Appetite for change: food, ESG and the nexus of nature

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Lessons from the COVID crisis

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Executive summary

- The COVID-19 crisis has demonstrated that humanity's understanding of its own relationship with the natural world remains inadequate – often dangerously so.
- The pandemic has particularly exposed the interconnectedness of numerous existential threats, all of which might be described as components of the "nexus of nature".
- One of the most perilous yet underappreciated of these threats is the unsustainability of prevailing attitudes towards food production and consumption.
- From the use of resources in developing countries to policies and practices around factory farming in the industrialised world, this issue affects the entire value chain.
- Guided by the idea of materiality and initiatives such as FAIRR*, investors are increasingly applying environmental, social and governance (ESG) principles in this sector.
- As well as promoting and protecting sustainable investments, these efforts are showing how positive change in one area can benefit the nexus of nature more widely.
- Interconnectedness means that the ripple effects can encompass concerns including deforestation, biodiversity loss, waste pollution, climate change and human health.

*Established by the Jeremy Coller Foundation, the FAIRR Initiative is a collaborative investor network that raises awareness of the environmental, social and governance (ESG) risks and opportunities caused by intensive animal production.

"Attitudes towards food production and consumption must be rethought. Mounting evidence indicates that the status quo is unsustainable."

2. Introduction

Maverick theoretical physicist Richard Feynman spent much of his life trying to unravel the mysteries of the subatomic realm. He enjoyed enormous success in this regard, earning a Nobel Prize for his work in the field of quantum mechanics, yet he suspected that many of the universe's secrets would likely stay forever undiscovered. "Nature's imagination," he once remarked, "far surpasses our own."

If he were still with us now, more than 30 years after his death from a rare cancer that defied cutting-edge medicine, he would surely discern the irony of a catastrophic pandemic striking in an age when humanity is so quick to celebrate its mastery of technological hyperconnectivity. For the problem, as Feynman was acutely aware, is that there has always existed another kind of hyperconnectivity – that which defines the natural world.

In this respect, as recent events have made clear, our understanding remains alarmingly inadequate. As the World Wildlife Fund states in its latest Living Planet Report: "Our relationship with nature is broken."[1]

Maybe nowhere is this uncomfortable truth more evident than in attempts to prevent another COVID-19-style disaster. Although much has been done to contain the virus's spread from one human to another, it is vital to recognise the wider significance of what we might call the nexus of nature.

In particular, the pandemic has underscored that attitudes towards food production and consumption must be rethought. This is a delicate and controversial subject – one that can invite awkward questions around customs, cultures, preferences and habits – but mounting evidence indicates that the status quo is unsustainable.

In this paper, we explore food production and consumption's position within the nexus of nature. We draw on expert insights from and interviews with representatives of Invesco and FAIRR, the foremost investor network in this space, to examine the issue through the prism of responsible investing.

We argue that incorporating material environmental, social and governance (ESG) considerations into investment decisions is essential to enhancing sustainability in this sphere. We also suggest that positive change is imperative and that investors, through the judicious allocation of capital and the power of active ownership, can play a critical role in bringing it about. Moreover, by supporting sustainable approaches to food production and consumption, investors can not only help transform this sector: they can also help tackle issues ranging from global warming to resource scarcity, from animal welfare to waste pollution, from the preservation of species to the safeguarding of human health. A key point is that the nexus of nature, if treated with respect, can deliver multiple opportunities and benefits – which is why we believe that interconnectedness is set to become one of the major investment themes of the years ahead.

"Many of the practices that have become commonplace in the face of ever-rising demand for animal protein have consequences that are both far-reaching and deleterious."

3. The nexus of nature

3.1. Prevailing practices and unlearnt lessons

The longer-term survival of our planet and its inhabitants is strongly connected to various existential threats that are themselves highly interrelated. They include climate change, overpopulation, deforestation, loss of biodiversity and – perhaps least appreciated – the ways in which food is produced and consumed. In turn, each of these has a major influence on our health and wellbeing.

The World Economic Forum's latest Global Risks Report underlines this. Eight of the 10 potentially most impactful risks over the next decade can be linked to humanity's tendency to take the natural world for granted. Only weapons of mass destruction and cyber-attacks can reasonably be thought of as removed from the nexus of nature.

Why is it so important to grasp how food production and consumption might fit into this picture? The short explanation is that many of the practices that have become commonplace in the face of ever-rising demand for animal protein have consequences that are both far-reaching and deleterious. There may be no better illustration than the circumstances behind the advent of COVID-19.

As has been extensively documented, one of the likeliest sources of the outbreak was a "wet market" where livestock was reportedly kept in close proximity to dead animals. Here, originating either in bats or pangolins, the virus is believed to have been transmitted to humans via a process of zoonosis.

Something analogous happened in the late 1990s, when the emergence of the Nipah virus provided a salutary demonstration of how the nexus of nature can function. Native fruit bats were driven from their traditional habitats by deforestation; they started foraging in trees near farms; through their bodily fluids, they infected land used for raising pigs; and the pigs duly passed the disease on to farmers and abattoir employees.

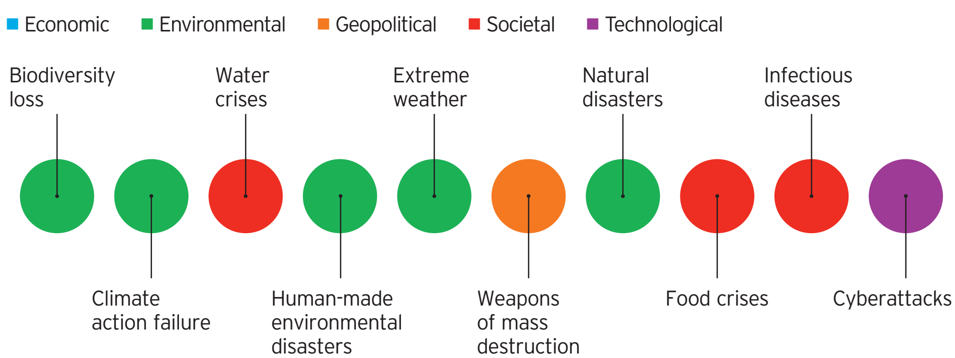
Similarly, the SARS virus of 2002 is now thought to have come from horseshoe bats, eventually reaching humans via consumption of cat-like mammals known as civets. This, too, was an ominous warning of our collective vulnerability to a type of natural hyperconnectivity that is often woefully underestimated or wilfully ignored.

At first glance, given the circumstances surrounding these examples, it may be tempting to infer that the nexus of nature is at its most threatening in relatively rural settings or in developing economies. In fact, this is far from the case. As we explain in the next chapter, the phenomenon is present throughout the value chain of food production and consumption and represents a genuinely worldwide concern.

Nature reaffirms its primacy

According to the World Economic Forum (WEF), risks related to the natural world now dominate the existential threats confronting humanity. They have gradually displaced economic, geopolitical and societal concerns in recent years, particularly since 2011.

The top 10 potentially most impactful global risks over the next decade, as collated in the WEF's latest report, are shown below. Note that even those classified as societal are in some way linked to nature.



Source: World Economic Forum: The Global Risks Report 2020.

3.2. Q&A: interconnectedness and existential threats

Maria Lombardo is Invesco's European Head of ESG Client Strategies; Cathrine De-Coninck Lopez is Invesco's Global Head of ESG. They are leading Invesco's drive to raise investor awareness of "interconnected causality", whose structure and implications they discuss in this Q&A.

What has the COVID-19 crisis told us about interconnectedness?

ML: We've seen the consequences of interconnectedness on a variety of levels. Maybe the most obvious, at least in the eyes of some critics, is that some of the shortcomings of globalisation have been exposed.

The pandemic has reminded us that the hub-and-spoke structure of 21st-century socioeconomic systems can allow unforeseen and extreme phenomena to spread rapidly. Much the same occurred with the global financial crisis. So that's one potentially important lesson about interconnectedness, which could ultimately lead to novel and more effective models of global cooperation.

Much less appreciated are the lessons about the relationship between the human race and nature. Alongside climate change, this crisis is probably the most dramatic illustration to date of how our own behaviour can have far-reaching repercussions – including in the form of existential threats.

It's many years since the scientific community first warned about the risk of potentially devastating viruses spreading from animals to humans. There have even been previous incidents of this happening, albeit not on the scale we're witnessing today. But humanity has done very little to alter its behaviour – and now we're paying the price.

How does this interconnectedness work?

CDL: The World Economic Forum approaches this issue through the science of complexity. This is a method of understanding systems whose parts combine to produce effects that aren't easily understood in terms of interactions between individual components.

Such an approach allows us to visualise a global system of interrelated risks, a sizeable proportion of which arise from our relationship with nature. Climate change, for example, represents one of the principal hubs, directly linking both to many other environmental risks and to societal problems such as social instability. It's a very tangled web, and it reveals how an issue such as infectious disease is connected to numerous other concerns.

As recent events have shown, an infectious outbreak results from an interplay between human health, animal health and ecosystem health. If we add to this mix factors such as globalisation, as already mentioned, and unprepared healthcare systems, which have been a key feature of the response to COVID-19, we have the ingredients for a worldwide crisis.

Is it possible to identify some kind of starting point or "first cause" amid this web? And is it possible to say where food production and consumption might enter the picture?

ML: In this specific context, if we're looking to simplify things, a realistic starting point is the global population. This stands at 7.8 billion today and is predicted to hit almost 10 billion by the middle of the century. With ever more mouths to feed, the demand for animal protein has continued to rise.

This, in turn, has encouraged the growth of unsustainable farming practices in both the developing and the developed world – the likes of wet markets in the former and the proliferation of "intensive" farming methods in the latter. And these practices, as scientific evidence and real-world experience increasingly show, substantially heighten the likelihood of a virus "spilling over" from animals to humans.

CDL: It's also important to remember that the interconnectedness of these risks effectively makes them self-perpetuating. If we maintain the status quo in relation to food production and consumption, for example, the continued pressure on natural resources will impact further on climate change, which will impact further on biodiversity and environmental degradation, and so on.

So we need to break these links – or we need to turn them into positive links. And investors can play a huge role in making this happen.

Should investors consider this notion of interconnectedness when deciding how to allocate capital responsibly?

ML: I think many are already aware of the notion, at least to some degree. Investors understand, for instance, that investing with climate change in mind should ultimately bring wide-ranging benefits in both environmental and societal terms. But there are obviously aspects of this web that are much less recognised, and how we produce and consume food is one of them.

We think understanding the full extent of interconnected causality will emerge as one of the next big themes for responsible investors. Crisis has shed fresh light on this idea – and crisis, as the saying goes, is a terrible thing to waste.

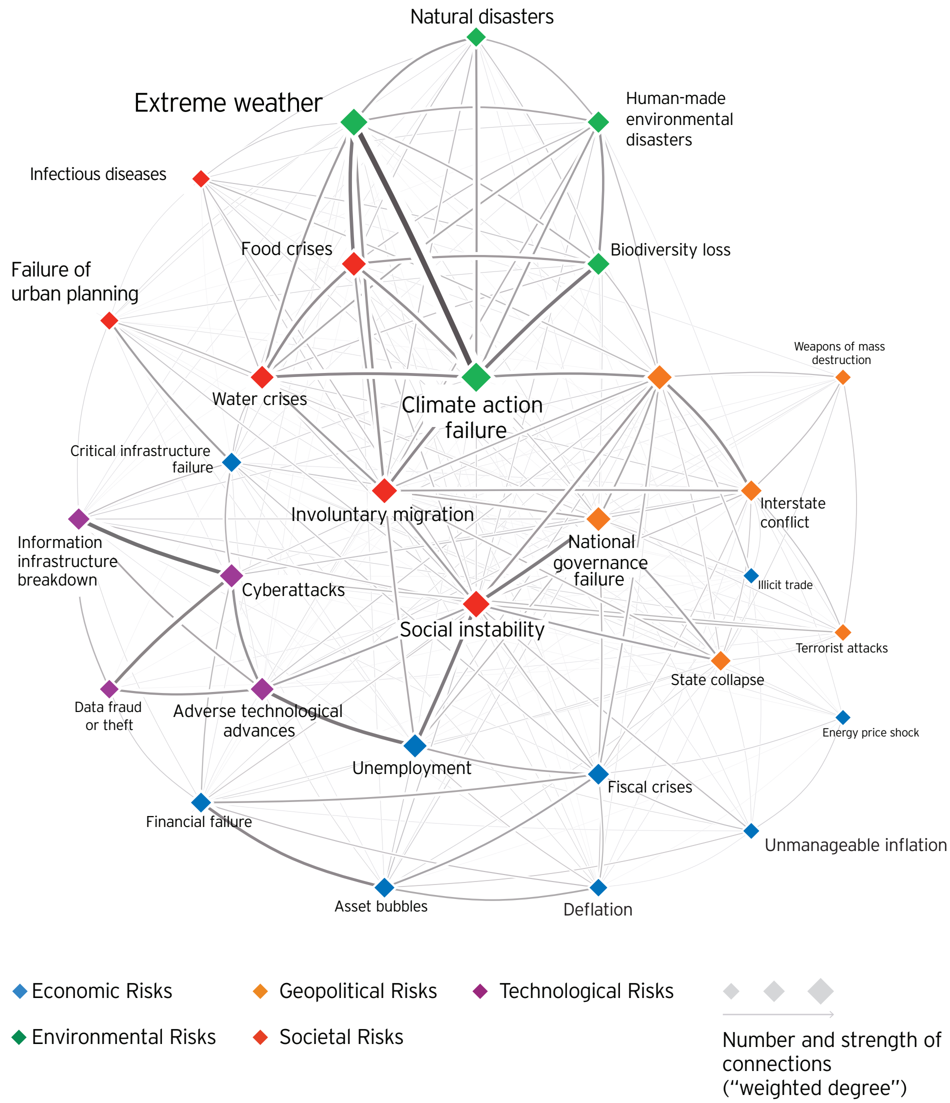
"We need to break these links – or we need to turn them into positive links. And investors can play a huge role in making this happen."

Connectivity and crisis

The WEF's Global Risks Report 2020 applies the science of complexity to visualise the interconnectedness of the key risks confronting our planet and its inhabitants. The results are shown below.

Note how infectious diseases – located on the upper left of the outer circle – can be linked to multiple risks of different kinds. From the perspective of responsible investing, it is an issue that encompasses all three elements of ESG.

The global risks interconnections map 2020



Source: World Economic Forum: The Global Risks Report 2020, 2020

> "The reality is that the next pandemic could easily emanate from a highly mechanised and supposedly sophisticated facility."

4. A global problem

4.1. Why materiality matters

SARS, the Nipah virus and COVID-19 may have originated in environments relatively free from industrialisation, but it would be wholly wrong to assume that more advanced means of food production and consumption automatically guard against the nexus of nature's reach. The reality is that the next pandemic could easily emanate from a highly mechanised and supposedly sophisticated facility.

The rise of factory farming methods has in many ways only exacerbated the threat. The continued overuse of antibiotics in intensive production has created a near-worldwide breeding ground for disease and accelerated the rise of ultra-resistant "superbugs" – the rapid transmission of which is further enabled by livestock's confinement, overcrowding, live transportation and stress.

As US academics Troy Vettese and Alex Blanchette have outlined, many aspects of factory farming were Taylorist even before Taylor[2]. American meatpackers, for instance, were committed to an ethos of speed, scale and monotony half a century before the father of scientific management set about analysing and synthesising workflows in pursuit of economic efficiency.

Ever since, Vettese and Blanchette argue, animals and workers have been "locked in a *danse macabre*"[3]. The incidence of COVID-19 infection among employees in the meat industry appears to reflect such claims: the Cargill processing plant in High River, Canada, for example, has been associated with more than 1,500 cases[4].

So there is both a global dimension and, crucially, a corporate dimension here; and this is why the investment community is so well placed to make a difference. As their principal shareholders, investors can support businesses in adopting more responsible policies and practices – especially if meaningful regulatory pressure is lacking[5].

To do this, the investment community needs to recognise and understand the material ESG risks that factory farming can pose. It needs to recognise and understand that another pandemic is just one of these risks. And, cognisant of the nexus of nature, it needs to recognise and understand the extraordinary scale of the potential corollaries of these risks.

Disease, greenhouse gas emissions, deforestation, biodiversity loss, working conditions, waste pollution, water scarcity – all these and many more enter the reckoning. We agree with FAIRR (Farm Animal Investment Risk and Return), a pioneering global network whose research helps identify and prioritise such material factors, which asserts that intensive farming "poses material risks to the global financial system and hinders sustainable development".

Intensive food production through the lens of material ESG risk

The FAIRR initiative is a collaborative investor network that raises awareness of the ESG risks and opportunities caused by the intensive farming of animals. Through its research, it helps investors integrate such factors into their decision-making and active stewardship processes.

FAIRR has identified 28 material ESG issues that could affect factory farms' financial performance and returns. Set out below, they include community health impacts and infectious diseases.

Environmental

- Air pollution
- Climate change
- Deforestation and biodiversity loss
- Disease outbreaks
- Greenhouse gas emissions
- High water use
- Natural hazards
- Poor animal welfare
- Resource scarcity
- Soil degradation
- Waste
- Water pollution
- Water scarcity

Social

- Changing consumers
- Community health impacts
- Excessive antibiotics
- Human rights
- Infectious diseases
- Land rights
- Loss of rural jobs
- Poor working conditions
- Shrinking labour pool
- Social backlash
- Social licence to operate

Governance

- Corporate governance
- Policy changes
- Sustainability disclosure
- Weak oversight

Source: FAIRR: Factory Farming: Assessing Investment Risks, 2016

4.2. Q&A: the elephant in the room?

Dr Henning Stein is Invesco's Global Head of Thought Leadership. He and his team provide insights and perspectives to the institutional investor and financial adviser global communities. In this Q&A he discusses his own views on one of the most sensitive issues around intensive food production: animal welfare.

As someone who works in the investment industry, do you see food production and consumption as a material issue or a moral one?

I see it as both. I think that's in keeping with any aspect of responsible investing, because when we talk about ESG – whether it's in relation to combatting climate change, ensuring good governance or tackling social and economic inequality – we ultimately talk about doing the right thing.

Responsible investing offers a way of squaring fiduciary duty with moral duty. That's why it's sometimes known as "conscious capitalism". It's a question of allocating capital in a way that delivers benefits beyond the bottom line.

So there's undoubtedly a material aspect to investing in this sector, and the fact that we're developing novel means of gauging the relevant material factors is extremely important. Personally, though, I can't deny that there's a moral aspect as well – and I'm sure many other people feel the same.

So what are your own feelings about animal welfare?

It's a subject that's very close to my heart. I've been involved with several animal charities for many years, and I spend a lot of my free time visiting and helping animal sanctuaries across Europe.

I've recently also taken a growing interest in issues around food production and consumption. I was a pescetarian for some time, and I'm now a vegan. The more I've learned about how meat is produced, especially in the context of mass farming, the more I've found the idea of eating it unconscionable.

Would you make any distinction between, say, what happens at a wet market and what happens at an industrialised farming facility?

No, because both might fall short of what I consider any meaningful standard of humaneness. Animals have feelings, like humans, and I believe neither of these approaches to food production and consumption consistently takes due account of this fact.

Some people say wet markets are needed to secure a reliable food supply for the poorest members of society in certain countries. My view is that there are many other ways in which food supplies could be maintained, including moving to plant-based diets.

And why are so many people willing to ignore what happens to animals in developed nations? Probably because they don't have to see it. In the 1850s, when movements opposed to animal cruelty first emerged, the mistreatment was in plain sight – in butcher shops, in the whipping of horses pulling wagons and carts... It's much easier to shut out these issues when they're hidden away.

Do you think recent events could prove a tipping point?

The pandemic obviously already ranks among the most significant events in modern history, and if we look at others – World War I, World War II, 9/11 – we see they led to huge changes in how we think, live and govern. Crisis always produces change, and we have to ensure the change is as positive as possible.

Of course, we've already seen a raft of extraordinary responses in many areas of our lives. But the topic of animal protection is still massively underrepresented, even though we should understand by now – as if we needed further justification – that we have to save animals to save ourselves.

What could prevent this topic from finally gaining more attention?

At an individual level, people are reluctant to confront their own dietary habits and the ways in which – whether unwittingly or not – they contribute to the status quo. More broadly, there's a general disinclination to criticise certain countries or cultures. There's also the fact that agribusiness in its present form is a huge contributor to many national economies.

I don't dispute that these are delicate and daunting considerations. That's why they represent serious obstacles to progress. But I also feel none of them should be thought of as inviolable or taboo when the opportunity to avoid another global disaster could be at stake.

Ideally, what would you like to see happen in the future?

As someone who believes in animal welfare, I would like to see policymakers prioritise animal protection. I would also like to see producers of plant-based proteins and "clean" meat – meat generated from animals' stem cells in laboratories – subsidised.

More generally, I would simply like to see the issue of animal welfare get greater acknowledgment – not just from policymakers but from the industry and, indeed, investors. I know it may not be among the top drivers of a company's materiality, but it's still tremendously important.

"The topic of animal protection is still massively underrepresented, even though we should understand by now – as if we needed further justification – that we have to save animals to save ourselves."

And as an investor?

I would like to see the investment community play its part in making a difference by encouraging businesses that value sustainability in this sector – just as it encourages such businesses in other sectors. Investors have recently developed a pretty strong record of driving positive change, and I would like us to do the same in this instance.

Anatomy of a socially responsible investment platform

The US is the world's second-largest meat-producing nation, behind only China. According to the Sentience Institute, a social science think-tank, 99% of animals farmed in the US in 2019 were factory-farmed.

The figures below were calculated using data from the US Department of Agriculture's Census of Agriculture and the US Environmental Protection Agency's definitions of "concentrated animal-feeding operations".

Percentage of factory-farmed livestock in the US:

Source: Sentience Institute, "US factory farming estimates", as at April 11, 2019

5. From materiality to multiple benefits

5.1. The nexus as a network for positive change

We have seen how the nexus of nature can be a source of multiple risks and threats if treated with contempt. It follows that it can also be a source of multiple opportunities and benefits if treated with respect.

This means that investors' backing of better policies and practices around food production and consumption can deliver positive change not just in this sector but in others to which it is linked. By way of illustration, consider intensive farming's relationship with the Cerrado – an area of tropical forests, woodlands and grassy savannah in Brazil.

The Cerrado is home to 5% of the planet's biodiversity. It accounts for the sequestering of 13.8 billion tonnes of carbon. As the source of several major rivers, it is vital to the proper functioning of rainfall cycles throughout South America. It is also home to indigenous communities that depend on it for their livelihoods. More than 50% of its original area has been lost to agricultural expansion, mainly as a consequence of the mass production of two commodities: beef, as consumed by humans, and soy, as consumed by livestock[6].

Since 2017, when a number of Brazilian NGOs drew attention to the situation, more than 160 companies and institutional investors have signed the Cerrado Manifesto Statement of Support. This calls for deforestation to be halted, for more sustainable approaches to be adopted and for farmers to be financially incentivised to participate in conservation efforts. The statement acknowledges the financial risks associated with the Cerrado's destruction and highlights the urgent need to "work with industry, producers, governments and civil society to protect globally important natural landscapes within a framework of good governance and land planning policy"[7].

As a result, the firms operating within the Cerrado's biome are now facing mounting pressure. So, too, is the Brazilian government, which has indicated that it wants to open up even more land to cattle farming and other commercial activities[8]. Some asset managers have warned that they could divest from non-compliant companies to avoid being left with stranded assets if engagement ultimately proves fruitless[9].

And what might happen if pressure and engagement do succeed, as would be the preferred outcome? This is where the nexus of nature becomes a network for positive change. The transformation of agriculture could in turn avoid the loss of hundreds more species of plants and animals[10]; it could preserve billions of tonnes' worth of sequestered carbon; it could protect against damaging shifts in rainfall patterns; and it could safeguard the existence of indigenous communities. In short: hyperconnectivity – or interconnected causality – could become an ally rather than an antagonist[11].

This notion also ties in with the United Nations Sustainable Development Goals (SDGs). These aim to direct investment towards 17 primary objectives for the planet and society, with a view to delivering significant results by 2030. A sector such as food production – whose value chain is not only deeply entwined within the nexus of nature but highly dispersed geographically, with many upstream phases located in developing economies – is manifestly embedded in a number of SDGs, most obviously SDG 2 (zero hunger) and SDG 12 (responsible production and consumption), as well as being linked to several others. As a global "call to action", the SDGs are an additional catalyst for wide-ranging positive impact[12].

"The nexus of nature can also be a source of multiple opportunities and benefits if treated with respect… Interconnected causality could become an ally rather than an antagonist."

A global perspective on responsible investing's ripple effect

The United Nations describes the 17 Sustainable Development Goals (SDGs) as "a shared blueprint for peace and prosperity". Investments that encourage sustainable food production and consumption can help achieve many of the SDGs.

Such investments are most obviously aligned with SDG 12. However, thanks to the nexus of nature and the geographical dispersion of the sector's value chains, they can also contribute towards many others spanning the entire ESG spectrum.

Source: United Nations

5.2. Q&A: food for thought

Maria Lettini is Executive Director of FAIRR. She was previously Head of the Americas for the Principles for Responsible Investment (PRI), leading its signatory relations and outreach strategy. In this Q&A she considers the rapid rise of ESG in the food sector and the future direction and impact of more sustainable policies and practices.

The food sector is one of the largest in the world. Why has it only recently started to be viewed through the lens of ESG?

I think it's because the focus previously was just on meeting ever-rising demand for food and protein. The basic aim was to feed many millions of hungry people, and the unintended consequences of how this might be done simply weren't part of the picture.

We've since seen a number of potential pivot points – global warming, water crises, mad cow disease, bird flu, swine flu and, of course, COVID-19 – as a result of which people are finally beginning to connect the dots. Now we can see the systems that have developed out of intensive food production aren't sustainable and actually pose a very serious threat.

That's not so say the initial intention – feeding as many people as possible – wasn't a good one. Rather, it's to say we need to revisit how we go about achieving that goal – and we need to realise we can do it in far more sustainable, safer ways.

What was the impact of FAIRR's original report, published in 2015, which identified 28 material risks across the value chain?

I was working for the PRI at the time, and one of my roles was to speak to investors about ESG risks across different asset classes and sectors. I don't think any of us had seen the materiality of ESG risks in this particular sector framed so compellingly before. The report actually made me think there and then that this would be one of the next global mega-trends for investors – which is exactly what it's become.

Food production was suddenly placed at the heart of the perfect storm that was developing. It was possible to view it within the broader context of climate change, environmental devastation, human health, animal welfare and other issues and say: "Yes, this all makes sense. This is something we need to look at."

How significant was the introduction of the Protein Producer Index? Was that another milestone?

It wasn't till we went through the process of assembling the Protein Producer Index that we could truly draw out the extent of the interconnectedness at play here. It really brought home how supply chains in factory farming feature in so many elements of the perfect storm I mentioned.

So it was a genuine game-changer. It transformed the conversations we were having with investors. It raised a lot of questions that had never really been asked before. It underlined the message that we have to engage with suppliers and manage all the risks that exist at every stage of a food producer's value chain. And it got a major response from the market.

> "More and more investors are adopting a very strong stance on these matters... We're seeing commitment, we're seeing progress, and we're seeing real change."

The pandemic has obviously demonstrated the need to pay more attention to these risks. Did you ever imagine proof of FAIRR's argument would come so quickly and so dramatically?

I feel COVID-19 is a classic "black swan" event. It's had unprecedented repercussions, yet hindsight suggests it was wholly predictable. It's taken the perfect storm and ratcheted it up.

FAIRR has always said this sector could be a source of significant disruption unless there was meaningful intervention. Plenty of experts in the scientific community have said the same thing for even longer. In the past, unfortunately, these warnings have tended to fall on deaf ears. Now, in light of everything that's happened, it's tough to ignore the message.

How urgent is the need for change? Does food production represent a "burning house"?

I think we already have the proof of that. But I've been genuinely surprised by the speed of progress in the past few years, and I'm extremely optimistic that the necessary turnaround will take place.

More and more investors are adopting a very strong stance on these matters, and a lot of topics that were once perhaps considered too scientific – not just climate change but more specialised issues such as regenerative agriculture and soil health – are moving from the fringes of the discussion and into the mainstream.

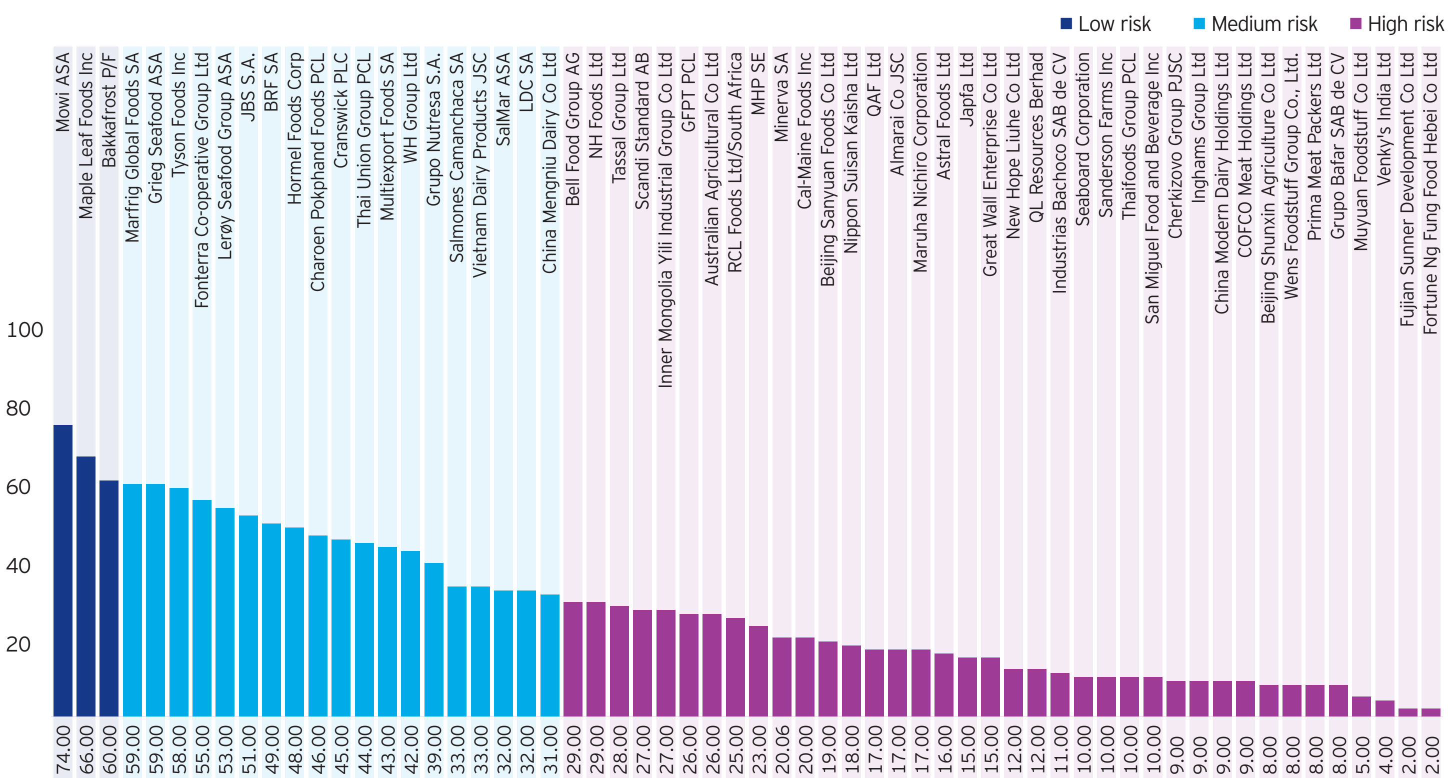
Crucially, there's also much more understanding among investors about interconnectedness. They're asking the right questions about their holdings, about companies' supply chains, about businesses' policies and practices. And all this helps shape corporate thinking, of course – which is what we want.

We're also seeing more disruptive technologies in this sector. That's a trend that could be truly transformative, and we need to incentivise companies to spark further developments that will help solve the world's problems and support everyone involved in food production.

So we're seeing commitment, we're seeing progress, and we're seeing real change. I find what's happening right now very encouraging – and I really mean it when I say I also find it inspiring.

FAIRR published its inaugural Coller FAIRR Protein Producer Index in 2018. This represented the world's first comprehensive benchmarking of the corporate risks involved in both intensive livestock farming and fish farming.

Introducing the index, FAIRR founder Jeremy Coller described the findings as "cause for concern". Some 63% of the 60 global food companies featured were classified as 'high risk' after being assessed on 10 ESG risk factors, including GHG emissions, deforestation, antibiotics and animal welfare.



Source: FAIRR: Coller FAIRR Protein Producer Index Report, 2020

> "Capital enables positive, lasting change to take place. This is now increasingly being demonstrated in reshaping how we meet the challenges of feeding an ever-growing global population."

Conclusion

The COVID-19 crisis has underlined the hyperconnectivity of multiple existential threats, all of them constituents of the nexus of nature. It has also highlighted the position within the nexus of food production and consumption, and in doing so it has provided a stark warning that many of the prevailing policies and practices within this arena are likely to prove unsustainable.

Of course, investors have no more entitlement than anyone else to pass judgment on what is right or wrong. They are not self-appointed saviours or heroes. They do not constitute a deus ex machina for this sector or any other.

Relatedly, investors do not have all the answers. In food production and consumption, as in so many corporate spheres, progress and transformation stem in the main from the companies themselves and from the gathering weight of scientific evidence.

What investors do have, though, is capital; and it is capital that enables positive, lasting change to take place. This has already been demonstrated in a variety of settings, and it is now increasingly being demonstrated in reshaping how we meet the challenges of feeding an ever-growing global population – as we will explore in more detail in our next paper.

By applying ESG principles, investors can make a difference – one likely to have far-reaching impacts. This is the essence of responsible investing and shareholder capitalism, as is already well known, but it is also the essence of the nexus of nature. Positive, lasting change in one area should lead to positive, lasting change in many others – just as the bleak effects of taking the natural world for granted in one area have been felt in many others in the past.

Deforestation, biodiversity loss, waste pollution, climate change, human health – responsible investments in food production and consumption can play a part in addressing all these issues and many more. Nature's boundless imagination, as so admired by Richard Feynman, guarantees as much.

Feynman once also memorably remarked: "Nature cannot be fooled." This truth has become all too obvious in recent decades and during 2020 in particular. By engaging with companies and policymakers and by supporting initiatives that prize sustainability, transparency and accountability, investors can go a long way towards helping ensure that humanity does not fool itself.

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World Economic Forum: *The Global Risks Report 2020*, 2020

World Wildlife Fund: *Living Planet Report 2020,* 2020

1 The report charts the decline of biodiversity by measuring population trends of vertebrate species from terrestrial, freshwater and marine habitats. It warns: "Biodiversity – the rich diversity of life on Earth – is being lost at an alarming rate. This loss affects our own health and wellbeing. Catastrophic impacts for people and the planet loom closer than ever." Carter Roberts, president of the WWF in the US, said of the findings: "As humanity's footprint expands into once-wild places, we're devastating species populations. But we're also exacerbating climate change and increasing the risk of zoonotic diseases like COVID-19. We cannot shield humanity from the impacts of environmental destruction." See WWF: Living Planet Report 2020, 2020.

2 Frederick Winslow Taylor, arch-proponent of industrial efficiency, was one of the first management consultants. He summarised his ideas in The Principles of Scientific Management, published in 1911.

3 See, for example, Vettese and Blanchette's article, "COVID-19 shows factory food production is dangerous for animals and humans alike", published in the Guardian on 8 September 2020.

4 A detailed account of conditions at Cargill can be found in CBC's "Inside the slaughterhouse", published on 6 May 2020, which includes workers' accounts of the frenetic pace of production on the "kill floor".

5 According to the American Society for the Prevention of Cruelty to Animals (ASPCA), the bulk of federal COVID-19 relief funds paid out to the US farming industry has gone to "inhumane factory farms and industrial agricultural companies", with "small, higher-welfare farms" left to struggle. See ASPCA: "Alarmingly, COVID-19 relief funds prop up factory farming", 25 August 2020.

6 See, for example, FAIRR: "Cerrado Manifesto Statement of Support", as published at https://cerradostatement.fairr.org/. FAIRR has led and coordinated the investment community's response to this issue, calling on investors to "stand alongside companies in sending a clear message that there is widespread industry support" for transforming agricultural policies and practices in the Cerrado.

7 Ibid.

8 As frustration with the government's stance on ESG issues in general has grown, some asset managers have even temporarily halted their buying of Brazilian government bonds. Such action constitutes an especially powerful display of active ownership. See, for example, Reuters: "Nordea Asset Management suspends Brazilian government bond purchases due to Amazon fires", 30 August 2019.

9 See, for example, Financial Times: "Investors warn Brazil to stop Amazon destruction", 23 June 2020. A compelling illustration of the threat of stranded assets can be found in Chain Reaction Research: Indonesian Palm Oil's Stranded Assets – 10 Million Football Fields of Undevelopable Land, 2017.

10 Without biodiversity, as a University of Cambridge report noted in 2020, "nature cannot provide the goods and services that are worth trillions". See University of Cambridge Institute for Sustainability Leadership: Biodiversity Loss and Land Degradation: An Overview of the Financial Materiality, 2020.

11 Other recent instances of companies and their investors promoting positive change in this arena include Grieg Seafood's issuing of green bonds with a condition that proceeds do not find their way to a US business accused of failing to protect the Amazon. See, for example, Financial Times: "Grieg takes aim at Cargill through $105m green bond", 4 July 2020. Coordinated investor action has included 2019's campaign by the Principles for Responsible Investment (PRI), which saw more than 250 investors – representing almost $18 trillion in assets under management – sign a statement calling for companies to demonstrate a clear commitment to eliminating deforestation from their operations and supply chains. See PRI: "Investor statement on deforestation and forest fires in the Amazon", 2019.

12 The SDGs are determinedly ambitious in their scope and targets. The United Nations has warned: "Unless progress accelerates, the core promise of the 2030 Agenda for Sustainable Development – to leave no-one behind – will remain a still-distant goal by 2030." See United Nations Department of Economic and Social Affairs (UNDESA): World Social Report 2020, 2020.

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