getting into colleges and universities (SHEP and AHDP) and a programme to assist adult returners (Scottish Widening Access Programme).

c) We also invest in strategic programmes to enable bridges and support into the university sector.

d) We are implementing our strategy for articulation including securing institutional commitments on articulation, supporting the National Articulation Forum's report on accelerating articulation and publishing the SFC's National Articulation Database.

e) We are implementing a National Ambition for Care-Experienced Students. Our National Ambition aims to address the under-representation and poor educational outcomes for this group.

f) We support policy for groups under-represented or under-achieving in comparison to their peers such as carers, veterans, BSL learners and estranged students.

PHOTO: UNIVERSITY OF EDINBURGH

g) We provide funding and develop policy to provide support for those with mental ill-health in both sectors.

h) We fund targeted interventions to address inequalities such as gender imbalanced subjects, gender-based violence, racial inequality and support for disabled students.

3.18 We have made good progress in many of these areas, particularly on the delivery of the Blueprint for Fairness, and this has been possible through the commitments made by institutions in their Outcome Agreements and their delivery, alongside a continued focus, funding and reporting by SFC. The Blueprint for Fairness recommended that by 2030, students from the 20% most deprived backgrounds (i.e. living in a Scottish Index of Multiple Deprivation 20 area, SIMD20) should represent 20% of entrants to higher education. There is an interim objective from this report which states that by 2021, students from SIMD20 areas should represent at least 16% of full-time first-degree entrants. In 2019-20, 16.4% of Scottish-domiciled university entrants were from SIMD20 areas, meaning the university sector has achieved the interim COWA target ahead of the deadline. We anticipate our proposal on a new National Impact Framework to be key in measuring how colleges and universities are performing against their future access targets.

3.19 Widening access to higher education matters because it can disrupt cycles of deprivation, level up opportunities for under-represented groups in society, and encourage institutions to look beyond grades to support participation from students with a diverse set of backgrounds and experiences who may not have traditionally considered higher education. We should celebrate the progress made on widening access, however, the pandemic, the submissions to this Review and the lived experience of students, suggest that widening access criteria and support should be able to flex as students' circumstances

change. Students can very easily and quickly find themselves in poverty and in need of support and we must ensure that students are not locked out of the support they need. The pandemic outlined that although the students who were already disadvantaged were heavily impacted, it also impacted a much higher number of students as evidenced by the numbers of students who were reliant on food banks and additional discretionary funds.

3.20 Scottish institutions have introduced contextualised admissions and minimum entry requirements to support widening access. The appointment of a Commissioner for Widening Access, and his approach in office, has been of fundamental importance in catalyzing the approach of SFC and institutions to widening access.

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📋 **WE RECOMMEND**

Given the early achievement of the Commissioner's interim target and our collective experience of the pandemic, as well as submissions to this Review, we recommend we work with the Scottish Government on how we can take our widening access work further, including the way we measure and invest funds, set targets and track widening access, and the role of a commissioner for the future.

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3.21 SFC has driven an increase in non-traditional access to universities through a commitment to articulation between colleges and universities for more than a decade. During this time, we have sought to increase the pathways on offer to students by encouraging institutions through their Outcome Agreement commitments to offer students articulation with advanced standing (full recognition of prior learning) onto their

degree programmes. This is often facilitated by formal articulation routes, whereby HNC and HND college students progress into year two or three of a university degree. Of the students who entered university with a college qualification in AY 2018-19, 66% gained appropriate recognition for prior learning. The proportion that remained steady since AY 2014-15 (65.7% progressing students in AY 2014-15 vs 66.1% students in AY 2018-19). Articulation occurs across most Scottish universities, although to varying degrees. Priorities and entry requirements of different institutions vary and it is not always possible, appropriate, in line with student preference or that the curriculum matches to articulate into the later years of a university programme. There are also more informal routes that a student may take; for example, they may achieve an HN-level qualification at college and then some years later return to university on a 'lifelong learning' basis.

3.22 When SFC first developed its policy around articulation, the qualification landscape was simpler and growing articulation routes was a clear way to enable students to access degree level provision. Although this is still the case, the qualification landscape across the school and post 16 education landscape has changed significantly since that time, through Curriculum for Excellence, DYW and the new apprenticeship family being delivered across both colleges and universities. There has also been a significant focus on enabling learners from disadvantaged communities to access university direct.

3.23 During this Review, we have engaged extensively and discussed our existing focus. While there is a significant role for articulation to play in the delivery of fair access and pathways, it cannot be the main or only player. It is also our view that our national targets on articulation should be reviewed to consider a wider consideration of fair access pathways. The

key outcomes we are seeking to achieve remain fairness of entry and recognition of prior learning. We continue to be impressed by the work implemented through Accelerating Articulation, the final report of the National Articulation Forum and fully agree with the forum's recommendations to recognise the diversity of pathways on offer. We have responded to their recommendations by ensuring we consider a wider definition of articulation in our framework and approaches to measurement that recognises associate degrees and progression within one institution, but we feel there is more we could do to encourage institutions to provide multiple entry points into their provision and to promote the pathways and entry routes on offer.

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📋 **WE RECOMMEND**

3.24 That we work with students and institutions to develop a refreshed set of institutional expectations on fair access pathways that:

• Deliver guaranteed and fair progression for students

• Fully recognise student talents and relevant SCQF credits

• Support efficient learner journeys that do not require students to repeat unnecessary levels of study

• Are co-designed and support the evolution of a tertiary systemeducation pathways through college and university.

• Recognise a wide range of qualifications including apprenticeships

• Are focused on fairness but enable institutional diversity

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## COMPLETING QUALIFICATIONS AND SUPPORTING NEXT STEPS

3.25  We know that for many college students their ability to complete qualifications or move to the next stage of study has been affected by difficulties in undertaking the necessary practical and vocational elements of their courses. We have worked with the sector to achieve our shared goal of supporting student success, through a combination of additional funds, bringing forward allocations where necessary, increased credit targets and flexibility in our credit guidance. Alongside the dedicated work of college staff, we have significantly reduced the risk of students failing to complete their qualifications and move on with their lives.

3.26  But these are extraordinary times. Participants in this Review highlighted the need to support students leaving the tertiary education system, to ensure that their hard work under such difficult circumstances is not undermined simply by the timing of their graduation and the economic recovery. Employers are likely to find themselves in a position where they would benefit greatly from graduate-level input but cannot financially commit to their recruitment or support. As we

collectively focus on Scotland's economy and social recovery from the pandemic, we will take steps - with partners - to ensure learners who exit the college and university system have every opportunity to take the next step on their learning or employment journey. This would enable institutions in both sectors to work with employers to sponsor a graduate or to provide work placements and/or upskilling opportunities providing a bridge and support towards the student's planned future career.

### WE RECOMMEND SFC

Develops a one year funded intervention to support graduating students into a productive bridging employment opportunity. We will work with colleges and universities to build on, and run alongside, the Young Person's Guarantee existing and future commitments and PACE (outlined by the Scottish Government) to develop this one-year funded intervention.

## CURRICULUM DEVELOPMENT FOR THE FUTURE

Ensuring the curriculum offer within our system remains fit for purpose and delivers for learners will remain important

3.27  Ensuring the curriculum offer within our system remains fit for purpose and delivers for learners will remain important. HNs have a key role to play in our system and we have heard from stakeholders that there is appetite to ensure these qualifications continue to evolve to both take account of changes in the labour market and the skills and experiences learners will need to be successful in their learning pathways and chosen careers. Therefore, **we will work with SQA and its successor qualifications body to advance work to further develop HNs**. We will ensure that colleges, educators, learners and employers inform the development of these qualifications and the important routes they provide into further study and work.

3.28  We will also set this alongside our ambition to see a leading-edge curriculum offer in areas of key national importance (e.g. net-zero) where supporting learning resource development at a national level may be preferable to drive value and ensure educators and students have access to the very best content around which to structure learning. **We will work with CDN and Colleges Scotland to explore curriculum resource development in the first instance.**

## SECURING QUALITY IN LEARNING AND TEACHING FOR STUDENTS

3.29  Our ambition is to make Scotland the very best place in which to be a student at college or university. This requires a strong commitment to enhancing the student learning experience through the effective use of evidence; clear and purposeful partnerships with students at all levels; and a commitment to cross-sector collaboration and sharing good practice across the college and university sector.

3.30  SFC has a general statutory duty to secure high-quality tertiary provision, and a requirement to secure ways of assessing and enhancing that quality. We fund QAA Scotland and Education Scotland to provide assurance, primarily of the quality of learning and teaching and the associated processes surrounding the quality of learning and teaching in universities and colleges, and the quality of the student experience. Many Review participants suggested ways of improving the current approach to quality.

3.31  For universities, a Quality Enhancement Framework (QEF) was introduced in 2003 and has been subject to regular reviews, most recently in 2017. The QEF is a partnership between SFC, QAA, Universities Scotland, National Union of Students, student associations and sparqs. It has five interrelated elements:

a) Enhancement-led Institutional Review (ELIR), evidence-based peer reviews on a four-yearly cycle that assess academic standards, quality processes, the student learning experience and collaborative provision. The review team will normally include UK-based academics, students and potentially an international reviewer depending on the nature of the institution.

b) Institution-led reviews of subject provision, over a six-yearly cycle. Institutions submit an annual statement on Quality to SFC from their governing bodies summarising enhancement activities.

c) Enhancement themes – national programmes of thematic activities to enable institutions, academic and support staff and students to share innovation in strategy, policy and practice across the sector and from international excellence.

d) Student engagement and partnership in quality assurance. SFC funds sparqs to enable students to take an active role.

e) Public information on the quality of the provision of learning.

Our ambition is to make Scotland the very best place in which to be a student at college or university.

We propose exploring options for a single quality framework for tertiary education.

3.32 For colleges, Education Scotland and SFC developed "How good is our college?". The framework is based on four high-level themes:

a) Leadership and quality culture – the colleges' leadership and approach to improvement

b) Delivery of learning and services to support learning – how good is the quality of provision and services the college delivers

c) Outcomes and impact – 'how good is the college' at ensuring the best possible outcomes for learners

d) Capacity for improvement

3.33 It is designed to align with other Education Scotland quality frameworks and the Student Engagement Framework for Scotland, and aims to support self-assessment, continuous improvement and sharing good practice. It is more aligned to SFC's current Outcome Agreement process and is supported by the co-development of continuous professional development with Colleges Development Network (CDN), which SFC funds.

3.34 We received feedback throughout this Review, particularly from institutions, about the way the existing system works. While there is widespread support for external scrutiny in ways that focus on self-assessment, enhancement and improvement, stakeholders raised several issues:

• the different quality assurance language we use across the sector;

• the lack of general understanding by students, the wider public and government about quality assurance processes;

• the need for more timely and better quality data in some key areas to support self-assessment and scrutiny processes;

• the fact that some aspects of provision for learners are not well covered under current arrangements (e.g. work-based learning, higher education provision in colleges); and

• the challenge of two different systems of assurance, and ways of expressing findings and judgement, given the increasingly inter-connected nature of tertiary-level provision.

3.35 If we are to secure good outcomes for learners, increase the responsiveness of the system, recognise the importance of seamless pathways from senior phase and between colleges and universities, integrate oversight of new provision and lifelong learning through micro-credentials, and given the current gaps in the quality assurance frameworks, **we propose exploring options for a single quality framework for tertiary education**.

3.36 These are the core principles for our approach to quality assurance and enhancement that might guide how these frameworks develop over time, building on initial feedback from stakeholders about what they value within existing approaches:

a) Enhancement-led: a focus on planned improvement and delivering excellence in the student experience matters.

b) Evidence-based: data and evidence should inform our understanding of practice and quality assurance, and our plans for enhancement

c) Reflective: assurance processes should be founded in honest, reflective and well-informed, evaluation.

d) Student partnership: learners should be supported and enabled to play active roles in quality assurance and enhancement.

e) Embracing exchange of practice: sharing of effective practice and connecting educators across disciplines and between institutions is of real benefit.

f) Peer review: the involvement of professional reviewers from other contexts and from outwith the institution brings beneficial input and expertise.

g) Developed in partnership: to ensure they are fit for purpose and impactful.

h) Principles of good regulation: frameworks should be tested against recognised principles of transparency, accountability, proportionality, consistency and targeted approaches.

3.37 A new framework would focus on enhancing quality and delivering excellence in the student learning experience both now and long into the future. It would connect to wider impact and accountability processes, with a clearer connection between quality processes and the National Impact Framework and Outcome Agreements. It would build on Scotland's track record in this space and would embrace the sharing of effective practice across our tertiary system.

## WE RECOMMEND

Developing a single quality assurance and enhancement framework for tertiary education, to uphold academic standards, and enhance the learning experience of all students.

3.38 The Cumberford-Little Report encourages us to consider greater support for WorldSkills competitions, where Scotland has been very successful despite the authors' view that they do not enjoy the same status in Scotland apparent in other European countries. We are aware that WorldSkills is more than an international body promoting global skills competitions and recognise that for participants the competitions represent the end point of a significant educational journey. Connecting with WorldSkills as a global movement will make a significant impact on the development of skills in Scotland through the pursuit of excellence rather than competence; the use of international best practice and benchmarking to raise standards in apprenticeships and technical education so more young people and employers succeed, the upskilling of staff to ensure our learners receive the highest quality of training, as well as biennial "skills Olympics". We have engaged with World Skills UK and the Scottish representative and have been impressed with the ambition, benchmarking and networks they offer.

## WE RECOMMEND THE SCOTTISH GOVERNMENT

Explores further with all interested parties – SDS, SFC, SQA and colleges – how a relationship with World Skills UK aligns with Scottish ambition, standards and approaches.

PHOTO: UNIVERSITY OF GLASGOW

# ONLINE LEARNING AND DIGITAL INFRASTRUCTURE

3.39 Following the thread of quality and student experience, excellent online and blended learning delivery for students is no longer nice-to-have, but is now recognised as essential - a core strategy for every educational institution, even recognising that residential and campus life will remain important for students and institutional business models. For some of our institutions, like the University of the Highlands and Islands (UHI) and the Open University in Scotland, high-quality online learning is integral to their success. For all, it means an increasing premium on mentoring and tutor advice, excellent content, and supporting changing student expectations and ways of engaging with study.

3.40 Many participants in our Review described this move to blended and digital learning as a moment of inflection and urged us to keep Scotland ahead of the game. Online learning is seen as innovative, agile, and environmentally sustainable. People are keen to explore how we can build world-class, accessible digital learning opportunities, where the sectors could develop more efficient digitally based curriculum, investing in material that can be shared more widely throughout the sectors and subject areas for the benefit of a wider range of learners. Respondents also highlighted the importance of blended learning models in many subjects, with students being able to develop practical skills on campus. Digital approaches offer the ability to remove barriers of distance and time, and enable students to learn at their own pace; they enable shifts from didactic to more active and constructivist learning, and the possibility of a learning experience personalised to individual needs. Unlocking these benefits may also depend on shifting the way people come to learning and their digital skills.

## STANDARDS FOR LEARNING

3.41 In response to Phase One submissions from stakeholders, we invited Jisc to lead a consultation on 'Supporting the digital revolution for learners'. This involved a series of roundtable discussions and follow up work with staff and students, focusing on four topic-based sessions - the Learner Experience; Reimagining Learning, Teaching and Assessment; Underlying Technologies and Infrastructure; Digital Culture and Leadership. The outcome of this work will influence our ambition and recommendations, including a vision for the role of digital, data and technology to support our ambition of achieving a responsive, coherent tertiary education and skills system. We have asked Jisc, through the consultation, to draft a Scottish level standard (or standards) for online and blended learning. We will refine and develop this through further consultation with colleges, universities and sector partners, to ensure this is delivered for students.

### WE RECOMMEND

That we work with sector partners to develop a Scottish level standard for online and blended learning to support institutions to deliver an excellent experience for learners.

## SUPPORTING DIGITAL TEACHING SKILLS

3.42 The rapid pivot to online learning in 2020 was only possible because teaching and support staff showed a high level of flexibility and outstanding dedication to support continuing student learning. Considerable progress was made in developing core skills around creating and delivering programmes online. Yet students report the quality of their experience was variable, and evidence suggests mixed levels of staff capability and confidence to adopt cutting-edge digital approaches.

3.43 Institutions will need to explore increased support for teaching staff, for example, using frameworks to understand current levels of digital skills, reviewing teaching qualifications and professional development standards, CPD and resources to support digitally-enabled learning. All of this should be informed by joint reflection on the changing role of educators to support accessible, inclusive and engaging learning in an increasingly online environment.

### SFC WILL WORK

With sector agencies to re-align its investments in educator development and digital to ensure they support the advancement of digital skills of educators so that they are equipped to develop and deliver high quality online and blended learning for students.

## 🌐 DIGITAL INFRASTRUCTURE AND CONNECTIVITY

3.44 The pandemic has highlighted a range of issues around equity and access to digital learning, in particular, the uneven availability of adequate broadband across Scotland and learner access to essential equipment. SFC's digital poverty funding was targeted at providing laptops and other IT equipment for Scottish-domiciled learners qualifying for hardship funding. Yet the picture is more complex, with challenges around online access faced by a wide range of learners at all levels of study, including international students. The experience should prompt us all to reflect on the essential infrastructure needed for students to succeed. Connectivity is a key issue in access to digitally delivered learning opportunities across both further and higher education. Scottish colleges and universities enjoy fast, secure and resilient connections to the Janet network for education and research, which operates at over 99% service availability[3]. But home broadband access – particularly in rural areas – is variable. There is a need to put in place long-term solutions to reduce digital and

data poverty and ensure equitable access to online education.

3.45 One way to achieve this would be to extend the reach of the Eduroam/Govroam service across public sector premises, providing seamless access to connectivity for learners in those locations, and meeting the needs of learners requiring a suitable learning environment where that is not available at home or accessible on campus. The key objective should be to seek collaboration across government, institutions, and industry to ensure tariff-free access to education content for learners in Scottish post-16 education.

## WE RECOMMEND

The Scottish Government considers further how to improve the provision of equitable digital connectivity, on and off-campus, to enable learners in Scottish post-16 education to take up the technology-enhanced learning opportunities available.

3  Jisc annual report 2019-20

## ⭐ ESTABLISHING NATIONAL LEADERSHIP DIGITAL CONSULTANCY SERVICE

3.46 Reacting to the pandemic has produced the beginnings of a vision for how we could transform the experience of learning and teaching. In future, there will likely be a different mix of face to face and online experience. Developments in AI, in particular, have the capacity to have a profound impact on learning, teaching and outcomes for students with potential impact on social inclusion and economic productivity. But we need to ensure it benefits learners and enables educators to use their time most effectively.

3.47 Institutions recognise the need to adapt and invest in their digital capacity. But the need to respond to the immediate context of the pandemic creates pressure around planning and finding investment for longer-term change. The pandemic is prompting reflection by senior leaders on key questions around the future of university and college education, including the use of the physical campus, the design of programmes, the changing economy, priorities for investment and financial health. In 2020 Jisc waived the normal fees on some of its consultancy services, to support institutional decision-making at what was – and remains – a

very uncertain time. We will explore the demand for and available supply of strategic consultancy around digital and institutional change, to ensure that senior managers have access to the support they need.

3.48 A national consultancy service could play a key role in enabling institutions to develop change plans which embrace digital, support leaders in navigating the implementation of digital solutions and will share best practice, provide implementation advice and enable evidence-based step-change enhancement of the student and colleague experience. The service could also provide advice to SFC, to inform our investment planning and interventions in respect of digital and the student learning experience.

## SFC WILL WORK

With JISC to explore the creation of a national digital consultancy service for senior leaders in tertiary education, reflecting institutions' own plans for development and SFC's investment, to inform future decisions and investment priorities.

PHOTO: CITY OF GLASGOW COLLEGE

## STUDENT SUPPORT

3.49   While significant support has been provided to students through the pandemic, we have not focused on the wider student support agenda (bursaries, childcare and discretionary funds) in this review of coherence and sustainability. This is because we are currently working with our colleagues in SAAS to implement the recommendations of the independent review of student support. The report of the Student Support Review Group entitled - A New Social Contract for Students was published in November 2017 and on 9th June 2018, the First Minister gave a broad indication of the Scottish Government response to the Review. This was followed up by a statement from the Minister for Further Education, Higher Education and Science to the Parliament on 12th June. In these announcements, Ministers indicated several changes to be introduced in response to the review recommendations.

3.50   Many of these recommendations were to support better alignment of student support funding between further and higher education and make it easier for students to move from FE to HE courses. Some of the ongoing work to implement the recommendations was reflected in the recent SNP manifesto commitments, for example, to expand the total student support package to reach the equivalent of the Real Living Wage over the next three years and to further align student support and social security benefits. We will continue to work with the Scottish Government and SAAS to introduce these changes.

3.51   There are further elements of student support that we will explore with the Scottish Government and SAAS. These relate to economic recovery. The current student support system is geared towards providing support to first-time learners, with students progressing through levels of study. As our focus shifts to include more upskilling and reskilling activity, there is a need to ensure that individuals who need to take time out of the labour market to retrain can be supported. We will therefore explore with Scottish Government whether we can introduce flexibilities in our student support systems around adult returners to education and those who need to undertake qualifications at the same level, but in a different subject (such as conversion courses).

3.52   There is also a cross-over between what we provide directly to colleges to support students and what we provide directly to students to support them through their learning. We will continue to review and make the most efficient use of our funding to support students. An example of this would be whether or not our 'study costs' support through bursaries would be more effective if it were directed through our core teaching funding.

**We will continue to review and make the most efficient use of our funding to support students**

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### SUPPORTING THE MENTAL HEALTH OF STUDENTS

SFC is committed to supporting student mental health and wellbeing, and we have several funding streams to support this - both established, and new funding as a direct result of COVID-19. In 2019, the Scottish Government committed to providing more than 80 additional counsellors in further and higher education over the next four years[4], with an investment of around £20m. Good progress has been made and agreement reached with the sector to enhance the services provided by colleges in particular. SFC also introduced an additional tranche of funding (£1.3m in 2020) to support improved mental health provision and counselling services in colleges and universities, to respond to the particular difficulties students faced during the pandemic, to bolster their mental health offerings.

3.54   Alongside this, we allocated £0.73m for Students Associations[5] to increase capacity and develop wellbeing support and activities, recognising the important role that Students Associations played during COVID lockdowns in terms of maintaining social connections and a sense of community, and providing non-clinical wellbeing support. In addition to the counselling funding outlined above, £4.4m is also being allocated in AY 2021-22 to help provide mental health and wellbeing services to college students and staff as they deal with the impact of the pandemic.

In the college sector, the greater number of vulnerable students and fewer existing mental health resources has increased the challenges raised by COVID. Disruption to in-person teaching - particularly for practical and vocational courses - and disruption to articulation pathways has also impacted the mental health and wellbeing of college students. This funding will enable colleges to develop mental health and resilience packages that are most appropriate to the needs of their college communities. Central to this will be the development of a Mental Health Coordinator role in colleges, to oversee these activities and to align mental health support more widely within regions. We have consulted closely with Colleges Scotland, NUS Think Positive and other key sector stakeholders to propose a package of mental health activities that colleges may use this funding to explore, including:

- Peer to peer student mental health support or other student-led mental health services.
- Mental Health Mentors
- The development of a Nightline service in the college sector.
- Appropriate mental health services for college staff.

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4   More mental health support for students

5   £730,250 confirmed to support Students' Associations

## SUSTAINING RESEARCH AND ENHANCING KNOWLEDGE EXCHANGE

4.1 Scotland's universities are among the best in the world, with cutting edge research that creates knowledge of immense social, economic and cultural value, essential not only to Scotland's ability to tackle challenges and opportunities now and in the future, but vital for our collective global health and wellbeing. We are genuine world leaders in areas such as precision medicine, quantum technology, photonics, nanofabrication, data, and natural capital. From this research flows potential knowledge exchange and innovation, business and wealth creation. And, of course, this research excellence is fundamental to Scotland's reputation and our ability to attract international students, inward investment, leveraged funding and broad collaborative networks here and across the globe.

## THE UK CONTEXT

4.2 The UK Government has set an ambition to be a global science superpower by investing £22 billion in R&D by 2024-25. This promises unprecedented levels of R&D spending and an opportunity for additional resources to be levered into Scotland. The UK R&D Roadmap, published last June, set out some of the policy levers and drivers that will shape how that investment is delivered, including a focus on places, innovation and people & culture. Participants in this Review were keen to emphasise the volatility in the current research environment – the changing UK policy context, the unprecedented cuts to live research projects caused by a sudden reduction in the UK Overseas Development Aid budget, signals that private sector R&D may be favoured over university research, and the establishment of the Advanced Research and Invention Agency (ARIA), with a focus on high-risk, high-reward research. This underscores the importance of exerting Scottish influence on UK strategies and policy delivery, to consider the implications for devolved responsibilities and to work through responses that protect and sustain Scottish research interests.

4.3 Our partnership working with UK Research & Innovation (UKRI) on both policy development and delivery has been productive and Review participants encouraged us to dedicate more resource to that relationship. We agree that providing UKRI with a consistent SFC contributor to their work and giving SFC and the Scottish sector an influential presence in the UKRI organisation would be beneficial. This could also provide an opportunity to maintain relationships with other partner organisations, administrations and relevant departments of the UK Government.

### WE RECOMMEND

Creating an SFC position to be based in Scotland House, London, to work closely with UKRI and other stakeholders relevant to Scottish interests.

## SUSTAINING INVESTMENT

4.4 We currently invest around £243m, 80% of our total funding for research and innovation each year, through the Research Excellence Grant (REG), to support excellent research activity. We are committed to supporting universities to explore the full range of disciplines from the most physical of the sciences to the most creative of arts disciplines. Our core investment in research remains the REG for curiosity-driven, discovery research in universities. It gives our talented research community the freedom to pursue research that can lead to major discoveries and provides capacity and continuity within the university research system, supporting institutions to attract external research investment from a range of sources. While REG provides this baseline funding, project-based funding for specific research endeavours is provided by UKRI, charities, industry and others. This is the UK dual funding system for research.

4.5 As the Muscatelli Report highlighted most nation-states promote research and innovation through direct R&D grants, R&D tax credits, patent box policies, skilled immigration, incentives for universities, STEM/skills supply, trade and competition, intellectual property reform, and mission-orientated policies. In the Scottish context, as these levers are not available to the Scottish Government, we rely on direct public R&D spending that can help to crowd-in private investment, an understanding that Higher Education Research and Development spend should stimulate business-related R&D while recognising that the dominance of SMEs in Scotland rather than large-scale R&D industrial players, and the importance of research investment to leverage other relationships and funding.

4.6 Over the past decade, REG has gradually increased, albeit below inflation and at a slower rate than UK Research Council funding. While REG in Scotland is higher per head of researcher population than equivalent funding streams in other parts of the UK, English institutions are likely to use tuition fee income to cross-subsidise research.

### WE RECOMMEND THE SCOTTISH GOVERNMENT

Continues to protect and sustain the research and science base in Scotland through continued long-term investment; and considers the potential to use additional capital resource for research when it becomes available. The additional funds in 2020-21 (£95m) and the small uplift to research funds for 2021-22 (1.5% overall, £4.4m) have been widely welcomed by the sector and participants to this Review.

## THE DISTRIBUTION OF INVESTMENT

4.7 Over the last decade, our funding has also become more concentrated in research-intensive universities. In AY 2020-21 over half (54%) of REG was allocated to two institutions - the University of Edinburgh and the University of Glasgow. The Muscatelli Report quite rightly challenged us to consider whether that level of concentration was sufficient. This Review enabled us to explore a wide spectrum of options for how to distribute this finite budget envelope. Review participants fell into some natural camps. Some research-intensive institutions told us that further concentration would yield more world-leading research and increased global standing, bringing benefit to the whole of Scotland in the process. Other institutions indicated that further concentration would have a relatively small positive effect on numbers at the top but a disproportionately negative effect for institutions who might receive less research funding, as well as creating a longer-term risk to novelty, creativity, research community development and the ability to offer research-led teaching.

4.8 Our judgement is that, within a finite resource and given the underpinning policy assumption that universities "do research" as well as learning and teaching, we are currently on the edge of retaining a credible distribution across 18 institutions (not including the Open University Scotland) and that any move to concentrate our funding further could have dramatic consequences for smaller institutions without having a significant beneficial effect on larger institutions. We believe that Scotland derives best value from SFC's sustained and flexible investment in our world-leading research base if we target that support at excellent research, wherever it is found, and empower the recipient universities to use our funding to develop that research and explore new and emerging research areas. We will continue to promote and support research excellence.

4.9 The most recent evaluation of research excellence (conducted jointly by all four UK higher education funding bodies) assessed institutions' research submissions based on outputs (e.g. publications and other forms of research output); impact (i.e. the benefits delivered to the economy, society, culture, public policy or services, health, the environment or quality of life); and the research environment (e.g. the vitality and sustainability of the research environment, including the contribution to the wider discipline or research base). We distribute REG through a funding formula that takes account of the most recent evaluation. The current UK-wide evaluation of university research, through the Research Excellence Framework (REF2021), will help us decide where research excellence lies across Scotland's institutions, and we will examine the detail of our distribution methodology as REF2021 results become available in early 2022. Responding appropriately to that refreshed map of research excellence across Scotland will be critical and consultation on the principles of a refreshed REG distribution methodology will be carried out in the later part of 2021, for implementation as early as AY 2022-23.

## RESEARCH SUSTAINABILITY

> The pandemic surfaced the challenges in this system of cross-subsidisation, with its reliance on international student income

4.10 We know that many research projects are not undertaken at Full Economic Cost (FEC) and that, for many institutions, research activity relies on cross-flows of income from other activities. The most recent figures show that recovery of FEC for research in Scotland was 80.1% on average, with a comparable UK figure of 70.6%[6]. As the Muscatelli Report set out, carrying out research at a loss is a strategic decision by each university – and a decision that needs to be constantly balanced with other considerations. Undertaking increased levels of high-quality research drives an institution's reputation and global league table performance, thus attracting profitable international student income that can cross-subsidise research activity. The pandemic surfaced the challenges in this system of cross-subsidisation, with its reliance on international student income (and Scotland's reliance on a small number of other countries for international student recruitment), given increasing research volume, public R&D budget constraints and the ambitious business decisions taken by individual universities.

4.11 We discuss general issues of institutional sustainability later in this report. There is no single solution to the challenge of research sustainability, but Review participants suggested we:

a) Engage further with individual institutions to assess the risks and implications of their strategies and business decisions, as international competition increases.

b) Track and influence decisions about UK Government R&D funding flows and policy decisions, wherever possible.

c) Continue to work with UKRI on the question of research sustainability, to ensure the context and distinct nature of Scotland's research base are taken into account in UKRI's consideration of international competitiveness in research quality, the recruitment of the best global talent, and the translation of research into impact. Given that we are part of the UK-wide system of dual support, and that the challenges of research sustainability are neither unique to Scotland nor solvable through our investment alone, we believe they require collective action on a UK-wide basis.

4.12 We consider that it is entirely proper, and desirable, for institutions to fund part of their own research activity from their own resources if they are able and wish to do so. While the right (sustainable) level of that contribution is a question to be worked out by the individual university, we recognise the role REG plays as a stable but flexible underpinning to an institution's portfolio of research funding (including cross-subsidy in some cases) and its importance in maintaining research excellence.

6   Transparent Approach to Costing - Annual TRAC 2018-19

## IMPACT AND ACCOUNTABILITY

4.13 SFC's Research Excellence Grant stretches beneath the breadth of our university research system to provide undirected, underpinning support and, unlike any other public research funding, it is agile, resilient and flexible. This includes supporting nascent and emerging research areas, providing continuity between research projects and contracts, and covering some of the overheads of externally-funded research. It also builds in the ability to be responsive in a changing landscape - including in the face of global forces such as pandemics. The lack of constraints and direction is a vitally important component of the dual support system.

4.14 That said, throughout this Review we considered the merit of better evaluation of the use of REG within universities, to provide institutions with an opportunity to describe what they achieve through their research work, for SFC to obtain better evidence to articulate the value of our investment, and for good practice to be shared across the research community. The approach used to report on the increased research funding allocated to universities in FY 2020-21 to mitigate the impact of COVID-19 is likely to offer an effective model to follow. While greater accountability for our undirected funding would make the value of research more visible, we will also work with sector partners to create a better narrative and set of case studies to articulate the case for sustained investment and demonstrate impact. We will commission an external analysis of the spillover benefits of our research investment to Scotland, including its economic and societal value.

### WE RECOMMEND

That we introduce reporting on the impact of basic research investment and associated spillover benefits, and share good practice and case studies.

PHOTO: UNIVERSITY OF EDINBURGH

## RESEARCH TALENT AND CULTURE

4.15 As we compete for global talent and continue to open up our post-school education system to people who may not have thought of a career in science and research, we are keen to make sure that Scotland can be an internationally renowned place to be a researcher or a knowledge exchange (KE) professional. A clear commitment to supporting and promoting equality, diversity and inclusion runs at the heart of SFC's work. People are at the heart of excellent research and they must have the freedom to work creatively and productively in a safe and open environment. The increasing focus on academic culture from research funders, institutions and the community is welcome and we want to be a part of this momentum, shaping the Scottish research and KE landscape to be more supportive of the people within it.

4.16 Many researchers find the level of competition associated with their work creates an aggressive environment, with many expressing concerns about their mental health and wellbeing, their ability to be creative, and concern at the importance associated with metrics of success other than research quality. We also have challenges in cultivating a truly diverse and inclusive research environment. Although we can point to good levels of participation in current UK activity associated with improvements in research culture (such as Athena Swan, Advance HE's Race Equality Charter and the Concordats on researcher development and research integrity), and to institutional work in this area, we can and must do more to improve Scotland's research culture. We are clear that the environment in which research is conducted is an essential part of research excellence.  Linking with the growing momentum from research funders in this space and the UK R&D People and Culture Strategy, **SFC will commission the sector to develop a blueprint for establishing a positive research**

**culture in Scotland and instigate a broader debate that explores and defines good practice.** This will focus on areas including research practice, improving job security, careers and excellence, and be supported with a co-ordinator post, to allow full-time effort and focus.

4.17 In addition, PhD training in the UK is changing, as more rounded definitions of a researcher develop that include broader skills in leadership and business acumen. There is increasing recognition that PhD training should be about more than just preparation for an academic career, and that valuing a greater range of career paths could attract a wider group of people. This is an opportunity for the Scottish sector to develop early consideration of these broader competencies for PhD training

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### 📋 WE RECOMMEND

Developing better ways to support the postgraduate research student experience by:

a) Introducing greater accountability from institutions for our Research Postgraduate Grant (RPG).

b) Restating the purpose of the RPG to include support for postgraduates to acquire the skills to develop careers in or outside of academia, and to support collaboration between universities in areas of researcher support and development.

c) Articulating better the value of post-graduate researchers (PGRs) to our economy and society, inside and out with academia. This will link to work underway within UKRI.

d) Building our evidence base, and exploring how we can better track the destinations of early career researchers trained in Scotland, as part of articulating the value that PGRs bring to our society and economy.

e) Creating a national Graduate School programme by consolidating our current support across many strands of activity in this area to develop communities that foster collaboration and a positive culture.

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## A MISSIONS APPROACH TO RESEARCH, KNOWLEDGE EXCHANGE AND INNOVATION

4.18 COVID-19 has brought the critical value of science, research, knowledge exchange (KE) and innovation to the fore and underscored what can be achieved when we focus and concentrate resources. Addressing the climate emergency through focused and sustained effort must be a primary goal. Other areas where a unified approach can make a real difference will range from our ageing population to persistent societal inequality, mental health, housing and more. We have a significant opportunity to drive change. Universities and colleges have a critical role to play here and more can be done do to maximise their contributions. It is our view that an interdisciplinary 'missions approach' will enable our institutions to take a leading role in tackling challenges and driving impact and long-term action.

4.19 Missions involve big, transformative goals which aim to improve our society. A 'missions approach' puts research and innovation at the heart of achieving these goals and provides funding that focuses on long-term outcomes and impact rather than short-term outputs. The approach is championed by Professor Mariana Mazzucato and others who recommend embedding a 'missions approach' across all public sector levers, including regulation, private sector incentives and funding, as well as investing in research and innovation to instigate innovative cross-sectoral collaborations[7]. A key characteristic is the creation of spill-overs beyond the focused outcomes that missions aim to achieve. These include: leveraging increased research funding, inward investment, talent attraction, international collaborations and export opportunities. Whilst the missions approach has recently gained significant prominence, it is not

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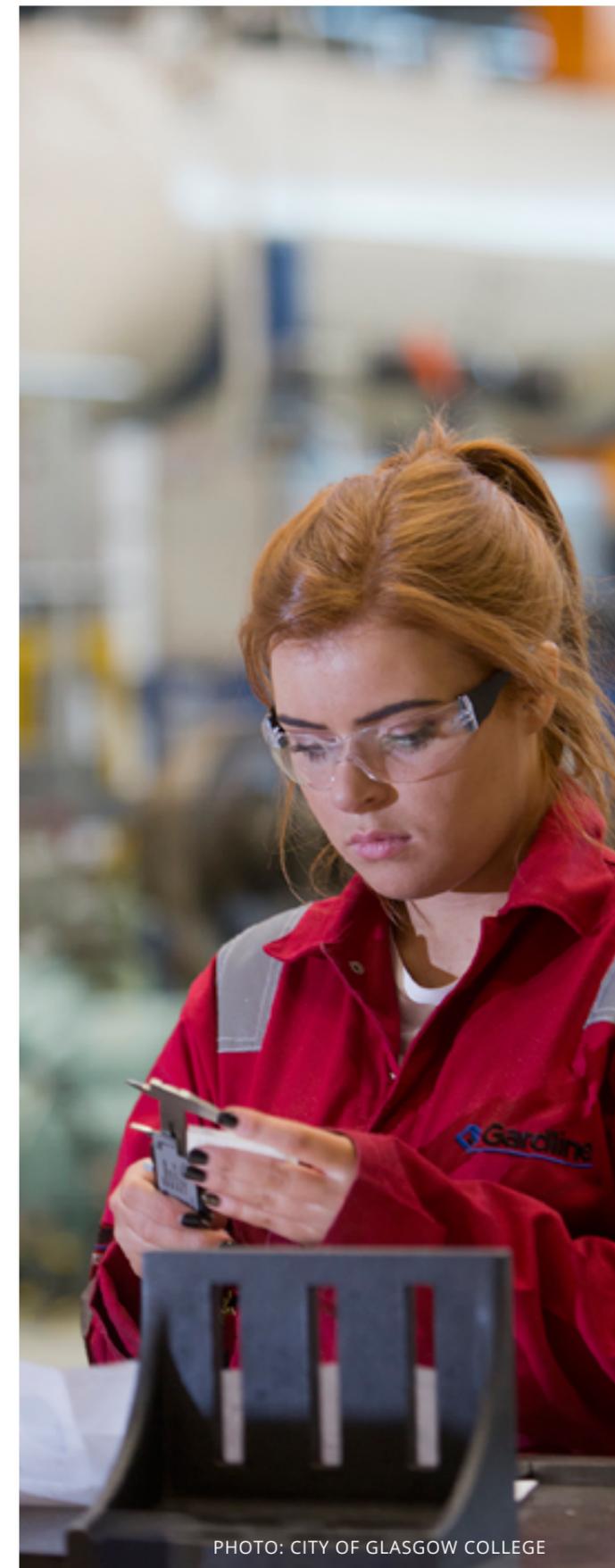7    Missions: A Beginner's Guide



PHOTO: CITY OF GLASGOW COLLEGE

a new concept. In designing their new mission-oriented approach, the European Union has pulled together a wealth of evidence on previous and ongoing successful mission programmes from around the world[8]. Missions are set by governments and research funders but researchers, innovators, public and third sector representatives work together to define the approach.

4.20 The European Commission's missions in their flagship research and innovation programme, Horizon Europe, aim to push the limits of traditional EU-funded research projects and mobilise funding and action from different funding bodies, private investors, researchers, and citizens, towards five missions – cancer, adaptation to climate change including societal transformation, healthy oceans, seas, coastal and inland waters, climate-neutral and smart cities, and soil health and food[9]. These missions sit alongside the programme's investment in discovery research and innovation. The missions represent around 5% of the overall Horizon Europe budget (approx. €95.5bn), and are a recognition of the importance of actively translating fundamental research into demonstrable impact in ways that have been under-utilised in the past.

4.21 SFC and the Scottish Government have undertaken mission-style approaches in the past, including the launch of the Cancer Innovation Challenge in 2017. The ambition of this £1m funding was to encourage collaboration between Innovation Centres (ICs), medical professionals and cutting-edge healthcare businesses to help Scotland become a world leader in cancer care. The collaboration developed two priority areas to address the challenge:

**PRIORITY 1** - identifying innovative cancer data science solutions;

**PRIORITY 2** - developing new tools for cancer patient-reported outcomes and experience measures.

8   Mission-oriented policy studies and reports

9   Missions in Horizon Europe

Activity around priority 1 has leveraged £5m of investment to create Artificial Intelligence (AI) tools as part of a prototype imaging system that could revolutionise the way people with Mesothelioma, the "asbestos cancer", are cared for. Scotland currently has the highest incidence of this type of cancer in the world, reflecting the historical use of asbestos in many UK industries, including shipbuilding and construction. The focus around priority 2 led to the creation and rollout of an award-winning app, developed by My Clinical Outcomes (MCO), to enable cancer patients to record and share their symptoms in real-time from home to provide better treatment pathways and improve outcomes. This has been rolled out in NHS Ayrshire and Arran, and is now in routine use supporting the care of chemotherapy patients. MCO are working to deliver in further health boards and across multiple cancer areas. Recognising the challenge of managing health remotely caused by the COVID-19 lockdown, MCO made their platform freely available to all of NHS Scotland Health Boards. This Challenge approach has led to significant positive outcomes-driven toward the mission of helping Scotland to become a leader in cancer care. This focussed approach is improving outcomes and experience for patients and helping to unlock exciting and innovative new approaches to how cancer care is delivered, tailored to Scottish citizens and their areas of need.

4.22 We have been encouraged to pursue missions in the Muscatelli Report and in Professor Louise Heathwaite's report on research pooling. A 'missions approach' fulfils the central recommendation from the Muscatelli Report that we support the development of national focuses within Scotland's R&I landscape, promoting coordination and increased collaboration to bring benefits including increased funding leverage.  He recommends –

"… an evolutionary approach [to focussing on areas of critical mass for innovation], where the major players (SFC and the Enterprise Agencies), work with the HEIs to gradually sharpen the focus of Scotland's innovation strategy, at least in terms of the major areas for investment. This might involve setting some over-arching mission-led themes (which would need to feed in external developments e.g. our relationship with the EU research and innovation base) and linking these to the range of publicly-funded and university-funded knowledge exchange assets – whether sector or technology-based…"

4.23 We agree that acting with a national mindset is important if we are to galvanize change. The pandemic has brought into sharp focus the need for us to collaborate to deliver against national need. A missions approach will catalyse and support collaboration, drawing together the necessary expertise, across disciplines, and enabling universities, colleges and other partners to coalesce around defining and addressing specific target areas, drawing on our world-leading research base that is underpinned by our core support for research and KE

### WE RECOMMEND THE SCOTTISH GOVERNMENT

Champions a 'missions-based' approach, to harness the power of research, Knowledge Exchange and innovation in tackling big societal challenges.

4.24 To fulfil this recommendation the Scottish Government will need to incentivise the whole Scottish ecosystem to work collectively with us on missions that catalyse cross-sector working and inter-disciplinarity to maximise resources, expertise and additional funding leverage to meet the scale of the challenges facing us. The formation of the Scottish National Investment Bank (SNIB), with its missions focus, provides an ideal opportunity to build out a broader system focus. We should be clear that there will be a threshold for impact. Missions need to be attractive to be successful and that requires resource, ambition and expertise. We have

examined missions-based approaches elsewhere and significant collective funding of £100m over five years (AY 2022-23 – 2026-27), would enable the co-design and co-creation of missions with a broad range of partners, including active researchers, over AY 2021-22, and would support the contribution from universities and colleges to three missions with potential for significant impact. We anticipate that at least one mission should be focused on net-zero and just-transition. This public funding would be multiplied significantly through leverage from other sources and parts of the system, and would be designed to ensure existing infrastructure, like Scotland's innovation centres and districts, and research pools could orient towards this missions approach.

4.25 In the absence of funding of significant scale, and recognising the spending environment, a single net-zero and just-transition focused mission could be initiated as a pilot mission, with funding of between £25m and £50m over five years.

4.26 We would expect our mission stimulus to leverage investment from others, helping us to bring additional and wider funding, resources and opportunities to Scotland. Several R&I funders have developed mission- or challenge-oriented funding streams, including UKRI, Wellcome and the European Commission, and our missions approach will position the sector to be able to make highly competitive bids to these programmes. In addition, the UK Government's newly announced National Science and Technology Council will explore how science and technology can be used to tackle significant societal challenges.

## COLLABORATION THROUGH RESEARCH POOLING

4.27 The Research Pooling Initiative (RPI) was a major SFC investment in collaboration. Established in 2005, Research Pools combined significant and targeted investment with a fostering of cross-institutional collaboration to achieve critical mass in key disciplines.

**THE 10 CONTINUING RESEARCH POOLS ARE:**

ETP (Energy Technology Partnership)

MASTS (Marine Alliance for Science and Technology for Scotland)

SCOTCHEM (Scottish University Chemistry)

SAGES (Scottish Alliance for Geoscience, Environment and Society)

SINAPSE (Scottish Imaging Network: A Platform for Scientifc Excellence)

SICSA (Scottish Informatics and Computer Science Alliance)

SRPE (Scottish Research Partnership In Engineering)

SULSA (Scottish Universities Life Sciences Alliance)

SUPA (Scottish Universities Physics Alliance)

SOILLSE (National Research Network for the Maintenance and Revitalisation of Gaelic Language and Culture)

4.28 The initial substantial (£150m) SFC investment was intended to support institutions to establish collaborative research structures in broad disciplinary areas to develop critical mass of excellent research in Scotland. The goal was to ensure that Scotland could compete more effectively for funding, research staff and doctoral students both nationally and internationally. Funding supported extensive recruitment of academic staff, investment in infrastructure, graduate schools and studentships as well as supporting the development of collaborative networks. The Research Pools were bespoke models and investment was spread over several years peaking at £20m in AY 2012-13. After 2014 the RPI entered its second continuation phase, where successful pools received up to £150,000 (later reduced to £112,500) per pool (matched by universities) per year to sustain the central resource and their collaborative activities. Funding is now provided through one-year transitional funding awards.

4.29 The Independent Review of the Research Pools, led by Professor Louise Heathwaite in 2019 concluded that the initial phase of the RPI was successful in its original aims and had made important contributions to Scotland's research base and continued global science leadership[10]. The review also recognised a cultural shift towards a collaborative ethos within the Scottish landscape which was aided, if not led, by Research Pools. Professor Heathwaite recommended that SFC build on the

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10   Independent Review of the Scottish Funding Council's Research Pooling Initiative

collective critical mass achieved and make an investment at scale to re-orient the Pools to address strategic, cross-disciplinary research challenges important to Scotland. Our missions proposal provides that opportunity for investment at scale. Professor Heathwaite also concluded that that the Pools no longer reflect the current set-up of the research landscape and funding in its current form should cease. She recommended that 'transition pools' be supported to ensure that the value brought to the system is not lost.

4.30  We consider that the Pools continue to bring value and that their continued presence should be secured, although with caveats. We recognise Professor Heathwaite's conclusion that both the Pools and the research landscape are now very different from when the initiative began.  Since the Heathwaite report was published, we have seen concerted action from the Pools to take on more of an interdisciplinary challenge focus – illustrated by their joint work surrounding COP26 – and by making a step-change in how they collaborate both between themselves and with other parts of the system, including Innovation Centres and Interface, through the establishment of Research Innovation Scotland (RIS), an umbrella architecture which aims

to explore where, as a collective and with a shared purpose, the Scottish research system can add value and generate outputs greater than the sum of its parts.

4.31  A number of the Pools operate pan-Scotland graduate schools which provide research students in Scotland with an enriched and enhanced experience as a result of being part of a national-level cohort. The recent Russell Group report 'Realising our potential' highlighted the importance of supporting networks to foster a sense of community as a positive influence on research culture. The role of the Pools in seeding collaboration to leverage additional funding reflects many of the recommendations in The Muscatelli Report. The Pools, with RIS as a further connector, bring significant value and are a ready-made architecture that can be drawn on to further boost Scottish system collaboration and coordination. Instead of reinventing the wheel and setting up new ways to support the leverage of additional funding in Scotland, we want to harness what is in our system already rather than creating new structures.

## ☆ NEXT GENERATION RESEARCH POOLS 2.0

4.32  We will recommission Research Pools, creating next-generation networks that build on our sustained investment in the Research Pooling Initiative with a focus on interdisciplinary challenge-oriented research collaboration, leveraging additional funding and fostering early career researcher communities and training.

4.33  In AY 2021-22 we are investing £1.05m in Pools in total, approx. £112,500 per Pool, matched by university contributions in cash and in-kind, to give a notional pooling resource of £2.1m per annum. This current level of funding is not sufficient to enable Pools to deliver on the full range of activity that they have the potential to provide and, in recent years, long-term uncertainty has brought challenges on top of the modest resourcing. We will therefore seek to ensure funding of recommissioned Next-Generation Pools at a higher level. To be clear, this is not a continuation of research pools as originally established, but managing the activity we

value better so that it is better aligned to our objectives, and promotes collaboration and inter-disciplinarity to increase UKRI investment.

4.34  We anticipate that additional funding for Next-Generation Pools will be needed to provide baseline support. As a condition of continued SFC funding, universities will be required to double SFC's contribution (without the increase coming from increased in-kind contributions). We will also encourage and support other actors in the system who work with, and value, the Pools, including the Scottish Government, to reflect this in their support. We recognise that the system value which pools bring is not understood or appreciated at all levels within universities. Therefore, over AY 2021-22 we will engage with the sector, including through Universities Scotland's Research and Knowledge Exchange Committee (RKEC) and other routes, to build buy-in and develop the vision for Next-Generation Pooling in the present-day research landscape. We intend to provide explicit support for Pools 2.0 for three years (AY 2022-23 – 2024-25) after which SFC's funding will become part of our university block grant and we will expect institutions to continue their funding, initially as a condition of grant.

PHOTO: DUNDEE & ANGUS COLLEGE

## THE CONTEXT FOR KNOWLEDGE EXCHANGE

### THE ECONOMIC AND POLICY ENVIRONMENT

4.35 As we recover from the economic and social impact of COVID-19, Scotland remains committed to net-zero emissions of all greenhouse gases by 2045[11]. The green recovery will require many existing jobs to change, new good jobs to be created[12] and the exploitation of all of our intellectual assets and ingenuity to achieve a just transition to a net-zero carbon society.

4.36 Our economy is adapting to a post-Brexit trade and talent flow environment and we still await the UK Government's replacement for the European structural funds which previously contributed to levelling up our skills development, infrastructure and industrial R&D. Our European and international reputation and relationships are of great importance to Scotland and our future prosperity.

4.37 The path to a fair, wellbeing-focussed and low carbon economy will require us to capitalise on regionally specific economic opportunities, to diligently manage our natural resources and environment, to move to a more digital business base, to benefit strongly from global trade[13] and to ensure that everyone, and every place, in our nation benefits. Universities and colleges are playing a vital role in delivering this green recovery vision and we want to help that contribution grow.

## THE CONTRIBUTION OF COLLEGES AND UNIVERSITIES

4.38 One of the greatest contributions that our universities and colleges can make to the economy and society is by educating skilled and capable people who will go on to contribute to the world in their professional or creative lives. SFC is focused on the journeys of learners, the coherent provision of the right courses and the inclusion of all who can benefit from tertiary level education and are conscious of the twin benefits – to the individual and society – of that education.

4.39 In addition to providing advanced education, universities carry out research that, supported by sustained and patient public and private investment over many years or decades, results in knowledge that can and does transform our healthcare, technology, public policy, environmental sustainability and more. Both colleges and universities directly support companies and the public sector with expertise, unique facilities and specialised training to enable innovation and encourage investment.

4.40 A study from 2015 estimated the economic value of universities to the Scottish economy at that time to be more than £7.2bn per year (GVA) and 144,549 FTE jobs. Work by the Fraser of Allander Institute is reported to have estimated the value-added to the economy by college graduates in Scotland as being around £2.58bn per year. Universities and colleges are significant economic and social contributors through their graduates, through the applications of research and their wide range of forms of support for private, public and third sector organisations in Scotland.

4.41 Throughout this Review, we have benefited from the input of stakeholders involved in all aspects of the activities just mentioned as well as from the recommendations of Mark Logan, Graeme Reid, Sir Anton Muscatelli and of Audrey Cumberford and Paul Little.

## CHALLENGES AND OPPORTUNITIES

4.42 Some of the underlying challenges of our economy pre-date both Brexit and COVID-19, including a low rate of business investment in R&D or BERD (0.83% of GDP cf OECD average of 1.68% in 2018)[14], a low proportion of investment by InnovateUK in Scottish R&D (a share of 6.7% in 2018 in comparison with our cf population share of 8%)[15] and few corporate R&D centres. To which we add the shrinking time window to decarbonise our industry, transport, agriculture, power production and domestic energy use.

4.43 This last, climate change, is the first of many opportunities. Scotland is making progress against the 2045 target[16]. We have both an abundance of natural capital riches to give us renewable energy and the foundations of a circular bio-rich economy but also a globally impressive university and college sector and an emerging entrepreneurial ecosystem working to achieve a just transition.

4.44 The Muscatelli Report challenged us, alongside the Scottish Government, the Enterprise Agencies and others, to fully harness the economic contributions of universities through a nationally aligned approach to innovation. It identified increased coordination and collaboration, in areas including a consistent industry 'offer' and in leveraging increased UK R&D funding, as opportunities to amplify the contributions of Scotland's institutions to Scotland's economic and social recovery.

4.45 To build on our research excellence and help open up research, skills support and the knowledge base of our institutions, Scotland has invested in Innovation Centres, in Interface and other major facilities such as the National Manufacturing Institute Scotland and the Michelin Scotland Innovation Parc. All of these investments help to encourage businesses (and the public sector) to invest in R&D, to benefit from innovation and to raise ambition and wages.

4.46 SFC directly supports universities to work collaboratively with each other in support of external partners by providing the outcome-focused University Innovation Fund. Between AY 2016-17 and 2019-20 universities have used this to enable 57 spin-out companies, 869 start-ups and 73 social enterprises and are now helping Scottish Development International to strengthen Scotland's international offer[17] to increase our already impressive FDI performance as second only to London in the UK in 2020[18].

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11  Reaching net zero

12  Scottish Enterprise Operating plan

13  Shaping Scotland's Economy: Inward Investment Plan

14  Gross expenditure on research and development Scotland 2018

15  Regional distribution of funding

16  Securing a green recovery on a path to net zero: climate change plan 2018–2032 - update

17  Shaping Scotland's economy: inward investment plan

18  EY Attractiveness Survey 2021

The pilot demonstrated the latent potential in the sector and the opportunity to fully harness this through core funding.

4.47 Our colleges, with very modest pilot support from SFC, are demonstrating a wide range of support for employers, stretching beyond the core education offer to innovative training, partnering with Innovation Centres and the use of unique facilities, all strengthening the regional relationships and building business confidence to invest in skills and innovation.

4.48 The ambition of the UK Government to spend 2.4% of GDP on R&D in the UK and to support this with £22bn of public money by 2024-25 will be realised through a mixture of public and private investment into companies, universities and elsewhere. We await the publication of the UK Innovation strategy, the outcomes of thinking on place-based R&D policy and other key developments but are keen to influence the "levelling up" ambition of the UK Government to ensure its appropriateness for Scotland's varied economic geography. As demonstrated through Scotland's successes implementing City Region Deals and in the UK Strength in Places Fund[19] to date, place-based 'triple-helix' partnerships of academic, private and public sectors are a great opportunity.

4.49 SFC's core interest in this economic development space is maximising the knowledge exchange between the institutions we fund (universities, colleges and small specialist institutions) and the companies[20] where that knowledge can be useful. We want to do this in a way that helps universities and colleges make the greatest contribution to Scotland's National Performance Framework: reducing inequality, increasing opportunity for all in society and helping us end our contribution to climate change.

4.50 Our current activities include:

a) The **University Innovation Fund (UIF)** is our core support for the staff and activities in universities which centrally manage and enable industrial partnerships, licensing, spin-out support, R&D contracts etc.  The UIF is both an individual and collaborative grant with agreed outcomes worked on by the 19 universities individually and in partnership.

b) SFC has co-created **Innovation Centres** with industrial leaderships, our institutions and our enterprise agencies and Government partners. The seven Centres in the current programme are a mix of industry-specific and underpinning sectoral areas[21].

c) **Interface** supports businesses to work with universities and colleges, particularly where that is for the first time. The Interface team draws on the institutions themselves, on Innovation Centres, research pools

19   Strength in Places Fund

20   Where 'companies', 'business' or 'industry' is usually to be read as including the NHS, public and third sectors

21   Specifically: Construction, Sensors and Imaging, Aquaculture, Data, Biotechnology, Precision Medicine and Digital Health and Care. See https://www.innovationcentres.scot/ . SFC is also supporting the Oil and Gas Technology Centre in its work on the transition to a low carbon energy industry.

and on the enterprise agencies to help build purposeful KE and innovation projects with businesses.

d) SFC makes a small number of targeted or pilot interventions – these have recently ranged from funding for R&D to help **decarbonise university estates and legacy housing stock[22]** to supporting colleges to demonstrate current and emerging contributions to economic transformation through the pilot **College Innovation Fund.**

e) Working with the academic sectors, enterprise agencies and government on the shared national innovation challenge. We are contributing to the work of the Enterprise and Skills Strategic Board and the many parts of the Scottish business support ecosystem led by other partners (such as NMIS, led by Scottish Enterprise).

f) Playing our full role in **UK-wide policy development** in R&D, Place and Innovation: offering support and guidance to UKRI and UK Government and getting involved in the design and delivery of UKRI programmes such as the Strength in Places Fund.

4.51 Our pilot College Innovation Fund provided project-based support for college KE activity and enabled a range of innovative projects to be undertaken across Scotland's colleges covering a broad spectrum of capability from digital training for care staff, electric vehicle upskilling to place-based approaches to repairing marine vessels. In its second phase, we invested £500K in seven projects which resulted in successful collaborations with over 55 SMEs and other organisations, and generated over £560K in leveraged funding, doubling the capacity and reach of our support. The pilot demonstrated the latent potential in the sector and the opportunity to fully harness this through core funding.

22   £500,000 towards a greener future

PHOTO: UNIVERSITY OF THE HIGHLANDS AND ISLANDS

## POWERING UP OUR INSTITUTIONS' CONTRIBUTIONS THROUGH KNOWLEDGE EXCHANGE

4.52 Our recommendations are aimed at increasing the contribution of universities and colleges to both the green recovery from COVID-19 and Scotland's just transition to a net-zero carbon wellbeing economy, in a way that brings greater coherence to our investments and the innovation landscape. We intend to:

a) **Centre our KE and Innovation support on the top priorities of green recovery, a wellbeing economy and just transition to net-zero carbon society.**

b) **Consult the college sector on the creation of a College Innovation Fund as sustained underpinning support to allow to allow colleges to secure local and national local and national partnerships with employers to benefit from college expertise as needed.** We envisage, once a distribution mechanism and impact framework is agreed, that this new core funding should be in place for AY 2022-23. We are keen to enable the full potential for support for a green recovery, jobs and community development that colleges as local anchor institutions will bring.

c) **Position the University Innovation Fund as the core underpinning support for universities to contribute to national and regional economic and social goals – with a de-carbonised economy and a just and fair society above all.** New measures of success and outcomes to reflect these will be in place for the beginning of AY 2022-23. We will retain the collaborative expectation of the Fund and will co-design the detail with the sector and stakeholders by the end of 2021.

d) **Develop an overarching Knowledge Exchange and Innovation Fund whereby SFC's university and college innovation funds are brought together to maximise the role of universities and colleges collectively in the Scottish economy.**

4.53 Our major KE and Innovation Investments (Interface and the Innovation Centre programme) are mature organisations with strong brand recognition. We propose changing our relationship with these organisations in three ways:

a) Re-commission the individual purposes of Interface and the Innovation Centre programme, consulting partners in Government and agencies. We will agree outcomes in our pursuit of green recovery, wellbeing, a just transition, and an entrepreneurial economy with a clear expectation of rapid change where needed and a proven broad contribution to our company, public sector and skills base.



PHOTO: FIFE COLLEGE

b) Strengthen the relationship between these important bodies and universities and colleges. We recommend that SFC works with both sectors to create an SFC-college-university Knowledge Exchange Advisory Board to guide SFC and our major KE investments to maximise economic and social impact arising from universities and colleges through KE and innovation support.

c) Move from short cycles of discrete fundamental funding reviews to a stable infrastructure relationship in which our support continues, contingent on affordability, sustained market demand and continued flexible delivery against goals that will be adjusted as policy or opportunity dictate. Recognising that the SFC led infrastructure of Interface and the Innovation Centres works closely with other significant innovation centre-like organisations such as Catapults, NMIS and the MMIC, our relationship with both UKRI and the enterprise agencies will continue and be strengthened to ensure coherence.

4.54 **As Scottish universities and colleges are such important actors in the green economic recovery, we will use our convening and connecting power to support their integration in the innovation and economic strategies of Scottish Government and UK Government agencies such as UKRI.** In Scotland, we will play our full part in the partnership of the Enterprise and Skills Strategic Board agencies and are uniquely placed to support government ambitions across education and skills as well as the support for innovative industry and public service through KE. The opportunities presented by the UK R&D Roadmap and the emerging UK Innovation and other strategies will be best seized by a partnership of Government and agencies and we will play our full role in that, contributing particularly to Scotland's relationship with UKRI and investing in people resource to do so.

### WE RECOMMEND

4.55 a) That Scottish Government continue to support SFC to provide an appropriate level of University Innovation Fund and support SFC to create a College Innovation Fund.

b) That the university and college sectors join SFC in repositioning Innovation Centres and Interface as stable long term infrastructure investments, helping to maximise their contribution to the economy and the relationship between the sectors and society in these challenging but opportunity-rich times.

## INTERFACE

Interface is an established feature in Scotland's innovation landscape with a 15-year history of working with SMEs, in many sectors, to match them to Scotland's world-leading academic expertise. SFC is investing £4.5m in Interface over 5 years (AYs 2018-19 to 2022-23) and some of their regional activity is also supported by Scottish Enterprise and Highlands and Islands Enterprise.

Interface also helps run SFC's Innovation Voucher (IV) programme. In AY 2020-21 we are providing £585k through a separate stream of funding for IVs, covering Standard, Student and Advanced vouchers. IVs offset the cost for businesses of collaborating with Scotland's institutions to support innovation to develop a new product, process or service for a company or to develop the company's workforce.

## SCOTLAND'S INNOVATION CENTRES

Our Innovation Centres were launched in 2012 to support transformational collaboration between universities and businesses and enhance innovation and entrepreneurship across Scotland's key economic sectors, create jobs and grow the economy.

They have backing from industry and draw on all of Scotland's research expertise in the relevant sector to work on problems and opportunities, adding value through secondments, industrial studentships, spaces for collaborative work and shared access to equipment. Innovation Centres also support skills and training to develop the next generation of researchers and knowledge exchange practitioners through masters and post-doctoral level provision.

Our seven current Innovation Centres are focused on different areas but are united in the aim to enhance innovation and knowledge exchange across Scotland's key economic sectors to create jobs and deliver economic and societal benefit.

| IN AY 2020-21 WE ARE PROVIDING £13.7M OF FUNDING TO THESE CENTRES: |
|---|
| Digital Health and Care Innovation Centre |
| Precision Medicine Scotland |
| Centre for Sensor and Imaging Systems (CENSIS) |
| Industrial Biotechnology Innovation Centre (IBiolC) |
| Sustainable Aquaculture Innovation Centre (SAIC) |
| Construction Scotland Innovation Centre (CSiC) |
| The Data Lab |

## ENTREPRENEURIAL ACTIVITY

4.56 One of the important contributors to Scotland's green recovery towards a net-zero carbon future society will be the ability of entrepreneurs to innovate, create change and build good-quality employment across the country. Scotland has an active entrepreneurial community with companies being founded by university staff, students and recent graduates at a rate second only to the golden triangle of Oxford, Cambridge and London in the UK[23]. It is well supported, with business-facing support including from enterprise agencies, Entrepreneurial Scotland, Elevator, The Hunter Foundation, Social Enterprise Scotland, Young Enterprise Scotland and private investors all adding value.

4.57 We recognise that entrepreneurship is interlinked with innovation. We need both the development of new opportunities and those with the capability to realise them at scale. As we look to develop our KE (and entrepreneurship) strategy, we will seek to embed entrepreneurship across the spectrum of KE and innovation, recognising the benefit of this approach to increasing impact. We will also recognise that a culture of entrepreneurship is of value beyond 'just' forming new enterprises, commercial or social, it also increases creativity and innovation in all aspects of our lives. In our learning and teaching, we recognize the benefit of high-quality research undertaken by our universities informing the curriculum to ensure students are getting a leading education. This practice must also be true of our approach to entrepreneurship. This means that it is not sufficient to only seek to embed an entrepreneurial mindset in students; it must be informed and enabled by the activities of universities and colleges themselves.

4.58 Truly successful business creation and commercialisation of research and knowledge exchange (through start-ups, spin-outs and licensing from universities and colleges) will be assisted greatly where the sector can actively support companies to scale and develop by providing the knowledge and expertise to support their business growth. That can be through the spin-out phase or executive, management and leadership training. By enhancing this provision, we both aim to champion the activity the sector can undertake to directly benefit our economy and highlight the reinforcing benefit of bringing this back into learning and teaching of our students and future entrepreneurs of all ages. We know this practice is already being undertaken by many institutions and we are seeking to build on that excellent work to date and explore the opportunity to take it further.

We recognise that entrepreneurship is interlinked with innovation. We need both the development of new opportunities and those with the capability to realise them at scale.

23   Spotlight on Spinouts

4.59 The concept of an Entrepreneurial Campus – universities and colleges embedding enterprise education, engaging with entrepreneurs in teaching and practice, supporting student enterprise and participating in the entrepreneurial ecosystem around them – is a key facet of the expectations of the Scottish Technology Ecosystem Review report by Mark Logan for Scottish Government.

4.60 SFC has been asked by Scottish Government to lead the work on the university and college contribution to the delivery of Mark Logan's review and we will do this, leading the co-design of an entrepreneurial campus strategy for Scotland, through our spin-out support investments and through integration of the STER strategy for creating sustainable start-up ecosystems with the local economic and educational development strategies that reflect the diversity of our economy and society. Universities and colleges are a rich source of talented people and the exciting ideas to create self-sustaining technology business ecosystems as envisaged by Mark Logan, but also to realise a wide range of entrepreneurial opportunities in both urban and rural society. With the academic community, we will explore 'what good looks like' in the curriculum, the campus environment and in the support offered and take the practical steps we agree will deliver the change required.

4.61 We have the benefit of building on earlier work by QAA on entrepreneurial campuses, on valuable work by Universities Scotland[24] on enterprise education and on the continued success of Converge Challenge (running for ten years, it nurtures innovative ideas and an entrepreneurial mindset in our institutions, to accelerate a pipeline of spinouts and start-ups). Our work with Young Enterprise Scotland on the Bridge 2 Business programme offers a range of services to inspire, connect and support further education college students aged 18-30 to embrace enterprise by giving them first-hand experience, support to start a business, and to develop skills and networks by engaging with entrepreneurial role models. This is also a key area for collaboration between colleges and universities.

24  Made It Happen

### WE RECOMMEND SFC

Rapidly develops a co-owned and co-designed Entrepreneurial Campus Strategy, building on existing successful activity in colleges and universities, and with an ambition to dramatically increase the flow of entrepreneurs into technology and other ecosystems consistent with the STER report recommendations.

4.62 Most recently we have co-created and supported the Scottish University Scale-up Consortium E Squared programme in partnership with 16 university business schools, Scottish Enterprise, HIE and the Hunter Foundation. This new programme enables established entrepreneurs to acquire the skills they need to support the next generation of Scottish businesses to scale, by becoming an effective Entrepreneur in Residence or Professor of Practice in Scottish universities, to teach on campus, or to deliver learning in business incubators or accelerators. The first enrolment of 36 entrepreneurs will "graduate" in July from the inaugural online course and we will develop that learning into our Entrepreneurial Campus work to contribute to the STER report vision.

### WE RECOMMEND

continuing to develop, in partnership with our academic consortium, the capacity for our Scottish academic community to train entrepreneurs and business leaders to themselves teach the entrepreneurs of the future how to scale up successful businesses.



PHOTO: FORTH VALLEY COLLEGE

## INTERNATIONAL

5.1  Scotland's universities and colleges are substantial assets, not just in their education and research capability in Scotland, but in their international reach and activity. Their contribution to Scotland's economy is estimated at £1.94billion through the export of education, research and commercialisation. We have three universities in the top 100 in the world[25] and secure partnerships in countries right across the globe. The excellence of university research underpins Scotland's international reputation (given its importance in international league tables). So, highly ranked, research-intensive universities are fundamental to the resilience and sustainability of the sector as a whole, and provide wider benefits for Scotland given their global standing. The ability to attract hundreds of thousands of international students is an important income stream, fundamental to the financial sustainability of institutions and investment in research, teaching and wider economic activities, but also in providing an enriched experience and cultural environment for students. We also benefit from a high proportion of academic research staff (20%[26]) who have come from other countries to work and live in Scotland.

5.2  The pandemic and the UK's exit from the EU provide a challenging backdrop for international collaboration, recruitment and research, but also an opportunity to build on the sector's strengths, maximise investment and embrace an ambitious vision for the international connectedness of the tertiary education and research sector. The Scottish Government has committed to developing an International Education Strategy, which provides an opportunity to position Scotland as a primary destination for international students and staff, maximising education and research as exports, promoting Scottish interests and enabling partnerships in particular countries and markets. This chapter aims to support the Scottish Government in the development of that strategy, based on responses to our Review.

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25  QS World University Rankings 2022
26  International facts and figures 2019

PHOTO: UNIVERSITY OF GLASGOW

## BENEFITS FROM INTERNATIONAL ACTIVITIES

5.3 Scottish tertiary institutions are an important part of any strategy that aims to ensure Scotland remains a globally competitive and successful nation. These are the key benefits we gain from universities' international activities:

- Supporting and encouraging inward investment, through research partnerships, alumni networks and student recruitment.

- Providing greater opportunities for securing access to international funding and innovation opportunities.

- Helping to address the UN's Sustainable Development Goals through the reputation of our world-leading institutions.

- Continuing European connections through both existing and newly established partnerships and relationships.

- Creating 'global citizens', who are internationally aware, employable, skilled and can respond to challenges and identify solutions.

- Enabling local communities to engage with staff and students across the world, opening up possibilities and broadening understanding of other cultures and traditions.

- Unlocking sources of international funding and bringing these to Scotland to support research, knowledge exchange and innovation, enabling learning opportunities and opportunities for exchange.

- Creating an environment within Scotland that supports a better understanding of international opportunities and a greater appetite and ability to seize them and influencing the world around us on the issues that matter most in helping Scotland flourish.

- Growing Scotland's economy, contributing £1.94bn to the Scottish budget in 2020-21, equating to a 2.4% share of Scotland's exports[27].

- Contributing to population stabilization and growth, to tackle long-term demographic changes in Scotland, where UK migration policies enable international students to choose to forge their careers here.

27  Higher Education's contribution to the National Performance Framework: economy, fair work and business.

## UNDERSTANDING GLOBAL TRENDS

5.4 The UK has been the second most popular destination in the world for international students consistently over time, with Scotland ranked 13th in the world, attracting around 61,600 international students. The proportion of international students at each institution varies, with four higher education institutions hosting more than a third of their total student population from countries outside the UK. The largest increases in recruitment by Scottish institutions have been from China, India, the USA, and Nigeria. The sector's overreliance on the Chinese market is not unique to the UK or Scotland as Chinese-domiciled students accounted for nearly 59% of the rest of the world-domiciled postgraduate students in 2019-20. However, Scottish institutions are facing intense and increasing competition for talent, collaborations and investment, with particularly strong competition for international students from the US and Australia, then France, Germany, Canada and Japan. It is interesting to note there is widespread domestic support for the notion that we should compete with other major economics to attract scientists, academics and support staff.

5.5 League tables are seen as important measures of success for universities across the world. Students often use league tables when deciding where to study, governments offer international scholarships dependant upon the league table position of institutions, and research partnerships with institutions are in many cases determined by their performance in these rankings. Universities that perform well in league tables also can act as 'beacons' for other institutions in the tertiary sector.

5.6 The Times Higher Education World University Rankings (THE) and the QS World University Rankings (QS) are two widely used league tables measuring the quality of universities around the world. Three Scottish institutions have ranked in the top 100 in one or both of these league tables every year for the last 5 years (the University of Glasgow and The University of Edinburgh appearing in both, and the University of St Andrews appearing in the QS). Scotland's two specialist institutions (Royal Conservatoire of Scotland and Glasgow School of Art) are also consistently ranked in the global top ten. The overall scores for these institutions have remained reasonably stable over time, indicating a consistent level of quality as measured by these guides. Chinese institutions have increasingly entered the top 100 following significant investment in their facilities, education and research, which means that Scottish institutions are at risk of dropping within these international rankings. This is important as some countries will only fund students to go to universities in the top 100 and this could impact recruitment and as a result, income to universities.

5.7 The impact of the UK's exit from the European Union on 31 January 2020, and subsequent government policy decisions (including the fact that EU students no longer qualify for tuition fee support beyond AY 2020-21 and in universities, are likely to be subject to international fees from AY 2021-22), is still unfolding, but will affect Scotland's ability to attract students, recruit staff and researchers, support student exchange and mobility schemes as before, research collaborations and investment. There will also be likely skills needs arising from potentially fewer EU nationals living and working in Scotland. There has been a significant subsequent decline of 40% in the number of EU applicants applying to Scottish providers in the most recent cycle (10,370 applicants, down from 17,240 in the previous cycle)[28]. A smaller number of EU nationals move to Scotland to pursue a college education, and they are more likely to be affected by changes in immigration policy.

28  2021 Cycle Applicant Figures - January Equal Consideration Deadline

5.8 The pandemic has resulted in seismic shifts in the way teaching and research is delivered. Millions of students have been unable to travel to the campus of their choice and teaching has been primarily delivered online. While studies show that students are still keen to travel to other countries, pre-matriculation, access and foundation courses are now online, and we cannot tell how much of this will return to in-person in-country delivery (although many argue that in-person language teaching is harder to replicate online). The pandemic has potentially shifted the UK and Scotland's competitive position in relation to Asia, where more students are exploring regional options in Singapore, Hong Kong, and Malaysia which offer attractive regional alternatives that were not available in the past.

5.9 This will change future delivery and will require the sector to harness technology, building on transnational education (TNE) activity and online learning which allow Scottish education to become accessible all over the world. Universities in Scotland currently deliver transnational activity in over 180 countries[29]. This type of provision may be more sustainable as we transition to living with COVID-19 and international travel remains limited, and chimes with students' expectation that they will have choice about how they study, when, where and what. Institutions and students are considering their actions to combat the climate crisis and this may increasingly affect choices about delivery methods and the need to offset international student travel.

29    Internationally Scottish

## ERASMUS AND STUDENT MOBILITY

The Scottish Government will want to consider the outcome from the UK scheme, the new Welsh international learning exchange programme, and how best to secure existing networks and enhance mobility from a Scottish perspective.

5.10 Offering student exchanges since 1987, Erasmus+ has enhanced the student learning experience, employability and Scotland's global connections. Erasmus+ projects have given opportunities to students to study abroad who might not have otherwise been able to. The number of Scottish students at college and university benefiting from the scheme doubled over the last seven years[30] with nearly 1300 college and 3058 university student placements in 2019-20 (with over 2,700 people at Scotland's universities taking part in outward mobility for study or work through Erasmus in AY 2017-18). Scotland has attracted proportionally more Erasmus participants from across Europe - and sends more in the other direction - than any other country in the UK. Mobility has often been a more integral part of the four-year degree, whereas in the rest of the UK mobility is often an additional year. The UK Government's replacement Turing Scheme (£105m for 35,000 placements) closed its applications process in April and we will follow the success of Scottish institutions, noting that Turing does not provide funding to facilitate inbound student mobility, or support teaching or training staff visits. The Scottish Government will want to consider the outcome from the UK scheme, the new Welsh international learning exchange programme, and how best to secure existing networks and enhance mobility from a Scottish perspective.

30    Briefing ahead of Ministerial Statement: An Update on the Impact of EU Exit on Scotland's Further and Higher Education Sectors



PHOTO: UNIVERSITY OF EDINBURGH

## HORIZON EUROPE

5.11 Horizon 2020, the European Union's flagship research and innovation funding programme, made almost €80bn of funding available from 2014 to 2020 and Scottish universities performed well, securing €533m in total across 881 different projects by 2018, representing over 11% of the total funding awarded to UK organisations. The UK must continue to participate in the successor scheme, Horizon Europe, given the success of Scotland's universities and the partnerships it supports to tackle significant missions across the spectrum of science, global and industrial challenges and innovation – and the potential links to our recommendations on missions earlier in this Review Report.

## RESEARCH AND EXCHANGE PROGRAMMES

5.12 Our ambition is for Scotland's universities to work as effectively as possible with global collaborators in academia, industry and other institutions; taking advantage of their international networks, their ability to build innovation capacity in Scotland and within their regional economy, and their institutional partnerships across the globe. SFC will continue to support increasing international opportunities for both Scottish and European PhD students and strengthen new research relationships. We have just launched a call for proposals from existing multi-institution collaborations to deliver schemes of PhD and early career researcher European exchanges, which will operate alongside the RSE's work with individual academics across the research life-course – from PhD, ECR through to world-leading academic – who will propose their own research through a series of research, networking and exchange opportunities. We will also support a second European Crucible in 2021-22 to stimulate collaborative, interdisciplinary research.

## COLLEGES' INTERNATIONAL AMBITIONS

5.13 Scotland's colleges have developed international strategic partnerships to support mobility, student recruitment and collaborative programmes. As recognised in the Cumberford-Little Report, international activity amongst universities enhances the reputation of the Scottish sector as a whole and colleges have leveraged and built on this success. In 2019-20, there were 1,693 international students enrolled in Scotland's colleges, making up (0.6% of students)[31]. Other internationalisation activity includes international projects 'in-country' through strategic partnerships, transnational programmes, ESOL teaching, and staff and student mobility mainly through the Erasmus programme.

5.14 While larger colleges are likely to sustain international networks in their own right, many others are likely to benefit from collaborations with universities and the larger metropolitan college partners to strengthen their international engagement. Through this Review, we found a large degree of support for cross-sector collaboration to enable colleges to build contacts, engagement and partnerships.

5.15 The recent CDN analysis of internationalisation[32] across the Scottish college sector recommends the establishment of a strategic level group to provide appropriate representation on internationalisation; the inclusion of colleges in the internationalisation agenda and system reforms; the development of sector-wide data sharing, marketing and communications; the exploration of a collective approach to commercial international opportunities; and the engagement of colleges within Scotland's international alumni plan. These recommendations offer a solid platform to work from.

## BRANDING AND MARKETING

5.16 The ability to maintain and secure our international competitiveness and reputation will be reliant on strong branding of the world-class education and research Scotland has to offer. Collectively, we need a strong marketing strategy for the Scottish tertiary education and research brand. 'Scotland is Now'/ Brand Scotland is the global campaign to promote Scotland as a place to visit, live, work, study and invest in. It is supported by Scottish Government, Scottish Development International, Talent Scotland, VisitScotland, Universities Scotland and Scottish Enterprise. This collaborative initiative is intended to align the international narrative through one marketing platform to attract visitors, migrants, students and investors through targeted communications. The campaign builds on the story of Scotland as a bold and positive country with a rich history and heritage and promotes its values as progressive, pioneering and inclusive. This acts as the umbrella campaign for Scottish further and higher education and it remains important that we maximise this investment to be visibly open to attracting international talent, alongside opportunities within the 'Study UK' brand, depending on the market, location and existing connections. international opportunities; and the engagement of colleges within Scotland's international alumni plan. These recommendations offer a solid platform to work from.

## INWARD INVESTMENT AND EXPORT

5.17 Scottish institutions also have a significant role to play in the delivery of Scotland's Inward Investment Plan, published in October 2020. Inward investment is of great significance for Scotland, and it makes a distinct impact on our economy. The plan recognises the role institutions have in building the talents of our people, attracting further talent, markets and technology and developing excellence and a deep knowledge base. In 2017-18, Scottish universities attracted around £170m per year as foreign investment into research[33]. This is on top of their income from other types of work for international organisations (such as consultancy) as well as from fees from around 36,500 non-EU international students[34], demonstrating the important role universities play in attracting inward investment. Scottish institutions are well placed to contribute across the nine opportunity areas identified within the Inward Investment Plan, and we are fortunate in having institutions with expertise across all of these areas: Energy transition, Decarbonisation of Transport, Software and IT, Digital Financial Services, Digital Business Services, Space, Healthtech, Transformation of Chemical Industries and Food & Drink Innovation.

5.18 Our research strengths complement the areas of growth identified in Scotland's Inward Investment Plan – we can be more integrated in our approach when it comes to promoting our research globally as well as areas of particular value to emerging economies. Universities can take advantage of opportunities provided by maximising existing partnerships.

5.19 Higher and further education not only secure inward investment, international education is a key export for Scotland and the wider UK. The Enterprise and Skills Board Review informed Scotland: A Trading Nation, launched in 2019. This cited the sectors as key enablers of the Trade Strategy, building international connections through students, research and knowledge exchange. Sector exports might be considered in three ways; income (and related economic benefits) from international students studying in Scotland; income from students studying with Scottish universities overseas and income from trade in goods, services and IP relating to university & college research and innovation.

5.20 Government-to-government engagement is essential to the success of international Scottish education and research. It is vital that all stakeholders embed tertiary institutions into export and foreign direct investment propositions through a genuinely 'Team Scotland' approach and recognition of their existing and potential role in key priority markets as globally significant research powerhouses and producers of world-leading talent.

5.21 During the Enterprise and Skills Review some universities proposed an 'Innovation to Export' model, where several institutions, ICs, Pools, companies would partner to address an industrial challenge overseas. This might involve industrial placement PhDs, technology transfer, joint development of IP etc. The resulting IP could provide export opportunities for Scottish companies. This should form part of the Scottish Government's consideration in its International Education Strategy.

Government-to-government engagement is essential to the success of international Scottish education and research.

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31  Infact
32  International Ambitions - An Analysis of Internationalisation Across the Scottish College Sector

33  Table 7 - Income analysed by source 2015/16 to 2019/20
34  Where do HE students come from?

PHOTO: NEWBATTLE ABBEY COLLEGE

## TRANSNATIONAL EDUCATION

5.22 Overseas campuses of UK universities account for 6.9% (449,690 students) of the total UK TNE population. Within this, Scottish TNE activity[35] is fairly small, with Heriot-Watt (13,170 students) and Edinburgh Napier (6,040 students, 2019-20) being the largest providers by far.  Scottish education provision can be found in most corners of the globe. In 2018-19, Scottish universities delivered Transnational Education (TNE - includes branch campuses of Scottish universities, online delivery, flexible learning) in a total of 183 countries and territories, with the six top countries being the United Arab Emirates, Oman, Malaysia, Singapore, China and Greece (TNE was also provided in 28 countries and territories within the European Union, with the top five countries being Greece, Ireland, Germany, Malta and the Netherlands.

5.23 Scottish providers are leaders in transnational education provision. Overall, TNE income to the UK in 2018-19 totalled £23.3 billion[36]; with 12.7% of the total number of students in that year being enrolled at a Scottish university. Since 2010, the estimated value of education-related exports and TNE activity in the UK has risen by 6.7%[37], demonstrating the significant potential for market growth for education exports during that time, and this may well continue if COVID-19 continues to limit world travel; students may increasingly value a Scotland and a UK that brings its educational excellence to a location closer to their homes.

35   The scale of UK transnational education

36   Scale of UK Higher Education Transnational Education 2018-19: Scottish Providers

37   UK revenue from education related exports and transnational education activity in 2018

## ALUMNI AND NETWORKS

5.24 Scotland's global alumni make a significant contribution to our institutions, economy and wider society through continued partnerships and connections. Many graduates form life-long connections to their institutions, place of study and wider country, often donating to their alma mater, supporting scholarships and initiatives, as well as delivering business, industry and research partnerships. In the UUKi Graduate Outcomes Survey in 2019, 77% of respondents said they were more likely to do business with the UK as a result of studying in the UK. There is also significant soft power associated with alumni networks as they play a key role in strengthening Scotland's reputation by promoting the value of Scottish further and higher education globally. There is a significant opportunity for Scotland and its universities and colleges to strengthen their relationships with their alumni to secure sustainable investment for Scotland. We recommend maximising connections with alumni to build and strengthen global connections and secure ambassadors for Scotland through mutually beneficial activity. This should link to the work of the Scottish Government's external network of offices, SDI, trade envoys and Global Scots.

5.25 In considering the development of an International Education Strategy for Scotland, we recommend the Scottish Government works with stakeholders and considers the issues we raise in this chapter and more widely across this Review – in particular:

- International education as an intrinsic part of Scotland's economic and social recovery strategies

- The importance of positioning Scotland as a primary destination for international students and staff, maximising education and research as exports, promoting Scottish interests and enabling partnerships in particular countries and markets

- The inclusion of colleges within all aspects of the international education strategy.

- The need to found the strategy in an analysis of trends in competing destination countries, major student exporting nations, transnational education, reliance on particular countries for international students and possible diversification strategies

- Enhancing the international student experience

- The development of a strong, competitive marketing strategy with urgency for the Scottish tertiary education and research brand, particularly across prime digital channels, that showcases our beacon research institutions, and emphasises Scotland as a safe, welcoming, supportive, socially progressive, environmentally aware destination.

- The development of a web presence that highlights virtual, blended and in-person international programs on offer across Scotland's colleges and universities

- Maximising connections with alumni to build and strengthen global connections and secure ambassadors for Scotland through mutually beneficial activity. This should link to the work of the Scottish Government's external network of offices, SDI, trade envoys and Global Scots.

- The opportunity to tackle significant missions across the spectrum of science, global and industrial challenges and innovation through international partnerships and collaborations

- An assessment of the outcome of the UK Turing scheme, the new Welsh international learning exchange programme, and how best to secure existing networks and enhance mobility from a Scottish perspective.

- The ability to boost European research and innovation ties through Saltire research exchange schemes and multi-disciplinary projects.

- Maximising the impact of Ministerial overseas visits for the further and higher education sectors, when those engagements resume post-pandemic.

## SUSTAINABILITY AND COLLABORATION

6.1 It is vital to the success of students and research activities, local communities and jobs, and our economic and social recovery, that Scotland's colleges and universities plan and manage their activities to remain financially viable and sustainable into the longer term. Continued viability and sustainability is a matter for every governing body, a condition of grant and part of the terms of meeting our Financial Memorandum. COVID-19 has impacted profoundly on the environment in which Scotland's institutions operate, the teaching methods employed, the whole student and researcher experience, and conditions for staff[38]. The immediate mobilization of responses to deal with COVID-19 and the rapid adjustments to deal with the pandemic have highlighted not only vulnerabilities in the sector's sustainability, but also its ability to weather this particular crisis by mitigation measures and speedily adapting to different ways of operating and by making early decisions about costs and expenditure.

38  Review of Coherent Provision and Sustainability

## INCOME AND LEVELS OF PUBLIC INVESTMENT

6.2 The budget settlement and final allocation of £1.9bn for colleges and universities for AY 2021-22 represents the highest annual allocation of teaching and research funding ever made by SFC. It includes money to support the health and wellbeing of students and puts colleges and universities at the heart of economic and social recovery and transformation. It includes £16.2m for work-based apprenticeship programmes, to fund over 1,370 Graduate Apprenticeship (GA) places at universities and 3,160 Foundation Apprenticeships (FA) at colleges for Senior Phase school pupils, to meet the collective ambition of 5,000 FA opportunities in AY 2021-22, through colleges, local authorities and independent training providers. This is in addition to the thousands of students at university on work-based programmes like teaching, nursing, medicine and at college in practical work-based courses like health care, catering and engineering.

6.3 Overall, our funding for Scotland's colleges, at £712m, represents an uplift of more than £60m from last year. In addition, colleges will also be funded to help regional employers get the skills they need and to help people reskill for future employment, with an additional £10m to support delivery of the Young Person's Guarantee and up to £17m for the Flexible Workforce Development Fund. It also enables colleges to support students whose studies have been disrupted during the pandemic.

6.4 In the university sector, our teaching funding at £738m represents an increase of £53m (8 %) from last year. Additional funds of £7m were made available in AY 2020-21 to provide additional places for Scottish students, and a further £14m for AY 2021-22 to fund 2,500 additional places for young people leaving school following the special assessment arrangements created by the pandemic. Further funding of £294m secures and protects vital investment in our university research and innovation base, so that we continue to discover new knowledge and translate that knowledge into benefits for health, economic prosperity and wider social impact. The settlement also retains the funding within each institution that would have been used to provide places for EU students free from tuition fees.

## TRENDS IN INVESTMENT

6.5 Since college reorganisation in 2014 up to this latest funding settlement for AY 2021-22, Scottish Government revenue funding for colleges has increased in real terms year on year, and by £185m in total cash terms over this period. This increase is mainly due to the Scottish Government funding the costs of national bargaining – the harmonization of staff terms and conditions. This means that although funding increased by 20.8% overall from 2016-17, 16.4% of that total was for pay harmonisation or pensions, leaving a smaller increase of 4.4% for other cost pressures. This increased funding has been focused in a small number of colleges and regions (we discuss this in more detail further in considering how we could transition to a more equitable distribution of funds in relation to student needs). The national bargaining allocation includes funding to meet the costs of harmonising terms and conditions for support staff and evaluation work is currently underway. Some of the additional funds secured for AY 2021-22 are one-off COVID-19 related investments to support students or to support colleges to play a more prominent role in economic recovery and respond to the specific needs of employers during this critical time for business and the labour market.

6.6 While the overall level of SFC funding in universities has remained consistent over recent years, this constitutes a real-term decline of around 10% over the seven years to 2021-22.

6.7 Research income from SFC accounts for just over a quarter of Scottish university research funding (26% in 2019-20), while another quarter is provided by UK Research and Innovation (UKRI). A mix of other sources (including industry, central UK and Scottish Government and EU funding) and charity income make up the rest. Looking at Scotland's university research income over the past decade, SFC's research funding has arguably not kept pace with other funding sources in terms of funding increases over time. Since 2010, SFC funding has increased by 10% compared to an increase of 16.9% from the largest funder, UK Research Councils.

6.8 Scotland has historically performed disproportionately well in winning UK Research Council (RC) funding - we consistently win a percentage share that is over and above our relative population size compared to other UK nations. Scotland's percentage share of RC income peaked in AY 2012-13 at 15.7% but fell to 13% in AY 2018-19. This share remains good but the trend indicates that Scotland's research base is increasingly being out-performed by other nations of the UK in terms of our Research Council funding share and we should consider whether we are positioned appropriately to win new types of funding flowing from UKRI. Analysis of UKRI's Industrial Strategy Challenge Fund showed that only 6.5% of the funding went to Scotland, compared to 44.2% going to London and the South East of England[39]. Scotland has also performed less well in terms of Innovate UK funding, attracting a much lower percentage (a share of 6.1% in financial year 2018-19) in comparison with the percentage of funding attracted from the Research Councils. However, Innovate UK is a business innovation funder and therefore performance in this area relates strongly to the uptake of this form of support by businesses in Scotland. When Innovate UK spend per capita is considered, we are low-to mid-pack in terms of the performance of NUTS1 regions of the UK.

6.9 SFC's main research investment, the REG, has gradually increased, albeit below inflation, while the addition of the Global Excellence Initiative in AYs 2013-14 and 2014-15 resulted in increased allocations. A similar pattern is seen for our Research Postgraduate Grant (RPG). Strategic research and innovation funding peaked in 2013 as a result of substantial investment in Research Pools between 2007 and 2012 and increased investment in knowledge exchange from 2011 onwards, with the introduction of our Scottish Innovation Centres in 2013. Overall, the balance of strategic funding has shifted from research to KE and innovation.

6.10 We have an opportunity to support the sector to maintain and grow Scotland's share of UKRI income as a route to increase the value and role of our institutions in supporting and contributing to our society and economy. The UK Government's ambition to be a 'global science superpower' promises unprecedented levels of R&D spending and an opportunity for additional resources to be levered into Scotland.

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39   UK Research and Innovation's management of the Industrial Strategy Challenge Fund

## REPLACING EU STRUCTURAL AND INVESTMENT FUNDS

6.11 Historically, colleges, along with some universities (notably the University of Highlands and Islands), have received funding under European Social Fund (ESF) programmes. The programmes provide additional student places for up-skilling and supporting young people not in employment, education and training. This activity has been undertaken since 2015-16 through two programmes: Developing Scotland's Workforce (DSW) and the Youth Employment Initiative (YEI). The YEI programme closed, as planned, at the end of AY 2017-18. However, the DSW programme has been extended into a second phase from 2018-19 to 2022-23. Colleges also benefit from ESF monies either directly or indirectly from other sources.

6.12 As part of the current ESF programme, SFC will distribute around £38m between 2020 and June 2023. SFC acts as a national co-ordinator of activity and allocates this funding to colleges for the upskilling of students who are long term unemployed and furthest from the labour market. Although we have left the EU, we will continue to receive this funding because it was committed prior to exit for the full duration of the programme.

6.13 The UK has been part of EU Regional Policy since its inception in the 1970s, and the funding has played a key role in local and regional economic development. Following Brexit, the UK Government has stated that it will provide successor funding to EU Structural and Investment Funds through its proposed UK Shared Prosperity Fund (UKSPF). Its Spending Review statement published on 25 November 2020[40] sets out some initial detail on UKSPF, indicating that it will operate UK-wide, using the new financial assistance powers in the UK Internal Market Bill. Priorities for investment will include training and upskilling. For 2021-22 there will be £220m additional funding to help local areas prepare for the introduction of the UKSPF and, in the longer term, funding will increase to around £1.5 billion a year. Included in this year's UK Budget were proposals for a Community Renewal Fund and Levelling Up Fund.  We await further details on the implementation of UKSPF.

6.14 One of the current priorities of European Structural and Investment Funds (ESIF) is to strengthen research, technological development and innovation. SFC supports this as a continuing priority and recommends that any future replacement funds should:

a) Be used for the teaching and training of students and staff. For communities that qualified for ESIF, this will enable the continuation of a route out of poverty, by offering additional access/progression to learning and upskilling through colleges and universities. By offering access to funded relevant vocational qualifications key industries and growth sectors will be supported, including those which have a high number of non-UK EU staff. These industries may be vulnerable to staff shortages after Brexit. Affected industries will likely include agriculture and aquaculture, fishing, chemicals and plastics, financial services, and food and drink[41].

b) Support communities that currently do not qualify for ESIF where they are economically 'borderline', particularly where these communities are expected to be disproportionately impacted by leaving the EU. These regions include the Highlands and Islands, Glasgow, Lanarkshire and rural southern Scotland[42].

6.15 We believe there is merit in SFC continuing to act as a national co-ordinator of learning, training and upskilling funded activity in universities and colleges and **the and that the Scottish Government should make the case for SFC's continued strategic oversight of replacement European funds from the UK Government that affect the delivery of programmes in colleges and universities.**
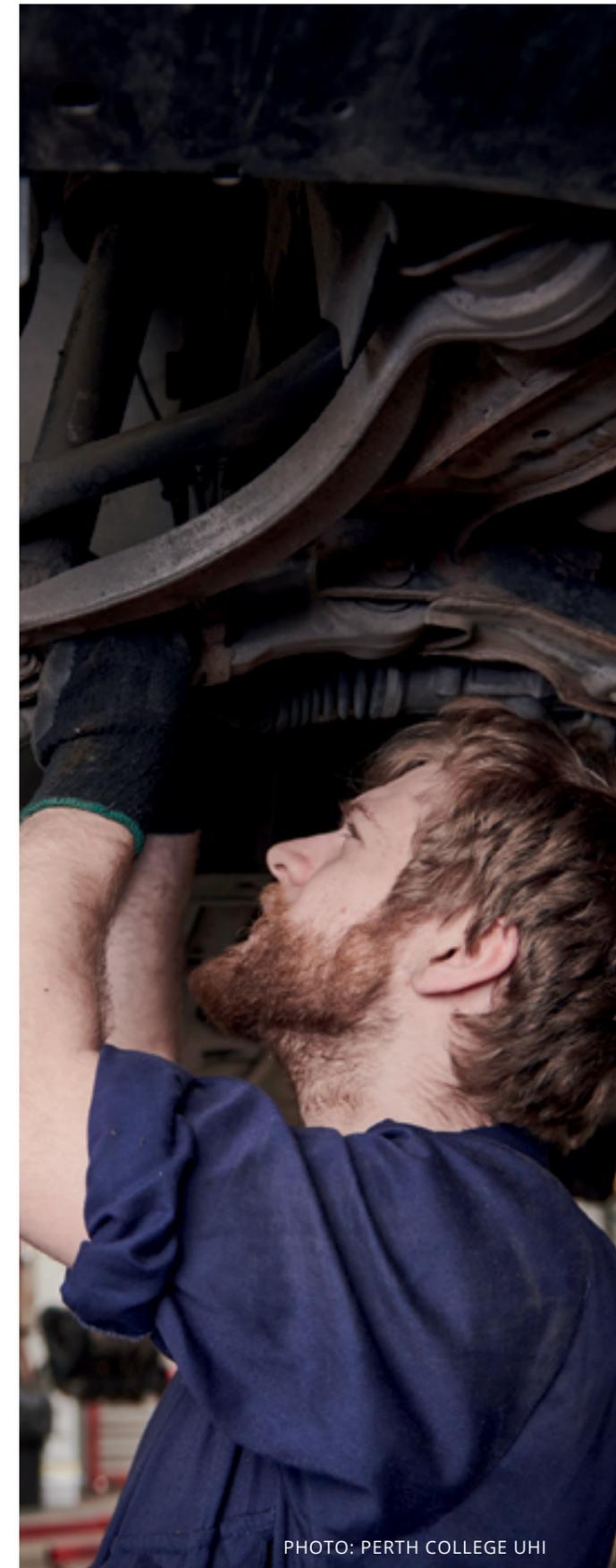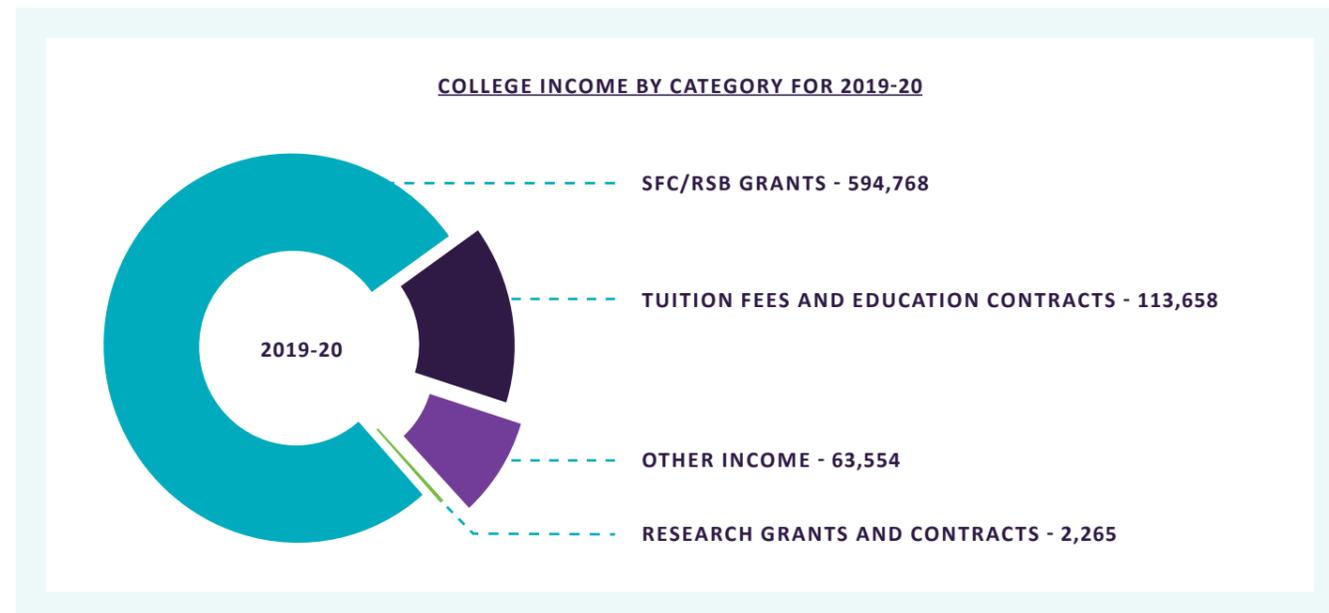
One of the current priorities of European Structural and Investment Funds (ESIF) is to strengthen research, technological development and innovation



PHOTO: PERTH COLLEGE UHI

40  Spending Review 2020 documents

41  Brexit impact on businesses sectors in Scotland

42  Rural and island areas among most vulnerable to impact of Brexit

## UNDERSTANDING SUSTAINABILITY

6.16 Colleges and universities operate in a financial environment that is complex, changing and often difficult to predict. **It is the responsibility of each institution to meet its financial obligations**, to work through that complexity, and make its own business decisions for the future. We rely on the policies, controls and safeguards of self-governing institutions' Boards, Courts and Committees to monitor and manage their financial risks - good governance and financial wellbeing are inextricably linked[43]. That said, the actions and intentions of governments, funding and research bodies, regulators and lenders play a significant part in setting the conditions that enable institutions to flourish. Therefore, while ultimate responsibility rests with each institution, we understand the often-symbiotic relationship between funders, lenders and institutions, and the importance of partnership working to maintain sustainability, and positive wider outcomes for the public good.

6.17 In considering financial wellbeing and risk in the sector, it is important to keep in mind the significant differences between college and university finances, business models and risk exposure. Since 2014 colleges have been largely reclassified as public sector bodies[44]. Their income is predominantly drawn from SFC and their financial management horizons and concerns are largely shorter-term and focused on viability and the management of cash deficits and surpluses within budget. Sources of income for the college sector in 2019-20 are shown in the chart below:



**COLLEGE INCOME BY CATEGORY FOR 2019-20**

2019-20

SFC/RSB GRANTS - 594,768

TUITION FEES AND EDUCATION CONTRACTS - 113,658

OTHER INCOME - 63,554

RESEARCH GRANTS AND CONTRACTS - 2,265

43  Institutional sustainability and governance
44  ONS Reclassification of Colleges

6.18 have historic relationships with Arms-Length Foundations that they can apply to for funds for particular investments), cannot incur external financial obligations (apart from pension liabilities) or borrowing without government consent, and have very limited obligations to external creditors in the main, apart from PFI funded capital projects where support is provided directly by the Scottish Government or SFC. They do not have reserves, and cannot build them up, to fund major strategic or largescale estates investments without government support. This also means that colleges are at lower risk of incurring financial losses through their plans and strategies; they do have more access to government resources, including banking, with its attendant advantages and central specialist advice; and the requirement for SFC approval has led to more consistency in restructuring decisions across the sector. However, there is also substantial additional work required as SFC's finances must incorporate college spend into our resource return to government; there are greater bureaucratic requirements to comply with the Scottish Public Finance Manual; additional reporting is required on cash resource position; and there is a requirement to participate in whole of government accounts and comply with government financial reporting as well as the FE/HE Statement of Recommended Practice (SORP), resulting in more complex financial statements. The college model does not fit readily into the government accounting framework due to different business cycles.

6.19 This operating model leads to significant discussion in the college sector, particularly for those familiar with arrangements before 2014, in terms of comparisons with the university sector, and the inflexibilities and reporting requirements that flow from traditional March year ends while working on an end July academic year. This was a frequent topic throughout this Review and sets the scene for some of our recommendations.

### WE RECOMMEND

Greater flexibility is offered to colleges around the March financial year-end, to support re-profiling income and expenditure to end July.

6.20 The majority of college expenditure is on staff costs (78% ) and much of the increase in college funding over the period 2017-18 through to 2019-20 has been used to fund the additional costs associated with national bargaining. Changes in the staff base are the main way colleges balance their books. This means, by necessity, the relationship with SFC is different. There is a greater reliance by colleges on SFC operating flexibly to respond to liquidity or cash-flow difficulties by re-profiling monthly funds or to help manage staff re-organisations by funding voluntary severance schemes, and to provide additional funds for unforeseen events. As highlighted above, this Review has raised again the inability of incorporated  colleges to borrow from external sources or to generate and use surpluses because of the classification by the Office for National Statistics (ONS) in 2010 that resulted in incorporated colleges being considered as public sector entities. The Cumberford-Little report, supported by the Royal Society of Edinburgh[45], recommended the Scottish Government revisit the current classification in order

*"to reduce unnecessary bureaucratic constraints and central controls that characterise the current system and which... hold colleges back from making the fullest possible contribution to inclusive growth".*

45  RSE Response to the Review of the Economic Impact of Colleges

Many in the sector believe reclassification would provide greater flexibility, the opportunity to manage their finances differently, and would encourage a greater culture of entrepreneurial activity. However, the Educational Institute of Scotland's response to our review[46] makes clear their support for colleges remaining part of the public sector and democratically accountable through Scottish Ministers and, ultimately, the Scottish Parliament.

6.21 The classification of incorporated colleges could not be altered without changing the role of Scottish Ministers. Colleges have suggested that their existing charitable objectives in relation to the use of their funds should provide comfort in any change of status, and that Scottish Ministers' powers over the appointment of individual Board chairs and members could be taken on by SFC. The removal of this classification by the ONS would require primary legislation and Scottish Ministers to remove their powers of direction and consent, their role in the governance of individual colleges, and college requirements relating to the Scottish Public Finance Manual and national bargaining.

## WE RECOMMEND SCOTTISH MINISTERS

Consider whether they wish to explore the ONS classification of incorporated colleges, with a careful assessment of associated benefits and risks, including lessons to be learned from the English college sector where colleges remain classified as private sector bodies, and consultation with all stakeholders.

6.22 Universities are non-profit distributing, autonomous charitable organisations with a much higher degree of complexity in their business models. Governing bodies and funders expect universities to generate the necessary level of cash to finance their operations and strategic needs over the medium to longer term, including their investment in human and physical resources. Universities rely on generating cross-flows of funding between activities, borrowing from external sources, income from endowments and surpluses for further longer-term investment in infrastructure and business development. Pre-COVID international fees represented 17% of university sector total income at nearly £677m and the growth of international and rest of UK (rUK) student income cross-subsidises Scottish-domicile student tuition, research activities and PhD students[47]. Their external obligations are incurred to finance longer term strategies and pension requirements.

6.23 The nature of cross-flows, where income from one source funds another activity, was raised frequently during this Review, particularly the reliance on international student fees. In general, cross-flows enable universities to pool resources to achieve their strategic aims at sector, institutional and subject or discipline levels. Their business models are structured to deliver their pedagogic and strategic objectives using income from a variety of sources. They pool resources to sustain important academic disciplines and to fund research activity that has consistently recovered less than 100% of its full economic cost, and where a cross-flow of income from non-publicly funded teaching and other activities is required to enable the sustainability of research. Research is a growth priority for many institutions and

government and the Muscatelli Report recommended that the HE sector should be open about its ambitions for expanding its research activities and leveraging more income into Scotland from the UK and other sources. It is clearly for each institution to consider how further growth can be sustained alongside other commitments and funding flows.

6.24 The complexity of university finances is not well captured by the annual financial statements. The Transparent Approach to Costing (TRAC) was introduced in an attempt to understand income and expenditure in relation to research, teaching and "other" (commercial and non-commercial) activities and thereby to contribute to financial transparency, particularly given an assumption that there should be a more direct relationship between income and expenditure in publicly funded teaching. TRAC also provides institutions and funders with benchmarking information, comparing institutions' own results with "peer group" institutions. We are working with the Office for Students (OfS) and UK Research and Innovation (UKRI), and the higher education funding bodies for Wales and Northern Ireland, on a review of the effectiveness of the TRAC system[48]. This is due to report in the late summer of 2021. We set out more information about current data later in this chapter.

6.25 The unit of resource for teaching activity in the Uuniversity sector has reduced in real terms compared with 2014-15. In 2014-15 teaching funding per student place was £6,341 and this reduced to £5,378 in 2020-21 but increased in 2021-22 to £5,566. The SAAS undergraduate tuition fee component of the funding universities receive has also remained static at £1,820 since 2009-10. We should continue to consider the real-terms value of the unit of teaching through these recovery years.

6.26 Some respondents to this Review suggested there should be a re-examination of the current principles around the funding of student tuition and their effect on the shape, size and nature of the tertiary education system. In particular, the need for progressive and flexible options, and a debate on the

contributions from individuals and business as well as the state. Some argue that the rules around fee-free tuition for Scottish domiciled students studying in Scotland should be relaxed to bring into the higher education system an additional contribution from students to the cost of their education, in light of the financial sustainability challenges facing universities.

6.27 Alternative approaches raised included either the student paying tuition fees up front and having access to a means-tested repayable tuition fee loan if necessary; or some form of graduate tax where government pays the upfront fees, so that they are free to students at the point of the delivery of their education, but they are repaid by the graduate over time through a higher rate of tax. Some suggested that Scottish students from wealthier families should pay more towards their fees or cover more of the public funding for their place at a Scottish university.

6.28 The Scottish Government's stated policy is that free tuition helps remove barriers to widening access and participation, and builds a strong social contract with students[49]. The National Union of Students and Union representations to us support the continuation of this Scottish Government policy. We have not taken the issue further given government policy.

6.29 When we assess viability and sustainability, we recognize the difference between colleges and universities; we understand that below the aggregate figures there are significant variations in financial performance between individual institutions; there are very different levels of reliance on SFC funds; we know that complex cross-flows of funds underpin the university business model, and that there are significant variations in size, scale and mission within the sector. In general terms, we assess financial wellbeing in several ways, but primarily through a combination of historical and future financial risk indicators:

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46   EIS Response to the SFC Review of Coherent Provision and Sustainability in Further and Higher Education

47   Open data and official statistics

48   Financial sustainability and TRAC

49   Universities

a) Viability focuses on shorter-term financial performance. Assessments of viability are concerned with an institution's ability to meet its financial obligations as they fall due. The measures we use include liquidity, cash flow, and short-term debt servicing.

b) Sustainability provides a longer-term view. Our analysis of sustainability involves a more rounded view of the financial performance and cost structures of an institution, and whether these are sustainable into the future – i.e. whether overall long-term income is sufficient to meet unavoidable long-term costs. The measures we use include the balance sheet structure, return on assets, the longer-term picture presented by viability measures and their variability, relationships with lenders, and the relationship with future business plans.

6.30 In general terms, the likelihood of a college encountering liquidity problems is higher than for universities, but the impact of a solvency event in a university is likely to be far greater given their external liabilities.

6.31 Our approach to assessing financial wellbeing aims to:

• Use readily available information where possible

• Consider both historical and future performance

• Avoid undue complexity in the way we design our approach

• Encourage self-assessment and shared results about financial wellbeing, to reach an agreed view

• Support a "no surprises" approach to monitoring and engagement.

6.32 During this Review, we have looked again at the way we assess financial health and wellbeing. It is, therefore, likely that we will:

• Seek periodic longer-term financial forecasts from universities that include strategies for pension deficits and refinancing events

• Expand the range of data on debt liabilities in universities

• Update our Financial Memoranda in light of this review.

• Consider defining "events" that an institution should tell us about in a timely manner that relate to any material, significant or exceptional issue, event or change that seriously affects its students, stability, governance and financial health, or reputation.

• Enhance our interactions with lenders

• Consider how best to share our assessments and subsequent engagement plans with institutions.



PHOTO: ARGYLL COLLEGE

## OUR CURRENT ASSESSMENT OF THE FINANCIAL HEALTH OF COLLEGES

### A SNAP-SHOT OF COLLEGE FINANCES

6.33 Colleges were already facing a series of cost pressures before the impact of COVID-19, including increasing cost pressures from cost of living pay awards, employers' pension contributions, maintaining the college estate and the UK's exit from the European Union[50]. The COVID-19 crisis has heightened those challenges, particularly for colleges with high levels of commercial and international income, but additional government and SFC funding in AY 2020-21 and a good budget settlement and final allocations for AY 2021-22 will have significantly stabilised college finances in the immediate term. As there is currently no guarantee that these levels of public investment will be maintained and recovery funding streams remain disparate, short-term and focused on delivery within a March year-end, college finances will remain vulnerable.

Our recommendations in this Review, on longer-term investment in colleges, aim to address sustainability issues. A full assessment of the financial health of colleges and universities is published alongside this Review report.

6.34 The most significant risk areas for colleges that could adversely affect their financial performance and sustainability relate to their ability to maintain short-term liquidity, sudden changes in public funding, additional staff costs arising from both cost of living pay awards and the outcome of the National Bargaining job evaluation exercise for support staff, and increases in employer contributions to the Scottish Teachers Superannuation Scheme and Local Government Pension Schemes.

6.35 Our approach throughout this pandemic has been to enhance flexibilities, reduce reporting burdens and ensure that colleges and universities have been recognised as leaders in economic and social renewal through the distribution of additional and new funding programmes to support young people and those requiring upskilling and reskilling through job loss and employment transitions.

50   Review of Coherent Provision and Sustainability

## ENHANCED FLEXIBILITY

• We will not recover SFC funds for COVID-19 related shortfalls against core activity targets;

• We increased flexibility in the administration of student support funds;

• We extended timescales for spending the flexible workforce development fund and increased the 2020-21 budget;

• We provided flexibility in grant drawdowns to several colleges encountering liquidity challenges.

## REDUCING REPORTING BURDENS:

• We kept returns and reporting requirements to a minimum; and

• We provided further flexibility for colleges to respond to the needs of learners, reflected in revisions to the college credit guidance.

## PROVIDING ADDITIONAL FUNDS

• The Scottish Government introduced the Young Person's Guarantee programme and the National Transitional Training Fund;

• The coronavirus job retention scheme provided additional income;

• We secured additional funding for student mental health and wellbeing support;

• Additional funding was made available for college student associations and unions;

• We provided an additional £15m of financial sustainability funding, distributed to all colleges to help address the major impact that COVID-19 has had on colleges in terms of reduced commercial income, increased costs and general weakening of their financial sustainability and to support them providing assistance to students to maximise the successful completion of their studies (and minimise the leve of deferrals);

• We undertook an in-year redistribution exercise of student support to meet requests for additional funding in 2020-21 (£1.6m) and repurposed and reallocated £5m unspent funds to enable colleges to provide students with equipment and support those in hardship

• We allocated funding to colleges for income lost during 2020-21 in providing student accommodation rent rebates; and

• We provided an additional £3m winter COVID-19 student support discretionary fund for colleges.

• We provided £6.5m additional capital funding to support economic recovery.

• We provided £2.3m additional capital to support digital provision.

6.36 The Finance Directors we engaged with throughout this Review and the pandemic highlighted the challenges and costs, but also their pride in the response that secured continued learning for students and mitigated the risks of lost learning and disengagement, prioritised the health and wellbeing of students and staff, communicated constantly with learners and provided ICT equipment and additional discretionary support for those in hardship, responded to requests for additional information and advice on national policy and funding issues. There is a strong sense that the lessons learned, the adjustments made, and the focus on learner needs, will boost the future of blended learning in colleges and enable them to play a critical role in Scotland's recovery.

## OUR CURRENT ASSESSMENT OF THE FINANCIAL HEALTH OF UNIVERSITIES

### A SNAP-SHOT OF UNIVERSITY FINANCES

6.37 Universities were already facing a series of cost pressures before the COVID-19 pandemic, including increases in employer pension contributions, the cost of maintaining buildings, and the implications of the UK withdrawal from the European Union. The COVID-19 crisis has heightened those challenges particularly for institutions with high levels of commercial and international income albeit 2019-20 fee income, including international fee income, has improved on 2018-19 levels.

• The sector's underlying operating position shows a surplus of £43m (equivalent to 1% of income), in line with the latest forecast position although down on the 2018-19 result.

• Increased fee income, £27m CJRS income, and staff and operating cost savings, have helped to compensate for the reduction in commercial income, particularly residences, catering and conference income. However, the sector-wide position masks particular financial challenges for some individual institutions. Eleven institutions reported underlying deficits during 2019-20.

• The sector's cash position has improved on 2018-19 levels, largely due to institutions placing on hold capital works, considerable research activity and loans drawn down but not utilised as a result of restrictions enforced through the COVID-19 lockdown.

• Overall sector borrowing increased by £85m, to a total of around £1.7bn, largely due to Financial Transaction loans provided by SFC. Loan interest payments for the sector increased from £40.5m in 2018-19 to £43.8m in 2019-20.

6.38 Some income sources also come with associated costs and cost pressures that need to be covered by the income e.g. employer pension contributions, which have increased substantially in recent years and will continue to rise, placing more pressure on the financial sustainability of universities. The cost of maintaining buildings represents a significant pressure on university budgets albeit much of that has been postponed due to COVID-19 restrictions. In 2019-20, international fees represented 19% of the university sector total income (up by 2% from the previous year). Overall, international student tuition fees (£791.5m) were much improved on 2018-19 levels (£676.9m).

6.39 The management of loss-making activities by cross-subsidy from surplus-generating activities is part of our assumption about universities' interconnected and complex financial model. The international research reputation of universities, and their position in league tables, affects the recruitment of international students. The surplus from those international students assists with the sustainability of research activity. Research reputation drives other income and strengthens staff recruitment and business relationships. Consequently, research losses should be viewed in the context of the overall university mission and business model. That said, international tuition fee income continues to be an area of significant risk due to international markets becoming ever more competitive. As we have seen through this pandemic, global events over which institutions have no control can significantly impact their assumptions and business.

6.40 As outlined above, the university TRAC is an activity-based costing system, adapted for an academic culture in a way that also meets the needs of the main public funders of higher

education. It takes institutional expenditure information from consolidated financial statements, adding a margin for sustainability and investment to represent the full 'sustainable' cost of delivery, and then applies cost drivers (such as academic staff time allocation and space usage) to allocate these costs to academic departments and specific activities.

6.41  TRAC is currently under review, but the most recently published TRAC dataset shows that the overall sustainability gap, as measured through TRAC, has closed, with Scottish universities improving overall FEC recovery to 97.7% and outperforming the UK overall. The overall TRAC deficit amounted to £96m. Below the headline figures, TRAC data shows that in 2018-19 non-publicly funded teaching, which is mainly non-EU international students, provided a surplus of £222m. This was used to cross-subsidise Scottish-domiciled and EU students, which generated a deficit in funding of £157m, as well as cross-subsidising research funding. The average research funding gap from 2015-16 to 2018-19 stands at £328m.

6.42  Universities are complex organisations and undoubtedly there will be differences in cost allocation methodologies across the sector. The strategies they adopt and the choices they make affect their cost base, for example, the size of classes, the mix of subjects offered and the quantum of research they undertake have a direct bearing on their activity (Teaching, Research or Other) and overall sustainability. We do not wish to restrict institutions' autonomy in making use of their resources in the way they consider to be most effective in achieving their range of activities by constraining cross-subsidy between activities, programmes and courses. We continue to encourage institutions to adopt entrepreneurial and innovative ways to deliver their objectives. Diversification and levels of income will determine an institution's ability to cross-subsidise activities. Some institutions will have limited capacity to cross-subsidise activities.

6.43  Greater collaboration or the consolidation of small courses across fewer universities, where courses are not cost-efficient to run within individual institutions or appear to perform poorly in terms of outcomes for students, is likely to provide a greater focus of interest for us in future.

## UNIVERSITY FORECASTS

6.44  Universities provided updated financial forecasts for the current Academic Year in mid-April 2021.  Key findings from the analysis are:

• The forecasts for 2020-21 continue to be impacted by the COVID-19 pandemic, however, the sector has responded well to the crisis and, based on the latest projections, the operating position is now better than expected in overall terms, although the situation remains volatile.

• The sector is reporting an underlying surplus of £154.8m. This represents a significant improvement on the previous forecasts for the current Academic Year due to a combination of increased international fee income and SFC grant, and lower staff and other operating costs. Residences income remains substantially down on previous years' results.

• The latest forecasts include one-off items of income, not adjusted for in the underlying calculation, that are not yet matched by expenditure that make the position look better than it is in reality. This includes £65m City Deal funding. The forecasts are also skewed by the projections for a small number of institutions and nine institutions are forecasting underlying deficits in 2020-21.

• Sector borrowing has increased significantly in recent years. The increase in borrowing since 2018-19 can be largely attributed to chartered institutions although ancient institutions account for the total bulk of the sector's borrowing. Most additional borrowing during 2020-21 relates to SFC's low-cost Financial Transaction loans.



PHOTO: UNIVERSITY OF GLASGOW

## REFLECTIONS ON THE IMPACT OF COVID 19 ON UNIVERSITY FINANCES

6.45  SFC has taken a variety of actions to assist the university sector in response to the COVID-19 emergency in 2019-20 and 2020-21 such as:

• Being flexible by not recovering SFC funds for shortfalls against core outcome agreement targets where these were related to COVID-19.

• Reducing reporting burdens by keeping returns and reporting requirements to a minimum.

• Providing additional funds:

- £75m support for research.

- More funded student places, including leaving funds previously used for EU tuition fees (£7.2m in 2020-21).

- UKRI additional funding of £18m to universities to support UKRI grant-funded research, research and technical staff and research infrastructure during the period of pandemic disruption, and £10.8m relating to "change of use" from existing grant portfolios. increased research capital for universities from World Class Labs funding scheme (£11.8m in 2020-21).

- UK Government Coronavirus Job Retention Scheme income (£27m in 2019-20; £10.2m forecast for 2020-21).

- Funding for student mental health and wellbeing support (£0.6m in 2020-21).

- Funding for university student associations and unions (£0.33m in 2020-21).

- £9.7m for income lost in student accommodation rebates, announced as part of a £30m package of support for college and university students in hardship as a result of COVID-19.

- £35m resource funding to help colleges and universities maintain research activity, protect jobs and help students.

- £20m capital funding for research and knowledge exchange.

- £3.5m capital funding to support economic recovery.

- £2.4m capital funding to support digital provision.

6.46  University Finance Directors outlined the immediate measures taken to respond to the COVID-19 pandemic:

• Significant short-term cost-cutting to mitigate against potential losses in international income (with budgets assuming 100% loss) and commercial activities, including hiring freezes, deferred capital projects, reduced maintenance spend to the minimum required levels, and reduced consumables budgets.

• Additional recruitment activity as a result of providing increased access to education for home students during the crisis; agility and innovation – through the development of additional entry routes (November and January) to respond to changes in international demand preferences; and increased rUK demand.

• Reduced operating costs as a result of lockdown with staff working from home and reduced consumables spend and activity.

6.47  They were at pains to stress that the unique circumstances of this year and next do not shift the underlying financial strains within the sector, particularly the reliance on international income (and in some cases an overreliance in the Chinese student market), and significant maintenance debt that is bound to increase due to meeting necessary sustainability goals. They pointed to hidden costs and cost deferrals that are not reflected in this year's financials:

• The significant USS deficit is likely to add significant future costs in deficit repayments, additional commitments by employers and staff benefit reductions. Provision impacts here will be significant but are expected to be reflected in 2021-22 accounts instead of the current year due to accounting rules.

• Infrastructure: COVID-19 cost-cutting measures, combined with an increased workload in responding to the pandemic, from IT supporting the move to online and estates management supporting changing lockdown requirements, reduced universities' ability to deliver and progress key infrastructure projects. Long required increases in spend will need to be borne in future years, alongside anticipated IT spend increases.

• Research debt: Increased student numbers have increased teaching load, reducing research activity. While awards have continued, applications have reduced, as have costs associated with further research activity (including spend on projects, but also additional costs such as conferences, travel etc.). There is a hidden cost here which is expected to have a knock-on impact in future years. Cash from this year is being used to support research activity (including leave) through this year and next.

• Many one-off costs savings will not be repeated:

- Teaching delivery and student experience-while learning outcomes are being met, the lack of in-person contact reduces costs particularly around consumable costs associated with labs and general consumables. These savings are unlikely to be sustained in the long term.

- Staffing- Some universities entered the crisis with a large number of vacancies that were not filled or were subject through the year to cost-cutting measures. Universities will be considering staffing levels for the future.

## LONGER-TERM RISKS IN THE UNIVERSITY SECTOR

6.48  The most significant risk areas for universities that could adversely affect their financial performance and sustainability relate to:

• The continuing impact of COVID-19 pandemic, required public health restrictions that affect Scotland's competitive position, and the potential failure to achieve international student recruitment targets, within a more competitive global market.

• Rise in staff costs including increases in employers' pension contributions, the Universities Superannuation Scheme (USS) in particular.

• Stock market pressures and wider economic challenges that lead to significant drops in regular donations and income from endowments; and existing debt levels and the management of lender and private placement relationships.

• Fall in rUK recruitment in an increasingly competitive market.

• The future of Graduate Apprenticeship funding, following one-off funds of £7m for 2021-22.

• Changes in UK Government policy on higher education, for example, the response to the Review of Post-18 Education and Funding in England, as lower tuition fees in England could have a significant impact on Scottish institutions, and other education policies that may affect Scottish institutions.

• UK policy relating to visa and immigration regulations; wider international policies, including mobility and exchange schemes; and the development of policy designed to mitigate the effects of leaving the EU.

• Unanticipated public spending cuts in teaching and/or research income;

• Impact of changes to UK research funding, and the research funding policies of charities and industry.

• Failure to effectively manage major capital investment programmes and their financial impacts.

## COLLABORATION FOR SUSTAINABILITY AND IMPACT

6.49 In our Phase One Report, we outlined how colleges and universities in Scotland have changed and evolved significantly over past decades with the establishment of modern universities, the regionalisation of colleges, and the founding of the University of the Highlands and Islands. In recent years, new higher education institutions have also been formed through mergers, including the University of the West of Scotland in 2007 and SRUC (Scotland's Rural College), established in 2012 through the merger of three land-based colleges with the Scottish Agricultural College; and the largest super college and campus was established in the City of Glasgow College. Collaboration and change have been ever constant in the sector. **We believe collaboration is required now more than ever** for:

- Coherent provision, both geographic and sectoral.
- Cost reduction and efficiencies.
- Improving quality.
- Investing in industry or employer requirements.
- Developing into other types of provision.
- Achieving sustainability through scale.

6.50 We expect institutions to explore internal efficiency measures, for example, increasing class sizes, reducing the percentage of income spent on staffing, ensuring support staff arrangements are appropriate to the size of the institution and what it can afford, and examining curriculum delivery to reduce duplication and poorly performing courses while making the most of blended learning. Many institutions are already taking these sort of measures at an individual level, and may need to explore further ways of working more closely with others, rationalising offers and

ensuring greater value for money. New collaborations and structures can protect and improve student access, provision and experience; address issues around the quality of provision; provide better career opportunities for staff; and create valuable economies of scale.

6.51 Throughout this Review, stakeholders have highlighted excellent existing collaborations or an appetite to further develop collaborations in a range of ways – for example, through joint submissions for funding, partnership agreements and alliances, more integrated models of tertiary education provision, cross-sectoral agreements, and federal models or consolidations. We recognise that different forms of collaboration will be appropriate to different contexts. Review participants highlighted collaboration on mission-driven research and in Research Excellence Framework submissions; for internationalisation where there are shared interests and relationships in particular markets; in providing pathways for learners; and in procurement and shared services, where Advanced Procurement for Universities and Colleges (APUC) is a leader in collaborative procurement. Examples of different models of collaboration were raised through this Review period, in various stages of thought or development. We outlined them in our Phase One Report to promote discussion about future collaboration that might improve outcomes for learners and economic renewal. We will continue to encourage and incentivise collaboration and the greater exploration of structures to deliver tertiary education, research and knowledge exchange as a way of securing sectoral and institutional sustainability, and improved coherence of provision, into the longer term.

## MULTI-COLLEGE REGIONS

6.52 There are currently ten single college regions and three multi-college regions each overseen by a Regional Strategic Body. Audit Scotland recommended we review those multi-college regions. Alongside our Phase One Report, we provided a full report to the Scottish Government, with recommendations about their future[51].

> ### WE RECOMMEND THE SCOTTISH GOVERNMENT
>
> Engages with us on our recommendations for multi-college regions, receives an update on progress since our Phase One Report, and works with us and key stakeholders on next steps.

## SUSTAINABILITY

6.53 It is evident from this Review that there is no easy answer or one solution to the question of the future sustainability of tertiary education and research in Scotland. It is a fluid environment, and many stakeholders can affect the future. In general, our Review suggests these broad themes emerge, as ways of managing future sustainability:

- Institutions will need to continue to pursue their own mitigation strategies and adjustments to their business models, for example, on workforce plans, estate and digital infrastructure management, wider efficiencies, and loan portfolio management in the university sector.

- The development of multi-year investment commitments by the Scottish Government and SFC would enable institutions to plan and adapt in a managed way.

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51  Review of Regional Strategic Bodies – Overview Report

- Much greater collaboration between institutions should lead to more integrated and efficient provision delivery and, where it is in the interests of learners and employers, greater consolidation of functions or courses across several grouped institutions. We are also keen to encourage shared services or new partnership models with varying degrees of integration that secure better outcomes and enhance sustainability.

- Protecting the research and science base by sustained investment levels and by increasing the level of full economic cost recovery associated with the collective actions of governments, SFC, UKRI, and charitable funding, to reduce university cross-subsidisation from international student fees, and considering the quantum and distribution of research funds.

- Considering uplifts to the unit of resource for public learning and teaching in the university sector, to recognise the real-term decline in investment over the last decade.

- The release from activity targets may enable colleges, in particular, to consider their missions and the level and focus of activity required, through regional planning and skills alignment work.

- Continuing to assume some level of cross-subsidisation from international income in universities for learning and teaching, research, and the delivery of agreed outcomes for the public good – hence the need for a Team Scotland and wider UK approaches on international strategies, and close monitoring of international and inter-regional student flows and the domestic policies of exporting countries.

- Considering SFC Financial Transactions and other transformation funds that can support institutions to adapt.

PHOTO: PERTH COLLEGE UHI

## AMBITION AND FRAMEWORKS FOR THE FUTURE

## THE SCOTTISH GOVERNMENT'S LONG-TERM INTENT

7.1  Throughout this Review, participants highlighted the need for the Scottish Government to set out more clearly its overall strategic intent for tertiary education and research, and its ambition for Scotland to be a world-leading entrepreneurial and innovative nation. We have also engaged participants on the development of a new longer-term National Impact Framework that SFC would develop with the sector, students and key interests, connected to Scotland's National Performance Framework, the United Nation's Sustainable Development Goals, the Scottish Government's strategic intent, and SFC's statutory mission to secure a coherent system of tertiary education provision and research. This in turn should set the context for SFC's main activities and any annual letters of guidance from government. This chapter considers the government's likely strategic intent, the development of a National Impact Framework, and how this links to SFC activities.
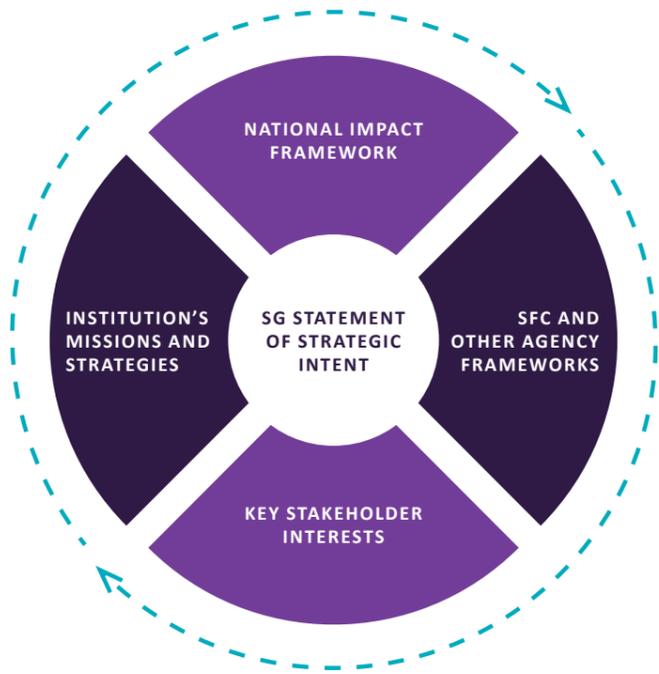
**7.2** We have policy choices about the future of tertiary education and research – what government chooses to prioritise will affect the way we invest, redistribute funds, set targets and talk about success. But it is not always clear exactly what government wants or what interventions will effect change.

## WE RECOMMEND THE SCOTTISH GOVERNMENT

Sets out more clearly its overall strategic intent for tertiary education and research. It will be for the Scottish Government to determine its statement of strategic intent, but working from published expert reports, OECD research on tertiary systems and knowledge exchange in other countries, current legislation and context, and Scotland's National Performance Framework, we suggest these elements could form the basis of that strategic intent.

## ILLUSTRATIVE STATEMENT OF STRATEGIC INTENT FOR TERTIARY EDUCATION AND RESEARCH

**AMBITION:**

To sustain a world-leading and coherent system of tertiary education, research and knowledge exchange that enables everyone in Scotland to flourish and lead fulfilling lives, and that responds effectively to current and future social and economic challenges and opportunities.

**KEY OBJECTIVES:**

- To be accessible to learners from all backgrounds, over their lifetime

- To provide high-quality learning experiences that equip learners for employment, further study, and successful transitions in their lives

- To deliver excellent research that adds to current knowledge, and translates into social and economic value

- To be connected and collaborative for better outcomes - for the cultural and economic needs of Scotland, for place and community, for schools and skills, and our place in the world

- To be underpinned by good governance and sustainable institutions

**PRIORITIES:**

Articulated through Letters of Guidance to agencies.

## DEVELOPING A NEW NATIONAL IMPACT FRAMEWORK

### WE RECOMMEND

**7.3** The development of a new National Impact Framework for colleges and universities, linked to Scotland's National Performance Framework that more clearly connects our collective endeavours to Scotland's National Performance Framework (encompassing UN Sustainable Development Goals) and the government's strategic intent while respecting the missions, roles and autonomy of the institutions we fund in the tertiary and research system. Such a framework will better demonstrate for everyone (students, researchers, employers, government, and tax-payers) the impact our institutions have for Scotland. It would draw on the areas of impact that have been highlighted as important throughout this review.

**7.4** The National Impact Framework would be developed by SFC in consultation with the Scottish Government, the sector and the NUS Scotland, taking account of wider stakeholder interests and aim to:
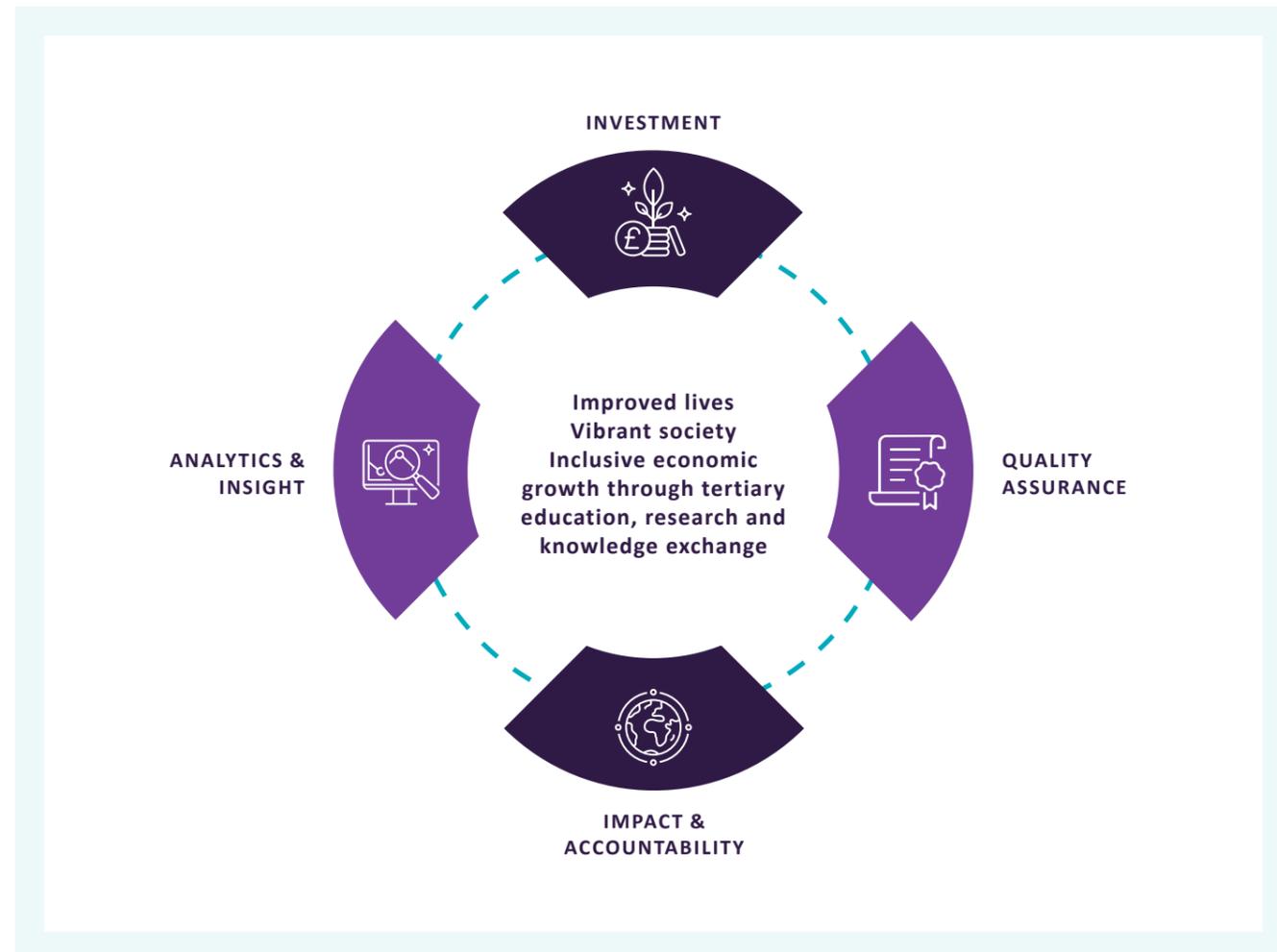
• Make a more explicit connection with Scotland's National Performance Framework, to enable institutions to demonstrate their impact in the round and over the longer term, across a broad range of outcomes for the common good and to demonstrate accountability for public expenditure, in terms that are relevant to their particular situation. This should enable us all to better articulate the vital role that colleges and universities play in economic and social growth in Scotland, inward and outward investment and the global contribution to the Sustainable Development Goals. It should also provide greater continuity and stability in terms of our collectively agreed desired outcomes and expectations.

• Provide a clear focus on key longer-term outcomes and impact – to distinguish this from specific programme monitoring or grant conditions.

• Set out more transparent expectations for all stakeholders and all institutions.

• Help to moderate and contextualise targets and performance-based funding premiums, if adopted.

• Support self-evaluation and work in tandem with an institution's own performance system as these outcomes should already be evaluated. It should, therefore, dovetail with the expectations and assurance processes of the governing bodies of individual institutions.

• Interact with the quality assessment frameworks of other bodies, such as QAA Scotland and Education Scotland, and the Research Excellence Framework.

• Recognise that the outcomes are not mutually exclusive and not all outcomes will be relevant to every institution. Importantly, this framework must be flexible enough to accommodate the diversity of institution and mission within the sectors. They are deliberately broad to capture big ambitions, collaborative approaches and collective challenges. But each institution will decide how best to deliver the broad outcomes within their context.

• Be adaptable for use by more integrated tertiary partnerships, particularly in relation to outcomes for students, where joint reporting may work best for certain aspects of the framework.

**7.5** In practical terms, the NIF would set the overarching context for a more targeted annual Outcome Agreement (OA) negotiation between SFC and institutions; and reduce the need for OAs to cover everything; help guide the activities of other quality assurance processes; and form the basis for SFC enhancement and improvement activity, undertaken in the spirit of collective leadership and collaboration for improvement.

## SFC'S FRAMEWORKS AND ACTIVITIES



7.6 We propose that SFC should operationalise the Scottish Government's strategic intent and the National Impact Framework through four interlinked and mutually reinforcing activities: Investment, Quality Assurance, Impact and Accountability, and Analytics and Insight. These activities are distinct, yet connected, for our focus on research and knowledge exchange, tertiary education, and related infrastructure.

7.7 Drawing on the themes emerging from this Review, and as we revise the way we carry out our mission, we have developed a set of guiding principles that should underpin our investment, quality and accountability functions. We recognise that these principles will always be in tension, and it is our role to manage these tensions constructively with stakeholders. We propose that our approach:

**KEEPS THE INTERESTS OF CURRENT AND FUTURE STUDENTS AND RESEARCHERS, AND EQUALITIES, AT THE HEART OF OUR WORK:**
In everything we do, SFC should ensure education is accessible to learners from all backgrounds, and that we support pathways to success. Our approach should make sure learners and researchers have a high-quality, safe and supportive learning and research environment that equips them to flourish in employment and further study, and to lead fulfilling lives. We should support their voices being heard and valued, and foster a culture where everyone is treated fairly and with respect.

**TAKES A SYSTEM-WIDE PERSPECTIVE:**
the college and university ecosystem is interconnected and there are strong connections between funding for tertiary education and infrastructure, research and knowledge exchange, social policy, schools and community engagement at a local, national and international level. This perspective also recognises that research requires a pipeline of talent and its success is also predicated on interconnected finance streams and infrastructure. Our approach to planning, operational policy and investment needs to consider the implications, interactions and co-funding opportunities alongside other main sources and types of funding, and other parts of the wider system.

**SUPPORTS LOCAL DECISION-MAKING:**
we fund a system of autonomous institutions and public bodies. They should be responsible for their own strategic decisions about the mix of provision to offer, the research to undertake and the best way to fulfil their mission, taking into account national, regional and local needs; learner demand; the strategic policy context set by Ministers; the National Impact Framework; SFC's impact and accountability frameworks; workforce planning for controlled subjects or ring-fenced programmes; and conditions of grant.

**SECURES QUALITY AND PUBLIC VALUE:**
our approach should support coherent and high-quality provision that maximises successful impacts and outcomes for students; supports access, participation and progression; produces excellent research and useful knowledge exchange; and meets Scotland's economic, social and cultural needs. It should also demonstrate a clear line of sight between public investment and desired outcomes across the whole system of tertiary education, research and knowledge exchange.

**IS FAIR:**
it should be fit for purpose, recognise the diversity of the system and support equitable investment and accountability decisions that hold in balance fairness for learners, staff, institutions, communities and the taxpayer.

**BALANCES STABILITY AND RESPONSIVENESS:**
it should provide a sufficient level of certainty, consistency and stability for key stakeholders, and limited volatility, to strategically plan programmes, provision and accountability mechanisms, and to plan to meet outcomes and expectations, or transition effectively to required changes and improvement. But it should also be able to adapt to available resources, support strategic policy aims and respond to external changes without significant shifts in the basic structure of our framework.

**IS PROPORTIONATE AND TARGETED:**
our approach should be appropriate to attain the objectives we are seeking to fulfil, and should not go beyond what is necessary to achieve those objectives. Where possible, our requirements should align with and complement institutions' own assurance mechanisms.

**STRIVES FOR TRANSPARENCY AND EFFICIENCY:**
while acknowledging the complexity in the system, our framework should be easy to explain, open and evidence-based, and administratively efficient and proportionate in terms of administration costs and burdens in the sector.

## IMPACT, QUALITY AND ACCOUNTABILITY

7.8 In terms of impact, quality and accountability, we recommend that these are the key building blocks in our frameworks for institutions that receive public funds:

• **A new National Impact Framework (NIF)** that connects with Scotland's National Performance Framework, and sets out clear expectations across the range of requirements for funded institutions. It would be owned and agreed between SFC, the Scottish Government, representative sector bodies, and NUS.

• Delivery plans for funding each year through a negotiated Outcome Agreement, under revised arrangements, based on a greater focus on coherent provision and the contribution of each institution, clearer priorities for investment and annual guidance from SFC, and with associated annual reporting against delivery by each institution or, where relevant, collaborative reporting between several institutions.

• Compliance with the **SFC's Financial Memorandum**, which includes compliance with the relevant Scottish further and higher education codes of governance, and the requirement for each institution to plan and manage its activities to remain viable and sustainable (covered earlier in this report), and to provide their annual accounts; and compliance with other key statutory requirements, such as the Public Sector Equality Duty and Climate Change Reporting requirements.

• Compliance with the terms and conditions set out in accepted **offers of grant** across a broad range of core funds and specific programmes.

• **Quality assurance frameworks** that focus on the enhancement of the quality of learning and teaching provision (i.e. academic standards and quality processes, collaborative provision), and research (through enhanced annual reporting and REF). We set out proposals for revisions to these quality assurance processes earlier in this paper.

• **Enhancement and scrutiny activity with SFC** in a mix of routine engagement for all and risk-based engagement based on our view of performance or financial wellbeing assessments. The activity may include, for example:

- institutional self-audits where required
- improvement plans where required
- thematic reviews of particular aspects of the OAIF or indicators, to celebrate good practice and draw out lessons for enhancement
- the commissioning of guidance
- a revised approach to on-site Strategic Dialogue Visits that will take place every 3-4 years, with a better connection to the cycle of other quality assurance processes
- special investigations where required

• The terms of various concordats and conditions agreed by SFC with other UK funding bodies.

• Providing robust and timely **data to SFC and other relevant authorities**; and an enhanced **analytics and insight** function within SFC that provides information back to the sector and advice to government.

PHOTO: UNIVERSITY OF THE WEST OF SCOTLAND

## OUTCOME AGREEMENTS

7.9 Outcome Agreements (OAs) were introduced in AY 2012-13 as part of the "something for something" funding settlement in the Scottish Government's spending review. They were intended to:

- Support individual institutions to demonstrate their fulfilment of Scottish Government priorities.
- Improve the reporting, and contribution, of the sectors as a whole to national priorities.
- Bring greater transparency and accountability for public expenditure.
- Make a shift towards relationship-based engagement within SFC so that we could take account of the differentiation in the sector and understand each institution's broader ambitions.

7.10 Since then, OAs have retained these broad objectives but have evolved and developed over four main phases:



| 2011 - 2014 ESTABLISHED | 2014 - 2017 EMBED | 2016 - 2019 INTENSIFY | 2019 REFINE |
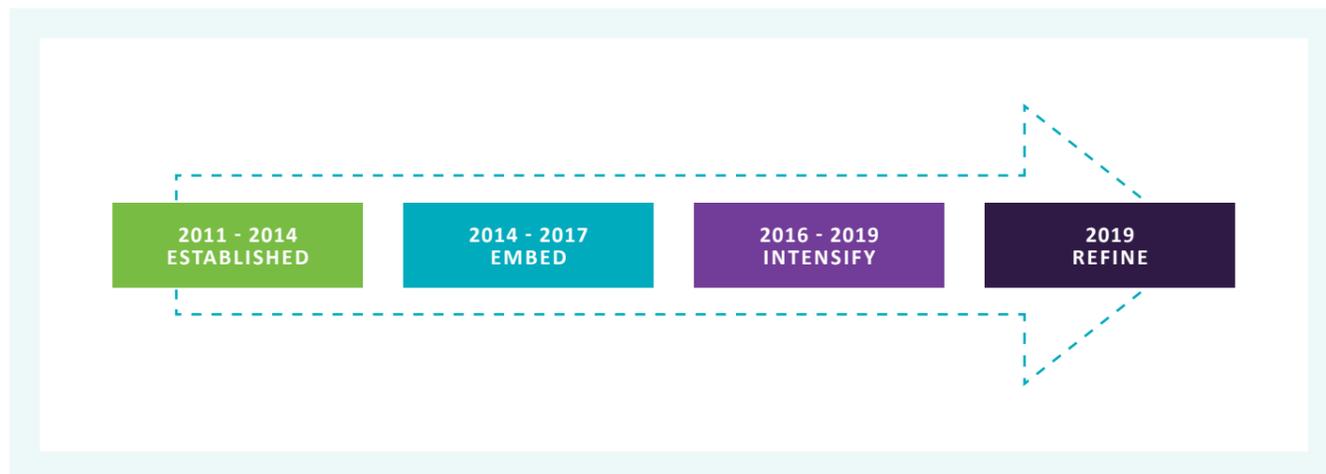
7.11 It is our view that they have been instrumental in helping to articulate the contribution of the sectors to key government priorities and they reshaped the SFC's relationship with the sector, with Outcome Agreement Managers (OAMs) providing account management-style engagement and points of contact across a broad range of issues for individual institutions. Institutions remain positive about their working relationships with OAMs and their grasp of an institution's characteristics and particular challenges. However, the Review provides a helpful opportunity to consider the further evolution of this element of our approach to both supporting and holding institutions to account.

7.12 Through this Review and in discussion with the sector, these are the issues that have been raised in relation to the current approach to OAs:

- The SFC's accountability system is broader than OAs. SFC should clearly define its accountability system and make a greater distinction between managing specific programmes on behalf of the Scottish Government, with associated grant conditions, and the strategic outcomes that should form the agreement.

- Allied to the point above, the Scottish Government's letter of guidance has increasingly stipulated issues that should become part of the OA. It is important that the letter of guidance outlines government priorities but it should stop short of specifying how SFC will ensure those priorities are met. It should also help SFC and institutions focus on the key priorities and areas for improvement in further and higher education.

- The process each year from design through to preparation and concluding of OAs has become relatively resource-intensive and time-consuming for both institutions and SFC. This has resulted in less time to focus on impact. The administrative burden should be reduced and the activity streamlined.

- Institutions contribute significantly across the broad elements of Scotland's National Performance Framework (NPF), and to the economic, social and cultural development of the country and wider world. However, OAs focus relatively narrowly on Scottish-domiciled student activity and do not always provide an opportunity for institutions to demonstrate their full impact across the NPF. Similarly, institutions should be able to better demonstrate their impact globally.

- There are too many measures in the OAs which focus on inputs and outputs rather than outcomes and impact.

- There is a tension between requiring institutions to make three-year OA commitments based on indicative one-year funding announcements.

- While there is better alignment now between the OA process and an institution's planning process, we could do more to draw from and align with an institution's existing performance reporting systems and quality assurance activity.

- We could do more to reflect the unique characteristics and context of each institution.

- Audit Scotland and institutions have highlighted the need for target setting against some outcomes, the absence of a link between performance and funding, and a lack of documented escalation of concern where institutional performance was weak.

The Review provides a helpful opportunity to consider the further evolution of this element of our approach to both supporting and holding institutions to account.

## REVISED OUTCOME AGREEMENTS

7.13 We have received positive feedback from colleges and universities regarding changes we made to our Outcome Agreement process in the emergency period AY 2020-21 based on the Outcome and Impact Framework in the Phase One Report and we will take a similar collaborative approach to agreeing the details of our approach going forward.

7.14 We will need to reach agreement with funded bodies about levels of funding and how our investment will provide the right mix of diverse and coherent provision, and the pursuit of excellent research and impactful knowledge exchange, in relation to meeting stakeholder needs and government priorities.

7.15 We expect that a refocused OA would outline:

- The institution's mission, to ensure our funding can achieve the sort of diversity and coherence of provision and excellent research and knowledge exchange to meet requirements.

- Anticipated developments in an institution's business model, sustainability and partnership working.

- A summary of the institution's strategic planning for coherent provision (e.g. the learners and industries it focuses on; the mix of SCQF levels offered, including in Senior Phase at schools; work-based learning and apprenticeships; discipline specialisation; modes of provision; relationship with research activities; international focus); and significant changes in provision undertaken or planned.

- Forward direction on skills alignment with the current and future needs of learners, employers, industries and research functions, set within a changing labour market and the trends at regional, national and global levels. We will be particularly interested in regional economic development in future growth or high priority sectors, connection to global inward investment and export plans, and future workforce needs in sectors facing significant change.

- The institution's commitment and plans for widening access, ensuring efficient learner journeys and enhancements to the student experience informed by the outcomes of quality assurance and partnerships with students.

- The institution's approach to and areas of focus for research, and the effective translation of research through knowledge exchange with impact. This will include a focus on research postgraduates.

- Response to SFC and government priorities and investment guidance. [SFC would set out investment priorities, areas of provision where we want to promote growth or address gaps, and potential areas for continuous improvement].

- Jointly agreed performance measures and targets.

7.16 An OA Accountability and Assurance Report at the end of each academic year from each institution would self-assess what has been achieved and would highlight positive case studies of achievements. We would provide analysis and commentary on progress. Alongside the collection of data, these reports would provide a narrative about skills and education provision and performance, and will bring focus to our evaluation of and engagement with institutions, as well as enhancement and improvement activity. We would expect students to be involved in this reporting. These reports will also help us to engage meaningfully on future investment plans across the sector.

7.17 We may develop Regional OAs with participating institutions within the pathfinder regions. Again, the OAs for the regional pathfinders will provide opportunities to explore coordinated responses to national and local priorities, joint targets and investment arrangements. This will sit alongside our suggested approach to piloting new funding and target setting for our two more integrated tertiary institutions, as set out later in this report.

7.18 We anticipate continuing to negotiate Outcome Agreements with other funded bodies (for example, the Royal Society of Edinburgh, JISC, CDN) and they will continue to be subject to conditions of grant. The National Impact Framework will provide overarching guidance but will be directly relevant only in parts.

## RESPONDING TO INDIVIDUAL PERFORMANCE AND ACHIEVEMENT OF OUTCOMES

7.19 For performance that meets or exceeds the expectations set out in the national outcomes and impact framework or the measures linked to outcomes for students, we could:

- Award investment premiums.

- Publish data that highlights excellent institutional performance.

- Publish case studies that celebrate good practice for all to learn from.

- Give preference to those institutions when discretionary funding opportunities arise.

- Where we find under-performance (including a breach of the Financial Memorandum) we would decide how best to support improvement in a proportionate, targeted and risk-based way. The list below sets out options that we might consider, depending on the nature of the issue in play:

  - Allow the institution to explain and discuss under-performance, including the provision of additional information or evidence.
  - Require an improvement plan.
  - Increase the frequency or intensity of engagement.
  - Conduct a special inquiry.
  - Ask Education Scotland or QAA to address key areas of focus in their normal engagement or by conducting a more specific engagement.
  - Amend conditions of future funding.
  - Adjust future funding allocations based on performance.
  - Give preference to others when discretionary funding opportunities arise.
  - Reallocate funds to others who could deliver with greater impact.
  - Recover public funds.

We will need to reach agreement with funded bodies about levels of funding and how our investment will provide the right mix of diverse and coherent provision

## ANALYTICS AND INSIGHT

7.20 We will use data and evidence to support improvement and accountability across the tertiary and research system. Strong data and evidence will ensure public confidence in the sectors, and will enhance our collective ability to influence government, and other agencies and funders.

7.21 SFC currently collects and acquires data from the sector through several returns (for example; financial forecasts, institutional efficiency returns, financial statements, TRAC (transparent approach to costing) returns, SFC Early and Final Statistics, HESA including student, staff and graduate outcome survey, College further education statistics (FES) student and staff returns, UCAS applications and applicant data). Key to our approach will be greater collaboration around data and insight-sharing among partners and agencies, with a more open and joined-up approach (including, for example, with HESA, JISC, UKRI and Scottish Government). This is particularly relevant in relation to the need we have all identified for in-year data. But we also recognise the burden data collections can bring and will ensure work together with other stakeholders to streamline and make them efficient.

7.22 Digital transformation continues to play a key role in socialising and popularising a data and evidence-based approach, as referenced within the Logan Review and the Scottish Government's Digital Strategy consultation responses. SFC will be an active contributor, learning from and also supporting the sector and our partners in developing our collective data capacity and capability.

7.23 As we develop our approach to the National Impact Framework, the reform of Outcome Agreements and accountability reporting, and our approach to viability indicators, we will work with institutions to consider measures that are relevant to all and measures that are more relevant to particular institutions.

7.24 Our proposals on Tertiary Planning Pathfinders and ongoing skills alignment work will require a good understanding of learner demand, labour market and other data, alongside intelligence from students, schools, employers, industry, planners and other agencies. We are keen to develop good practice guidance that will support institutions in working together on ways to assess need and align provision at national and regional levels, enhancing decision-making and securing better outcomes.

7.25 We will enhance our approach to national-level reporting and to insight briefings that will provide greater context for performance, celebrate good practice and success, and highlight areas for continuous improvement and enhancement.

## SFC'S INVESTMENT FRAMEWORK

7.26 This Review suggests these are the types of investments we need to make:

• Core funding for institutions - for core activity across teaching, research and knowledge exchange. This is primarily formula-driven and will remain so:

   - Learning and teaching.

   - Controlled subjects.

   - Research Excellence Grant.

   - Knowledge and Innovation Grants.

• Premiums or performance-based funding that will recognise and reward teaching, research and knowledge exchange activity that requires additional funding to secure good outcomes, or to incentivise delivery against outcomes for the sector, contextualised by the National Impact Framework.

• Directed funding - for specific policy interventions required to deliver government policy objectives, for example:

   - Upskilling and reskilling.
   - Apprenticeships.
   - Specific government programmes, such as mental health counsellors.
   - Mission-based research funding.

• Enabling infrastructure investment, for example:

   - Estate and Financial Transaction funding.
   - JISC digital and network support.
   - Data collections.
   - Innovation Centres.
   - Interface.
   - A National Schools Programme.
   - Quality assurance programmes.

• Transformation funding - to support institutional viability or significant collaborations between groups of institutions that will deliver significant benefits for learners, efficiencies, or more integrated tertiary education models. It is likely that modest amounts of funding may be available and will be linked to developed proposals.

7.27 This Review also suggests that we should develop further our policy on fund recovery. As an important custodian of public funding and given our duty to secure value for money, we will revise our policy around interventions where delivery falls short of expectations.

7.28 As a long-term investor in tertiary education and research, we are clear that longer-term investment requires longer-term commitments.

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### WE RECOMMEND THE SCOTTISH GOVERNMENT

Enables SFC to provide more certainty for our investments, beyond one year. Our funding from government comes from several sources and policy portfolios. Earlier in this report, we recommend that government takes a more strategic approach to funding streams from across portfolios, to enable colleges and universities to play their full part in the country's economic and social recovery.

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7.29 We have already set out our approach and recommendations for research. This chapter draws out several other investment types for further consideration.

## CORE FUNDING FOR TEACHING

7.30 Our investment in teaching and learning for the college and university sectors was £1.3bn in AY 2020-21, representing 64% of our total investment. If we include direct support for students (bursaries, childcare and discretionary funds) over 70% of our funds support the teaching and learning of students at colleges and universities in Scotland.

## IMPROVED PROVISION PLANNING

7.31 A key driver of the distribution of funds is the number of students we fund in the college and university sectors. There is a cap on the number of university full-time undergraduate students but universities deliver in excess of this cap. In the college sector there is a target of 116,000 FTEs and although colleges have achieved that target, in recent years, delivering the target has been difficult for some. If colleges are not able to meet the target, they risk recovery of teaching grant. This can have the effect of creating perverse incentives, for example, the addition of courses or units to achieve targets and maintain funding.

7.32 Earlier in this report, we recommend the Scottish Government explores removing the 116,000 FTE target in the college sector and redefining the target by changing the way we express our desired outcomes for post-16 education, with a move away from absolute number targets for particular parts of the system towards whole system targets for proportions of school leavers, and at different age stages, engaging in college and university education (including through the apprenticeship family). This will enable us to improve our provision planning and align what we do regionally, with universities and colleges working together where appropriate. In general, improved strategic planning for coherent provision would draw on past and projected demographics and take account of proposed economic development. This would help to provide evidence to support the future size and shape of the tertiary sector and teaching grant provided by SFC but also inform estate needs and capital funding.

## FAIR AND TRANSPARENT DISTRIBUTION OF FUNDS

7.33 In Phase One of this Review we explore how tertiary education and research funders distributed their funds. Our approach to funding learning and teaching mirrors many of the elements we see in other countries and is a hybrid system. We provide formula-based grants that are, to some extent, based on historical funding patterns. In learning and teaching our main funding model has three core elements: student numbers; subject prices; and premiums that are reviewed on an annual basis. We intend to continue to distribute funds using formulae for learning and teaching. Our research funding is largely formula-driven and contains a more explicit set of performance-based measures, based on periodic, seven-year reviews of excellence, as explained earlier in this report.

**CORE FUNDING =
STUDENT NUMBERS (FTEs OR CREDITS) X
SUBJECT PRICE + PREMIUMS**

7.34 For teaching funding, we propose continuing to base our core funding on student numbers and a measure of the cost of delivering subject groupings. However, there are other costs and/or incentives that we would also need to include which we would add (premiums).

7.35 While this is similar to the existing models that underpin the current investment in teaching and learning, there are funding elements within the model that it is timely to review:

• Funding that was meant to provide help to transition to new arrangements, but now needs to be rebalanced.

• Funding based on a historic distribution and needs to be revised with more relevant data.

• Where we want to re-purpose for new policy initiatives.

## COLLEGE TEACHING FUNDING

7.36 SFC allocated £454m in teaching and fee waiver grant to colleges to deliver learning activity and an additional £111m to provide financial student support in AY 2018-19. This excludes additional funding for strategic projects and £13m for ESF activity. The currency used in relation to college activity is known as "credits". This is tied to the number of hours of learning. One credit equates to 40 hours of learning and one full-time student equals 15 credits.

7.37 From AY 2017-18 we have provided the college sector with funds to implement national bargaining harmonisation and job evaluation costs, with the intention that these costs could be fully implemented in AY 2019-20. In AY 2020-21 SFC also provided the college sector with funds to support increased pension costs. Around £48.9m was provided to institutions for national bargaining from AY 2017-18 to AY 2019-20 and, if we include additional funds for pensions, the overall additional funding amounted to £66.2m. This was based on the costs of bringing all staff in the sector onto the same pay scales, the costs of national bargaining, job evaluation and pensions differed by individual college and, therefore, not all colleges received the same increases throughout that period. The implementation of national bargaining over the last three years has therefore meant SFC has used a historical funding allocation method, with the addition of an uplift based on each college's cost of implementing harmonisation and job evaluation costs. Some colleges required more funding than others to meet those costs and, therefore, recent increases in investments in colleges have been focused in a small number of colleges and regions, to meet their costs of pay harmonisation. As a result, several colleges receive a significantly higher amount of funding per student than others.

7.38 There has always been variation in the credit price system, even before taking account of national bargaining pay harmonisation, because of elements within the teaching funding formula (for example, subject mix, remote and rural funding, and historic efficiencies). However, the distribution of national bargaining pay harmonisation funds has accentuated those variations further. We have been clear throughout that we intended to return to a different investment model at the end of this implementation period. However, returning to a distribution model based on a price x credit formula, alongside moving towards a more even distribution of the price paid for each credit, may result in a significant reduction of funds in particular regions. Even if this rebalancing were gradual, our modelling work suggests it could still have a destabilising effect across the sector, and for particular colleges, without additional funds to smooth the effect.

### WE RECOMMEND SFC

convenes a working group, to include the Scottish Government and the college sector, to agree a plan to move towards a fairer distribution of investment across the sector.

7.39 Following the regionalisation of colleges, we developed a demographic funding model, with the aim of providing sufficient college places to meet the needs of each region, while still meeting the Government's overall FTE target. The demographic model uses a range of publicly available data sources to ensure SFC has a strong evidence base to inform a needs-led approach to identify people likely to want and benefit from a college education. We can align this model with policy priorities by adjusting the indicators we use or by changing the weighting we give each indicator. For example, we can provide more places to a region with higher proportions of school leavers who are not at a tertiary level institution, on a programme funded by SDS (e.g. a Modern Apprenticeship) or in employment. The current demographic model indicators for colleges are set out in the box below.

## DEMOGRAPHIC MODEL INDICATORS

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

THE NUMBER OF S3-S6 STATE SCHOOL PUPILS IN EACH LOCAL AUTHORITY.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

16-17-YEAR-OLDS OUTWITH A POSITIVE DESTINATION.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

18-19-YEAR-OLDS OUTWITH A POSITIVE DESTINATION.

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MAINTAINING FULL-TIME PLACES FOR 20–24-YEAR-OLDS AND PROVIDE ADDITIONAL PLACES FOR UNEMPLOYED 20-24-YEAR-OLDS BASED ON JOBSEEKER'S ALLOWANCE NUMBERS.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

NUMBER OF CREDITS FOR EACH PERSON WITH LOW-LEVEL QUALIFICATIONS.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

REGIONAL SKILLS ASSESSMENTS AND MID-LEVEL JOB OPENINGS.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

THE ECONOMICALLY INACTIVE POPULATION OF WORKING AGE.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

LOW AND MID-LEVEL EMPLOYMENT (UPSKILLING).

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

UNEMPLOYED PEOPLE AGED 25 AND OVER.

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

PEOPLE LIVING IN THE 10% MOST DEPRIVED POSTCODE AREAS.

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7.40  A regional distribution method would not be an appropriate methodology on its own to fund universities. While universities play an important regional role, demand for places is national, UK-wide, and international. The university sector also tends to have higher student mobility, wider travel to study areas, and quite different patterns of travel to work after graduation. In recent years, we have invested in additional student places in the university sector for particular policy objectives, for example, for widening access, supporting students to articulate between colleges and universities, and for certain skills needs. While student demand is a driver, we place limits on overall numbers.

7.41  The current college demographic model is a distributional model that allocates places between regions. It does not determine the total number of college places that Scotland may need. However, as we set out earlier in the section on learning throughout life, we could develop this demographic model to support better estimates of further and higher education requirements and how we might shift from an activity target to a participation indicator.

## UNIVERSITY TEACHING FUNDING

7.42  Our Review has considered the current university model and has concluded that the current general model of basing core funding on student numbers, with a recognition built in for the cost of delivering different subjects, fundamentally works well. That said, there are other cost factors that need to be included within the overall funding formula that should be updated based on specific reviews of those costs and more relevant data. In addition, this Review has resulted in the reform of our validation model. This is outlined in more detail below.

7.43  Our funding formula can be described in this way:

**CORE TEACHING FUNDING = STUDENT PLACES (FTES) X SUBJECT PRICE + COST FACTORS/PREMIUMS**

7.44  At present the additional cost factors and premiums we use are:

- Small Specialist Institution Grant.
- Widening Access and Retention Fund (WARF).
- Compensation for Expensive Strategically Important Subjects.
- Disabled Student Premium.
- Pensions Contribution.

We set out more detail about these premiums later in this section.

7.45  As part of the Review, we considered whether the validation model used in calculating universities' main teaching grants was still necessary. Since this model was introduced in AY 2012-13, we have always intended to revert to a simpler, more transparent and fairer approach by transitioning back to a more straightforward price x volume model. This was outlined in our Review Phase One Report as an area for reform and as a result SFC has removed the validation model for AY 2021-22 funding allocations. An explanation of the validation model can be found in our Phase One Report.

7.46  In order to aid this transition, and to ensure that no university lost funding as a result of this measure, SFC allocated additional funded student places to each university whose funding would have reduced, based on their existing profile of non-controlled funded places. In total, we allocated 1,528 additional FTE funded places to offset the total reduction in main teaching grant. The total cost of removing the validation model alongside the award of additional places for AY 2021-22 was £8m. The result of this change is a more transparent methodology by abolishing the complex validation and threshold model.

## RECOGNISING DISTINCT INSTITUTIONAL MISSIONS

7.47 We should continue to support institutions with distinct missions and recognise this within the funding model, where it leads to distinct costs. We currently recognise these through various premiums and cost adjustments. We will continue with the Small Specialist Institution Grant £10.6m, provided to Glasgow School of Art, the Royal Conservatoire of Scotland and SRUC. We will also continue funding support for rural and remote colleges (£10m provided to six colleges/regions).

7.48 As we move to re-purpose and rebalance some of the funds mentioned above (e.g. pay harmonisation and access funds) we will model the impact on individual colleges and universities and consider other specific institutional factors.

## TESTING INTEGRATED TERTIARY APPROACHES

7.49 In our Phase One Report, we raised the possibility of developing a more integrated tertiary funding model. This would require a more flexible approach to the current operation of separate funding models and to the separate ring-fenced budgets for colleges and universities from the Scottish Government. It would also need to be built on more integrated strategic planning at a regional level between appropriate clusters of institutions, to enable the movement of funded places. Our two proposed Tertiary Provision Pathfinders provide an opportunity to test and model how a more integrated tertiary model might work in practice.

### WE RECOMMEND

That the Tertiary Provision Pathfinders should explore the necessary conditions for a more integrated tertiary funding model in order to draw lessons for any wider policy development.

7.50 UHI and SRUC already provide a whole spectrum of provision across the SCQF levels. Effectively these two institutions are already tertiary institutions, but, as our funding is split between universities and colleges, these institutions have multiple funding streams and targets.

### WE RECOMMEND

Exploring a greater realignment of our funding and targets for UHI and SRUC, to pilot a more integrated tertiary approach.

## POLICY INCENTIVES AND PREMIUMS

7.51 We influence approaches and behaviours in the way we strike a balance between core and non-core funds or premiums, and what incentives we build into our funds. For example:

- The Research Excellence Grant is driven by a measure of research excellence, incentivising and rewarding excellence where it is found.

- Within our teaching funding, we have allocated premiums to incentivise and encourage behaviours (e.g. widening access premiums.

7.52 The review of our funding for access in the university sector – Widening Access and Retention Fund (WARF) £15m – recommended we recognise the increased costs in recruiting and retaining students from disadvantaged backgrounds and acknowledge this in allocations. The current WARF fund is allocated to eight universities. There is not a sufficiently strong link between recruitment and successful completion. The data also shows some institutions are performing well in this area, but they currently do not receive any WARF funding. We intend to use the review findings and policy development in this area to model alternative approaches to this funding.

We will work with the sector to devise a fair and inclusive approach to WARF – taking account of related funding - to ensure this funding is leveraged to best support student outcomes.

7.53 In the college sector we have £52m for access and inclusion funding (previously Extended Learning Support). The distribution was based on data that we collected on the numbers of students who had additional learning needs.

We reviewed the purpose of this fund and will revise the distribution of this funding based on less historic data.

7.54 We provide, in the university sector, funding for expensive strategically important subjects £17m. This was introduced to recognise the difference between the fees paid by rUK students £9,250 and the funding the university receives from SFC/SAAS for students e.g. Clinical Medicine £17,412.

We will review these incentives to ensure their continued relevance and to consider our response to the recommendations of the Logan report on how we develop a world class technology sector in Scotland.

7.55 We will also consider repurposing funding that is currently embedded within our core teaching grant to support postgraduate taught students, combined with skills funding £7m, to provide a separate funding steam that could be used more flexibly by universities to provide support for a mix of postgraduate full and part-time courses and micro-credentials.

## FUND RECOVERY

7.56 Outcome Agreements are likely to include delivery plans for funding each year. Where performance falls below expected levels we may:

- Adjust future funding allocations based on performance.

- Give preference to others when discretionary funding opportunities arise.

- Reallocate funds to others who could deliver with greater impact

- Recover public funds.

This will ensure that limited resources continue to deliver optimal outcomes for students and Scotland.

7.57 This will be supported by our enhanced approach to analytics and insight and is of relevance to our entire portfolio of funding, including core funding for teaching, research, knowledge exchange and capital, performance-based or premium funding, ring-fenced funding and transformation funding. It is also relevant to funding we provide across colleges, universities, other partners and our funding of infrastructure within the landscape.

## TRANSFORMATION FUNDING

7.58 SFC currently provides 'non-core' funding for a wide range of organisations, initiatives and programmes . We heard in Phase One of this Review that universities, colleges and other stakeholders would welcome transformation funds to address organisational change priorities. There may be an opportunity for a small amount of our non-core funds to be set aside as transformation funding, to support institutional change and collaboration, strategic improvement and efficiencies. Transformation funding of this nature would be time-bound and should not displace the use of other funding types.



PHOTO: ARGYLL COLLEGE UHI

## CONCLUSION: SYSTEM LEADERSHIP FOR THE FUTURE

### ENHANCING COLLABORATIVE LEADERSHIP

8.1 When Scottish Government Ministers commissioned this Review, they asked how SFC could best fulfil its mission of securing coherent, quality tertiary education provision and procuring research in these changing times. They asked us to consider how the sectors should address the outcomes we need to achieve in Scotland, and what changes might be needed to our funding, operations and accountability frameworks and policy in general.

8.2 Reviews can create their own dynamic. In considering the responses to our early open call for evidence, through our engagement with a large number of stakeholders using various methods, and by digging further into the other excellent reports that emerged in advance and throughout this Review, we recognised early on the huge appetite to consider the tertiary education and skills system as a whole, the desire to inject pace into the way we explore skills gaps now and into the future, the importance of work at regional level to explore the complexity of adjusting provision and making change happen for real, and the concern to avoid jumping to quick or seemingly easy solutions at a time of maximum uncertainty.

PHOTO: GLASGOW SCHOOL OF ART

8.3 Therefore, while we have articulated the dynamic uncertainties we are living with, not least the impact of the current pandemic and the shifting policy environment, the difficulty of predicting with precision exactly what we need from the system, and the fact that many actors are involved in creating, sustaining and changing this system, we have made recommendations to improve the way it functions that build from significant existing strengths in a measured and evolutionary way. Our recommendations aim to improve the system by leading to better definitions of what we want from it, in setting out the trends that give us pause for thought and the nature of future changes we need to respond to, in setting out ambitious chunks of work for the future, and in highlighting particular ways we can use the levers at our disposal to deliver better outcomes over time.

8.4 This Review broadened into a more fundamental set of questions that challenge us all collectively about the nature of public value and system change. Indeed, the challenge is only partly about SFC's mission, and more fundamentally about how we can collectively develop a coherent, responsive and sustainable tertiary education, skills and research system that balances and delivers the current and future needs of students and employers, and contributes to broader economic and social goals for Scotland. Every day we manage technical solutions to the problems the system throws up, where we can bring our expertise together to make something better or to solve an issue that requires attention and where a solution is possible. But to develop the sort of coherent, responsive and sustainable system Scotland needs for the future requires a different sort of adaptive leadership. It needs us to work across different authorising environments and many stakeholders and communities of interest (including institutional governing bodies, governments at the national and local level, policy-makers and funders, employers and industry); it challenges us to bring our collective resources (people, skills, technology, funding) together to produce the outcomes we are looking for; and it needs constant reference back to the kind of public value we are trying to deliver together. It also needs a much better narrative around this sort of collective endeavour and the impact we are seeking to achieve.

8.5 This should challenge our individual leadership and partnership working. It will take negotiation, good intelligent analysis to help provide informed decision-making, adjustments, consistent attention, and tackling competing perspectives. The pandemic forced impressive examples of adaptive collective leadership - from quickly repurposing estates to provide COVID-19 PPE support, rapidly and proactively altering teaching methods to meet rapidly evolving circumstances, working with community partners and other agencies to offer spaces for alternative use. This is a massive strength to build from for the future, and has demonstrated the very successful partnerships and alliances that already exist across colleges and universities, that came together for the common good during this COVID-19 crisis. If we are to continue to prioritise this sort of adaptive leadership we will need to work together across our system and in collaboration with other stakeholders. To do this, we should invest in the leadership we will need to make change happen. Alongside the recommendations in this Review report, which will require considerable partnership working, we would like to explore the establishment of a National Leadership Programme that would bring together colleges and universities to invest in current and future adaptive leaders, who will need resilience and support to become the innovators we need to develop our system for the future.

## DEVELOPING SFC FOR THE FUTURE

8.6 We recognise there are specific challenges for SFC in contributing to system change. Our ability to fulfil our mission requires us to exercise our powers in ways that continue to earn the trust and respect of Scottish Government Ministers, the sector and other stakeholders; and by conducting ourselves in an impartial manner that rests on good evidence and sound judgement. We can only fulfil our mission by working with and through other partners. And we will continue to respect the subsidiarity, autonomy and agency of institutions within the sector. To this end, we must:

• Use our convening power to create effective collaborative spaces for strategic planning and good operational policy design at national and regional levels.

• Test and pilot new approaches to support the evolution of the system in a managed, evolutionary way.

• Strengthen our role as an intelligent client for the significant infrastructure investment we make in tertiary education and research to ensure we direct it to best effect for the future (e.g. quality assurance, digital infrastructure).

• Enhance our capacity to engage with key partners and be clear about our expectations of those partners.

• Develop our approach to evaluation, data and enhanced analytics to help shape policy and practice, and to get better information into the hands of decision-makers across Scotland.

• Elevate the key drivers for change that should provide a focus for many years to come – equalities and inclusion; the climate emergency; and Fair Work.

• Make sure we are protecting and promoting current and future student interests.

• Connect with expert advice – this Review has highlighted where we need a boarder approach to engagement with experts through advisory groups (eg employers and industry, student representatives, apprenticeships), or set up different managing arrangements (e.g. to oversee our knowledge exchange and innovation infrastructure).

• Get involved in regional economic partnerships to secure better strategic provision planning for skills and tertiary education and to connect with learner and employer needs.

• Promote Scottish interests across UK Government agencies and departments, and with other devolved administrations, in areas where a dual mandate exists or where policy and funding decisions elsewhere will present challenges or opportunities for colleges and universities in Scotland.

8.7 If we are to fulfil the ambition expressed by participants in this Review and take forward the recommendations, SFC needs to be a key adviser to government and the strategic authority for tertiary education and research. We should invest wisely, evaluate impact, collaborate with others, and secure public value and agreed outcomes for current and prospective students, businesses, and Scotland's economic and social recovery.

That means the Scottish Government and the sector, together, need to invest in SFC and its capacity to be an agent of change that can hold in tension the often delicate dynamics of public policy, institutional autonomy, and pressured funding rounds.

8.8 We have a truly world-leading tertiary education and research system. It will be increasingly challenged to deliver what Scotland needs. But we have solid foundations and a unique set of building blocks that will enable us to respond effectively and at pace, and set ambitious pathways for the future.