



AstraZeneca Biodiversity Position Statement

September 2024

Introduction

At AstraZeneca we recognise that a healthy environment is inextricably linked to the health of people, society, and the planet. We are taking action to protect and restore ecosystems by lowering the environmental footprint of healthcare whilst investing in nature and biodiversity.

There is an urgent need to operate within planetary boundaries¹ to halt and reverse biodiversity loss. We support the principles of the UN Convention on Biological Diversity (CBD) and share their 2050 vision of ‘Living in Harmony with Nature’. We are pushing the boundaries of science to deliver life-changing medicines in a way that is respectful of our planet. Our approach includes collaborating with experts such as the European Forest Institute (EFI) to utilise leading forest restoration techniques and share learnings from our global AZ Forest reforestation initiative. We lead the PREMIER collaboration, which aims to identify tools to address the environmental risks of pharmaceuticals. We are also working to follow emerging best practice, for example by becoming early adopters of the [Taskforce on Nature-related Financial Disclosures \(TNFD\)](#),² while leveraging tools such as ENCORE and nature-related methodologies from the Science Based Targets Network (SBTN)³ in our approach.

As we further our understanding of our connections to nature, we will continue to apply the [Conservation Hierarchy](#),⁴ by limiting environmental impacts across our value chain, investing more in nature and water stewardship, and maintaining our focus on protecting biodiversity around our sites.



What is biodiversity?

The UN Convention on Biological Diversity defines biodiversity as the variety of life forms that can be found in an area; from the variety of genes to the species diversity of all life that make up the ecosystems which underpin our planet’s ability to support life.⁵

We support the principles of the UN Convention on Biological Diversity (CBD) and share their 2050 vision of ‘Living in Harmony with Nature’.

Why we are taking action



Healthy ecosystems provide life-sustaining functions and offer solutions to environmental challenges, improving water quality, sequestering carbon, and mitigating flood risk. Biodiversity is also vital for pest control and pollination which, in turn, helps to ensure food security.⁶

Earth’s natural capital — such as water resources, forests, and biodiversity — is being depleted at an unprecedented rate that is faster than nature can replenish.⁷ This is putting the health of people and communities at risk. The degradation of nature also exacerbates other environmental challenges like climate change and its adverse impacts on the water cycle. For example, forest clearance can act as a source of greenhouse gas emissions (GHG), with deforestation currently responsible for 11% of all GHG emissions, placing additional pressures on ecosystems.⁸

The World Economic Forum (WEF) estimates that more than half of the world’s GDP depends heavily on functioning natural ecosystems,⁹ with the decline

of natural ecosystems threatening to disrupt many important supply chains including our own. Decreasing biodiversity also limits access to raw materials of natural origin that we rely on to discover, develop, and produce life-changing medicines.

How our activities interact with biodiversity

Quantifying impacts and dependencies on biodiversity across global supply chains is a complex challenge. We are following the science to develop a deeper understanding of our relationship with nature. This includes the role our business plays in known direct drivers of changes in the natural environment that negatively impact biodiversity, such as land, water, and sea use change, pollution, and climate change.¹⁰

Dependencies and Impacts

Direct drivers of change in nature	Examples of how our business potentially risks contributing to these drivers	Our approach to limiting impacts on biodiversity
<p>Climate Change</p> <p>Changing use of land, water and sea</p> <p>Pollution</p> <p>Resource exploitation</p>	<p>The facilities needed to make our medicines are energy intensive. Substituting our energy for renewable zero emission sources is an important step towards reducing our impact on the climate and achieving our Ambition Zero Carbon targets to be science-based net zero by 2045.³⁰ Whilst innovative, renewable energy sources present opportunities to reduce our environmental footprint, they also pose a risk of adversely impacting nature via unsustainable use of water bodies, natural resources, and land.</p> <p>Many of the chemicals and materials we use to manufacture our medicines, including solvents and single use plastics, come from fossil-based feedstocks. There are many suppliers attempting to provide bio-based alternatives, such as plastics derived from sugar cane.</p> <p>While many bio-based materials may have lower carbon footprints which support our broader climate commitments, the agricultural feedstocks from which they are produced risk contributing to indirect habitat conversion, increased water use, and pollution of nearby catchments from fertilisers. Following their useful life, the chemicals and materials used to make medicines, even if bio-based, often require treatment to be safely disposed of, and are typically incinerated rather than being reused, recycled or repurposed. This loss of resources further exacerbates the pressure on biodiversity from raw material extraction.</p> <p>Potential impacts on wildlife can also occur from low-level and/or long-term exposure to our Active Pharmaceutical Ingredients (API).</p> <p>Many pharmaceutical innovations are inspired by studying nature, from learning how the smallest of organisms, through to plants and animals from ecosystems around the world, overcome stressors or diseases. For example, one of AstraZeneca’s medicines was originally isolated from the salivary secretions of the Gila monster¹¹ native to the deserts of the southwestern United States and northwestern Mexico.¹²</p>	<p>Designing for circularity</p> <p>Resource efficiency</p> <p>Responsible sourcing</p> <p>Protecting nature</p> <p>Pharmaceuticals in the Environment (PIE)</p>

Our commitment

We are committed to supporting global progress towards the goals outlined in the Kunming-Montreal global biodiversity framework.¹³

We aim to:

- Reduce our impact on the planet through increasingly efficient, circular use of natural resources across the value chain to ensure responsible sourcing, consumption, production, and disposal.
- Protect and restore ecosystems to improve health outcomes and tackle environmental drivers of disease, such as water and air quality, through our focus on water stewardship and biodiversity.

Key areas of focus to support and restore biodiversity

Responsible sourcing

Recognising that AstraZeneca supply chains have the potential to impact biodiversity, we commit to developing a framework to systematically assess biodiversity risks and dependencies across our value chain by 2024. We will build on this knowledge to ensure all agricultural, forestry and marine-derived materials used in AstraZeneca products and research activities are sustainably sourced by 2028.

Deforestation risk

We support the Glasgow Leaders' Declaration on Forests and Land Use¹⁴ commitment to end deforestation globally by 2030. We are committed to demonstrating key forest risk commodities are free from deforestation and ecosystem conversion by 2025, in line with the Accountability Framework,¹⁵ focusing on: timber products (paper and card packaging, construction timber and cellulose), palm oil, and lactose.

Suppliers and water stewardship

We will partner with our direct tier 1 suppliers in locations with high water risks and withdrawing high volumes, to set water efficiency targets and adopt good water stewardship practices. We will also partner with our suppliers to mitigate water risks to our business while supporting the wildlife and communities that rely on the same water supply.

Investing in nature restoration within and beyond operations

The twin biodiversity and climate crises require urgent and coordinated action. Investing in nature has a significant role to play in climate mitigation and adaptation for both nature and communities. We commit to going beyond minimising impacts on biodiversity from our operations and our value chain.

To do this, we will expand our investments in nature-based solutions, and through our global AZ Forest programme we have committed to ensure the long-term survival of 200 million trees, working with communities to maximise the co-benefits reforestation can bring to the local context.

As we progress our understanding of how and where our business interacts with nature across our value chain, we are prepared to take action. Starting in 2024, we are investing up to \$5m per year to fund nature and water stewardship projects through our annual Climate Adaptation and Nature fund.

Biodiversity reporting

We will develop systems and follow the emerging science to transparently communicate our progress on how we are supporting and protecting biodiversity. By the end of 2024, we will map and report AstraZeneca's nature-related dependencies, impacts, risks, and opportunities, in line with the TNFD framework.

By 2025, we will set credible, science-led targets to halt and reverse biodiversity loss from business activities across our value chain, working with partners to protect and restore the ecosystems on which we all depend.

Our strategic approach to nature and biodiversity



We are working to further characterise and reduce our impact on biodiversity, whilst also investing in nature restoration projects that benefit the health and resilience of our societies and the natural world.

Biodiversity is embedded within AstraZeneca’s sustainability strategy and is included within the three interconnected material focus areas of our Environmental protection pillar – Ambition Zero Carbon, Product sustainability and Natural resources. Through these, we are driving action across our value chain to contribute to the UN’s Sustainable Development Goals (SDGs).¹⁶

To evaluate our contribution we have mapped how our progress and metrics impact the SDG targets.



- SDG 6 | Clean water and sanitation
- SDG 12 | Responsible consumption and production
- SDG 13 | Climate action
- SDG 15 | Life on land

Contribution to the Sustainable Development Goals (SDGs)

We leverage our Life Cycle Assessment (LCA) programme, in line with ISO standards 14040 and 14044, to determine the type and magnitude of environmental impacts across our product value chains. The LCA programme measures the environmental impact caused by the manufacture, distribution, use, and disposal of our products across many of the drivers of biodiversity loss (e.g., pollution, climate change, water use) and allows us to track progress towards our targets. By considering a range of impacts and by identifying hotspots where the greatest gains can be made, we can both estimate the negative effects on biodiversity and take action to address them. We aim to adopt a holistic approach to ensure that any reductions in biodiversity impacts are absolute and do not simply shift the environmental burden elsewhere.



Science Based Targets for Nature AR³T Action Framework

Our Alignment to AR³T

Our current Environmental protection strategy aligns with the Science Based Targets Initiative Action Framework (AR³T). We have prioritised our targets to enhance efficiency within our products and operations to avoid environmental impacts and reduce pressures on biodiversity. We have also begun efforts to restore and regenerate nature.

We are following the TNFD LEAP¹⁷ approach to strengthen our decision-making with nature-related data from across our value chain as we continue to build partnerships to transition towards more environmentally conscious approaches. These range from our commitment to water stewardship and responsible sourcing, leading our industry in the management of Pharmaceuticals in the Environment (PIE), to our increasing use of circular business models.

Key initiatives to address our impacts and dependencies on nature



Our research and development

AstraZeneca adheres to the principles of the Nagoya Protocol

In line with the Protocol's aim to protect and value nature, when developing new medicines, we carry out due diligence on research and development projects that use genetic resources, some of which are sourced from the natural environment. Assessments on our use of genetic resources are conducted in accordance with regional and national access and benefit-sharing legislation. To ensure there are no delays to the development of our medicines, access and benefits of sharing biological resources underpin our [Bioethics Policy](#).

AstraZeneca adheres to Cartagena Protocol on Biosafety

In some aspects of our research and development, AstraZeneca must work with biohazardous, or potentially biohazardous, materials. We have strict standards and procedures in place to manage the risks associated with handling biohazardous materials. AstraZeneca fully complies with the security measures required by the Cartagena Protocol, and a Global Biosecurity Procedure is in place that requires appropriate security for all relevant materials, whether or not there is a specific national legal requirement. This procedure applies to all parts of the business.

We also provide training to relevant employees to increase awareness of associated “dual-use” concerns linked to scientific research.¹⁸

Our suppliers

We recognise that our reliance on external suppliers to manufacture many of our medicines risks displacing our impacts from AstraZeneca sites to our supply chain partners. We are working with our partner network to support them in embedding sustainability into their business. Through our [Supplier Sustainability Framework](#), we share guidance from our own experiences and ensure our own teams source from partners who share our values.

To limit our own contribution to climate change and its impact on biodiversity, we are working closely with our supply chain partners to reduce our Scope 3 emissions, which represent over 90% of our GHG footprint. Our verified science-based Ambition Zero Carbon targets are to halve our entire value chain footprint by 2030, on the way to a 90% reduction by 2045. To help us meet these targets, we aim for 95% of our suppliers by spend, covering purchased goods and services and capital goods, and 50% of our suppliers by spend, covering upstream transportation, distribution and business travel.

Through the [Sustainable Markets Initiative \(SMI\) Health Systems Task Force](#), a public-private partnership chaired by our CEO Pascal Soriot, we are also taking action to accelerate the transition to net-zero across the healthcare sector. Furthermore, in collaboration with industry peers and Schneider Electric, we founded the [Energize](#) programme, which helps healthcare industry suppliers access renewable electricity at scale, and thereby supports our Scope 3 emissions reductions. We have also joined forces with our peers to accelerate the decarbonisation of API supply chains, helping suppliers through the [Activate Programme](#).

AstraZeneca fully complies with the security measures required by the Cartagena Protocol, and a Global Biosecurity Procedure is in place that requires appropriate security for all relevant materials, whether or not there is a specific national legal requirement.

Our raw materials

Responsible sourcing

We are taking steps to tackle the risks of deforestation and other biodiversity pressures from known high impact commodities within our upstream supply chain, as identified by [SBTN's value chain assessment tools](#). We aim to have sustainability action plans in place for 12 of our identified key materials of natural origin by 2025.

We have initially focused on the timber and palm oil used in our products as these key forest risk commodities are responsible for a large share of commercial tropical and sub-tropical deforestation.²³

Timber

Timber products are used in both our secondary paper-based packaging, such as leaflets and cartons, and tertiary packaging, such as cardboard.

We committed to ensure that, by the end of 2022, more than 95% of our paper-based secondary and tertiary packaging would be sourced from sustainably managed forests.²⁴ Over the last three years, we have achieved our target of 95% of paper-based product packaging materials used being supplied from sustainable sources. We are continuing to monitor and report our progress to sustain this commitment.

We assess our supply chain against certification schemes that aim to safeguard biodiversity by protecting healthy, resilient forests. We work with suppliers who can provide Forest Stewardship Council (FSC), Sustainable Forestry Initiative (SFI), or Programme for the Endorsement of Forest Certification (PEFC) supply chain assurances for our end products.

Palm oil

Palm oil derivatives are used as excipients within some of our products, primarily as stearic acid which is used to make the magnesium stearate for our medicine capsules. Some of the other materials we use such as propylene glycol, glycerol and citric acid can also be generated using palm oil derivatives.

Of the >70 million tonnes²⁵ of palm oil produced globally each year, our use represents less than 0.001% of global demand. Despite these low volumes, we recognise the need to mitigate the social and biodiversity risks associated with farming palm oil. We are building partnerships to improve our understanding the associated nature-related risks and to inform our approach to minimising the pressures on nature caused by this dependency. We have identified that magnesium



stearate accounts for a significant amount of palm oil derivatives we purchase, and we are continuing to systematically identify additional sources of palm oil derivatives back to tier-n of our supply chain. Read more in our joint paper with WWF, [Assessing water risks of commodities](#).

Horseshoe crabs

In addition to widely used commodities, including those identified in our Responsible Sourcing Framework, we recognise that specific pharma sector activities can impact specific species. The TNFD recommendations are helping us to progress our understanding of these impacts and dependencies. For example, in order to ensure a subset of our products are safe for patient use, there are regulatory requirements that Bacterial Endotoxin Testing must be performed. Tachypleus or Limulus Amoebocyte Lysate (TAL and LAL), an extract from the blood of horseshoe crabs, has historically been the only available source for this critical activity.

We are actively taking action to address our sector's dependency on this species through a range of activities. These include ensuring no further collection of TAL, to avoid commercial pressure on this endangered species, and instead using LAL, which come from a better understood fishery. We will also continue to progress the work we have already started to significantly reduce our use through more efficient test methods, and to responsibly transition to more recently available synthetic alternatives whilst maintaining patient safety and meeting regulatory requirements.

Read more about our approach to optimising bacterial endotoxin testing in the [European Pharmaceutical Review](#) and the [Pharmaceutical Supply Chain Initiative](#) position paper on the use of horseshoe crabs.

We have achieved our target of 95% of paper-based product packaging materials used being supplied from sustainable sources.

Our operations

We set ambitious targets to drive resource efficiency within our operations across water, waste, energy, and carbon and we are on track to achieve our reduction goals from our 2015 baseline, decoupling our consumption from our continued business growth.

We have a dedicated Natural Resource Efficiency Fund, which has invested approximately \$150 million in environmental efficiency innovations since 2015.



Efficiency projects at our sites

Production processes at our Coppel site in Texas, US, generated a large volume of silica waste with a high water content. The Natural Resource Efficiency Funds supported a project to neutralise and separate silica from the water using filter presses, resulting in an 80% decrease in waste sent to landfill (>5,000 tonnes annually as production rates increase) and enabling the water to be sent for further wastewater treatment. Following project completion in early 2022, the team is exploring opportunities to reuse the water onsite, as well as local opportunities to repurpose the residual waste.

To better meet new regulations in the Taihu-Yangtze River basin in China, our Wuxi site upgraded its wastewater system in 2022. A new wastewater treatment plant enables treated wastewater to be reused, saving 25,000m³ of water every year. This is approximately 10% of the current site water footprint. To meet future needs, the system has the capacity to reuse up to 20% of the water treated.

Our products

Pharmaceuticals in the Environment

Pharmaceuticals in the Environment (PIE) is our most material water quality risk, with a potential to directly affect biodiversity. Many pharmaceuticals are biologically active molecules and can interact with and impact non-target species when in the environment, which primarily occurs as a result of patient use.



Through our environmental risk assessments, we identify safe concentrations for our APIs. We use them to manage our own manufacturing emissions and those of contracted manufacturing organisations (CMOs), reporting our performance against our rolling annual targets. These safe concentrations are also used in our Ecopharmacovigilance (EPV) programme to track measured environmental concentrations of our APIs as well as information on potential ecological effects published in the scientific literature. The data is utilised both to ensure our risk assessments remain in line with the latest scientific advances, and to guide any required management activities. We transparently share this data, presenting the information in an [interactive EPV dashboard](#). We were the first pharmaceutical company to share this data. Find out more in our [Pharmaceuticals in the Environment Position Paper](#).

In most cases, our environmental risk assessments demonstrate that PIE resulting from patient use poses low or insignificant environmental risk and the presence of these trace levels is unlikely to cause adverse impacts. In regions with inadequate sewage treatment, a high population density, and rivers with low flow conditions, we have the tools to identify these ‘at risk’ situations and devise appropriate solutions to avoid impacts on nature.

Designing for circularity

Incorporate the principles of the circular economy into the design of all our processes and products, from initial research and development through to production



The shift from a take, make, waste economy to a circular one has immense opportunities to halt biodiversity loss.¹⁹ We aim to contribute to the growing circular economy, a concept based on the idea that resources should be retained and regenerated in the same way that natural ecosystems reuse and recycle chemicals and nutrients to generate new raw materials. We follow the principles of the Ellen MacArthur Foundation to eliminate waste and pollution, circulate products and materials at their highest value, and to regenerate nature.²⁰

Guidance on our Circular Economy approach, including our focus on action at the top of the waste hierarchy,²¹ is provided to all our employees within our global standards.

Resource efficiency

By implementing more efficient processes to develop and produce our medicines, we are reducing resource consumption across our value chain and helping to reduce the pressures on natural ecosystems.

We use a metric called process mass intensity (PMI)²² to measure our raw material efficiency for all products as they are developed. PMI is measured as kilograms of raw materials used to produce a kilogram of the final API. A lower PMI means we are using materials more efficiently. We set challenging targets for new API production processes across our pipeline which we aim to meet at launch.

Our verified science-based Ambition Zero Carbon targets are to halve our entire value chain footprint by 2030, on the way to a 90% reduction by 2045, to become science-based net zero.

Protecting and restoring nature and biodiversity

Beyond our work to measure and limit our environmental impacts, we aim to protect and invest in nature. Nature Based Solutions (NBS) are defined by the European Commission as “innovations inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience”.²⁶ Our investments in NBS aim to tackle the twin crises of climate change and biodiversity loss, and their impacts on human health. NBS will play an important role in our climate and nature strategies, but will be in addition to and alongside deep decarbonisation of our value chain and the reduction of our impacts on nature. NBS can deliver multiple co-benefits, such as:

- Retained and restored ecosystem services from forests, wetlands, croplands, and other coastal ecosystems that support health and wellbeing
- Biodiversity conservation and sustainable livelihood development
- Improved human resilience and increased capacity to adapt to the challenging impacts of climate change, such as floods, heat waves or droughts

Water stewardship

We are focused not only on how much water we use, but also on the long-term impacts of where and how we use this vital resource. We are adopting water stewardship practices to respond to growing water risks in the basins we rely on, and our approach is detailed in our [Water Stewardship Position Statement](#). Supported by our partnership with WWF and our membership with the Alliance for Water Stewardship (AWS), we have prioritised six sites located in water scarce areas across five countries. These sites face increasing water availability and quality risks as climate change impacts the global water cycle. By 2025, we aim to have long-term contextual water targets in place at these sites. This will help us mitigate site-specific risks, support shared local water challenges, and help us prepare for broader adoption of this approach across our site network and key suppliers.

AZ Forest

Tackling deforestation is key to preserving biodiversity. Globally, forests contain over 60,000 tree species and provide habitat for 80% of amphibian species, 75% of birds and 68% of mammal species.²⁷ Forests are also key to addressing climate change – they absorb around 30% of anthropogenic carbon emissions.²⁸ However, forest clearance and degradation can also act as a source of emissions.²⁹



[AZ Forest](#) is AstraZeneca’s global initiative to plant and maintain 200 million trees worldwide by the end of 2030 – aiming to mitigate the negative impacts of climate change, improve human health, and make a positive contribution to communities, local economies, nature and our planet. We have active projects in Australia, Brazil, Ghana, Kenya, India, Indonesia, Rwanda, Vietnam, the UK and the USA.

To ensure our projects are resilient to the risks they will face over the coming decades, and to maximise the environmental and social co-benefits, we partnered with the European Forestry Institute and the Circular Bioeconomy Alliance to develop the [CBA Principles for Landscape Restoration](#).

These Principles support the development of projects which promote ecological and community resilience. They ensure that AZ Forest projects are co-designed with planting experts and local communities to deliver natural restoration and agroforestry, supporting: the development of sustainable livelihoods and the creation of new jobs and skills, building habitat connectivity and local climate resilience, and providing ecosystem services such as water purification.

By developing circular bioeconomies and supporting sustainable livelihoods, our projects also address the drivers of forest degradation. Our approach is focused on ensuring trees are valued: as a source of food, commodities, sustainable timber, and for their ecosystem services. This helps to ensure the trees are protected and will thrive over the coming decades.

AZ Forest projects focus on building ecological and community resilience.

We ensure our projects utilise a diverse mix of locally appropriate species and carefully selected seed stocks to ensure they are resilient to pests, diseases and environmental change. For example, in Australia, AZ Forest has planted over 260 locally-appropriate species, many of which are expected to increase food supply for species like the koala, the regent honeyeater and threatened glossy black-cockatoo.

Since 2023, all new projects develop Biodiversity Recovery and Monitoring Plans which aim to maximise the potential for nature recovery in the project area. We will monitor the impact these projects have on nature with a range of tools including, camera traps, bioacoustics, eDNA and ecologist surveys.

Employee engagement

AstraZeneca employees actively contribute to local projects to restore nature. Our sites routinely organise employee events, such as tree planting and cleanups in local parks and river basins. The AstraZeneca Chennai and Bangalore sites have embarked on local forestation efforts, planting over 32,000 indigenous saplings. This activity, which has increased green cover by four acres, supporting reduced air and noise pollution, creating carbon sinks and mitigating urban heat island effects, is in addition to reforestation activities under our global AZ Forest programme.

Our global reforestation partner One Tree Planted supports employee-organised events near AstraZeneca sites, with many events held near our sites globally since 2022.

Employees can also contribute to our global forest restoration work through our employee recognition programme, which includes the option to use reward points on tree planting. In 2023, our employees opted to use their points to fund the planting of over 80,000 trees.

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Biodiversity at our sites

Although our land holdings are relatively small, we manage our sites in a way that supports sustainable ecosystems and encourages wildlife. Through our global Natural Resources and Biodiversity standard, we continue to apply best practice and actively manage biodiversity on our sites, including:

- **Local Biodiversity Action Plans (BAPs):** these are required for all sites >5 hectares and any site near an area of ecological importance. Our BAPs assess potential local biodiversity impacts of major sites within our global network and set out actions to conserve and enhance native habitats, create and maintain refuges for flora and fauna, and preserve links with the surrounding environment via green corridors of uninterrupted habitat.
- **The Conservation Hierarchy:** we follow the hierarchy steps to **avoid**, **minimise**, **restore**, and **offset** at sites where impacts on biodiversity are anticipated.

Footnotes

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