

Disrupting Commodities

Building Thriving Rural Communities and More
Sustainable, Resilient Agricultural Supply Chains

February 2021



ABOUT THE FARMER INCOME LAB

The [Farmer Income Lab](#) is a collaborative ‘think-do tank’ to improve farmer incomes and build resilient supply chains that work for farmers and business. As an industry-led collective, the Lab harnesses the expertise of academic, public, private and civil society partners to generate insights and connect solutions in order to influence industry action. By understanding what works and what doesn’t, and why, we can create solutions that can be activated, replicated and scaled.

In order to build fit-for-purpose supply chains, where small-scale farming enterprises and companies both thrive, we cannot be satisfied with incremental improvements. Through individual and collective action, we must push boundaries and extend our ambitions—because poverty won’t be solved with the same approaches that perpetuate it.

Mars, on behalf of the Farmer Income Lab, has led the Disrupting Commodities project with support from Rogers MacJohn LLC and SocialSide. This report was prepared by Richard Rogers, Managing Director of Rogers MacJohn, in collaboration with Beth Jenkins, Managing Director of SocialSide.

CONTENTS

ABOUT THIS REPORT	4
1. THE CHALLENGE	7
2. DRIVERS AND SIGNALS OF CHANGE	9
3. UNCERTAINTIES	16
4. SCENARIOS FOR THE FUTURE	17
5. A SHARED VISION	24

ABOUT THIS REPORT

The Disrupting Commodities Project seeks to catalyze thriving rural communities and sustainable, resilient agricultural supply chains

In 2019, the Farmer Income Lab launched the Disrupting Commodities Project to tackle this challenge—to catalyze thriving rural communities and sustainable, resilient agricultural supply chains.

We know that, to succeed, a critical mass of food and agriculture companies must act. Therefore, we seek to develop a shared vision of the future, and strategies and tactics for getting there from where we are now.

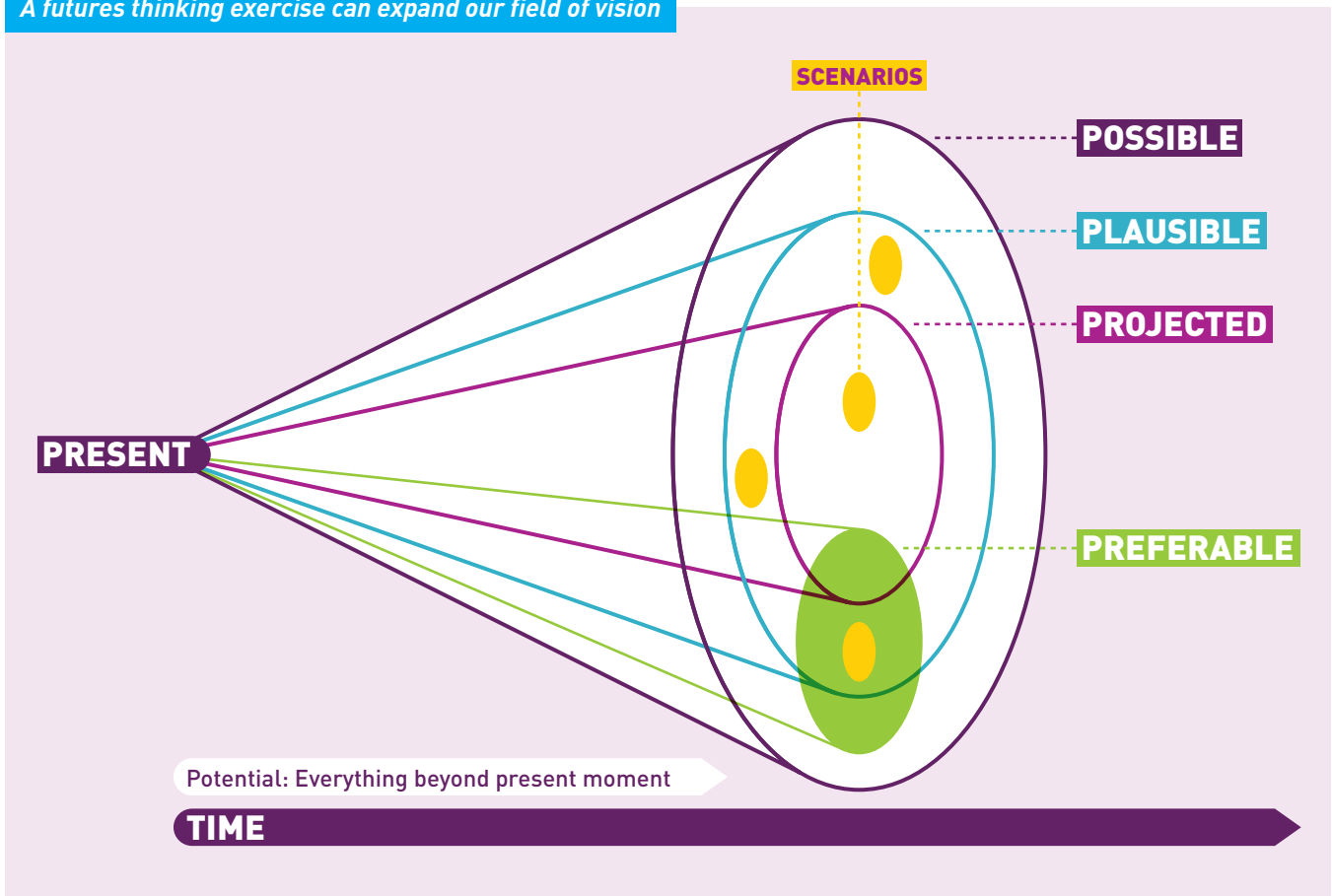
To do it, we are using a foresight process. Most strategic planners use historical data to inform their decision-making, an approach that relies on assumption and risks missing novel opportunities and threats. Too often, this results in incremental, business-as-usual thinking and doing.

Foresight flips this approach, using drivers and signals of change in the present to construct a range of plausible scenarios for the future. Scenarios are rich, data-driven stories about tomorrow that can drive better decisions today. They are intended to help methodologically identify contingencies and test the flexibility and resilience of an organization’s strategy—helping leaders identify steps they can take over a given period of time to future-fit their businesses.¹ The business case for foresight is clear: a longitudinal study conducted in 2018, for example, found that future-prepared firms were 33% more profitable than the average and achieved 200% more growth in market capitalization.²

As part of our foresight process, depicted in the figure on page 6, the Farmer Income Lab conducted research and engaged a variety of experts through a series of telephone interviews and workshops over the last 18 months. We worked to understand the challenge of farmer poverty at the far ends of global agricultural supply chains, the drivers and signals of change in the operating environment for companies that depend on the raw materials those farmers grow, and the critical uncertainties that will determine the way change plays out. And we developed three plausible scenarios for the future of agricultural raw material supply chains.



A futures thinking exercise can expand our field of vision



Based on these plausible futures, we developed a shared vision of our preferred future: one in which all agricultural raw materials are sourced from profitable, socially responsible, and environmentally sustainable farming enterprises that contribute to rural economic growth and poverty reduction—enabling rural communities and natural ecosystems to thrive.

“We envision a future in which all agricultural raw materials are sourced from profitable, socially responsible, and environmentally sustainable farming enterprises that contribute to rural economic growth and poverty reduction, enabling rural communities and natural ecosystems to thrive”

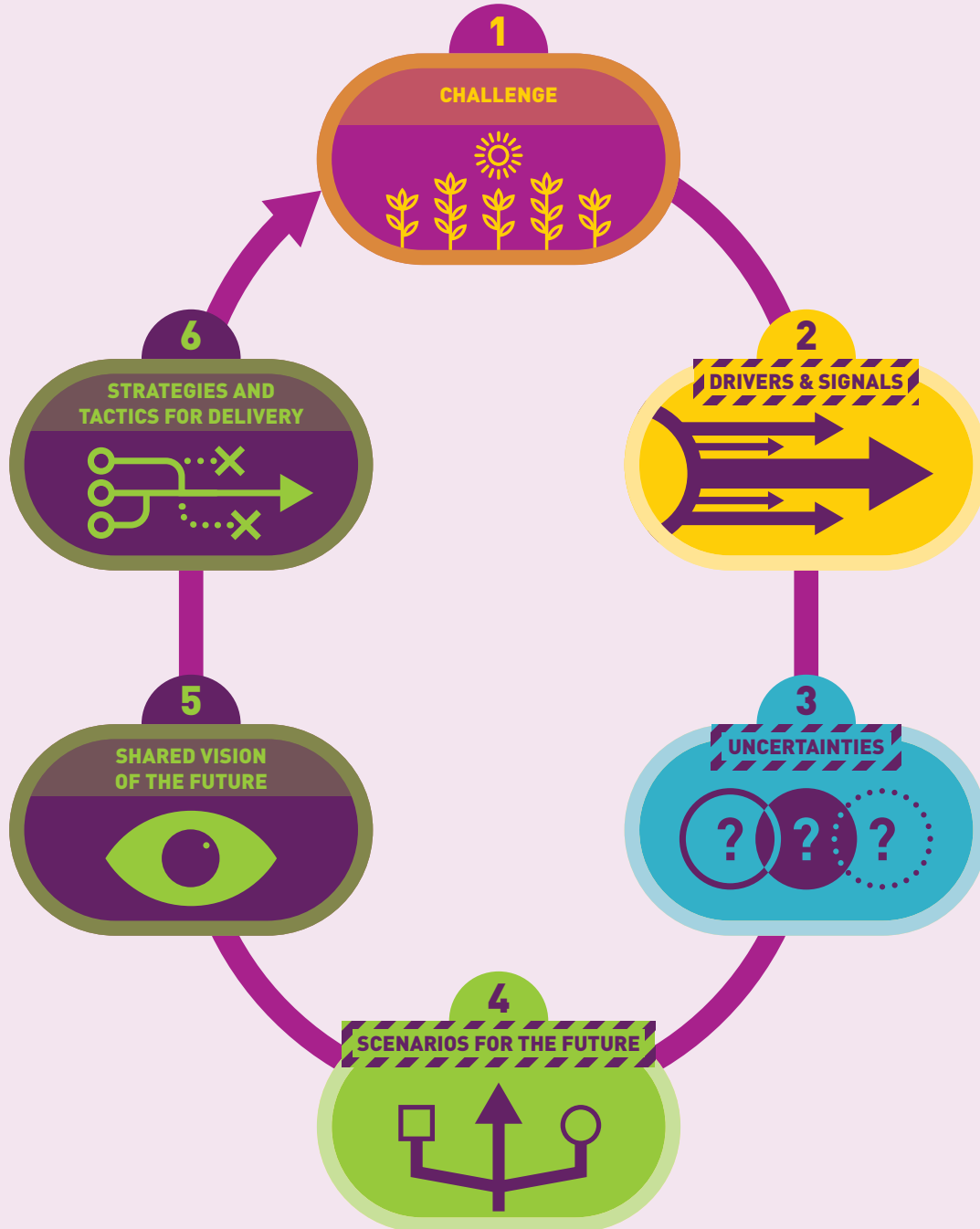
We also talked about what it will take to get there: a strong business case, new models of business-government engagement, and clear evidence of what works.

This report summarizes the insights that have come out of the Disrupting Commodities Project so far. The next step will be to develop strategies and tactics that companies can use to drive progress toward our vision.

COVID-19’s impacts on global agricultural supply chains show that our work is more urgent now than ever. The relentless focus on efficiency in agricultural supply chains has made it harder to cope with crises like COVID-19, and COVID-19 is unlikely to be the last crisis the 2020s have in store. A significant change in trajectory is needed. To prepare for the future, we must take action now—while we still have time to build the future we want.

The Disrupting Commodities Foresight Process

Engaging stakeholders over the last 18 months, we have worked to understand the challenge of farmer poverty at the far ends of global agricultural supply chains (step 1 below), drivers and signals of change in the operating environment for companies that depend on the raw materials those farmers grow (step 2), and critical uncertainties that will determine the way change plays out (step 3). Based on these insights, we have developed three plausible scenarios for the future of agricultural raw material supply chains (step 4). Finally, we have used these plausible futures to develop a shared vision of our preferred future (5)—and what it will take to get there from where we are now. Our next step will be to develop the strategies and tactics to bring our vision to life (6).





1. THE CHALLENGE

To support thriving rural communities and sustainable, resilient supply chains, small-scale farmers' incomes need to rise

Most small-scale farmers that participate in global supply chains live in poverty.

Around the world, some 35 million small-scale farming households participate in global supply chains. As many as 24 million of them may be living in poverty using a poverty line of \$3.10 per day. And up to nine million—fully one quarter of all small-scale farming households participating in global supply chains—may be living in extreme poverty, as defined by the World Bank, earning under \$1.90 per day.³

Poverty impacts small-scale farmers' lives in many ways.

According to the UN Food and Agriculture Organization, most small-scale farming families endure poor housing conditions, such as dirt floors, and severely limited access to electricity, running water, and proper toilets. Poor sanitation, in turn, contributes to chronic diarrhea—one of the primary causes of death in children under five—and undernutrition. It takes the average small-scale farmer 11 minutes to reach a paved road, which limits access to markets and services like education and healthcare.⁴ And as the Consultative Group to Assist the Poor reports, poverty leaves smallholders ill-equipped to deal with risks, from injuries to crop failures.⁵

Small-scale farmer poverty also creates risk for global food and agriculture companies that depend on the raw materials they grow.

Lacking the resources for a decent standard of living, small-scale farmers skimp on seasonal inputs, reduce labor-intensive activities, and defer investment in their farms. Their yields are low and vulnerable to pests, diseases, and extreme weather events. They may resort to child labor and deforestation to try to make

ends meet, or break contracts in order to sell for the highest prices. For buyers, the net result is increasing risk—to security, safety, and quality of supply, cost and price volatility, reputation and regulatory compliance.

Business-as-usual creates serious constraints for corporate procurement executives in mitigating this risk.

Procurement is typically charged with managing security, safety, and quality of supply, cost and price volatility, and reputation and regulatory compliance associated with the supply chain. Procurement is the corporate function with the closest contact and greatest leverage over supply chain stakeholders.

However, procurement does not operate independently; rather, it responds to marketing, product development, and other business decisions that are often made without its input on the implications for the supply chain. Commodity markets are competitive, and social and environmental externalities are not priced in. Short-term pressures drive an overriding focus on cost in the absence of performance metrics tied to long-term risk reduction and value creation. Even if they had incentives to do things differently, procurement executives often lack the knowledge and skills needed—and often have only weak links with the sustainability function, where that knowledge and skillset may reside. Frequent management and staff changes also make it difficult to institutionalize new sustainable sourcing approaches spearheaded by individuals with a vision for change.

As a result of these constraints, procurement executives usually default to traditional procurement practices that transfer the majority of risk to small-scale farmers and the majority of value to their companies—which may make poverty worse.

These traditional commodity procurement practices include spot market purchasing, futures contracting, and electronic tendering, for example (Appendix A includes a longer list that explores the benefits and risks of each practice for companies and the small-scale farmers they source from). These practices can create business value when measured over a period of months, perhaps up to a year or two. But whether they create business value in the medium to long term is now being questioned. COVID-19, for example, is showing that efficiency can come at the expense of resilience.

“We’re at a standstill because we have the sustainability teams saying there’s a problem, but the procurement teams are saying we have a cost optimization goal.”

- Procurement executive, coffee trading company

To promote decent standards of living and more sustainable, resilient raw material supply chains, we need to support more sustainable, resilient farming enterprises.

Farmers need higher incomes, more positive monthly cash flows, and a stronger balance sheet to achieve food security and good nutrition and to access safe water and housing, quality healthcare and education—and to make the investments required to upgrade their operations, or to capture even better opportunities outside of farming.

Increasing farmer incomes will require stakeholders across sectors to tackle a complex set of dynamics and to clearly define their respective roles and responsibilities.

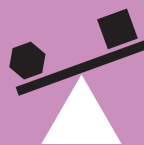
Small-scale farmers face a range of barriers to increasing their incomes, making productive investments, and protecting themselves against risk, from the fundamental fact of small farm size to lack of access to credit, insurance, inputs, storage facilities and logistics services. A paper developed by Oxfam for the Farmer Income Lab in 2018, [“A Living Income for Small-Scale Farmers: Tackling Unequal Risks and Market Power,”](#) argued that “at the core of the income challenge for small-scale farmers lies a significant imbalance between the risks of agriculture shouldered by farmers and their power to shape their own market participation.”⁶ The paper identified barriers to farmer income growth in three categories, outlined in Box 2 below.

Business practices have a key role to play in tackling these barriers—but business can’t do it alone. Governments, especially, have key roles to play, for example in providing enabling policy and regulatory environments for investment and ensuring that farmers have the safety nets and supports they need to capitalize on their assets and buyer relationships.

Barriers to increasing smallholder farmer incomes



1 Risks that deter farmers from investing in their farms, such as fluctuations in crop prices, unpredictable rainfall, and land ownership issues.



2 Power asymmetries between farmers and larger players in the supply chain that restrict farmers’ access to profitable markets and limit their bargaining power.



3 Structural barriers that underpin many of these risks and power asymmetries, such as a lack of professional farmer organizations, consolidation at the buyer level, market-based pricing mechanisms, and export promotion strategies.



2. DRIVERS AND SIGNALS OF CHANGE

Agricultural supply chains are ripe for disruption, with powerful drivers and signals of change that suggest cost and risk are set to rise—and that buyers will have to engage head-on with the challenge of increasing farmer incomes

These drivers—large-scale trends in the operating environment for global food and agriculture companies and their commodity buyers—include the following:

Increasing demand for food

With the global population projected to reach 9.7 billion by 2050⁷ and hundreds of millions of people joining the middle class each year,⁸ demand for food is on track to increase by more than 50% by mid-century (and non-food demand for agricultural products, such as for biofuels, is also increasing).⁹ Agricultural production, food processing, distribution, and sales will have to increase commensurately.

“When export companies say they’d like to switch to supplying domestic markets, they’re after better payment terms and less price volatility. With domestic markets, they’re paid within the week instead of 90-day payment terms.”

– Executive, emerging market distribution company

Modernization of low- and middle-income country food markets

Population growth, the rising middle class, and increasing demand for food are concentrated in low- and middle-income countries, which are also urbanizing quickly. United Nations projections show nearly 90% of urban population growth to 2050 taking place in Asia and Africa.¹⁰ In response to these dynamics, highly localized food markets are transforming into rural-to-urban supply chains, and small- and medium-sized intermediaries are proliferating, creating non-farm jobs.¹¹ Domestic markets are becoming attractive alternatives to export markets, where growth is slower and standards are higher. As a result, buyers of exports will have to work harder to compete.

Environmental limits to growth of the food supply

The world is losing 23 hectares of arable land worldwide every minute,¹² and warming temperatures, changing precipitation patterns, and more frequent extreme weather events and pest and disease infestations are impacting agricultural productivity.¹³ Up to 25% of crop yields may be at risk.¹⁴ Increased atmospheric CO2 levels can also reduce crops' nutritional value.¹⁵ Water scarcity poses an additional threat: agriculture uses on the order of 70% of all freshwater abstracted worldwide,¹⁶ and research by McKinsey & Company projects that the world faces a 40% gap between water supply and demand by 2030.¹⁷ It will become harder and harder for procurement executives to source the agricultural raw material volumes they need to meet increasing demand from traditional sourcing origins, as environmental pressures like these drive farmers to diversify away from agriculture.

Consolidation in the food value chain

The past several decades have seen considerable consolidation within and across the stages of the food value chain, as a result of factors such as pressure from the financial sector, low interest rates, and new technology—from gene editing to adapting crops for changing climates to big data guiding production and marketing. For example, following a spate of mergers in the agricultural input space in 2017-18, the top four firms hold approximately 70% of the global pesticide market and 67% of the global seed market.¹⁸ The four major commodity trading companies are estimated to hold between 70 and 90% market share.¹⁹ And the top 10 food and beverage companies hold nearly 40% of the market share of the top 100 companies in the sector.²⁰ While consolidation can increase efficiency and lower costs, it can also diminish supply chain resilience—for example, security of supply can be put at risk as buyers become increasingly dependent on longer supply chains and a smaller number of key suppliers and origins.

“Many smallholders today are out of business or soon will be—it’s just not profitable enough. I don’t think they’ll sell their land. They’d rather lease it and let farm management companies run it.”

– Senior executive, commodity trading company

Mounting stakeholder expectations

Even as it becomes more challenging for procurement executives to secure adequate volumes of quality supply, consumers, regulators, and investors are paying greater attention and demanding greater accountability for how they do it—with ramifications for sales, compliance, and cost of capital. Stakeholders are increasingly looking for environmental sustainability and social equity for women, people of color, and those with low incomes, in companies' own operations and in their supply chains.

Consumers, especially younger generations, increasingly make consumption and employment choices that line up with their social and environmental values. For example, a global survey of nearly 30,000 consumers by Accenture Strategy found that 62% want companies to take a stand on issues like sustainability, transparency, and fair employment practices, and more than half take action when they are disappointed in a company's words or actions—either complaining or withholding their business (17% permanently).

Regulators are already starting to make public expectations enforceable. This trend is particularly pronounced in the area of human rights, where Australia, France, Germany, the United Kingdom and the United States have all adopted human rights disclosure and due diligence laws that apply to companies' agricultural supply chains. United States Customs already prohibits the import of raw materials produced with forced labor and child labor, and recently announced it would detain all shipments of palm oil from a number of Malaysian producers.²¹ Some producing and consuming countries are considering targeting poverty directly through legislation designed to bring smallholder farmers' incomes up past the poverty line—as the governments of Ghana and Côte d'Ivoire have already done in implementing a \$400 per ton “living income differential” on cocoa. There are also precedents outside the agriculture sector. For example, the Kimberley Process—which requires governments to set up legislation and import/export controls on “conflict diamonds”—now includes 54 countries and 99.8% of the global rough diamond trade.²²

Investors are increasingly aware of the links between financial performance and environmental, social, and governance (ESG) issues, and they are factoring these issues into their decision-making. There is a growing body of research linking ESG performance and long-term shareholder return. To take just one example, a quantitative analysis of more than 300 companies found that companies' performance on relevant social impact issues had statistically significant effects on their valuations and margins. In the consumer packaged goods industry, gross margins were 4.8 percentage points higher for top performers in socially responsible sourcing.²³ Driven by findings like these, 58% of global asset owners are either implementing or evaluating ESG considerations in their investment strategies.²⁴

“We are in a transparency race. We either find out where all of our materials come from, and under what conditions they are produced, and find ways to innovate and improve—or someone else will find out and publicize the issues.”

—Procurement executive, multinational food company

Radical transparency

New technologies are increasing traceability and transparency, making information about agricultural raw materials' origins, safety, quality, sustainability, and even freshness more widely available to companies, consumers, regulators, and investors. These technologies include mobile phones and other mobile Internet access devices, drones, and Internet-enabled sensors and scanners that can enable companies along the supply chain to track a commodity's progress from farm to market. According to the World Economic Forum, “Traceability helps make much of what is currently ‘invisible’ within our food systems ‘visible.’ It could potentially facilitate comprehensive tracking of the environmental, economic, health, and social consequences of different agricultural production processes, even making it possible to calculate the ‘true cost of food.’”²⁵ This information will help companies understand their impacts and follow through on their commitments. It will also help stakeholders hold companies to account for those commitments—and potentially fuel heightened demand for even more radical change.



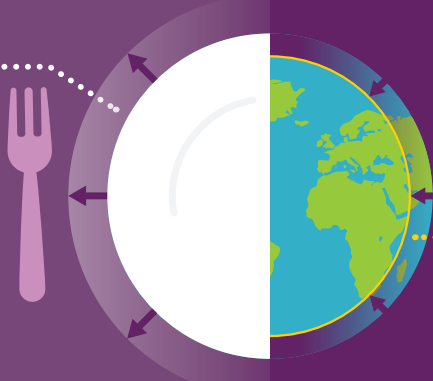
Photo credit: CIAT

DEMAND FOR FOOD IS INCREASING

AS GLOBAL SUPPLY IS REACHING LIMITS

50%
INCREASE
BY 2050

2050
GLOBAL
POPULATION
PROJECTED
TO REACH
9.7 BILLION



23
HECTARES OF
ARABLE
LAND
LOST
EVERY
MINUTE

UP TO
25%
OF CROP YIELDS
MAY BE AT RISK
DUE TO CLIMATE
CHANGE

IN LOW- AND
MIDDLE-INCOME
COUNTRIES

THE MIDDLE
CLASS IS
GROWING

DOMESTIC MARKETS
ARE BECOMING ATTRACTIVE
ALTERNATIVES TO
EXPORT MARKETS

40% GAP
BETWEEN
WATER SUPPLY
AND DEMAND
BY 2030

EXPECTATIONS OF COMPANIES ARE MOUNTING

CONSUMERS

62% want companies to take a stand on sustainability, transparency, and fair employment practices

Over **HALF** take action when disappointed in a company's words or actions

REGULATORS

Rising requirements on
**HUMAN RIGHTS, INCOME,
ENVIRONMENTAL IMPACT, SAFETY
and TRACEABILITY**

\$400 PER TON
"LIVING INCOME"
PREMIUM
on cocoa in
**GHANA and
CÔTE D'IVOIRE**



INVESTORS

SOCIAL IMPACT ISSUES affect
VALUATIONS and MARGINS

Consumer packaged goods industry

4.8
PERCENTAGE
POINTS HIGHER

for top performers in socially responsible sourcing

FOOD VALUE CHAIN IS CONSOLIDATING

4 MAJOR
COMMODITY
TRADING
COMPANIES
ARE ESTIMATED
TO HOLD BETWEEN



**70 AND
90%**
MARKET
SHARE

**TECHNOLOGY IS INCREASING SUPPLY
CHAIN TRACEABILITY AND TRANSPARENCY**



Sources indicated in
'Disrupting Commodities'
report, 2020

As these drivers unfold, signals—including events, developments and innovations—are showing that change is already happening. Just a few of these signals of change include:

The 2008 food price crisis

In 2008, international food prices spiked and became more volatile. Rice prices, for example, were three times as high and five times as volatile.²⁶ This came as a shock to consumers²⁷ and impacted the poor disproportionately.²⁸ Violent protests erupted in some areas. Most experts attribute the 2008 food price crisis to a “perfect storm” of factors, including a new and relatively sudden increase in demand for biofuels; weather-related declines in production in major exporting countries; low stock levels for cereals; recent depreciation in the US dollar; and rising oil prices. The central tension, a mismatch between supply and demand, can be seen gathering steam again today as populations grow and natural resources dwindle—conditions unlikely to return to normal on their own. COVID-19 has also precipitated an uptick in the prices of some commodities, as described below.

Land use consolidation

Small-scale farms have consolidated into larger operational units in various countries—from Argentina, Brazil, and China to Ghana, Kenya, and Zambia.²⁹ For example, in Brazil, where agricultural subsidies are lower than in other major producing countries, farmers have had to be aggressive about creating economies of scale to be competitive in global markets, and farms are on average larger than in the United States or Europe.³⁰ Maize, potato, rice, and orange production have shifted from predominantly small-scale to predominantly large-scale production. At the same time, small-scale farmers maintained a large share of coffee production due to high producer margins.³¹ But consolidation is not an inevitable historical progression, and not necessarily a desirable one, with a number of possible negative impacts. Rather, consolidation depends on a range of factors at the farm, market, and policy levels, from crop intensity and mechanization potential to market structure and requirements to land rights and trade policy.³²

Procurement practices designed to create shared value

As high-profile corporate commitments and corporate social responsibility programs, including certification schemes, have fallen short of their goals on farmer income, child labor, and other issues, a number of companies have begun to experiment with new procurement practices designed to share risk and value among companies and small-scale farmers in more equitable ways. These practices include supply chain simplification, longer-term contracts, cost-plus pricing, and others. In cost-plus pricing, for example, buyers pay a minimum price linked to the cost of production along with a premium for meeting quality and/or sustainability standards. This practice guarantees that farmers recoup their expenses and earn a specified amount of profit, essentially eliminating their price risk; for companies, it reduces volatility in the cost of goods sold. For both parties, cost-plus pricing builds trust and a sense of partnership. However, buyers do forego the opportunity to save when the world market price dips below the cost-plus price, and they have to manage the risk that farmers may break their contracts and sell to other parties when the world price rises higher. Appendix B explores a longer list of emerging procurement practices intended to create shared value in greater depth.

“We require having our customers’ pricing people in the room with the sustainability people. We’re working as a vendor to bring all these people together.”

– Procurement executive, beverage supplier

COVID-19

The COVID-19 pandemic has become one of the biggest public health crises and has led to one of the steepest economic downturns in decades. In agricultural raw materials markets, the pandemic has fueled price swings—causing the prices of some materials to increase (for example due to movement-related restrictions) and others to decrease (for example due to declining consumer demand). At the far ends of agricultural supply chains, high percentages of small-scale farmers have lost income, and some have already begun to shift from cash crops to food crops as a result. Some of the largest food and beverage companies have reported that supply chain disruption was mostly short-term, as governments imposed restrictions intended to curb the spread of the virus, because they had volumes secured through futures purchases or were able to diversify. However, some businesses that diversified quickly encountered quality problems and had to issue recalls. And COVID-19's impacts on security of supply may not be felt until the coming year, when yields of key crops may be lower. Farmer poverty, a lack of storage infrastructure in producing communities, and sheer distance from origin to buyer, from buyer to consumer now appear to be critical vulnerabilities in agricultural supply chains. These vulnerabilities underscore the need to balance efficiency with resilience, and companies are already exploring dramatic new options—from changing sourcing origins to substituting synthetic ingredients for natural ones.³³

“This is about business continuity and resilient supply chains. That’s what we’re measured on.”

– Procurement executive, multinational food company

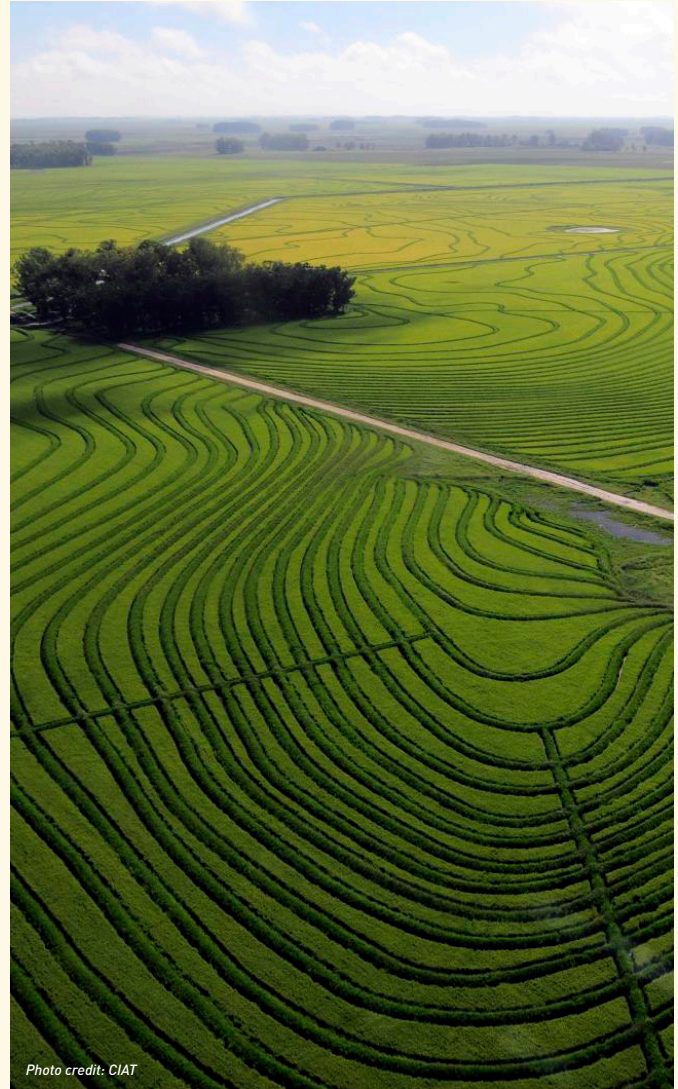


Photo credit: CIAT

These drivers and signals of change at play in the operating environment for global food and agriculture heighten the risks that procurement executives are typically charged with managing—and make it more important for them to engage head-on with the challenge of increasing farmer incomes.

The corporate procurement function manages supplier relationships to ensure the supply of key agricultural ingredients with the right combination of cost, quality, and other attributes necessary to fulfill current and future consumer demand. Procurement executives report having these key performance indicators (KPIs), in roughly the following priority order³⁴:

- Food safety
- Reliability and quality of supply
- Cost
- Reputation
- Product differentiation and innovation

Once reliable volumes meeting quality and safety specifications are assured, cost is typically the overriding factor. Procurement is traditionally optimized for efficiency. However, as COVID-19 has shown, this has come at the expense of resilience—leaving little room for procurement to adapt to change. Resilience will remain a key concern as trends in the operating environment increase risk. For example:

- **Security of supply:** Risk to security of supply increases as climate change, water shortages, and other environmental issues reduce productivity; as competition for supply increases; and as smallholder farmers, unable to achieve standards of living that meet their aspirations, shift to other crops or move out of farming.
- **Cost and volatility:** There will be upward pressure on the price and volatility of smallholder-produced raw materials as populations increase, incomes rise, and demand grows unless there is equal growth in supply—a scenario that climate change, water scarcity, soil degradation, and limited access to finance, inputs and training all mitigate against. At the same time, procurement executives worry about the cost of implementing new models that account

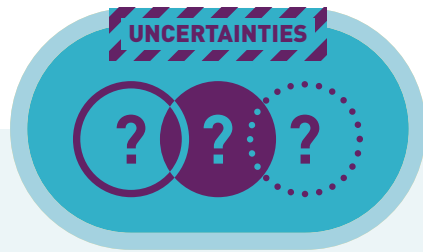
for the social and environmental externalities that global companies are now expected to manage.

- **Reputation:** Corporate reputations hang in the balance as traceability and transparency expose conditions in farming communities that clash with consumer, regulator, and investor expectations—and with companies' own sustainability commitments. Increasingly, stakeholders want to hear about companies' performance, not just their programs. Corporate storytelling will ring hollow without data to back it up.
- **Compliance:** Finally, global companies must stay on top of an evolving regulatory environment and ensure they are taking the steps needed to comply with new regulations and guidelines to mitigate legal risks. With regulation becoming stricter, companies must also look beyond compliance with today's requirements and consider how they can innovate to get ahead of the curve.

To manage these risks as they mount, it will become ever more important for procurement teams to take on more central, strategic roles—working across their companies and with government and civil society—to create a future in which agricultural raw materials are sourced from profitable, sustainable farming enterprises that create local economic growth and opportunity in rural areas.

“It’s possible that in the future, new policies by importing and exporting governments may hold companies accountable for failing to deliver a living income. And those policies may be more fully enforced.”

– Senior executive, government-funded agricultural development organization



3. UNCERTAINTIES

The drivers and signals of change at play today could lead down different paths, toward different futures, depending on a number of key uncertainties

These uncertainties include:³⁵

Global openness to trade

Is global trade open and fair, creating opportunities for all, or do populism, nationalism, and loss of faith in global institutions impose barriers? For example, will the COVID-19 health and economic crisis and the rise of nationalist leaders in many countries shut down borders and lead protectionism to resurge? Will supply quotas proposed by producing countries to raise prices for certain globally traded raw materials, like cocoa, allow farmers to achieve living incomes, or will they lead to significant market distortions and inefficiencies?

Climate impact management

Do technological innovation, policy and regulatory reform, and mindset change allow us to get out in front of climate impacts, or are mitigation actions inadequate? For example, do governments put a price on carbon? And does the experience lead them to begin to price in other environmental and social externalities—from water stress to soil degradation to poverty, insecurity, and conflict—or do people and the planet continue to subsidize the true cost of production?

Rural development policy

Do national governments invest in infrastructure, services, support, and social protection that give farmers a leg up and allow for the growth of ancillary businesses and non-farm employment in rural areas? Or do constrained national budgets and “elite capture” of resources by well-established industry players continue to cause under-investment in critical public goods, especially in rural areas, and exacerbate wealth disparity?

Technological innovation

Do agricultural research and development, “big data,” and the Internet of Things generate solutions to some of small-scale farming’s most pressing problems—increasing productivity and climate resilience, improving access to finance and risk management, and enhancing trust between farmers and buyers? Or do high-tech solutions remain out of reach for small-scale farmers on the wrong side of the “digital divide”?

Business and supply chain management

Do companies at the top of the food value chain, including retailers and brands, continue to manage first and foremost for efficiency and short-term profitability? Or do they begin to place equal emphasis on resilience and long-term viability? If the latter, how can this be institutionalized effectively, and are staff throughout the organization incentivized to make the right investment and buying decisions?



4. SCENARIOS FOR THE FUTURE

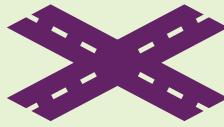
Combining these uncertainties with the drivers and signals of change at play in the operating environment for global food and agriculture companies today, three plausible futures emerge

The first scenario, Corporate Crossroads, describes the kind of future we can expect if trends continue along their present trajectory. The second, Permanent Food Crisis, reflects a perfect storm of negative changes. The third, Agricultural Transformation, reflects positive changes in several key uncertainties.

Plausible futures for global agricultural supply chains



1 CORPORATE CROSSROADS



Scenario 1: Corporate Crossroads

Today, domestic markets in developing countries are growing and modernizing. In response to consumer trends, stakeholder pressure, and business risk, global supply chains are becoming more sophisticated in terms of quality, food safety, and environmental sustainability—but a commensurate focus on social sustainability issues like poverty and economic security is lacking. With no change to the current trajectory, the number of small-scale farmers facing poverty and insecurity will continue to grow.

In 2030:

Domestic market growth has created opportunity for some farmers—but not all

Increasing demand for food, especially in rapidly growing cities,³⁶ has driven a proliferation of medium-sized farms with the scale and capacity to serve more sophisticated buyers and longer rural-urban supply chains.³⁷ Some small-scale farmers have “stepped up” and become medium-sized farmers, while others have “stepped out” and sold or rented their land—but a vast majority are still “hanging in” and their circumstances are even more dire than they were in 2020. As some observers predicted, domestic market growth has not been able to support lucrative opportunities for all.³⁸

Current sustainability programs aren’t good enough

Programs by donors, civil society groups, and responsible companies have continued to reach limited numbers of farmers and to increase their incomes an average of 50-100%,³⁹ which hasn’t been enough to reach a living income, adapt to climate change, meet traceability requirements or more demanding social and environmental standards. Investor pressure to account for firms’ environmental externalities has grown, but not yet extended to social externalities, like farmer poverty and inequality. As a result, innovative procurement practices designed to create shared value, which seemed to hold promise ten years ago, have failed to gain traction as procurement executives’ KPIs have continued to lead them to maximize efficiency and profit, and individual executives championing a change have become disillusioned and moved on. Average farm size has continued to decrease as farmers divide their land to bequeath to their children.⁴⁰ Most small-scale farmers remain stuck earning a small fraction of the value of the finished product, sometimes below the cost of production,⁴¹ living at or around the poverty line.⁴²

The backlash hits sales and operations

As small-scale farmers have reached rock bottom, social unrest has begun to simmer. Women, especially, have begun to organize, no longer willing to accept the lives that farming offers their children. Groups of farmers serving corporate supply chains have marched on processing plants and factories, shutting down operations. Farmers forced to find alternatives to farming have migrated to urban areas that cannot support them. Youth unemployment, already high,⁴³ has reached explosive levels.

Investigative reports and a flurry of mainstream media exposés⁴⁴ have linked small-scale farmers’ plight to companies’ purchasing practices, bringing consumer skepticism to a tipping point. Certification has fallen out of favor, and “feel-good” stories on companies’ social media feeds are met with scorn. Donors and reputable civil society groups only partner with companies that agree to rigorous impact assessment—especially government donors using taxpayer funds. Some rich country governments, responding to campaigners and an increasing number of migrant caravans reaching their borders, are exploring restrictions on imports produced by people earning poverty-level incomes, expanding rules that originally targeted forced labor and child labor.⁴⁵

Companies make dramatic new investments—but not necessarily in small-scale farmers

Companies that depend on raw materials predominantly grown by small-scale farmers have found no way around the need to make dramatic new investments to secure supplies, meet regulatory requirements, and protect brand reputation. Companies have invested in a number of truly innovative programs for specific raw materials for specific brands in specific parts of the world. However, these companies have increasingly opted to invest in their own large-scale commercial farms and take on a new set of risks to manage—including forcible displacement, wages, workers’ rights, and labor standards along with all of the risks inherent in agriculture, such as weather, theft, and disease.

Outcomes for Scenario 1: Corporate Crossroads

Outcomes for Small-Scale Farmers	Outcomes for Large Companies
<ul style="list-style-type: none"> • Persistent poverty-line incomes, sometimes below the cost of production • Increased incentive to mobilize and protest • Increased incentive to leave farming 	<ul style="list-style-type: none"> • Increased operating costs • Reputational damage • Additional regulation • Increased capex costs • New risks to manage



Scenario 2: Permanent Food Crisis

Today, the global population is increasing and the climate is changing. Extreme weather events, pest infestations, and crop diseases are becoming more common—and crop yields are in jeopardy. If incremental thinking remains the norm, international cooperation splinters, and promising innovations wither on the vine, the food system may descend into a permanent state of crisis.

In 2030:

Food supply falls short of demand

Held back by mistrust of science, short-term incentives, and imbalances of power, business and political leaders failed to mount the ambitious response needed to meet the climate challenge. Increasing drought, pest pressure, and disease have hammered crop yields. Declining agricultural productivity, against a backdrop of increasing demand for food, is driving more land to be cleared for production—and worsening climate trends.

Social upheaval and market turmoil follow

The gap between supply and demand has led food prices to skyrocket, forcing consumers to change their diets and occasionally triggering violent unrest. People are calling it “2008 on steroids.”⁴⁶ Food security now tops the policy agenda in many low- and middle-income countries, as well as in some highly unequal high-income countries. Well-meaning governments have implemented new policies and programs to achieve food self-sufficiency that seem to be having the opposite effect, distorting markets and farmers’ incentives—for example, stockpiling, banning exports, promoting staples over cash crops, and facilitating “land grabs” by large investors. Governments of countries lacking arable land or fresh water, unable to meet citizens’ food needs domestically, have even engaged in land grabs themselves, through sovereign wealth funds. The lessons of past land grabs have been cast aside as elites seek to protect their own interests. Inequality, tension, and conflict are at an all-time high.

A rural exodus accelerates

Crop yields have declined the most for small-scale farmers. Living in poverty and having almost no access to credit or insurance, these farmers were unable to take advantage of technological innovations designed to mitigate climate impacts. A lucky few, supported by corporate and donor programs, have found a viable niche growing high-value crops for local markets, such as vegetables and spices—but millions of small-scale farmers and their families, facing levels of poverty and hunger they could no longer survive, have been forced to migrate to already-straining cities and to richer nations riven with disagreement about whether and how to absorb them.

Companies that depend on exports face difficult choices

With a greater emphasis on food security, land allocation is geared towards staple crops. Non-staple crops like coffee, cocoa, cashew, cotton, and tea have increased steeply in price, effectively making them luxury goods out of reach for mainstream consumers. Companies are faced with drastic and potentially costly choices, like relocating production facilities to reduce import/export activity wherever possible; reformulating products to reduce the content of more expensive ingredients; switching to synthetic versions; and investing in high-tech alternatives to traditional agricultural production, such as bioreactors—possibly jeopardizing quality and consumer acceptance. Price volatility and erratic government policy have injected increased risk into the decision-making process.

Outcomes for Scenario 2: Permanent Food Crisis

Outcomes for Small-Scale Farmers	Outcomes for Large Companies
<ul style="list-style-type: none"> • Declining crop yields • Distorted markets • Forced migration from rural to urban areas, domestically and internationally 	<ul style="list-style-type: none"> • Increased procurement spend • Decreased security of supply • Increased cost of capital • Increased political risk



Photo credit: CIAT

3 AGRICULTURAL TRANSFORMATION



Scenario 3: Agricultural Transformation

Today, a wide range of innovations are bubbling up under the heading of climate-smart, precision agriculture, including drought-tolerant seeds, remote sensing, the use of big data,⁴⁷ and more. Select governments have enacted policy reforms to support small-scale farmers, institute land reform, build strategic rural infrastructure, expand R&D and extension services, and improve the investment environment. Food and agriculture companies are recognizing the limits of CSR-based approaches and looking inward at the way their core business and supply chain management practices drive social and environmental outcomes. If business, government, and the investment community seize the moment to push each other to bold new levels of ambition and action in their respective domains—from procurement to public policy to finance—not only farms but entire rural economies could be transformed.⁴⁸

In 2030:

Small farms have become more professional and profitable—in some crops and contexts

With the tools, incentives, and resources they needed to invest in increasing productivity, quality, and environmental sustainability, small-scale farms have come to flourish – producing high-value, labor-intensive crops like coffee, green beans and spices. For other crops, where greater economies of scale were needed to reach profitability, average farm size has increased. Maize and wheat are almost exclusively commercially grown on highly mechanized large farms. Crops like cocoa, cotton and rice are mostly grown on medium-sized nucleus farms that support smaller farms nearby, but even those smaller farms operate at a level of scale that makes it possible for farmers to earn living incomes. With targeted measures aimed at expanding access, women farmers have taken advantage of these new developments as much as men.

But small-scale farming is no longer the dominant livelihood in most rural areas

Some small-scale farmers have turned into medium- and large-scale farmers. Many others have chosen to exit farming altogether. While some former farmers and their children can now be found working on larger-scale farms—where the pay is high enough and the working conditions are good enough—many others have more attractive positions running and working in small and medium-sized enterprises offering storage, logistics, processing, marketing, and a host of other services that target agricultural businesses, their employees and their families in thriving rural economies. Some former farmers and their children can also be found working in well-paid jobs in cities.⁴⁹

Agricultural supply chains create value for buyers and suppliers alike

Food and beverage brands and retailers no longer struggle to gain reliable access to safe, high-quality, environment-friendly and socially responsible raw materials. To get it, they are offering longer-term contracts, shorter payment terms, and in some cases, better prices, which commercially viable farms—and stronger, more professional associations of small-scale farmers—have been able to negotiate. Increased productivity has helped keep buyers’ costs contained. And longer-term contracts and deeper relationships with fewer suppliers have reduced price volatility and hedging costs, as well as helped improve investment planning. To reduce the risk of supply disruption due to an overreliance on a few key suppliers or origins, deeper supplier relationships are fostered with a handful of strategic suppliers in a diverse set of origins. Investors have come to demand that companies account for social externalities like farmer poverty and inequality, and they reward companies for these efforts through reduced cost of capital.

Outcomes for Scenario 3: Agricultural Transformation

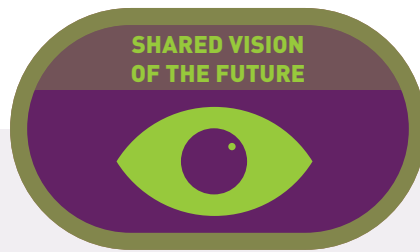
Outcomes for Small-Scale Farmers	Outcomes for Large Companies
<ul style="list-style-type: none"> • Profitability and sustainability through focus on specific crops and models • Lucrative opportunities for employment and entrepreneurship in rural economies outside of farming 	<ul style="list-style-type: none"> • Reliable access to safe, high-quality, environment-friendly, socially responsible raw materials • Raw materials costs contained • Price volatility and hedging cost reduced • Reduced cost of capital • Reduced reputational risk



Photo credit: CIAT

“Investing in a long-term relationship with a supplier reduces volatility and headaches with quality, volume, and consistency of supply. Pricing those risks in makes a lot of sense.”

– Senior executive, private foundation and former commodity trader



5. A SHARED VISION

We envision a future in which all agricultural raw materials are sourced from profitable, socially responsible, and environmentally sustainable farming enterprises that contribute to rural economic growth and poverty reduction—enabling rural communities and natural ecosystems to thrive

In this report, we have described current challenges, drivers of change, and three scenarios for the future that could emerge. Ordinarily, strategic planners would now turn to the task of future-fitting their organizations for any of these scenarios.

In this case, because the stakes are so high—both for small-scale farmers and the companies that depend on the raw materials they grow—it is not enough to prepare for all plausible futures. We have to work to create our preferred future. That is, a future in which all agricultural raw materials are sourced from profitable, socially responsible, and environmentally sustainable farming enterprises that contribute to rural economic growth and poverty reduction—enabling rural communities and natural ecosystems to thrive.

We must also consider what it will take to deliver our vision.

We think there are at least three fundamental building blocks: a strong business case, new models of business-government engagement, and clear evidence of what works.

1. A strong business case

To work toward our vision, companies need a business case compelling enough to drive the investment and the fundamental changes in organizational structure and incentives that will be required. Today, short-term profitability drives most executive decision-making. This creates an overriding

focus on cost and stifles investments in sustainability expected to yield returns over the medium to long term. Procurement, the corporate function that is closest to the supply chain, is hamstrung by a lack of integration with corporate strategy, product development, and marketing, where key strategic decisions are made, and with sustainability, where important knowledge and skills reside.

To justify changing procurement practices to help realize our vision, corporate decisionmakers need evidence of a positive return on investment—including data on the benefits of doing so and the risks of failure to do so. We must be able to capture the risks and benefits quantitatively, not just qualitatively.

On the risk side, evidence needs to go beyond reputational risk to include risk to continuity of supply given increasing competition for raw materials, threats to market share, increasing legal jeopardy, and environmental risks such as soil erosion, climate change, and watershed depletion. Risk would ideally be defined on a material time horizon, i.e. short- to medium-term, without losing sight of long-term systemic risks. Long-term supply and demand projections would help to quantify some long-term risks. For example, we must also be careful of increasing productivity and yields at a rate out of step with market growth, which can result in periods of oversupply, low prices, and increased financial insecurity to farmers. Finally, risk should be valued based on real cases, rather than hypothetical ones, based on reliable field data collected in a standardized way.

On the benefit side, corporate decisionmakers would value data showing a positive return to sustainability investments, such as the extent to which younger consumers make more sustainable purchasing decisions, and to which more equitable procurement practices lead to more stable pricing, reduced sourcing and manufacturing costs, greater consumer loyalty, and better brand value and sales growth. For example, Unilever’s “sustainable living” brands have been growing faster than their traditional brands. Evidence of the financial impact from government policy carrots (such as excise tax breaks) and sticks (such as transparency requirements) would also help make the case. Transparency requirements could be particularly promising, helping to heighten investor scrutiny—changing the conversation from tactical procurement risk mitigation to strategic opportunity creation and earnings growth.

Core questions that need to be answered to define the business case:

- How exactly do we price risk in order to make better strategic trade-offs between efficiency and resilience?
- What changes to executive incentives are needed to institutionalize sustainability?

Value chain benefits



2. New models of business-government engagement

While there is much that business can do to support thriving rural communities and build sustainable, resilient agricultural supply chains, companies cannot achieve either of these twin objectives on their own. Business has a core competency in efficient capital allocation, value addition, and innovation. It can provide market access and employment to small-scale farmers and other enterprises along the agricultural supply chain. However, these investments only generate a positive impact on poverty in the right enabling environment. Countries such as China, Taiwan, Indonesia, Vietnam, and Ethiopia have demonstrated how crucial targeted government intervention can be in areas ranging from regulatory policy to infrastructure to social support. Unfortunately, while the concept of partnership is having a heyday, in many countries, the business-government relationship is limited and largely transactional.

“We envision a future in which all agricultural raw materials are sourced from profitable, sustainable farming enterprises that contribute to local economic growth and poverty reduction”

To build thriving rural communities and sustainable, resilient agricultural supply chains, companies, governments, and their development partners will need to operate and collaborate in effective and transparent ways based on the unique role they play in the supply chain and on their assets and core competencies. In a survey of private and public sector stakeholders, most responded that multinational commodity buyers can play the most pivotal role in achieving our vision through their procurement strategies and tactics – an area they are best positioned to lead. These can include redistributing value and risk through mechanisms such as contract length, payment terms, and price premiums; improving supply chain efficiency; and helping farmers access improved inputs and credit. Most felt that governments can facilitate this most by funding infrastructure, improving land tenure, and sharing the risk of lending to farmers. Civil society groups, for their part, can help farmers form cooperatives and pilot new business models. Respondents felt that civil society and donors both have important roles to play in advocating for supportive public policies. And donors have a crucial role to play in convening and aligning stakeholders around joint initiatives and investments (see Appendix 3 for detailed survey results).

Core questions:

- How can business and government hold each other accountable for doing their part? What kinds of coordination mechanisms are needed?
- What are the key prerequisites, with respect to a country’s policies and enabling environment, that would allow business investments to have maximum impact on inclusive rural economic growth and poverty reduction?

3. Clear evidence of what works

Businesses, governments, and their development partners have invested billions over the past several decades implementing programs to address low farmer productivity and poverty, with limited success. And in the absence of rigorous common metrics and measurement methodologies, we've been unable to learn as much as we've needed to about what has worked and what hasn't—and why. An evidence base, built on a common core set of metrics, will not only allow for comparability and insights into what works across countries, commodities, and communities; but it should also allow for better decision-making, innovation, transparency, accountability.

Core questions:

- What are the most critical and cost-effective metrics for identifying and tracking the key drivers of impact and return on investment?
- How can we incentivize stakeholders to adopt a common set of metrics and to share their results in order to compare approaches and determine what works?

With a shared understanding of the challenge and a shared vision of the future, the Farmer Income Lab will now turn to the task of developing strategies and tactics companies can use to help bring our vision to life. Building on insights about what is required—a compelling business case, new models of business-government interaction, and clear evidence of what works—the Lab's agenda includes:

- Research into historical lessons learned from countries that have largely overcome persistent rural poverty (for example, the effectiveness of different farming models, government policies and investments, and the role that business played)
- Development of “common core” metrics that can be used to compare performance across companies, and generate rigorous evidence of what works
- Deployment of “Lighthouse Programs” to pilot innovative approaches, test new partnership and procurement models, learn via common metrics, and drive continuous improvement and scale based on lessons learned

The Farmer Income Lab will also continue to engage stakeholders through the Disrupting Commodities workstream in a series of workshops, focused on procurement tactics, that will allow business to make more sustainable and strategic sourcing decisions against a robust, financial business case.

The Lab intends to grow its coalition of private, public, and civil society partners to create a future in which all agricultural raw materials are sourced from profitable, socially responsible, and environmentally sustainable farming enterprises that contribute to rural economic growth and poverty reduction—enabling rural communities and natural ecosystems to thrive. With greater reflection, dialogue, and a willingness to experiment, the Lab intends to drive creative, positive change in current procurement systems to achieve this shared vision.

APPENDIX 1. TRADITIONAL PROCUREMENT PRACTICES THAT MAY MAXIMIZE SHORT-TERM PROFITABILITY

Approach	Definition	Benefit and risk to buyers	Benefit and risk to smallholders
Spot market purchasing	Buyer and seller immediately complete their transaction at current market prices.	Spot market purchasing allows buyers to secure the lowest possible cost by maximizing competition among sellers. The risk, however, is that the origin or method of procurement is unknown, exposing the buyer to compliance or ethical issues and disregarding long-term surety of supply.	Because farmers must make the decision to plant far in advance, they run the risk that spot market prices will decrease by the time their crops are ready for the market. It is worth noting that women farmers and poorly organized farmers often sell primarily on the spot market.
Futures contracting	A strategy that buyers use to protect themselves against rising prices. The seller agrees to deliver the buyer a fixed volume at a fixed price on a specified date in the future.	Buyers typically engage in futures contracting when they believe prices will rise in the future; if the market price at the time of sale is higher than the pre-agreed price, the strategy has worked and the buyer saves money but faces the risk that farmers will break their contracts and sell in the spot market. If the spot market price is lower, the buyer loses money.	Futures contracts offer farmers a secure market at a certain price. If the market price at the time of sale is lower than the pre-agreed price, farmers benefit; but if the market price is higher, farmers lose out. Smallholder farmers are typically unable to hedge themselves.
Electronic tendering	The entire procurement process is completed online, from advertising the requirement to placing the contract.	Electronic tendering increases efficiency. In addition, when real-time electronic bidding is permitting, prices tend to decline as suppliers compete with one another, to an extent not normally attainable using traditional bidding processes.	The increased competition that electronic tendering makes possible puts downward pressure on the prices that smallholder farmers receive.
Short-term contracts	Fixed-price agreements for periods as short as a few days or a single harvest.	Short-term contracts allow buyers to obtain what they need now with the freedom to continue to seek the lowest price in the future.	Short-term contracts do not provide farmers with the visibility they need to invest for the long term such as adapting to climate change, reducing deforestation, managing soil health and improving quality, and they impede access to finance. ⁴¹
Extended payment terms	Extended payment terms allow buyers to pay within a specified number of days after a delivery is made. For example, one leading global coffee buyer's terms range up to 300 days. ⁴²	Extended payment terms are a form of credit that suppliers offer to buyers. However, they limit the pool of potential suppliers to those with sufficient working capital to comply.	Extended payment terms prevent smallholder farmers, who have limited working capital and access to finance, from contracting with buyers directly. Only the largest traders with sufficient working capital can compete for a buyer's business (and extended payment terms leave those traders with less to invest in supporting smallholder farmers).

APPENDIX 2. EMERGING PROCUREMENT PRACTICES THAT MAY BUILD LONGER-TERM SHARED VALUE

Approach	Definition	Benefit and risk to buyers	Benefit and risk to smallholders
Longer-term contracts	Contracts that typically last for more than one year—three, five, even 10 years. They include minimum quantity and quality specifications and can include other criteria, for example related to sustainability. They also include a price finding mechanism for future transactions (such as cost-plus, described below, or average spot market price at the time of sale). ⁴³	Long-term contracts reduce price volatility and allow buyers to work together with suppliers toward longer term sustainability goals. Long-term contracts reduce transaction costs and help secure supply, ensure quality and on-time delivery. According to WWF research, they appear to work best as part of a portfolio approach, in which a percentage of supply is secured using long-term contracts and a percentage is purchased using shorter-term approaches. ⁴⁴	Long-term contracts reduce price volatility for smallholders as well as buyers. They help smallholders gain access to credit and give them the visibility over time that they need to invest, improve productivity and quality, and increase their incomes.
Supply chain consolidation and simplification	Supply chains can be consolidated and simplified by reducing the number of suppliers a company sources from and by reducing the number of tiers in the supply chain, which takes out intermediaries that are all trying to capture a share of the value of a commodity.	Supply chain consolidation and simplification increase the value available to capture. However, intermediaries often provide important logistics, storage, and sometimes even value addition services that buyers (or farmers) would have to manage effectively on their own if those intermediaries went away.	Supply chain simplification increases the value available to capture, which can benefit smallholders as well as buyers. However, where smallholders are unorganized, there's a significant risk that these cost savings will accrue to the buyers rather than to the farmers.
Supplier relationship development	Working jointly with suppliers to reduce costs and inefficiencies, develop sustainability strategies, and tackle other constraints facing smallholders through technical assistance on good agricultural practices.	Supplier relationship development builds understanding and trust among supply chain partners (buyers, traders, farmers, processors, input supply companies, and banks), reducing the risk of investing in approaches that create longer-term shared value. Buyers must choose carefully to ensure that they invest in suppliers who perform well on quality, reliability, cost and sustainability issues.	Greater investment into improving farming practices, rural finance, and supply chain efficiency can significantly improve smallholder productivity and incomes. However, farmers must ensure they do not become overly dependent on a small number of buyers in exchange for this assistance.

Approach	Definition	Benefit and risk to buyers	Benefit and risk to smallholders
Farmer organization strengthening	Strengthening farmer cooperatives' management expertise and finances.	Stronger farmer organizations can reduce transaction costs for buyers, ensure greater quality control, and disseminate benefits to farmers. The risk to buyers is that strong farmer organizations can have more power in price negotiations or hold up supply if price negotiations break down.	Farmers can benefit from better organization by strengthening their bargaining power in relation to buyers, developing value added services such as primary processing, packaging, and logistics, and receiving services such as mechanization, finance, and training more easily. The risk to farmers is weak or corrupt organization management.
Standards and certification	Requirements that buyers impose to try to ensure the safety, quality, and sustainability of the materials they're buying, along with other technical specifications. Standards can be developed by the company or by a credible third party, often through multi-stakeholder consultation. In the case of third-party standards, auditing for compliance may result in certification.	Standards make buyers' aspirations and intentions clear and can help protect corporate reputation to an extent. But compliance with social and environmental standards can be difficult to achieve and to verify. Serious issues have been found even on certified farms.	Standards and certification can provide guidance on issues, but interviewees consider them insufficient for impact at scale given their cost, environmental focus, and appeal to a niche consumer. Implementing standards and achieving certification take time, technical expertise, and investment. Farmers without the means to come into compliance risk being shut out of corporate supply chains. At the same time, research suggests that farmers who have achieved certification have reaped limited benefits in terms of income. ⁴⁵
Shorter payment terms	Shorter payment cycles by end buyers allow intermediate suppliers to also provide shorter payment terms to smallholder farmers	Shorter payment cycles may reduce the end buyer's interest earnings and increase working capital needs. This, however, allows intermediaries such as processors and traders to pay farmers faster for greater farmer loyalty and first access to the commodity.	Shorter payment terms allow for smallholders and farmer cooperatives with minimal initial working capital to cover their costs until they develop needed technical and financial capacity to enter a buyer's supply chain and handle longer payment terms.

Approach	Definition	Benefit and risk to buyers	Benefit and risk to smallholders
Cost-plus pricing	Buyers pay a minimum price linked to the cost of production along with a price premium for meeting quality and/or sustainability standards that ensure a decent income for the farming household.	Cost-plus pricing reduces volatility in the cost of goods sold. However, buyers do forego the opportunity to buy at a lower price when the world market price dips below the cost-plus price, and they also have to manage the risk that farmers may break their contracts and sell to other parties when the world price is higher.	Cost-plus pricing guarantees that farmers recoup their expenses and earn a specified amount of profit through a price premium, essentially eliminating their price risk. However, variations in the cost of production across origins can limit the competitiveness of some origins, unless there is a unique attribute, such as flavor, that makes it worthwhile for a buyer to pay a higher price (as in the case in specialty coffee, for example).
Supply chain efficiency improvement (“cleansheeting”)	Cost and value added are clarified at each stage of the value chain in order to identify opportunities to improve efficiency and take out unnecessary costs.	Efficiency gains create value that can be captured by the company; however, certain efficiency gains such as minimizing inventory or changing logistics providers can also create increased supply risks for companies.	The value of efficiency gains can be shared by smallholder farmers as well as buyers and other parties in the chain. However, there is a risk that buyers—with greater power in the relationship—could capture all of the identified value themselves.
Sophisticated quality grading	Offering farmers a premium for higher quality, differentiated produce valued by end buyers. This is commonplace in coffee but not in other commodities such as cocoa.	Sophisticated quality grading allows companies to set prices that capture consumers’ highest willingness to pay. Some consumers are also willing to pay a premium for special varieties and origins, thereby “de-commoditizing” the commodity.	Sophisticated quality grading creates additional value that is shared with smallholder farmers in the form of price premiums to incentivize the production of unique varieties or high quality.
Strategic corporate philanthropy	Strategic use of corporate philanthropic funds to build smallholder farmers’ capacity to organize into businesses and participate in supply chains they cannot participate in today, for food safety, quality, financial, or logistical reasons. Technical assistance is provided to the farmers and/or farmer business organizations (“FBOs”) to help them eventually become suppliers to the business on purely commercial terms..	Farmer organization development promotes long-term security of supply. Compliance with laws against “self-dealing,” the use of tax-free corporate philanthropic funds to benefit the business generating those funds, must be carefully managed, and the technical support must ensure that the farmers diversify their revenue streams and customer base so as not to become dependent on or only benefit the corporation providing the philanthropic support.	Smallholders benefit from membership in strong farmer organizations where services such as training, price negotiation, access to finance, value addition, and logistics are offered. Technical support must ensure that smallholder farmers diversify their revenue streams and customer base so as not to become dependent on (or only benefit) the corporation providing the philanthropic support.

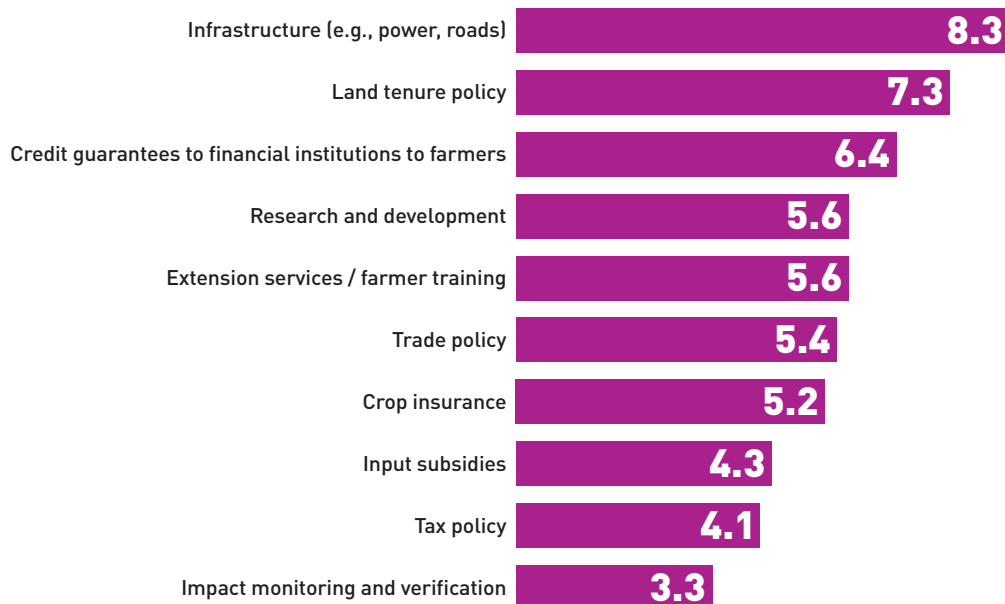
APPENDIX 3. ROLES OF STAKEHOLDERS IN INCREASING FARMER INCOMES

The charts below capture the results of a survey of procurement executives and other experts conducted in November, 2020 (n=20). Respondents were asked to rank their top three choices. Scores are weighted averages of rankings, with higher scores reflecting higher rankings.

Where do you feel multinational buyers of commodities can play a pivotal role in achieving our shared vision?



What are the most critical investments origin governments can make to achieve our shared vision?



What are the most important roles for civil society / non-governmental organizations (NGOs) to play?



How can development agencies and donors be most catalytic?



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33. The Farmer Income Lab will be releasing a report on COVID-19's impacts on key commodities in key geographies where poverty is pervasive and cash crop raw materials are sourced.
34. Farmer Income Lab. 2019. "Background Paper: Disrupting Commodities." Background paper prepared for a workshop held in Washington, DC on October 26-27, 2019.

35. Adapted from Woodhill et al 2020, pages 30-31.
36. United Nations Department of Economic and Social Affairs. 2019. "[World Population Prospects 2019: Highlights.](#)"
37. Woodhill et al 2020.
38. "Stepping up," "stepping out," and "hanging in" segmentation from Woodhill et al 2020.
39. Farmer Income Lab. 2018. "What Works to Increase Smallholder Farmers' Income?" A Landscape Review." Research by Dalberg Advisors and Wageningen University. Online at https://www.farmerincomelab.com/sites/g/files/jdpyr621/files/2019-09/What%20Works_FINAL_9.19.pdf.
40. Lowder SK, Scoet J, Raney T. The number, size, and distribution of farms, smallholder farms, and family farms worldwide. *World Dev* 2016; 87: 16–29.
41. In coffee, for example, an estimated 25-50% of producers in high-cost origins are currently unable to cover their production costs. International Coffee Organization (ICO). 2019. "[Coffee Development Report 2019. Growing for prosperity: Economic viability as the catalyst for a sustainable coffee sector.](#)" Page 12.
42. Of more than 500 million smallholder farming households worldwide, approximately 44% are currently estimated to be moderately or extremely poor. Farmer Income Lab. 2019. "Race to One: Mobilizing Business Action on SDG 1." Event pre-read. Calculations based on data presented in De La O Campos, A.P., Villani, C., Davis, B., Takagi, M. 2018. "Ending extreme poverty in rural areas: Sustaining livelihoods to leave no one behind." Rome, FAO.
43. Global youth unemployment was 13.6% in 2019, with some regions considerably higher e.g. 30.2% in Northern Africa and 18.7% in Southern Asia. International Labour Organization. 2020. "Global Employment Trends for Youth 2020." Online at https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_737648.pdf, page 33.
44. As a precedent, see the Associated Press' [Pulitzer Prize-winning coverage](#) of human rights abuses in Thai fish supply chains, which contributed to the issuance of a European Union yellow card and several lawsuits against buyers in the United States.
45. E.g. the United States Tariff Act and the California Transparency in Supply Chains Act.
46. For an account of the 2008 food price crisis, please see, inter alia, FAO. 2009. "[The State of Agricultural Commodity Markets 2009, Part 1: What happened to world food prices and why?](#)"
47. To see how big data may play a role in opening up access to finance for smallholder farmers, please see Rural and Agricultural Finance Learning Lab. "[Learning Brief 5: Big Data Could Mean Big Opportunity.](#)"
48. For more on how agricultural transformation could happen, please see the following: 1) McKinsey & Company. 2017. "[Successful agricultural transformations: Six core elements of planning and delivery](#)" and "[Readiness for agricultural transformation.](#)" 2) International Institute for Sustainable Development (IISD). 2019. "[Transforming Agriculture in Africa and Asia: What are the Policy Priorities?](#)" 3) Walch, Kathleen. 2019. "[How AI is Transforming Agriculture.](#)" *Forbes*.
49. For accounts of the agricultural transition in several Asian countries, see Studwell, Joe. 2013. *How Asia Works: Success and Failure in the World's Most Dynamic Region.* Grove Press.