



The James
Hutton
Institute

Corporate Plan

2021 -2026



*Our work is inspired by
James Hutton: Scottish
innovator and polymath*

A world enlightened by science
is the world we need today

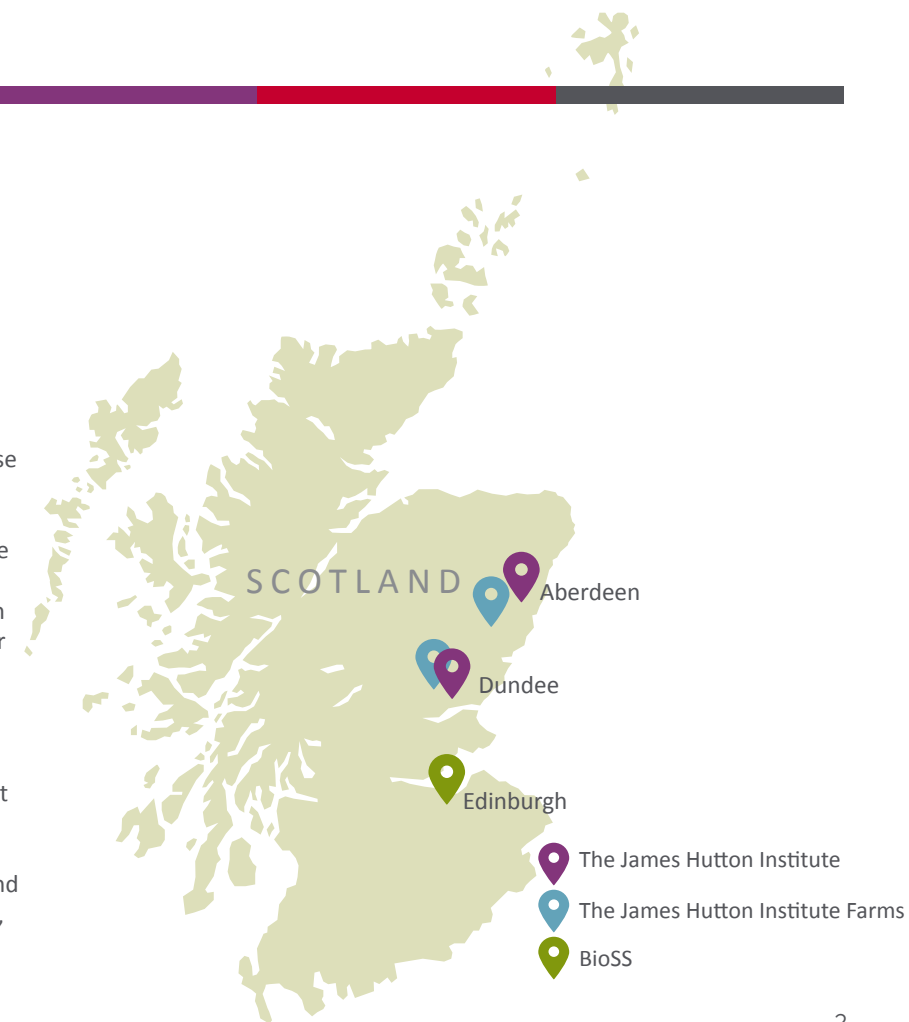
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Who we are

We are an independent research organisation conducting science on land, crops, and natural resources. The products of our research benefits current and future generations in Scotland and beyond.

Of our 500 colleagues, 350 are scientists and 150 provide the professional services that enables our work, including an extensive farm, field and glasshouse research service. We host Biomathematics Statistics Scotland (BioSS) and 120 post-graduate students registered at more than 30 different universities in the UK and internationally. In addition to our two main campuses in Aberdeen and Dundee we have offices in Edinburgh and three research farms. Over 100 further people working in the private sector or for public sector bodies are co-located on our campuses. This includes the University of Dundee's Plant Sciences Division who are based on our Invergowrie site. Our subsidiary, James Hutton Limited, helps deliver impact by commercialising our intellectual property. We recognise that that every person in the Hutton Group is part of our science team, each with their specific and important role to play. We are the sum of these parts, and all play a part in the translational approaches we pioneer to make a difference.



What we do

We use science to understand our world better and to provide solutions to the climate and nature crises. We innovate, we invent, we discover, we model, we predict, we test, we verify, we provoke, we reassure, we advise, we challenge, we motivate, educate and inspire. We use our accumulated knowledge, resources and the skills, talents, experience of our people to understand and enlighten the choices that governments, society and individuals need to make in relation to land use and natural resources for a better world for future generations. We work in the lab, field, farm, in natural ecosystems and with communities, on the soil, water, vegetation, crops, nature, people and society.

We work with partners in over 55 different countries worldwide. Our approach is to take our expertise, skills and knowledge from Scotland to other parts of the world, and to learn and bring international expertise, knowledge and skills back to Scotland.

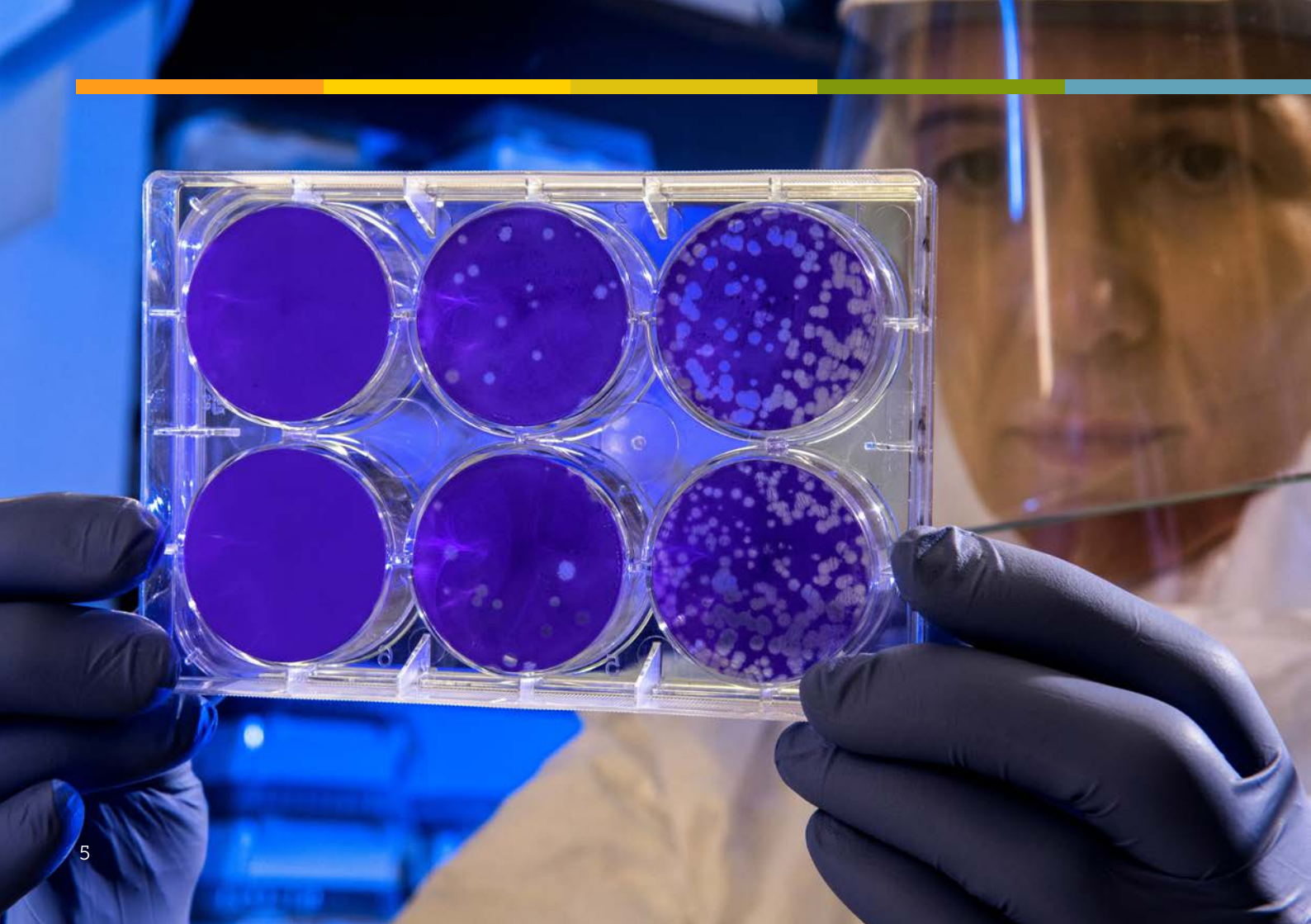


Our values and ethos

- We respect and value our people and the people we engage with
- We want to make a difference
- We strive to be excellent in everything we do
- We foster creativity and innovation
- We lead by example

Our ethos is the “advancement of knowledge” relevant to the needs and aspirations of society, and we aim to achieve this through objectivity, independence and transparency, showing leadership through our ways of working, and in explaining the shared benefits of science and technology to society as a whole.





From Scotland to the world and back

For every £1 of public investment in the Hutton we return £12.75 to the UK economy



Our impact

The James Hutton Institute collaborates and works in numerous global locations, exchanging knowledge, impact, innovation, skills, learning and experience.

Our purpose

Securing the future through excellent science.

Our vision

To be international leaders in science on land, crops, natural resources and the wider natural environment, working with communities to provide transformative solutions to global challenges in a way that supports the wellbeing of future generations.

Our mission

We will conduct excellent, open science through engagement with research partners, business, policy and civil society, that challenges conventional wisdom and ensures trust in what we do.



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Our strategy for 2021-2026

The context

The past five years have seen major changes in the external context in which we work. The COVID19 pandemic has hugely disrupted our way of life and the economy. It has refocussed minds on the need to work together to solve global issues including the bigger threats of the Nature and Climate crises for both current and future generations. The Global challenges are mirrored in the priorities of the Scottish and UK Governments and the European Union's (EU) Societal Challenges.

There have been major advances in technology from drones to gene editing, and there is an ever-increasing need for development of integrated solutions, including incorporating new digital technologies. At the same time, there is better understanding of the critical role of social sciences in addressing global challenges, and social innovations have emerged in the form of third sector and community-led initiatives. The complex and urgent nature of our world's problems means we need inter-disciplinary and trans-disciplinary research that brings different skills and expertise to tackle the issues affecting multiple uses of land and natural resources. The urgency of the world's situation means we need to be bolder, undertaking more transformative research.

What we will do

We have an established international reputation for working with a diverse range of stakeholders and across scientific boundaries. Over the next 5 years we will build on this reputation and extend our use of landscape-scale action based research to test interventions aimed at supporting future sustainability and to gather evidence on what works more quickly.

Our plans align with the Scottish Government's commitment to reducing inequalities, increasing innovation, sustainable economic growth, investment in our natural capital and in education, skills and learning, and the internationalisation of what we do. Working in collaboration with our partner Scottish Environment, Food and Agriculture Research Institutions (SEFARI) we will deliver to the Scottish Government's Environment, Natural Resources and Agriculture research programme. In addition, we will support the Scottish Government's portfolio of Centres of Expertise on Climate Change, Waters, Plant Health and Animal Disease Outbreaks, the new centres on Biodiversity and Knowledge Exchange and Impact, and Scotland's underpinning national capacity in science.

We will continue to engage with all parts of society, policy, academia and industry. Innovation happens when problems, opportunities, ideas, technologies and common goals are shared. We welcome more people to join us on our campuses to maximise knowledge flows through the provision of shared social and collaboration spaces. We will embrace new ways of working through Open Science, sharing our data, code, and research outputs and knowledge still further to ensure there is equality and transparency in all we do. Our locations, our size, and the way we work all make this easier.

We will continue to build on our teamwork approach, recognising the role that all play. With new harmonised terms and conditions for all our people we have also committed to the Scottish Business Pledge, a values-led partnership between Scottish Government and business that is based on boosting productivity and competitiveness through fairness, equality and sustainable employment, and our corporate activities will continue to demonstrate our alignment with this important commitment.





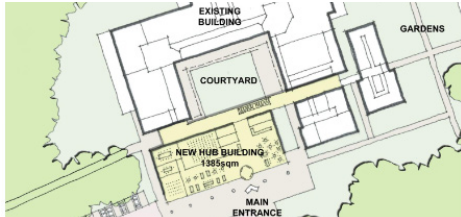
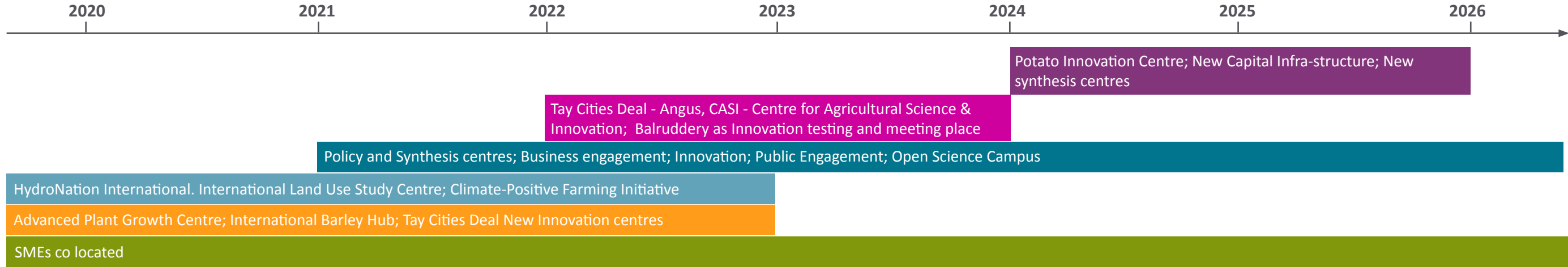
How we will make this happen

We will invest in the infrastructure to support our strategy, with £62m of funding from the Tay Cities Deal (TCD) being used to develop our Invergowrie Campus and creating two open innovation centres in the International Barley Hub (IBH) and the Advanced Plant Growth Centre (APGC). A further investment will be made in our Balruddery Research Farm, a Leaf Innovation Centre, to make it accessible for private sector companies wishing to take part in or see field trials on new ways of managing land sustainably. As part of our Climate-Positive Farming Initiative, our Glensaugh research farm will see investment in a whole-farm systems experiment that observes, tracks and adapts the farm to meet science-based carbon reduction targets and maximises the biodiversity and natural capital of the farm. We will work with the Macaulay Development Trust, investing in the campus at Craigiebuckler at which we will create new spaces for private and public sector collaborators who wish to join us there and with the Mylnefield Trust and Scottish Society for Crop Research supporting our crop research. Our campuses will get new access roads that will enable greater visibility. This will support the diversity and strength of activity that takes place across our open science campuses, including spin-out companies and a thriving and innovative private sector, with science and society benefitting from the synergies.



Open Campus Developments

New hubs for partnership working



Reducing our carbon emissions – a route map to Net Zero

Our values include 'leading by example' and, in addition to providing research findings that will help address the climate emergency, the Institute is committed to reducing our own operational emissions to help future generations.

Our Hutton Climate Action Plan, based on guidance from the Science-Based Targets Initiative, commits us to reducing our total greenhouse gas emissions by at least two-thirds by 2030. This will be highly challenging and will require action from all departments across the whole Hutton Group.

Key actions will include:

- Becoming more energy efficient.
- Further extending our use of renewable energy (e.g. through a new solar meadow at Invergowrie, new wind energy and actively seeking funding to develop a green hydrogen scheme at Glensaugh.)
- Embracing low carbon construction for our Tay City Deal developments and developments on the Craigiebuckler campus.
- Using lower-carbon energy products and more sustainable approaches in our operations, in particular labs.
- Reducing emissions associated with business travel and commuting
- Monitoring, reporting and, if necessary, re-appraising our carbon targets in the light of progress and changing external needs.

In addition to our carbon reduction targets, the Institute will work towards achieving net zero according to SBTi criteria by managing our research farms land in a way which supports us being carbon neutral while also protecting nature. In doing so it will show the critical role that the land-based sectors will play in addressing the two biggest issues of our generation - climate change and biodiversity loss.



The Institute has signed up to the Race to Zero global campaign and we have endorsed the Edinburgh Declaration on post-2020 global biodiversity framework.



Our Commitment to tackle the Global Challenges in the next 5 years

We will directly contribute towards 11 of the UN's Sustainable Development Goals:

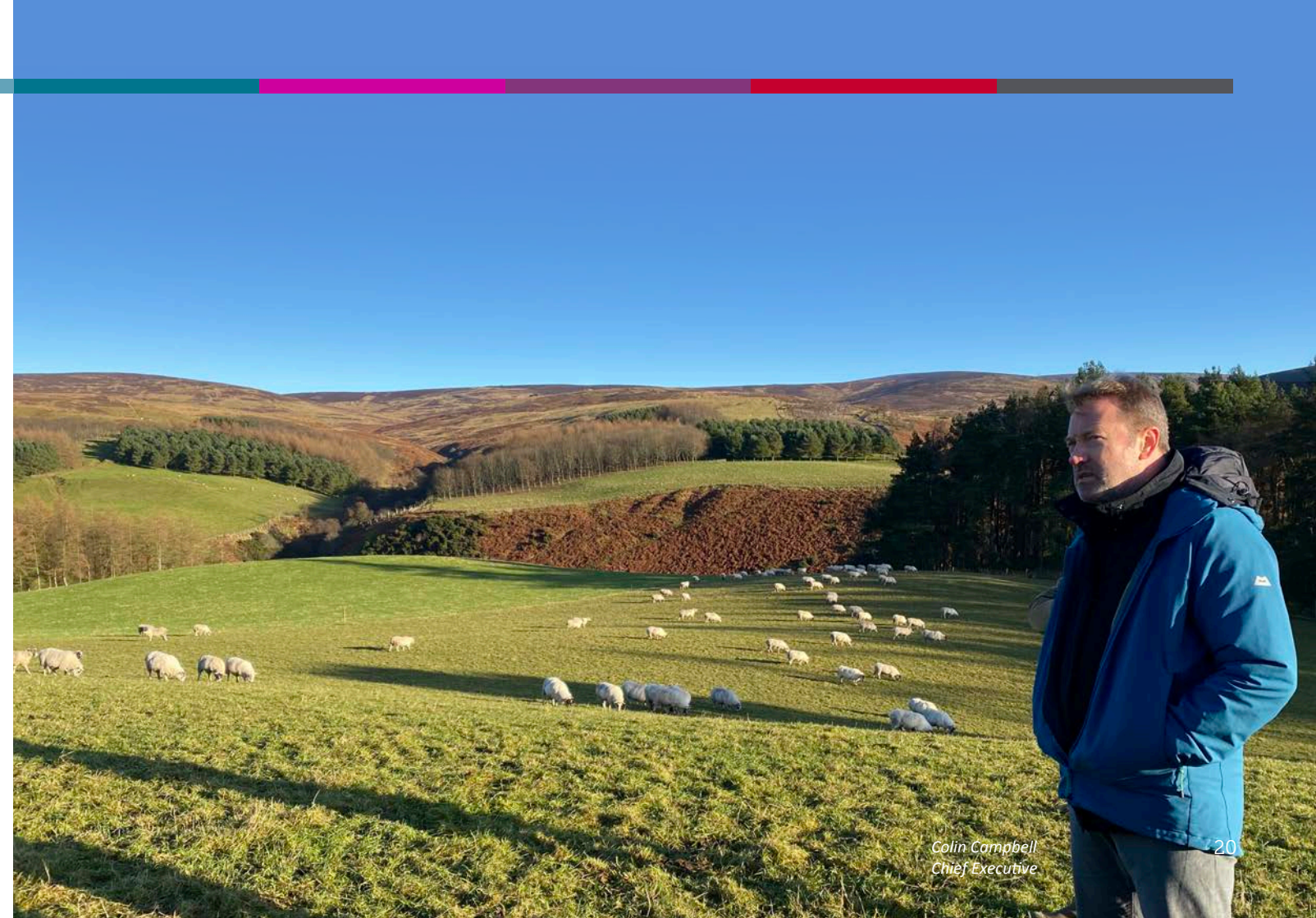


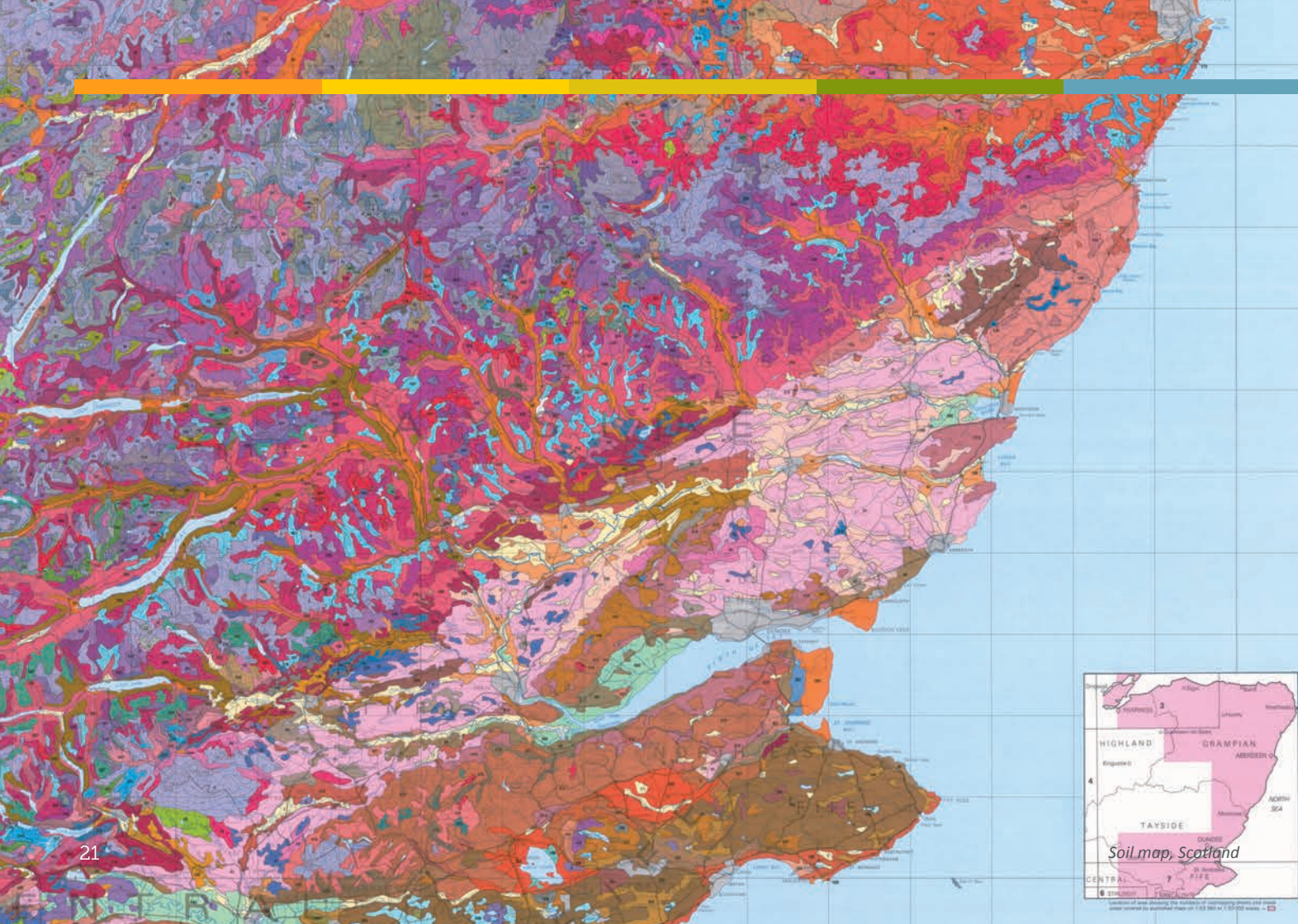
Climate Action

With stakeholders in policy and practice, we will co-construct evidence-based approaches to tackling the climate and biodiversity crises through

- understanding and working towards just transitions towards climate neutral futures
- testing and co-constructing approaches to transformative farming and other rural land use
- on-the-ground demonstration of practices that mitigate or adapt to climate change
- operationalising climate positive farming at Glensaugh farm
- demonstrating and implementing new agro-ecological farming systems and practices that reduce GHG emissions
- guiding the planning and monitoring of peatland restoration
- regional spatial modelling of carbon resources under scenarios of woodland expansion

In relation to our operations, we will show leadership in reducing our GHG emissions, guided by science-based targets and recognising international equity to go beyond Net Zero, aiming for a 66% reduction by 2030, and identifying ways to achieve further reductions over subsequent years.





Life On Land

By understanding land systems, we are gaining insights into sustainable management of our natural resources, the threats they face, and the opportunities they offer. This will enable us to:

- co-design and implement novel approaches to the conservation of Scotland's most iconic wild species and habitats
- apply natural capital thinking to Scottish landscapes, enabling land managers to realise the delivery of multiple benefits
- integrate knowledge of protection and enhancement of the health of soils into future sustainable land management systems
- develop innovative land systems linked to green infrastructure benefiting human and environmental health



Zero Hunger

We will help secure the provision of food and plant-based products at home and overseas by translating our science to:

- exploit the genetic resources in our germplasm collections to develop crop varieties that grow well under projections of climate change for the UK and Global South and that produce sustainable yields of safe and nutritious food
- monitor and mitigate threats of invasive pests and diseases to plants in agricultural and natural environments
- understand relationships between community food growing, local food systems and household food security with respect to food affordability and nutrition in different socio-economic contexts, and the social and cultural barriers to the uptake of new varieties and growing practices
- develop visions of the future of land use drawing on the resources of our new International Land Use Study Centre



Industry, Innovation and Infrastructure

Working with industry and business from micro to global scales we will:

- co-develop solutions to real-world challenges, through the International Barley Hub, the Advanced Plant Growth Centre and the European Water Test Network
- test innovative nature-based solutions in real-life situations including natural flood management in conjunction with initiatives such as the Dee Catchment Partnership
- work with communities and undertake action research on the roles of citizen science and the evolution and impacts of social innovation for the delivery of public services and goods.



Clean Water and Sanitation

We will study the chemical, physical, and biological processes and reactions that govern the composition of soil, water, and living organisms, and the social processes in water governance to

- guide best social and environmental practices in integrated catchment management
- test and apply new monitoring and analytical techniques for organic pollutants in different environmental matrices and
- internationally, work on the environmental and social benefits of decentralised, low carbon on-site wastewater treatment for rural communities, through the Scottish Government Hydro Nation International Centre which is co-located with us.





Responsible Consumption and Production

Through understanding the interactions between production systems, the environment and people we are developing tools and capabilities that support circular economies. In particular we will provide:

- understanding of value chains and where interventions have the greatest potential to improve environmental and social impacts
- work with farms and food businesses to understand how they can contribute to sustainable food and nutrition security,
- develop world leading integrated pest management tools and toolboxes
- design and implement agro-ecological farming practices and systems
- investigate non-food uses of plants to develop green alternatives to existing, or for new, materials



Affordable and Clean Energy

We are committed to making our contribution to climate neutrality, through:

- direct investment in on-site renewable energy for our operations and, working with communities and industry, understanding motivations and trade-offs made in energy use by individuals and in workplaces
- undertaking environmental monitoring in the vicinity of renewable energy developments
- assessing energy use and its impact on land systems





Decent Work and Economic Growth

- Our values and modes of operation ensure the highest standards of safe, secure and respectful working environments for all our colleagues, collaborators and citizens. Our research is providing insights to social and economic inequalities, and how they can be addressed in land-based industries and rural communities and will seek to inform equitable pathways of green recovery from COVID-19.



Quality Education

Our post-graduate school provides training in world-leading techniques and concepts. With our approach to Open Science, we will:

- make scientific data, information and tools accessible and usable
- create innovative ways to enabling on-line and virtual access to publicly funded collections
- provide learning content for primary and secondary education





Gender equality

Our work will support greater gender equality and empower women and girls by:

- Providing news insights into issues of gender and age in farming and land management.
- Our efforts to create a work environment which is fair, welcoming and inclusive and where everyone is treated with dignity and respect
- Committing to the Athena SWAN charter and ambition to progress from bronze to silver award status.



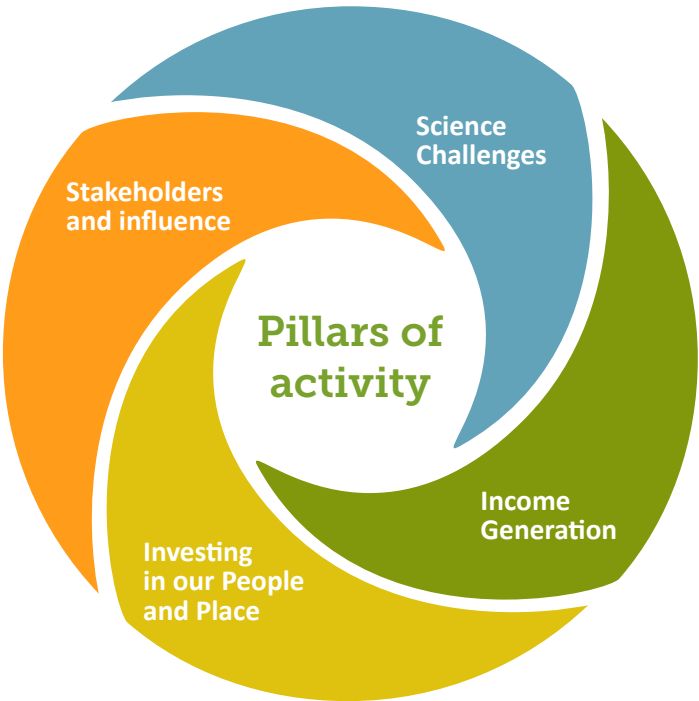
Partnerships for the Goals

Working in partnership with colleagues across the globe in policy, universities, industry and business, civil society, and the public of all ages and backgrounds is integral to our transdisciplinary research approach to tackling shared societal problems. We will be active in partnerships:

- with leading international agencies with remits in climate change, biodiversity and food
- throughout Scotland, in association with SEFARI and our funding partners and engaging with innovative governance structures of Scotland's pilot Regional Land Use Partnerships and working across communities of interest and of place in Europe for the creation of visions for rural areas.



We will deliver our vision through an operational plan that focuses on four pillars of activity



Stakeholders and influence

We will maximise research impact by engaging with wide audiences and encouraging new ways of developing research that embed science within user communities. This builds on our tradition in “translational” science - taking research from fundamental principles through to products and/or knowledge that delivers to industry, stakeholder or policy needs, and builds citizen engagement in science.

Science Challenges

Our science will be focussed around three global challenges for land, crops, and the natural environment, with our ambition to be leaders in open science embodied in a fourth challenge cross-cutting all that we do.

- Challenge 1:** Develop crops and cropping systems that deliver food and plant products for economic prosperity and wellbeing while safeguarding the environment
- Challenge 2:** Protect and enhance natural capital and the resilience of ecosystems for multiple benefits
- Challenge 3:** Support sustainable and resilient communities through social, economic and technical innovations
- Challenge 4:** Act as an exemplar for open science, showing the possibilities and benefits of this approach across all areas of our work

Income Generation

Our One Group approach delivers income from multiple funding sources to support the fundamental and translational research we do. We will seek a balanced portfolio of public and private sector sources of funding. Grant funding will be sought from the EU, UK Research and Innovation (UKRI), Scottish Government and international governments, we will seek income for services to the public and private sector through James Hutton Limited, and we will gain funding from benefactors and private sector through our Development Office. The Development Office will also engage a wider range of stakeholders in our strategy and vision for a more sustainable world. It will help celebrate James Hutton and especially his Tercentenary in 2026 and by extension his inspiration and fields of study. Our income strategy will be focussed on Flagship Initiatives including the two Innovation Centres – IBH and APGC – two new synthesis centres - the International Land Use Study Centre (ILUSC) and the Hydro Nation International Centre (HNIC) - and the Climate-Positive Farming Initiative.

Investing in our People and Place

To continue to develop our science we will invest in staff who can help us deliver the ambitious business plans and make the most of the scientific opportunities. We will continue to work with our associated Trusts - the Macaulay Development Trust and the Mylnefield Trust – benefitting from their investment in our science capability. In addition, our well-regarded Postgraduate School will continue to grow by seeking additional funding and supporting allied initiatives such as Scottish Government’s Hydro Nation Scholars programme. We will continue to invest in training, mentoring, supporting opportunities for career development and promoting actions that encourage the wellbeing of all our people.

Annex 1 describes how we will measure our success in each pillar of activity.

Concluding Remarks

Our plans will benefit Scotland, the UK and the world by:

- Underpinning vibrant, resilient and equitable rural areas, with tangible benefits for more sustainable land use, jobs, high value skills and knowledge, adding value to growing economic sectors such as Food and Drink and sustaining primary production industries and value chains in support of a bioeconomy.
- Protecting and enhancing our Natural Capital, reducing the threats of Climate Change and stimulating a green recovery post COVID19.
- Projecting ourselves internationally as a place where excellent science delivers real world solutions



Factors that will enable our success:

- Climate change, the biodiversity crisis and growing pressures on food systems will result in an increasing demand for our research
- The James Hutton brand is strong and founded on creative and critical thinking using scientific research that delivers global impact, following the inspiration of James Hutton after whom we are named.
- The strong alignment of our vision to that of the Scottish, UK and European governments and the international agenda
- Our success in the Tay Cities Deal, bringing £62m of investment over the next 5-10 years, and our involvement in the Angus Deal and the Islands Deal in Orkney.
- The Macaulay Development Trust's support for investing developments at our Aberdeen campus in the next 5 years.
- Increased investment in James Hutton Limited
- Our newly established Hutton Development Office that will support a step change in fundraising activities.
- Continued support from our associated Trusts and Societies of the Macaulay Development Trust, Mylnefield Trust, Scottish Society for Crop Research, and Orskov Foundation
- A strong financial position with reduced costs and increased surplus for capital investment
- Improved internal systems providing operational efficiencies and fresh impetus from new Directors in our Flagships and a strengthened Executive and Board team

Annex 1: Measuring our success



Pillar 1

Influence and Impact - Actively engage with stakeholders to achieve the Group strategy, and collaboratively maximise impact, promote leading ideas and demonstrate we are international leaders

Objective definition

Stakeholders engage with us and are regularly informed about our accomplishments and impact. Stakeholders can comment freely on our work and approach us for authoritative analysis, investigation and impartial advice. The Institute leads and shapes dialogue, policy and priorities relating to food and environmental security. We achieve more by leveraging the collective expertise of the James Hutton Group and our partners for solving the scientific and operational challenges that we face. Our brand is recognised and trusted by all our stakeholders.

If we are doing this well, what will it look like?

- All of our stakeholders feel respected and valued as a consequence of deliberate efforts to communicate.
- Our science programmes and priorities both influence and are being influenced by stakeholders.
- Our research platforms are in demand for supporting knowledge exchange with, and by, our stakeholders.
- The Institute is endorsed by stakeholder groups and our outputs are referenced by our stakeholder community.
- Our original thinking, fresh perspectives and insights will be in demand at conferences, in the scientific press and by the media.

How do we measure our achievement of the objective?

- Upward trend of indicators of impact.
- Positive testimonies from all of our stakeholder groups.
- Increasing frequency of stakeholder presence in impact narratives.
- Increase in number of interactions with stakeholders and visits to Institute for forums and workshops.
- Increase in number of funding proposals with stakeholders as partners.
- Increase in the number of outputs identified by stakeholders as being of significance or high impact.
- Membership of committees of influence.



Pillar 2

Our Science Challenges and Open Science: Deliver our science challenges

Objective definition

Sustainable management of our natural resources and enhanced ecosystem resilience to external pressures underpins all the goals for sustainable development. The work within our Science Challenges will aim to deliver on our commitments to tackling the UN SDGs. We will embrace Open Science in the way we work, recognising this will require investment in our infrastructure and a change in research culture in some areas.

If we are doing this well, what will it look like?

- We will see more resilient, more sustainable farming systems, reduced losses due to pests and diseases, and with reduced environmental risks.
- New and better crop varieties are produced faster and better suited to the value chains.
- Novel pest management products and management systems employed across the agricultural and horticultural sectors.
- A wider choice and range of crop varieties that address multi-functionality in cropping systems.
- Greater efficiency/reuse of by-products in (non)food and drink value chains.

- Greater understanding of the role of behaviours, people and policies managing land based food systems.
- Reduced impact of climate and other extreme events on communities and ecosystems.
- New nature-based solutions embedded in local and national plans, new agroecological and land systems, new resilient crops and management techniques.
- We see new ideas being tried for halting and reversing biodiversity decline.
- More efficient and more effective monitoring and management of soil, water, biodiversity and ecosystems, people and communities.
- Communities working together in new ways to deal with sustainable natural resource management.
- Lower ecological footprints at local and national scales.
- Greater understanding of the role nature plays in supporting wellbeing.
- A reduction in waste and more efficient and sustainable use of resources by rural industries.
- Healthier food choices and reduced levels of food insecurity at local, national and global scales.

How do we measure our achievement of the objective?

- Year on year increase in the number of open access datasets, and open access outputs.
- Adoption of new agro-ecological and Integrated Pest Management approaches (IPM) in crop production systems

- Commercially successful crop varieties for food, drink and plant-based products
- Demonstrable contributions to development and implementation of policy in biodiversity, ecosystems, water, soil and land use, rural economy and communities.
- Production of user-friendly, open platform information resources, tools and techniques to support the sustainable management of natural assets and management of ecosystem resilience e.g. web based access to soil, water, biodiversity and ecosystems data and information resources through the Institute website and public access websites of third parties.
- Increased levels of funding for transdisciplinary projects in sustainable management of natural assets which demonstrate effective engagement with stakeholders with co-construction and shared project activities.
- Extending the geographical application of sustainable management of natural assets research through a greater level of funding from international-focussed initiatives.
- Increased in public awareness (both local and international) of the James Hutton Institute's work supporting sustainable development and resilient communities as reflected through social media indicators and press coverage.
- Reputation as an Open Science Institute.
- Greater use of our data, resources and facilities from external parties.



Pillar 3

Our Finances: We grow by developing new income streams; operate a portfolio funding model to deliver a translational pipeline from basic to translational science; secure sufficient total and unrestricted funding to sustainably pursue research and maintain fit for purpose infrastructure

Objective definition

We appropriately target sources of funds for our research and capability development. We prepare robust bids with appropriate risk management and based on an increasingly solid reputation.

If we are doing this well, what will it look like?

- We have a high level of situational awareness of, and influence on, the funding landscape in Scotland, UK, Europe and further afield.
- We prepare ambitious and robust bids and business cases and win more money aligned with our flagships initiatives
- We win a high % of the bids for funding.
- The proportion of funding from industry stakeholders increases in IBH and APGC
- We increase the level of our funding from Trust and Foundations.
- We have more unrestricted income from fundraising and campus development

How do we measure our achievement of the objective?

- Non-grant in aid research funding doubles by 2026, reflecting award success and growth in capability significantly linked to flagship initiatives.
- Growth in return and profit from JHL, with turnover doubling by 2026 to support employee utilisation; strategic JHI capital equipment and other investment.
- Ratio of successful bids increases and average size of bids increases.
- Good customer feedback on performance.
- Higher average contribution to Full Economic Cost (FEC) realised.



Pillar 4

Our People and Place: adapt learn and grow; attract and develop high quality employees; invest in our campus and facilities

Objective definition

Our success depends on the calibre of talent that we attract and develop. We cannot be a world leading institute unless we are able to develop talent and build careers and leadership fostering a healthy interflow with other institutions. Our facilities and resources need to be world class and we need to invest in existing and new facilities that make our Campus Open to others and support the culture we want; we also need to invest and lead by example ensuring our operations reduce GHG emissions and go beyond Net Zero.

If we are doing this well, what will it look like?

- We attract and retain high calibre people.
- The quality of our science is motivating and inspirational to both early career and established scientists and professional services
- Our colleagues have high levels of engagement and motivation and have effective personal development programmes, mentoring and coaching.
- There is a feedback-rich culture in daily use.
- Students/Interns/Visitor/Apprenticeships will increasingly seek to participate in our programs and compete to join the Institute.
- Our values are being lived - there is a discernible James Hutton culture and ethos.
- We understand that new, tough challenges forge teamwork and innovative thinking.
- We have new facilities and an open campus that attracts collaborators and new talent from around the world.
- People engage in healthy working lives programme and sickness absences fall.
- We are viewed as a progressive organisation committed to Equality, Diversity and Inclusion across all that we do.
- Increases in awards and accolades.

How do we measure our achievement of the objective?

- Increase in positive turnover - people attain promotions internally and externally.
- Our skills and expertise evolve to ensure we meet needs.
- Trained cohorts of scientists equipped with cutting-edge skills and experience.
- Improvements in employee surveys and job satisfaction.
- Faster, more effective recruitment - people retained with feeling of investment.
- Expanded capacity: in identified areas of science; business analysts and development; project management specialists.



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