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Finding the Return on Sustainability Investments

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DEAR READER,

Welcome to edition 56 of the Capco Institute Journal of Financial Transformation, produced in partnership with King's Business School and dedicated to the theme of ESG – environmental, social and governance.

We all recognize that transformation towards a green economic system via sustainable finance is needed, welcome and inevitable. Our clients have a crucial role to play here. Acknowledging the scope and complexity of the evolving ESG landscape, we are perfectly positioned to prepare them for the ESG era.

With climate change accelerating and generating physical events on an unprecedented scale, governments and societies are considering measures to mitigate carbon emissions via net zero initiatives. The focus is firmly on greater sustainability and more equitable policies in response to shifting public attitudes. ESG considerations are reshaping investment risks on the one hand, and opening the way for green financing and sustainable technologies and innovations on the other.

This edition of the Journal examines all three pillars – environmental, social, and governance, highlighting efforts by regulators and practitioners to create a unified approach.

Moving forward, compliance with emerging ESG standards will be a critical differentiator for long-term business success. Data will also play a critical role in delivering the transparency and insights required to validate the ESG credentials of businesses, and investment strategies. Advances in areas such as machine learning, artificial intelligence and cloud technologies will be key to establishing a future model of sustainable finance.

This edition draws upon the knowledge and experience of world-class experts from both industry and academia, covering a host of ESG topics and innovations including the value of tracking Return on Sustainability Investment (ROSI) and the importance of moving away from purely external risks to addressing issues that can have positive commercial and societal impacts.

I hope that that the research and analysis within this edition will prove valuable for you as you shape your own ESG strategies, policies, and innovation.

Thank you to all our contributors and thank you for reading.

Lance Levy, **Capco CEO**

FINDING THE RETURN ON SUSTAINABILITY INVESTMENTS

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ABSTRACT

Managing for the material environmental and social issues affecting business today requires new strategies, practices, and tools. Our research explores how to best understand and track the financial return on sustainability investments, to assist companies with their decision making, and improve their bottom-line as well as their societal impact. In this article, we explore the strategies and benefits associated with sustainable agriculture and provide case studies of how companies and farmers have benefited from sustainable sourcing, biodiversity protection, water conservation, and regenerative agriculture practices. We see consistent benefits in the form of operational efficiencies, risk mitigation, innovation and growth, customer loyalty and sales, employee retention, and productivity, amongst other drivers. In fact, sustainable business practices throughout the value chain could be characterized as driving the next wave of total quality management, and the methodology can be useful to most industry sectors.

1. INTRODUCTION

Investments in sustainability can pay dividends – but only if corporate leaders are implementing robust and embedded sustainability strategies as well as tracking and managing the returns on their sustainability investments. Our research into the Return on Sustainability Investment (ROSI)[1] is demonstrating that sustainability is the next wave of total quality management – driving operational efficiency, market demand, innovation, employee productivity and retention, risk mitigation, and supplier resiliency. Yet most companies, even those that have credible sustainability programs, are measuring ESG and financial returns separately and have no idea how the two connect, thereby losing the opportunity to improve returns.

We have studied this for the automotive sector,[2] apparel,[3] and utilities, and are currently finalizing a food and agriculture framework and a related set of cases. We will provide examples for the agriculture sector[4] in this article but emphasize that the process used applies to all industry sectors. The findings are also relevant for investors, who tend to rely on process-based ESG metrics to make investment decisions; ROSI can help better analyze the efficacy of a company's embedded sustainability strategy and its management, market, and financial benefits.

[1] https://bit.ly/3TbyJKb
[2] https://bit.ly/3TbyTBh
[3] https://bit.ly/3CszUzd
[4] https://bit.ly/3Cw4JmA

2. HOW TO UNDERSTAND ROSI

For all sectors, we begin with assessing the material ESG issues that will impact the industry, understanding that corporate strategy must focus on material topics. In food and agriculture, that includes topics such as climate change, water quality and quantity, chemical and energy use, food waste, packaging, worker wellbeing, animal welfare. and so on. Climate change is already affecting productivity and worker wellbeing – a company dependent upon resources that are in turn dependent on the weather needs to manage for the negative impacts of climate change. How well that company works with its suppliers to improve climate change resiliency and reduce its value chain carbon emissions is likely to be material to its success.

Having identified the material ESG topics for a given industry, which are well documented by the Sustainable Accounting Standards Board (SASB)[5] and the Global Reporting Initiative (GRI)[6], we then assess the sustainability strategies available to effectively address them. Figure 1 lays out the 12 sustainability strategies we have identified for the food and agriculture sector, based on interviews of corporate leaders, company engagement, and desk research.

Prioritization of the strategies for different companies will vary – some companies will have no exposure to animal welfare issues, for example. But, other topics, such as climate change and worker welfare, affect all companies throughout the agriculture and food value chain. Prioritizing the strategies should be based on the company's assessment of ESG risks and opportunities throughout its value chain. Just because a brand does not control the treatment of workers on the farms from which its suppliers source, for example, does not mean that child labor on those farms can be ignored as someone else's problem (witness the negative publicity for chocolate companies regarding child labor in West Africa).

Following the prioritization of sustainability strategies, the company must then design the practices it plans to implement as well as the key performance indicators (KPIs) it plans to track. At this point, the finance team can also design aligned financial metrics. Sustainability practices are the specific steps taken to implement a sustainability strategy, such as climate change or diversity, equity, and inclusion (DEI). As with any corporate strategy, some practices will work well (both to tackle the ESG issue and drive better financial performance) and some will not. If the company focuses on process-based metrics (e.g., a tracking the existence of a DEI policy versus creating programming that results in improved diversity and inclusion) it is less likely to drive better performance, which is why identifying the best practices, as well as tracking their impact and financial performance, will be key.

At the practice level, we can monetize the returns by assessing which of the nine ROSI mediating factors might drive improved financial performance for that practice – operational efficiency, reduced risk, improved sales, employee engagement, etc. Figure 2 presents a full listing of the mediating factors.

Figure 1: Sustainability strategies in agriculture

*These strategies are subject to change
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[5] https://bit.ly/2yzkhaj
[6] https://bit.ly/3fF11ya

Figure 2: Return on Sustainability Investment (ROSI) drivers of financial performance and competitive advantage

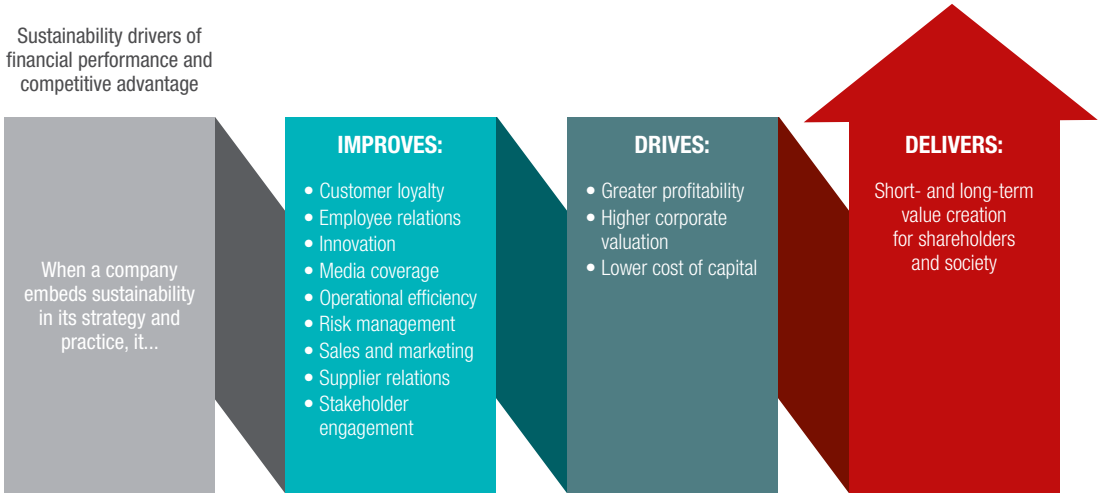

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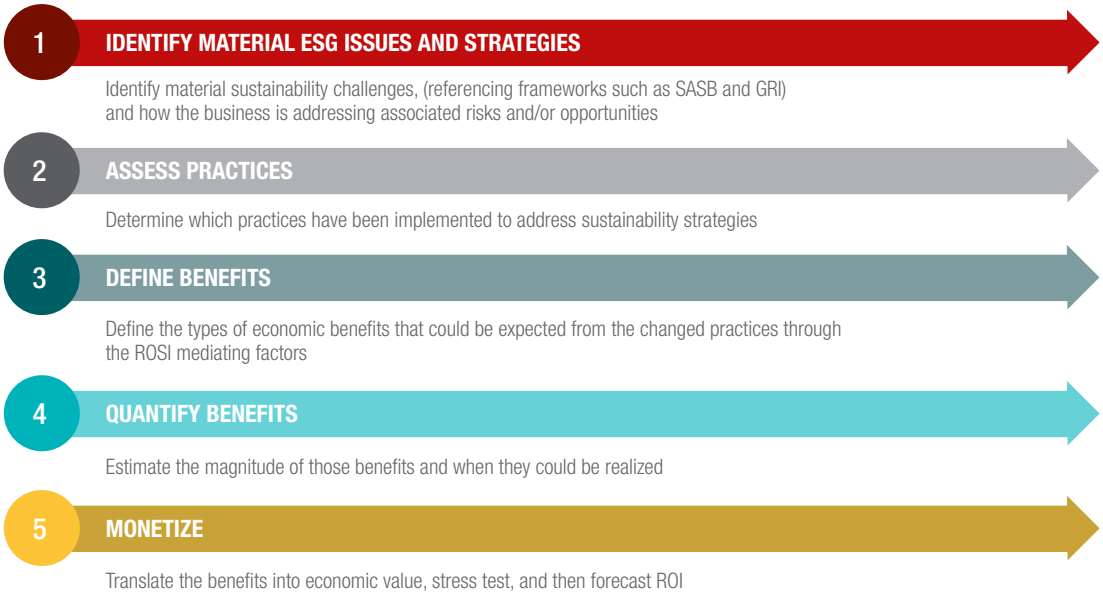
Figure 3: ROSI methodology and collaboration process



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In summary, companies and investors can improve their financial performance by implementing and/or monitoring embedded sustainability practices that drive the ROSI mediating factors. Currently, the finance team and investment analysts are not tracking ROSI. Figure 3 demonstrates the steps we have developed to better track and manage for the financial impacts of sustainability strategies.

To help bring this to life, we will provide examples from our food and agriculture research, which we have been working on for several years with a variety of companies and partners. The final food and agriculture ROSI framework should be completed by early 2023.

Figure 4: Climate change practices

	ON-FARM	MANUFACTURING/ PROCESSING	DISTRIBUTION	RETAIL/ FOOD SERVICE	CONSUMER ENGAGEMENT
Reduce GHG emissions	Reduce livestock-related GHG emissions (diet, wellness, technology)	Transition to low emissions vehicles/transport			
	Reduce direct and indirect emissions from machinery use				
	Ensure no deforestation of primary forest with monitoring and/or certification programs		Purchase or require certified and zero-deforestation products		Use low- or no-carbon labeling
Transition to low-carbon alternatives	Use bio-based fertilizer	Develop animal feed for improved digestibility		Change product recipes or switch to low-carbon impact commodities	
	Adopt soil health				
	Optimize energy efficiency (LED, automated monitoring, etc.)				
	Implement monitoring and tracking systems for energy usage				
		Replacement of obsolete refrigeration equipment with newer, more efficient equipment and/or low-carbon and natural refrigerants			
Sequester carbon	Plant trees/ grasslands where possible	Improve land management to minimize cutting			
	Introduce anaerobic digesters to farming practices	Conservation cover crops, no-till or reduced tillage			
Sell / purchase offsets	Participate in public-private partnerships to maximize carbon offset buy-trade				

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3. CLIMATE CHANGE STRATEGY, PRACTICES, AND ROSI

Let us take a look at a few sustainability strategies for food and agriculture, starting with climate change. Agriculture both generates emissions (through deforestation, livestock-related emissions, chemical use, soil erosion, transportation and distribution, and manufacturing) and is affected by climate change, which can reduce accessibility, productivity and quality amongst other negatives. Figure 4 presents a mapping across the value chain of climate-related practices and sub-practices commonly used in agriculture.

The four primary practices to address climate change are on the left: reducing greenhouse gas (GhG) emissions, transitioning to renewables, sequestering carbon, and selling or purchasing carbon offsets. For each practice, there are sub-practices depending on where one sits in the agricultural value chain. The next question is: how might these practices improve financial performance? We undertook a project with McDonalds and Carrefour (major French supermarket chain) looking at rancher uptake of sustainable agriculture and deforestation-free practices for beef production in Brazil and found that the improved sustainable agriculture practices increased rancher profitability seven times, driven by a 2.3X increase in productivity, lower input costs, and higher quality (resulting in premiums). This also drove better returns for the slaughterhouses and the retailers, in the form of lower operational, regulatory, and market risk, as well as higher premiums in some cases.

4. SUSTAINABLE SOURCING CHANGE STRATEGY, PRACTICES, AND ROSI

Sustainable sourcing is another strategy employed in the food and agriculture sector. Figure 5 demonstrates practices and sub-practices, with the major practices being supplier sustainable sourcing requirements, supply certification, sustainable sourcing projects, and supply chain partnerships/ incentives. Sustainable sourcing has become a strategy of choice as it improves transparency in the supply chain, identifies supplier risks in the form of problematic labor or environmental practices, and creates a marketing opportunity.

Figure 5: Sustainable sourcing practice map

	ON-FARM	MANUFACTURING/ PROCESSING	DISTRIBUTION	RETAIL/ FOOD SERVICE	CONSUMER ENGAGEMENT
Companies execute sustainable sourcing requirements for their suppliers (non-certification)	Compliance with supplier code of conduct or standards				Communicate sustainable sourcing in messaging and/or certification labels at point of sale
		Releasing information about traceability of suppliers			
		Company or third-party auditing of value chain partners, reporting and disclosure			
Commitment to one or more sustainability certifications for all or part of supply chain		Include certification requirements in supplier contracts			
	Work with third parties and/or supply chain partners to ensure uptake of certification practices				
Investment in sustainable supply chain sourcing projects	Environmental and social responsibility trainings funded and implemented with key partners, including conservation projects to protect biodiversity, water, etc. and community projects to improve quality of life				Engage consumers in conservation and community improvement projects
Companies develop supply chain partnerships	Long-term contracts				
	Implementation of preferred supplier status and premiums as related to sustainability practices				

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Figure 6: Improving biodiversity practice map

	ON-FARM	MANUFACTURING/ PROCESSING	DISTRIBUTION	RETAIL/ FOOD SERVICE	CONSUMER ENGAGEMENT
Partnerships to protect biodiversity	Partner with farmers, civil society, academics, foundations, and/or government to protect important conservation areas and species (e.g., within soil health, water stewardship)				
Protect and restore critical habitats	Map and protect high conservation value/high ecological value/ high carbon stock areas in and adjacent to production areas to prohibit conversion to agriculture	Monitoring supply chain compliance related to deforestation and nature conservation requirements		Monitoring supply chain compliance related to deforestation and nature conservation requirements	Label products with conservation attributes
	Conserve and manage important watersheds and water bodies				
	Map and protect endangered and threatened species in and adjacent to production areas				
	Reduce chemical use (including applying integrated pest management)	Change product recipes or switch to low-biodiversity impact commodities		Change product recipes or switch to low-biodiversity impact commodities	
	Set aside important conservation areas for full protection				
	Commitment to no deforestation/ pursue sustainable agriculture certifications				
Regenerate degraded agricultural lands	Areas unlikely to provide economic return should be identified & taken out of production & managed to improve biodiversity				
	Transition to organic				
	Adopt cover crops				
Protect/restore endangered species	Map and implement protection of endangered and threatened species in and adjacent to production areas				
Pay ecosystem service benefits	Adopt cover crops				

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To better understand the ROSI of sustainable sourcing, we partnered with McCormick to assess the returns on their sustainable sourcing of several iconic spices. Their sustainable sourcing program provided technical assistance to farmers. We identified four categories of ROSI benefits: improved sales, positive and free media coverage, risk reduction, and lower cost of capital. The total was U.S.$6 million in net annual benefits after including the costs of the program – pointing toward the benefits of increasing the sustainable sourcing investments.

5. BIODIVERSITY AND ECOSYSTEM CONSERVATION STRATEGY, PRACTICES, AND ROSI

Biodiversity and ecosystem conservation is a strategy of growing focus as we increasingly recognize the negative impacts of agriculture due to chemical use, deforestation, and soil depletion (amongst other impacts) on pollinators, aquatic habitats, birdlife, microfauna, and other forms of biodiversity. This can also negatively impact agriculture as pollinators are critical for many crops, birds eat pests, and so on. The four major practices are: protect and conserve natural habitats, restore degraded lands, protect/restore endangered and threatened species, and pay for ecosystem services. The related sub-practices include mapping and inventorying conservation habitats and threatened/endangered species, creating conservation set-asides, planting diverse flora on degraded lands, and so on.

To explore the ROSI benefits of biodiversity conservation, we partnered with a mid-sized food company, selling baby foods, jams, and snacks globally that is working with farmers within the jams business to protect pollinators and their habitats. We modeled the benefits of expanding the program (currently funding research and training, installing bee hotels, and offering a promotional product with a portion of sales funding a tree planting program) into a sustainable sourcing relationship with monitored and comprehensive uptake of pollinator conservation (e.g., compliance with a "bee-friendly" standard). The farmer benefits of adopting "bee-friendly" practices includes improved yields, lower input costs, and increased opportunities for incentives. Working with farmers to achieve these outcomes could help them address rising labor and fertilizer costs as well as increased cost associated with new regulations.

The benefits for the company we identified included: a more stable supply chain (reliable access to locally produced product and price stability), improved sales related to sustainably marketed product offering (drives higher customer loyalty, increased penetration of consumer segments, and potential premium pricing), reduced Scope 3 carbon related to adoption of select farming practices (i.e., tree and hedgerow plantings, reduced fertilizer use, and converting to organic fertilizer), and improved employee engagement (due to improved overall sustainability profile of the company). Overall engagement with the farmer, while difficult to measure, could improve supplier loyalty.

We estimated average annual operating income potential improvements of approximately U.S.$650 thousand for the company, with the majority of benefits being sales-related given conservative assumptions being used for price stability, value of carbon, and impact on employees. After including an estimate of program costs, the project ROI exceeded 30 percent.

6. WATER STEWARDSHIP STRATEGY, PRACTICES, AND ROSI

Agriculture is highly water-intensive, currently using about 60 percent of the world's freshwater supplies. Unfortunately, depleted groundwater supplies, combined with climate-induced extreme weather events, is causing extreme water scarcity, while flooding is also creating challenges for water quality and accessibility. Food and agricultural companies are, therefore, focusing on reducing water use and improving water quantity and quality. Water use in the sector is embedded in farming, manufacturing, and packaging. Ignoring water constraints creates significant risk for companies in terms of competition with other water users, regulation, reputation, and social license to operate. For example, consumers are increasingly concerned about the massive amount of water used to create bottled beverages. Practices include watershed conservation projects, buffer zones planted along waterways on farms, and water-efficient technology in manufacturing.

The Center for Sustainable Business at NYU Stern School partnered with Arca Continental, one of the largest bottlers of Coca-Cola products in the world, and ALO Advisors (a sustainability consulting firm that works with NYU Stern to develop/deploy ROSI) to assess the potential economic

Figure 7: Improving water security practice map

<table>
<tr><th></th><th>ON-FARM</th><th>MANUFACTURING/ PROCESSING</th><th>DISTRIBUTION</th><th>RETAIL/ FOOD SERVICE</th><th>CONSUMER ENGAGEMENT</th></tr>
<tr><td rowspan="5">Reduce water use</td><td colspan="5">Installation of water meters and monitoring of water use</td></tr>
<tr><td colspan="3">Installation of more efficient water technologies</td><td></td><td rowspan="2">Use sustainability messaging/ certifications on product labels</td></tr>
<tr><td>Incorporate native/drought tolerant landscaping</td><td colspan="3">Water management as part of green building guidelines</td></tr>
<tr><td>Convert irrigation systems to high efficiency equipment</td><td colspan="3">Account for real price of water (i.e., set internal price)</td><td></td></tr>
<tr><td colspan="2">Implement community- and/or NGO-based conservation projects to conserve important sources of water and watersheds including water access and water rights</td><td colspan="2">Identify critical watersheds to preserve</td><td></td></tr>
<tr><td rowspan="5">Improve water quality</td><td>Land management (e.g., reduced till) and green infrastructure (e.g., filter strips)</td><td colspan="4">Stormwater management (includes: rain gardens, permeable pavements, rainwater collection and reuse)</td></tr>
<tr><td>Reduce pesticide/herbicide (IPM) and fertilizer (four Rs on farm – right place, time, amount, rate)</td><td>Reduce chemical use in operations</td><td colspan="3"></td></tr>
<tr><td colspan="3">Ensure community access to safe drinking water</td><td colspan="2"></td></tr>
<tr><td>Protect waterways from livestock incursion and provide them alternative sources of water</td><td colspan="4"></td></tr>
<tr><td>Ensure best-in-class manure management to avoid run off into water bodies (including technology applied)</td><td colspan="4"></td></tr>
</table>

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implications of climate change on a key agricultural commodity, particularly with regard to future water availability, yield/productivity, and commodity price changes. Under the premise that no actions are undertaken – referred as the "business as usual" scenario (BAU) – possible business exposure was calculated at several million U.S. dollars during periods of drought by 2040. With the ROSI methodology, Arca Continental was able to translate these challenges into key initiatives and potential financial benefits.

7. SOIL HEALTH STRATEGY, PRACTICES, AND ROSI

Better soil health improves productivity as well as carbon sequestration. Conventional farming tends to strip the soil of nutrients, which then requires the extensive application of synthetic nutrients such as nitrogen or phosphorus-based fertilizer. It also depletes the soil's ability to sequester carbon. The current focus on regenerative agriculture is very much soil health related, with the major practices being soil management (e.g., conservation tillage), improved nutrient management, rotating crops, and having continuous soil cover. Famers can put in place better soil management practices, while brands and first-tier suppliers can provide incentives to farmers to embrace those practices and reduce their Scope 3 emissions.

We worked with Cargill, a multinational commodity trader, to understand the ROSI for soy farmers in the Midwest who were rotating crops (which slows the depletion of soil nutrients), practicing conservation tillage (which minimizes soil disruption), and providing continuous cover of the soil (which improves soil structure and soil organic matter, and reduces erosion). We found that soy farmers were realizing incremental value of between U.S.$49 and 87 per acre because of those soil management practices. Approximately half of the benefit came from a reduction of direct costs, i.e., less use of equipment, fuel oil, and chemical inputs such as fertilizer. Other benefits included higher yields due to more resilience to extreme weather, lower insurance premiums, and incentive payouts by various U.S. states for the better practices. Programs for farmers to realize ecosystem

Figure 8: Soil health practice map

<table>
<tr><th colspan="4">ON-FARM</th><th>MANUFACTURING/ PROCESSING</th><th>DISTRIBUTION</th><th>RETAIL/ FOOD SERVICE</th><th>CONSUMER ENGAGEMENT</th></tr>
<tr><td rowspan="2">Improve long-term land productivity</td><td>Minimize equipment and fuel usage to avoid soil disturbance</td><td rowspan="8">Adjust herbicides and pesticides to improve biodiversity</td><td rowspan="8">Measure carbon sequestered/ reduction in carbon emissions to identify opportunities for reduction</td><td colspan="4" rowspan="8">Incentivize the farmer to adopt regenerative soil health practices</td></tr>
<tr><td>Provide habitats for beneficial organisms</td></tr>
<tr><td rowspan="2">Soil management landscaping</td><td>Installation of buffer zones to reduce soil erosion</td></tr>
<tr><td>Adjust livestock grazing intensity and manure management</td></tr>
<tr><td rowspan="2">Improve nutrient management</td><td>Use more natural fertilizer</td></tr>
<tr><td>Implement periodic soil testing and adjust fertilizer usage; 4Rs</td></tr>
<tr><td>Rotate crops</td><td>Identify useful/ naturally fertilizing crops across seasons</td></tr>
<tr><td rowspan="2">Continuous cover</td><td>Maintain healthy, perennial plant cover</td></tr>
<tr><td>Leave roots in the ground</td></tr>
</table>

*Soil health practices also appear across other strategies, including water stewardship, climate change, chemicals, and biodiversity
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payments for carbon sequestration were relatively new. But applying a research-based estimate of value was placed on the future environmental outcomes (reduction in nitrogen and phosphorus run-off and carbon sequestered) expected for each farmer, resulting in an additional U.S.$45 in value per acre. Cargill itself also saw operating efficiencies due to more stable supply as well as modest sales and marketing benefits as their clients are increasingly asking for regenerative agriculture sourcing. Cargill has since established RegenConnect™, a voluntary market-based regenerative agriculture program that helps farmers access the carbon marketplace, representing a new line of business for the company.

8. ROSI AND CONSUMER DEMAND

In the consumer-packaged goods (CPG) sector, which is where most agricultural products are found, the Center For Sustainable Business at NYU Stern School has done extensive research into consumer purchasing of sustainable products, working with IRI, a market research firm which collects all bar code data for consumer packaged goods (CPG) products in all retail and ecommerce outlets in the United States. We began reviewing the consumer purchasing data in 2019, looking backwards five years in order to understand the trends.

In 2021,[7] sustainability-marketed products in CPG were responsible for 31 percent of CPG growth, at a 30 percent price premium, on average. U.S.$3.4 billion of carbon labeled product was sold and one of every two new CPG products introduced in 2021 had some type of sustainability attribute. Since 2019, we have seen market share of sustainability-marketed products grow in many categories, from skincare to dairy. Clearly, both consumers and brands are driving demand for sustainable products, another key element of the return on sustainability investment.

9. CONCLUSION

Stakeholders such as regulators, consumers, employees, suppliers, investors, and civil society are placing pressure on companies to be more sustainable. Some companies have embraced sustainability as a pathway toward improved management and competitive advantage. However, some question whether sustainability can really create financial value. In fact, some (including most recently conservative policymakers) see sustainability as reducing financial value, despite many studies to the contrary, including our own meta-analysis[8] of more than a thousand academic studies on the correlation between financial performance and sustainability performance.

This is because companies are not tracking the return on their sustainability investments, and you cannot value what you do not track. ROSI provides the C-suite, and especially the finance function, the approach and tools to incorporate an assessment of the intangible and tangible financial benefits of a given set of sustainability strategies and practices, delivering the insights to determine where more funds should be invested. We have found that not all practices utilized under a given strategy will deliver net positive financial returns. However, when viewed as a whole, most of the practices will drive financial benefit, which can subsidize practices that may be necessary, but do not have a positive return.

Much of a company's value today lies in intangibles such as reputation and intellectual property. Sustainability drives tangible benefits such as operational efficiencies, but it can also provide important intangible benefits such as innovation and risk mitigation, as we saw in some of our examples. Sustainability is not only transforming production, manufacturing, distribution, and consumer engagement, but it is also likely to transform traditional accounting processes.

[7] https://bit.ly/3SRLtVZ
[8] https://bit.ly/3TbzzXI

ABOUT CAPCO

Capco, a Wipro company, is a global technology and management consultancy specializing in driving digital transformation in the financial services industry. With a growing client portfolio comprising of over 100 global organizations, Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to deliver end-to-end data-driven solutions and fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its Innovation Labs and award-winning Be Yourself At Work culture and diverse talent.

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King's Business School, the ninth and newest faculty at King's College London, opened in 2017. It is accredited by AACSB and EQUIS and was rated one of the top 10 business schools for research in the U.K. based on the Research Excellence Framework 2021. It is rated fifth in the U.K. for Business Studies by the Times and Sunday Times Good University Guide. Based in the heart of London, the School is part of an internationally renowned research-intensive university with a track-record of pioneering thinking and the limitless energies of the city's businesses, policy-makers, entrepreneurs and change-makers to draw on. The School's commitment to drive positive change is at the heart of its research and education.

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