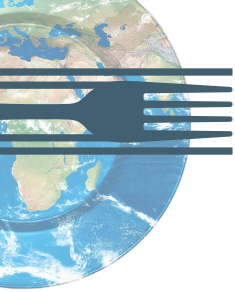




FINANCIAL MARKETS
ROADMAP
FOR TRANSFORMING THE
Global Food System

Executive Summary



ABOUT THIS REPORT

The **global food system** is a significant source of **HARM** to the **climate**, to **nature** and to **society**

The global food system is a significant source of harm to the climate, to nature and to society. Unless it is transformed, financial institutions will be unable to meet their Net Zero ambitions and (more importantly) humanity will be unable to meet its ambitions to limit climate heating to +1.5°C by 2050, and to restore nature and achieve the UN's 17 Sustainable Development Goals (including 'zero hunger') before 2030. The financial consequences of this collective failure will be significant.

Private finance has a major role to play in supporting and driving the required transformation of the food system. We estimate nearly USD 9 trillion of private finance is currently supporting the global food system (63% of its estimated asset value of USD 14 trillion) and that private finance already has the capacity to provide c.USD 630 billion annually.

This report sets out **four food system transformation themes** that financial institutions should focus on to ensure they are aligning their capital and investment processes with the food system changes required:

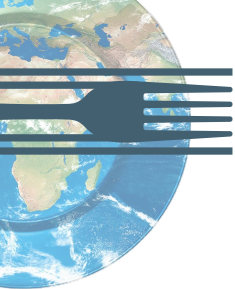
- **Responsible supply chains**
- **Increase food system (true cost) efficiency**
- **Reduce pollution**
- **Sustainable product offerings**

Financial institutions should use these themes as the basis to construct a food system investment strategy to guide their capital allocation and engagement with companies and governments.

For those financial institutions that want to take immediate action we have identified **six Priority Actions** to achieve before 2030 that fit within our Four Themes framework and have the potential to significantly reduce the harms coming from the current food system. Financial institutions can undertake all six Priority Actions or select those that best fit their investment philosophies and portfolios.

Financial Institutions should aim to achieve these Priority Actions before 2030:

- #1 Fully traceable supply chains**
- #2 Halve food loss and waste**
- #3 Stop deforestation**
- #4 Cut methane emissions by 45%**
- #5 Make agriculture/aquaculture systems regenerative**
- #6 Invest in alternative proteins**



HOW THIS REPORT IS STRUCTURED

The Executive Summary provides a short overview of the key points in the report, presenting Planet Tracker’s conclusions and recommendations, as well as a summary of the potential benefits. The supporting evidence and arguments are contained in the main body of the report and the appendices.

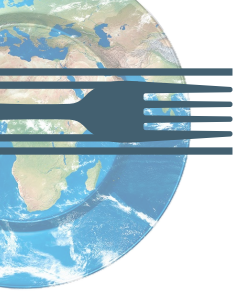
The main report includes a detailed discussion of the harms arising from the current food system and the disastrous trajectory it will take if a business-as-usual approach continues to be funded by private finance. For the benefit of financial institutions the first part of the main report focuses on the findings from our analysis of the Planet Tracker food system database. This captures financial data for 400,000 food system companies from 160 countries, and overlays this with environmental and funding data to provide a comprehensive, bottom-up view of the relationship between finance and the food system’s harmful planetary footprint.

The main report then sets out the ways in which private finance should contribute to the required transformation of the global food system using the four food transformation themes framework. The report puts this private finance framework in the context of the broader work that has been done on transforming the food system based around three food system transformation pathways.

Finally, the main report sets out the **six Priority Actions** in detail, explaining what needs to be done and the benefits for humanity (and for financial markets) of doing so.

Benefit for **humanity**
and for **financial markets**





EXECUTIVE SUMMARY

The objective – a transformed global food system

A sustainable food system is one that delivers food security and nutrition for all without breaching planetary boundaries, and that is economically, socially and environmentally sustainable (climate, nature and people-positive).

Building on this framework, a sustainable food system can be defined as one that is:

- **Resilient** – able to withstand and adapt to challenges (e.g. a changing climate, wars etc);
- **Efficient** – maximising outputs and minimising inputs and losses, while operating within the doughnut of planetary boundaries and the social foundation, and maintaining its natural capital base;
- **Effective** – providing sufficient nutritious, culturally appropriate, food to all of a growing population and supporting livelihoods and wellbeing.

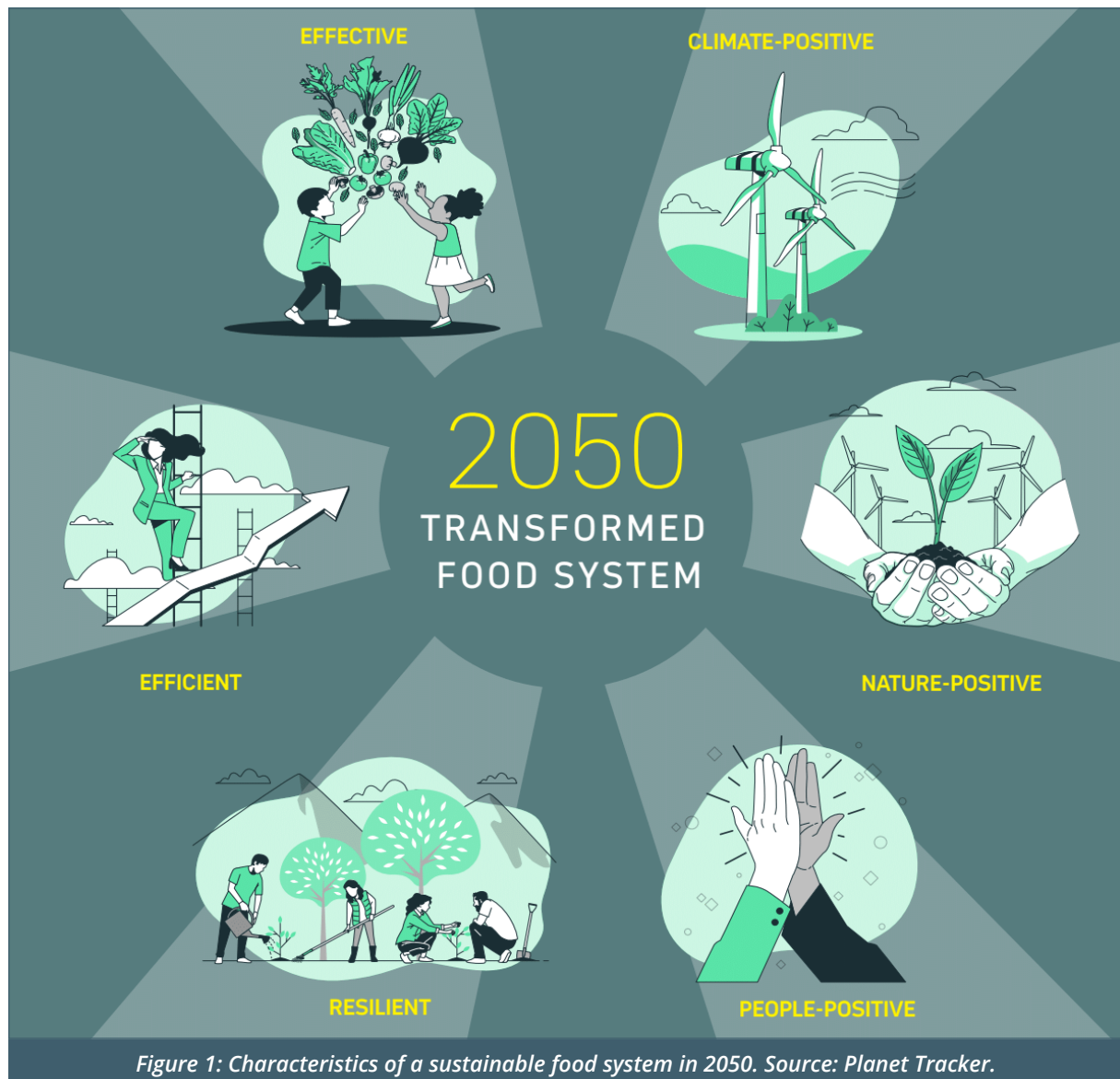
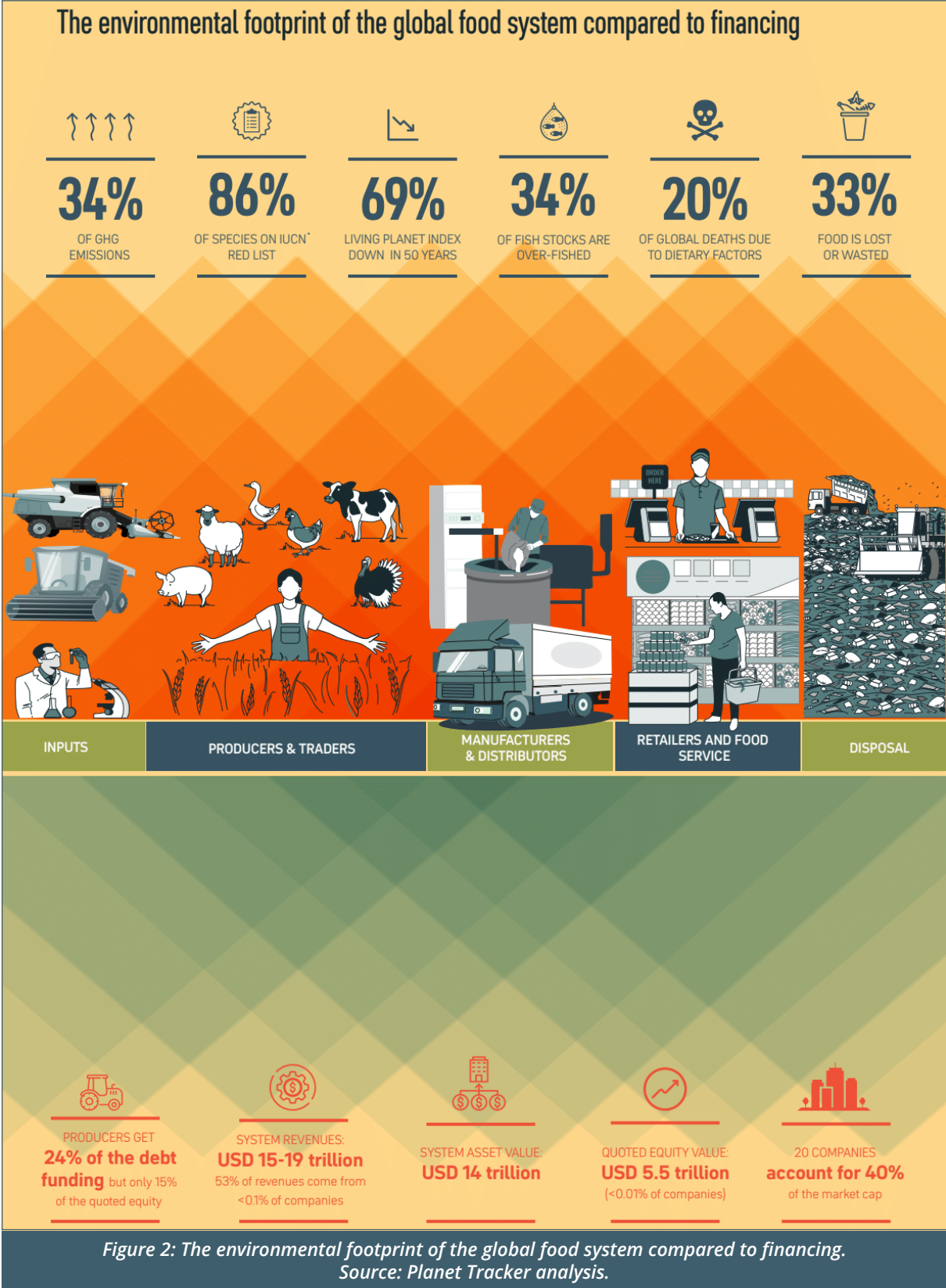


Figure 1: Characteristics of a sustainable food system in 2050. Source: Planet Tracker.

The environmental and funding footprint of the global food system

Planet Tracker has compiled a food system database that captures financial data for 400,000 food system companies from 160 countries, and overlays this with environmental and funding data to provide a comprehensive, bottom-up view of the relationship between finance and the food system’s harmful planetary footprint – see Figure 2.



* International Union for Conservation of Nature

Planet Tracker’s food system database divides the food system into activity-based Segments and Nodes and allocates financial and environmental company metrics across these Nodes in line with the company’s business activities – see Figure 3.

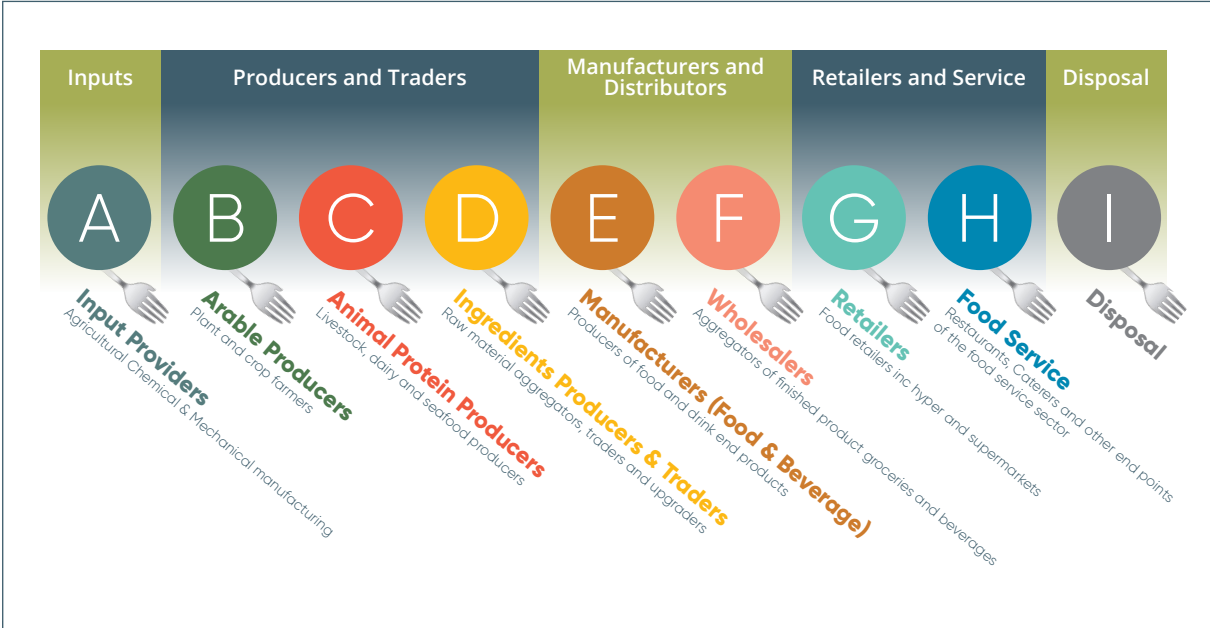


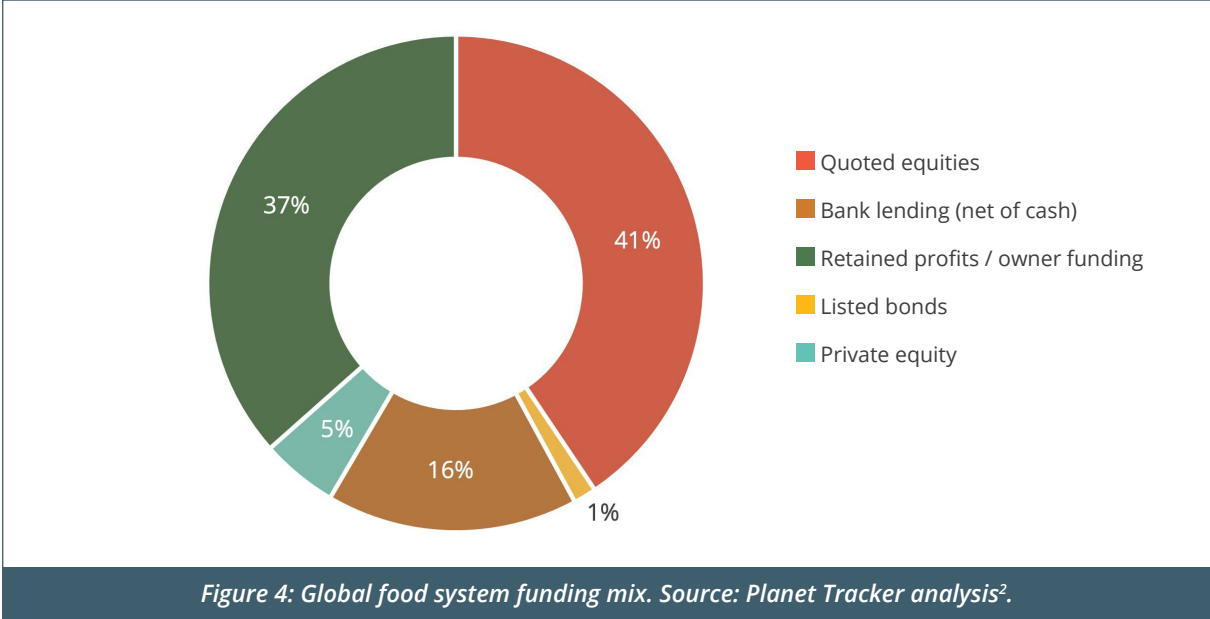
Figure 3: Food system Segments and Nodes. Source: Planet Tracker.

The funding provided by investors and banks is also split across the Segments and Nodes within the database to align with the company metrics. Our dataset contains c.17,300 investors and funders (banks and other providers of debt finance) providing c.USD 8.6 trillion of funding¹ to the companies in our database (63% of its estimated USD 14 trillion asset value), with the potential to provide annual funding of around USD 630 billion.

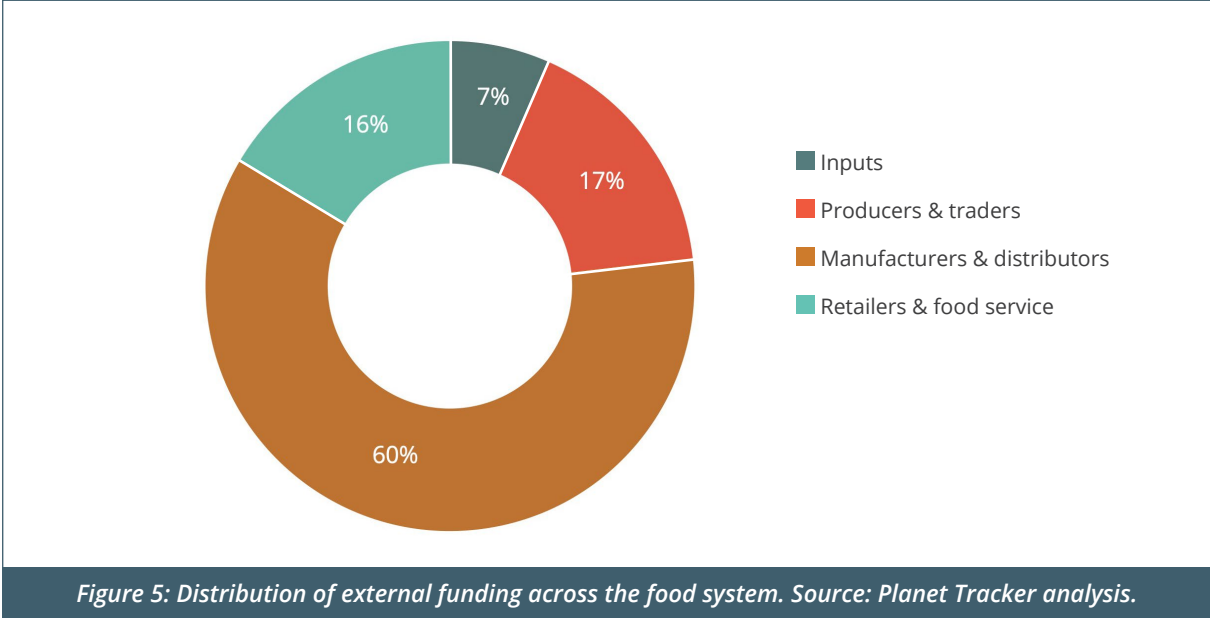
¹ Equities, bonds, and bank lending.



Figure 4 shows the mix of funding that is supporting this system, highlighting the importance of the equity markets, bank lending and retained profits.



The majority of this funding is provided to companies in the manufacturers and distributors section of the food system – see Figure 5.



² NB: Bank lending is estimated based on an overall estimated debt figure less whatever is determined to be bond finance (so if bond finance is assumed to be higher, then bank lending will be assumed to be lower).

Financial analysis of the Planet Tracker food system database corroborates other studies that suggest that the majority of the profits in the system are captured by companies at the downstream end. Only 13% of the aggregate profits in the database are captured by producers compared to 47% of the profits captured by food retailers and food service companies as shown by Figure 6.

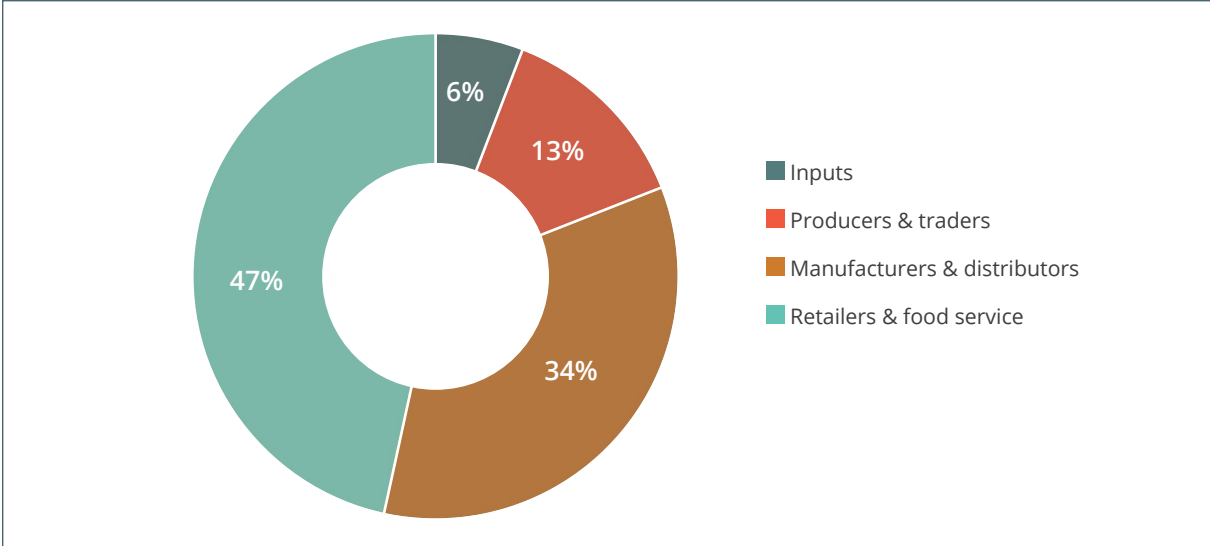


Figure 6: Distribution of profits across the global food system. Source: Planet Tracker analysis.

Analysis of the GhG figures disclosed by the companies in our database shows that the environmental footprint of the food system separated from the funding and the profits since it is heaviest at the producer end of the supply chain – see Figure 7.

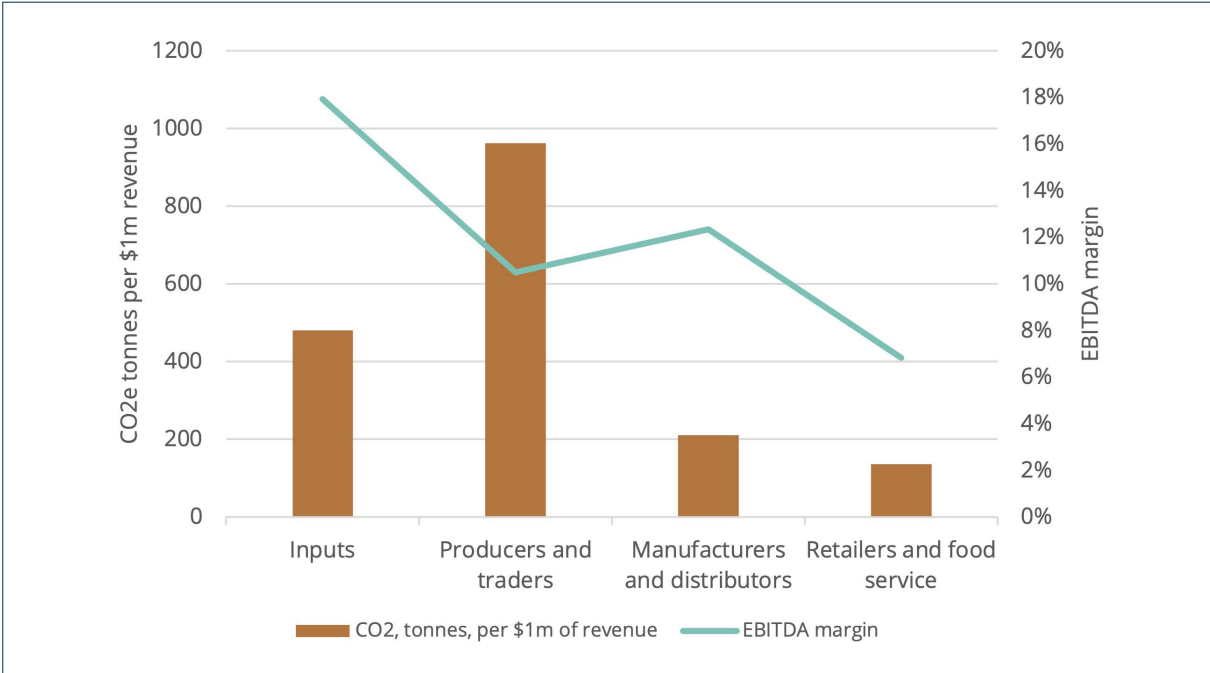


Figure 7: GhG intensity across the global food system supply chain. Source: Planet Tracker.

What should the financial sector do?

Financial institutions need to deploy their firepower to support the transformation of the global food system.

The food system as a whole needs to follow three broad transformation pathways to achieve sustainability by 2050.

The **three transformation pathways** identified in this report are usually targeted at governments and policy makers, and describe the changes required at a systems level. As such, they provide an important context for financial institutions when deciding how best to support the required transformation of the global food system. However, financial institutions need greater detail and actions that can be implemented through their financial relationships with the companies they support.

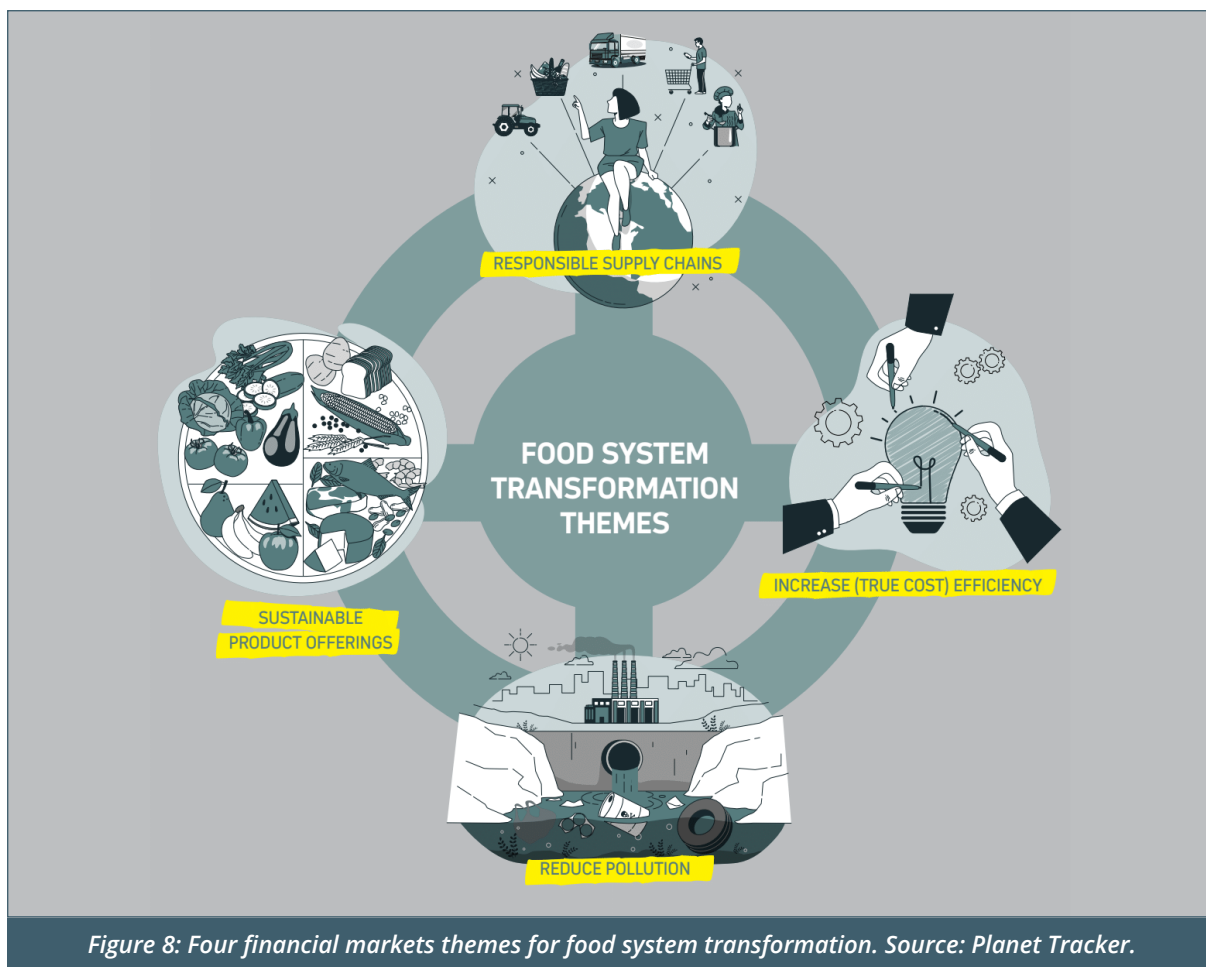
The **four food system transformation themes** set out in this report provide financial institutions with the structure they need to develop policies and configure their investment and company engagement processes to ensure they are allocating capital in support of the food system transformation and mitigating the investment risks associated with the changes that will occur.

Finally, this report sets out **six priority actions** that provide financial institutions with a list of actions **that should be taken before 2030** if they wish to have an immediate impact to reduce the harms that the global food system is generating and a correspondingly beneficial contribution towards net zero lending or investment portfolios.

There are significant risks for financial institutions that fail to position themselves to take account of the inevitable changes that will impact the global food, but for those that seek to actively support and drive the required changes there are significant investment opportunities.

This Roadmap is designed to be the start of the journey. Planet Tracker's work will continue to build on the four food transformation themes, and we intend to provide more detailed analysis and toolkits in the future to support financial institutions to implement the priority actions. However, the urgency of the linked climate and nature crises requires immediate action, and the financial sector's role in this is crucial.





Responsible supply chains

Many of the harms caused by the food system occur upstream in food production, but the demand that drives these harms is generated further downstream which is where the majority of the funding provided by the financial markets and lending banks is focused.

As a result, mitigating or preventing these harms will require actions to be transmitted up the supply chains involved and information about the effect of these actions will need to be transmitted back to the downstream actors responsible and to their funders. In addition to this, downstream companies will need to work with their peers to support upstream companies across supply chains and to transfer the capital, resources and knowledge required to enable sustainable transformation. Ultimately, the food system's problems are beyond any one company's capacity to solve so a focus on responsible supply chains will be essential.

The Kunming-Montréal Global Biodiversity Framework (GBF) has a 2030 target relating to transparent supply chains: 'Requiring transnational companies and financial institutions to monitor, assess, and transparently disclose risks and impacts on biodiversity through their operations, portfolios, supply and value chains',ⁱ so policy pressure can be expected to grow in this area.

Increase food system (true cost) efficiency

The global food system needs to produce more with less if it is to successfully feed a growing population without exceeding planetary boundaries. However this increase in efficiency needs to be measured based on the true cost of the system (including the costs of pollution, impact on biodiversity, etc):ⁱⁱ

- 1** Inputs with high economic, environmental and social costs need to be reduced;
- 2** Protein and calorie production and nutritional content must be increased without expanding or depleting the land or sea used; and
- 3** Loss and waste throughout the food system must be eliminated, including by making the system less linear and more circular by recycling products through the system.

In addition to the focus on efficiency, financial institutions should support moves to invest in regenerative agriculture and aquaculture that maintains high levels of productivity while:

- regenerating soil;
- reducing (or even eliminating) synthetic fertilisers and pesticides;
- reducing water use and negative impacts on freshwater and oceans; and
- ensuring positive environmental effects including increasing biodiversity.

Financial institutions investing in the theme of increased food systems efficiency need to ensure they are taking a holistic approach to avoid the risk of unintended consequences. Investment policies and company engagement processes should focus on improving the system as a whole, including the social / human welfare aspects, not just a specific component.



Reduce food system pollution

The food system is the source of a significant proportion of the pollution poisoning the ecosystems on which humanity depends for its survival including :

- Anthropogenic GhG emissions (including gases with very high climate heating effects such as methane and nitrous oxide);
- Nitrogen and phosphorous run-off;
- Pesticide leakage;
- Particulate air pollution;
- Antimicrobial resistance through excess use of antibiotics; and
- Plastic pollution.

The benefits of cutting pollution are obvious and in many cases the actions required have the potential to be self-funding over time because the pollution represents an unnecessary drain on the resources of the businesses concerned.

As a result, there is a strong link between this theme and the theme of increased efficiency and financial institutions can support actions that address both at the same time.

Financial institutions that wish to focus on the theme of reducing food system pollution need to ensure that they are taking a holistic, systems-based approach so that they can avoid the potential negative consequences of actions that appear positive when considered in isolation³.

³ Food losses vs plastic packaging is one example of a potential conflict – the argument being that plastic packaging reduces food losses in the system. The issue is complex but there is a significant risk that promoters of plastic packaging use food loss as an excuse without the evidence to support their defence of plastic (and without weighing the total systems costs of plastic pollution against the total systems costs of food loss).

Sustainable product offerings

The sustainable product offerings theme focuses on the food manufacturers, retailers and food service companies. These businesses are responsible for shaping food environments⁴ that drive the desires stimulated among food consumers and the demands made on food producers.

This downstream part of the food system is where the majority of financial capital is focused and so this theme is an essential component for any financial institution wishing to support the transformation of the food system through their investment policies and company engagement processes.

Within this theme there are a number of topics that financial institutions should concentrate on including:

- Sustainable 'food product architecture' – redesigning products to
 - ensure the underlying raw materials can be produced with a reduced nature and climate impact; and
 - improve their nutritional content, and taste, and to reduce chemical additives and levels of fat, salt and sugar;
- Reconfiguring 'food choice architecture'⁵ to encourage consumers to choose food products that are better for them and the planet;
- Reducing waste by food service companies and consumers;
- Developing methods for recycling unconsumed food and other food system waste products so that the system becomes more circular;
- Sustainable packaging and transport; and
- Supply chain traceability.

As with many aspects of the food system's required transformation, companies will struggle to achieve sustainable product offerings without having clear visibility of, and control over, their supply chains. Consequently, there is a strong link between this theme and the theme of responsible supply chains, particularly for businesses that wish to profit by offering traceable products to their customers.



⁴ 'Food environment' is the physical, economic, political and socio-cultural context in which consumers engage with the food system to make their decisions about acquiring, preparing and consuming food. Companies can influence it via a variety of channels focused on 'price, place, and promotion' (including packaging, store location, discounts for retailers and/or consumers, etc.),

⁵ Food choice architecture encompasses all the aspects of a food product that will influence a consumer's behaviour when choosing that product. It is the food version of choice architecture (Nudge, Thaler and Sunstein, 2008).

Cross-cutting themes

Financial institutions should consider the following cross-cutting themes when configuring their investment policies and engagement approach:

- **Just transition** – financial institutions should ensure their approach to the transformation process upholds human rights and labour standards to ensure that as far as possible no-one is permanently disadvantaged as a result.
- **Company lobbying** – financial institutions should ensure that lobbying by companies (and their industry groups) is consistent with their public statements and supports the required transformation.
- **Engagement with governments** – financial institutions should engage with governments to ensure the regulatory environment supports the required transformation.

Six priority actions the finance sector should take

These actions have been selected from the wider range of possibilities supported by the four food system transformation themes based on:

- the size of the potential benefit,
- the immediacy of their beneficial impact,
- the extent to which they lie within the power of financial institutions to have an effect, and
- the extent to which they align with existing initiatives that financial institutions can leverage.

The six priority actions are:

#1 Require fully traceable supply chains

#2 Halve food loss and waste

#3 Stop deforestation

#4 Cut methane emissions by 45%

#5 Make agriculture/aquaculture systems regenerative

#6 Invest in alternative proteins

Financial Institutions should aim to achieve these Priority Actions before 2030.

2030

The Priority Actions are summarized below. The reasons why each Priority Action has been selected and details of the expected benefits are set out on the main body of this report. The actions are not completely independent of each other and will often be complementary.

In relation to each Priority Action (and the issue(s) the action targets) financial institutions should:

- **Question** - incorporate the target issue into pre-funding due diligence questionnaires/ processes and investment decisions;
- **Evaluate** - link funding costs / investment evaluation to the target issue;
- **Engage** - engage proactively with investees to encourage them to address the target issue in their own operations and in those of their suppliers;
- **Debate** - extend the engagement process to encourage policy makers, industry bodies and peers to address the target issue;
- **Reduce** - reduce their exposure to investees that are failing to take action; and
- **Report** - establish clear portfolio assessment, monitoring and reporting processes so that they can evaluate the extent to which their capital is being deployed to address the target issue and to be held accountable.

Financial Institutions should also encourage collaboration within sectors and along supply chains to mitigate specific harms.



PRIORITY ACTION #1 require fully traceable supply chains before 2030

Investors and banks funding companies towards the downstream end of the food supply chain (manufacturers, wholesalers, retailers, and food service companies) should assess the extent to which their portfolio companies in these Nodes have fully traceable supply chains.

We recommend the following questions should be included in pre-funding due diligence questionnaires and when meeting company managements:

- 1 What traceability systems are currently in place at the company?
- 2 What is their scope, precision, breadth, and depth?
- 3 How interoperable are the company's traceability systems with those of suppliers and clients? (for example, in the context of seafood, do they use GDST⁶ standards?)
- 4 What prevents the company from implementing robust traceability solutions on 100% of its products?
- 5 How much would the required investment cost and what would be the financial benefits to become 100% traceable?
- 6 How can investors and lenders support the transition towards being 100% traceable?

Sovereign bond investors should engage with governments to encourage the requirement for end-to-end food supply chain traceability particularly in relation to products that carry a high risk of environmental and/or social harms (for example deforestation, child labour, etc).



⁶ Global Dialogue on Seafood Traceability



PRIORITY ACTION #2

halve food loss and waste before 2030⁷

Financial institutions should:

- Establish a clear investment due diligence approach that gathers data on food loss and waste from prospective investee companies and establishes clear criteria for including that information in the investment decision.
- Engage proactively with companies at the upstream end of the supply chain (through to the food manufacturers) to encourage them to address food loss and waste in their own operations and in those of their suppliers.
- Engage proactively with food retailers and food service companies to encourage them to take steps to reduce food waste through their own operations and in the hands of consumers.
- Engage proactively with food retail and food service companies to ensure that (in addition to reducing the absolute amount of food waste) they maximise the usage of food waste through such means as composting, using waste as a source of bioenergy, etc.
- Reduce their holdings of, or loans to, food system companies that do not have a clear focus on reducing food loss and waste and shift their capital to those that do.
- Establish clear portfolio assessment, monitoring and reporting processes so that they can evaluate the extent to which their capital is being deployed in support of reducing food loss and waste and be held to account for their actions.

Sovereign bond investors should engage with governments to encourage them to introduce policies and laws that aim to tackle food loss and waste as well as removing incentives that may encourage the opposite behaviour.

⁷ 'Food loss' refers to losses in food production, and manufacturing; 'food waste' refers to food that is ready for consumption but wasted instead of being consumed





PRIORITY ACTION #3 **stop deforestation before 2030**

Efforts to eliminate deforestation are more likely to be successful when placed in this wider context as part of a food systems transformation strategy.

What should financial institutions do themselves?

Financial institutions should implement the following policies⁸ to address deforestation risk in their investment/lending portfolios:

- Publicly commit to ensuring zero gross deforestation of all natural forest ecosystems (legal and illegal) in their investment/lending portfolios.
- Reinforce the commitment by publishing regular, timely action plans and progress updates.
- Specifically target deforestation-linked emissions in their 'net zero' plans.
- Actively engage with and support initiatives such as IFACC^{8A}, to move funding away from deforestation linked activities.
- Make the financing of companies operating in agriculture production contingent on comprehensive zero deforestation policies that include time-bound requirements for monitoring and transparency.

What should they require of their investments?

- Require portfolio companies to proactively report on deforestation-linked CO₂ emissions in their supply chains.
- Require upstream companies (producers and traders) to disclose the location of their production facilities and volumes produced as a condition of funding.
- Require portfolio companies to purchase only products that are certified as deforestation free.

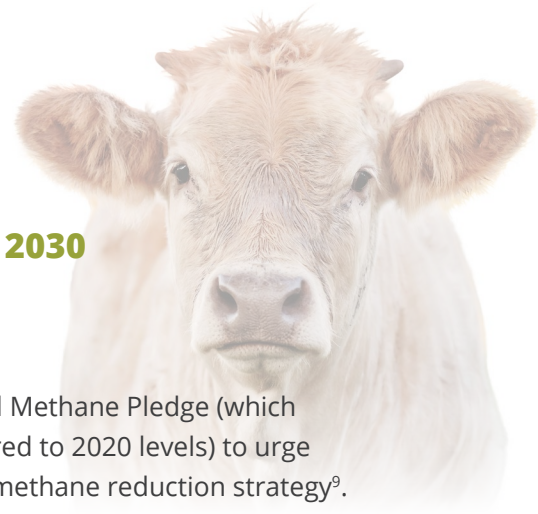
⁸ 'Global Canopy's Deforestation-Free Finance initiative includes a [Finance Sector roadmap](#) that recommends the key steps needed for financial institutions to eliminate commodity-driven deforestation, conversion, and associated human rights abuses from their portfolio within four years of beginning the process.'

^{8A} Innovative Finance for the Amazon, Cerrado and Chaco (IFACC)





PRIORITY ACTION #4 **cut agri-methane emissions by 45% before 2030**



What should financial institutions do themselves?

Sovereign bond investors should:

- Engage with governments that are already signatories to the Global Methane Pledge (which aims to reduce methane emissions by at least 30% by 2030 compared to 2020 levels) to urge them to explicitly include reducing animal protein production as a methane reduction strategy⁹.
- Engage with signatories to the pledge to encourage, detailed, separate sector-based targets and milestones to ensure the 2030 goals are achieved.
- Set deadlines for investments in sovereign instruments of the three largest emitters of methane which did not commit to the Global Methane Pledge (China, Russia and India¹⁰) to sign the pledge or at least set targets that will put their methane emissions on a path consistent with the pledge.

Banks and investors in equities and corporate bonds should:

- Allocate their capital away from industrial animal protein production towards alternative protein producers.
- Engage with food system companies further down the supply chain to encourage them to shift their production portfolios away from industrial animal protein production and to engage with their customers to encourage a shift in demand and consumption in the same direction.
- Restrict new financing to producers which have not committed to reducing methane emissions from their production of animal proteins and link financing to quantitative production-related methane emissions reduction targets.
- Ensure new financing policies are in alignment with The Global Methane Pledge.
- Assess the aggregate methane footprint of their portfolios and report annually.

What should they require of their investments?

- Require investee food systems companies to provide comprehensive data regarding production in terms of volumes and locations¹¹.
- Require portfolio companies (particularly meat and dairy producers) to consistently and comprehensively report their methane emissions separately from other GhGs, including Scope 3.
- Require investees in downstream Nodes (ingredient producers and traders, food manufacturers, retail, and food service) to set targets for their animal protein supply chains to: quantify Scope 3 emissions by 2025 and align with the Global Methane Pledge by setting targets to reduce emissions by 2030.

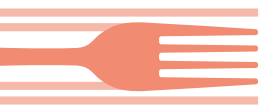
Given the very heavy methane footprint of the industrial meat producers¹² investors should consider divesting their holdings in these companies unless their engagement efforts provide a clear indication of money being spent to move towards more sustainable alternatives. Similarly, lenders should divert funds or at least charge a premium to compensate for the significant risk that industrial meat production assets will become stranded as government policies and consumer preferences shift.

⁹ The Global Methane Pledge currently only refers to 'seeking abatement of agricultural emissions through technology innovation as well as incentives and partnerships with farmers.'

¹⁰ The USA ranks as #3 behind China and India and ahead of Russia, but the USA has signed the pledge.

¹¹ This information is extremely valuable for basic investment analysis and risk assessment even without taking into account the sustainability reporting benefit.

¹² For example, see 'Emissions Impossible: how big meat and dairy are heating up the planet' published by the Changing Markets Foundation and Institute for Agricultural and Trade Policy (2022).



PRIORITY ACTION #5 **make agriculture/aquaculture systems regenerative before 2030**

What should financial institutions do themselves?

Equity investors may find their holdings of companies at the producer end of the food system form a smaller part of their portfolios than companies in the manufacturing and distribution Nodes. This means their focus will need to be on indirectly influencing producers via their customers further down the supply chain.

Conversely, banks are more likely to have direct relationships with companies involved in agricultural¹³ production and so should aim to directly influence their behaviour.

Financial institutions should:

- Reduce their holdings of, or loans to, agricultural production companies that do not have a clear focus on applying regenerative agricultural techniques and shift their capital to those that do.
- Engage proactively with investee companies to encourage them to adopt regenerative techniques in their own operations or with respect to their suppliers.
- Establish effective monitoring systems so that any cases of environmental and/or social harms resulting from extractive agricultural practices will be identified quickly.
- Disinvest from any companies that appear to be deliberately taking an extractive approach to food production (i.e. where there is clear evidence of environmental and/or social harms).
- Establish clear portfolio assessment, monitoring and reporting processes so that they can evaluate the extent to which their capital is being deployed in support of regenerative agriculture and be held to account for their actions.
- Establish strong due diligence processes to ensure that they can distinguish greenwashing from genuine regenerative agricultural practices.

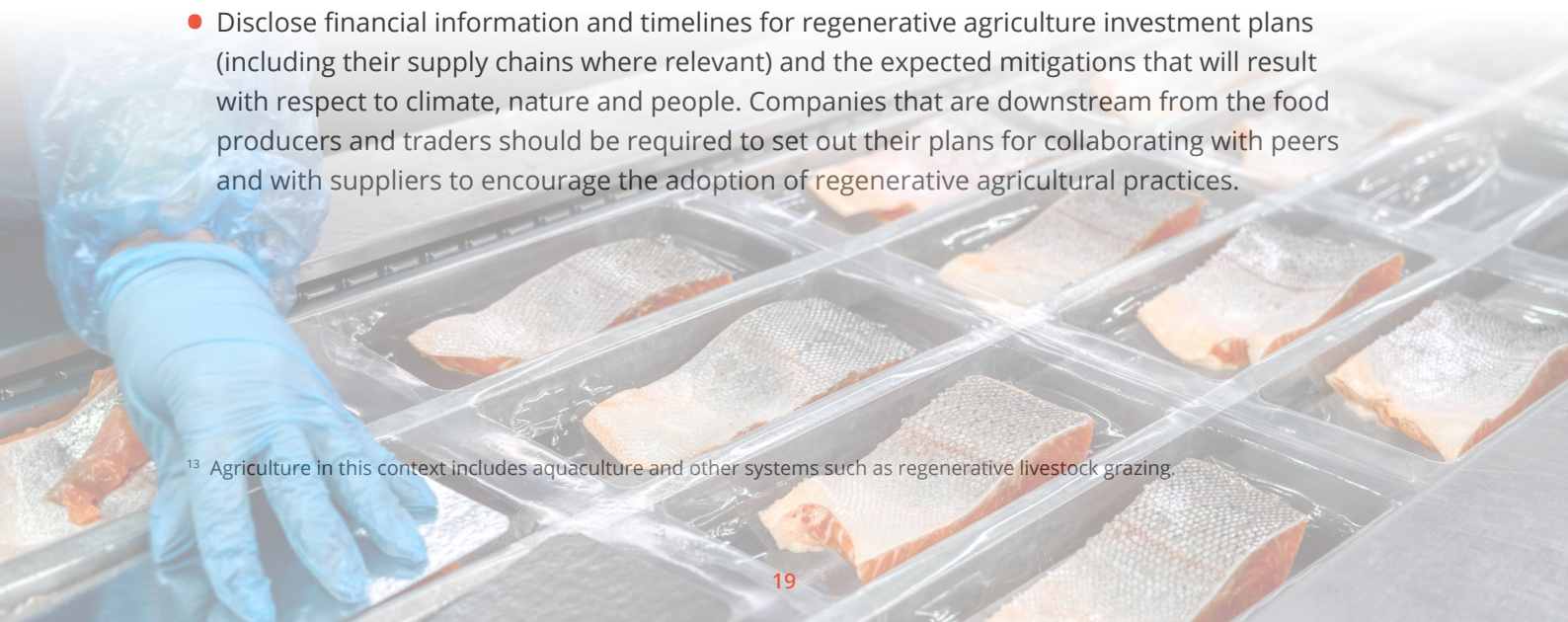
Sovereign bond investors should engage with governments to ensure agricultural policies and subsidies support regenerative agricultural practices and that policies and subsidies incentivising extractive agricultural practices are abandoned rapidly.

What should they require of their investments?

Companies that are funded or are seeking funding should be required to:

- Disclose information about their current agricultural practices (or those of their suppliers) with sufficient granularity to enable a portfolio view of the extent to which regenerative agriculture is being funded (or not).
- Disclose financial information and timelines for regenerative agriculture investment plans (including their supply chains where relevant) and the expected mitigations that will result with respect to climate, nature and people. Companies that are downstream from the food producers and traders should be required to set out their plans for collaborating with peers and with suppliers to encourage the adoption of regenerative agricultural practices.

¹³ Agriculture in this context includes aquaculture and other systems such as regenerative livestock grazing.





PRIORITY ACTION #6 **invest in alternative proteins**

In the context of this Roadmap we define 'alternative proteins' as all types of protein production that does not involve traditional livestock techniques.

What should financial institutions do themselves?

- Engage with governments to ensure regulatory frameworks encourage the development of alternative proteins.
- Allocate their capital away from industrial animal protein production towards alternative protein producers.
- Engage with food system companies further down the supply chain to encourage them to shift their production portfolios away from industrial animal protein production and to engage with their customers to encourage a shift in demand and consumption in the same direction.

What should they require of their investments?

- Require investee food systems companies to provide comprehensive data regarding production of traditional and alternative protein types in terms of volumes and locations¹⁴.
- Engage with investees directly involved in animal protein production to encourage them to shift their production to alternative protein sources.
- Engage with investees in downstream Nodes (ingredient producers and traders, food manufacturers, retail, and food service) to set time-framed targets for shifting their product portfolios away from industrial meat and dairy towards alternatives.
- Require investees in downstream Nodes (ingredient producers and traders, food manufacturers, retail, and food service) to report on their lobbying activities and disclose the steps they are taking to create food environments that support the development and sale of products based on alternative proteins.



¹⁴ This information is extremely valuable for basic investment analysis and risk assessment even without taking into account the sustainability reporting benefit.

...REDUCE **food systems**
EMISSIONS by nearly **60%**
of the current **footprint**

Illustrating the benefits

Calculating a quantified estimate of the benefits of transforming the global food system is extremely difficult. The FLAG¹⁵ Guidance published by the Science Based Targets initiative includes estimated benefits of 12 Gt CO₂e¹⁶ from a range of transformative food system actions.

Using a similar basis (but a much more simplistic approach) we estimate that five of the six Priority Actions we recommend could reduce food systems emissions by approximately 10 Gt CO₂e, nearly 60% of the food system's current 17.9 GtCO₂e footprint – see figure 9 – and reduce humanity's overall GhG footprint by a fifth – see Figure 10.

We are not able to estimate a GhG benefit from Priority Action #1 – fully traceable supply chains – but we can estimate an economic benefit.

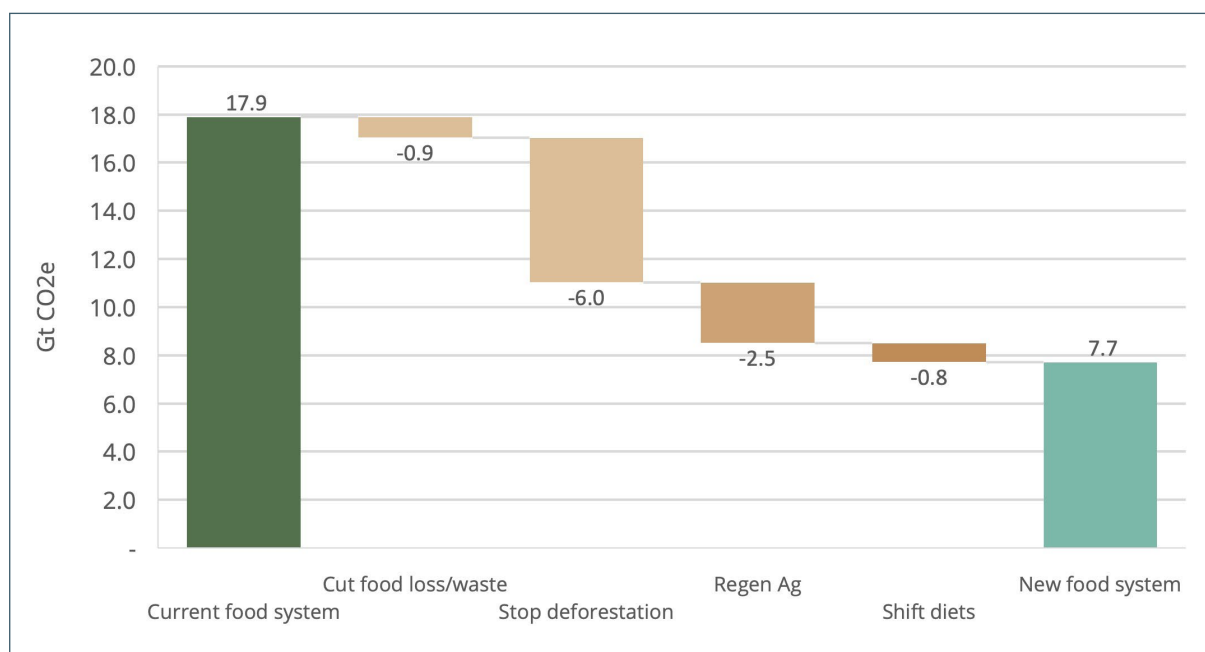


Figure 9: Illustration of the GhG reductions associated with five of Planet Tracker's six Priority Actions. Source: Planet Tracker analysis based on Roe et al. NB Carbon sequestration in soil is used to illustrate the potential of a shift to regenerative agriculture. 'Shift diets' approximately captures the benefits of cutting methane and shifting to alternative protein sources.

¹⁵ Forests, Land, And Agriculture

¹⁶ Carbon dioxide equivalent – a measure that enables comparison between different greenhouse gases and aggregation of emissions figures

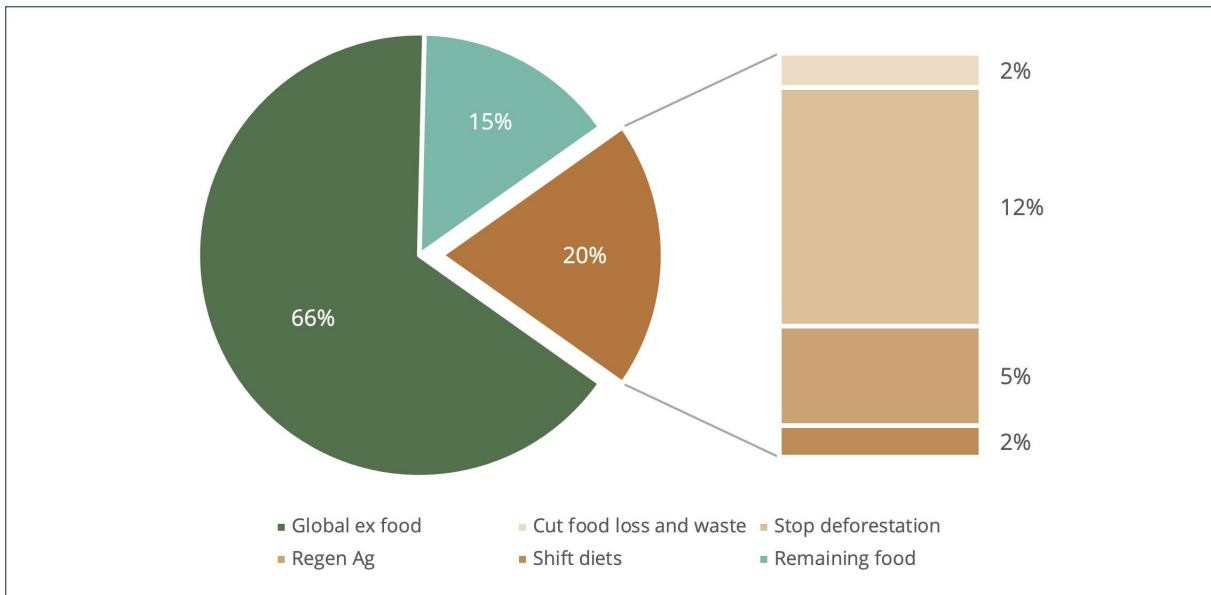


Figure 10: Illustration of the potential benefits of five of Planet Tracker's six Priority Actions.
 Source: Planet Tracker. NB The estimated benefit from carbon sequestration in soil is used to illustrate the potential of a shift to regenerative agriculture. 'Shift diets' approximately captures the benefits of cutting methane and shifting to alternative protein sources

The value of the economic benefits is potentially huge. FOLU's Growing Better report includes estimates for the benefit of a variety of actions to transform the global food system. Their framework does not precisely match ours but Figure 11 illustrates the trillion-dollar scale of the benefits associated with the six priority actions we recommend (five are based on FOLU's analysis, and one - supply chain traceability - is based on Planet Tracker's estimate).

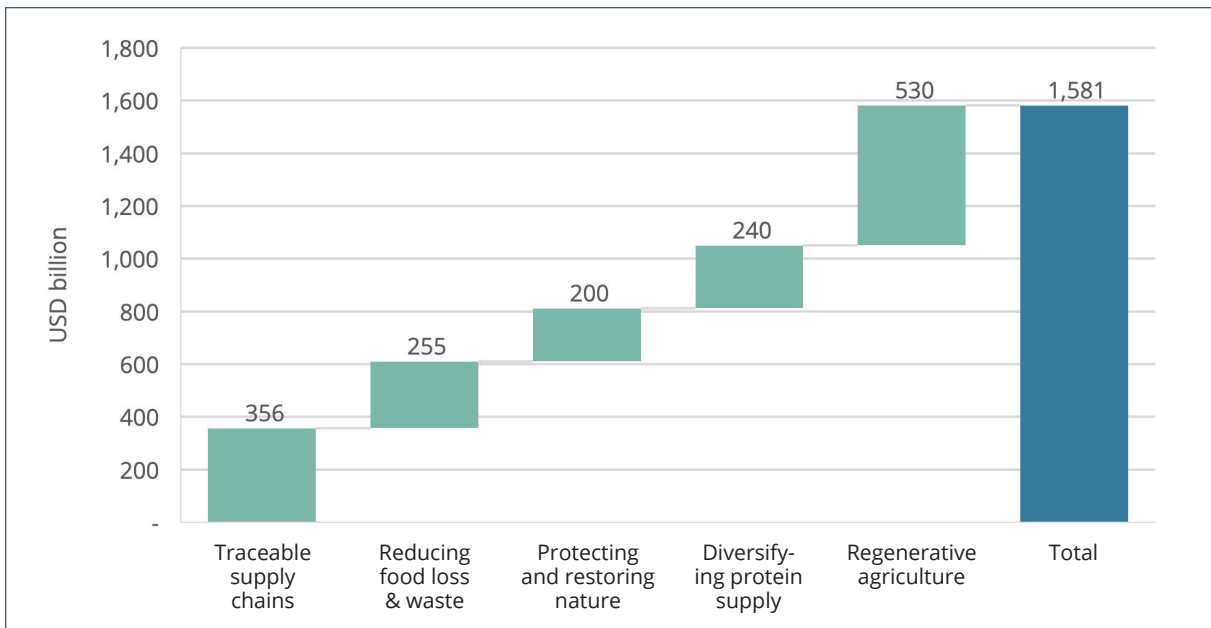


Figure 11: Illustration of the scale of economic benefits associated with Planet Tracker's six Priority Actions.
 Source: Planet Tracker analysis based on FOLU estimates. NB Diversifying Protein Supply also captures the benefits associated with reducing methane emissions

Downside risks of business as usual

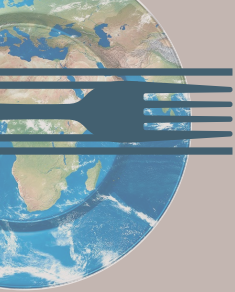
A 2022 report by Race to Zeroⁱⁱⁱ highlights that if food system transition risks are unmitigated, individual firms at the centre of the global food supply system could lose up to 26% of their value, with a sector average hit of over 7% compared to a BAU scenario.

Their analysis covered 40 of the largest and most influential food and agriculture companies collectively worth USD 2.2 trillion and employing nearly 8 million people, selected from the 2021 WBA Food and Agriculture Benchmark's list of 350 influential food and agriculture companies.

The loss across the food companies selected would equate to USD 152 billion. The Race to Zero report concludes that all of this loss is avoidable if the company and sector-specific mitigating actions¹⁷ they recommend are taken.



¹⁷ These mitigating actions relate to the specific companies and their position in the supply chain but are consistent with our framework

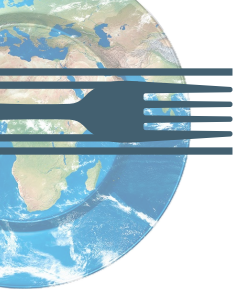


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REFERENCES

- i <https://www.unep.org/news-and-stories/story/cop15-ends-landmark-biodiversity-agreement>
- ii <https://teebweb.org/wp-content/uploads/2021/09/TechnicalBriefingNote.pdf>
- iii Assessing the financial impact of the land use transition on the food and agriculture sector, Race to Zero, September 2022 <https://climatechampions.unfccc.int/wp-content/uploads/2022/09/Assessing-the-financial-impact-of-the-land-use-transition-on-the-food-and-agriculture-sector.pdf>



ABOUT PLANET TRACKER

Planet Tracker is a non-profit financial think tank producing analytics and reports to align capital markets with planetary boundaries. Our mission is to create significant and irreversible transformation of global financial activities by 2030. By informing, enabling and mobilising the transformative power of capital markets we aim to deliver a financial system that is fully aligned with a net-zero, nature-positive economy. Planet Tracker proactively engages with financial institutions to drive change in their investment strategies. We ensure they know exactly what risk is built into their investments and identify opportunities from funding the systems transformations we advocate.

FOOD AND LAND USE PROGRAMME

Programme goal: to align capital markets with a sustainable global food system. Before 2050, Planet Tracker's Food and Land Use Programme will highlight the investment risks and opportunities associated with the just and equitable transformation of the global food system that eliminates negative externalities with respect to climate, nature, and health so that it is fit to feed the world's growing population within planetary boundaries. By highlighting these risks and opportunities, Planet Tracker's Food and Land Use programme will influence financial markets actors to actively support and fund this transformation.

ACKNOWLEDGEMENTS

Authors: Peter Elwin, Director of Fixed Income and Head of Food & Land Use Programme, Planet Tracker; Emma Amadi; Ewan Mitchell; Philip Hunter

Researchers: Ailish Layden, Giorgio Cozzolino, Christopher Baldock

Editors: John Willis, Dominic Lyle

With thanks to: Avery Cohn, Rachel Crossley, Patty Fong, Katie Gordon, Brent Loken, Nick Robins, Anna Taylor, Helena Wright and those that preferred to remain anonymous.

WITH THANKS TO OUR FUNDERS





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