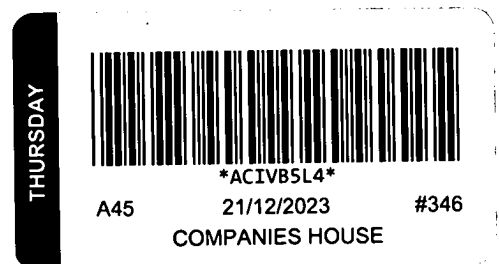


Rothamsted Research Limited

ANNUAL REPORT AND FINANCIAL STATEMENTS

for the year ended

31 March 2023



Company Registration No. 2393175
Charity No. 802038

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Rothamsted Research Limited

LEGAL & ADMINISTRATIVE INFORMATION

DIRECTORS

Professor Sir John Beddington FRS (Chair)*	
Professor Andrew Balmford FRS	
Dr Oliver Doubleday (Deputy Chair)*	
Professor Bridget Emmett ⁺	
Professor Julie Gray ⁺	
Mr John Haywood	Retired 5 December 2023
Mr Jan Holthuis* [^]	
Dr Stuart Jarvis*	Retired 7 February 2023
Professor Louise Manning	
Mr Neil Scragg*	Appointed 10 May 2023
Professor Sandy Thomas ⁺	
Professor Michael Winter ⁺	Retired 5 December 2023

* - Member of Finance and Audit Committee

⁺ - Member of the Science Advisory Group of the Board

[^] - Member of the Intellectual Property and Exploitation Panel

CHARITY NUMBER: 802038

COMPANY NUMBER: 2393175, a company registered in England and Wales

REGISTERED OFFICE

Rothamsted Research Limited
Harpenden
Hertfordshire AL5 2JQ

AUDITOR

Buzzacott LLP
130 Wood Street
London
EC2V 6DL

PRINCIPAL BANKERS

Barclays Bank
22-24 Upper Marlborough Road
St Albans
Hertfordshire AL1 3AL

PRINCIPAL SOLICITORS

Mills and Reeve LLP
Botanic House
100 Hills Road
Cambridge
CB2 1PH

Rothamsted Research Limited

TRUSTEES' REPORT (INCORPORATING THE STRATEGIC REPORT)

The Directors submit their Annual Report together with the audited Financial Statements for the year ended 31 March 2023. This contains a Directors' report as required by company law. Further information can be found at <http://www.rothamsted.ac.uk/>

STRUCTURE, GOVERNANCE AND MANAGEMENT

Directors and Officer

The Directors, who are also the Trustees, the Institute Director and Officer of the Company, who served throughout the year, were as follows:

Directors

Professor Sir John Beddington FRS (Chair)	
Professor Andrew Balmford FRS	
Professor Bridget Emmett	
Dr Oliver Doubleday	
Professor Julie Gray	
Mr John Haywood	Retired 5 December 2023
Mr Jan Holthuis	
Dr Stuart Jarvis	Retired 7 February 2023
Professor Louise Manning	
Mr Neil Scragg	Appointed 10 May 2023
Professor Sandy Thomas	
Professor Michael Winter	Retired 5 December 2023

Institute Director

Professor Angela Karp

Officer

Company Secretary: Louise Warren

Constitution

Rothamsted Research Limited (the Institute or the Company, Rothamsted Research or RRes) is a charitable company which is limited by the guarantees of its members to a maximum of £1 each and which is regulated by the terms of its Articles of Association. The company Registration Number is 2393175. The Company is also a registered charity, number 802038 and, as such, is not usually liable to taxation on income arising from and expended on its charitable activities.

Appointment of Trustees

An executive search agency is used for the identification of potential Trustee-Directors. These are then considered by an appointments panel nominated by the Board and composed of two or three Trustees considering overall balance of skills and experience, vacancies and future needs or pressures on the Board. Potential appointees are invited to visit Rothamsted campus to meet the Institute Director and others as appropriate.

Trustee Induction and Training

New Trustee-Directors are offered training opportunities with good quality national providers identified by mutual agreement. This ensures that the Board are all fully aware of the latest position on relevant Company and Charity law, regulations and good practice especially in the context of Rothamsted Research Limited and the current decisions that it faces. Induction and training for new Trustee-Directors will be carefully tailored to the needs of the individuals concerned with special consideration of the issues that the group faces in the coming months.

Rothamsted Research Limited

TRUSTEES' REPORT (INCORPORATING THE STRATEGIC REPORT)

Third Party Claims

The group holds Directors and Officers insurance which will indemnify the Directors against claims from third parties.

Organisation

The Board of Directors is responsible for the overall governance and strategic direction of the Company in accordance with the Company's Articles of Association. Day-to-day management is delegated to the Chief Executive Officer and Institute Director, who the Board is expected to support in the development of strategic direction and policies, objectives and goals. There may be between 9 and 15 Trustee-Directors sitting on the Board of Directors, with Lawes Agricultural Trust ("LAT") and Biotechnology and Biological Sciences Research Council ("BBSRC"), part of UK Research & Innovation, each providing an Observer at Board meetings and each nominating one Director. The Chair of the Board is jointly nominated by LAT and UKRI-BBSRC. All directors are appointed to serve on an *ad hominem* and non-executive basis and, except for the Chair, do not receive any remuneration; consistent with this position the Board of Directors advises on the development of strategy and policy. The Institute Director reports to the Chair and Trustee-Directors of Rothamsted Research Limited. There is an appointments panel that is set up as required. The Board considers and is guided by the guidance issued from time to time by the Charity Commission.

The relationship of the Company with its major funding body, the UKRI Biotechnology and Biological Sciences Research Council ("UKRI-BBSRC"), is defined by the terms and conditions of an Institute Grant Agreement. The Members of the Company are LAT and UKRI-BBSRC plus the Chair of RRes being a single natural Member and they have signed a Members' Agreement. The role of these members is defined through a Members' Agreement that describes how this tripartite arrangement recognises the contribution in land (LAT) and funding (UKRI-BBSRC) respectively to the well-being of Rothamsted Research Limited; this is achieved through an arm's length stance that does not seek to unduly influence the strategic direction of the Institute. To date, the Board has established three sub-committees for specific purposes, namely the Finance and Audit Committee, the Science Advisory Group of the Board, and the Remuneration Committee; the latter setting remuneration for key senior staff based on performance.

Until 2017 there was an agreement in place by which UKRI-BBSRC employees (who were public sector employees and subject to those controls) were deployed to work at Rothamsted Research with the latter bearing all relevant costs. With effect from 1 April 2017 all UKRI-BBSRC employees were transferred to Rothamsted Research Limited employment under TUPE regulations. Pension arrangements protected by TUPE remain the same and are administered by the Research Councils' Pension Scheme. All new members of staff appointed are employees of the Company under terms and conditions defined by the Company. They pay into a defined contribution Pension Scheme (started on 1 April 2012) provided and administered by Aviva PLC.

Employee Consultation

The Company recognises all appropriate Trade Unions representing staff employed. The Institute Negotiating Consultative Committee meets at least twice a year. It provides an avenue for provision of information, consultation and discussion of a wide range of matters affecting staff. At a national level, there is a Joint Negotiating Consultative Committee representing all staff within the institutions supported by the UKRI-BBSRC. Information is also provided at a national and local level through the Annual Report, the Strategic Plan and other publications. The Employee Forum gives an employee voice within Rothamsted and represents all staff across the whole of the organisation. It provides the opportunity for representatives and senior management to share key information, have discussions about the issues, interests and ideas that are important to all, and provides a platform to ensure participation in constructive discussions on how best to grow and develop the Institute. The Forum complements and is additional to existing methods of internal communication. It proactively seeks views and feedback and acts as a communication and consultative body in areas such as: Institute strategy and performance, the political environment and its impact on RRes,

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TRUSTEES' REPORT (INCORPORATING THE STRATEGIC REPORT)

organisational development and changes, employment terms and arrangements, employee engagement, health, safety and well-being, training and people development, as well as work life balance and equality and diversity. The Institute Director attends the Institute Negotiating Consultative Committee and receives regular reports from the Employee Forum, which is attended by a member of HR, reporting back to the Board.

Disabled Persons

The Company complies with all relevant legislation relating to disabled persons and continually strives to follow best practice in these matters for an employee with a disability to remain in employment or to successfully employ a disabled preferred candidate within a safe working environment.

Our staff code requires that we will not reject a disabled job applicant for a reason which relates to his/her disability; person specifications will always be used and selection criteria monitored to ensure that discrimination does not unwittingly occur; recruitment and selection procedures will be adapted where possible to ensure that they do not disadvantage disabled job applicants.

We will take steps to try to enable an employee who becomes disabled to remain in employment. In consultation with the employee, adjustments to facilitate their retention will be considered. Employees with disabilities will be provided with opportunities to develop full and rewarding careers on an equivalent basis to other employees with similar skills and abilities and, as described above, we will support any such applicants for vacancies across the Institute.

Athena SWAN Charter

The Athena SWAN Charter recognises advancement of gender equality: representation, progression and success for all, and Rothamsted Research Limited is committed to achieving this. Rothamsted Research Limited gained the Athena SWAN Bronze award in 2014, and our accreditation remains valid with renewal expected during 2023. Originally established to encourage and recognise commitment to advancing the careers of women in science, technology, engineering, maths and medicine (STEMM), the charter now recognises work undertaken to address gender equality more broadly, and not just barriers to progression that affect women.

Connected Charity and Companies

The freehold interest in the land and buildings at the Company's main operating site, (Rothamsted, Harpenden, Hertfordshire) is held by Lawes Agricultural Trust (LAT), a charity with similar objects to Rothamsted Research. There is no written agreement for the occupation of this site and no rent is charged to the Company by LAT. Land and buildings at North Wyke, Devon are owned by the UKRI-Biotechnology and Biological Sciences Research Council ("BBSRC") and occupied by the Company under a formal lease with a peppercorn rent.

Rothamsted Enterprises Limited (REL) is a joint venture of Rothamsted Research, LAT and UKRI-BBSRC. REL operates and provides catering, conferencing and managing agent services for the Conference Centre, Lawes Open Innovation Hub and, on behalf of LAT, The Daniel Hall Building, Innovation Labs and Russell Building. REL is a unique hub focused on promoting collaboration and innovation by partnering with commercial agricultural technology businesses and opening the research process. With access to Rothamsted's world class facilities and researchers, REL offers flexible laboratory space, offices and informal meeting hubs, as well as an extended Conference Centre. No other material subsidiary undertakings conducted any trading activities during the year.

The Charity has a 15.87% shareholding in VSN International Limited, the principal activity of which is research into, and development and distribution of, data analysis software, mainly targeted at the international life science sector. The company continues to consolidate through steady growth. The 2022/23 operating profit of £210k (21/22:£248k) was achieved across all territories of the globe.

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TRUSTEES' REPORT (INCORPORATING THE STRATEGIC REPORT)

Fund Raising

Rothamsted Research Limited does not actively fund raise, and no professional fund-raisers are engaged. Therefore no complaints were received in connection with fundraising.

STRATEGIC REPORT OBJECTIVES AND ACTIVITIES

The objects of RRes are:

- For the benefit of the public to advance the science of agriculture by the initiation, protection, development and continuance of investigations and experiments;
- To ensure that research undertaken is complementary to related studies elsewhere whilst providing for regional diversity in the environment and in agricultural practice, and to collaborate in joint programmes where appropriate;
- To promote the dissemination and extension of research findings alone or in association with other charitable organisations having objects similar to the objects of the Company and to actively facilitate the uptake of research results by industry;
- To extend these activities through external funding to provide support to developing countries.

RRes remains dedicated to providing scientific research that contributes to the sustainability of agricultural land management systems both in the UK and throughout the world. This includes improving yield and quality of crops produced for a variety of purposes and enhancing the sustainability of agricultural systems worldwide. RRes is also using its scientific expertise to understand climate change and taking this further by demonstrating how plants and appropriately managed agriculture can help to mitigate anthropogenic effects on climate change.

Agriculture provides one of the most spectacular illustrations of how the benefits from good science can provide improved well-being for mankind; from the precarious food security that was found throughout the globe only a few generations ago to a sufficient, predictable supply of good quality food that much of the world enjoys today. However, that situation is not true for a large number of people, nor is it assured without constant scientific development and global food security is a significant political issue for all countries. This situation is not likely to change in the medium term and the unique combination of skills and experience across RRes is increasingly relevant for that and the growing bioeconomy.

The mission of RRes is to perform world-class research to deliver knowledge, innovation and new practices to increase crop and animal productivity and to develop environmentally sustainable solutions for food and energy production. RRes's purpose is to bring together global science, fresh thinking and innovation for lasting benefits worldwide. The unique value proposition for which RRes is held in high regard globally, is the novelty and integrity of its knowledge on agricultural systems. RRes' research underpins key sectors of UK biosciences such as sustainable food production, bioenergy and biotechnology.

The launch of RRes' 2017-2022 research and innovation strategy coincided with the commencement of new Institute Strategic Programmes (ISPs) 2017-2022, extended to March 2023 as a result of the COVID pandemic. The strategy was formed after extensive stakeholder discussions, in which period the ISPs were also shaped. The RRes strategy identified three overarching Themes ("Science Portfolios") that address major challenges for future agriculture: **Superior Crops:** Increasing sustainable yield and quality of food crops and designing crops with novel nutritional or industrial value; **Securing Productivity:** Increasing resilience of crop productivity by reducing losses caused by biotic and abiotic stresses; **Future Agri-Food Systems:** High-performing crop and livestock production systems with lower environmental impact.

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TRUSTEES' REPORT (INCORPORATING THE STRATEGIC REPORT)

Five **Institute Strategic Programmes (ISPs)**, and three **National Capabilities (NCs)** act as central pillars of these Science Portfolios:

Portfolio	ISP	NC
Superior Crops	• Designing Future Wheat (DFW) • Tailoring Plant Metabolism (TPM)	
Securing Productivity	• Smart Crop Protection (SCP)	• Rothamsted Insect Survey (RIS)
Future Agri-Food Systems	• Soil to Nutrition (S2N) • Achieving Sustainable Agricultural Systems (ASSIST)	• North Wyke Farm Platform (NWFP) • Long-Term Experiments (LTE)

Briefly, the five inter-connected ISPs and numerous other grants linked to them have the following major aims*:

- **ISP 1: Designing Future Wheat** a UK wheat research programme to improve resource, resilience and value of wheat through genetic improvement
- **ISP 2: Tailoring Plant Metabolism** a programme aimed at delivering novel traits in bespoke crops for the bioeconomy, including oilseed crops and willows
- **ISP3**: Smart Crop Protection** a programme on novel, systems-based solutions for managing insect pests, crop disease and weeds in crop production
- **ISP4: Soil to Nutrition** a programme that applies a mechanistic approach to optimising efficient nutrient use across crop and livestock food production systems
- **ISP 5***: Achieving Sustainable Agricultural Systems** a programme to evaluate and understand the performance of sustainable intensification options at farming scale

* All ISPs received a 1yr full cost extension due to Covid 19, Extending their duration from 5 to 6 years.

**SCP was not funded by BBSRC as a ISP, but by Innovate UK from 2017-2021 only. It did not receive additional funds in 2022/23.

***ASIST received a further 5years funding, joint between NERC and BBSRC, led by UKCEH. The ISP transitioned from ASIST to AgZero+ during the reporting period.

The three National Capabilities, the Long-Term Experiments, the Rothamsted Insect Survey and the North Wyke Farm Platform continue to serve as a key resource for our strategic research as well as research conducted by national and international partners. They are supported by UKRI-BBSRC and open to scientists everywhere.

The Company's main objectives for the year April 1st 2022 – March 31st 2023 were to:

- Respond to any feedback on the new ISP programme submission and (assuming all programmes are funded) close the current programmes and start the new programmes in April 2023;
- Establish and implement an institute performance review process to monitor progress in all five programmes, and therefore monitor progress in the transition of the institute to a National Capability;
- Re-fresh the institute committees, working groups and task forces to engage staff throughout the organisation in developing and driving the changes needed;
- Improve income generation through increased effort and efficiencies in grant funding, cost recovery and commercial funding streams;
- Roll-out an extensive training programme in equality, diversity and inclusivity and conduct a review of pay and performance-related rewards, as part of wider HR strategy;

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TRUSTEES' REPORT (INCORPORATING THE STRATEGIC REPORT)

- (vi) Continue improvements in research data management practises and in business operations through digitisation; and
- (vii) Ensure that maximum outputs and outcomes are achieved from our previous strategic programmes and projects, as well as any new research initiated during the year.

Four new Institute Strategic Programmes were developed during 2022. These formed a key part of the total submission to UKRI-BBSRC which comprised:

1. Director's Statement
2. Institute Strategic Programme Grant (ISPGs)
 - Delivering Sustainable Wheat (DSW)
 - Green Engineering (GreEn)
 - Growing Health (GH)
 - Resilient Framing Futures (RFF)
3. Institute Development Grant (IDG)
4. Core Capability Grant (CCG), including 3 National Bioscience Research Infrastructures (NBRIs):
 - Rothamsted Insect Survey (RIS)
 - North Wyke Farm Platform (NWFP)
 - Rothamsted Long Term Experiments (RLTE)
5. Small Value Capital Grant (SVCG)
6. Institute Research Culture Statement

The full submission was delivered in time for the deadlines and presented to an external panel for review on October 4th 2022 and was successfully awarded on the 28th of March 2023.

As part of the Transformation Programme being undertaken by the Institute, seven senior level Science Leaders have been recruited, highly recognised in their fields with excellent track records, to inspire and provide new leadership under science portfolios. Following an extensive capability mapping exercise, the new, flatter, organisational structure is complete. The new structure aligns well with the UKRI-BBSRC Institute Strategy; recommendations for Culture and a new HR strategy is under development to support it.

The Knowledge Exchange and Commercialisation (KEC) group has been reconfigured with the KE team incorporated within the Research and Innovation Grants Office (RIGO) Innovation and Commercialisation Office (ICO). The ICO has a new Director and an Intellectual Property and Exploitation Panel, including Board membership, has been established.

In readiness for the new strategic programme which started in April 2023, RRes centralised teams were combined into two interconnected Offices: (1) RRes Engagement and Communications Office (RECO) which combines Knowledge Exchange, Public Engagement & Communications and (2) RRes Impact and Grants Office (RIGO), which combines the grants office and commercialisation teams. This change recognises that the expertise and skills required for grant funding and commercialisation differs from that needed for communications and KE. Together, RECO and RIGO lead, coordinate, manage and support Institute-wide activities, including engagement with high profile government representatives, corporates and KE partners, showcasing multiple programmes at events (e.g. Cereals) intelligence gathering and networking. They will be responsible for record keeping, monitoring and reporting, and assessment of best practices between peers through participation at professional events and exchange programmes with practitioners. They will run annual training activities to develop the next generation of scientists and generate institutional confidence across all modes of impact delivery. RECO and RIGO both report to the CEO, endorsing the importance RRes gives to delivering impact. In addition, to improve the delivery of impact from individual ISPGs, NBRIs and leveraged projects, RRes will “embed” KE Managers (from RECO) and

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TRUSTEES' REPORT (INCORPORATING THE STRATEGIC REPORT)

designated Impact Managers (from RIGO) within specific programmes, such that each co-locates with the science teams to provide dedicated support for at least half a day each week.

The Digital Transformation strategy at Rothamsted is being realised as a series of incremental and iterative changes across seven key pillars of the institute's data ecosystem:

- (i) Infrastructure - hardware, software, storage capacity, computing power (HPC)
- (ii) Information Architecture - organisation of resources and content for efficiency and sustainability
- (iii) Process - formalisation of data governance rules, procedures for stakeholders when handling data, running analyses, and using tools
- (iv) Upskilling staff with new data stewardship training and support, as well as recruitment of new IT expertise
- (v) Change management - stakeholder engagement to accelerate adoption of new digital technologies
- (vi) Communication - consensus building, fusion roadmaps / trajectories, skills training
- (vii) Culture - recognising the ongoing value of data and rewarding its creators

The digital agenda has been guided by stakeholders from across the operational and research units in the institute, meeting regularly as the Digital Infrastructure Group (DIG). Outcomes from these consultations include the revision of a series digital governance policies, which have resulted in the publishing of strategy documents and a communications portal serving best practices reports, questionnaires and registries of essential data and information assets. Further to the roll out of policies a series of initiatives have been launched and are progressing well including the provision of Electronic Notebooks and the provision of open source FarmOS, an application for farm management, planning, and record keeping.

Emerging from restructuring, and new leadership (Prof Chris Baker) for a new directorate (Intelligent Data Ecosystems), is success in grant winning for digital projects. An award of £300,000 from the Alan Turing Institute's Out of Budget Process was secured in November 2022 to develop a pipeline for extracting evidence of crop loss from scientific reports. Subsequently further funding, £1.5M from the Alan Turing Institute / EPSRC has been secured in July 2023 to support out Digital Twin agenda for the next 2 years. New funding applications to BBSRC in the value of £5M were initiated for replacement of the current high performance computing infrastructure were submitted in September 2023. Outreach activities during the year also included meetings with members of Parliament and Peers in Westminster to present their latest insights on artificial intelligence (AI) in farming as part of Evidence Week in Parliament. Leadership in national digital initiatives was further realised through our participation in the successful UKRI £3M Digital Twin Network+ application which will run from 2023 to 2028.

The Institute Research Grants Office has worked hard with Departmental Heads to identify and support grants submissions. Notable successful wins in the financial year (award received) included the following grants of over £500k:

- Department for Business, Energy and Industrial Strategy, Ian Shield
- Biotechnology and Biological Sciences Research Council, Kim Hammond-Kosack
- European Commission, Martin Blackwell
- Innovate UK, Cara Griffiths
- The Royal Society, Marcelo Valadares Galdos
- Natural Environment Research Council, Andrew Whitmore

Along with grants of over £250k:

- Alan Turing Institute, Christopher Baker
- Natural Environment Research Council, Christophe Lambing

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- Biotechnology and Biological Sciences Research Council, Peter Shewry
- Biotechnology and Biological Sciences Research Council, Vasthi Alonso Chavez
- Department for Environment, Food and Rural Affairs, Kim Hammond-Kosack
- Anglo American, Andy Neal

In addition to multiple successes with the funders mentioned above the Institute has achieved great success with Equipment and Capital bids, totalling more than £14.7m.

SHAKE Climate change has successfully moved through its fourth year of operation. Out of 30 high quality applications from early-stage ventures, fifteen were selected for the fourth cohort and completed the Phase One workshop. Seven of these were selected for Phase Two and two months of further mentoring, which culminated with the final pitch to the Investment Panel. Two promising ventures, ResurrectBio and Adamo Foods, were selected for an investment of £100K each as shown on the balance sheet as social investments.

Since the launch in 2019, the programme has received 127 applications from high quality early-stage ventures. Of these, sixty-four entrepreneurs have completed the intense seven-day workshop in Phase One, receiving mentorship and training to improve on their business proposition. Thirty-five ventures have completed Phase Two, which includes mentoring, meeting with science experts and further workshops, and the SHAKE portfolio now consists of eleven ventures, including Economad, Glaia, HE Feeds and PheroSyn from Cohort 1, Climate Edge, Entio and SugarOx from Cohort two, Tumbebug and The Good Pulse Co from Cohort three and ResurrectBio and Adamo Foods from cohort four.

SHAKE funding has made £1.46 million in direct investments into 11 ventures and enabled the SHAKE supported ventures to raise an additional £8.89M in grant and equity funding.

Discussions are currently taking place with new funders to deliver the SHAKE Programme for a fifth cohort in 2024.

To help achieve financial sustainability the Company has a highly skilled workforce of scientists of international quality who have access to state-of-the-art facilities alongside unrivalled time-series of data and sample archives, including those derived from the world-renowned and unique “classical” field experiments started over 175 years ago. The major areas of activity are scientific research, postgraduate education, policy support and public engagement. Rothamsted is committed to ensuring that all its research is published in widely available media of various types appropriate for the target audience.

Science: All RRes strategic programmes achieved substantive progress throughout the year. Notable achievements in the reporting year were reported by all ISPGs: TPM research in lipid and phenolic glycoside pathways has extended from discovery science to delivery of products in crops, plus field trials, functional testing, protection of IP and significant progress in the path to commercialisation. S2N has generated important strategically-relevant data on the impacts of extreme weather events on nutrient losses across scale. This has illustrated very clearly to Defra policy teams and industry groups the resilience challenge facing UK agriculture and the need to improve ‘resistance’ to weather extremes to avoid substantive off-site environmental damage costs. The programme has also demonstrated the first use of an ensemble of agroecosystem models to assess the co-benefits and trade-offs associated with land use change scenarios. This work points to the clear benefits of taking an ensemble approach; something used for some time in climate science. DFW had delivered a major step-change in gene functional characterisation resources in wheat including contribution to the international sequencing and assembly of 15 genomes of hexaploid wheat, as well as low coverage sequencing of 242 *Ae. tauschii* accessions (D-genome progenitor). During the course of the reporting period research jointly funded by Bayer and Syngenta successfully completed on

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TRUSTEES' REPORT (INCORPORATING THE STRATEGIC REPORT)

the whole genome analysis of 19 insect pests of global importance. These genomes now form the basis of subsequent research planned for under the ISP Growing Health starting in 2023.

Innovation: During the year, the ICO team merged with the Grants office to more closely align the activities of both teams to support the development of the grants pipeline and impactful applications. The team continued to develop the foundations required to deliver an improvement in the proportion of commercial grant and licence outcomes from Institute science. These activities included the delivery of the three stage Annual Innovation Training Programme (innovation, collaboration, commercialisation), the trialling and establishment of an ERP based Post-Award Engagement Process, reviewing the effectiveness of existing IPR and licence arrangements, as well as managing the day-to-day project, documentation and IP risk-based work flows required to successfully enter collaborations and win grants for translative science. In addition, the team has been closely involved in the ongoing delivery of the SHAKE Climate Change programme, the formation of a follow-on SHAKE Programme for 2023, as well as the development and co-ordination of a UK National Agri-Tech Innovation Pathway, an early-stage cross-institution initiative for UK institutions involved in Agri-Tech to collectively list their commercial innovation discoveries in one place to be actively marketed to the world. We are considering relaunching the initiative following public departmental changes and the recently announced merger of the three Agri-Tech centres into an Agri-Tech Catapult. Including the SHAKE portfolio, Rothamsted now has 15 separate shareholdings or convertible loan investments in Agri-Tech venture companies. Rothamsted continues to be an active participant in the BBSRC KEC Forum regularly sharing knowledge with other BBSRC Institutes on translative and commercial matters, including for example IP Policy and spin-out venture formation.

Partnerships: The SHAKE Climate Change Entrepreneur support programme has successfully completed a fourth cohort. Two new ventures were successful in their final pitch, each receiving an investment of £100K which are shown on the balance sheet as social investments. Two Rothamsted spinout companies, Pherosyn and SugarOx were among the successful ventures in cohort one and continue to develop. Following the launch of Pherosyn, this team successfully bid for a £308K BBSRC grant (Industrial Biotechnology for Improving production of Higher Value Chemicals) and a £270K Innovate UK grant under the SMART initiative for scale up. SugarOx have secured £180k of non-diluted funding from the Defra Farming Innovation Programme for a collaborative R&D project with Rothamsted, and are closing a £150k Seed Enterprise Investment Scheme having reached full subscription.

Farmer & industry engagement: We strengthened links with UK farmers and farmer networks through direct research involvement in programmes such as ASSIST, BGRI, ERDF Agri-tech projects, the Soil to Nutrition ISP and collaboration with the UNESCO North Devon Biosphere. Our Science & Innovation Advisory Board (SIAB) and Institute Strategic programme (ISP) Advisory Groups provide healthy early sounding beds for ideas, whilst our partnerships with key bodies such as AHDB, AgriTech East and the National Farmers Union enable us to connect to regional and national farmer networks. Our Harpenden site has now joined our North Wyke campus as a LEAF Innovation Centre, linking us to other leading farmer-facing research organisations and LEAF's national network of LEAF Marque and Demonstration Farms. Scientists also engaged with the agricultural industry at external events; Cereals 2020, , Groundswell, NFU meetings, and the Oxford Real Farming Conferences. Many KE activities have opened back up after the COVID pandemic allowing for new farmer networks to be established including those associated with our new ongoing work with the UNESCO North Devon Biosphere and the Trewithin Estate in Cornwall. The later exemplar has permitted the collection of valuable farm land use and management data to support the planned development of a new field scale ecosystem services tool to support farmers in their decision-making.

Government and Policy: RRes has continued to play an important role in policy development, providing thought leadership and evidence to various parliamentary bodies. A number of our scientists gave evidence

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TRUSTEES' REPORT (INCORPORATING THE STRATEGIC REPORT)

to parliamentary committees: Dr Martin Blackwell gave evidence to the EFRA committee on soil health. Prof Lin Field shared her huge experience of pesticide regulation with the all-party Science Innovation and Technology Committee (APPG SITC) on insect declines. Dr James Bell, head of the insect survey also gave evidence to the panel. In October, members of the APPG SITC visited the Harpenden site to learn more about the insect survey for the insect declines report. The EFRA committee on soil health visited the Harpenden site early in 2023, and numerous references to Rothamsted's research were included in their report published in December. Following the passage into law of the Genetic Technology (Precision Breeding) Act in March, calls for further policy reform were led by the Royal Society's policy briefing Enabling genetic technologies for food security. Prof Johnathan Napier represented Rothamsted at the launch in October. On climate issues, Prof Adrian Collins joined the farming advisory group of the UK's Climate Change Committee, and internationally Dr Khalid Mahmood took part in discussions of climate-resilient crops at the World Agritech Innovation Summit, taking place alongside the UNFCCC COP28 climate conference in Dubai in December.

Public Engagement and Science Communication: Rothamsted's communication programme continued to strengthen with the appointment of our first communications officer specialising in social media in November 2022. As a result our social media channels have shown strong growth with, for example, Twitter attaining a quarter of a million impressions in the last quarter, and a new TikTok video channel up to 3,000 views on just 6 months. News coverage across all media has also been strong with 3,364 media mentions over the 12 month period (up 42% over 2021/22). In the first fully post Covid year for direct public engagement, RRes took part in several events, including the UK's biggest public science event, New Scientist Live, plus British Science Week and the British Science Festival.

RISK MANAGEMENT

The Company has a formal risk management strategy which has been in place throughout the period covered by this report and is reviewed by the Board and the Finance and Audit Committee. The Board has overall responsibility for establishing key procedures designed to achieve systems of internal control and for reviewing and evaluating their effectiveness.

The risk management strategy comprises:

- An annual review of the key risks RRes may face;
- The establishment of systems and procedures to mitigate those risks identified within the risk register;
- The implementation of procedures designed to minimise any potential impact on RRes should those risks materialise;
- Financial processes are carefully controlled and monitored through active and regular review of policies and procedures to ensure segregation of duty, appropriate signing authority is monitored.

A risk register is maintained which sets out the key organisational risks. Risks are considered by reference to the probability of occurrence and impact on RRes.

The principal risks identified, related goals, and management strategies to improve mitigation, are as follows:

Risk Identified	Institute Goal at Risk	Principal Mitigations taken
Failure to recruit and retain high performing scientists or key staff	Excellent, outcome-driven, and well-resourced science; highly motivated, skilled and well-performing workforce. Impact on financial sustainability.	External independent Compensation & Benefits Review undertaken. New HR strategy being developed; working groups established to focus

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		on Early Career Researchers and Equality, Diversity & Inclusion.
Loss of major income stream	Long-term sustainability & reputation	Strategic reviews as part of the Transformation programme delivered through four working groups; Improved understanding, systems and oversight of competitive grants; Strengthened commercialisation capability and IP policy.
Non-compliance with laws and standards	A robust system of controls exists to protect the Institute's people, assets, and reputation	Health & Safety Strategy Group established and governance structures strengthened; Greater Finance and Audit Committee oversight; Management Committee review of all policies and procedures.

The Institute has a dedicated Internal Audit, Risk and Compliance officer and day to day responsibility for the implementation of risk management procedures and ongoing monitoring of risk and the effectiveness of controls rests with the Institute Executive Team (IET). The IET examines existing and emerging corporate risks, reviews the Institute risk register and explores corporate risks in detail based upon an agreed timetable. It is also overseen by the Finance and Audit Committee, to which significant risks may be escalated for action or monitoring, as well as high level oversight by the Board.

The Finance and Audit Committee is empowered by the Board of Trustee-Directors and has responsibility for advising on the effectiveness of the systems of internal control, including risk management. To fulfil this requirement, the risk profile is reviewed by the Finance and Audit Committee.

In terms of financial risks, the Group has no borrowings and limited exposure to financial instruments, such as trade debtors and trade creditors. Cash is held in deposit accounts and treasury deposits with major UK clearing banks. The Group's exposure to trade debtors and the associated risk of default is limited to only £0.9m at 31 March 2023, 2022 £0.8m. Future strategic funding for five years from April 2023 was ratified by BBSRC council in December 2022 and there is nothing to suggest that RRes does not remain a key strategic institute of UKRI-BBSRC as evidenced by recent financial investment in the capital requirements and transformation of the institute alongside the future strategic funding.

PUBLIC BENEFIT

Rothamsted Research Limited traces its primary Object back to that of the LAT – still extant and owner of the land and building assets at Rothamsted and Brooms Barn from which it was created in 1986; this Object can be summarised as the advancement of the science of agriculture. By virtue of the means and routes by which this is carried out, it is clearly aimed at public benefit and so falls within the charitable purpose of “the advancement of the arts, culture, heritage or science”. There are inevitable ancillary benefits from the primary activities as a result of meeting the primary Object that would fall into the categories of advancement of education, the advancement of environmental protection or improvement and, perhaps to a more limited extent, the advancement of health. The Charity Commission guidance lists “scientific research” as one of the approved categories and specifically mentions scientific research projects under the heading of the advancement of science. The Trustee-Directors have complied with section 17 of the Charities Act 2011 to have due regard to public benefit guidance published by the Charity Commission.

In the preceding sections of this report we detail how the objectives and achievements of RRes have been successfully pursued. We aim to reach the highest level in the quality of our scientific research; we ensure

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that this is fully and widely distributed to a global audience and so achieve international recognition. This will continue to be via the referred scientific literature, through contributions to research conferences as speakers and poster providers and via popular press articles for farmers and those engaged in land management. For the wider public we both initiate debates on important scientific issues relating to food production and security and proactively engage in discussions and consultations involving these topics.

We are convinced of the necessity to help ensure that our scientific advances can enhance the countryside and environment at both a national and a global level taking as many steps as we can to ensure this is achieved.

The benefits of our work reach and influence, directly or indirectly, all sectors of society: the broad aim of optimising the use of resources, maintaining crop production, while minimising potentially damaging environmental impacts is of benefit to all of humanity. There are some sectors of society who hold views that would limit the introduction of some of the technologies that arise from, or are an inherent part of, our scientific investigations; genetic modification of crop plants might fall into this category. Equally, much of our work is of direct benefit to the practices that are supported by the very same groups; improvement of biological control strategies may be highlighted in this context. Thus, we cover a wide number of sectors and interests and philosophical positions without favouring any one.

The scientific strategy is highly outcome-focussed. Rothamsted Research Limited is continuing to monitor and understand the benefits that the research work has brought to a broad cross section of the community and more details can be seen on our web site at <http://www.rothamsted.ac.uk/our-science>. This covers a range of scientific disciplines but examples include improvement of fertiliser recommendations to reduce waste and pollution, improved monitoring of aphids, tracking and controlling potato diseases, enhancing disease resistance in oilseeds used in the Indian sub-continent and controlling insect vectors of human/animal disease for use in both the developed and developing world. Also, Rothamsted data has informed regulations for heavy metal levels in grains, glucosinolate levels in rape seed oil and opportunities for monitoring and improving soil health.

Indirect benefit may arise from a commercial company identifying new opportunities within our research findings or during a collaboration; this is incidental to our work so in our dealings with commercial companies we do not accept any blanket inhibition on freedom to publish. We do accept that, in some examples, the best way that scientific discoveries may be introduced and achieve the most widespread use is through protection of our intellectual property and therefore fully accept that such an approach can be a legitimate form of comprehensive dissemination and actively pursue this where appropriate. Any financial benefit captured by RRes in this or any other way will be used to further pursue its primary Objects.

FINANCIAL REVIEW

Income

Total group income was £40.0m (2022: £36.3m). This included capital grants of £14.7m (2022: £7.7m). When comparing income year on year, if capital funding is removed, income has reduced by 12%. The principal reasons for this reduction are one off grants received in the prior year from BBSRC relating to the transformation programme. Rothamsted's principal funder is the UK Biotechnology and Biological Sciences Research Council (UKRI) which contributed 78% of total income (2022: 72%).

Expenditure

Total group expenditure for the year amounted to £33.7m (2022 £32.3m). Recurrent expenditure (excluding depreciation and redundancy costs) increased from £28.5m to £29.4m. The increase in recurrent expenditure was £0.9m, resulting from general inflationary pressures. Depreciation and amortisation charges have increased by £0.2m in the year with the additional capital funding received.

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Net movement in reserves and reserves position

The net movement in reserves for the year was an increase of £6.8m. Unrestricted reserves reduced by £1.3m to £13.6m, and restricted reserves increased by £8.1m to £65.8m.

The Institute is very carefully monitoring its cost base and is striving for efficiency savings where possible in order to prevent future deterioration of its unrestricted reserves. The Institute is operating on a tight financial budget for the immediate future and is putting in place the tools to improve the quality and success rates of grant applications and secure additional income streams.

Subsidiaries and joint ventures

A joint venture (Rothamsted Enterprise Limited) made a loss of £73k (2022: Loss of £225k) of which Rothamsted's 40% share was £(29k). Following FRS102 the investment interest recognised in the group accounts is nil as Rothamsted has not incurred legal or constructive obligations or made payments on behalf of the joint venture.

During 2014/15, Rothamsted Enterprises Ltd completed the construction of the Lawes Open Innovation Hub and the Rothamsted Conference Centre extension on land at West Common, Harpenden, and its principal activities are conferencing, business incubation and shared laboratory facilities to promote collaborative working. REL manages both the Daniel Hall, Innovation Labs and Russell Buildings for LAT and has relaunched the Manor now appropriate licenses are in place.

Capital expenditure

Capital expenditure for the year was £10.7m. This is predominantly capital spend which was supported by capital grants from BBSRC.

Cash

Cash at 31 March 2023 was £15.3m (2022: £15.4m). Rothamsted deposits its cash with major UK clearing banks. Income from cash deposits in the year was £213k (2022: £11k).

Investment policy

The Group's investments are held to:

- Provide operational liquidity
- Plan for scientific research and
- Support intellectual property

Investments are held as fixed term deposits with major UK clearing banks. Cash is drawn down in line with a planned expenditure schedule within the budget and in conjunction with the reserves policy and forecasting. Maturities of the deposits match these timelines.

In addition there are a small number of investments held to achieve a longer term return on intellectual property to provide funding for future research programmes and a model for commercialisation of research and innovation in to the market place.

Social investments

As noted on page 8, RRes has made a number of mixed motive investments under the SHAKE Climate Change Entrepreneur support programme. The Charity awards these for entrepreneurs and start-ups who are combatting climate change with science or tech-based ideas in the areas of agriculture or food production. Successful applicants who receive a loan are mentored and supported by leading science tech and business experts with regular meetings to monitor performance. The mixed motive investments are included in the financial statements as social investments and are made in the form of a concessionary loan. These concessionary loans are granted for an initial term of 12 months with interest of 5% per annum. Each loan automatically converts into shares in the event of default or if the purpose of the loan can no longer be effectively furthered. Otherwise, the loans are convertible at the Charity's option any time after the initial 12 month term. As at 31 March 2023, 11 loans totalling £1,460k have been made, of which 5 have been

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converted and 6 remain as convertible loans with neither the option to convert having been taken or any triggering events occurring.

Reserves policy

The Group's reserves are held to support financial solvency, manage uncertainty and fund future activities. The level of reserves required by the group is therefore determined by reference to:

- Future operational and capital expenditure requirements for the ISP funding cycle
- Potential financial risks identified in the risk register
- Potential funding required for strategic investments not included in the operating budget
- Working capital/liquidity requirements

Unrestricted reserves that have been designated for specific purposes are shown in a separate designated reserve. £0.75m is designated towards the Transformation of Rothamsted project which is expected to be spent in 2023/24.

The Institute has set itself a target level of reserves of £1.7m and defines its current free reserves as £1.7m. being unrestricted reserves not tied up in tangible fixed assets, fixed asset investments or designated towards the Transformation Programme.

Key performance indicators

During the year a number of key performance indicators (KPI's) have been implemented in order for the Executive Team and Trustee Board to monitor financial performance and sustainability of the Institute. Each KPI is Specific, Measurable, Achievable, Realistic and Time-bound (SMART) and is reported on at least once a quarter.

For external reporting the following four KPIs have been chosen.

KPI's 1, 2 and 3 are concerned with the submitting and winning of new grants in order to leverage additional income. A grant will typically span several years.

KPI 4 is concerned with ensuring the staffing split between science and non science staff remains sustainable.

Targets were set for the financial year based on performance in the previous year and the overall performance is highlighted in the table below.

	2021/22	2022/23	Target for 2023/24
KPI 1: Grants awarded (£'000)	24,516	16,658	16,000
KPI 2: Grants awarded (number)	72	78	75
KPI 3: Grant success rate (all funders)	40%	54%	54%
KPI 4: Ratio of science to technical/admin staff (FTE)	2.53	2.50	2.50

The total value of grants awarded has reduced from the previous year as the awarded amount in 2021/22 was significantly higher due to two multiyear awards exceeding £4.5m each (KPI 1). Excluding these two high value grants the total average grant award has increased slightly from £208k to £213k. The number of grants awarded has increased on the previous year (KPI 2) by 8% . Success rates across all funder types (KPI 3) have also improved and the target rate for 2023/24 remains at this higher level. The number of awards and total value of grants awarded are not expected to increase in 2023/24 due to the significant time spent on the preparation of the strategic funding application and the knock on effect on grant submissions. The ratio of science to staff to technical/admin staff based on FTE has remained constant in the period and this split is targeted to continue for 2023/24.

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TRUSTEES' REPORT (INCORPORATING THE STRATEGIC REPORT)

FUTURE DEVELOPMENTS

Rothamsted Research (RRes) occupies a strong national and international niche in research and innovation in arable and grazing livestock systems. Our vision is to undertake cutting-edge, strategically placed science to generate new knowledge of relevance and wide application in meeting current and future challenges facing agriculture. As a key pillar in delivering this vision, in April 2023, Rothamsted started a new round of strategically funded programmes, following a successful submission to BBSRC in 2022. A clear focus for 2024/25 will be ensuring the new programmes are on track to delivering against their aims and objectives and the transitioning of the institute to a National Capability, in alignment with the 2021 BBSRC Institute Strategy.

Our aim will be to ensure the institutes achieves the maximum leverage and outcomes from the strategically funded programmes. In relation to this, our specific priorities for the year ahead are: a) to ensure maximum outputs have been translated to outcomes from the previous round of strategic funding through continued support for the most appropriate pathways to impact; and b) to implement the strategy and actions required to ensure that all the principles of a BBSRC National Capability are being met through the pursuit of the four strategic Themes presented in the bid: 1 - Excellent science of national strategic relevance to agriculture; 2 - Influential leadership and connectivity; 3 - A supportive and inclusive culture for developing a diversity of skilled people; 4: Delivery of environmental, social and economic impact. Towards the latter priority, within each of the four Themes, key objectives have been identified and assigned to five newly established Working Groups, with wide cross-institute staff representation, each of which have been allocated specific targets for 2024/25. A National Capability Board will review progress against the objectives and targets and encourage cross-programme working. The institute will also be testing a defined set of metrics it has developed to evaluate and capture the supporting evidence needed to demonstrate the progress achieved. Specific targets within the year will include the establishment of key partnerships with Universities and other organisations (a focus of the Science Programme Group) and, a new HR strategy and improved culture statement (a focus of the HR Strategy Group). Through working closely with the Lawes Agricultural Trust and Rothamsted Enterprises Ltd., Rothamsted will also define and progress plans for the future development of science and innovation on its campuses.

Compliance with section 172

The Board of Trustees welcomes the opportunity to demonstrate how they have developed the Institutes business relationships with stakeholders. The Trustees believe that they have acted in a way they consider would be most likely to promote the success of the company for the benefit of its members as a whole (having regard to the stakeholders and matters set out in s172(1)(a-f) of the act) in the decisions taken during the year ended 31 March 2023 and in the approval of the Transformation Programme.

As Trustees, our intention is to behave responsibly and ensure that management operate the business in a responsible manner, operating within high standards of business conduct and good governance. The Trustees intention is to behave responsibly towards our stakeholders and treat them fairly and equally, so they too may benefit from the successful delivery of our plan. When making strategic decisions the Trustees have taken into account the likely consequences of these decisions in the long term.

The Trustees continue to work closely with UKRI-BBSRC, as evidenced through the conception and progress of the Transformation Programme. Employees from across the Institute have been closely involved in the development and direction of the Transformation Programme, with working groups given the opportunity to attend Board meetings and provide feedback. As reflected in the Strategic Report (Pages 6-10), the Institute has continued to strengthen links with farmers, Government and public engagement. The Institute engages with staff through the employee consultation channels described on Page 4 of the Trustees' Report, and is pleased to confirm continuation of its Athena SWAN Charter.

The Trustees are responsible for the overall governance and strategic direction of Rothamsted Research and have a duty to ensure it provides a service that is a public benefit and meets the needs of its beneficiaries.

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Their role includes the provision of leadership with a framework of prudent and effective controls, including through the Finance and Audit Committee and Scientific Advisory Group of the Board.

The Trustees have maintained a close relationship with the Institute leadership team and have been reassured by the creation of the Institute Executive Team (IET), comprising senior members of the Institute from both scientific and operational areas. The IET reports to the Board through the Institute Director.

GOING CONCERN

The group has confirmed strategic funding in place for the five years to March 2028 totalling £12.2m per annum. In addition to this strategic funding the fixed costs of the institute are financed through leveraged grant monies and trading income and the Transformation Programme is designed to accelerate the scientific and organisational transformation required to meet these income targets. Impacts of the programme were delayed due to the covid-19 pandemic but are now starting to be seen with the appointment of new senior science leaders and the digital transformation of the institute. However during the financial year 2023/24 a further investment of £3.5m from UKRI-BBSRC has been required to assist the institute in maintaining the viability of the science whilst the full impacts wait to be realised. The institute will be reviewing its operating model in early 2024 in consultation with UKRI-BBSRC in order to ensure that the institute can start to generate a surplus and put its longer term future on a more secure footing. UKRI-BBSRC continues to invest in the long term future of the institute with further capital awards of £14.7m made in the 2022/23 financial year which will aid with income generation and cost efficiencies and all indications are that RRes remains a key strategic Institute of the BBSRC and UKRI as evidenced by the financial investment detailed.

The Board has reviewed and approved management's financial forecasts to March 2026. These forecasts include detailed cashflow projections, including a sensitivity analysis to March 2025 and are considered by the Directors to reflect:

- Achievable levels of leveraged funding awards
- Achievable levels of trading income
- Reasonable and prudent assumptions for cost levels
- Reasonable assumptions around the timing of cash receipts and cash profile of expenditure.

The Board concludes that RRES can continue to operate within its currently available and projected cash and working capital facilities for the 12 months from sign off of the financial statements and is therefore considered a going concern. With the expected actions resulting from the review of its operational model the board concludes that it can continue to operate in future periods without material uncertainty. In arriving at this conclusion the Board has had regard to relevant factors including the support of BBSRC and LAT, the current inflationary environment and economic uncertainty facing the UK.

The Strategic Report, which concludes above, includes information in respect of financial instruments, future development and research and development activities in accordance with the section 414C(11) of the Companies Act 2006.

Energy and Carbon Reporting

As part of the obligations set out under the Energy and Carbon Report Regulations 2018, RRes is required to disclose the energy and carbon created as an organisation over the last reporting year starting on or after April 2019. To fulfil this we have measured our UK energy and greenhouse gas emissions as classified within scope 1 and 2 (Streamlined Energy and Carbon Reporting (SECR)).

Energy Consumption and Greenhouse Gases

Streamline Energy and Carbon Reporting (SECR) is a government reporting programme that came into force on 1 April 2019. RRes engaged TEAM (Energy Auditing Agency) Ltd to prepare its SECR, who used half hourly electrical consumption data, gas usage data, red diesel data, propane data, organisation transport data and intensity ratio information provided by RRes. TEAM then used the latest figures provided by The

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Department for Energy Security and Net Zero and The Department for Environment, Food and Rural Affairs to convert the useable data into Tonnes of Carbon Dioxide equivalent (tCO₂e):

RRes's consumption and associated greenhouse gas emissions for the financial year April 2022 to March 2023 are shown in the table below.

Energy Efficiency Actions

The charity has installed energy efficient air conditioning with lower GWP (Global Warming Potential) and completed further installation of LED lights in glasshouses. New energy efficient and lower GWP chiller units have been installed.

Information Required	Current Reporting Year	Previous Reporting Year
Energy consumption used to calculate emissions: /kWh	Gas: 18,926,146 kWh Propane: 674,555 kWh Red Diesel: 631,849 kWh Business Travel: 162,896 kWh Electricity: 3,673,400 kWh Total: 24,068,846 kWh	Gas: 17,249,751 kWh Propane: 562,874 kWh Red Diesel: 927,676 kWh Business travel: 173,455 kWh Electricity: 4,789,954 kWh Total: 23,703,710 kWh
Emissions from combustion of gas tCO ₂ e (Scope 1)	3,454.8 tCO ₂ e	3,159.5 tCO ₂ e
Emissions from combustion of propane tCO ₂ e (Scope 1)	144.4 tCO ₂ e	130.9 tCO ₂ e
Emissions from combustion of red diesel tCO ₂ e (Scope 1)	147.2 tCO ₂ e	216.1 tCO ₂ e
Emissions from business travel in company owned vehicles (Scope 1)	40.2 tCO ₂ e	44.3 tCO ₂ e
Emissions from purchased electricity (Scope 2, location- based)	710.4 tCO ₂ e	1,017 tCO ₂ e

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Information Required	Current Reporting Year	Previous Reporting Year
Total gross CO ₂ e based on above	4,497	4,567.8
Intensity ratio:	70.5 kgs of CO ₂ e per m ² of occupied floor area (63812.5m ²)	71.6 kgs of CO ₂ e per m ² of occupied floor area (63812.5 m ²)

AUDITOR

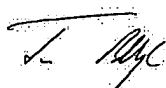
Buzzacott LLP has indicated its willingness to continue in office.

STATEMENT AS TO DISCLOSURE OF INFORMATION TO THE AUDITOR

The Directors who were in office at the date of approval of these financial statements have confirmed, as far as they are aware, that there is no relevant audit information of which the auditor is unaware. The Directors have confirmed that they have taken all the steps that they ought to have taken as Directors to make themselves aware of any relevant audit information and to establish that it has been communicated to the auditor.

The Trustees' Report prepared under the Charities Act 2011, which also contains all information required in a Directors' Report by the Companies Act 2006, and the incorporated strategic report prepared under the Companies Act 2006, were approved by the Board and signed

On Behalf of the Board



Professor Sir John Beddington
Trustee
Rothamsted Research Limited
Harpenden
Hertfordshire
AL5 2JQ

Date: 19 December 2023

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STATEMENT OF TRUSTEE RESPONSIBILITIES

The trustees (who are also directors of Rothamsted Research Limited for the purposes of company law) are responsible for preparing the Trustees' Annual Report and the financial statements in accordance with applicable law and United Kingdom Accounting Standards (United Kingdom Generally Accepted Accounting Practice).

Company law requires the trustees to prepare financial statements for each financial year which give a true and fair view of the state of affairs of the charitable company and the group and of the incoming resources and application of resources, including the income and expenditure, of the charitable group for that period. In preparing these financial statements, the trustees are required to:

- select suitable accounting policies and then apply them consistently;
- observe the methods and principles in the Charities SORP;
- make judgments and estimates that are reasonable and prudent;
- state whether applicable UK Accounting Standards have been followed, subject to any material departures disclosed and explained in the financial statements; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the charitable company will continue in business.

The trustees are responsible for keeping proper accounting records that disclose with reasonable accuracy at any time the financial position of the charitable company and enable them to ensure that the financial statements comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the charitable company and the group and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

In so far as the trustees are aware:

- there is no relevant audit information of which the charitable company's auditor is unaware; and
- the trustees have taken all steps that they ought to have taken to make themselves aware of any relevant audit information and to establish that the auditor is aware of that information.

The trustees are responsible for the maintenance and integrity of the corporate and financial information included on the charitable company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

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INDEPENDENT AUDITORS REPORT

Opinion

We have audited the financial statements of Rothamsted Research Limited (the 'charitable parent company') and its subsidiaries (the 'group') for the year ended 31 March 2023 which comprise the group and charitable parent company statement of financial activities, balance sheets, and statement of cash flows, the principal accounting policies and the notes to the financial statements. The financial reporting framework that has been applied in their preparation is applicable law and United Kingdom Accounting Standards, including Financial Reporting Standard 102 'The Financial Reporting Standard applicable in the UK and Republic of Ireland' (United Kingdom Generally Accepted Accounting Practice).

In our opinion, the financial statements:

- give a true and fair view of the state of the group's and of the charitable parent company's affairs as at 31 March 2023 and of the group's income and expenditure for the year then ended;
- have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice; and
- have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Conclusions relating to going concern

In auditing the financial statements, we have concluded that the trustees' use of the going concern basis of accounting in the preparation of the financial statements is appropriate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the group and charitable parent company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the trustees with respect to going concern are described in the relevant sections of this report.

Other information

The trustees are responsible for the other information. The other information comprises the information included in the annual report and financial statements, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

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INDEPENDENT AUDITORS REPORT

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact.

We have nothing to report in this regard.

Opinions on other matters prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the trustees' report, which is also the directors' report for the purposes of company law and includes the strategic report, for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the trustees' report, which is also the directors' report for the purposes of company law and includes the strategic report, has been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception

In the light of the knowledge and understanding of the group and the charitable parent company and its environment obtained in the course of the audit, we have not identified material misstatements in the trustees' report including the strategic report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- adequate accounting records have not been kept by the charitable parent company, or returns adequate for our audit have not been received from branches not visited by us; or
- the charitable parent company financial statements are not in agreement with the accounting records and returns; or
- certain disclosures of trustees' remuneration specified by law are not made; or
- we have not received all the information and explanations we require for our audit.

Responsibilities of trustees

As explained more fully in the trustees' responsibilities statement, the trustees (who are also the directors of the charitable company for the purposes of company law) are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the trustees determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the trustees are responsible for assessing the group's and the charitable parent company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the trustees either intend to liquidate the group or the charitable parent company or to cease operations, or have no realistic alternative but to do so.

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INDEPENDENT AUDITORS REPORT

Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined above, to detect material misstatements in respect of irregularities, including fraud. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below.

Our approach to identifying and assessing the risks of material misstatement in respect of irregularities, including fraud and non-compliance with laws and regulations, was as follows:

- ◆ The engagement partner ensured that the engagement team collectively had the appropriate competence, capabilities and skills to identify or recognise non-compliance with applicable laws and regulations;
- ◆ We identified the laws and regulations applicable to the group and the charitable company through discussions with management, and from our knowledge and experience of the sector;
- ◆ We focused on specific laws and regulations which we considered may have a direct material effect on the financial statements or the operations of the group and the charitable company, including the Companies Act 2006, Charities Act 2011 and Accounting and Reporting by Charities: Statement of Recommended Practice applicable to charities preparing their accounts in accordance with the Financial Reporting Standard applicable to the United Kingdom and Republic of Ireland (FRS 102) and those in relation to Health and Safety.
- ◆ We assessed the extent of compliance with the laws and regulations identified above through making enquiries of management and inspecting legal correspondence; and
- ◆ The identified laws and regulations were communicated within the audit team regularly and the team remained alert to instances of non-compliance throughout the audit.

We assessed the susceptibility of the group financial statements to material misstatement, including obtaining an understanding of how fraud might occur, by:

- Making enquiries of management as to where they considered there was susceptibility to fraud, their knowledge of actual, suspected and alleged fraud; and
- Considering the internal controls in place to mitigate risks of fraud and non-compliance with laws and regulations.
- Performed analytical procedures to identify any unusual or unexpected relationships;
- Tested journal entries to identify unusual transactions;
- Assessed whether judgements and assumptions made in determining the accounting estimates set out in the accounting policies were indicative of potential bias; and
- Performed substantive testing of expenditure including authorisation thereof.

Rothamsted Research Limited

INDEPENDENT AUDITORS REPORT

In response to the risk of irregularities and non-compliance with laws and regulations, we designed procedures which included, but were not limited to:

- Agreeing financial statement disclosures to underlying supporting documentation;
- Reading the minutes of Board meetings; and
- Enquiring of management as to actual and potential litigation and claims, including inspecting the relevant correspondence from regulators and advisors;

There are inherent limitations in our audit procedures described above. The more removed that laws and regulations are from financial transactions, the less likely it is that we would become aware of non-compliance. Auditing standards also limit the audit procedures required to identify non-compliance with laws and regulations to enquiry of the trustees and other management and the inspection of regulatory and legal correspondence, if any.

Material misstatements that arise due to fraud can be harder to detect than those that arise from error as they may involve deliberate concealment or collusion.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

Use of our report

This report is made solely to the charitable company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the charitable company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the charitable company and the charitable company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Buzzacott LLP

Catherine Biscoe (Senior Statutory Auditor)
For and on behalf of Buzzacott LLP, Statutory Auditor
130 Wood Street
London
EC2V 6DL

Date: 20 December 2023

Rothamsted Research Limited
CONSOLIDATED STATEMENT OF FINANCIAL ACTIVITIES
for the year ended 31 March 2023

	Notes	Unrestricted funds £'000	Restricted funds £'000	Total funds 2023 £'000	Total funds 2022 £'000
INCOME					
Income from:					
- trading	1	436	-	436	352
- investments	2	241	-	241	39
Income from charitable activities:					
- scientific research	3	2,494	21,878	24,372	27,488
- capital grants	3	-	14,708	14,708	7,707
- postgraduate education and training	3	-	237	237	692
		2,494	36,823	39,317	35,887
TOTAL INCOME		3,171	36,823	39,994	36,278
EXPENDITURE ON:					
Raising funds	5	8	-	8	11
Charitable activities	6a	5,488	28,202	33,690	32,321
Net interest in results of joint venture	12	-	-	-	20
		5,496	28,202	33,698	32,352
TOTAL EXPENDITURE		5,496	28,202	33,698	32,352
Net gains on investments	12	436	18	454	18
NET INCOME/(EXPENDITURE) FOR THE YEAR BEFORE TRANSFERS		(1,889)	8,639	6,750	3,944
Transfers between funds	16	559	(559)	-	-
NET MOVEMENT IN FUNDS IN YEAR		(1,330)	8,080	6,750	3,944
RECONCILIATION OF FUNDS					
Fund balances at 1 April 2022		14,977	57,733	72,710	68,766
Fund balances at 31 March 2023		13,647	65,813	79,460	72,710

All income and expenditure derives from continuing activities

Rothamsted Research Limited
CHARITY STATEMENT OF FINANCIAL ACTIVITIES
for the year ended 31 March 2023

	Notes	Unrestricted funds £'000	Restricted funds £'000	Total funds 2023 £'000	Total funds 2022 £'000
INCOME					
Income from:					
- trading	1	436	-	436	352
- investments	2	241	-	241	39
Income from charitable activities:					
- scientific research	3	2,494	21,878	24,372	27,488
- capital grants	3	-	14,708	14,708	7,707
- postgraduate education and training	3	-	237	237	692
		<u>2,494</u>	<u>36,823</u>	<u>39,317</u>	<u>35,887</u>
TOTAL INCOME		<u>3,171</u>	<u>36,823</u>	<u>39,994</u>	<u>36,278</u>
EXPENDITURE ON:					
Raising funds	5	8	-	8	11
Charitable activities	6a	5,488	28,202	33,690	32,321
		<u>5,496</u>	<u>28,202</u>	<u>33,698</u>	<u>32,332</u>
TOTAL EXPENDITURE		<u>5,496</u>	<u>28,202</u>	<u>33,698</u>	<u>32,332</u>
Net gains on investments	12	436	18	454	18
NET INCOME/(EXPENDITURE) FOR THE YEAR BEFORE TRANSFERS		<u>(1,889)</u>	<u>8,639</u>	<u>6,750</u>	<u>3,964</u>
Transfer between funds	16	559	(559)	-	-
NET MOVEMENT IN FUNDS IN YEAR		<u>(1,330)</u>	<u>8,080</u>	<u>6,750</u>	<u>3,964</u>
RECONCILIATION OF FUNDS					
Fund balances at 1 April 2022		<u>14,980</u>	<u>57,733</u>	<u>72,713</u>	<u>68,749</u>
Fund balances at 31 March 2023		<u>13,650</u>	<u>65,813</u>	<u>79,463</u>	<u>72,713</u>

Rothamsted Research Limited

BALANCE SHEETS

31 March 2023

Company Registration Number 2393175

	Notes	Group 2023 £'000	Charity 2023 £'000	Group 2022 £'000	Charity 2022 £'000
FIXED ASSETS					
Tangible assets	10	60,871	60,871	53,949	53,949
Intangible assets	11	434	434	695	695
Investments	12	378	378	374	374
Social Investments	12	1,909	1,909	1,120	1,120
Joint venture	12	-	-	-	-
		63,592	63,592	56,138	56,138
CURRENT ASSETS					
Stock		1,047	1,047	887	887
Debtors	13	7,941	7,941	6,256	6,256
Cash at bank and in hand		15,321	15,321	15,372	15,372
		24,309	24,309	22,515	22,515
CREDITORS: Amounts falling due within one year	14	(8,441)	(8,438)	(5,943)	(5,940)
NET CURRENT ASSETS		15,868	15,871	16,572	16,575
TOTAL ASSETS LESS CURRENT LIABILITIES		79,460	79,463	72,710	72,713
NET ASSETS		79,460	79,463	72,710	72,713
FUNDS					
Restricted funds	16	65,813	65,813	57,733	57,733
Unrestricted funds:					
General funds		12,897	12,900	14,227	14,230
Designated funds		750	750	750	750
	16	13,647	13,650	14,977	14,980
TOTAL FUNDS		79,460	79,463	72,710	72,713

The financial statements set out on pages 26 to 59 were approved by the Board and authorised for issue on 19 December 2023 and signed on its behalf by:

Neil G. Scragg

Neil Scragg
Director

Rothamsted Research Limited

CONSOLIDATED CASH FLOW STATEMENT

for the year ended 31 March 2023

	<i>Notes</i>	2023 £'000	2022 £'000
Net cash used in operating activities	17	(3,987)	(2,080)
Cash flows from Investing activities			
Dividends, interest and rent from investments		241	39
Purchase of property, plant and equipment		(10,673)	(6,630)
Capital grants received		14,708	7,707
Concessionary loans granted		(340)	(280)
Withdrawals from money market deposits greater than 90 days		7,500	4
Net cash generated by investing activities		11,436	840
Change in cash and cash equivalents in reporting period		7,449	(1,240)
Cash and cash equivalents at beginning of reporting period		7,872	9,112
Cash and cash equivalents at the end of the reporting period	17	<u>15,321</u>	<u>7,872</u>

Rothamsted Research Limited
CHARITY CASH FLOW STATEMENT
for the year ended 31 March 2023

	<i>Notes</i>	2023 £'000	2022 £'000
Net cash used in operating activities	18	(3,987)	(2,080)
 Cash flows from Investing activities			
Dividends, interest and rent from investments		241	39
Purchase of property, plant and equipment		(10,673)	(6,630)
Capital grants received		14,708	7,707
Concessionary loans granted		(340)	(280)
Withdrawals from money market deposits greater than 90 days		<u>7,500</u>	<u>4</u>
 Net cash generated by investing activities		<u>11,436</u>	<u>840</u>
 Change in cash and cash equivalents in reporting period		7,449	(1,240)
Cash and cash equivalents at beginning of reporting period		7,872	9,112
Cash and cash equivalents at the end of the reporting period	18	<u><u>15,321</u></u>	<u><u>7,872</u></u>

Rothamsted Research Limited

ACCOUNTING POLICIES

These financial statements have been prepared in accordance with FRS102 (The Financial Reporting Standard applicable in the UK and the Republic of Ireland (FRS102)). The financial statements have been prepared under the historical cost convention as modified by carrying investments at fair value. The financial statements meet the requirements of the Companies Act 2006, the Statement of Recommended Practice - Accounting and Reporting by Charities (Charities SORP (FRS102)) and applicable accounting standards so far as these requirements are appropriate. Rothamsted Research Limited is a private company limited by guarantee and a registered charity. It is registered, domiciled and incorporated in England. The registered company and charity numbers are on page 2. The charity is a public benefit entity as defined by FRS102 and part of a public benefit group. Monetary amounts in these financial statements are rounded to the nearest whole £1,000, except where otherwise indicated. Sterling is the Group's functional and presentational currency.

In accordance with FRS 102, the charity has taken advantage of the exemption from the following disclosure requirement in its individual financial statements: Section 33 'Related Party Disclosures' – Compensation for key management personnel.

GOING CONCERN

The group has confirmed strategic funding in place for the five years to March 2028 totalling £12.2m per annum. In addition to this strategic funding the fixed costs of the institute are financed through leveraged grant monies and trading income and the Transformation Programme is designed to accelerate the scientific and organisational transformation required to meet these income targets. Impacts of the programme were delayed due to the covid-19 pandemic but are now starting to be seen with the appointment of new senior science leaders and the digital transformation of the institute. However during the financial year 2023/24 a further investment of £3.5m from UKRI-BBSRC has been required to assist the institute in maintaining the viability of the science whilst the full impacts wait to be realised. The institute will be reviewing its operating model in early 2024 in consultation with UKRI-BBSRC in order to ensure that the institute can start to generate a surplus and put its longer term future on a more secure footing. UKRI-BBSRC continues to invest in the long term future of the institute with further capital awards of £14.7m made in the 2022/23 financial year which will aid with income generation and cost efficiencies and all indications are that RRes remains a key strategic Institute of the BBSRC and UKRI as evidenced by the financial investment detailed.

The Board has reviewed and approved management's financial forecasts to March 2026. These forecasts include detailed cashflow projections, including a sensitivity analysis to March 2025 and are considered by the Directors to reflect:

- Achievable levels of leveraged funding awards
- Achievable levels of trading income
- Reasonable and prudent assumptions for cost levels
- Reasonable assumptions around the timing of cash receipts and cash profile of expenditure.

The Board concludes that RRES can continue to operate within its currently available and projected cash and working capital facilities for the 12 months from sign off of the financial statements and is therefore considered a going concern. With the expected actions resulting from the review of its operational model the board concludes that it can continue to operate in future periods without material uncertainty. In arriving at this conclusion the Board has had regard to relevant factors including the support of BBSRC and LAT, the current inflationary environment and economic uncertainty facing the UK.

BASIS OF CONSOLIDATION

Rothamsted Manor Limited is the only UK subsidiary was dissolved in March 2022. Other subsidiaries have not been consolidated on grounds of immateriality.

A new subsidiary Rothamsted Scientific Services was incorporated in 20 October 2022. Trading in this undertaking commenced on 1 April 2023.

Rothamsted Research Limited

ACCOUNTING POLICIES

JOINT VENTURES

Undertakings in which the group has a long-term interest and which are under joint control are defined as joint ventures. Joint ventures are accounted for using the equity method.

TANGIBLE FIXED ASSETS

Tangible fixed assets are depreciated to their estimated residual values over their expected useful lives on a straight-line basis. Items over £3,000 are capitalised.

Buildings	25 - 50 years
Plant & Machinery	5 - 10 years
Fixtures, Fittings and Vehicles	3 - 10 years

Assets in the course of construction are included at cost, and will be depreciated to their estimated residual values over their expected useful lives on a straight-line basis once the asset is available for use. Freehold land is included at cost and not depreciated. An assessment is made at each reporting date of whether there are any indications that a fixed asset may be impaired or that an impairment loss previously recognised has fully or partially reversed. If such indications exist, the recoverable amount of the asset is estimated. Shortfalls between the carrying value of fixed assets and their recoverable amounts are recognised as impairments in the Statement of Financial Activities.

INTANGIBLE FIXED ASSETS

Intangible fixed assets are amortised to their estimated residual values over their expected useful lives on a straight-line basis. Items over £3,000 are capitalised.

Computer Software	3 - 5 years
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Assets in the course of construction are included at cost, and will be amortised to their estimated residual values over their expected useful lives on a straight-line basis once the asset is available for use. An assessment is made at each reporting date of whether there are any indications that a fixed asset may be impaired or that an impairment loss previously recognised has fully or partially reversed. If such indications exist, the recoverable amount of the asset is estimated. Shortfalls between the carrying value of fixed assets and their recoverable amounts are recognised as impairments in the Statement of Financial Activities.

STOCKS

Inventory takes the form of both materials to be consumed in the rendering of services and assets held for sale in the ordinary course of business (farm livestock). Materials consumed in the rendering of services is measured at the lower of cost and estimated selling price less costs to complete and sell. Farm livestock is measured at fair value. The classes of farm livestock are cattle and sheep and the fair value is determined by an independent valuer following inspection.

	Fair value as at 01/04/22 £'000	Sales £'000	Purchases £'000	Gain/Loss on revaluation £'000	Fair value as at 31/03/23 £'000
Cattle	307	(179)	7	196	331
Sheep	76	(67)	27	41	77
	383	(246)	34	237	408

Gains or losses on revaluation of livestock are taken to the statement of financial activities and recorded against expenditure.

INVESTMENTS

Unlisted investments are carried at directors' estimate of fair value as at the Balance Sheet date, and any gains or losses taken to the Statement of Financial Activities.

Rothamsted Research Limited

ACCOUNTING POLICIES

SOCIAL INVESTMENTS

Mixed motive social investments are made in the form of concessionary loans. Concessionary loans which have been converted in the financial year to equity are carried at directors' estimate of fair value as at the Balance Sheet date, and any gains or losses taken to the Statement of Financial Activities. Concessionary loans which have not converted are measured at the amount paid in the form of loan, including interest accrued and after impairment, where applicable.

INVESTMENTS IN GROUP UNDERTAKINGS

Investments in group undertakings are stated at cost less impairment, where relevant, as these represent shareholdings in unlisted companies.

FUND ACCOUNTING

General funds are unrestricted funds which are available for use at the discretion of the Trustee-Directors in furtherance of the general objectives of the Charity and which have not been designated for other purposes.

Designated funds comprise unrestricted funds that have been set aside by the Trustee-Directors for particular purposes. The aim and use of each designated fund are set out in the notes to the financial statements.

Restricted funds are funds which are to be used in accordance with specific restrictions imposed by donors or which have been raised by the Charity for particular purposes. The cost of raising and administering such funds is charged against the specific fund. The aim and use of the restricted funds are set out in the notes to the financial statements.

INCOME

All income except grants is included in the Statement of Financial Activities when the Group or Charity is legally entitled to the income and the amount can be quantified with reasonable accuracy. Income from grants, including capital grants, is included within income when these are receivable, except as follows:

- When donors specify that grants given to the Charity must be used in future accounting periods, the income is deferred until those periods.
- When donors impose conditions, which must be fulfilled before the Charity becomes entitled to use such income, and those conditions are outside the control of the Charity, the income is deferred and not included in income until pre-conditions for use have been met.

When donors specify that grants, including capital grants, are for restricted purposes, which do not amount to pre-conditions regarding entitlement, this income is included in restricted funds when receivable.

EXPENDITURE

Liabilities are recognised as expenditure as soon as there is a legal or constructive obligation committing the Group or Charity to the expenditure. All expenditure is included in the Statement of Financial Activities on an accruals basis, inclusive of any VAT which cannot be recovered, and have been classified under headings that aggregate all costs related to the category.

- Costs of raising funds are those costs incurred in trading activities which raise funds.
- Charitable activities include expenditure associated with scientific research and postgraduate education and training and include both the direct costs and support costs relating to these activities.
- Governance costs include those incurred in the governance of the Charity and its assets and are primarily associated with constitutional and statutory requirements.
- Support costs include central functions and have been allocated to activity cost categories on a basis consistent with the use of resources.

Expenditure by the Charity, which is financed by grants from third parties and applied to buildings occupied but not owned by the Group, is capitalised and included within Restricted Funds. The rent-free provision to the Charity of the buildings, on which such expenditure has been applied, is not treated as a donation as it is not possible to place an appropriate value on such arrangements.

Rothamsted Research Limited

ACCOUNTING POLICIES

OPERATING LEASES

Rentals under operating leases are written off on a straight-line basis over the term of the lease.

PENSION COSTS

Employees who remain on BBSRC contracts are members of the Research Councils' Pension Schemes. These are defined benefit schemes, the finances of which are administered by the BBSRC, and for which separate accounts are published (see Note 9). The pension schemes are administered by the Research Councils' Joint Superannuation Services and the schemes' finances are administered by the BBSRC. Under the definitions set out in FRS 102, the scheme is a multi-employer pension scheme. The Charity is unable to identify its share of the underlying assets and liabilities of the scheme. Accordingly, the Charity has accounted for its contributions to the scheme as if it were a defined contribution scheme. The pension costs represent contributions payable by the Group to the schemes.

Employees with Rothamsted contracts are members of a defined contribution scheme. The amount charged as expenditure represents the contributions payable by the Group in the year and is split between restricted and unrestricted funds based on how the individual is funded.

REDUNDANCY COSTS

A liability is recognised for redundancy where the charity is demonstrably committed to terminating the employment of an employee or to provide termination benefits. A redundancy payment is charged to the Statement of Financial Activities immediately on recognition at the best estimate of the cost at the reporting date. Where the responsibility for funding the redundancy payment lies with a third party in full or in part the associated income is immediately recognised in the Statement of Financial Activities.

Redundancy payments for employees who remain on BBSRC contracts are linked to severance arrangements under the exit terms outlined in the Civil Service Compensation Scheme Terms (CSCS). These terms cover all agreed exits under Voluntary Redundancy, Compulsory Redundancy and Voluntary Exit. Payments are made following a process approved by Joint Superannuation Services (JSS) who administer the CSCS on the charity's behalf.

Redundancy payments for staff employed by the charity under Rothamsted contracts are not funded and are calculated in accordance with statutory provisions.

RESEARCH AND DEVELOPMENT

All research and development costs are written off as incurred.

CHARITABLE STATUS

Rothamsted Research Limited is a registered charity, registration number 802038, and in consequence is exempt from taxation on income arising from and expended on its charitable activities.

FOREIGN CURRENCIES

Transactions in foreign currencies are recorded using the rate of exchange ruling at the date of that transaction. Monetary assets and liabilities denominated in foreign currencies are translated using the rate of exchange ruling at the balance sheet date and unrealised and realised gains and losses on translation are included in the Statement of Financial Activities.

FINANCIAL INSTRUMENTS

The Group applies the provisions of Section 11 'Basic Financial Instruments' and Section 12 'Other Financial Instruments Issues' of FRS 102, in full, to all its financial instruments.

Financial assets and financial liabilities are recognised when the Group becomes a party to the contractual provisions of the instrument, and are offset only when the Group currently has a legally enforceable right to set off the recognised amounts and intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

Rothamsted Research Limited

ACCOUNTING POLICIES

Financial Assets

Debtors

Debtors which are receivable within one year and which do not constitute a financing transaction are initially measured at the transaction price. Such debtors are subsequently measured at amortised cost, being the transaction price less any amounts settled and any impairment losses.

A provision for impairment of debtors is established when there is objective evidence that the amounts due will not be collected per the original terms of the contract. Impairment losses are recognised as expenditure in the Statement of Financial Activities for the excess of the carrying value of the debtor over the present value of the future cash flows discounted using the original effective interest rate. Subsequent reversals of an impairment loss that objectively relate to an event occurring after the impairment loss was recognised, are recognised immediately in the Statement of Financial Activities.

Concessionary loans are measured at the amount paid, including interest accrued and after impairment, where applicable.

Financial Liabilities

Creditors

Creditors payable within one year that do not constitute a financing transaction are initially measured at the transaction price and subsequently measured at amortised cost, being the transaction price less any amounts settled.

SIGNIFICANT JUDGEMENTS AND ESTIMATES

The Group makes estimates and assumptions concerning the future. The resulting accounting estimates and assumptions will, by definition, seldom equal the related actual results. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

Key sources of estimation uncertainty include:

Income from grants for scientific research is recognised using one of three methods depending on the specific conditions of the individual research grant award. These three methods are milestone, expenditure led or straight line.

For milestone grants specific milestones are used to determine entitlement to income and should an invoice have not been raised this will be included as a debtor (accrued income).

For straight line grants, there are implicit time conditions within the grant agreement which, in the absence of specific milestones are used to determine entitlement. In these instances, the duration elapsed is deemed a reliable estimate for entitlement to receive payment for work/service/delivery performed. Should actual income received exceed this amount the excess is included as a creditor (deferred income) and should actual income received be less than the entitlement amount this is included as a debtor (accrued income).

For expenditure led grants, in the absence of specific milestones or implicit time conditions to determine entitlement, income is recognised to the extent that resources have been committed to the specific project, as this is deemed to be a reliable estimate of the right to receive payment for the work performed. In this case, cash received in excess of expenditure is included as a creditor (deferred income) and expenditure in excess of cash included as a debtor (accrued income).

Rothamsted Research Limited

ACCOUNTING POLICIES

The methodology applied to each grant will impact the income recognised in the Statement of Financial Activities and therefore is an important estimate in the context of these financial statements.

Grants received for capital expenditure are included in the Statement of Financial Activities when the Group is entitled to receipt, whereas the depreciation on those grant-funded capital assets is reflected in the Statement of Financial Activities over the useful economic lives of those assets as stated on page 31. The depreciation cost (included in note 10) is significant to the result as shown in the financial statements and, accordingly, the expected useful lives are an important estimate in the context of these financial statements.

Certain buildings are included as fixed assets in these financial statements when the land is owned by The Lawes Agricultural Trust (LAT). Under the terms of the bare licence between LAT and the Charity, the Charity has unencumbered usage of these buildings and the trustee-directors are confident that the Institute will retain a legal right to occupy the land and buildings for the foreseeable future. They are therefore included within fixed assets.

The fair value of unlisted and social investments has been determined as follows.

Level 1:	The unadjusted quoted price in an active market for identical investments that the directors can assess at the measurement date.
Level 2:	Where an active market does not exist and the investment is held in a company which has generated revenue for three years the proportional share of the net assets held or a multiple of revenue/earnings methodology is to be used.
Level 3:	Where an active market does not exist and the company does not have three years revenue generation, the latest share price based on a sale of existing holdings (*).
Level 4:	Where an active market does not exist, the company does not have three years revenue generation and there has been no sale of existing holdings, the post money price from the most recent fundraising round (*).
Level 5:	Where none of the conditions above are met a fair value can't be measured reliably and so the investment is measured at its cost less impairment

(*) Given the early stage of the investments, the lack of liquidity of the shares and the absence of measurable key performance indicators under Levels 3 and 4 a base discount factor is applied as follows:

Level 3:	
Sale of holdings between existing and new party	0%
Sale of holdings between existing shareholders	20%
Level 4:	
Raising new capital	20%

After application of the base discount each individual investment within Levels 3 and 4 is assessed as to whether it is performing at, above or below expectations which includes an assessment of cash runway, cash burn, the likelihood, timing and pricing of a further fundraising round and market acceptance of the product. The performance discount factor is applied on a sliding scale as follows:

	RAG Status	Performance Discount factor
No concern on performance – performing above expectations	Green	0%
Some concern on performance – performing at expectations	Amber	15%
Significant concern on performance – performing below expectations	Red	30%
Expected failure	n/a	100%

The assessed fair value of the investments held by level are as follows:

Rothamsted Research Limited

ACCOUNTING POLICIES

	Unlisted investments	Social investments	Total investments
	£'000	£'000	£'000
Level 1	-	-	-
Level 2	377	-	377
Level 3	-	-	-
Level 4	-	1,109	1,109
Level 5	-	800	800
	377	1,909	2,286

Rothamsted Research Limited
NOTES TO THE FINANCIAL STATEMENTS
for the year ended 31 March 2023

1	TRADING INCOME GROUP AND CHARITY	Unrestricted 2023 £'000	Unrestricted 2022 £'000	Restricted 2023 £'000	Restricted 2022 £'000	Total 2023 £'000	Total 2022 £'000
	Consultancy	22	42	-	-	22	42
	Royalties	140	101	-	-	140	101
	Rental Income	58	39	-	-	58	39
	Back Office	134	164	-	-	134	164
	Other	82	6	-	-	82	6
		<u>436</u>	<u>352</u>	<u>-</u>	<u>-</u>	<u>436</u>	<u>352</u>
2	INVESTMENT INCOME GROUP AND CHARITY	Unrestricted 2023 £'000	Unrestricted 2022 £'000	Restricted 2023 £'000	Restricted 2022 £'000	Total 2023 £'000	Total 2022 £'000
	Dividend income	28	28	-	-	28	28
	Interest receivable	213	11	-	-	213	11
		<u>241</u>	<u>39</u>	<u>-</u>	<u>-</u>	<u>241</u>	<u>39</u>

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

3 CHARITABLE ACTIVITIES

Total income from charitable activities is analysed as follows:

GROUP AND CHARITY	Unrestricted 2023 £'000	Unrestricted 2022 £'000	Restricted 2023 £'000	Restricted 2022 £'000	Total 2023 £'000	Total 2022 £'000
Strategic Funding	-	-	10,134	10,087	10,134	10,087
Competitive Project Grant	180	5	3,958	4,371	4,138	4,376
Open Access Funding	-	-	85	85	85	85
Strategic Hires	-	-	200	200	200	200
Institute Development grant	-	-	-	201	-	201
Capital Equipment	-	-	13,217	5,480	13,217	5,480
Capital maintenance	-	-	1,491	2,227	1,491	2,227
Redundancy Funding	-	-	83	-	83	-
Energy supplement grant	-	-	1,160	-	1,160	-
Resource Grant Funding	-	1,870	-	1,730	-	3,600
TOTAL BBSRC	180	1,875	30,328	24,381	30,508	26,256
DEFRA	-	-	572	1,113	572	1,113
Other Government Departments /						
Public Sector (see below)	40	58	2,764	2,178	2,804	2,236
European Union	-	-	628	346	628	346
Industry	46	166	1,591	1,516	1,637	1,682
Trusts, Foundations, Charities	648	465	447	250	1,095	715
SHAKE Climate	-	-	-	919	-	919
Income from Farm Operations	600	689	-	-	600	689
ERDF	-	-	202	204	202	204
Postgraduate Education and Training Union	-	202	237	490	237	692
Open Access Funding (RCUK)	-	-	54	40	54	40
Income from H&CE	279	307	-	-	279	307
VAT Recovery	-	253	-	-	-	253
Recharges to Related Parties	541	358	-	-	541	358
Miscellaneous income	160	75	0	2	160	77
TOTAL INCOME	2,494	4,448	36,823	31,439	39,317	35,887
Public Sector:						
Other Research Councils	10	14	1,117	1,874	1,127	1,888
Other Government Departments	30	44	1,647	304	1,677	348
	40	58	2,764	2,178	2,804	2,236

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

4 INCOME

GROUP AND CHARITY	Unrestricted 2023 £'000	Unrestricted 2022 £'000	Restricted 2023 £'000	Restricted 2022 £'000	Total 2023 £'000	Total 2022 £'000
Analysis of income by geographical region:						
Domestic Customers (UK)	2,159	4,604	36,823	30,819	38,982	35,423
EU Customers	894	120	-	528	894	648
Non - EU Customers	118	115	-	92	118	207
	<u>3,171</u>	<u>4,839</u>	<u>36,823</u>	<u>31,439</u>	<u>39,994</u>	<u>36,278</u>

5 COST OF RAISING FUNDS	Unrestricted 2023 £'000	Unrestricted 2022 £'000	Restricted 2023 £'000	Restricted 2022 £'000	Total 2023 £'000	Total 2022 £'000
GROUP AND CHARITY						
Consultancy	8	11	-	-	8	11
	<u>8</u>	<u>11</u>	<u>-</u>	<u>-</u>	<u>8</u>	<u>11</u>

Rothamsted Research Limited
NOTES TO THE FINANCIAL STATEMENTS
for the year ended 31 March 2023

6a EXPENDITURE ON CHARITABLE ACTIVITIES

	Group 2023	Group 2022	Charity 2023	Charity 2022
	£'000	£'000	£'000	£'000
<u>Scientific research</u>				
Direct	22,330	20,252	22,330	20,252
Other	5,406	5,114	5,406	5,114
Support	5,344	6,139	5,344	6,139
	33,080	31,505	33,080	31,505
<u>Post graduate education & training</u>				
Direct	493	631	493	631
Other	0	0	0	0
Support	117	185	117	185
	610	816	610	816
<u>Total</u>				
Direct	22,823	20,883	22,823	20,883
Other	5,406	5,114	5,406	5,114
Support	5,461	6,324	5,461	6,324
	33,690	32,321	33,690	32,321
<u>Unrestricted</u>				
Direct	-	770	-	770
Other	27	159	27	159
Support	5,461	6,324	5,461	6,324
	5,488	7,253	5,488	7,253
<u>Restricted</u>				
Direct	22,823	20,113	22,823	20,113
Other	5,379	4,955	5,379	4,955
Support	0	0	0	0
	28,202	25,068	28,202	25,068
<u>Total</u>				
Direct	22,823	20,883	22,823	20,883
Other	5,406	5,114	5,406	5,114
Support	5,461	6,324	5,461	6,324
	33,690	32,321	33,690	32,321

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

Direct costs £22,823k (2022: £20,884k) for the Group and £22,823k (2022: £20,884k) for the Charity are those associated with providing the activity, such as laboratory supplies. Other costs of £5,406k (2022: £5,114k) include indirect costs relating to premises and equipment. Support costs are detailed in Note 6b.

6b) SUPPORT COSTS

The Group and Charity allocate support costs as shown in the table below. Support costs are allocated on a basis consistent with the use of expenditure.

GROUP AND CHARITY

	Scientific research £'000	Postgraduate education and training £'000	Total 2023 £'000	Total 2022 £'000
Commercial and Finance	592	13	605	1,002
Human Resources	509	11	520	317
Computing Service	214	5	219	589
Institute Management	1,115	25	1,140	1,977
Other administration	2,109	46	2,155	2,349
Science Facility Service	696	15	711	-
Governance	109	2	111	90
	<u>5,344</u>	<u>117</u>	<u>5,461</u>	<u>6,324</u>

An analysis of the comparative 2021/22 support costs are as follows:

GROUP AND CHARITY

	Scientific research £'000	Postgraduate education and training £'000	Total 2022 £'000
Commercial and Finance	974	28	1,002
Human Resources	308	9	317
Computing Service	571	18	589
Institute Management	1,918	59	1,977
Other administration	2,279	70	2,349
Governance	89	1	90
	<u>6,139</u>	<u>185</u>	<u>6,324</u>

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

7 GOVERNANCE COSTS	Unrestricted 2023 £'000	Unrestricted 2022 £'000	Restricted 2023 £'000	Restricted 2022 £'000	Total 2023 £'000	Total 2022 £'000
GROUP AND CHARITY						
Audit fee	40	38	-	-	40	38
Technical support	71	52	-	-	71	52
	<u>111</u>	<u>90</u>	<u>-</u>	<u>-</u>	<u>111</u>	<u>90</u>

2 Directors (2022:None) claimed or were reimbursed an insignificant amount for travel expenses.

Under the amended Articles of Association approved by Special Resolution on 10 December 2013, the Charity is authorised to remunerate its Chairman, and in the year ended 31 March 2023 paid an honorarium of £10,932 (2022: £10,932). Other trustees received £Nil (2022: £Nil).

8 NET INCOME/(EXPENDITURE) IS STATED AFTER CHARGING/(CREDITING) THE FOLLOWING:	Group 2023 £'000	Charity 2023 £'000	Group 2022 £'000	Charity 2022 £'000
Interest receivable	(213)	(213)	(11)	(11)
Auditor's remuneration – audit services – parent	40	40	38	38
Auditor's remuneration – assurance services – (grant audit)	6	6	-	-
Auditor's remuneration – taxation compliance	2	2	2	2
Depreciation	3,735	3,735	3,554	3,554
Loss on disposal of tangible fixed assets	17	17	-	-
Amortisation	261	261	261	261
	<u></u>	<u></u>	<u></u>	<u></u>

Rothamsted Research Limited
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for the year ended 31 March 2023

9 STAFF COSTS AND NUMBERS	Unrestricted 2023 £'000	Unrestricted 2022 £'000	Restricted 2023 £'000	Restricted 2022 £'000	Total 2023 £'000	Total 2022 £'000
GROUP AND CHARITY						
Salaries and wages	5,155	5,542	8,897	8,197	14,052	13,739
Social security costs	548	552	946	830	1,494	1,382
Other pension costs	750	824	1,295	1,308	2,045	2,132
Redundancy costs	265	10	83	12	348	22
	<u>6,718</u>	<u>6,928</u>	<u>11,221</u>	<u>10,347</u>	<u>17,939</u>	<u>17,275</u>

The average number of persons employed by category was:

	Group Total 2023 No.	Charity Total 2023 No.	Group Total 2022 No.	Charity Total 2022 No.
Science staff	275	275	277	277
Technical and administrative staff	107	107	106	106
	<u>382</u>	<u>382</u>	<u>383</u>	<u>383</u>

The average number of persons (full time equivalent) employed by category was:

Science staff	254	254	256	256
Technical and administrative staff	102	102	101	101
	<u>356</u>	<u>356</u>	<u>357</u>	<u>357</u>

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

9 STAFF COSTS AND NUMBERS (continued)

The number of staff with emoluments greater than £60,000, all of whom were accruing pension benefits, was:

	Group Total 2023	Charity Total 2023	Group Total 2022	Charity Total 2022
£60,000 - £69,999	17	17	10	10
£70,000 - £79,999	2	2	8	8
£80,000 - £89,999	2	2	2	2
£90,000 - £99,999	7	7	1	1
£100,000 - £109,999	2	2	1	1
£110,000 - £119,999	2	2	2	2
£120,000 - £129,999	1	1	-	-
£150,000 - £159,999	2	2	1	1
	<u>35</u>	<u>35</u>	<u>25</u>	<u>25</u>

Remuneration for 10 key management personnel (Trustees and executive team), was £1,246k, including employer's national insurance and pension contributions (2022: £1,097k, 11 employees).

Charity staff employed prior to the change in governance are BBSRC employees who are subject to BBSRC terms and conditions of service and are appointed by the Charity under delegated powers. Although the legal liability for employment rested with the BBSRC through to 31 March 2021, the Charity is expected to meet all staff costs arising from normal activities.

Ex BBSRC staff employed by Rothamsted Research Ltd are members of the Research Councils' Pension Schemes (RCPS), which are funded on a pay-as-you-go basis principally through employer and employee contributions and annual Grant-in-Aid. The pension schemes are by analogy to the Principal Civil Service Pension Scheme (PCSPS), except that the schemes, which are defined benefit schemes and provide retirement and related benefits on final emoluments, redundancy and injury benefits are administered and funded by the Research Councils. The pension schemes are administered by the Research Councils' Joint Superannuation Services and the schemes' finances are administered by the BBSRC. Under the definitions set out in Financial Reporting Standard 102 the schemes are a multi-employer pension scheme. The Charity is unable to identify its share of the underlying assets and liabilities of the scheme. Accordingly, the Charity has taken advantage of the exemption of FRS 102 and has accounted for its contributions to the scheme as if it were a defined contribution scheme. For 2022/23, the Group paid £1,092k (2022: £1,008k) in employer's contributions into the scheme. A separate Research Councils' Pensions Schemes Account has not yet been published for the year ended 31 March 2023 but will contain further disclosure of information as required under the relevant accounting standard. The total net liability as at 31 March 2022 was £7,228m. The Group expects to pay £721k in respect of RCPS and £1,773k in respect of the defined contribution scheme in employer's contributions in 2023/24.

Staff employed since 1 April 2012 are members of a defined contribution scheme, as noted on page 4. Group contributions made in 2022/23 amounted to £1,624k (2022: £1,539k), and accrued contributions at 31 March 2023: £150k (2022: £150k).

In the year, the Charity paid £10k in premiums for Professional Indemnity Insurance (2022: £7k).

Rothamsted Research Limited
NOTES TO THE FINANCIAL STATEMENTS
for the year ended 31 March 2023

10	TANGIBLE FIXED ASSETS	Land & Buildings £'000	Plant and machinery £'000	Fixtures, fittings and vehicles £'000	Total £'000
	GROUP AND CHARITY				
	Cost:				
	As at 1 April 2022	72,233	36,102	7,220	115,555
	Disposals	-	(6,657)	(388)	(7,045)
	Additions	744	9,176	753	10,673
	As at 31 March 2023	72,977	38,621	7,585	119,183
	Accumulated depreciation:				
	As at 1 April 2022	32,443	24,204	4,959	61,606
	Charge for the year	1,531	1,385	819	3,735
	Disposals	-	(6,657)	(372)	(7,029)
	As at 31 March 2023	33,974	18,932	5,406	58,312
	Net book value:				
	As at 31 March 2023	39,003	19,689	2,179	60,871
	As at 31 March 2022	39,790	11,898	2,261	53,949

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

10 TANGIBLE FIXED ASSETS (Continued)

The freehold interest in the land and buildings at the Company's main operating site, (Rothamsted, Harpenden, Hertfordshire) is held by Lawes Agricultural Trust (LAT). There is no written agreement for the occupation of this site and no rent is charged to the Company by LAT. As the Charity has unencumbered usage of these buildings, they are reported as fixed assets above. The trustee-directors are confident that the Institute will retain a legal right to occupy the land and buildings for the foreseeable future. The Lawes Agricultural Trust, a related party as disclosed in note 19.

11 INTANGIBLE FIXED ASSETS

GROUP AND CHARITY	Software £'000	Total £'000
Cost:		
As at 1 April 2022	1,304	1,304
Accumulated amortisation:		
As at 1 April 2022	609	609
Charge for the year	261	261
As at 31 March 2023	870	870
Net book value:		
As at 31 March 2023	434	434
As at 31 March 2022	695	695

12 INVESTMENTS

GROUP	Unlisted investments 2023 £'000	Unlisted investments 2022 £'000
Valuation:		
As at 31 March	378	374

The unlisted investments relate to the following holdings:

The Company owns 2,833 £0.01 ordinary shares in VSN International Limited, a 15.87% shareholding (2022: 2,833 £0.01 ordinary shares, a 15.87% shareholding).

The Company also owns 103,675 £0.001 ordinary shares, a 0.9% shareholding in Insense Limited (2022: 103,675 £0.001 ordinary shares, a 0.9% shareholding).

Investments are held at the Directors' estimate of fair value. The determination of fair value is contained within the accounting policies note, under significant judgements and estimates.

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

CHARITY	Unlisted investments £'000	Shares in group undertakings £'000	Total £'000
Historical cost	101	-	101
Valuation			
As at 1 April 2022	374	-	374
Unrealised gain	4	-	4
Value:			
As at 31 March 2023	378	-	378
As at 31 March 2022	374	-	374

Shares in subsidiary undertakings

The Charity held the following shares in subsidiary undertakings at 31 March 2023:

	Shares held Class	%	Capital and Reserves £	Country of Incorporation
Rothamsted Research Holdings Limited (dormant)	Ordinary	100	-	England & Wales
Rothamsted International Consulting Limited (dormant)	Ordinary	100	2	England & Wales
Genetic Technologies Limited (dormant)*	Ordinary	100	2	England & Wales
Rothamsted Scientific Services Limited (dormant)	Ordinary	100	1	England & Wales
Rothamsted Experimental Station Limited (dormant)*	Ordinary	100	1	England & Wales
AfSIS Ltd (dormant)	Ordinary	100	8,000	Tanzania

* held indirectly via Rothamsted Research Holdings Limited.

The registered office of these undertakings is Rothamsted Research Limited, Harpenden, Hertfordshire AL5 2JQ except AfSIS Limited. The registered office of this entity is P.O. Box 2704, Dodoma Road, Arusha, Tanzania.

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

12 INVESTMENTS (continued)

Rothamsted Enterprises Limited as shown below, is a joint venture between Rothamsted Research Limited (40%), the Lawes Agricultural Trust (40%), and the Biotechnology and Biological Sciences Research Council (20%). The Charity owns 40% of the 5 ordinary shares issued. The group's share of the results of the entity for the year ended 31 March 2023 are summarised below. As at 31 March 2023, the group's interest in this entity was valued at £Nil (2022: £Nil) as Rothamsted does not have a legal or constructive obligation to cover the net liabilities of the joint venture.

	2023 £'000	2022 £'000
Turnover	1,015	711
Administrative expenses	(1,044)	(801)
Retained profit/(loss) for the year	(29)	(90)
Net (liabilities) at 1 April	(70)	20
Net liabilities at 31 March	(99)	(70)
	2023 £'000	2022 £'000
Being:		
Fixed assets	3,652	3,832
Net current assets	119	127
	3,771	3,959
Liabilities greater than one year	(3,870)	(4,029)
Net liabilities at 31 March	(99)	(70)

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

12 INVESTMENTS (continued)

Concessionary loans are granted for an initial term of 12 months with interest of 5% per annum. Each loan automatically converts into shares in the event of default or if the purpose of the loan can no longer be effectively furthered. Otherwise the loans are convertible at the Charity's option any time after the initial 12 month term. As at 31 March 2023, 11 loans totalling £1,460k have been made of which 5 have been converted and 6 remain as convertible loans with neither the option to convert having been taken or any triggering events occurring.

GROUP AND CHARITY	Equity Holdings £'000	Convertible loan £'000	Total Social Investments £'000
Historic cost	660	800	1,460
Value as at 1 April 2022	-	1,120	1,120
Additions		340	340
Conversions	660	(660)	-
Unrealised gain	449	-	449
Value as at 31 March 2023	1,109	800	1,909
Net Book Value:			
As at 31 March 2023	1,109	800	1,909
As at 31 March 2022	-	1,120	1,120

The Company owns 2,822 £0.01 ordinary shares in SugaROx Limited, a 20.19% shareholding (2022: 2,822 £0.01 ordinary shares, a 24.53% shareholding). 822 shares relate to the Shake Climate Change portfolio with the remaining 2,000 shares representing separate holdings by the Company.

The Company owns 2,750 £0.01 ordinary shares in Pherosyn Limited, a 27.5% shareholding (2022: 0 shares) all of which represent separate holdings by the Company in addition to a convertible loan relating to the Shake Climate Change portfolio.

13 DEBTORS	Group 2023 £'000	Charity 2023 £'000	Group 2022 £'000	Charity 2022 £'000
Due within one year				
Trade debtors	845	845	755	755
Other debtors	209	209	409	409
Prepayments and accrued income	5,971	5,971	4,496	4,496
VAT recoverable	183	183	155	155
Due from joint venture – due in one year	521	521	60	60
	7,729	7,729	5,875	5,875
Other debtors due after one year				
Due from joint venture	212	212	381	381
	7,941	7,941	6,256	6,256

Rothamsted Research Limited
NOTES TO THE FINANCIAL STATEMENTS
for the year ended 31 March 2023

14	CREDITORS: Amounts falling due within one year	Group 2023 £'000	Charity 2023 £'000	Group 2022 £'000	Charity 2022 £'000
	Trade creditors	5,190	5,190	2,919	2,919
	Payroll creditor	233	233	255	255
	Other taxes and social security	352	352	377	377
	Other creditors	12	9	7	4
	Accruals	1,750	1,750	1,592	1,592
	Due to joint Venture	17	17	-	-
	Deferred income (see note 15)	887	887	793	793
		<u>8,441</u>	<u>8,438</u>	<u>5,943</u>	<u>5,940</u>

15	DEFERRED INCOME represents grant income received in advance of expenditure. The movement can be analysed as follows:	Group 2023 £'000	Charity 2023 £'000	Group 2022 £'000	Charity 2022 £'000
	Opening balance	793	793	2,300	2,300
	Amounts deferred during the year	887	887	793	793
	Release of amounts previously deferred	(793)	(793)	(2,300)	(2,300)
		<u>887</u>	<u>887</u>	<u>793</u>	<u>793</u>

16	FUNDS	Unrestricted 2023 £'000	Unrestricted 2022 £'000	Restricted 2023 £'000	Restricted 2022 £'000	Total 2023 £'000	Total 2022 £'000
	GROUP						
	Funds as at 31 March	13,647	14,977	65,813	57,733	79,460	72,710
	Funds balances are represented by:						
	Fixed assets	11,276	11,651	52,316	44,487	63,592	56,138
	Current assets	5,084	5,788	19,225	16,727	24,309	22,515
	Current liabilities	(2,713)	(2,462)	(5,728)	(3,481)	(8,441)	(5,943)
		<u>13,647</u>	<u>14,977</u>	<u>65,813</u>	<u>57,733</u>	<u>79,460</u>	<u>72,710</u>

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

CHARITY	Unrestricted 2023 £'000	Unrestricted 2022 £'000	Restricted 2023 £'000	Restricted 2022 £'000	Total 2023 £'000	Total 2022 £'000
Funds as at 31 March	13,650	14,980	65,813	57,733	79,463	72,713
Funds balances are represented by:						
Fixed assets	11,276	11,651	52,316	44,487	63,592	56,138
Current assets	5,084	5,788	19,225	16,727	24,309	22,515
Current liabilities	(2,710)	(2,459)	(5,728)	(3,481)	(8,438)	(5,940)
	13,650	14,980	65,813	57,733	79,463	72,713

GROUP – GENERAL FUNDS	2023 £'000	2022 £'000
Balance brought forward	14,227	15,064
Net (expenditure)/income	(1,889)	(2,427)
Designated in year	-	-
Released from designated funds	-	1,590
Transfer from restricted funds	559	-
Balance carried forward	12,897	14,227

CHARITY – GENERAL FUNDS	2023 £'000	2022 £'000
Balance brought forward	14,230	15,047
Net (expenditure)/income	(1,889)	(2,407)
Designated in year	-	-
Released from designated funds	-	1,590
Transfer from restricted funds	559	-
Balance carried forward	12,900	14,230

DESIGNATED ESTATE REBUILD FUND GROUP AND CHARITY	2023 £'000	2022 £'000
Balance brought forward	750	2,340
Designated in the year	-	-
Released in the year	-	(1,590)
Balance carried forward	750	750

£750k of the designated fund relates to funds set aside by the trustee-directors for the transformation of Rothamsted.

Rothamsted Research Limited

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GROUP AND CHARITY RESTRICTED	1 April 2022 £'000	Income £'000	Expenditure £'000	Gains, Losses & Transfers £'000	31 March 2023 £'000
Capital fund	44,978	14,708	(3,121)	(559)	56,006
Estate Rebuild fund	2,000	-	-	-	2,000
Open Access fund(RCUK)	19	54	(55)	-	18
Shake Climate Change	2,040	(91)	(236)	18	1,731
BBSRC Resource Grant	208	10,219	(10,322)	(34)	71
RI fellows	80	-	(14)	-	66
Strategic Hires	-	200	(200)	-	-
Institute Development Grant	196	-	(76)	-	120
Transformation award	5,039	-	(2,163)	-	2,876
Restricted Projects	2,437	10,490	(10,804)	(74)	2,049
Capital funded from Competitive Restricted Funding	710	-	(73)	74	711
Capital funded from Strategic Restricted Funding	26	-	(4)	34	56
Energy Supplement Grant	-	1,160	(1,051)	-	109
Redundancy Funding	-	83	(83)	-	-
	<u>57,733</u>	<u>36,823</u>	<u>(28,202)</u>	<u>(541)</u>	<u>65,813</u>

The Capital fund principally represents funding received, largely from the BBSRC, for the acquisition of tangible fixed assets. These assets are built on land that is not owned by the Institute. It represents the net book value of such fixed assets. The Estate Rebuild fund represents funding received from the BBSRC in respect of ensuring the long-term sustainability of the Institute's estate facilities. The Open Access fund represents funding received from the UKRI, in respect of the RCUK requirement for publications to be openly available on a publisher's site. SHAKE climate change is a programme which helps entrepreneurs and start ups who are combating climate change. In accordance with the Institute Standard Conditions of Grant it has become required to place all grant award payments from the BBSRC in relation to ISP's in a restricted reserve called BBSRC resource grant. RI fellows funds are used to make awards to scientists from developing and emerging countries worldwide to conduct research into agriculture in developing countries. The transformation award is monies received towards the overall Transformation Project.

Three new restricted funds were created in the year ended 31st March 2022. Restricted Projects against which all competitive award activity is charged, and two funds for capital items purchased from restricted competitive awards and restricted strategic awards.

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

An analysis of the comparative 2021/22 restricted fund movements follows:

GROUP AND CHARITY RESTRICTED	1 April 2021 £'000	Income £'000	Expenditure £'000	Gains, losses & Transfers £'000	31 March 2022 £'000
Capital fund	40,359	7,707	(3,088)	-	44,978
Estate Rebuild fund	2,000	-	-	-	2,000
Open Access fund(RCUK)	5	40	(26)	-	19
Shake Climate Change Gates Foundation(ISDA)	1,285	919	(164)	-	2,040
BBSRC Resource Grant	-	-	-	-	-
RI fellows	671	10,172	(10,609)	(26)	208
Strategic Hires	136	-	(56)	-	80
Institute Development Grant	-	200	(200)	-	-
Transformation award	-	201	(5)	-	196
Restricted Projects	4,483	1,730	(1,174)	-	5,039
Competitive Restricted Fund	2,423	10,470	(9,721)	(735)	2,437
Strategic Restricted Funding	-	-	(25)	735	710
	-	-	-	26	26
	<u>51,362</u>	<u>31,439</u>	<u>(25,068)</u>	<u>0</u>	<u>57,733</u>

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

17	RECONCILIATION OF GROUP NET INCOME/(EXPENDITURE) FOR THE YEAR TO NET CASH GENERATED FROM/ (USED IN) OPERATIONS	2023 £'000	2022 £'000
	Net income/ (expenditure) for the year	6,750	3,944
	Adjustments for:		
	Depreciation of tangible fixed assets	3,735	3,554
	Amortisation of intangible fixed assets	261	261
	Dividends, interest and rents from investments	(241)	(39)
	Loss on disposal of tangible fixed assets	17	-
	Gain on investments	(454)	(18)
	Share of joint venture loss / (gain)	-	20
	Capital Grants	(14,708)	(7,707)
	Operating cash flows before movements in working capital	(4,640)	15
	Decrease/(Increase) in stocks	(160)	(139)
	Decrease/(increase) in debtors	(1,685)	(194)
	Increase/(decrease) in creditors	2,498	(1,762)
		653	(2,095)
	Cash generated from / (used in) operations	(3,987)	(2,080)
	ANALYSIS OF CASH AT BANK AND IN HAND		
	Cash and cash equivalents represent:	2023 £'000	2022 £'000
	Bank balances	15,321	7,872
	Short term deposits 90 days or less	-	-
	Cash and cash equivalents	15,321	7,872
	Short term deposits more than 90 days	-	7,500
	Cash at bank and in hand as per balance sheet	15,321	15,372

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

18 RECONCILIATION OF CHARITY NET INCOME/ (EXPENDITURE) FOR THE YEAR TO NET CASH GENERATED FROM / (USED IN) BY OPERATIONS	2023 £'000	2022 £'000
Net income / (expenditure) for the year	6,750	3,964
Adjustments for:		
Depreciation of tangible fixed assets	3,735	3,554
Amortisation of intangible fixed assets	261	261
Dividends, interest and rents from investments	(241)	(39)
Loss on disposal of tangible fixed assets	17	-
Gain on investments	(454)	(18)
Capital grants	(14,708)	(7,707)
Operating cash flows before movements in working capital	(4,640)	15
Decrease/(Increase) in stocks	(160)	(139)
Decrease/(Increase) in debtors	(1,685)	(194)
(Decrease)/Increase in creditors	2,498	(1,762)
	653	(2,095)
Cash generated in / (used in) operations	(3,987)	(2,080)
ANALYSIS OF CASH AT BANK AND IN HAND		
Cash and cash equivalents represent:	2023 £'000	2022 £'000
Bank balances	15,321	7,872
Short term deposits 90 days or less	-	-
Cash and cash equivalents	15,321	7,872
Short term deposits more than 90 days	-	7,500
Cash at bank and in hand as per balance sheet	15,321	15,372

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

19 RELATED PARTY TRANSACTIONS

As explained in the Trustees' Report (incorporating the Strategic Report), LAT and BBSRC are members of the charitable company and, accordingly, are considered related parties. BBSRC funds scientific research and equipment purchases for the Institute. Note 9 of the financial statements explains the staffing arrangements between BBSRC and the Charity. Land and buildings at North Wyke, Devon are owned by the Biotechnology and Biological Sciences Research Council and occupied by the Charity under a formal lease and at a peppercorn rent. LAT also funds scientific research through grants to the Institute. LAT provides student accommodation to RRes. Details of the agreements regarding the Charity's use of buildings owned by LAT are set out in Note 10, which are currently rent free.

Rothamsted Research is a member of AgriMetrics Ltd and performed no administrative and scientific services for the company. The balance of monies owed to RRes outstanding at the year-end was £Nil (2022: £Nil). The Charity made a total sale of £Nil (2022: £Nil) to AgriMetrics during the year. RRes provides back office support, site support and scientific services to REL, LAT, UKRI-BBSRC, SugaRox and PheroSyn.

Transactions with related parties

During the year the company entered into the following transactions with related parties which are reported on an as invoiced basis.

	2023 £'000	2022 £'000
Rothamsted Enterprises:		
Sales transactions	652	221
Purchase transactions	234	142
Lawes Agricultural Trust:		
Sales transactions	1,032	873
Purchase transactions	22	11
UKRI-BBSRC:		
Sales transactions	29,317	26,048
Purchases transactions	97	125
SugaRox:		
Sales transactions	43	53
PheroSyn:		
Sales transactions	5	-

Amounts due to related parties

	2023 £'000	2022 £'000
Rothamsted Enterprises	17	4
Lawes Agricultural Trust	1	-
UKRI-BBSRC	19	-
	37	4

Amounts due from related parties

	2023 £'000	2022 £'000
Rothamsted Enterprises	733	441
Lawes Agricultural Trust	152	174
UKRI-BBSRC	39	228
SugaRox	-	142
PheroSyn	140	140
	1,064	1,125

Rothamsted Research Limited

NOTES TO THE FINANCIAL STATEMENTS

for the year ended 31 March 2023

20 CONTINGENT LIABILITIES

Under the terms of the contract between the Charity and the Biotechnology and Biological Sciences Research Council, should certain fixed assets be sold, a proportion of the proceeds might become payable by the Charity to the Research Council. No such liability exists at 31 March 2023 (2022: £Nil).

21 FINANCIAL INSTRUMENTS

	Group	Charity	Group	Charity
	2023	2023	2022	2022
	£'000	£'000	£'000	£'000
Financial assets held at fair value	<u>1,486</u>	<u>1,486</u>	<u>374</u>	<u>374</u>

Rothamsted Research Limited
INCOME AND EXPENDITURE ACCOUNTS
for the year ended 31 March 2023

	Group	Charity	Group	Charity
	2023	2023	2022	2022
	£'000	£'000	£'000	£'000
Gross income of continuing operations	25,286	25,286	28,571	28,571
Total expenditure of continuing operations	(29,963)	(29,963)	(29,264)	(29,244)
Net income / (expenditure) for the year	<u>(4,677)</u>	<u>(4,677)</u>	<u>(693)</u>	<u>(673)</u>
Net (expenditure)/ income for the year	(4,677)	(4,677)	(693)	(673)
Net gain on Investments	454	454	18	18
Capital grants received	14,708	14,708	7,707	7,707
Depreciation	<u>(3,735)</u>	<u>(3,735)</u>	<u>(3,088)</u>	<u>(3,088)</u>
Net income / (expenditure) for the year per SOFA	<u>6,750</u>	<u>6,750</u>	<u>3,944</u>	<u>3,964</u>