
Working together to solve the world’s biggest challenges.
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ACCELERATING KNOWLEDGE

Springer Nature is a leading global research, educational and professional publisher, home to an array of respected and trusted brands providing quality content through a range of innovative products and services. We are the world's largest academic book publisher, publisher of the world's most influential journals and a leader in the field of open research. Our education and professional publishing divisions are leaders in their markets, providing quality content through a range of innovative platforms, products and services. Our textbooks are used in classrooms, lecture halls and laboratories around the world.

Together, as a group of companies, we want to become the trusted knowledge accelerator, advancing learning and discovery for the benefit of all, passionate about understanding the needs of our communities and making change happen – better than anyone else.
ABOUT SPRINGER NATURE

As a truly global business, operating in more than 50 countries and distributing content in 180 markets, Springer Nature’s 13,000 people work together to serve the needs of researchers, students, teachers and professionals around the world.

We advance discovery by publishing robust and insightful research, supporting the development of new areas of knowledge, responding to the needs of the research community and making ideas and information accessible globally.

Each year we handle more than one million article submissions and publish around 300,000 articles across almost 3,000 journals and 13,000 books. We are the largest open access research publisher – publishing around one in four of all open access articles globally – and home of the respected Nature portfolio of journals. Last year, our content platforms were visited almost two million times a day.

As a leading educational and professional publisher, Springer Nature also provides quality content through a range of innovative platforms, products and services. Our textbooks are used in classrooms, lecture halls and laboratories around the world. Our education experts bring together insights from teachers and schools and the latest educational research to develop books, courses and resources for the classroom.

Connecting curious minds to advance learning and discovery

In 2018, we celebrated the 175th anniversary of Macmillan, one of our foundation companies.

Coming from a humble Scottish family, David and Alexander Macmillan shared a love of reading and a belief in the power of books to communicate ideas and to change lives. They published their first book, The Philosophy of Training, in 1843, opening a bookshop in London in the same year.

As the company grew, so did the two brothers’ belief in the importance of education and academic scholarship. Alexander launched the scientific research journal Nature in 1869.

When former British prime minister Harold Macmillan became chairman in 1965, he decided education should continue to be a key area of focus for the organisation. This led to the creation of Macmillan Education, which continues its work today as part of Springer Nature.
Advancing learning and discovery in 2018

Highlights

We started publishing **35 more journals** including *Nature Sustainability*, *Sustainable Earth* and the *Journal for STEM Education Research*.

We celebrated the **175th birthday of Macmillan**, with events in offices and at book fairs around the world (read more on page 2).

SN Applied Sciences and SN Comprehensive Clinical Medicine, **two new interdisciplinary journals**, published their first articles. Five in-house managing editors coordinate the submission, peer-review and publication process for SN Applied Sciences, a broad-based interdisciplinary journal, developed in response to the increasing volume of article submissions about industry-related research.

Macmillan International Higher Education launched its new **Red Globe Press imprint**, serving the worldwide market for core adoptable textbooks for universities.

The winners of the first-ever **Nature Research Awards for Inspiring Science and Innovating Science**, in partnership with The Estée Lauder Companies, were announced in October. These global awards were created to recognise inspirational early-career women researchers and those who have worked to champion women’s and girls’ participation in science (read more on page 13).

Springer Nature’s **diversity and inclusion roadmap** was launched by the newly appointed director of diversity and inclusion. SN Pride, a group for members and supporters of the LGBTQ+ community at Springer Nature, was also launched (read more on page 12).

Science and the Sustainable City – part of the Springer Nature Grand Challenges programme – was held in Singapore alongside the World Cities Summit. Bringing together members of academia with others from policy and business, the conference discussed areas of research related to city design, planning and infrastructure development.

For the first time since Springer Nature’s formation in 2015, a **global workforce engagement survey**, known as Pulse, was held (read more on page 21).

We celebrated the **160th anniversary of MMW-Fortschrifte der Medizin**, which was the first medical journal in Germany to offer continuous medical education to its readers.

A new employee-run **Green Office Network** was created to encourage environmental responsibility and action at site level around the world. More than 80 colleagues signed up to join the network, holding more than 20 meetings during 2018. In London, an incentive scheme for employees resulted in a saving of more than 40,000 single-use cups between October and December.
SUSTAINABLE IMPACT

Looking at the global picture today, there can be no doubt that as politics become more turbulent and polarising, the need for international businesses to make a positive impact on sustainable development has become even more important.

Even though millions of the world’s poorest are lifted out of extreme poverty every year, we are still quite a distance away from becoming a world of equality. Indeed, we are likely moving further away from it. Sound answers to these problems are needed especially in the light of artificial intelligence and its impact on our societies. At the same time with the Arctic temperature exceeding its historic average by more than five degrees in two consecutive years and with almost every continent suffering its own drought, fire or flood, climate change is undeniably happening at an accelerated rate. And last but not least, this year we witnessed the birth of the first genetically engineered baby and with it, potentially a turning point in human history.

These grand challenges are not being solved fast enough and big new questions are out there waiting for answers: Who do we want to be? And in what state do we want to pass on both the beauty of our planet and our wisdom to future generations? In finding answers, Springer Nature has a clear role to play building on its own strong heritage: one of our founders Julius Springer engaged himself politically on the social-progressive front in 1848 and his contemporaries Alexander and Daniel Macmillan stood for wide curiosity, optimism, tolerance and integrity. 150 years ago, in 1869, the Macmillan brothers launched *Nature*. The first statement in its mission was and still is to this day to “place before the general public the grand results of Scientific Work and Scientific Discovery and to urge the claims of Science to a more general recognition in Education and in Daily Life”. If one takes it all together: The core commitment of Springer Nature is to ‘factfulness’ and evidence, to sustainability and equality, to ethical behaviour and a humanistic education, all of which are the prerequisites of progress and peace in our societies.

Needless to say, we should not only publish but also live up to these values, to the latest findings and to best practices ourselves. As chairman I am proud to see us moving decisively in that direction.

In 2018, Springer Nature reduced its environmental footprint considerably. The diversity and inclusion programme made significant progress and new appointments to the supervisory board added a range of skills and experience as well as improving governance and the gender mix. As a board we are also entrusted with the long-term sustainability of the company beyond 2018 and so the future financing of Springer Nature was secured for the next three years. But there is much more to highlight. This report shares our approach to responsible business in more detail. You will read about what we do exactly to help children to learn, to support professionals in their careers and to make better-informed decisions, to engage with researchers on their journey to new discoveries and to help them share their work as openly as possible. It tells how we always try to connect with our customers and communities. In that vein, I hope you will share with us any suggestions or comments about how Springer Nature can further develop its responsible business actions to support the United Nations’ Sustainable Development Goals, because ‘the best is the enemy of the good’.

Stefan von Holtzbrinck
Chairman
When I joined Springer Nature over a year ago it was because I wanted to work for a purposeful company and alongside colleagues motivated to help make the world a better place through the acceleration of knowledge: in areas of the most significant research, in teaching and learning and in the application of everyday work through our professional information division. This is a key driver not just for Springer Nature, but for the tens of millions of people involved in research, teaching and professional development that we come into contact with every day.

We are well placed to rally behind the importance of evidence-based research and to share the benefits of it through better communication and education to make a material impact on the implementation of the UN's Sustainable Development Goals (SDGs). As a large global enterprise we must also look closer to home and take responsibility for our own operations to reduce our environmental footprint, to promote an inclusive environment rich in diversity and to forge ever-closer links with the communities we serve.

In this report, we focus on both what we do to advance learning and discovery and how we do it.

Specifically, we focus on three of the most significant areas where we feel that we can make a positive contribution to the SDGs.

1. **Solving grand challenges.** As publishers of trusted, evidence-based research, we have a vital role in accessing and disseminating new discoveries that can help solve grand challenges. In our education division we also work with UN agencies to raise awareness of the SDGs with every age group. We consider, actively manage and report on the operational impacts of our business, including our carbon emissions, paper sourcing and labour standards in our supply chain to make sure we are lessening our footprint on the planet and treating people fairly. We report on these impacts in the People and Partners, Environment and Community sections of this report.

2. **Diversity and inclusion.** In our business and when working with others there is an imperative for us to address any problem that is standing in the way of great research. We recognise the need for greater diversity and inclusion both in our own workplaces and in the research community whose content we publish and have made significant progress with our diversity strategies within the business. Our 13,000 colleagues around the world interact on a daily basis with a community of more than one million researchers, and with teachers and schools in more than 100 countries. With such a large network, we can positively contribute to improvements in diversity and inclusion in the communities we work with and we take this responsibility seriously.

3. **Robust research, openly accessible.** As custodians of the scientific record, we publish thousands of new discoveries each month, providing quality assurance and peer review so that research stands up to international scrutiny and is presented and shared in the best possible way. We implement technology to reduce the time it takes for researchers to share their discoveries and provide training and support to researchers so their research can have a greater impact. Our long commitment to open access research means that today we are by far the largest open access research publisher - publishing more than 91,000 open access articles in 2018. We make academic research freely accessible and discoverable through partnerships, innovation and collaboration with communities.

I am delighted that in this report we are able to show progress on several fronts and look forward to building on this even more in 2019.

Daniel Ropers
Chief Executive Officer
As one of the world’s largest publishers of academic research, educational content and science journalism, involved in the dissemination and application of evidence-based sustainability research, acting as a responsible business is a core component of what we do.

We therefore believe that Springer Nature has a key role to play in contributing to the United Nations Sustainable Development Goals (SDGs). The 17 SDGs, launched in 2015, set out an agenda for global sustainable development, and are intended to be delivered by 2030 through the achievement of 169 specific targets.

This will require academia, business and policymakers to work together to address the world’s most pressing problems.

Our responsible business programme focuses on three of the most significant areas where we feel we can make a positive contribution to the SDGs: addressing grand challenges; diversity and inclusion; and publishing robust, openly accessible research. Our contributions come from both what we publish and how we act. This framework sets out where our expertise and reach can have the most meaningful impact:

**Supporting the sustainable development agenda**

If humanity is going to succeed in tackling our most difficult challenges, it’s going to take all of us working together, across disciplines and over time.”

Mariette DiChristina, Editor-in-Chief, *Scientific American* and Executive Vice President, Magazines at Springer Nature

**Our framework for supporting the SDGs**

- **01** Solving grand challenges in support of the SDGs
- **02** Diversity and inclusion, in our business and working with others
- **03** Robust research, openly accessible
- **04** Forging relationships with the community: education and research communities, and wider society
- **05** Our three pillars: Springer Nature supporting delivery of the Sustainable Development Goals
- **06** Our role as a publisher: Advancing learning and discovery
- **07** Our respect for the people and partners who work for and with us
- **08** Minimising impact on the environment by operating responsibly and monitoring performance

If humanity is going to succeed in tackling our most difficult challenges, it’s going to take all of us working together, across disciplines and over time.”

Mariette DiChristina, Editor-in-Chief, *Scientific American* and Executive Vice President, Magazines at Springer Nature
Responsible Business Report 2018

Research-based solutions to real-world problems
Given that Springer Nature is a global publisher of educational materials and evidence-based research, it’s no surprise that our stakeholders care about sustainability and business ethics. Our employees and authors expect us to stand up for science and robust research, especially where they are under threat, and to operate to high standards with respect to the environment and communities where we work.

We collaborate with a large global community of academic researchers and educators who, through their work, want to leave the world better than they found it by solving problems and disseminating their ideas. We share these aspirations and use them to develop better services for research and education communities around the world.

Promoting science, research and education
Our Education business is focused on raising educational standards and creating opportunities for learning in the developing regions of the world. By inspiring children with engaging, high-quality materials, we aim to create learners for life, through higher-level study and research, or at work. Through our education, higher-education and professional offerings, Springer Nature can support them every step of the way. We believe that research is a global endeavour and that the free flow of information and ideas lies at the heart of advancing discovery. We give a voice to the science and education communities on national and international stages throughout the year, and are committed to improving the understanding of science in the media and among the general public.

Springer Nature is, to our knowledge, the largest employer of science writers in the world, increasing the reach and impact of the products of research by making them accessible to businesses, policy leaders, educators and the public. We provide support for national science media centres, and train those writing about science in the press.

We also sponsor the John Maddox Prize for those who, despite facing difficulty or hostility, promote science and evidence on a matter of public interest.

As a leading publisher of research, education and professional materials we work around the world to publish robust, accessible research and high-quality learning materials.
ADDRESSING GRAND CHALLENGES

We publish a large body of research each year that relates to sustainable development and the SDGs. In 2018, we continued to develop our Grand Challenges programme, which connects policymakers and business leaders with research and analysis.

Launched in 2017, the programme seeks to inspire greater collaboration across five areas related to the SDGs: climate change, global health, the food–energy–water nexus, a digitally transformed world, and sustainable cities.

“Science isn't the answer to everything. But an informed decision-making process is helpful.”

Jerry McNerney, US Congress Representative, California
Springer Nature Grand Challenges

Our Grand Challenges portal features cutting-edge research from a wide range of science, engineering, social sciences and humanities disciplines. These have been selected to help practitioners develop innovative and effective policies, programmes and technologies to address global issues.

Events and summits

During 2018, we held events to bring together researchers, policymakers and businesses to consider how the latest research can help decision making and sustainable solutions.

In Singapore, we hosted Science and the Sustainable City, an event co-located with the World Cities Summit; and, in Washington DC, our second Science on the Hill event brought the latest research on artificial intelligence and robotics to healthcare to the US Congress. We hope to develop more events and activities in 2019.

Sustainability publications

Many of Springer Nature’s journals address sustainability issues of relevance to the SDGs. In 2018, we launched several new publications with direct relevance to the global research communities that are seeking to make a real difference:

Nature Sustainability is an interdisciplinary journal that blends natural, social and engineering research to support new policies and deliver actionable solutions to sustainability challenges. The journal’s content intersects with almost every one of the UN’s SDGs, with a particular interest in sustainable cities and communities (SDG 11), and sustainable food systems (directly linked to SDG 12, responsible consumption and production). Nature Sustainability aims to bring together a broad range of sustainability research in one place; facilitate ongoing debate about how academia is supporting the field; and define practical solutions for more effective policymaking.

Sustainable Earth is a fully open access journal that directly addresses the SDGs. It aims to bridge the research–policy divide through the publication of guideline articles, which provide a sound evidence base and make direct suggestions for policy implementation. The journal has a community focus and through a partnership with the Canopy Project, one tree will be planted for every reviewer report received in the peer-review process. Early articles have addressed topics such as biophilic urbanism (the incorporation of natural elements in the built environment), climate information services and planetary boundaries.

The Springer Sustainable Development Goals series published two new books in 2018, with several more planned for 2019. All are guided by an expert international advisory panel.

Managing the impacts of Springer Nature

In this report (and elsewhere), we outline some of the most significant impacts that Springer Nature has on the environment and society. We use the SDGs as a framework to consider the potential impacts of the business – both positive and negative – and how we manage them (see more on pages 24–27).

How could a publisher help end hunger?

We publish a wide variety of content relevant to the SDGs and believe that this research can help support implementation of the global goals. But how might this work in practice?

In November, a diverse range of colleagues from London, Berlin and New York came together for a hack day. We discussed how Springer Nature could contribute to SDG 2: Zero hunger, through the content we publish and other tools and services. Some of the ideas presented are now being taken forward.

We hope to hold more hack days and workshops on other SDG topics in 2019.

Bringing the SDGs to life for children

In India, Macmillan Education has worked with UNESCO and local education boards to include SDG-related content in curriculum materials. Intended to help primary-school-aged children learn more about environmental issues and sustainable development, these include project work, videos and songs on topics such as air and soil pollution, waste and water management, and personal and community hygiene.

A second set of printed materials and online apps explores World Heritage sites in India. This will develop the investigative skills of young learners while introducing them to the concepts of heritage and conservation.

Springer Nature publishes content relating to all 17 SDGs. These nine goals are directly addressed by content shared on the Springer Nature Grand Challenges portal.
DIVERSITY AND INCLUSION

Diversity benefits science

It is imperative for us as publishers to find ways to address any problem that is standing in the way of great research, so we seek to collaborate with research communities to raise the bar on diversity and inclusion. For Springer Nature, working towards an even more inclusive and diverse workplace creates opportunities. It contributes to increasing employee engagement and allows our people to perform at their best and it drives innovation and helps us to cater to the diverse communities we serve.

We introduced a diversity and inclusion roadmap in 2018.
Given the importance of publication and other academic activities, from peer review and conference participation to academic success and visibility, several recent studies have called for journals and other stakeholders to take steps to ensure against bias and to promote representation of women and under-represented groups.

Across the whole of Springer Nature, our people interact with more than one million researchers and authors every year, coordinating the activity of around 90,000 editors and 700,000 peer reviewers, and meeting with many others at conferences and symposia. Editorial boards and peer reviewers make judgements and decisions about the type of research that gets published. Our conference team arranges more than 30 conferences each year, working with panellists and keynote speakers.

We are a diverse organisation, with our workforce located in around 50 countries and women making up 57% of that workforce. But the gender and cultural balance decreases with seniority and varies by region: for example, in the top three tiers of the organisation, including the management board, only 39% of the 315 individuals are women. Of these tiers, 65% are European nationals, which doesn't reflect the geographical spread of either revenue or people. We value local and regional market knowledge: most of our management teams have been hired locally and come from the region in which they work.

Our new global director of diversity and inclusion has led the development of a D&I roadmap. The roadmap identifies two initial areas of focus: gender balance and cultural diversity in our senior leadership roles; and global decision-making bodies and the pipeline that leads to them.

To drive change, we focused on several initiatives spanning inclusive leadership, recruiting, talent development, metrics and community building. To start the conversation, we have rolled out online training to all employees about how to identify and address unconscious bias, with on-site workshops about inclusive leadership due to follow in 2019. A recruiting checklist for hiring managers and human resources aims to support our recruitment process so that we reach a broader pool of talent. In some locations, this is supported by on-site sessions on implicit bias in recruiting.

In 2018, Springer Nature's management board agreed to set global targets for improving the gender balance in our global leadership positions. While many of the actions that we are taking in our D&I strategy are relevant through all tiers of the organisation, we believe that an increasing proportion of women in senior decision-making roles is one way to measure our success. This should have a positive impact on the gender pay gap within the company over time.

By 2023 we are aiming for 45% of those global leaders in the top three tiers of the organisation to be women, in comparison with 39% today. We are also considering other key performance indicators to track our progress towards becoming a more inclusive and diverse company.

In countries where there is a legal framework for diversity reporting, we publish additional information. This includes gender pay gap reporting, as required in the UK.

Our aim: by 2023, 45% of the top three tiers of the organisation will be women.

With such a large network, we can positively contribute to improvements in diversity and inclusion (D&I) in science – and we take this responsibility seriously.

Diversity and inclusion in our business

We are proud to play an active role in promoting and celebrating diversity both through our publications and across our company. Since 2016, a global Springer Nature task force has been working to understand the diversity challenges we face, and what we can do to attract and retain diverse talent, so that we become a truly inclusive workplace.

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Discover more
2018 UK Gender pay gap report
Sponsored by our CEO Daniel Ropers, SN Pride was launched in 2018. More than 300 colleagues have joined this employee resource group, with local representatives in London, the Netherlands, Spain, Argentina, Germany and the US. Employee resource groups like SN Pride aim to facilitate information sharing, networking, professional and personal development, aid community outreach and support diversity in our recruitment processes. The network seeks to create a space in which people feel comfortable and represented. Feedback from colleagues so far has been very positive.

Rachel Jacobs, Group General Counsel and D&I Champion: “We are committed to diversity and inclusion at the highest levels of the organisation and while I think we have made a good start on our diversity and inclusion journey, there is still much more we can do. Change has to come from all of us when creating a truly inclusive workplace, and SN Pride provides both a virtual and a real-world community to enable sharing of ideas, networking opportunities and more.”

SN PRIDE NETWORK

Mentoring
We are piloting two mentoring programmes.

The first, for international mid-level managers around the world, aims to foster exchange, raise the profile of international talent, and contribute to succession planning and our future talent pipeline.

A second pilot supports mid-level managers who have parenting or care responsibilities, where a mentor provides guidance and support to help the mentee continue to pursue their career development actively while navigating family responsibilities.

Employee networks
In 2018, we supported employees in setting up networks they feel are important. We launched SN Pride, our network for the LGBTG+ community and allies. In 2019, community building around D&I will remain an important part of our approach and we will continue to offer opportunities for colleagues to get involved with planned new employee groups, including a parents network, a network for employees with disabilities, and a women’s network.

Diversity and representation, working with research and education communities
There is a large body of research suggesting that persistent gender disparities exist in research and education communities. This includes the distribution of research funding, institutional hiring, the allocation of institutional resources, authorship on papers, the representation of academic editors and peer reviewers in journal processes, and speaker opportunities at conferences.

During 2018, Nature Human Behaviour has published research about how gender diversity – in research teams, research methods and research questions – can aid scientific discovery and innovation.2 Other publications demonstrated that there is far more to do: research published in Nature Geoscience claimed that there has been little progress in ethnic and racial diversity in earth, atmospheric and ocean sciences in the past 40 years.3

Tackling this issue head-on, Nature Research set up its own diversity steering group, chaired by the editor-in-chief, in 2017. Now taking a company-wide approach, this group seeks to explore how we work with the research community to make a positive difference, with a particular focus on addressing the speed of change. Scientific American also has its own diversity steering group.

2 “No progress on diversity in 40 years” Nature Geoscience (2018)
Workstreams are currently looking at minimising the gender gap in areas such as the make-up of conference panels, the authorship of commissioned content, editors-in-chief and editorial board members, and peer reviewers. We are working to ensure that commissioned content represents issues that impact minority and disadvantaged populations.

We are also working to improve the diversity of talent coming into the research and publishing sectors. Colleagues are volunteering to support students from diverse and under-represented backgrounds, including a programme where around 30 colleagues in London mentor young women considering further study in STEM (science, technology, engineering, mathematics) subjects, and another initiative where colleagues provide tutoring to A-level science students from local schools (see page 30).

In recognition of efforts to attract more girls and young women to science, and to honour early-career women researchers, in 2018 we launched the Nature Research Awards for Innovating in Science and Inspiring Science.

**DIVERSITY IN PEER REVIEW**

During Peer Review Week in September 2018, Springer Nature hosted an afternoon of talks and debates at a London university, to encourage discussion around the theme of diversity and inclusion in peer review. Editors and authors from our journals, blog platforms and social media networks explored many aspects of the peer-review process. These included a patient peer-review trial being conducted by BMC, and ways to make the pool of peer reviewers across the global academic community more inclusive and diverse. The panel discussion was live-tweeted, resulting in 46,000 social media impressions and more than 700 engagements – a reflection of the level of interest in the topic.

**NATURE RESEARCH AWARDS: CHAMPIONING INSPIRATIONAL WOMEN SCIENTISTS**

Astrophysicist Mirjana Pović has taught science to orphans in Rwanda, helped to organise community support for women with HIV in Tanzania and contributed to space research in Africa. She has also excelled in her own research at the Ethiopian Space Science and Technology Institute in Addis Ababa and the Institute of Astrophysics of Andalusia in Granada, Spain.

In recognition of her work, she received Nature Research’s Inspiring Science Award, one of two new prizes developed in partnership with The Estée Lauder Companies, at a ceremony in London in October 2018.4

The first-ever Nature Research Award for Innovating Science was presented to the Association of Hungarian Women in Science (NaTE) for sponsoring Girls’ Day, a campaign that encourages high-school students to consider a career in science and technology. The campaign has attracted some 10,000 participants over the seven years that it has run.

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4 “Hungarian association wins prize for promoting participation of women in science” Nature (2018)
PUBLISHING ROBUST, ACCESSIBLE RESEARCH

Improving the publishing process

We are proud to be the largest open access research publisher in the world. We work hard to ensure that the research we publish is of the highest quality and disseminated as widely as possible.

One of the most effective ways to advance discovery is to improve the integrity and speed of the publishing process, for the benefit of the whole research community. We believe that our primary duty is to make the work we publish easy to discover, access, understand, use, reuse and share.

Springer Nature publishes more open access research than any other publisher.
**Research integrity**
Committed to our role as guardians of the scholarly record, we strive to ensure that all published content meets appropriate editorial and ethical standards. We aspire to support the highest levels of integrity in research, seek to identify errors and misconduct, and commit to transparently and rapidly correcting the published record where necessary.

As a member of the Committee on Publication Ethics (COPE), Springer Nature is guided by COPE principles when handling cases of research and publication misconduct. We have a Code of Conduct for editors, which sets out the standards we expect in relation to publication ethics, and use COPE’s online resources to inform the discussion of difficult cases.

Continuing to prioritise research integrity across all our publications, we appointed a dedicated research integrity director in 2018, to lead the Springer Nature Research Integrity Group (SNRIG). The SNRIG works with authors, editors, staff, reviewers and the research community to maintain high editorial standards and to prevent misconduct. It does this by:

- providing resources on publication ethics issues, including eight training modules launched in 2018
- promoting both the adoption of best practice by all stakeholders, and the ethical conduct, reporting and evaluation of research
- investigating potentially unethical practices while ensuring all involved are treated fairly
- advising editors on appropriate actions, such as correction or retraction, when unsound publications or unethical practices are found.

Employees or others with whom we work can report concerns via an editor or through a confidential whistleblowing system, Speak-Up.

All issues reported to our staff are investigated: in 2018, the SNRIG looked into more than 1,000 cases, in the context of around one million submissions to Springer Nature each year. The most frequently reported issues were plagiarism; duplicate submissions and publications; and problems with authorship, data or the peer-review process (see below). If issues are confirmed, we take action by publishing expressions of concern or, in very serious cases, retracting related articles.

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**PEER REVIEW**

Peer reviews lie at the heart of the research process and are central to the integrity of the scientific record. Our network of internal and external editors spends thousands of hours identifying and selecting suitable reviewers, and managing the process of peer review. This assures and improves the quality of the scientific literature we publish and, in doing so, advances discovery.

We continually invest and innovate in peer reviews to find the most appropriate process for the different communities we serve, and we are pioneering several new developments in peer review, including open, double-blind and recognition rewards.

In December, Springer Nature and Publons, part of Clarivate Analytics, teamed up to improve the peer-review process and enable reviewers to receive recognition for their contributions.

Following a successful pilot, which saw 60,000 reviewers record more than 275,000 reviews on Publons, the new Publons Reviewer Recognition Service will be rolled out across more than 2,000 Springer Nature journals. It will recognise the work of the researchers (who provide more than one million reviews every year), starting with Scientific Reports, which is one of the world’s largest open access journals.\(^5\)

Employees or others with whom we work can report concerns via an editor or through a confidential whistleblowing system, Speak-Up.

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\(^5\) Publons reviewer recognition service
In 2018, BMC and Nature Communications joined other publishers in calling for greater transparency in the peer-review process, by signing an open letter coordinated by ASAPbio. Open peer-review reports are now published alongside articles in 70 BMC journals.

Working with cross-industry groups, we are also experimenting with blockchain to make the peer-review process more transparent and trustworthy. The technology allows authors, editors and reviewers to share information efficiently, while respecting privacy and confidentiality. 6

**Reproducibility**

All readers of scientific literature need to feel confident that the analyses and results of all published research are trustworthy and that, if the research were to be repeated, the same result would occur. Supporting the research community with robust processes is an important part of the publishers' role.

There has been much discussion in the academic community about the ability for research results to be replicated by others, and the tools used by publishers to avoid misleading or inaccurate research from being released. Nature journals have been at the leading edge of this push for rigour and reproducibility through thought leadership, advocacy, policies, infrastructure and service solutions. Our strategy for supporting transparent, reproducible research is built on five main areas: experimental design (including reporting standards and checklists), data, code, materials and protocols.

We require authors of primary life science research papers in *Nature* journals to submit a checklist to support the transparent reporting of key practices, including randomising, blinding and calculating appropriate sample sizes. Two independent studies have found evidence of increased reporting standards in *Nature* journal papers resulting from the introduction of reporting checklists and specific references. 7, 8

In a 2017 survey of *Nature* authors, which sought to understand their perceptions of such reproducibility initiatives, 49% thought that the checklist had improved the quality of research published in *Nature* (15% disagreed) and 37% thought the checklist had improved quality in their field overall (20% disagreed). Encouragingly, a remarkable 78% said that they had continued to use the checklist to some extent, irrespective of their plans to submit research to a *Nature* journal in the future. 9

Driven by our long-standing experience in this area, we are working with a group of journal editors and experts on transparent reporting and reproducibility to develop minimal reporting standards in the life sciences.

We also provide services to help make data sets more accessible, readable and usable so that other researchers can replicate the original work.

Solutions that empower lab scientists to quickly find, evaluate and reproduce experimental procedures are a critical aspect of scientific research. Launched in 2018, Springer Nature Experiments brings together a portfolio of around 60,000 articles about protocols and methods, drawing on the entire Springer Nature protocols and methods portfolio. As the first research tool of its kind in life sciences, Springer Nature Experiments can play a key role in supporting reproducibility and scientific robustness.

In 2018, BMC and Nature Communications joined other publishers in calling for greater transparency in the peer-review process, by signing an open letter coordinated by ASAPbio. Open peer-review reports are now published alongside articles in 70 BMC journals.

Working with cross-industry groups, we are also experimenting with blockchain to make the peer-review process more transparent and trustworthy. The technology allows authors, editors and reviewers to share information efficiently, while respecting privacy and confidentiality. 6

**Reproducibility**

All readers of scientific literature need to feel confident that the analyses and results of all published research are trustworthy and that, if the research were to be repeated, the same result would occur. Supporting the research community with robust processes is an important part of the publishers' role.

There has been much discussion in the academic community about the ability for research results to be replicated by others, and the tools used by publishers to avoid misleading or inaccurate research from being released. Nature journals have been at the leading edge of this push for rigour and reproducibility through thought leadership, advocacy, policies, infrastructure and service solutions. Our strategy for supporting transparent, reproducible research is built on five main areas: experimental design (including reporting standards and checklists), data, code, materials and protocols.

We require authors of primary life science research papers in *Nature* journals to submit a checklist to support the transparent reporting of key practices, including randomising, blinding and calculating appropriate sample sizes. Two independent studies have found evidence of increased reporting standards in *Nature* journal papers resulting from the introduction of reporting checklists and specific references. 7, 8

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Opening up research

As the rapid evolution of technology creates ever-more channels to disseminate and amplify research, we can connect people with the most relevant and important information, so that they can discover and learn more. We want to bring academic research to broader audiences in more engaging and accessible ways, and enable the sharing of both open access and subscription content.

Taking action to make our content as accessible as possible, Springer Nature has done more to drive the open access agenda – in new developments, investment, risk-taking and volume – than any other publisher. In the past 20 years, we have embraced offsetting agreements; invested in BioMed Central (BMC) and Open Choice; voluntarily adopted a six-month embargo for Nature titles; made Nature Communications fully open access; and launched Scientific Reports, a multidisciplinary open access journal.

We now publish more than 90,000 immediate open access papers a year and continue to explore new solutions. But, as a first mover, we also experience challenges first hand: funding flows that need to change, a lack of global coordination, disciplines that lack open access resources, and institutions that try to benefit from taking a back seat. As policymakers and funders consider how research can be made more open and accessible, we have a role to play in developing a solution that is sustainable for all.

We encourage preprint posting and self-archiving of author-accepted manuscripts and have some of the most liberal policies of any publisher.

Globally, around one third of all research published by Springer Nature is done so under an immediate (gold) open access model. We now publish more than 600 fully open access journals, and more than 1,900 Springer Open Choice (hybrid) journals. More than 70% of Springer Nature journal content published by authors from the UK, Sweden, Austria and the Netherlands is now published via gold open access.

We were also the first major publisher to enable the sharing of subscription content. Our free content-sharing initiative, SharedIt, provides shareable links to view-only versions of papers in subscription journals.

We want to advance discovery through data sharing, and are committed to helping researchers take an open approach to their data wherever possible. We make research accessible to a wide audience through our award-winning journalistic content, and with 14 local language editions of Scientific American, we reach an even wider geographic audience.

We make our content available via machine-readable interfaces. Our references are available via Crossref, while reference lists, together with broader open linked data, are accessible through SciGraph.

Springer Open Choice (hybrid) journals

1,900+
**Opening up research pre-publication**
We have been working to improve visibility of potentially significant science that is being considered for publication and encourage collaboration opportunities in the research community. In 2018, Springer Nature, working with partner Research Square, launched In Review, a service that aims to open up the submission and peer-review process for authors and beyond. The first service of its kind, In Review provides authors with real-time access to the submission status of their manuscript at a granular level, including the number of reviewers invited, number of reports received and access to a private author dashboard through which they can suggest reviewers. It also allows authors to showcase their work to funders and others, and to engage the wider community for comment, collaboration and potential citations, while their manuscript is under review. In Review was initially available on a select number of BMC journals and will be rolled out across more Springer Nature journals in 2019.

**Access to research from developing countries**
We invest in education and scientific research in places where it’s needed but where people may not be able to afford it, by supporting the initiatives of organisations such as Research4Life, INASP and CGIAR. We also offer article processing charge waivers to papers whose authors are based in low-income countries (as classified by the World Bank in July 2018).

Through these programmes, Springer Nature offers low-fee, and sometimes free, access to research. This helps to reduce the scientific knowledge gap between industrialised countries and the developing world.

**Sharing experimental data**
We believe that research data should be easy to find and access, so that it can be used in other research programmes around the world. We have been proactively developing services to help the research community share its data in reusable and accessible ways:

- We work closely with repositories and organisations that promote and support open standards, including the Research Data Alliance, CODATA and FORCE11.
- Since 2014, *Scientific Data*, an online open access journal, has given researchers publication credits for describing their data sets, making them more useful and reusable.
- *BMC Research Notes* enables researchers to publish short notes, observations and descriptions of data that might otherwise have remained in a lab notebook or as a footnote in a data set.

In 2018, we published a survey of 7,700 researchers that demonstrated that the academic community supports data sharing. Three-quarters (76%) of researchers rated the importance of making their data discoverable highly, and nearly two-thirds (63%) submitted data files as supplementary information, deposited the files in a repository or did both. There are, however, also challenges to data sharing: being able to organise it in a presentable and useful way (46%), uncertainty about copyright and licensing (37%), and not knowing which repository to use (33%).

Springer Nature has launched new support services to help researchers, institutions and funders manage and store research data. Editors curate and enhance metadata to improve its discoverability; they also help authors to draft summaries and data-availability statements to improve human readability, data linking and citations. The new services can be used for any scholarly research data — including code, videos, images, text, raw and processed data — even if they are not associated with a publication.

**Innovating to serve the research community**
We want to apply our skills and resources beyond publishing to better serve the needs of researchers. This involves creating tools, services and training that help the research community to understand and utilise new ideas and concepts, or providing the metrics and information for librarians and institutions to optimise their limited budgets. Our focus is always on investing in initiatives that add value.

Springer Nature is the largest publisher of academic text books — more than 13,000 each year. We are, however, constantly innovating and believe that technology has much to offer book publishing. In 2018, the first books using the More Media digital application were published. The app, which can be downloaded for free, allows print books to be enhanced by interactive or multimedia content on a smartphone or tablet. By scanning the page of the printed books, the reader can immediately access relevant digital content.

We know we don’t have all the answers to the issues faced by our business and our stakeholders, so we work in partnership with others to develop solutions.
In 2018, for example, we held hack days in Germany and the UK, bringing together business expertise and developers to explore potential options. At our first hackathon in San Francisco, hosted at the Microsoft Reactor, we explored how virtual and mixed-reality technologies could use the millions of scientific data points to which we have access to solve real-world problems. Over two-and-a-half days, several prototypes were developed, including a way to visualise and track the global degradation of coral reefs, in the hope of raising awareness and helping to address this major ecosystem crisis.

To track how well we are meeting the evolving needs of the research community, we monitor the satisfaction of the authors, reviewers and editors who work on our books and journal articles. Authors consistently rate Springer Nature very highly: in 2018, 61% of journal-article authors rated their overall experience as ‘excellent’ and another 28% as ‘good’.

Where such surveys identify areas for improvement, we look to make changes: for example, production time for books has significantly reduced during the past two years, from an average of 115 days in December 2017 to 76 days in September 2018, as a result of measures to standardise and unify processes for book production across different parts of Springer Nature.

### Copyright and protecting intellectual property

We believe that authors should retain copyright and receive clear credit for any work published in our books or journals. As such, in 2017 we agreed to stop taking copyright from authors of subscription primary research articles; the implementation of this approach is ongoing. In 2018, we amended our remaining Copyright Transfer Agreements to be more permissive and, during 2019, we will require only an exclusive Licence to Publish for the primary research we publish.

It is important that we protect our authors against any infringement of their intellectual property, while considering the sensitivities and concerns of the research community. We proactively identify, monitor and take action against potential infringements, to ensure that any threats to the intellectual property rights of our authors are targeted, disrupted and, where possible, closed down. Any concerns about online piracy or physical counterfeiting can be reported to our anti-piracy team.

Springer Nature has joined large and small publishers, university presses and learned societies in a group exploring how to address the harm being caused by pirate sites, including Sci-Hub. These illegally share the content of libraries, academic institutions, learned societies and publishers, and ultimately affect the accuracy of the scientific record.
PEOPLE AND PARTNERS

Responsibility to our people

With our people located in more than 50 countries around the world, Springer Nature comprises many internationally dispersed and globally organised teams. A large proportion of our employees are highly skilled and academically qualified, with nearly two-thirds educated to at least master’s degree level or equivalent. In our Research business, we often recruit people in the early stages of their careers and provide them with opportunities to acquire additional editorial and technology skills, useful for their future.

We adopted a global health and safety policy in 2018.
We provide support that helps our global leaders to work efficiently in virtual teams, communicate across geographies and cultures, and develop diverse leadership groups that reflect the wider workforce. We offer training programmes, ranging from business skills to resilience, via LEAP, our online learning platform. These can be accessed globally and are made available in multiple languages. To make sure our employees benefit from these opportunities, we run regular online and on-site sessions to demonstrate how to use LEAP and its integrated online libraries for professional and personal development.

Our Code of Conduct and leadership principles set out our expectations of all who work for us: that all employees are treated fairly and respectfully by directors, managers and colleagues. Everyone at Springer Nature has a responsibility to help us maintain a safe and respectful workplace free from discrimination, harassment, unwanted physical contact, intimidation or bias. This is supported by training modules about values and conduct, which includes training on anti-harassment and unconscious bias. In 2018, more than 9,000 employees completed this training. An anti-discrimination policy will be rolled out in 2019. Our diversity and inclusion strategy is covered on pages 10–13 of this report.

Forging a common culture

Springer Nature has an established set of behaviours, rolled out to leadership and relevant to all employees, which aim to capture our culture and ways of working.

Our global leadership programme for both new and established senior managers enhances a common framework that reflects our company values. It aims to equip participants with the tools they need to lead their teams in a complex environment, while helping them to demonstrate our behaviours.

Since the start of the programme in 2016, 607 leaders have attended 58 programmes, delivered in four languages at locations around the world.

In line with one of our behaviours, listen and engage with people, we conducted our first Pulse engagement survey in 2018. These short, targeted employee ‘health checks’ give us an indication of how people are feeling. By holding them regularly, we’ll be able to keep track of our progress and make improvements.

In this first year, our engagement score was slightly below the global all-industry benchmark used by our survey partner Kantar TNS. For a relatively new global company (three years post-merger) just beginning to measure employee engagement in this way, we have been advised that this is a good result. But, we want to continually improve our engagement over the long term and, in particular, identify the reasons why certain business areas and locations exhibit lower levels of engagement.

The results of this initial survey will act as the baseline for future measurement and reporting. In 2019, our senior managers will use the results and open comments to identify our key issues. This may also lead to additional surveys about individual topics, or for specific groups or regions, helping us in the long run to improve employee engagement.

Looking after our people

In 2018, we adopted a global health and safety policy, which references both mental and physical health risks. This helps us to coordinate our initiatives and build on the work that individual offices have been doing. In the US, Germany and the UK, we provide a confidential assistance service to employees and their families when they need advice or support on issues related to stress, finances or health and wellbeing.

We also provide training modules in related areas, including resilience and stress management.
Responsible business practices

Code of Conduct
Our businesses have a strong set of common values and a collective desire to have a positive impact on society. Springer Nature’s Code of Conduct and our Code of Conduct for Business Partners are essential frameworks. They set out the guidelines and boundaries of how we treat each other as colleagues, suppliers and customers.

The codes of conduct build on the clear vision that describes how we operate:

• As proactive partners, we build strong relationships with our suppliers and customers based on mutual respect and trust. This ensures that we can all benefit from collaboration.

• As quality champions, we work harder to ensure the job is done in the best possible way. This means always acting with honesty and integrity, applying the same high standards to how we do things as to what we do.

• As industry pioneers, we have a responsibility to set an example for the rest of the publishing world. We should always strive to use our influence for good.

Springer Nature considers compliance with the laws and regulations that impact our business to be an essential part of acting responsibly. This means that:

• we will adhere to all applicable laws, even if this involves a business disadvantage

• where national laws are more restrictive than our internal policies and guidelines, national laws take precedence. Equally, where local laws are less restrictive, we expect our employees and other representatives to follow our own codes and global policies.

Publishing and editorial policies
We believe that scholarly communication is aided by making our operating processes more transparent. Demonstrating our joined-up approach to being the most progressive research publisher, in 2017 we created a new home for our publishing and editorial policies on our website.

Developed in consultation with the research communities we serve, including our authors, peer reviewers, external editors and library customers, our policies underpin:

• our respect for academic independence

• our commitment to giving authors a real choice in the mode of publication for their research

• an understanding that this research needs to be published quickly while still commanding the highest level of trust

• our responsibility in safeguarding the scientific accuracy of the published record

• our understanding of the changing needs of the academic community.

We are working with our partners, and particularly our external editors, to make sure that these standards are well understood by everyone who contributes to our publications.

Respect for human rights
We follow the UN Global Compact, the OECD Guidelines for Multinational Enterprises and the standards issued by the International Labour Organization (ILO), and expect our business partners to do the same. Our annually updated Modern Slavery Statement sets out more fully how we monitor and address these areas in our supply chain.

We recognise the important role that international business plays in the fight against corruption. In addition to our internal policies, our chief risk and compliance officer represents Springer Nature in the International Chamber of Commerce UK Committee on Corporate Responsibility and Anti-Corruption Policy, and contributed to the OECD/G20 Anti-Corruption Ethics and Compliance Handbook for Business.

We monitor and audit our supply chain for issues including labour standards, data protection/information security and anti-corruption. In 2018 this programme covered 172 suppliers, with active monitoring of 50 of those in 2018. The majority of higher risk observations were in the area of health and safety and action plans are implemented with oversight by the Springer Nature employee responsible for the supplier relationship.

EMPLOYEE WELLBEING

In September 2018, colleagues in New York held a Health and Wellness Fair. At the event, staff could speak to a variety of health specialists, including acupuncturists, nutritionists, representatives from sports clubs and financial advisors, receive podiatry assessments and BMI screenings, and use massage chairs. The fair demonstrates our willingness to support every aspect of employee health.

We have a dedicated Wellbeing Group in the UK, with volunteer Wellbeing Champions who embed this role into their working day. They direct colleagues to available resources and support, shape our wellbeing agenda in the UK and play a key role in fostering a positive culture. The group provides a vital forum, giving colleagues access to the support they need to thrive at work.

In offices in a number of countries we have rooms dedicated to employee wellbeing, including quiet rooms. In New Zealand, the relaxation room provides space for reading or yoga and the team hold regular discussions on the theme of health and wellbeing.
The main areas of risk in our supply chain and how we audit them

<table>
<thead>
<tr>
<th>Risk assessment</th>
<th>Contractual clauses</th>
<th>On-site audits</th>
<th>Pre-contract due diligence</th>
<th>Ongoing monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>We reassess our supply-chain risks every year, looking at the types of goods and services provided, the locations of suppliers and the estimated annual level of spend.</td>
<td>We are starting to include ethical conduct clauses, including audit rights, in the contracts of relevant suppliers.</td>
<td>We review our highest-risk suppliers every year. Suppliers with whom we spend at least €100,000 per year, and who work for us in higher-risk territories, are also independently audited at least once every three years.</td>
<td>All significant potential suppliers that are in scope for active management are required to complete a due diligence questionnaire.</td>
<td>All relevant suppliers are required to complete and update our labour standards questionnaire every three years (unless they have been audited within the required timeframe).</td>
</tr>
</tbody>
</table>

Tax strategy
We commit to contribute a fair share of tax. We structure our tax affairs efficiently, in line with legislation and customary practice in the jurisdictions where we operate, and do not tolerate tax planning that might give rise to a tax result contrary to the letter and clear intentions of the regulation and legislation. We subscribe to initiatives that increase tax transparency. The effective tax rate (i.e. adjusted weighted average rate) of the Springer Nature Group for 2018 is approximately 30%. Our tax strategy for the year ended 31 December 2018 is published on our website: www.springernature.com/responsiblebusiness.

Digital security and data protection
We aim to be a data-driven and customer-centric organisation, offering valuable services and insights. We recognise the potential risks to customers, staff and company reputation if we don’t ensure the security and resiliency of our data and our systems.

We have therefore established several technical and organisational measures designed to protect our systems, commercially sensitive information, and other customer and staff data. These include embedding ‘security first’ principles into our application development process, and rolling out security initiatives at infrastructure and server level.

In 2018, around 800 staff received GDPR training.

General Data Protection Regulation
Springer Nature has always taken a responsible approach to data protection compliance. Our data protection programme is based on, and compliant with, the European General Data Protection Regulation (GDPR) and is applicable globally throughout our business.

In February 2018, we established a central data protection office, led by the group data protection officer. This team works closely with business stakeholders to ensure that we handle both staff and customer data in a secure and compliant manner. It is responsible for giving advice, training staff, conducting privacy impact assessments of new systems, and reviewing our existing processes to ensure they remain compliant. In 2018, around 800 staff received either department-specific or general GDPR training.

We also adopted a new Global Privacy and Information Technology Policy, covering the collection, use and security of information. This provides a framework for implementing and maintaining group standards whenever personal or confidential information is handled.

IF YOU SEE SOMETHING – SAY SOMETHING
We encourage our employees and business partners to raise any questions or concerns they have about the way we operate as soon as possible. Our message is, “If you see something – say something”. Any authors, suppliers, editors and customers who don’t wish to contact us directly can use Speak-Up, a confidential whistleblowing system.

All reports received – via Speak-Up or directly to our compliance officers – are reviewed, redirected if appropriate, escalated where necessary and actions reported to senior leaders. Summaries of the most significant reports are provided to Springer Nature’s supervisory board twice a year.

In 2018, a total of 233 reports were received, 173 via the Speak-Up system. There were 132 reports related to areas covered by our Code of Conduct. This reflects a significant increase in volume of reports received on previous years, which is a positive reflection of the effectiveness and growing awareness of our system.

In line with our long-term commitment to support employees and others in raising their concerns, we appointed Dr Thomas Thiekoetter as our ombudsman in 2018. Dr Thiekoetter can be contacted directly or through Speak-Up.
RESPONSIBILITY TO THE ENVIRONMENT

Managing environmental impacts

Our environmental footprint shows that the impact of our operations, although not insignificant, is modest for a company of our size. We are office-based, with no manufacturing operations, although the dispersed locations of the markets we serve means many of our people travel regularly, often by air.

In 2018, we reduced our carbon emissions by 18% (net)
With respect to the environment, we believe we can make the biggest contribution to the UN’s SDGs by:

- enhancing international access to robust and policy-relevant science (relevant to several goals but especially SDG 17: Partnerships for the goals)
- looking carefully at how we can reduce our own carbon footprint (SDG 13: Climate action)
- working with our supply chain to reduce the potential negative impacts of paper production (especially relevant to SDG 15: Life on land).

**Disseminating trusted science**

With much public concern over misinformation on environmental issues such as climate change, we recognise that our role as a trusted publisher of credible research is to present evidence in an impartial and accessible way. Trusted and policy-relevant research, disseminated responsibly, is crucial to enable individuals, governments and companies to make informed choices.

**Responsible sourcing of paper**

Increasingly, our content is distributed digitally. Our research publications have led the move to online content, and there has also been a significant growth in print-on-demand for books and journals. This means that products are only printed when they are ordered, reducing waste. Our textbooks, journals and other learning materials, however, are still typically printed, and we used 32,178 metric tonnes of production paper in 2018. This represents a 3% increase against 2017, which is largely due to improved data gathering, allowing us to collect information on a wider range of products.

Because all our books and journals are printed by third-party suppliers, they source most of the paper used on our behalf. Our group-wide paper policy states that we will only use paper graded 3 or 5 stars in the Publisher’s Database for Responsible Environmental Paper Sourcing (PREPS). This means that it must come from known, legal and responsible sources.

Our environment committee, comprised of senior executives from across the business, has worked with the procurement and purchasing teams to gather data on the paper sourced for our products, to ensure compliance with our policy. Beginning with our largest print suppliers, representing around 74% of our overall paper supply, we shared the updated paper policy and introduced a new reporting process to monitor compliance. We received a good response to our first data request from these largest suppliers and we are now working with those that found it harder to answer all the questions, to understand their data systems and how they can demonstrate compliance with our requirements.

For the surveyed printers, we were able to confirm that more than 80% of the paper used by them for our products was in compliance with our responsible paper sourcing policy. Around 10% was ungraded, and we are working with suppliers and PREPS to grade these papers to confirm compliance. A further 10% was graded 1 star in PREPS, which is not compliant with our policy. The majority of this related to one paper type, and we have already taken steps to source alternative papers that meet the paper policy.

In 2019, we will work with PREPS and our largest suppliers to ensure we are using paper graded 3 star or 5 star wherever possible, or considering alternative paper stock where this is not possible. We aim to phase out paper stock that does not comply with our policy, unless a strict exceptions process has been followed and the paper use approved by a senior manager. We will continue to audit our most significant suppliers to ensure their ongoing compliance with our responsible sourcing of paper policy.

**OPEN AND TIMELY ACCESS TO ENVIRONMENTAL RESEARCH**

We mark global awareness days by creating, promoting and offering free access to relevant content. During 2018, our Earth Day and World Environment Day campaigns featured blog posts and curated content on key themes such as plastic pollution, the urban environment, water issues and the 1.5°C Paris Climate Agreement target. Visitors to our pages were particularly interested in content related to ocean plastics and to water resources in urban environments.

Springer Environmental Sciences has compiled a collection of open access books covering a wide range of environmental topics.

In a year that has seen the devastating effects of forest fires, it is also timely that we have added the journal *Fire Ecology* to the SpringerOpen portfolio. It features articles on the ecological and management aspects of wildland fires.
Understanding the impacts of our operations

In 2018, we gathered environmental data from 46 core sites, representing approximately 77% of our total building area, 80% of our energy consumption and 88% of our headcount. Data is extrapolated for the remainder of our sites.

Our energy and carbon footprints

<table>
<thead>
<tr>
<th>Net greenhouse gas emissions ( tonnes CO₂e)* 2018</th>
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<tbody>
<tr>
<td>Total</td>
</tr>
<tr>
<td>32,439</td>
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</table>

- **Scope 1**: includes emissions associated with the use of natural gas, diesel (for back-up generators), fuel for fleet vehicles and estimated fugitive emissions of F-gases from air-conditioning systems.

- **Scope 2**: includes emissions associated with the use of electricity and district heating.

- **Scope 3**: includes emissions associated with business flights, leased building services (where service charges are included within a flat fee) and outsourced data centres. Data from our travel suppliers covers an estimated 78% of emissions associated with flights and the remainder has been extrapolated from financial data, erring on the side of overestimation. We align our carbon calculation methodology for business flights to that of our largest travel management company, BCD.

Energy efficiency at our sites

Electricity consumption at some of our largest sites has reduced compared with 2017. While weather conditions in 2018 were a factor, we are also seeing savings from energy-efficiency measures: for example, in our large Argentinian warehouse, the installation of LED lighting reduced annual electricity consumption by 13%. We also expect to see savings next year by implementing LED lighting in our largest Australian office.

Meanwhile, in India, six of our larger offices worked to revitalise the ‘switch off at night’ policy for lighting and equipment, engaging staff through an awareness campaign and training for new starters. These efforts are supported by the use of environmental sensors, timers and other controls where appropriate. The introduction of better air-conditioning controls at one of our large Indian offices has also seen a 14% reduction in electricity use compared with 2017, echoing earlier successes at four other sites.

One of our larger Indian offices, in Chennai, has introduced temperature sensors and software to manage air-conditioning levels. This has created a more comfortable work environment as well as saving energy. We have introduced LED lighting, which has reduced maintenance requirements, improved illumination levels and overall we have already reduced electricity consumption by 4% compared with last year.

Purchasing renewable electricity

Our gross carbon emissions (excluding the influence of renewable electricity purchasing) are level with 2017, with a 3% increase in flight emissions because of more complete data reporting by travel providers serving our Indian business and changes to official conversion factors. This was compensated for by a small decrease in energy consumption, including a 40% decrease in diesel generator usage in India thanks to fewer power cuts.

Our net carbon emissions fell by 18% compared with 2017, as we tripled our purchases of renewable electricity backed by energy-attribute certificates.

As our sites are mostly leased, we have limited scope for generating renewable electricity on our buildings. For Germany, we have committed to purchasing guarantees of origin certificates, equivalent to 3.5GWh of electricity per year for 2018 and 2019; this represents 90% of our German electricity usage in 2018. We also purchased I-RECs (international renewable energy certificates) equivalent to our entire 2018 electricity use in India. At some European sites, we purchase renewable energy under green tariffs, again backed by certificates.

In total, in 2018 we sourced energy attribute certificates equivalent to 71% of our total usage, compared with 17% in 2017.
We acknowledge that purchasing renewable electricity certificates is an interim measure in addressing the causes of climate change. Given the urgency expressed in the UN Intergovernmental Panel on Climate Change (IPCC) report in October 2018, however, we feel it is right to complement our energy efficiency savings by signalling our commitment to a green energy future. In 2019, we will continue to explore opportunities for greater energy efficiency, including conducting energy audits at some larger sites and investigate the potential to include ‘off-grid’ renewable energy installations on our own buildings.

**Resource use and waste generation**

<table>
<thead>
<tr>
<th>Total paper use (t)</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office paper</td>
<td>106</td>
<td>118</td>
</tr>
<tr>
<td>Production paper</td>
<td>32,178</td>
<td>31,203</td>
</tr>
</tbody>
</table>

Table: Total paper use (t)

<table>
<thead>
<tr>
<th>Total site waste (t)*</th>
<th>2018</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,599</td>
<td>1,645</td>
<td></td>
</tr>
</tbody>
</table>

* See footnote 9 on page 32

In 2018, we worked to improve data collection on our resource use and waste generation. We have improved the methodology we use to calculate water use from bore wells in India, although the high consumption of unmetered ‘corporation water’ in the state of Tamil Nadu continues to pose challenges for data accuracy.

We now collect data on the use of office paper for all our 46 core sites: 33 provide waste generation data (four more than 2017) and 31 provide water consumption data (one more than 2017). On a like-for-like basis, office paper usage has reduced and recycling rates have increased following green campaigns in several large offices. Paper usage has also reduced due to greater digitisation. Water consumption for drinking and sanitation has remained level.

**Green Office Network**

In 2018, we launched a group-wide Green Office Network to generate ideas on how we can reduce the environmental footprint of our offices. More than 80 colleagues from more than 20 locations are now involved and we hope that the network will build over time, enabling best practice sharing between sites.

*“The Green Office Network helps us pull together the different initiatives and harness employee enthusiasm to do more. In January 2018, Macmillan Iberia created a CSR committee with representatives from across the business. We started by publishing a blog with a short checklist to find out how our central and regional offices were dealing with green issues and to ask all staff for ideas. Following an enthusiastic response, we prioritised a series of environmental awareness campaigns."

*“In April, we launched a campaign to reduce single-use plastic. With the help of the procurement team, we have greatly reduced the use of disposable plastic in catering and stationery, and eliminated plastic coffee stirrers. We partner with the Seur Foundation in its ‘bottle tops for a new life’ project, collecting bottle and container tops in all our offices. The money obtained from recycling them goes to children who need special medical treatment and orthopaedic aids."

*“We have also launched a campaign to turn off unnecessary lighting, working with cleaning contractors in our Madrid office to ensure all lights are turned off in the evening. Going forward, we are looking at a range of other options, including the potential to increase the proportion of hybrid and electric vehicles in our vehicle fleet, and options for upgrading the energy and water consumption of fixtures.”*

Paz Borroso, Chair, Spain Green Office Network

**Breaking our dependency on disposable plastic**

In 2018, we decided to stop wrapping our new and re-printed books in plastic before they are distributed for sale around the world. We have since reduced the tonnage of plastic we use in wrapping Macmillan Education materials by more than 75% since 2017. In other words, 5.6 million books were not wrapped in plastic due to the change.

“A review in the catering facilities at our London campus found that 42% of the waste produced was single-use plastic. We set ourselves a target to reduce this to 8% by the end of 2019.

*“Ceramic mugs for hot drinks were already available in kitchens with dishwashing facilities. We encouraged everyone to bring in their own reusable bottle for cold drinks. Paper straws are now offered, although we emphasise that it is better to not use a straw altogether.

“As part of our recycling system for the London campus, we work with Simply Cups to recycle single-use coffee cups. Wanting to do more, we offered a £2 contribution towards the purchase of one reusable cup for every employee at the site; more than 600 took up this offer. We encourage employees to bring their own cup by charging 50p extra for every hot drink that requires a disposable cup purchased in our café.

“As a result, between introducing the measures in September and the end of the year, we saved more than 40,000 single-use cups and stopped 24,000 single-use plastic glasses entering the waste stream. We will continue these initiatives in 2019, including examining food packaging and processes to identify opportunities for more reductions.”*

Mark Talbot, Head of Facilities Operations, Group Property

**Office waste recycled**

62%
RESPONSIBILITY TO THE COMMUNITY

Enabling access to education and science

Springer Nature is built on the foundations of companies that have, for almost two centuries, been committed to advancing learning and discovery. We do this by publishing content that helps young minds to love learning, students to achieve better results, academic researchers to build on past discoveries and disseminate their own findings widely, and professionals to continue developing throughout their careers.

We aim to enable access to equitable, quality education and science.
The responsibility we have to the community extends beyond our own activity as a publisher. We want to advance discovery by enabling access to equitable, quality education and science – to help curious minds to develop and grow. Around the world, we invest time and money in projects that share our aims and have a positive impact on society.

We use a framework for our contributions to the community that draws together, under a common approach, the programmes we support through financial or in-kind donations, or by encouraging our employees to volunteer their time. The framework explains how we will help people and communities to Discover, Learn and Achieve.

In 2018, we gave more than €870,000 in donations and sponsorship to charities and organisations to support projects and programmes that align with our aims. This includes education projects, travel and childcare support for early-career researchers, and mentoring in academia. Our employees also gave time towards a variety of projects that align with our framework and support our local communities.

In addition, we distributed resources such as books and equipment, and provided free and low-cost access to some of our subscription journal content in developing countries, through membership of programmes such as Research4Life and the International Network for the Availability of Scientific Publications.

We support a large number of individual projects, all around the world through financial donations and time volunteered by our staff. In these pages we highlight a small selection.

We gave more than
€870k
in donations and sponsorship to charities and organisations that align with our aims.

Responsibility business: contributions to communities

**DISCOVER**
Supporting programmes that open research to new audiences and promote research integrity and quality communication.

**LEARN**
Supporting projects that excite and inspire children and young people for a lifetime of learning and to develop the curiosity and skills to engage with science, technology and sustainability.

**ACHIEVE**
Advancing discoveries by enabling students and early-career researchers to deepen their research and professional skills and open up new opportunities for collaboration.

**OTHER EMPLOYEE-DRIVEN LOCAL ENGAGEMENT**
Springer Nature operating as a responsible local employer: other employee-driven local engagement in support of issues including medical research, humanitarian assistance and donating/sharing resources with local in-need communities.
Inspiring young people to pursue science and research careers

We want to make a difference to under-represented groups – including women and ethnic minorities – in science, technology, engineering and maths (STEM).

In London, we work with Urban Partners, a voluntary partnership of organisations that use their time, expertise and resources to benefit the local community and create a thriving area to live and work. We have been involved in two programmes that support young people from diverse backgrounds from the communities close to our offices in the King’s Cross area:

• Each week, we co-host a homework club, where volunteer staff provide free tutoring to more than 30 A-level students. Many of the 33 employees participating in this project tutor science subjects, because a large number of our employees have postgraduate degrees in these areas.

• We have also created a new mentoring scheme for students from a girls’ school local to our offices. Each month, around 30 volunteer mentors draw on their own experiences and knowledge to offer guidance and support to a group of 16 year olds. Together, they discuss plans for future studies, career ambitions and the perceived challenges the students face.

Through these initiatives, we hope to help young people to grow in confidence and be inspired to pursue study and careers in STEM.

Supporting literacy in India

In 2018, Springer Nature continued to support Door Step School, a charity based in India that seeks to address illiteracy among the country’s most underprivileged children. We have supported its mobile classroom for the past five years, helping underprivileged groups of children, including those living on the streets, access a basic education.

In collaboration with Orange, Springer Nature runs the annual EducaInternet contest, in which teachers and students create fun, innovative and original resources to demonstrate the safe and responsible use of technology. This helps them to adopt safe practices and promote the responsible use of information and communications technology to their pupils in a fast-changing digital world.

As a publisher with an ever-increasing amount of online content, we are dedicated to the safe, responsible provision of web-based information. In Spain, we support EducaInternet, a training platform for teachers to learn about the safe use of technology. This enables them to adopt safe practices and promote the responsible use of information and communications technology to their pupils.

We support Project Grow with Books, a joint initiative between Door Step School and municipal schools in Pune. Through 90-minute reading classes in primary schools, the programme aims to encourage reading and enhance the literacy capabilities of children. Springer Nature has supported this initiative by printing books for the children to read.

Alongside our support for children’s literacy and education, we also support a project designed to train teachers and crèche workers.
Academic scholarships in Germany
Springer Nature supports several scholarships for exceptional students and early-career researchers across the regions in which we operate. The Deutschlandstipendium (Germany Scholarship) is just one example of how we support the development of young scientists.

The scholarship is a public–private funding programme that provides targeted support to students expected to achieve outstanding academic results and go on to promising future careers. We have supported these scholarships since 2010 and now fund them at three German universities, each focused on a specific discipline:

• at RWTH Aachen, the scholarship is dedicated to medicine and dentistry
• at FU Berlin, it is awarded to students studying mathematics and computer science
• at Heidelberg University, the scholarship is for physics and astrophysics students.

In addition to academic achievement, the criteria for selecting scholarship recipients include social commitment and personal achievements, such as overcoming challenges in their past.

In 2018, one of these scholarships was awarded to Julius Vernie, a master’s student of physics at Heidelberg University.

Julius Vernie is awarded his Deutschlandstipendium (Germany Scholarship) by Renate Bayaz, Communications Director at Springer Nature.

*Springer Nature is well known to all students of physics. Every second physics book in the university library is published by Springer, and they stick out by their striking red spine. The renowned journals of the Springer Nature group, above all Nature, but also the science magazines from Spektrum or Scientific American, stand for sound science and the advancement of technology and society. So I was particularly pleased when I learned that Springer Nature – a company whose mission is the global dissemination of knowledge and discovery – sponsors my fellowship grant.*

Julius Vernie, scholarship recipient

Julius Springer Charitable Fund supports Water Multisystem Therapy, a therapy that helps children, teenagers and adults with autism.

SUPPORTING LOCAL COMMUNITIES
Julius Springer Charitable Fund
Since 2004, donations from the Julius Springer Charitable Fund (JSCF) have eased the financial burden of many people in need. The grants are divided into three target areas: individual people in need; a medium-term impact project selected by the JSCF’s board members; and projects in a chosen region where the company operates.

This regional focus supports specific projects or groups of people from low socio-economic backgrounds, determined through the engagement of local Springer Nature colleagues.

In 2018, our regional focus was on Italy, where we donated €25,000 to help two non-profit organisations in Milan that offer therapy and support for children with autism, severe mental illnesses and physical disabilities.
This is Springer Nature’s second Responsible Business Report. We have defined key performance indicators (KPIs) for our non-financial reporting and, where these were reported in 2017, have included two years’ worth of data. These KPIs are intended to reflect our responsible business strategy and goals, and reflect our impacts as a business.

### Economic

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue (€ billion)</td>
<td>1.64</td>
<td>1.66</td>
</tr>
</tbody>
</table>

### Our research content

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content published immediate (gold) open access (%)</td>
<td>30</td>
<td>29</td>
</tr>
<tr>
<td>Number of fully open access journals</td>
<td>597</td>
<td>604</td>
</tr>
<tr>
<td>Number of fully open access books</td>
<td>137</td>
<td>651</td>
</tr>
</tbody>
</table>

### People

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of full-time employees (headcount)</td>
<td>12,988</td>
<td>12,927</td>
</tr>
<tr>
<td>Number of full-time employees (FTE)</td>
<td>12,625</td>
<td>12,596</td>
</tr>
<tr>
<td>Number of employees by continent (headcount)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Europe</td>
<td>5,037</td>
<td>5,059</td>
</tr>
<tr>
<td>North America</td>
<td>873</td>
<td>1,097</td>
</tr>
<tr>
<td>Latin America</td>
<td>864</td>
<td>860</td>
</tr>
<tr>
<td>Asia</td>
<td>5,798</td>
<td>5,564</td>
</tr>
<tr>
<td>Africa</td>
<td>245</td>
<td>232</td>
</tr>
<tr>
<td>Oceania</td>
<td>171</td>
<td>115</td>
</tr>
<tr>
<td>Gender split – management board (% men/women)</td>
<td>83/17</td>
<td>83/17</td>
</tr>
<tr>
<td>Gender split – tiers one to three (% men/women)</td>
<td>59/41</td>
<td>61/39</td>
</tr>
</tbody>
</table>

### Environment

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total energy (MWh)</td>
<td>31,779</td>
<td>31,360</td>
</tr>
<tr>
<td>Renewable energy (MWh)</td>
<td>4,748</td>
<td>15,392</td>
</tr>
<tr>
<td>Greenhouse gas emissions (tonnes CO₂e)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scope 1</td>
<td>4,945</td>
<td>5,111</td>
</tr>
<tr>
<td>Scope 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>location-based emissions</td>
<td>12,312</td>
<td>11,845</td>
</tr>
<tr>
<td>market-based emissions</td>
<td>10,127</td>
<td>3,166</td>
</tr>
<tr>
<td>Scope 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>flights</td>
<td>20,751</td>
<td>21,449</td>
</tr>
<tr>
<td>leased building services (location-based emissions)</td>
<td>1,847</td>
<td>1,648</td>
</tr>
<tr>
<td>leased building services (market-based emissions)</td>
<td>1,617</td>
<td>639</td>
</tr>
<tr>
<td>transmission and distribution of energy</td>
<td>2,167</td>
<td>2,074</td>
</tr>
<tr>
<td>Water usage (m³)</td>
<td>117,370</td>
<td>117,852</td>
</tr>
<tr>
<td>Total site waste (t)</td>
<td>1,645</td>
<td>1,599</td>
</tr>
<tr>
<td>Waste recycled (%)</td>
<td>48</td>
<td>62</td>
</tr>
<tr>
<td>Office paper (tonnes)</td>
<td>118</td>
<td>106</td>
</tr>
<tr>
<td>Production paper (tonnes)</td>
<td>31,203</td>
<td>32,178</td>
</tr>
<tr>
<td>Production waste (tonnes)</td>
<td>Not reported</td>
<td>1,276</td>
</tr>
</tbody>
</table>

### Social impact

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash donations and sponsorship (€ thousands)</td>
<td>578</td>
<td>875</td>
</tr>
</tbody>
</table>

### Compliance

<table>
<thead>
<tr>
<th>Category</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff undertaken Code of Conduct training</td>
<td>95%</td>
<td>97%</td>
</tr>
</tbody>
</table>

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1. Includes research journal and review article content only, published in fully open access journals or within hybrid journals. Excludes editorials and opinion pieces.
2. At 31 December 2018.
3. Reporting line changes, as a result of restructuring in some parts of the company, had an impact on the composition of tiers one to three in 2018.
4. This figure includes energy used by sites where we have operational control, serviced sites and outsourced data centres. It excludes properties leased by Springer Nature to third parties.
5. In addition, our largest outsourced datacentre uses 100% renewable electricity, and we purchase energy attribute certificates corresponding to the electricity usage at sites we lease to third parties in Germany and India.
6. Additionally, ‘outside of scopes’ (‘biogenic’ part of biofuels) emissions are estimated at 84 tonnes.
7. This figure includes services sites and outsourced data centres. It excludes properties leased by Springer Nature to third parties.
How we report

Our Responsible Business Report focuses on performance and activities from 1 January to 31 December 2018. It includes case studies and other stories that, in some cases, refer to activity that began before 2018, where these are ongoing projects or are otherwise still relevant to work we did in 2018 or our most material issues. Previous reports can be found at www.springernature.com/responsiblebusiness

Springer Nature’s responsible business strategy and reporting is governed by a steering group and committees that oversee activity and communications, as outlined here.

We undertook an analysis to determine the most material issues to address in our report. We sought input and advice from sustainability professionals, strategy and market intelligence teams within Springer Nature and others who work closely with our external stakeholders. The report includes those issues deemed to be of high or medium materiality for Springer Nature, when considering stakeholder concern and impact on our business. The list of issues was reviewed and adapted at various points of the year to ensure that it remained responsive to emerging stakeholder concerns. Those deemed the most material are outlined in the table here.

<table>
<thead>
<tr>
<th>Summary material issue</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to research</td>
<td>Research – pages 14–19</td>
</tr>
<tr>
<td>Data privacy and security</td>
<td>Research – pages 14–19</td>
</tr>
<tr>
<td>Diversity and inclusion</td>
<td>Diversity – pages 10–13</td>
</tr>
<tr>
<td>Editorial standards and research integrity</td>
<td>Research – pages 14–19</td>
</tr>
<tr>
<td>Piracy and copyright</td>
<td>Research – pages 14–19</td>
</tr>
<tr>
<td>Research solutions to the SDGs</td>
<td>Supporting the sustainable development agenda – pages 6–7</td>
</tr>
<tr>
<td>Workforce engagement</td>
<td>People and partners – pages 20–23</td>
</tr>
</tbody>
</table>

8 Includes renewable electricity used at our largest outsourced datacentres, and sites covered under our purchases of energy attribute certificates in Germany and India.
9 Figure relates to typical office and warehouse waste streams and excludes recycling of unsold product, damaged production paper and construction waste.
10 Improved data gathering processes allow us to report this indicator for a wider sample (21) of our largest (‘core’) offices; 2017 data has been restated on the same basis. Data for our largest warehouses show these mainly have paper and packaging waste, most of which is reused or recycled.
11 This estimated figure comes from group-wide research and information taken from financial systems, and includes funds given in donations and sponsorships to charities and non-profit organisations to support projects and programmes that align with our aims.
12 Percentage of those staff registered for eLearning. Data is not captured for approximately 3,000 typesetting staff with no management responsibility; the Code of Conduct is shared with these staff via other means.