FIXING THE BUSINESS OF FOOD

ALIGNING FOOD COMPANY PRACTICES WITH THE SDGS

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

Columbia Center on Sustainable Investment
A JOINT CENTER OF COLUMBIA LAW SCHOOL AND THE EARTH INSTITUTE, COLUMBIA UNIVERSITY

SANTA CHIARA | LAB
Università di Siena 1240

Barilla Center FOR FOOD & NUTRITION

FIXING THE BUSINESS OF FOOD

ALIGNING FOOD COMPANY PRACTICES WITH THE SDGS

Fixing the Business of Food is an initiative of the Barilla Center for Food & Nutrition (BCFN), UN Sustainable Development Solutions Network (UN SDSN), Columbia Center on Sustainable Investment (CCSI), Santa Chiara Lab - University of Siena (SCL).

Section 1 of this publication has been prepared by the Columbia Center on Sustainable Investment (CCSI) and the UN Sustainable Development Solutions Network (UN SDSN). The authors are Agarwal, Urvi; Espinosa, Gaëlle; Mardirossian, Nora; Marrero, Abrania; O'Dwyer, Erin; Plekenpol, Regan; Rincón Rico, Diana Marcela; Sachs, Jeffrey D.; and Sachs, Lisa E.

Section 2 of this publication has been prepared by the Santa Chiara Lab - University of Siena (SCL). The authors are: Al Khatib, Maher; Busco, Cristiano; Cresti, Simone; Cupertino, Sebastiano; Errera, Giorgio; Giovannoni, Elena; Perrella, Valerio; Riccaboni, Angelo; Tozzi, Cristiana; and Vitale, Gianluca.

Contributions were made by Ruggerini, Anna; Ciati, Roberto; Antonelli, Marta; and Pedrotti, Michele (BCFN).

The authors extend deep thanks to the following subject-matter experts who provided technical reviews of one or more of the Four Pillar Framework standards: Archer, Christina; Baethgen, Walter E.; Batho, Julia; Beckerman-Hsu, Jake; Biggs, Maisie; Burgos, Stephanie; Burrow, Sharan; Cardona, Italo; Christman Cole, Chloe; Cordes, Kaitlin; Daniels, Stephanie; Denning, Glenn; Douzal, Clara; Finn, Steven; Ferrat, Marion; Gneiting, Uwe; Grozinger, Christina; Guataqui, Schneider; Henry, James; Hodge, Mark; Johnson, Lise; Jones, Sarah; Kaag, Astrid; Khan, Micheline; Korkea-aho, Emilia; Livingston-Docwra, Ewan; McClain, Amanda; Monaghan, Rosie; Mosnier, Aline; Muñoz Quick, Paloma; Nestle, Marion; Orjuela, Manuela; Orellana, Marcos; Paarlberg, Robert; Parra, Andrea; Poncet, Jordan; Qazi, Kauwel; Reinhardt, Forest; Sandjojo, Virginia; Segrè, Andrea; Stanton, Julie; Szoke-Burke, Sam; Vittuari, Matteo; Woo Baidal, Jennifer; and Ziska, Lewis.

September 2021

www.barillacfn.com - info@barillacfn.com

Please quote this publication as: Sachs J. et al., 2021. "Fixing the Business of Food 2021: Aligning food company practices with the SDGs", Barilla Center for Food & Nutrition, UN Sustainable Development Solutions Network, Columbia Center on Sustainable Investment, Santa Chiara Lab University of Siena.

ISBN: 9788894528091

Table of contents

Foreword

The world food system is in crisis, which is why UN Secretary-General Antonio Guterres convened a UN World Food System Summit at UN Headquarters on September 23, 2021. The crisis is really a complex set of crises, including the following five main categories:

1. **Unhealthy diets.** Around half of the world today lives on unhealthy diets, including outright hunger, micronutrient deficiencies, and unbalanced diets leading to obesity, diabetes and other metabolic diseases, and healthy diets are unaffordable for around 40 percent of the world population;
2. **Food losses and wastes.** Around one-third of agricultural output is lost to post-harvest losses and consumer wastes;
3. **Unsustainable food production.** Food production is environmentally unsustainable, contributing to greenhouse gas emissions, deforestation, land degradation, loss of biodiversity, chemical pollution (from fertilizers and pesticides), invasive species, freshwater depletion, soil loss, and other environmental harms;
4. **Poverty in farm communities.** A significant proportion of farm families in low-income countries suffer from extreme poverty and lack of access to healthcare, education, safe drinking water and sanitation, electricity, safe cooking fuels, and digital services;
5. **Vulnerability of food systems to future shocks.** Food production is increasingly vulnerable to human-induced climate change and its myriad consequences: heatwaves, storms, floods, droughts, pest infestations, and others, yet the world also requires major increases in production of certain foodstuffs, especially fruits, vegetables, nuts, fish, and some others.

This is a daunting list of concerns, with grossly insufficient policy attention around the world. Food systems are mostly taken for granted by governments and the public. This is no longer tenable. Not only are these five categories of ills already very serious; they are expected to get much worse unless the world food system is transformed. Not even the richest countries are immune. Consider that the United States has one of the highest adult obesity rates in the world, around 42 percent. Many developing countries, meanwhile, are facing obesity epidemics while still confronting hunger and undernutrition, a so-called “dual burden” of malnutrition. Nor is any part of the world immune to the intensifying floods, droughts, tropical cyclones, forest fires, and pest outbreaks resulting from human-induced climate change.

The UN Food System Summit in September 2021 aims to spur long-term solutions by governments, businesses, and the public. The UN Food System Summit has identified five action tracks to address the five main categories of crisis:

- **Action Track 1:** Ensure access to safe and nutritious food for all
- **Action Track 2:** Shift to sustainable consumption patterns
- **Action Track 3:** Boost nature-positive production
- **Action Track 4:** Advance equitable livelihoods
- **Action Track 5:** Build resilience to vulnerabilities, shocks and stress

The transformation of the global food system is a daunting challenge, at least on the scale as transforming the world energy system to stop human-induced climate change. The transformation of the world food system to achieve sustainability in all its dimensions – as called for by Sustainable Development Goal 2 and related SDGs – is in many ways far more complex than the energy system transformation. The world food system involves hundreds of millions of farmers and their families, complex global supply chains in international trade of foodstuffs, thousands of major food producing companies, complex and highly varied food production systems and local ecologies, extensive food processing for final consumers, and of course a profound variety of food traditions and cultures around the world.

The world's major food companies, engaged in food production, trade, processing, and consumer sales around the world play a major role in the global food system, and therefore have crucial roles to play in the transformation to sustainable food systems. Since the food companies vary enormously in their roles across the food supply chain "from farm to fork," they also have distinctive roles and responsibilities. This report is aimed at establishing guidelines for food companies to align with the SDGs and the requirements of global food system sustainability.

Of course, food companies are only a part of the global food system, and only a part of a complex set of solutions. Food companies by themselves cannot end global warming, control food choices by the world's households, end poverty, or solve the problems of food losses and wastes. Yet in each of these areas, they can play a role, often one that they themselves have not yet recognized or internalized in the company. We are at the start of a new era of food system sustainability, and food companies will be required to raise their awareness of food system needs and their own roles in achieving food system sustainability.

To help companies accomplish this historic change of direction – as part of broader social and policy changes – we have identified an approach to help companies understand their particular roles in the global transformation, to adjust their internal policies and practices, and then to report on their actions. The management and employees of the food companies need as well to be informed and engaged in the major transformations ahead.

In our approach, company managers ask four key questions about the company. The first is about the company's products, that is, the goods and services that they sell to the final consumers. Are their products healthful and are they being consumed in healthful ways, as part of healthful diets, by their customers? Are the company's products part of the growing problem of obesity and metabolic diseases, or part of the solution? Do the products help to alleviate hunger and undernutrition, for example by fortifying vitamins and other micronutrients? Food companies should take significant actions to reduce diet-related chronic diseases by curbing unhealthful additives and processing, fortifying products with vitamins and micronutrients, and helping their customers to achieve healthy and nutritious diets.

The second question is about the company's production operations. Are the production processes environmentally sustainable, or are they implicated in environmental harms such as greenhouse gas emissions, freshwater depletion (such as from fossil aquifers), deforestation, degradation of fragile ecosystems (such as wetlands and grasslands), chemical pollution (such as through fertilizer runoff and pesticide use), and loss of biodiversity (by conversion of habitats to agricultural uses)? These are often complex questions, and many companies have never asked them in scientific detail. There are also social dimensions of sustainability. Do the company's own production operations use child or bonded labor? Are workers paid a living wage?

The third question is about the company's value chains, both upstream to suppliers and downstream to customers. In the past, companies concerned themselves mainly with their own production and sales, and did not ask many questions about the sources of their upstream inputs or downstream activities that connect the company with consumers. Yet sustainable food systems (and indeed sustainable systems across the economy) require responsibility across the value chain. Major companies in the world today recognize that it is unacceptable to use inputs produced by child or slave labor, or by production processes that are environmentally destructive – even if carried out by other companies. Moreover, the upstream farm families should have access to essential services, social protection, and decent work. Nor can companies wash their hands of downstream responsibility. Improving unsustainable social conditions upstream and downstream will surely require efforts beyond those of the food companies, yet the companies should join governments, civil society, and international agencies to implement solutions.

The fourth question concerns every company's "social license to produce," or what we call good citizenship. Companies are organizations with legal rights and responsibilities. Corporations, for example, are granted privileges such as limited liability in order to encourage their contribution to the economy. Yet such privileges come with weighty responsibilities as well. This includes a heavy responsibility towards sustainable development itself. Companies are obligated to be honest, eschew fraudulent practices, respect all stakeholders, and obey the law. This includes paying taxes and honoring environmental agreements, and refusing to cut corners (such as aggressive tax avoidance that skirts the spirit of the law) just because enforcement practices are laggard. Companies should not engage in lobbying activities that undermine the common good even if they believe they can get a special advantage through their lobbying. The first rule of good citizenship is the ancient precept, *Primum non nocere*, or "First, do no harm."

This report is part of an ongoing annual series of reports on Fixing the Business of Food initiated and actively supported by the Barilla Center for Food and Nutrition (BCFN). The report is the product of a team including BCFN, the Columbia Center on Sustainable Investment (CCSI) at Columbia University, the United Nations Sustainable Development Solutions Network (UN SDSN), and the Santa Chiara Lab (SCL) of the University of Siena. CCSI and UN SDSN are responsible for Section 1 of the report, on the Four Pillar Framework. Santa Chiara Lab is responsible for Section 2 of the report, on applying the Four Pillar Framework to a selection of major food companies. The BCFN has generously and actively supported the entire project and has been involved in all aspects of this work.

We emphasize that *Fixing the Business of Food* is an annual report and very much a work in progress. The challenges that we are describing and aiming to address are deep, complex, and still very much under-addressed. Food companies are just becoming aware of the magnitude of the crisis, and many governments remain wholly unaware. The UN Food System Summit aims to change this reality, with all due urgency. We recognize that we are just at the start of a long-term transformation of the food system, and other parts of society (energy, infrastructure, health, education, and others) to achieve the SDGs, fulfill the Paris Climate Agreement, and ultimately, to build the future we want. Companies are just now becoming aware of the Four Pillar Framework. We intend to continue to develop, deepen, and expand our work in the years ahead, and therefore welcome comments, feedback, and opportunities for exchanging viewpoints and information.

About Section 1 of this report

Section 1 of this report, prepared by CCSI and UN SDSN, presents the Four Pillar Framework standards. These standards summarize the activities that are expected of food processing companies that align with the UN SDGs.

First, the Four Pillar Framework is introduced. The challenges facing corporate SDG-alignment are presented, along with the case for how the novel Four Pillar Framework addresses these gaps, and more generally, the objectives of the Framework.

Next, distinct features of the Framework and standards are discussed, including its value chain scope, the expectation that companies address root causes in their broader ecosystems, and the due diligence approach which provides structure to the implementation guidance for each standard. Information regarding the standards' alignment with other frameworks is then shared.

The report includes a brief overview of the Four Pillars and a one-page overview of the twenty-one standards. Detailed implementation guidance for the standards is forthcoming in November 2021.

About Section 2 of this report

Section 2, by SCL, outlines the results of some empirical studies conducted to analyse the alignment of food companies with the SDGs vis-à-vis the Four Pillar Framework (Ch. 2.1). Valuable findings are also provided to inform the application of the Four Pillar Framework to different business settings (Ch. 2.2)

Analysis of the sustainability reports of the 100 largest food companies (par. 2.1.1) highlights that, in general, companies should make more significant contributions to sustainable food systems. Although they disclose some interesting commitments, especially with reference to "Sustainable Business Operations and Internal Processes (Pillar 2)", companies do not provide information on strategic goals and achievements with reference to all relevant topics. Moreover, when used, KPIs vary widely among companies.

A deeper analysis of four companies (par. 2.1.2) shows that to become truly sustainable, companies

need to adopt a fully integrated approach. This entails taking into consideration interests and contributions of a series of key stakeholders and linking them in a journey that connects governance with strategy, as well as operations with performance.

From the effort of enacting the Four Pillar Framework in more than 30 agri-food companies (Ch. 2.2.), the need to take into consideration the differences among sub-sectors and the simplicity of organizational structures and processes of many agri-food businesses emerged.

Smaller businesses often see sustainability as a threat and not as an opportunity. They need support – more than rankings - in the ongoing transformation process. They can contribute to more sustainable food systems, but they need to be taught the "grammar" of sustainability, which shows them the advantages of sustainability and the good solutions already adopted by other companies (some of which presented in par. 2.1.3.), and how to integrate metrics and targets in their governance and management systems.

Accordingly, section 2 shows a useful adaptation of the Framework to smaller food companies, small farms, wineries, and aquaculture businesses. This endeavour has been made thanks to a process of stakeholder consultation. In this way the Four Pillar Framework was confirmed to be very effective in supporting the alignment of any kind of business, and not only the largest, to SDGs.

SECTION 1

–

FOUR PILLAR FRAMEWORK STANDARDS FOR FOOD COMPANY ALIGNMENT WITH THE SDGS

By

Columbia Center on Sustainable Investment *(CCSI)*

& ***Sustainable Development Solutions Network*** *(SDSN)*

About the Four Pillar Framework Standards

The Four Pillar Framework standards support companies in their efforts to align their practices with the UN SDGs. The implementation guidance provided for each of the standards laid out in the Four Pillar Framework offers a set of practical steps for companies to take to align their business activities with the ambitious vision laid out in the SDGs. This section provides a brief explanation of the standards' relevance to the following audiences: food sector companies, policymakers, and institutional investors.

Relevance of the Four Pillar Framework Standards to key audiences

The primary audience for the standards are **food sector companies** that are serious about making the necessary transformational changes to their businesses to align with the SDGs. From the business perspective, aligning with the SDGs presents opportunities to meet social responsibilities and stakeholder expectations and it helps avoid risks to the bottom line across complex issue areas.

The food system faces many challenges stemming from private sector activity that prioritizes short-term profits at the expense of the health and wellbeing of people and the environment. Failure to address these challenges also poses medium- and long-term risks to the resiliency and financial success of food sector companies: from climate change[1] and global pandemics[2] to the exodus of agricultural producers and workers from the sector due to the livelihood's inviability.[3]

Individual food sector companies may face risks if they fail to take adequate action to align their practices with the SDGs, including exposure to sanctions[4] for non-compliance with increasing

1. The food system is globally responsible for *more than a third* of global GHG emissions. (Source: M. Crippa et al., "Food Systems Are Responsible for a Third of Global Anthropogenic GHG Emissions," *Nature Food* 2, no. 3 (March 2021): 198–209, https://doi.org/10.1038/s43016-021-00225-9.) At the same time, weather impacts linked to climate change have caused disruptions along the entire food supply chain, including rising temperatures reducing agricultural and fishing yields, severe drought leading to "[e]stimated agricultural losses [of] near US$ 3 billion in Brazil," and severe thunderstorms in Iowa resulting in "severe agricultural losses, including an estimated two million hectares of flattened corn and soybean crops." (Source: "State of the Global Climate 2020," WMO-No. 1264 (World Meteorological Organization, 2021), https://library.wmo.int/doc_num.php?explnum_id=10618.
2. Recent large-scale pandemics "have come about due to inadequate food systems safeguards to detect, trace and eliminate threats arising from zoonotic diseases." (Source: Anaka Aiyar and Prabhu Pingali, "Pandemics and Food Systems - towards a Proactive Food Safety Approach to Disease Prevention & Management," *Food Security*, July 10, 2020, 1–8, https://doi.org/10.1007/s12571-020-01074-3.) Such pandemics cause disruptions to the food and agricultural sector, with the COVID-19 pandemic imposing a shock on agricultural markets that "will most likely reverberate throughout the coming decade." (Source: "The Impact of COVID-19 on Agricultural Markets and GHG Emissions" (OECD, December 8, 2020), https://read.oecd-ilibrary.org/view/?ref=1059_1059106-6g8ilorfb1&title=The-impact-of-COVID-19-on-agricultural-markets-and-GHG-emissions&_ga=2.161060350.291376585.1627877284-1353280411.1627877284.
3. A 2020 report highlights that "Failure to pay a living wage has begun to cost companies their workforce: as entire sectors of agricultural production become financially unsustainable, workers look to other industries which pay more (e.g., West African cocoa farmers turning to rubber and cashew plantations, and migration from rural communities to cities)." (Source: Art Prapha, "From Risk to Resilience: A Good Practice Guide for Food Retailers Addressing Human Rights in Their Supply Chains," *Oxfam*, July 2020, 40.)
4. Saldarriaga, "The EU's New Sustainability Rules Spell Trouble for Many Businesses," Financial Times, June 3, 2021, Https://www.ft.com/content/2e60c66a-fe96-4235-9c5b-4093b7423fb2.

legislation and regulation mandating company action on sustainability issues.[5] Regardless of the legal and regulatory framework in place, conflict with communities can result in concrete losses including opportunity costs and staff time diverted to managing conflict.[6] On the other hand, companies with positive reputations for sustainability are better able to hire and retain top talent,[7] as well as increase profitability.[8] Across all sustainability issues, following the law is not sufficient to align practices with the SDGs, nor to avoid material risks.

The standards are also a resource for **policymakers** to drive the critical food system transformation needed to achieve the SDGs and to meet their own responsibility to achieve the SDGs[9] by establishing a framework of comprehensive expectations for, and regulations governing, the private sector.

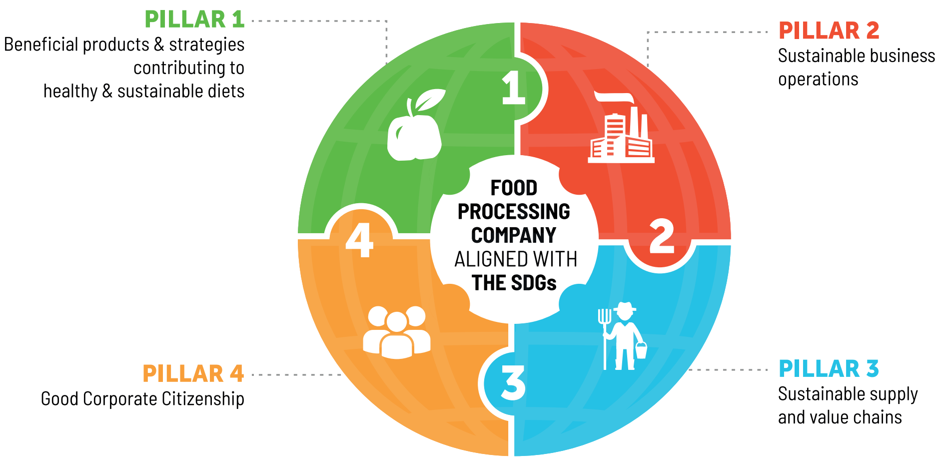
Finally, with clients and regulators increasingly demanding that sustainability be meaningfully integrated into investment decisions and engagement, **investors** are paying closer attention than ever to the ways in which their investment activities impact people and planet.[10] The robust Four Pillar Framework standards serve to guide investors seeking to identify and integrate environmental, social, and governance (ESG) risks in their investment decision-making and to engage their portfolio companies in the necessary transformational changes to minimize harms and maximize positive contribution to the SDGs.

For **those impacted by company activities, civil society organizations, academics, and engaged members of the public**, the Four Pillar Framework can be used to help assess, monitor, and hold food processing companies accountable for meeting their sustainability expectations. The standards can be used to help articulate calls for company prevention, mitigation, and remedy in terms of alignment with the SDGs.

---

5. For example, in the European Union (EU) alone, the Non-Financial Reporting Directive, Taxonomy for Sustainable Activities, the Sustainable Finance Disclosure Regulation, and a forthcoming Mandatory Environmental and Human Rights Due Diligence Law are all aimed at driving more meaningful corporate sustainability efforts.
6. Rachel Davis and Daniel Franks, "Costs of Company-Community Conflict in the Extractive Sector," *CSR Initiative at the Harvard Kennedy School*, n.d., 56.Davis and Franks; Anna Locke et al., "Assessing the Costs of Tenure Risks to Agribusinesses," TMP Systems & ODI, February 24, 2019, https://landportal.org/node/79770; Joseph Feyertag and Benedick Bowie, "Tenure Risk in the African Sugar Sector Can Cause Companies to Lose up to $100 Million," TMP Systems & ODI, February 25, 2019, https://landportal.org/node/79776.
7. For example, a 2020 study provides evidence that workers "value environmental sustainability and accept lower wages to work in more environmentally sustainable firms and sectors" and "that more sustainable firms are also better able to recruit and retain high-skilled workers." (Source: Philipp Krueger, Daniel Metzger, and Jiaxin Wu, "The Sustainability Wage Gap," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, May 7, 2020), https://doi.org/10.2139/ssrn.3672492.)
8. Morteza Khojastehpour and Raechel Johns, "The Effect of Environmental CSR Issues on Corporate/Brand Reputation and Corporate Profitability," *European Business Review* 26, no. 4 (January 1, 2014): 330–39, https://doi.org/10.1108/EBR-03-2014-0029.
9. One of the six societal transformations necessary to achieve the SDGs identified by the Sustainable Development Solutions Network (SDSN) is "Sustainable food, land, water, and oceans." (Source: Jeffrey D. Sachs et al., "Six Transformations to Achieve the Sustainable Development Goals," *Nature Sustainability* 2, no. 9 (Settembre 2019): 805–14, https://doi.org/10.1038/s41893-019-0352-9.)
10. For example, interviews with 70 senior executives at 43 global institutional investing firms in 2019 revealed that "ESG [environmental, social, and governance] was almost universally top of mind for these executives." (Source: Robert G. Eccles and Svetlana Klimenko, "The Investor Revolution," *Harvard Business Review*, May 1, 2019, https://hbr.org/2019/05/the-investor-revolution.) A survey of global asset owners in 2018 found that more than half are currently "implementing or evaluating ESG consideration in their investment strategy." (Source: "Smart Beta: 2018 Global Survey Findings from Asset Owners" (FTSE Russell), accessed June 8, 2021, https://investmentnews.co.nz/wp-content/uploads/Smartbeta18.pdf.)

1. Overview of the Four Pillars



PILLAR 1

Beneficial Products and Strategies Contributing to Healthy and Sustainable Diets

Pillar 1 highlights the impact of a company's products, services, and strategies on human wellbeing and the planet's sustainability. For the food processing companies, this Pillar helps bring into focus the contributions to healthy and sustainable dietary patterns through their products and strategies. This includes whether food products are healthful, whether product marketing promotes health, and whether product use is conducive to well-being and supportive of improved living standards.[11]

PILLAR 2

Sustainable Business Operations and Internal Processes

Pillar 2 includes the environmental and social impacts of business operations, and the responsibility of companies to respect human rights, which improves the livelihoods of communities, workers, producers, and their families.

11. Sachs et al., "Fixing the Business of Food. How to Align the Agrifood Sector with the SDGs."

PILLAR 3

Sustainable Supply and Value Chains

Pillar 3 highlights the company's role in and responsibility for using leverage to influence value chain actors, such as suppliers, producers, and clients, to drive sustainable development in the broader ecosystems of which it is part. This Pillar focuses on company activities to support the realization of the SDGs through interactions with these actors, and collaboration to promote, incentivize, and ensure more sustainable practices and better livelihoods within its own value chain as well as within the relevant industries or sectors that its operations and business relationships influence.

PILLAR 4:

Good Corporate Citizenship

Pillar 4 brings into focus how companies are governed and how they engage with the systems and rules that govern them. Good corporate citizenship is the foundation for the holistic changes in corporate practices needed to align with the SDGs. This pillar highlights company strategies that contribute to or diminish social goods or societal well-being, and activities that support or undermine the crafting and effective deployment of law and policy that advances sustainable development. It considers company engagement in responsible tax and litigation practices, and the extent to which corporate governance and management systems are geared towards incentivizing SDG-aligned conduct.

<table>
<tr><th>PILLAR 1
Beneficial products
& strategies contributing to healthy
& sustainable diets</th><th>PILLAR 2
Sustainable business
operations</th><th>PILLAR 3
Sustainable supply
and value chains</th><th>PILLAR 4
Good Corporate Citizenship</th></tr>
<tr><td>• Healthy & sustainable product portfolios
• Marketing & labelling
• Food security
• Food safety</td><td colspan="2">• Climate change & air quality
• Biodiversity
• Agrochemicals & Sustainable Agriculture
• Freshwater
• Waste
• Animal Welfare
• Child labor
• Forced labor
• Living wages & incomes
• Health & safety
• Freedom of association & collective bargaining
• Non-discrimination & equality
• Resource rights</td><td>• Governance & management
• Policymaking influence
• Litigation
• Tax</td></tr>
</table>

Because the issues relevant to pillars 2 and 3 are the same, the standards cover both operations and value chain.
The company will tailor its approach to addressing the issues based on their relevance for its operations and/or value chain.

While most topics are relevant to multiple Pillars, the above graphic limits duplication to the extent possible. Accordingly, this structure places topics where they have the most relevance based on (1) where the topic presents the greatest opportunity for improvement in the food sector; and (2) where the topic can be addressed by the company. The relevance of certain topics to each Pillar varies somewhat based on the company's structure, and each standard takes into consideration these potential differences.

2. Overview of the Standards

This page provides an overview of the Four Pillar Framework standards. The order of the standards does not signify relative importance.

PILLAR 1:

1. HEALTHY & SUSTAINABLE PRODUCT PORTFOLIOS: Ensure the food products sold by the company contribute to healthy and sustainable diets.
2. FOOD SECURITY: Facilitate access to safe and nutritious foods. Prevent and eliminate threats to food security across the company's value chain and broader ecosystems.
3. MARKETING & LABELING: Employ responsible, equitable, and honest marketing and labeling practices that allow consumers to easily make informed choices and do not exploit vulnerable populations.
4. FOOD SAFETY: Prevent and eliminate food safety hazards in the company's business operations and value chain to ensure safe food for consumers and prevent harms to broader ecosystems.

PILLARS 2 & 3:

5. CHILD LABOR: Prevent and eliminate child labor in the company's operations, value chain, and broader ecosystems.
6. FORCED LABOR: Prevent and eliminate forced labor in the company's operations, value chain, and broader ecosystems.
7. FREEDOM OF ASSOCIATION & COLLECTIVE BARGAINING: Empower workers, producers, and their representatives to organize and join trade unions, bargain collectively without interference, and participate in decision-making on matters that affect them.
8. NON-DISCRIMINATION & EQUALITY: Remove barriers to equal treatment and opportunity in the company's operations, value chain, and broader ecosystems.
9. OCCUPATIONAL HEALTH & SAFETY: Provide healthy and safe working environments for all workers in the company's operations and use leverage to ensure healthy and safe working environments for all workers and producers in the value chain.
10. RESOURCE RIGHTS: Respect all legitimate resource and tenure rights, and support smallholder farmers and communities in retaining and defending their natural resource rights, with a particular focus on vulnerable rights holders.
11. LIVING WAGES & INCOMES: Pay living wages to all workers and use leverage in the company's value chain and the broader ecosystem to ensure workers are paid living wages and producers earn living incomes.

12. AGROCHEMICALS & SUSTAINABLE AGRICULTURE: Minimize agrochemical use in the value chain and support producers in transitioning to sustainable and regenerative agricultural practices that maintain productivity while protecting ecosystems and human health and preserving soil and other natural resources.
13. CLIMATE CHANGE & AIR QUALITY: Significantly and rapidly reduce greenhouse gas emissions to net zero, in line with limiting global warming to 1.5°C, throughout the company's operations and value chain, including by asserting influence on land use change, energy use, agricultural practices, and food loss and waste.
14. BIODIVERSITY: Prevent negative impacts on biodiversity and protect, restore, and promote natural ecosystems throughout the company's operations and value chain.
15. FRESHWATER: Achieve the lowest possible water footprint, with a focus on areas where the water risk is high, to ensure a sustainable clean water supply for human use and natural ecosystems.
16. WASTE: Minimize food loss and packaging waste in the company's operations and value chain, including at the retail and consumer levels.
17. ANIMAL WELFARE: Prevent and eliminate animal rights abuses and implement good animal welfare in the company's operations, value chain, and broader ecosystems.

PILLAR 4:

18. GOVERNANCE AND MANAGEMENT: Implement governance structures and management systems that center impacts of the company's operations, products, and value chain on people and planet.
19. POLICYMAKING INFLUENCE: Refrain from activities that increase company influence over policymaking to achieve company or industry interests at the expense of achieving the 2030 Agenda. Support government efforts to achieve the Sustainable Development Goals.
20. TAX: Eliminate the average gap between the tax paid and the statutory rate over any five-year period in each country of residence for the company and its subsidiaries.
21. LITIGATION: Refrain from litigation activities which financially harm, limit access to justice, or chill public participation and speech of critics by exploiting power and resource asymmetries.

3. Background of the Four Pillar Framework

The global food system must be fundamentally transformed to operate within planetary boundaries and to enable human wellbeing. States are primarily accountable for achieving the SDGs laid out in the 2030 Sustainable Development Agenda. This includes driving the necessary transformations across food systems and protecting the human rights of individuals and communities. In the 2030 Agenda, States recognize the vital role of companies in achieving the goals, including the importance of mitigating business' harmful impacts on human and planetary health and supporting broader SDG achievement.

Since a rigorous and comprehensive framework through which to assess corporate alignment with the SDGs is missing, food sector companies and their stakeholders do not have clear guidance on how to support the achievement of the SDGs.

A. Challenges the Four Pillar Framework seeks to address

The Four Pillar Framework to guide food sector companies' alignment with the SDGs and the Paris Climate Agreement was presented in a 2020 report by the Fixing the Business of Food Initiative.[12] The report found that available sustainability frameworks, standards, reporting, and certifications for companies do not sufficiently support or measure SDG alignment across the Four Pillar Framework business activities and their identified key topics. The report found that "[e]ven as corporate sustainability efforts increase — as seen in the rising number of sustainability initiatives and standards,[13] Environmental, Social, and Governance (ESG) screened investment increases,[14] and in the mainstreaming of sustainability reports[15] — corporate alignment with the SDGs continues to face fundamental challenges."[16]

12. J. Sachs et al., "Fixing the Business of Food. How to Align the Agrifood Sector with the SDGs." (Barilla Foundation, UN Sustainable Development Solutions Network, Columbia Center on Sustainable Investment, Santa Chiara Lab University of Siena., 2020).
13. Rhonda Brauer and Glenn Davis, "Sustainability Reporting Frameworks: A Guide for CIOs" (Council of Institutional Investors, September 2019), https://7677c7b7-7992-453f-8d12-74ccbdbee23c.filesusr.com/ugd/72d47f_e00c47786e17471fb3b8222e78427935.pdf.
14. GSIA estimates a 34% increase in sustainable investing assets just from 2016 to 2018.
15. In 2018, 86% of S&P 500 companies published sustainability reports Christine Robinson et al., "#DeloitteESGnow — Sustainability Disclosure Goes Mainstream," 2019, https://dart.deloitte.com/USDART/home/ publications/deloitte/heads-up/2019/deloitteesgnow-sustainabilitydisclosure-goes-mainstream.
16. Sachs et al., "Fixing the Business of Food. How to Align the Agrifood Sector with the SDGs."; This is also confirmed in Section 2 of this publication.

The 2020 report identified the following key challenges with existing frameworks, practices, and reporting:

1. A lack of consensus on the key principles defining an "SDG-aligned" or "sustainable" business create confusion and enable greenwashing,[17] and frameworks' voluntary natures allow companies to self-report their sustainability performance on their preferred issues while ignoring less convenient elements.[18] This leaves the public, investors, consumers, and governments with an incomplete picture of each company's sustainability practices and SDG-alignment.
2. Many standards and reporting frameworks focus on activities which are easy to compare, such as corporate policies and codes of conduct. While these are vital steps in a company's sustainability journey, they have proven insufficient to tackle and eradicate human rights abuses and poor practices in business operations and throughout value chains.
3. Existing frameworks and ESG indexes have generally overlooked or neglected aspects of business activities which are critical for understanding the overall impacts of companies on the SDGs. In particular, three key topics receive insufficient coverage:
   - **Impacts resulting from product use**: Companies whose primary products are unhealthy foods, drinks, or substances often do well on ESG metrics if they report on substantial efforts in other areas, such as labor rights in their supply chains. The company's main business model – creating, marketing, and selling foods which in practice have negative health impacts on consumers – are often not factored into benchmarks.
   - **Good corporate citizenship**: Beyond illegal corruption, many frameworks ignore the impacts of companies' tax practices and policymaking engagement activities, including lobbying. These activities can weaken legitimate democratic institutions and limit the State's ability to achieve and finance the SDGs.[19]
   - **Engagement with human rights defenders and whistleblowers**: Oftentimes, companies engage with human rights defenders, whistleblowers, critics, and trade unionists in ways which undermine the achievement of their own sustainability commitments and targets. Human rights and environmental defenders who challenge agribusiness projects play a critical role in notifying companies of potential sustainability issues, and yet still face violence and judicial harassment in their operating contexts. Current ESG and sustainability frameworks rarely consider such impacts and the appropriate role of responsible and sustainable companies in acting to prevent and address them.

To address these contributing factors for corporate misalignment with the SDGs and to activate the transformative power of responsible business activities, the Four Pillar Framework standards advance a robust, holistic approach to corporate SDG alignment.

17. Florian Berg, Julian Kolbel, and Roberto Rigobon, "Aggregate Confusion: The Divergence of ESG Ratings," *SSRN Electronic Journal*, 2019, https://doi.org/10.2139/ssrn.3438533.
18. Sebástien Smith, "Business's Approach towards Sustainable Development Goals: Self-Interest and Cherry Picking," Sustainability XTM, November 22, 2016, https://sustainabilityx.co/businesss-approachtowards-sustainable-development-goals-self-interest-and-cherrypicking-752ace93351e; UN Global Compact, "Integrating the SDGs into Corporate Reporting: A Practical Guide," August 2018, https:// www.unglobalcompact.org/docs/publications/Practical_Guide_ SDG_Reporting.pdf; Antonio Vives, "Businesses' SDG Contributions: Legitimate or Greenwashing?," December 19, 2017, https://www. triplepundit.com/story/2017/businesses-sdg-contributions-legitimate-orgreenwashing/13991.
19. Steve Johnson, "ESG Investment Favours Tax-Avoiding Tech Companies," Financial Times, February 22, 2021, https:// www.ft.com/content/486afe00-5347-4f23-ab30-fb2ab901b2cb.

B. Objectives of the Four Pillar Framework

The Four Pillar Framework is a rigorous conceptual framework that brings clarity to the task of identifying SDG-aligned corporate practices by identifying (1) the four broad areas of business activity that affect the SDGs, (2) the underlying nutritional, environmental, social, and governance topics that food sector companies need to tackle through those business activities to spur the greatest contributions to the SDGs, and (3) standards for each of those topics.

The Four Pillar Framework aims to address the challenges identified above by providing companies, standard-setters, reporting frameworks, rating agencies, investors, and policymakers with a practical framework for assessing food sector alignment with the SDGs. The Framework can and should be used to refine other sustainability reporting frameworks, standards, policies, rankings, and certifications to ensure a holistic approach to aligning food sector practices with the SDGs.

The Framework takes such a comprehensive approach to align with the SDGs across four pillars of business activities that impact the SDGs: (Pillar 1) beneficial products and strategies contributing to healthy and sustainable diets; (Pillar 2) sustainable business operations and internal processes; (Pillar 3) sustainable supply and value chains; and (Pillar 4) good corporate citizenship. Food sector companies need to tackle *all four of these pillars* to align with – and spur the greatest contributions to – the SDGs.

The standards lay out a “North Star” of what a company whose practices fully align with the SDGs looks like in order to guide corporate sustainability efforts. The Framework is holistic, and the standards across issue areas are indivisible, meaning strong performance on one standard cannot offset misalignment on another standard. This improves upon approaches which allow companies to cherry pick the issues they wish to contribute to and report on.

C. Target companies for the standards

The Four Pillar Framework is useful to all food companies at different stages of the food system value chain in evaluating their alignment with the SDGs.

As a starting point, the set of Four Pillar Framework standards are geared towards *food processing companies*. Companies in the food processing sub-sector are those engaged in processing and manufacturing raw materials to transform them into food and beverage products. Among these companies, the largest of based on annual sales globally are: Nestlé; PepsiCo, Inc.; Anheuser-Busch InBev; JBS; and Tyson Foods.[20]

All food processing companies are within scope - those of all sizes, from all regions, and with all structures.

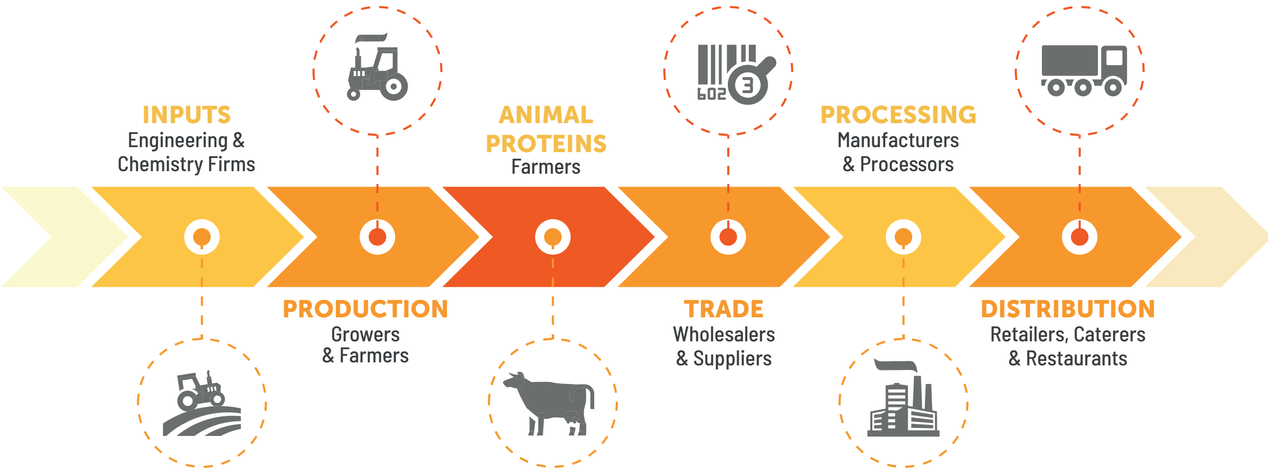
Small- and medium-sized enterprises may face different challenges in meeting the standards than multinationals. Companies located in emerging markets also face different challenges in meeting the standards than companies located in developed markets.

20. “The 2020 Top 100 Food and Beverage Companies,” Food Engineering Magazine, August 21, 2020, https://www.foodengineeringmag.com/articles/99063-the-2020-top-100-food-and-beverage-companies.

Accordingly, the standards include the expectation that the company assesses its own footprint or baseline to identify areas for improvement in meeting the standard. At this stage, the company considers the specific challenges based on the company's size, operating contexts, and commodities, so that its efforts to meet the standard are tailored to the company's involvement with negative impacts on people and the environment.

Importantly, the Four Pillar Framework is structured in a way that requires consideration of the company's structure. A vertically integrated food processing company, with some of its own plantations, mills, and distribution facilities and a vast network of in-country subsidiaries will likely have more severe social and environmental issues relevant to Pillar 2 (own operations) than Pillar 3 (value chain) when compared with a company which more heavily relies on supply chains. Because the individual company's structure to some extent dictates the relevance of some issues to their own operations and value chains, only one standard has been written for each of the social and environmental standards relevant to Pillars 2 and 3. Companies are expected to tailor their approaches to meeting the standard based on the extent to which the issues are relevant to their own operations and/or value chain, and the standard provides guidance for how the company acts in both spheres.

FIVE SUB-SECTOR OF THE FOOD AND AGRICULTURE SECTOR



2. Key Features of the Four Pillar Framework and Standards

The Four Pillar Framework standards align with and build upon the 18 key topic areas identified in the Fixing the Business of Food's 2020 report.[21]

In order for the standards to target the areas of greatest opportunity for improvement in the food sector, they cover the areas in which the food sector currently lags behind in aligning with the SDGs. The standards draw from the UN Guiding Principles on Business and Human Rights (UNGPs), the existing authoritative global framework for how companies should know and show that they prevent, mitigate, and remediate the actual and potential negative impacts on people.

The UNGPs clarify that companies are expected to respect all internationally-recognized human rights, which include consumers', communities', and workers' rights to health, food, and a decent standard of living. The SDGs have human rights at their core, with over 90% of SDG targets linked to specific provisions of international human rights standards."[22]

The UNGPs were unanimously adopted by the UN Human Rights Council in 2011 and subsequently have shaped company efforts and disclosure on their respect for internationally-recognized human rights, investor engagement on ESG issues, certifications and benchmarks, as well as law and proposals to codify Human Rights and Environmental Due Diligence.

As a North Star, the Four Pillar Framework standards **build upon the foundation of the UNGPs to help companies contribute** to the transformational change required to achieve the SDGs. This includes the UNGPs value chain scope, the importance of collective action and addressing root causes in the broader ecosystem, and its due diligence approach.

A. Value chain scope

Transforming food sector practices to align with the SDGs needs to include the governance of food sector companies, the nutritional value of food, and respect for human rights and the environment along the value chain from farm to fork. From the perspective of a food processing company, aligning practices with the SDGs requires proactive efforts beyond the company's own operations, by acting in its value chain and broader ecosystems.

21. These key topics were selected in collaboration with the World Benchmarking Alliance (WBA) and the Food Foundation, and verified through a survey program in which member companies of Cibus Italia, Déméter France and Ielka Greece, participated. Sachs et al., "Fixing the Business of Food. How to Align the Agrifood Sector with the SDGs."
22. Danish Institute for Human Rights, "Making the Link between Human Rights and the 2030 Agenda," SDG - Human Rights Data Explorer, January 14, 2019, https://sdgdata.humanrights.dk/en/node/252884.

Companies have an existing responsibility to respect human rights in their own operations and throughout their value chains.[23] This corporate responsibility entails preventing and mitigating impacts on people with which they are involved, including those that are directly linked to their operations, products, or services by their **business relationships**.[24] It is also well recognized that, to achieve climate targets, companies need not only reduce their direct emissions (Scope 1), but also indirect emissions from value chain sources the company does not control or own (Scope 3) which often constitute the biggest greenhouse gas impacts.[25] The World Benchmarking Alliance has taken a value chain approach in its benchmarks, including the Social Transformation Framework[26] and Food & Agriculture Benchmark.[27]

BUSINESS RELATIONSHIPS – *As defined by the World Benchmarking Alliance, and in line with the UNGPs – are "the relationships a company has with business partners, entities in its value chain, and any other State or non-State entity directly linked to its operations, products or services. They include indirect relationships in its value chain, beyond the first tier, minority, and majority shareholding positions in joint ventures. It covers both upstream and downstream relationships."*

By taking action in their value chains, companies can increase their contributions to the SDGs many-fold. Companies can spur transformative changes for people and planet in their value chains due to their existing connections to business relationships across their value chains. Engaging existing relationships serves as a great "opportunity to uplift millions of people's lives" by enabling them to enjoy the benefits of sustainable development.[28]

To improve social and environmental sustainability in their value chains, SDG-aligned companies change their own business practices which might incentivize unsustainable practices, and also engage with value chain actors to influence them to adopt improved practices.

Consequently, companies throughout the value chain have a role to play in aligning their practices with the SDGs, through both individual and collective action. In line with the approach the UNGPs call upon companies to take,[29] where companies cannot prevent or mitigate an impact on their own, they should increase their leverage, or influence, by working with others. This can include collaborating with peer companies, participating in multistakeholder initiatives, collaborating with State actors, and working with civil society organizations to monitor performance or facilitate improved practices in the value chain that foster environmental sustainability and human wellbeing.

23. United Nations, "Guiding Principles on Business and Human Rights: Implementing the United Nations 'Protect, Respect and Remedy' Framework," 2011, https://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf; OECD, "OECD Guidelines for Multinational Enterprises" (OECD Publishing, 2011), http://www.oecd.org/daf/inv/mne/48004323.pdf.
24. Business relationships are defined as "the relationships a company has with business partners, entities in its value chain and any other State or non-State entity directly linked to its operations, products or services. They include indirect relationships in its value chain, beyond the first tier, minority, and majority shareholding positions in joint ventures. It covers both upstream and downstream relationships" (Source: World Benchmarking Alliance, "Social Transformation Framework to Measure and Incentivize Companies to Leave No One Behind," January 2021, https://assets.worldbenchmarkingalliance.org/app/uploads/2021/02/WBA-Social-Transformation-Framework-FINAL.pdf.)
25. Greenhouse Gas Protocol, "Greenhouse Gas Protocol FAQ," accessed May 16, 2021, https://ghgprotocol.org/sites/default/files/standards_supporting/FAQ.pdf.
26. World Benchmarking Alliance, "Social Transformation Framework to Measure and Incentivize Companies to Leave No One Behind."
27. World Benchmarking Alliance, "Methodology for the Food and Agriculture Benchmark" (Amsterdam, The Netherlands: World Benchmarking Alliance), accessed May 27, 2021, https://assets.worldbenchmarkingalliance.org/app/uploads/2021/02/Food-and-Agriculture-Benchmark-methodology-report.pdf.
28. Shift, "Business, Human Rights and the Sustainable Development Goals: Forging a Coherent Vision and Strategy," 2016, https://shiftproject.org/wp-content/uploads/2016/11/BSDC-Biz-HumanRights-SDGs.pdf.
29. United Nations, "Guiding Principles on Business and Human Rights: Implementing the United Nations 'Protect, Respect and Remedy' Framework."

B. Addressing root causes in the broader ecosystem

Certain human rights and environmental issues connected to their operations and value chain are challenging for companies to tackle due to underlying conditions or root causes in the ecosystem surrounding the company and its value chain actors. For example, child labor may be endemic in a particular region from which the company sources, in part driven by poverty experienced by agricultural production communities. Adjustments to business activities such as sourcing practices, supplier audits, contract clauses, and supplier capacity building may prove insufficient to eliminate child labor in the company's supply chain.

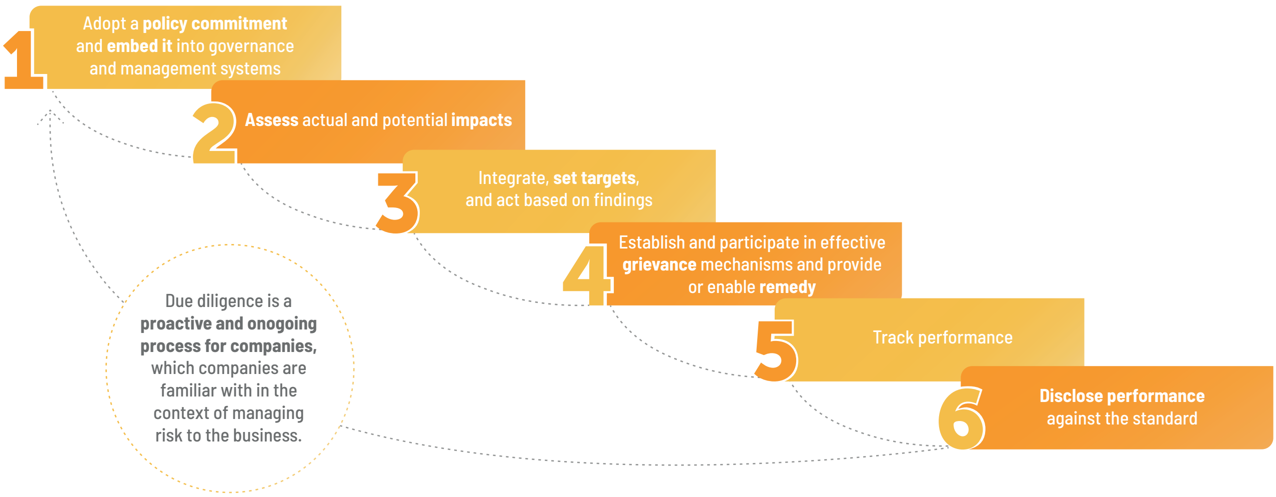
In such cases, the Four Pillar Framework standards call upon companies to take action to mitigate root causes at the source. These root causes might include poverty, lack of regulation or enforcement, and systemic biases. To be effective, this requires increasing their individual leverage by engaging in collective action with peer companies, civil society organizations, and others. These efforts might not be targeted at the company's value chain alone, and can benefit the broader ecosystem or communities.

The Framework's approach aligns with the expectation that companies focus their contributions to the SDGs on their own value chains, while also acknowledging the potential for companies to contribute in ways which reach beyond their value chains and have positive impacts on people and planet in their broader ecosystems.

The Four Pillar Framework's broader ecosystem approach does not call for traditional philanthropy or corporate social responsibility, but rather targeted efforts to address root causes of negative impacts, or SDG deficits, the company is connected to through its operations and value chain. While companies may choose to engage in discretionary philanthropy and corporate social responsibility which is not aimed at preventing or mitigating negative impacts connected to its business activities, responsible corporate conduct aligned with the SDGs focuses on avoiding harms. No discretionary contributions can compensate for corporate failures to protect people and planet from harm.

C. Due diligence approach and implementation guidance format

The standards and their implementation guidance incorporate a due diligence approach across all issue areas. Due diligence is a proactive and ongoing management process, which companies are familiar within the context of managing risk to the business. As articulated particularly for human rights,[30] the due diligence approach is transferable, and is thus relevant for each of the Four Pillar Framework standards. The due diligence approach provides the structure for each of the Framework standards' implementation guidance, which consist of the following steps a company should take to meet the standard:



This due diligence approach helps the standards build upon and align with other existing standards, reporting frameworks, and indicators. Many initiatives include various pieces of the above listed steps, without having a consistent structure across issue areas.

For example, the Fixing the Business of Food report from September 2020 included the following proposed indicators for greenhouse gas emissions, which can be re-organized into some of the six steps listed above:[31]

1. "[A]LL FOOD AND AGRICULTURAL COMPANIES SHOULD REPORT GHG EMISSIONS FROM THEIR POWER CONSUMPTION..."
   - Disclose performance against the standard: "SDG-aligned food companies report GHG emissions from their power consumption"

2. "[F]OOD COMPANIES COULD HAVE A MAJOR EFFECT IN PROMOTING HEALTHIER AND MORE PLANT-BASED DIETS THROUGH THEIR MARKETING AND NUTRITION STRATEGIES."
   - Integrate and act upon findings: "SDG-aligned food companies promote healthier and more plant-based diets through their marketing and nutrition strategies."

3. "A STRONG COMMITMENT AND A CLEAR, RIGOROUS PATH TO CARBON NEUTRALITY CAN BE AN IMPORTANT STARTING POINT TO ACCELERATE CORPORATE TRANSITION TO A MORE SUSTAINABLE PATHWAY."
   - Adopt a policy commitment and embed it into governance and management systems: "SDG-aligned companied develop a clear, rigorous path to carbon neutrality."
   - Integrate, set targets, and act based on findings: "SDG-aligned companies develop a clear, rigorous path to carbon neutrality."

4. "CARBON NEUTRALITY STARTS WITH THE QUANTIFICATION OF GHG EMISSIONS."
   - Assess actual and potential impacts: "SDG-aligned companies quantify their baseline GHG emissions."

30. United Nations; OECD, "OECD Guidelines for Multinational Enterprises."
31. Sachs et al., "Fixing the Business of Food. How to Align the Agrifood Sector with the SDGs."

D. Alignment of standards with existing frameworks

The 2030 Agenda recognizes the role of existing international standards on responsible business conduct, "such as the Guiding Principles on Business and Human rights and the labour standards of the International Labour Organization, the Convention on the Rights of the Child and key multilateral environmental agreements."[32] Accordingly, our standards use existing internationally-recognized standards, such as international human rights standards, the Paris Climate Agreement, and guidelines for their implementation as their core foundation.

Where international law has already established the authoritative global standard for an issue, the Four Pillar Framework standards lay out what international law requires, link to relevant instruments, and provide guidance for meeting those expectations. The Four Pillar Framework standards aim to support and bolster international legal expectations and do not supplant international law, jurisprudence, or practice.

Each of the standards was reviewed by specialized experts in the relevant area.

The Four Pillar Framework is grounded in international standards and aligned with leading benchmarks and resources. Some of these key sources are listed in the table below.

INTERNATIONAL STANDARDS	LEADING BENCHMARKS AND RESOURCES
▸ International Bill of Rights and other human rights instruments	▸ GRI Standards[35]
▸ The UN Guiding Principles on Business and Human Rights	▸ World Benchmarking Alliance a. Social Transformation Framework to measure and incentivize companies to leave no one behind[36] b. Methodology for the Food and Agriculture Benchmark[37] c. Corporate Human Rights Benchmark Methodology 2020 for the Agricultural Products, Apparel and Extractives Industries[38]
▸ The OECD Guidelines for Multinational Enterprises [33]	▸ OECD-FAO Guidance for Agricultural Supply Chains[39]
▸ The Paris Agreement[34]	

32. United Nations, "Transforming Our World: The 2030 Agenda for Sustainable Development," October 2015, https://sdgs.un.org/2030agenda.
33. OECD, "OECD Guidelines for Multinational Enterprises" (OECD Publishing, 2011), http://www.oecd.org/daf/inv/mne/48004323.pdf.
34. "The Paris Agreement | UNFCCC," accessed May 31, 2021, https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.
35. GRI, "GRI Standards," 2019, https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-english-language/.
36. World Benchmarking Alliance, "Social Transformation Framework to Measure and Incentivize Companies to Leave No One Behind."
37. World Benchmarking Alliance, "Methodology for the Food and Agriculture Benchmark."
38. World Benchmarking Alliance-WBA, "Corporate Human Rights Benchmark Methodology 2020 For the Agricultural Products, Apparel and Extractives Industries," January 2020, https://www.corporatebenchmark.org/sites/default/files/CHRB%20 2020%20Methodology%20AGAPEX%2028Jan2020.pdf.
39. OECD, "OECD-FAO Guidance for Responsible Agricultural Supply Chains" (OECD Publishing, Paris, 2016), https://www.oecd-ilibrary.org/agriculture-and-food/oecd-fao-guidance-for-responsible-agricultural-supply-chains_9789264251052-en.

INTERNATIONAL STANDARDS	LEADING BENCHMARKS AND RESOURCES
	▸ Access to Nutrition Index (ATNI) Methodology[40] ▸ Committee on World Food Security Principles for Responsible Investment in Agriculture and Food Systems[41] ▸ Oxfam Behind the Brands Scorecard Methodology[42] and Shining a Spotlight report[43]

In contrast with many existing standards and benchmarks, the Framework does not start from asking what a company can disclose or track through quantitative indicators, so that companies can be easily compared. In our view, establishing clearly what companies should do – what SDG - aligned practices look like – through elaborating standards and expectations necessarily precedes determining what should be tracked or disclosed.

40. Access to Nutrition Initiative, "Global Access to Nutrition Index 2021 Methodology," June 2020, https://accesstonutrition.org/app/uploads/2020/06/Global-Index-2021-Methodology-FINAL.pdf.
41. Committee on World Food Security, "Principles for Responsible Investment in Agriculture and Food Systems," October 15, 2014.
42. Oxfam, "The Behind the Brands Scorecard Methodology," August 2014, https://www.behindthebrands.org/images/media/Download-files/BtB%20Methodology%20document_final_Sept%202014.pdf.
43. Emma Fawcett and Suzanne Zweben, "Shining a Spotlight: A Critical Assessment of Food and Beverage Companies' Delivery of Sustainability Commitments," 2021, https://webassets.oxfamamerica.org/media/documents/BTB-2021-V7-Digital.pdf?_gl=1*1776pl7*_ga*MjA3NTgzNzA2MS4xNjE1NDM3OTIx*_ga_R58YETD6XK*MTYyMDY4NzcwMS4xMC4xLjE2MjA2ODc3NjEuMA.

SECTION 2

–

EMPIRICAL ANALYSIS OF THE ALIGNMENT OF FOOD COMPANIES WITH SDGS

Companies' sustainability performance and adaptation of the Four Pillar Framework to different business settings

By

Santa Chiara Lab *University of Siena*

1. Introduction

Companies have a crucial role in promoting sustainability within societies. This is especially true in the food industry, as food represents a transversal vector of sustainability for the achievement of the SDGs.[44]

All the issues addressed by Agenda 2030 and the SDGs are impacted by food systems – understood as the sets of activities involved in producing, processing, transporting, distributing, and consuming food. People's health, farmes' livelihoods, the protection of the environment, and communities' wellbeing depend on food systems.[45]

Adopting a sustainable managerial approach is not only fair and ethical, it also fosters companies' financial performance.[46, 47,48]
Nevertheless, the alignment between companies and the SDGs is still weak.[49] Notably, companies' contributions to implement Agenda 2030 are still inadequate and the SDGs are generally poorly integrated into business practices, as highlighted in recent studies[50] and prior Fixing the Business of Food (FTBF) Reports.

Integrating sustainability principles within business goals and activities is not easy. It requires a rethinking of corporate purpose, management systems, performance measurements, and reporting systems.[51]

---

44. Fassio, F., and Tecco, N. (2019). Circular economy for food: A systemic interpretation of 40 case histories in the food system in their relationships with SDGs. Systems, 7(3), 43. https://doi.org/10.3390/systems7030043.
45. Gangi, F., Daniele, L. M., and Varrone, N. (2020). How do corporate environmental policy and corporate reputation affect risk-adjusted financial performance? Business Strategy and the Environment, 29(5), 1975-1991. https://doi.org/10.1002/bse.2482.
46. Silva, S., Nuzum, A. K., and Schaltegger, S. (2019). Stakeholder expectations on sustainability performance measurement and assessment. A systematic literature review. Journal of Cleaner production, 217, 204-215. https://doi.org/10.1016/j.jclepro.2019.01.203
47. Acar, M. F., Aktas, E., Agan, Y., and Bourlakis, M. (2019). Does sustainability pay? Evidence from the food sector. Journal of Foodservice Business Research, 22(3), 239-260. https://doi.org/10.1080/15378020.2019.1597672
48. Cupertino, S., Vitale, G. and Riccaboni, A. (2021). Sustainability and short-term profitability in the agri-food sector, a cross-sectional time-series investigation on global corporations, British Food Journal, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/BFJ-02-2021-0154
49. Van Tulder, R., Rodrigues, S.B., Mirza, H. Sexsmith, K. (2021). (2021).The UN's Sustainable Development Goals: Can multinational enterprises lead the Decade of Action?", *Journal of International Business Policy*, vol. 4, pp. 1–21. https://doi.org/10.1057/s42214-020-00095-1
50. UN Global Compact (2020). Uniting Business in the Decade of Action. Building on 20 Years of Progress. New York: United Nations Global Compact. WBCSD & DNV-GL (2018). Business and the SDGs: A survey of WBCSD members and Global Network partners. Geneva: WBCSD. PwC (2015). Make it your business: Engaging with the Sustainable Development Goals. London: PricewaterhouseCoopers.
51. Busco, C., Granà, F., and Izzo, M.F. (2020). Making Sustainable Development Goals happen through integrated thinking and reporting. In The Routledge Handbook of Integrated Reporting (pp. 403-418). Routledge.
De Micco, P., Rinaldi, L., Vitale, G., Cupertino, S. and Maraghini, M.P. (2021). The challenges of sustainability reporting and their management: the case of Estra, Meditari Accountancy Research, Vol. 29 No. 3, pp. 430-448. https://doi.org/10.1108/MEDAR-09-2019-0555. Vitale, G., Cupertino, S., Rinaldi, L., Riccaboni, A., "Integrated Management Approach Towards Sustainability: An Egyptian Business Case Study," Sustainability 11, no. 5 (February 26, 2019): 1244, https://doi.org/10.3390/su11051244.

To better understand the reasons for such weakness and to support the spread of the Four Pillar Framework (with its topics and standards), this section presents the results of empirical studies on companies' reporting on their performance and behavior regarding sustainable development.

It should be noted that, as the project is still in the early stages of introducing companies to the Four Pillar Framework, the SCL analysis and the CCSI pillars are a work in progress and the specific items in the Four Pillars are still evolving. Furthermore, topics used in this Section do not match up precisely with those in Section 1, as they are based upon the 2020 version of the Framework.

Paragraph 2.1.1 presents the results of the analysis of the sustainability reports of the 100 largest food companies in terms of market capital using the lens of the Four Pillar Framework. This very large study follows previous FTBF studies done in 2019 and 2020.

Analysing sustainability reports was useful to understand what companies view as their priorities and responsibilities in terms of sustainability, the ESG issues on which they focus, and how they measure their non-financial performance. Integration among financial and non-financial measurements is vital for sustainability improvements.[52] Our analysis shows that sustainability reporting by the companies offers only a limited and often self-promoting view of the companies' actual behavior, highlighting favorable dimensions while under-reporting or ignoring negative dimensions of the companies' behavior. Our project's longer-term goal is to get companies to pay attention comprehensively to all four pillars in their reporting, actions, and performance.

Moreover, this year's analysis considered companies' risk disclosure practices to understand to what extent companies include ESG issues into their risk evaluation.

At the same time, given the complexity of the business context, qualitative studies have being conducted to better understand which factors are enabling or impeding companies' greater efforts in terms of sustainability. The results of some pilot case studies are presented in paragraph 2.1.2. Our analysis shows that to become truly sustainable, companies need to adopt a fully integrated approach. This entails taking into consideration the interests and contributions of a series of key stakeholders and linking them in a journey that connects governance with strategy, as well as operations with performance.

In 2021 we also started collecting and valorising good practices as a vehicle for disseminating awareness about the benefits that can arise from operating sustainably. This effort allows the creation of a community of food companies, researchers, innovators, institutions, policymakers, investors, and other stakeholders to share experiences and feedback. The first outcomes of such collaborations are presented in paragraph 2.1.3.

Cases and good practices presented in the 2021 Report refer to Italian companies. In the follow up of the FTBF project, experiences from other countries will also be included.

Chapter 2.2 of this report shows the results of the first applications of the Four Pillar Framework

52. Engida, T. G., Rao, X., Berentsen, P. B., & Lansink, A. G. O. (2018). Measuring corporate sustainability performance–the case of European food and beverage companies. Journal of Cleaner Production, 195, 734-743. https://doi.org/10.1016/j.jclepro.2018.05.095

in the field on the basis of interviews, webinars, and meetings with smaller food companies, small farms, wineries, and aquaculture businesses.

Testing the Framework made clear the need to make adaptations to the general framework, mainly in terms of simplification, due to different settings, sub-sectors, and business sizes. At the same time, the strengths and potentialities of the Four Pillar Framework (with its topics and standards), to align food businesses with SDGs, was fully confirmed.

Our project's "theory of change" aims at three steps: company reporting, changes of internal management systems (e.g., incentives, promotions, and evaluations to promote sustainable development practices), and beneficial changes of behavior. While the empirical analysis shows that the transformation is a long-term process, it is an urgent one that requires all actors to push for meaningful changes as quickly as possible.

2. Empirical analysis

2.1. COMPANIES' SUSTAINABILITY PERFORMANCE AND PRACTICES

2.1.1. ANALYSIS OF SUSTAINABILITY REPORTS AND RISK DISCLOSURE

The definition of sustainability strategies and the disclosure of non-financial results is key to better align food companies with the SDGs.[53] For this reason, we carried out an empirical analysis of sustainability reports with the aim of understanding if, and how, food companies use such documents to disclose strategic sustainability objectives they are pursuing, and achieved results. To this purpose, a manual content analysis of sustainability reports issued in 2020 of the largest 100 publicly listed global agri-food and beverage companies[54] was performed. Sustainability strategic goals and disclosures were assessed referring to the Four Pillar Framework and its topics.[55]
Companies and data were selected considering the Refinitiv Eikon database,[56] a commonly recognized corporate financial and ESG data source covering 9,000 companies listed in 23 world and regional stock exchange indices. Such companies represent 70% of total market value worldwide. The majority of the companies (52) are defined as "food producers". There are 25 drug and grocery stores, and 23 companies which produce and sell beverages. Countries (77 OECD and 23 non-OECD) most represented by companies are the United States (26), Japan (9), and China (8). For the latter criteria we referred to the FTSE Global Classification System to cluster the scrutinized companies, also distinguishing between alcoholic and non-alcoholic beverage sub-industries.

a. Pillar 1 - Beneficial Products and Strategies Contributing to Healthy and Sustainable Diets Topics

Our analysis shows that companies are scarcely inclined to illustrate strategic goals for each of the topics in Pillar 1 (see Table 1) in their sustainability reports. (We note that the topics in each pillar continue to evolve. For our analysis, we used the topics and categories in the 2020 FTBF Report, which are not exactly those in Section I of this year's report.)

53. Engida, T. G., Rao, X., Berentsen, P. B., & Lansink, A. G. O. (2018). Measuring corporate sustainability performance–the case of European food and beverage companies. Journal of Cleaner Production, 195, 734-743. https://doi.org/10.1016/j.jclepro.2018.05.095.
54. The exhaustive list of the 100 companies is in Table 10.
55. Four Pillar Framework topics analysed in our study were those defined in Fixing the Business of Food report 2020. The list of Key topic is: Healthy & Sustainable Product Portfolios, Healthy Eating And Lifestyle Promotion, Undernutrition, Food Safety, Air And Climate, Nature & Biodiversity, Sustainable Food Production, Freshwater, Waste (Food Loss & Waste/Packaging), Animal Welfare, Diversity And Inclusion, Labor Rights & Decent Work, Corporate Governance System Oriented Towards Sustainability, Community Engagement, Anti-Corruption, Corporate Taxation, Resource Rights, Living Income For Smallholders (source: https://www.fixing-food.com/wp-content/uploads/2021/04/Fixing-The-Business-Of-Food-2020.pdf, p. 39.)
56. https://www.refinitiv.com/en/about-us

Table 1. **COMPANIES (%) DISCLOSING SUSTAINABILITY STRATEGIC GOALS AND ACHIEVED RESULTS IN THEIR SUSTAINABILITY REPORTS**

PILLAR 1. BENEFICIAL PRODUCTS AND STRATEGIES CONTRIBUTING TO HEALTHY AND SUSTAINABLE DIETS TOPICS	GENERAL STRATEGIC OBJECTIVE FOR EACH TOPIC	TARGET, YEAR AND TIMELINE	BASELINE FOR TARGET DEFINITION	ACHIEVED RESULTS AND/OR IMPLEMENTED INITIATIVES	RESULTS MONITORED BY KPIs
Healthy and sustainable product portfolios	10%	23%	5%	56%	49%
Healthy eating and lifestyle promotion	16%	33%	10%	64%	63%
Undernutrition	21%	29%	8%	56%	42%
Food Safety	14%	19%	3%	65%	62%

The highest percentage is achieved by the topic 'Under-nutrition,' for which 1/5 of the companies declare a connected strategic goal.

Pillar 1's topics are also less monitored in terms of periodical targets to achieve, in comparison with other Pillars, never exceeding 1/3 of the companies.
Companies rarely set baselines for each of Pillar 1's topics, avoiding comparing their actual performance with a standard base year.
Between 1/2 and 2/3 of companies report their achieved results or implemented initiatives. Roughly 50% of the scrutinized companies used at least one KPI for each Pillar 1 topic.

Compared to the other Pillars, companies disclose information on Pillar 1's topics mainly in a qualitative manner.
Table 2 shows that KPIs mostly used to monitor the results achieved in Pillar 1's topics are related to marketing issues (e.g., labeling, donation, and external quality assessment) and product/ingredient traceability.

It should be noted that companies monitoring ESG initiatives tend to use more than a KPI.

Table 2. **COMPANIES (%) USING SPECIFIC KPIs**

PILLAR 1. TOPICS	MAIN KPIs USED	% OF KPI USE
HEALTHY & SUSTAINABLE PRODUCT PORTFOLIOS	Ingredient modification indicator (e.g., quantity of salt, fat and sugar reduction or fibre increase) or similar indicators	18%
	Nutritional upgrade of pre-existing products or reformulation of pre-existing products that are now healthier or considered healthy, or similar indicators	16%
	Revenues from healthy products or financial investment on healthy products, or similar indicators based on sales	21%
HEALTHY EATING AND LIFESTYLE PROMOTION	People reached/ trained/ educated thanks to healthy lifestyle communication, or similar indicators	22%
	Responsible labelling with healthy lifestyle information following certain regulations, or similar indicators	27%
	Responsible advertising with healthy lifestyle information following certain regulations, or similar indicators	11%
	Products and ingredients traced, or similar indicators	20%

PILLAR 1. TOPICS	MAIN KPIs USED	% OF KPI USE
UNDERNUTRITION	Food donated to Food banks or similar associations/ activities	27%
	Funding initiatives supporting Food banks (or similar entities)	18%
	People reached with food donation programs or similar activities	11%
FOOD SAFETY	Non-compliance incidents/ fines/ complaints/ feedbacks regarding products food safety and quality that have been addressed a or similar indicators	13%
	Employees that are trained on quality and food safety or hours of food safety training per year, or similar indicators	14%
	Third party quality assessments in a year, or similar indicators	39%

b. Pillar 2 – Sustainable Business Operations and Internal Processes Topics

As for Pillar 2, Table 3 shows that companies are more inclined to set strategic goals for topics such as 'Sustainable Food Production and Sourcing,' 'Waste production,' and 'Securing Sustainable Water Supply for Human Use and Ecosystem' than for the other topics, with percentages between 25% and 30%.

Table 3. **COMPANIES (%) DISCLOSING SUSTAINABILITY STRATEGIC GOALS AND ACHIEVED RESULTS IN THEIR SUSTAINABILITY REPORTS**

PILLAR 2. SUSTAINABLE BUSINESS OPERATIONS AND INTERNAL PROCESSES TOPICS	GENERAL STRATEGIC OBJECTIVE FOR EACH TOPIC	TARGET, YEAR AND TIMELINE	BASELINE FOR TARGET DEFINITION	ACHIEVED RESULTS AND/OR IMPLEMENTED INITIATIVES	RESULTS MONITORED BY KPIs
Air and Climate	22%	59%	37%	93%	92%
Nature and Biodiversity	15%	26%	6%	43%	36%
Sustainable Food Production and Sourcing	28%	52%	20%	91%	89%
Securing Sustainable Water Supply for Human Use and Ecosystem	25%	47%	26%	84%	83%
Waste	27%	66%	29%	91%	89%
Animal Welfare	7%	36%	3%	41%	36%
Diversity and Inclusion	21%	36%	11%	89%	86%

Moreover, the results highlight that companies usually tend to define targets for Waste, Air & Climate, and Sustainable Food Production and Sourcing issues more than the other topics, with percentages not too far from 2/3 of the total.
Non-financial declarations generally report baselines for Pillar 2's topics more than for the other Pillars, with values also around 30% of the total and almost 40% for Air & Climate issues.

Almost all companies report results or initiatives except for Nature & Biodiversity and Animal Welfare. Notably, we found that measuring/monitoring using KPIs for the GHGs total/direct/indirect production, energy consumption, and waste management has become mainstream practice.

The following table presents the most used KPIs for Pillar 2's topics.

Table 4. **COMPANIES (%) USING SPECIFIC KPIs**

PILLAR 2. TOPICS	MAIN KPIs USED	% OF KPI USE
AIR & CLIMATE	Total CO2-e emissions Kilotonnes, reduction in greenhouse emissions (per mt of production), greenhouse gas emissions footprint, or similar indicators	70%
	CO2 intensity ratio (ton CO2e/ton of products), (grams per litre packaged), (kg/ ¥ million [Net sales and revenue]), or similar indicators	40%
	SCOPE 1 Greenhouse gas emissions (tonnes CO2-e), Direct GHG Emissions, or similar indicators	43%
	SCOPE 2 Greenhouse gas emissions (tonnes CO2-e), or similar indicators	42%
	SCOPE 3 Greenhouse gas emissions (tonnes CO2-e), or similar indicators	25%
SUSTAINABLE FOOD PRODUCTION & SOURCING	Planted hectares, trees planted and tree seedlings distributed, forest conservation/ reforestation initiatives, or similar indicators	20%
	Development of new plant/ animal varieties, protection of endangered species, initiatives to support biodiversity, or similar indicators	9%
	% of sustainable sourced PALM OIL (tonnes), (RSPO), or similar indicators	6%
	% of sustainable sourced virgin fiber PULP and PAPER products (tonnes), (Forest Stewardship Council, Programme for the Endorsement of Forest Certification or Sustainable Forestry Initiative), sales of products bearing the Forest Stewardship Council ® (FSC®) label or the label of the Programme for the Endorsement of Forest Certification (PEFC), or similar indicators	6%
	Total Elecriticity/ energy CONSUMPTION/ sold, Direct Energy and Indirect Energy, Energy Reduction Performance by Site (o) MWh (PJ), (MJ), (kWh), (mmbtu), or similar indicators	55%
	Elecriticity/ energy/ fuel INTENSITY (MJ/m2), (kWh/m2), (kWh/sales tonnage), (mmbtu/tonne of food produced), (GJ/metric ton of product), or similar indicators	39%
	Renewable energy use (GWh), % Renewable energy as share of total energy, charging stations for electric vehicles, fleet with alternative fuels, or similar indicators	30%
	External sustainability certification/ assessments/ awards environmental standards, awards, or similar indicators	25%
	Sustainably sourced own brand commodities, or similar indicators	42%
SECURING SUSTAINABLE WATER SUPPLY FOR HUMAN USE AND ECOSYSTEMS	Total water use/ consumption/ extraction/ abstraction, portion of the withdrawn water permanently lost from its source, (GL), (ML), or similar indicators	33%
	Water footprint/ intensity/ efficiency by Site, (Megalitres per site), (m3/sales tonnage), (litre of water per litre of packaged product), (m3/tonne of food produced), (acre inches of water/ ton of potatoes grown), (m3/ ¥ million [Net sales and revenue]), or similar indicators	49%
	Total Water withdrawn (Megalitres), or similar indicators	26%
	Total recycled/ reused water, N° stores with waterloop water saving systems (like drip irrigation systems), n° suppliers engaged in water management practices, or similar indicators	30%
	Total wastewater/ discharged, reduction in wasterwater, chemical products for water treatment, emissions to water, (BOD Tonnes, COD Tonnes, particles Tonnes), (BOD ('000 tonnes)), or similar indicators	36%

PILLAR 2. TOPICS	MAIN KPIs USED	% OF KPI USE
WASTE	Total solid waste generated/ reduction and composition, (Kilotonnes), or similar indicators	37%
	Total waste disposed/ incinerated, both food and packaging, (tonnes), or similar indicators	28%
	Total Waste recovered/ recycled, both food and packaging, (tonnes), or similar indicators	23%
	% Recycling rate, (the portion of waste that is recycled/ recyclable, Proportion of utilized waste per disposed waste), or similar indicators	42%
	Sustainable packaging solutions taken, (N° reusable cups/ shopping bags, average packaging weight reduction (gr, T), tonnes of hard to recycle materials removed, reduction in absolute packaging CO2 emissions), or similar indicators	36%
ANIMAL WELFARE	% Cage-free/ free-range eggs, or similar indicators	14%
	% rabbit/ chicken meat that complies with rabbit/ broiler chicken welfare standards, livestock and poultry producer partners, paid to livestock and poultry producer partners (International Poultry Welfare Alliance (IPWA)), or similar indicators	7%
	N° external assessments conducted to check for conformance with animal welfare standards, (RSPCA), (U.S. National Dairy Farmers Assuring Responsible Management (FARM)), or similar indicators	7%
	N° internal assessments/ status updates conducted to check for conformance with animal welfare standards, or similar indicators	8%

It emerges that companies generally do not use KPIs as the management system's aspects traditionally have a qualitative nature. However, our study shows that around 30% of companies, represented principally by Food Producers and Drug & Grocery Stores, adopt Compensation Policies based on sustainability criteria, namely:

- the 34% of companies have ESG Related Compensation;
- the 25% of companies have Senior's Executive Compensation linked to sustainability targets.

Moreover, 75% of companies have a sustainability committee within the Board and top management. In particular, roughly 80% of both Drug & Grocery Stores and Food Producers present such committees.

Furthermore, only 1/3 of the companies integrate sustainability principles into their planning and control activities. Notably, Drug & Grocery Stores (40% of the companies operating in this industry) and Beverages (40% of the companies operating in this industry) are more inclined to implement such a managerial practice than the other sub-industries.

Further, roughly 1/3 of the companies report on ESG risk management activities. Companies operating in Drug & Grocery Stores and Food Producers are generally more ready to implement risk management activities than companies operating in the beverages industry. However, a relevant part of companies (42%) do not have a materiality assessment. In this regard, we found that Drug & Grocery Stores' business activities are more predisposed to perform materiality assessments than those companies operating in other industries. We hasten to add that "materiality" measures the relevance of an ESG factor on the company's own financial performance and risks, while we are mainly emphasizing the company's impact on the rest of society. In this sense, materiality is only a limited and inward-looking aspect of a company's sustainability performance. With regard to ESG factors, we give more importance and attention to a company's adverse impacts on society than its adverse impacts on its own balance sheet and risks.

In addition, the study highlighted that 83% of the companies defined a policy to protect customers' data security and privacy. This issue is largely recognised by all companies, independent of the industry. Finally, the analysis showed that 76% of the companies adopt codes of conduct to promote the highest standards of general business ethics. This issue is commonly recognised by a large part of companies operating in all industries.

c.Pillar 3 – Sustainable Supply and Value Chain Topics

Table 5 shows that companies are scarcely inclined to set strategic goals for topics of Pillar 3.

Table 5. **COMPANIES (%) DISCLOSING SUSTAINABILITY STRATEGIC GOALS AND ACHIEVED RESULTS IN THEIR SUSTAINABILITY REPORTS**

PILLAR 3. SUSTAINABLE SUPPLY AND VALUE CHAINS TOPICS	GENERAL STRATEGIC OBJECTIVE FOR EACH TOPIC	TARGET, YEAR AND TIMELINE	BASELINE FOR TARGET DEFINITION	ACHIEVED RESULTS AND/OR IMPLEMENTED INITIATIVES	RESULTS MONITORED BY KPIs
Labour Rights and Decent Work	26%	51%	14%	90%	86%
Decent Standard of Living for Smallholder Farmers	16%	21%	6%	46%	45%
Sustainable Management of the Supply Chain	-	5%	-	14%	14%

Sustainable Management of the Supply Chain does not present any information in regards to the strategic planning of such activities. Moreover, companies usually tend to define targets for Labour Rights and Decent Work issues, while both Decent Standard of Living for Smallholder Farmers and Sustainable Management of the Supply Chain topics are poorly targeted.

Furthermore, we found that companies rarely report baselines for Pillar 3's topics. Notably, only the Labour Rights and Decent Work categories present that information and compare actual results with a base year standard. Conversely, Decent Standard of Living for Smallholder Farmers and Sustainable Management of the Supply Chain topics do not present sufficient information regarding baselines.

While companies tend to disclose results/initiatives and use KPIs for Labour Rights and Decent Work and Decent Standard of Living for Smallholder Farmers, Sustainable Management of the Supply Chain performance results are poorly reported and monitored through KPIs.

In particular, our study highlights that companies tend to not include Sustainable Management of the Supply Chain issues in their strategic planning process and reporting. In this regard, OECD companies and particularly Food Producers tend to report performance monitored using KPIs more than other companies.
The main KPIs used for Pillar 3 are shown in Table 6.

Table 6. **COMPANIES (%) USING SPECIFIC KPIs**

PILLAR 3. TOPICS	MAIN KPIs USED	% OF KPI USE
LABOUR RIGHTS AND DECENT WORK	N° work related fatalities	19%
	Total recordable injury frequency rate (TRIFR), or similar	24%
	Lost time injury frequency rate (LTIFR) Lost time injuries per million hours worked, or similar indicators like LTI, Lost Workday Incident Rate (LWIR), Lost Time Accident Rate (LTAR)	24%
	Occupational incident Rate (OIR), Total Incident Rate (TIR) or similar	19%
	Revision, compliance, update, modification of supplier code of conduct/ Human Rights Policy, or similar	49%
DECENT STANDARD OF LIVING FOR SMALLHOLDER FARMER	Financial support of local farmers with funds, financial grants, donations and interest free loans or similar	11%
	Financial investments in local communities' infrastructures and water/ energy / housing facilities development in order to improve their livelihoods, or similar	10%
	Ensuring a stable income and fair salaries through fair trade and long-term contracts to the workers, workforce breakdown or similar	17%
	Farmers reached, enrolled in worker support programme, sustainable programme, or similar	11%
	Education programs to ensure safe and sustainable crop management practices or providing useful information and expertise, or similar	12%
SUSTAINABLE MANAGEMENT OF THE SUPPLY CHAIN	Suppliers with sustainable agriculture projects underway, usage of regenerative agriculture practices, % of planted area certified according to environmental standards, or similar	5%
	Suppliers monitored for deforestation and exploitation and blocked or disqualified due to non-compliance with basic sustainability criteria, or similar	10%

d.Pillar 4 – Good Corporate Citizenship Topics

Table 7 shows that companies do not define strategic goals regarding Corporate Taxation and Resource Rights topics. References to Community Engagement and Anti-Corruption activities are also very rare in companies' strategic planning.

Table 7. **COMPANIES (%) DISCLOSING SUSTAINABILITY STRATEGIC GOALS AND ACHIEVED RESULTS IN THEIR SUSTAINABILITY REPORTS**

PILLAR 4. GOOD CORPORATE CITIZENSHIP TOPICS	GENERAL STRATEGIC OBJECTIVE FOR EACH TOPIC	TARGET, YEAR AND TIMELINE	BASELINE FOR TARGET DEFINITION	ACHIEVED RESULTS AND/OR IMPLEMENTED INITIATIVES	RESULTS MONITORED BY KPIs
Community Engagement	16%	26%	4%	80%	75%
Corporate Taxation	-	-	-	-	-
Anti-Corruption	7%	5%	1%	62%	53%
Resource Rights	-	-	-	-	-

Furthermore, the study highlights that the definition of targets concerns only 1/4 of companies and only for Community Engagement activities. Baselines are almost not existent.

At the same time, almost all companies report results or initiatives for Community Engagement activities using at least one set of KPIs. The most common KPIs are shown in Table 8.

Table 8. **COMPANIES (%) USING SPECIFIC KPIs**

PILLAR 4 - TOPICS	MAIN KPIs USED	% OF KPI USE
COMMUNITY ENGAGEMENT	Total contributions/ projects ($) supporting directly and indirectly local communities, or similar	27%
	Cash donations supporting local communities, or similar	19%
	Educational and prevention initiatives supporting local communities, or similar	29%
	Initiatives supporting local markets, ratio of locally hired employees, or similar	20%
ANTI-CORRUPTION ACTIVITIES	Hours of training on anti-bribery requirements and business ethics or similar	23%
	Legal actions/ fines/ breaches/ matters for anti-competitive behaviour, cases of corruption, anti-trust, and monopoly practices during the year, or similar	16%
	Grievances and remediation procedures, whistleblowing programs, confidential Ethics and Compliance helpline, open door policy, or similar	28%

e. Analysis of risk disclosure

In 2021 the FTBF Team started to analyze risk disclosures connected to sustainability.
As a pilot study, some major agri-food companies were included in the sample: Saputo - US, Campari Group - IT, Ajinomoto Group - JP, Tesco - UK, Grupo Bimbo – MX.

A manual content analysis of the financial statements published in 2020 was performed. This analysis shows that in addition to traditional risk management (e.g., trend in demand; customer preferences and loyalty; market competition; digitalization and technological development; liquidity and credit risk; brand reputation and trust; currency and interest rate risk; risks related to the effects produced by new regulations and taxation; etc.) some operational risks related to environmental, social, and health dimensions were reported.

Environmental risks refer to mitigation and adaptation actions to climate change, promotion of the circular economy, reduction of losses and waste from food supply chains, the sustainability of supply chains and raw materials, and rational use of resources.

Society risks are mainly related to healthier and more protein-rich foods and more sustainable and inclusive management of employees.

As to health, risks relate to the effects of the current pandemic on production processes, the supply chain, and consumption and eating habits.
Companies disclose how they strategically tackle financial and non-financial risks, informing

critical stakeholders (i.e., shareholders, investors, debtholders, suppliers, and customers) about the development of businesses. This prevents possible adverse events that could affect both their economic results and those material ESG performance, as well as the firm's growth in the short-term.

Table 9. **COMPANIES' MAIN RISKS**

	ECONOMIC	ENVIRONMENT	SOCIAL	HEALTH
SAPUTO	Covid-19 negative impact on production and sales; Increase in procurements costs; Low customer loyalty; Regulation costs; Financial risks.	Climate change negative impact on production;	Workforce limitation due to Covid-19; Cybersecurity and data integrity risks;	Health and safety personnel risks; Food insecurity and unsafety.
CAMPARI GROUP	Macroeconomic instability; Strategic risks; Seasonality dependence; Low customer loyalty; Financial risks; Lose qualified personnel; Regulation costs	Climate change negative impact on production;	Workforce and procurements limitation due to Covid-19; Cybersecurity and data integrity risks.	Food insecurity and unsafety.
AJINOMOTO GROUP	Macroeconomic instability; Covid-19 negative impact on production and sales; Financial risks; Regulation costs; Low customer loyalty;	Climate change negative impact on production;	Supply chain's delays in addressing social issues.	Food insecurity and unsafety.
TESCO	Covid-19 negative impact on production and sales; Low customer loyalty; Financial risks; Macroeconomic instability; Regulation costs; Lose qualified personnel	Climate change negative impact on production;	Cybersecurity and data integrity risks; Workforce and procurements limitation due to Covid-19.	Food insecurity and unsafety.
GRUPO BIMBO	Financial risks;	-	-	-

f. Final remarks

Our study shows that companies tend to disclose the information on Pillar 1's topics mainly in a narrative way and that the most used KPIs for Pillar 1's topics are clearly "Marketing-oriented."

The qualitative nature of the reported information for Pillar 1 are also due to some gaps in the current Global Reporting Initiative (GRI) standards, which are the most used standards by the investigated companies. Notably, the latest GRI Standards versions (i.e., 2016, 2018) only partially cover the topics related to products' health and safety. Moreover, the GRI currently refers either to non-conformity issues of the products or to marketing/labeling, leaving space for possible green-washing practices. Differently, the previous GRI G3/G4 standards versions and the Sustainability Accounting Standards Board (SASB) allow a more precise disclosure of products and services for specific sectors.

A return to the G3/G4 solution (i.e., the Sector program GRI initiative currently implemented) or a wider adoption of SASB sector-specific metrics (used only by 5% of the scrutinised sample) as well as the adoption of the standards proposed by this report in Section 1, should be considered by companies in future sustainability reporting practices. Accordingly, we wish for a closer collaboration among the most important sustainability reporting standard initiatives to harmonize and improve the existing standards. In 2020, indeed, GRI, SASB, International Integrated Reporting Council (IIRC), the Task Force on Climate-related Financial Disclosures (TCFD), and Climate

Disclosure Standard Board (CDSB) issued a Statement of Intent through which they agreed to work together to develop a comprehensive corporate sustainability reporting framework.[57]

Companies report much more information on Pillar 2's topics than on other topics in terms of General Goals, Targets, Baselines, Results, and KPIs.

Measures to report information of GHG emissions, Energy Consumption, Water usage, and Waste management are common to many companies. Nevertheless, some methodological flaws exist regarding computational processes, due to unspecific metrics being provided by the most used reporting standards. As a matter of fact, GRI, for instance, does not provide univocal calculation methods for some topics, as in the case of GHG emissions intensity ratio.

As to the Pillar 2 issues, we found relevant gaps concerning low integration of sustainability principles in planning, control, and risk management activities and few ESG related compensation policies, while materiality analysis is still not fully embraced by companies. On the other hand, positive evidence has been highlighted regarding the adoption of sustainability committees, data protection policies, and codes of conduct.

Sustainable Management of Supply Chain (Pillar 3) issues are poorly included in companies' strategic planning and reporting. Only food producers attempt to include it (especially in OECD countries). Further, companies tend to inefficiently monitor the implementation of supply chain activities due to a scarce use of KPIs, despite declaring they have specific ESG policies and that they monitor and assess their supply chains' ESG impacts. Low percentages of KPI usage have also been registered regarding "Decent Standard of Living for Smallholder Farmers" (Pillar 3).

In the supply chain context, it would be useful for companies to disclose a more detailed estimation of the ESG impacts of their suppliers' activities. To this end, it would be desirable that the commonly used sustainability reporting standards providers improve their support to the companies, enriching the set of standards proposed. For example, GRI provides only two standards (i.e., 204 and 414) that regulate the disclosure of the sustainable supply chain management topic.

Pillar 4's topics are poorly considered, in terms of strategic goals and reporting, in the sustainability reports of the agri-food and beverage companies. Only "Community engagement" and "Anti-Corruption" activities have been reported, by 1/3 or more of the investigated companies. In this regard, GRI released #207 standards for the Taxation topic in 2019, but companies neglected its usage in 2020 ESG reporting activities. In order to fill this gap, companies should consider this new reporting standard.
Furthermore, the analysis revealed that a wide heterogeneity exists in KPI usage since sustainability issues are complex and varied.
This analysis also highlights that the focus put by companies on some specific metrics and KPIs (especially in Pillar 2 topics) is not flanked by coherent strategic planning. Low percentages of

57. CDP, CDSB, GRI, IIRC, SASB (2020). Statement of Intent to Work Together Towards Comprehensive Corporate Reporting. Summary of alignment discussions among leading sustainability and integrated reporting organisations CDP, CDSB, GRI, IIRC and SASB. Facilitated by the Impact Management Project, World Economic Forum and Deloitte, September, 2020, available online at: https://29kjwb3armds2g3gi4lq2sx1-wpengine.netdna-ssl.com/wp-content/uploads/Statement-of-Intent-to-Work-Together-Towards-Comprehensive-Corporate-Reporting.pdf

strategic objectives disclosure were found. In addition, pieces of information on the management commitment and on future actions to be taken to pursue sustainable development is scarce.

In other words, it seems that companies stress those KPIs and metrics that are financially material and can have a benefit in terms of investment and marketing attraction. How companies contribute to overall sustainable development is still not clear, lacking key pieces of information within sustainability reports, as demonstrated by the gaps identified in Pillars 2, 3, and 4.

As for risk disclosure analysis, we found that companies have started to include non-financial issues in risk evaluation. In particular, most of the scrutinised companies share the risk that climate change can negatively affect business production as well as the risk of having unhealthy products Covid-19 also represented a common risk for employees' health, procurement flaws, and financial losses. Finally, companies place significant attention on risks related to data protection and cybersecurity.

2.1.2. CASE STUDIES

Given the complexity of the business context, qualitative case studies are relevant to explore the factors that are enabling or impeding companies' attempts to fully integrate sustainability with their business objectives. Notably, this is even more urgent in the wake of the Covid-19 outbreak, which has transformed our world and overtaken our lives, presenting unprecedented medical, human, and social challenges, as well as threatening the survival of thousands of companies at a global scale with devastating societal and economic outcomes. While the final responses of individual organizations to the crisis may differ from retrenchment to persevering or from innovation to exit, a preliminary interpretation of our case studies offers a clear understanding of the way in which a range of companies are pursuing value creation and SDG alignment during the current uncertain times.

Looking at our data, it is rather clear how navigating the challenges of contemporary organisations requires much more than a mishmash of sustainability tactics that balance competitiveness and sustainable growth. Pursuing value creation and SDG alignment requires a fully integrated approach that takes into consideration how the interests and the contributions of a series of key stakeholders are linked through a journey that connects governance with strategy, as well as operations with performance. This is a journey that large, medium, and small organisations have been embracing, although at different paces and through heterogeneous practices. This process of integration paves the way to value creation and SDG alignment and, interestingly, maximizes the potential of the Four pillars Framework as an evolving self-assessment tool for contemporary organizations.

Although one of the key advantages of the case analysis is that it offers the opportunity to appreciate and leverage differences and multiplicity, we suggest contemporary organisations have been rooting this process of integration around four distinct but interconnected elements: Purpose ("Why"), Strategy ("What"), Innovation ("How"), and Impact ("Where").[58]

Why does the organization exist? Purpose is the company's enduring reason for existence, which is generally communicated as a statement that captures the organisation's contribution to society.

58. For additional insights regarding the journey from Purpose to Impact see C. Busco (2022), Purpose to Impact, AICPA-CIMA research report, London.

Articulating a corporate purpose is challenging as it entails a process of mediation that connects the aspirations of the organization itself with the needs of its key stakeholders, including society as a whole. Multiplicity and diversity are valuable inputs in this process as the organization confronts the various and heterogeneous parties that demand value creation to be achieved and shared through the company's outputs and outcomes. This is indeed the case of Sfera, an organization producing high quality nickel-free tomatoes whose purpose is to fulfill the needs and expectations of their customers through a technology that put the company at the forefront of the industry in terms respecting biodiversity and dealing with distributors along the value chain.

What is the direction of the organisation? If a corporate Purpose gives sense to the company's raison d'être, a Strategy offers direction. In this sense, while Purpose (articulation and communication) and Strategy (identification and execution) are key milestones within the company's management system, a Purposeful Strategy represents an "ending" that calls for new "beginnings". A Purposeful Strategy summarizes decisions that represent promises through which organisations' leaders convey to investors, business analysts and other interested stakeholders, their visions for the future challenges and envisage paths towards possible solutions. Such promises engage with discourses (for example, with "sustainable development"), mobilize concepts (i.e., value creation), and leverage practices (such as stakeholder engagement and materiality assessment) in a space where multiplicity and heterogeneity nourish the organizations' trade-offs which keep unfolding within an ambiguous present and uncertain future. Banfi Società Agricola winery for example, place the concept of "respect" at the core of its business and sustainability Strategy. Respect is the underpinning element that characterizes the way in which Banfi Società Agricola engages with the key drivers of its Business Models: suppliers, employees, customers, and territories. It comes as no surprise that Banfi Società Agricola relabeled its value creation chain as "sequence of respect" that spans from soil erosion to the people in its community.

How is Purposeful Strategy executed? Value creation and SDG-alignment calls for Innovation (product, process, managerial). Innovation entails engagement and requires rethinking the organization as it develops at the intersection of aspirations, inclusion, and actions. Innovation builds on a (un)balancing act between idealism and realism, imagination and existing needs, positive impact on society and maintaining financial viability. Innovation is likely to affect the existing trade-offs among stakeholders, generating new ones. As Innovation "operationalises" Purposeful Strategy, the implications for the performance of the business and the externalities across the organisation's value chain shall be monitored and interpreted. This is certainly the case of Agricola San Felice – Allianz, whose research and experimentation enable this winery to innovate over the years producing new Tuscan varieties. Among them is Pugnitello, a highly prized variety that has become one of San Felice's iconic wines also thanks to a company that place "Biodiversity", recovery of rainwater, solidarity and inclusion projects at the very heart of its business model and operations.

Finally, where is impact achieved? In order to confirm that Innovation contributed to a Purposeful Strategy, execution Impact must be evaluated. The estimation of Impact is a balancing act that requires measurement and wise judgement. Sustainable Value Creation mediates (integrates and un-balances) the multiple stakeholders' needs and the heterogeneous performance at stake. Sustainable Value Creation, therefore, is not exclusively captured by "a single number" (a figure), rather through a process of knowledge construction that helps organisational leaders "figure-out" the consequences in terms of operations and innovations. Aiming to support the alignment between brand/local strategies, corporate strategies, and the "Good for you, good for the planet" purpose through operations, Barilla has adopted an integrated 'operations scorecard' to capture its impacts and key performance. This tool summarizes Barilla's journey from Purpose to Impact and provides the company with a platform shared across the Group.

The "operations scorecard" is divided into a number of key dimensions having the same weight:

1. People, including health and safety, training, absences, injuries and accidents;
2. Product, including product quality, and customer complaints;
3. Planet, including waste, recycling, energy and water consumption;
4. Profit effectiveness, concerning asset usage effectiveness;
5. Profit efficiency, concerning asset usage efficiency.

Over the last six months we engaged with four organizations (Agricola San Felice – Allianz, Banfi Società Agricola S.r.l., Barilla, Sfera società agricola s.r.) on the broad topic of integrating Sustainability with Business Models within processes of Sustainable Value Creation, as well as on SDG-alignment. Informed by our prior academic research and professional background, these case studies were guided also by our approach to Sustainability Accounting and Reporting as open platforms for participation, engagement, and knowledge generation built on visualization, evaluation, and mediation. From purposeful strategy to impactful innovations, from management practices to governance structures, our processes of engagement with participant organizations benefited from the Four Pillar Framework as a useful reference to appreciate and assess the unique journey of each organization (due to the size and to the sub-sector of the company) within a common landscape. Overall, although at different levels due to the variety of contexts, it is possible to suggest how there is very good overlap between the items/objectives included in the Four Pillar Framework and of the key concern and issues that characterize these four organizations.

2.1.3. VALORISATION OF GOOD PRACTICES AND CREATION OF THE FTBF COMMUNITY

Aims of the FTFB initiative include to deepen the knowledge of business practices and to support food companies towards sustainability. For this reason, in 2021 we started collecting and valorising good practices implemented by businesses and business associations, as a vehicle for disseminating awareness of the benefits that can arise from sustainability.

Such valorisation took advantage of the PRIMA Observatory on Innovation (POI) Platform.[59]

POI was created within the Partnership for Research and Innovation in the Mediterranean Area (PRIMA). PRIMA is a Euro-Mediterranean programme fostering and funding Research and Innovation on sustainable agriculture, efficient use of water and agri-food value chains, with a budget of 500 million euros over 7 years, provided by the European Commission and 19 Countries.[60]

The promoters and partners of the Platform Prima Observatory on Innovation include ministries, business associations, research and innovation entities and national and international networks focused on sustainability.[61]
POI addresses the need for innovation and sustainability in the agri-food sector. Innovation is considered one of the most important drivers of change in the framework of sustainable development.

59. www.https://primaobservatory.unisi.it/it/homepage.
60. https://prima-med.org/
61. For the exhaustive list of promoters and partners: https://primaobservatory.unisi.it/it/partners

Often, innovation is difficult to achieve by small enterprises, in particular those in the agri-food sector.

The Platform wants to offer companies the opportunity to engage and adopt technological, organisational and social innovation through an IT platform which gathers contributions from high-performing companies (best practices), researchers, and innovators.

Through the platform, companies can learn new practices, understand the relevance of sustainability as core of the business and benefit from specialized and scientific support of researchers and innovators.
As the final step of the cycle, institutions and policy makers could use POI to understand the needs of the sector and adopt policies for sustainable innovation.

The Platform includes three sections, dedicated to Research Projects in Sustainable and Innovative Agri-food, Best Practices of Agri-food Companies, and Best Practices of Agri-food Associations and Foundations.

Regarding the section of Agri-food Companies, we defined a good business practice as '*a strategy, activity, process, innovation or technological, cultural, organizational or social solution implemented by a specific company, capable of making progress with respect to already known and consolidated practices and which can be adopted as a larger-scale model. It must be able to make a positive contribution in terms of environmental, economic and social sustainability*'. A good practice refers to a specific experience that is also potentially replicable and transferable.

Within the POI Platform, good business practices implemented by around 60 companies are collected according to the Four Pillar Framework and 18 objectives. The Platform collects also a hundred research and innovation projects.

Some examples, albeit generic, of sustainable *good practices* in the agri-food sector range from companies reusing wastewater for irrigation, to farmers cultivating new varieties of fruit and vegetables that are nutritionally healthier and cause less impact on the environment, to businesses introducing new solutions for the conservation of perishable foods. Other examples concern solutions to be resilient to climate change, active technological greenhouses, the recovery of rainwater and the saving of water resources, the safeguarding of biodiversity through biological control and reductions in the environmental impact of the agri-food sector (less pesticides, better animal protection, preservation of biodiversity, sustainable use of soil, sustainable use of water resources, reduction of GHG emission).

The experiences collected show a large interest of even smaller companies towards the implementation of sustainable innovations. However, such introduction is often not connected to more strategic sustainable planning. In any case, we noticed that the collection of good practices is influencing other businesses and business associations.

This involvement with businesses is contributing to the creation of a community of food companies, researchers, food innovators, institutions, policymakers, investors and other stakeholders, useful to share experiences and feedbacks. Such community was key for organising initiatives and events promoting sustainable innovations in the agri-food sector.

2.2. ADAPTATION OF THE FOUR PILLAR FRAMEWORK TO DIFFERENT BUSINESS SETTINGS

In this Chapter the results of applications of the Four Pillar Framework in the field are shown.

Through interviews, webinars and meetings with various European stakeholders, smaller food companies, small farm, wineries, aquaculture businesses and networks of companies, the Framework was empirically tested. 34 French and Italian companies[62] took part to the study together with French and Italian associations representative of dozens of agri-food companies[63] , a Greek research organization on retail consumer goods,[64] a major Italian consortium developing a research project on Aquaculture,[65] and an Italian network of hundreds of agri-food businesses[66] took part to the study.[67]

Such conversations facilitated the understanding of the priority issues for each sub-sector, good practices adopted by companies and the issues emerging while implementing sustainability. They contributed also to the creation of the community of entrepreneurs in the agri-food sector and in sharing good sustainability practices mentioned above.

Interviews with companies and business associations facilitated the understanding of the relevance given by farmers to biodiversity preservation and concerns in the field of viticulture about the certification of organic production, due to the rigid administrative protocols of this certification. Greater interactions with universities were requested, not only in terms of research but also in the design and practical uptake of solutions. The need for more and more innovative technologies to optimize internal processes was highlighted. The issue of the healthiness of products was considered crucial by farmers and processors.

In general, it emerged that, the topics proposed by the Four Pillar Framework were extremely relevant to the companies interviewed to better understand what they were doing and what they should do.
However, the need for some adaptations arose, due to different settings, sub-sectors and business sizes. Attention should be given to priorities typical of different sub-sectors, especially where organizational structures and processes are light and not always highly professionalized. Lighter procedures are inevitably necessary in contexts dominated by smaller sized companies.

Finally, the need to better illustrate each topic of the Four Pillars, making reference to a list of possible related objectives, was clear. This would make it easier to translate principles of the Four Pillar

62. French companies engaged thanks to Demetèr: Confederation Générale des Producteurs de Beetteraves Francais, NatUp, Axereal, Avril Group, Syngenta, Soufflet Group, Groupe Florimond Desprez, Tereos, Bayer SAS France. Italian companies engaged thanks to Casa dell'Agricoltura: Azienda Vitivinicola Calvi, Cascina Isola Maria, Cascina La Forestina, Az. Agr. Gabriele Cerenini, I Pep Lung, Compagnia del Lago, Neorisorse, Fratelli Durando, La San Mauro, Az. Agr. Gavarot di Colli Enrico, Latteria Sociale Valtellina, Legnami Valmorbida S.a.S., Banfi, Sfera, San Felice, Andriani, Image Line, Too Good To Go, Monterosso Società Agricola Forestale, Le Carline, Az. Avicola Benincasa Gabriele Di Gullà Antonella, The Circle, Fiego - Fattoria Brigantesca, La Bona Usanza, Az. Agr. Conterno Fantino.

63. Demeter (France), https://www.demeter.fr, and Casa dell'Agricoltura (Italy) https://casagricoltura.org

64. Ielka (Greece) http://www.ielka.gr/?page_id=778

65. AGER, a Consortium composed by a bank foundation and some universities, supporting research in the supply chains of 8 sectors, including aquaculture https://www.progettoager.it

66. Cibus, https://www.cibus.it

67. Webinars were held with the above mentioned associations and with the following Italian associations: Alleanza delle Cooperative Italiane – Agroalimentare, Ancc COOP, CIA Agricoltori Italiani, Coldiretti, Conad, Confagricoltura, Copagri, Federalimentare, Federdistribuzione, Filiera Italia.

Framework in concrete business actions. Inevitably, the list of objectives was particular to each of the analysed contexts: smaller food processors, small farms, wineries, and aquaculture businesses. Such list, at the same time, is valuable also to deal with the steps of the due diligence approach at the basis of the Four Pillar Framework.

As a consequence of such conversations, four adaptations of the Four Pillar Framework, dedicated to each of the 4 sub-sectors analysed, were created.

Here are some examples of the possible objectives identified for some of the Four Pillar Framework topics.

For smaller food processors Pillar 4, Topic 1 is "Definition of positive relationships with local communities". Relative objectives are: to support projects related to sustainable development by institutions, communities and local associations; to implement or participate in job orientation, tutoring and training activities.

For aquaculture businesses, Pillar 2, Topic 3 is "Sustainability of food production and supply chain". Relative objectives are: use sustainable production practices such as aquaponics, hydroponics, organic aquaculture, water recirculation aquaculture, off-shore mariculture, Integrated Multitrophic Aquaculture (IMTA or Integrated Aquaculture); Ensure transparency in the procurement of natural resources; Recruitment of eggs and / or juveniles and / or semen from traceable suppliers; Ensure the disinfection of the eggs; Ensure a recruitment of vaccinated juveniles; Carry out the verification / certification of the health and hygiene quality of the juveniles being recruited; Periodic control and water quality, veterinary and fish behavior; Evaluate the performance of aquaculture techniques in response to diets requiring the inclusion of new ingredients; Perform life cycle analysis (LCA) of fish fed with the new ingredients of alternative diets; Analyse the economic sustainability of the production of the new ingredients introduced, and the consequent new fish production.

For small farms Pillar 3, Topic 2 is "Adequate living standards for small farmers and livestock breeders". Relative objectives are: to ensure adequate contracts for farmers and livestock breeders; to promote market access and benefits in the value chain; to provide measures to protect productivity and resilience to extreme climate events.

For wineries, Pillar 1, Topic 1 is: "Strategies and products portfolios contributing to healthy and sustainable diets". Relative objectives are: to offer a production of organic wines; to offer a production of DOP and IGP wines; to adopt a conscious use of sulphites.
Once prepared, such lists of topics and objectives were tested with businesses, facilitating our conversations.

Adapted frameworks were seen by companies as very useful to perform a self-assessment of their degree of sustainability, highlighting strengths and weaknesses of the company's sustainability together with priorities and investments needed to be better aligned with Agenda 2030. The four supplementary frameworks were seen valuable also to guide companies in preparing sustainability reports. For instance, Banfi, one of the most important Italian wineries, gave wide attention to the Four Pillar Framework within its Sustainability Report 2020 (pp. 54 and 55).[68]

68. Download the report here: https://www.banfi.it/en/sustainability/

Self-assessments will be even more easy to perform when the digitalization of the Framework, started in May 2021, is completed. The ad hoc digital platform will collect both the activities done by a company in each of the topics of the Four Pillar Framework, and the degree of commitment and disclosure for each of the topics, in line with the due diligence approach.

Given the minor weight of adaptations introduced, our empirical study confirms the potentialities of the Four Pillar Framework to align any kind of food business with SDGs, even the smaller and the smallest ones.

3. Conclusion

The empirical analysis of the 100 largest companies' sustainability reports highlights that, in general, the real firms' contribution to sustainable food systems is still not clear. Using the lens of the Four Pillar Framework, disclosures of strategic goals and achieved results related to sustainability were studied. Our findings show that companies are far from providing information with reference to some relevant topics. KPIs tend to vary widely among companies. The situation is slightly better only within Pillar 2, and especially for GHG emissions. However, even in this case, a clear description of the baseline is disclosed in no more than a third of the companies.

Our analysis took into consideration also good practices enacted by companies. A digital platform was created, collecting dozens of interesting initiatives, for instance in the field of water efficiency and conservation of perishable foods. Such collection valorises best practices and is useful to influence other companies. However, such good practices often are not connected, within the enacting company, to a more strategic sustainable planning and attitude.

The importance of such connection was also confirmed by our qualitative analysis of a few case studies. Such studies highlight, in particular, that companies, to become truly sustainable, need to adopt a fully integrated approach. This means to take into consideration interests and contributions of a series of key stakeholders and to link them in a journey that connects Governance with Strategy, as well as Operations with Performance.

In 2021 we applied the Four Pillar Framework in a few dozen agri-food companies. From this effort, the need to take into consideration differences among sub-sectors and the simplicity of organizational structures and processes of most agri-food companies emerged.

As a matter of fact, for a true improvement of agri-food systems in terms of sustainability, it is necessary to focus both on large companies and on smaller businesses, which often see sustainability as a threat and not as an opportunity.

Smaller companies need support – more than rankings - in the ongoing transformation process. They need to be taught the "grammar" of sustainability, showing them the advantages of sustainability, the good solutions already adopted by other companies, and how to integrate metrics and targets in their governance and management systems.

Our findings show that the Four Pillar Framework represents a very useful support in this direction.

Table 10. **LIST OF THE 100 ANALYZED COMPANIES**

#	COMPANY	COUNTRY
1	COLES GROUP	AUSTRALIA
2	TREASURY WINE ESTATES	AUSTRALIA
3	WOOLWORTHS GROUP	AUSTRALIA
4	ALIMENTATION CCH.TARD SUBD.VTG.SHS.	CANADA
5	LOBLAW	CANADA
6	METRO	CANADA
7	SAPUTO	CANADA
8	ASSOCIATED BRIT.FOODS	UNITED KINGDOM
9	DIAGEO	UNITED KINGDOM
10	OCADO GROUP	UNITED KINGDOM
11	TESCO	UNITED KINGDOM
12	THE A2 MILK COMPANY	NEW ZEALAND
13	ARCHER DANIELS MIDLAND	UNITED STATES
14	BROWN-FORMAN	UNITED STATES
15	BUNGE	UNITED STATES
16	CAMPBELL SOUP	UNITED STATES
17	CONAGRA BRANDS	UNITED STATES
18	CONSTELLATION BRANDS	UNITED STATES
19	GENERAL MILLS	UNITED STATES
20	HERBALIFE NUTRITION	UNITED STATES
21	HORMEL FOODS	UNITED STATES
22	KELLOGG	UNITED STATES
23	LAMB WESTON HOLDINGS	UNITED STATES
24	MCCORMICK & COMPANY NV.	UNITED STATES
25	MOLSON COORS BEVERAGE COMPANY	UNITED STATES
26	MONDELEZ INTERNATIONAL CL.A	UNITED STATES
27	MONSTER BEVERAGE	UNITED STATES
28	PILGRIMS PRIDE	UNITED STATES
29	SYSCO	UNITED STATES
30	COCA COLA	UNITED STATES
31	HERSHEY	UNITED STATES
32	J M SMUCKER	UNITED STATES
33	KRAFT HEINZ	UNITED STATES
34	KROGER	UNITED STATES
35	TYSON FOODS	UNITED STATES
36	US FOODS HOLDING	UNITED STATES
37	POST HOLDINGS	UNITED STATES
38	JBS ON	BRAZIL
39	BRF BRASIL FOODS ON	BRAZIL
40	ARCA CONTINENTAL	MEXICO
41	BECLE DE CV	MEXICO
42	FOMENTO ECONOMICO MEXICANO	MEXICO
43	GRUPO BIMBO	MEXICO
44	ANHEUSER-BUSCH INBEV	BELGIUM
45	COLRUYT	BELGIUM
46	ATLANTIC GRUPA	CROATIA
47	CARLSBERG	DENMARK
48	KESKO	FINLAND
49	CARREFOUR	FRANCE
50	DANONE	FRANCE
51	PERNOD-RICARD	FRANCE
52	METRO	GERMANY
53	SUEDZUCKER	GERMANY
54	KERRY GROUP	IRELAND
55	DAVIDE CAMPARI MILANO	ITALY
56	MARR	ITALY
57	SOCFIN	BELGIUM
58	HEINEKEN	NETHERLANDS
59	KONINKLIJKE AHOLD DELHAIZE	NETHERLANDS
60	UNILEVER	NETHERLANDS
61	DINO POLSKA SA	POLAND
62	JERONIMO MARTINS	PORTUGAL
63	EBRO FOODS	SPAIN
64	VISCOFAN	SPAIN
65	ICA GRUPPEN	SWEDEN
66	MOWI	NORWAY
67	ORKLA	NORWAY
68	BARRY CALLEBAUT	SWITZERLAND
69	CHOCOLADEFABRIKEN LINDT & SPRUENGLI	SWITZERLAND
70	NESTLE	SWITZERLAND
71	X5 RETAIL GROUP GDR	UNITED STATES
72	AJINOMOTO	JAPAN
73	ASAHI GROUP HOLDINGS	JAPAN
74	FAMILYMART	JAPAN
75	KIRIN HOLDINGS	JAPAN
76	SUNTORY BEVERAGE & FOOD	JAPAN
77	NISSIN FOODS HOLDINGS	JAPAN
78	KIKKOMAN	JAPAN
79	MEIJI HOLDINGS	JAPAN
80	YAKULT HONSHA	JAPAN
81	CHINA MENGNIU DAIRY	HONG KONG
82	INNER MONGOLIA YILI INDL.GP.	CHINA
83	JIANGSU YANGHE BREW.JST.	CHINA
84	KWEICHOW MOUTAI	CHINA
85	LUZHOU LAO JIAO	CHINA
86	MUYUAN FOODS	CHINA
87	NEW HOPE LIUHE	CHINA
88	WULIANGYE YIBIN	CHINA
89	TONGWEI	CHINA
90	DALI FOODS GROUP CO.	HONG KONG
91	TINGYI CYMN.ISLE.HLDG.	HONG KONG
92	CHINA RESOURCES BEER HOLDINGS	HONG KONG
93	WH GROUP	HONG KONG
94	DAIRY FARM INTL.HDG.	SINGAPORE
95	WANT WANT CHINA HOLDINGS	HONG KONG
96	BRITANNIA INDS.	INDIA
97	IOI CORPORATION	MALAYSIA
98	WILMAR INTL.	SINGAPORE
99	CP ALL	THAILAND
100	CHAROEN POKPHAND FOODS	THAILAND

Barilla Center FOR FOOD & NUTRITION

FOLLOW US ON THE SOCIAL NETWORK

Via Madre Teresa di Calcutta, 3/a | 43121 Parma | Italy | www.barillacfn.com | info@barillacfn.com