Environmental Sustainability in Pharma

A view on Pharma's progress towards positive impact

The pharmaceutical industry is no stranger to environmental regulation, often controlling emissions of air and water pollutants in order to minimise damage to the local environment from toxic and pharmaceutically active chemicals.

Over the past couple of decades, since the Kyoto protocol in 1997, broader movements towards reducing the effects of climate change have been introduced by nations aimed at all industries. The latest evolution of this movement is the Paris Agreement, ratified in 2015, that specifically aims to keep global warming to well below 2°C and preferably to no more than 1.5°C compared to pre-industrial levels by 2050.[1] The EU is aiming to go a step further with its European Green deal, introduced in late 2019, where it has committed to become the first climate neutral continent by 2050 and has allocated over €1tn to its objectives. These initiatives aim to provide a cleaner environment, affordable renewable energy, resilient industry, longer lasting products and a better quality of life.[2]

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There is a strong argument that health systems as a whole should be frontrunners in limiting the impact of climate change, as it strikes at the heart of population health: a changing climate will drive poorer outcomes, increase mortality and health inequity. These can arise from multiple causes, among them severe weather, extreme heat, a changing ecology of disease vectors, increased allergens and geopolitical conflicts over scarce resources.

4.4%

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The reality, however, is that unlike high-emission industries such as transport, mining and energy, the healthcare sector has generally kept a low profile in the public eye when it comes to sustainability questions. This is evidenced by the lack of research activity on quantifying the impact of the industry on the environment; one of the very few studies in circulation suggests healthcare contributed 4.4% of the world's carbon footprint in 2014[3] and likely to have increased since. When it comes to pharma, a study suggests that it is smaller in revenue, yet more polluting than the automotive industry, which may come as a surprise to many.

The findings also suggest that there are large variations of CO^2 emissions between different companies of a similar revenue size.[4] Note that they did not control for the disease area focus of these companies – a primary care specialist will have different logistical and manufacturing challenges than a company focused on rare diseases.

In addition, climate change will affect the pharma industry through various internal and external factors, some of which are listed in Figure 1. Broadly, these factors can be split into upstream and downstream effects that will either affect pharma or those where pharma can influence. These factors are not mutually exclusive and pharma will have a varying degree of influence over its ability to control these challenges. Minimising effluents in water and air pollution at manufacturing sites are easier to control than shifts in burden of disease or cultural attitudes towards health.

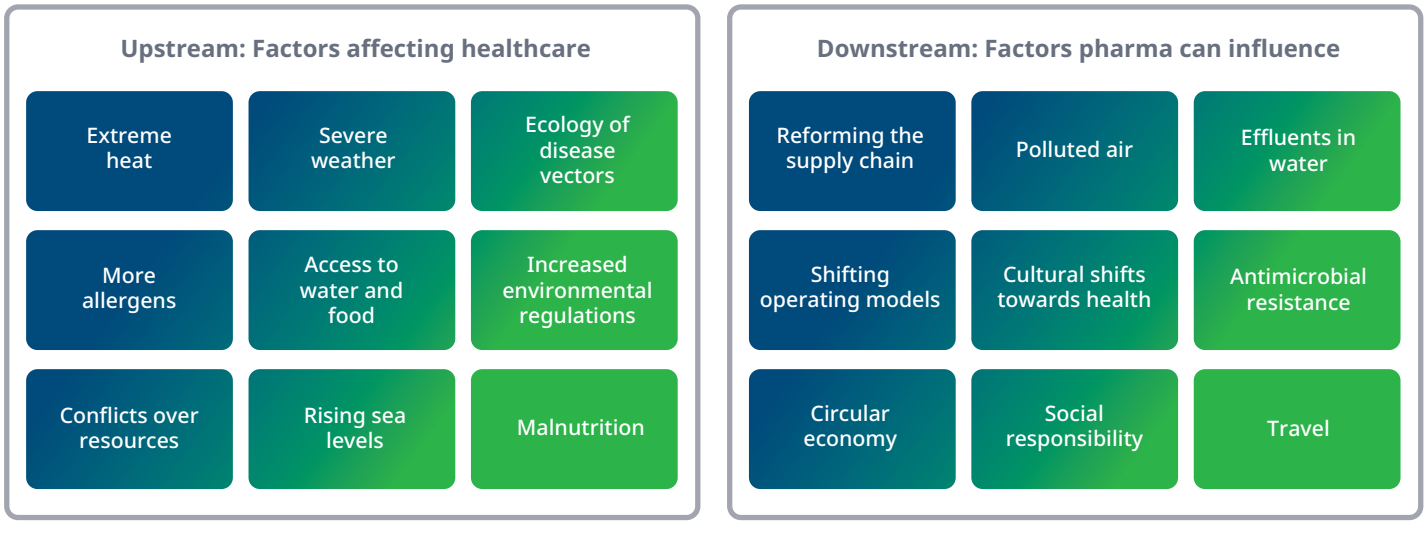
Pharma companies are subject to a country's regulations regarding sustainability and the environment, for example they must comply with legislation regarding clean air and water standards, such as the EPA's Management of Hazardous Waste Pharmaceuticals regulations in the US.

However, there are few regulations that directly target the pharma industry on areas such as reductions in greenhouse gas emissions and conservation of water.

Instead, the pharma industry has been looking to produce its own guidelines and take action proactively through industry bodies and think-tanks. The European Federation of Pharmaceutical Industries and Associations (EFPIA) recently released a white paper on climate change[5] outlining its members commitments to climate change. Several larger pharma companies have also come together to release the Biopharma Investor ESG Communications Guidance 2.0[6], which highlights areas of Environmental, Social and Corporate Governance (ESG) that pharma companies should prioritise.

These guidelines contain forward looking commitments to sustainability and incorporate standardised metrics to track commitments. However more needs to be done from industry bodies to advance guidelines into concrete action points that can be adopted by specific sub-sectors, such as companies operating within biotech, large pharma, generics, API, FDF, CDMOs, CROs, MedTech, packaging and others.

Figure 1: Upstream and downstream environmental factors



Source: IQVIA European Thought Leadership

Major public pharma companies have already shown leadership in these activities: Sanofi reduced its CO^2 emissions from refrigerants by 40% since 2015 levels, AstraZeneca being one of the first in the industry to have validated net-zero targets, Roche and Novartis historically running long-standing programmes dedicated to sustainability.

This is a good start, and expected from industry leaders, yet more needs to be done to increase awareness and action in smaller, private companies based in emerging economies. These frequently have a small molecule generics business model: manufacturing with low margins, but with a global reach. As of June 2021, 20% of all prescription medicine volume sold globally came from 10 companies and 30% from 20 (IQVIA MIDAS MAT Q2 2021, Rx-only).

To achieve significant change impacting 80% or more of the supply chain, around 500 companies need to come together to drive change (Figure 2). Of these 500, 40% of them are headquartered in India or China, 30% in Europe and 20% in the US which offers the possibility for cooperation from major jurisdictions.

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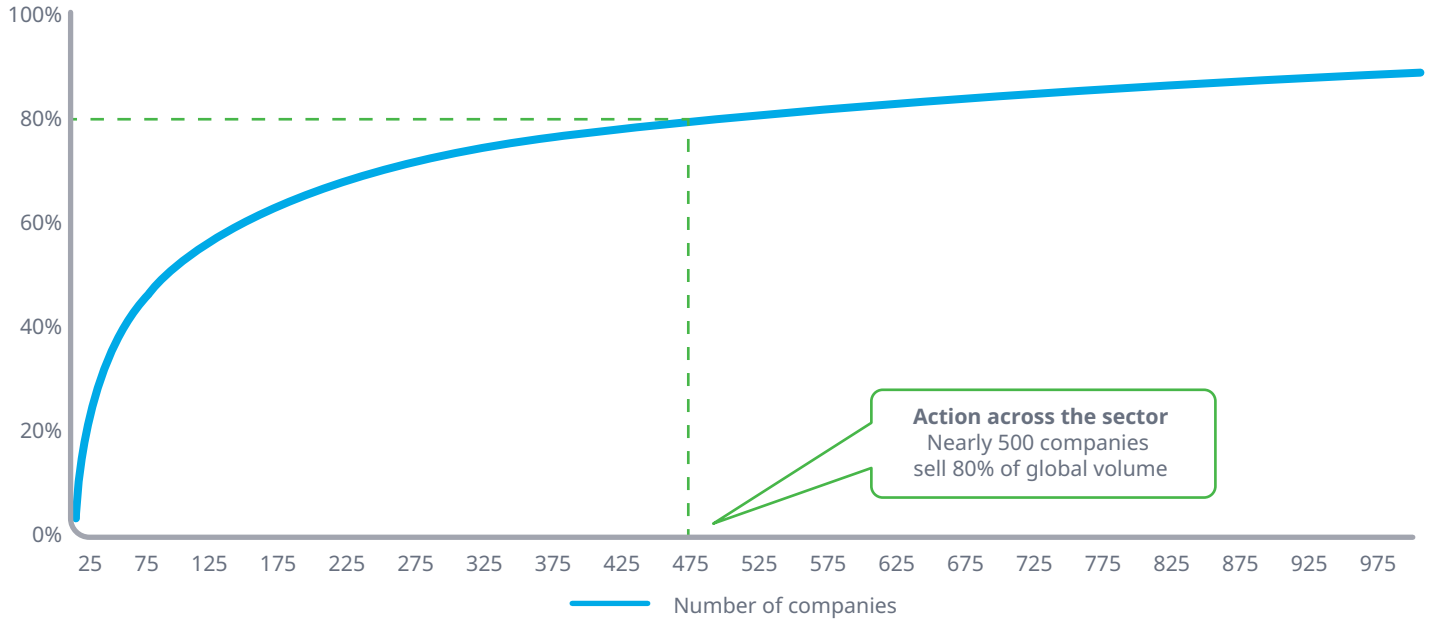
Further compounding the complexity is that these manufacturers often rely on multiple partners to manufacture their API intermediates, excipients and raw materials; this is why supply chain transparency is such an important area to tackle this problem.

Figure 2: Global Rx voume share per company *(Standard units, 2021)*



Source: IQVIA European Thought Leadership; IQVIA Midas MAT Q2 2021; Rx-only

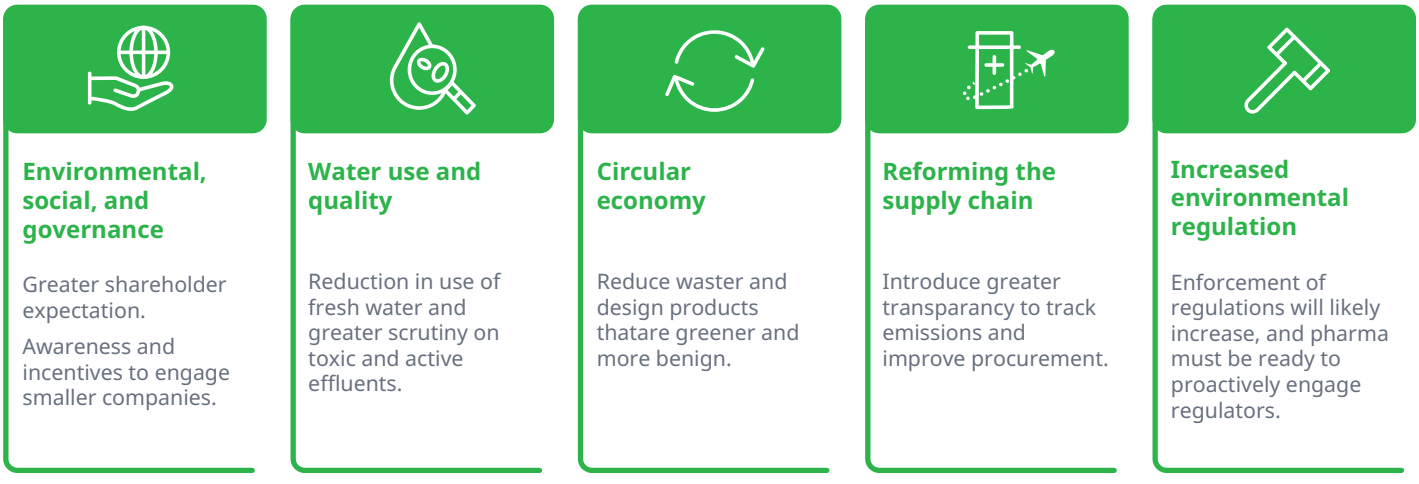
The top 5 areas that we have identified as key challenges (Figure 3) that pharmaceutical companies need to address in the near future are:

1. **Environmental, social, and corporate governance** — A greater shareholder expectation of accountability. There needs to be increased awareness and incentives to engage smaller companies and generics manufacturers
2. **Water use and quality** — A Reduction in use of fresh water and greater scrutiny on toxic and active effluents
3. **Circular economy —** Reduce waste and design products that are greener and more benign
4. **Reforming the supply chain —** Introduce greater transparency to track emissions and improve procurement
5. **Increased environmental regulation — Enforcement of regulations will likely increase, and pharma must be ready to proactively engage regulators

These factors will inevitably affect the internal and external pressures on a pharmaceutical company. Externally, investors will scrutinise how board members are selected and demand greater transparency and action. Regulators will force processes and that will affect operations from R&D through to manufacturing. Internally, Environmental, Social and Corporate Governance officers will be assigned to oversee initiatives and work with executives to drive change within the company. To ensure this happens in time, strong vision and leadership is required coupled with accountability from all employees across the entire value chain; companies need to communicate effects from higher-order collaboration derived from individual actions.

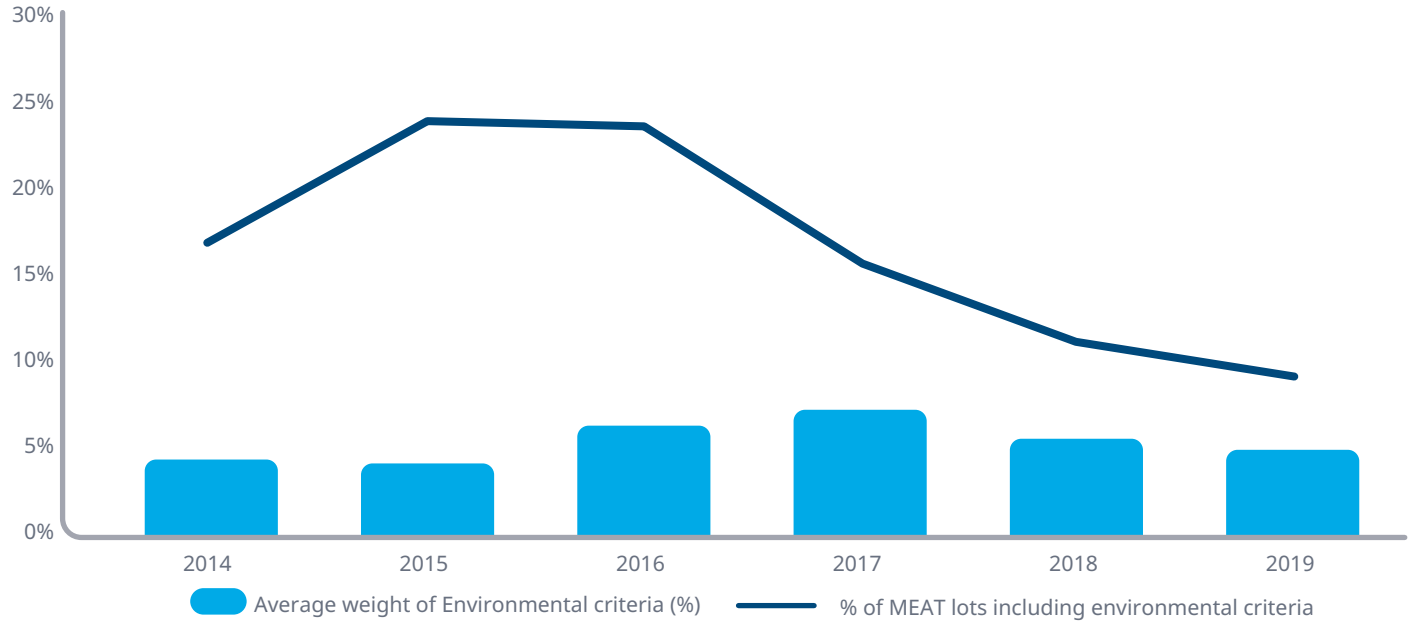
One of the key tools to drive change from supply partners is to implement sustainable criteria for procurement functions. Public purchasing in healthcare systems has a strong part to play in initiating the cascade of action. The movement towards greater sustainable criteria in tenders began with the Nordic countries, but is quickly gaining traction in other western nations.

Figure 3: Increased environmental regulations: Enforcement of regulations will likely increase, and pharma must be ready to proactively engage regulators



Source: IQVIA European Thought Leadership

Figure 4: "Environmental" criteria use in tenders (Denmark, Norway, France, Spain, and the UK)



Note: Environmental criteria excludes other related areas such as sustainability, recycling, social responsibility, packaging, energy use and others
Source: IQVIA European Thought Leadership; IQVIA THOR Database

A study in 2019 using 80,000+ Most Economically Advantageous Tender (MEAT) lots from IQVIA's THOR database across Northern Europe showed that MEAT tenders containing "Environmental" criteria peaked in 2016 and declined to 10% of all MEAT lots by 2019 (Figure 4). The weight of Environmental criteria broadly stabilised around 5%. Note that other related criteria such as sustainability, recycling, social responsibility and lifecycle cost were excluded from this chart, and these will have increased in proportion. As we look ahead, criteria that address environmental matters will increase in the near future and will begin to be adopted by smaller countries as stakeholders align to modernise tender practices.

As the industry reacts to pressure from social and environmental concerns, it needs to find ways to align profitability with greener operations. Recycling and purchasing renewable energy are proven methods of reducing waste and emissions, yet more focus is needed to design better medicines from the ground up. These might include greener synthetic routes, lower API use through novel formulations, or reusable devices. A green shift in early product design would be a real win for the industry as it attempts to align environmental sustainability with commercial success. Combined with value chain transparency and lifecycle analysis, this could pave the way for an industry-wide certification system with a sustainability score linked to medicine batches.

Currently, pilot projects and green devices show great promise, but their uses are confined to miniscule volumes compared to global medicines provision. More needs to be done by the industry to set ambitious science-based targets, influence supply partners and use technology to drive change, for example by driving adoption of virtual trials or introducing transparency between stakeholders. Collectively, these measures will go a long way to bringing environmental concerns into the mainstream.

References

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