1 Editorial Review: A Review of Evidence and Perspectives on Sustainable Global Value Chains[1]

Lead chapter synthesizing findings in the Springer textbook "Sustainable Global Value Chains" (39 chapters).

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1.1 Introduction

Value chains are a vital part of how our world operates, yet we are only beginning to understand how to make them sustainable. When the World Commission on Environment and Development published *Our Common Future* in 1987 (also known as the Brundtland Report; see WCED 1987) it represented a turning point for the understanding of sustainability and sustainable development. The fundamental importance of the topic - and the importance of the private sector in achieving it - has since been increasingly signalled by thousands of scientists and policymakers including leading thinkers such as the Nobel Laureate economist Nicholas Stern (2007) who addressed the urgency of taking action to reduce climate change whose cost to all of us has been estimated as equivalent to losing at least 5 % of gross domestic product (GDP) globally.

Most institutions take the topic very seriously. The United Nations 2030 Agenda (UN 2015) and its leadership in crafting the Sustainable Development Goals (SDGs) will help guide the transformation towards global sustainable development (see Chap. 2 for more on SDGs). In the intrinsically complex world of sustainability, there is a clear area of consensus: that to achieve sustainability, multi-

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dimensionality must be addressed and so must the critical role of the private sector. We recognise that in order to succeed, we need to take into account diverse economic, environmental, and social (including governance) aspects that are affected by the operation of global value chains. We are surmounting prior simplistic or short-sighted perspectives that led to efforts focused only on income, or productivity, or environmental protection.

What is left, and it is a key pillar to address, is to undertake the tasks necessary to learn what works and to transform our businesses and economies. That, however, is sometimes easier said than done. The textbook that this chapter introduces, addresses the crux of that challenge by presenting a broad array of options for understanding and managing the complexity of sustainability initiatives that affect value chains and trade. We have selected 38 chapters from among a broad array of experts that address the many ways to undertake this transformation and transition toward sustainable value chains. We define value chains as *the full range of people, inputs, and activities required to bring a product or service from conception through transformation and transportation to consumers and final disposal* in alignment with Kaplinsky and Morris (2001) and others.

With that in mind, this chapter provides an overview of the key issues necessary to both understand and drive sustainable global value chains, as well as a brief synopsis of the main themes of the book. With major trends moving clearly toward public-private integration of sustainability initiatives, we look at the key issues and the implications of that. The chapter begins with sections assessing new trends in the sustainability agenda, from both political (Sect. 1.2) and private sector perspectives (Sect. 1.3). This includes the diverse perspectives of governance from SDGs to regulation to private standards. We then discuss in Sect. 1.4 the emergent and critical value of the availability and understanding of innovative and tested approaches to monitoring and evaluating so as to more effectively manage the progress towards sustainability. Selected initiatives are reviewed in Sect. 1.5 to offer concrete outlooks into some of the major approaches by sector. Here we examine some future outlooks from several authors who argue that much has changed in the last decade and there are an array of new tools at hand that can functionally support the emerging value chain transformations towards greater inclusiveness, clarity, and sustainability. The chapter ends with conclusions in Sect. 1.6.

The sound approaches presented by more than 50 authors throughout this text help to make informed choices towards a common sustainability agenda. Some also illustrate how to secure outcomes that represent positive returns on investment (ROI), which is useful for both public and private concerns—noting that the "returns" are not necessarily financial or even monetisable. In accord with mutidimensionality and our abilities for more sophisticated measurement, we can and should consider diverse values that include social and resource capital in addition to financial or economic benefits.

1.2 Political Trends

Simply put, the fundamental role of government and policy is to help ensure that we have the basic conditions to be safe and happy. Sustainability is clearly within this purview of government but, interestingly, as we have become increasingly aware of the intrinsic non-sustainability of our global and local systems, many of the most visible sustainability initiatives have primarily been a voluntary concept at least in recent decades. Even many public efforts or accords remain voluntary and spottily enforced by governments. The private sector, after decades of little or even negative engagement, is emerging more strongly as a voice and catalyst for sustainability—or at least is much more active in sustainability activities and claims.

This shift, even at its early stages is certainly welcome, but there are many reasonable questions about whether real sustainability could be widely achieved via the efforts of private firms. It is more likely that the private sector will struggle to achieve meaningful change because of some of the intrinsic contradictions embedded in the dominant consumerist culture that exists across key parts of the planet. Corporate marketing departments tell us to consume more and to live for our own frequent and even immediate gratification while the modestly funded CSR side of the business conducts some projects or insists on suppliers checking off generic compliance checklists.

It is becoming clear that the private sector, even if it may have some incentives, does not have the adequate mechanisms or the legitimacy to achieve the necessary common good of sustainability. Our sustainability is likely to require some restraint and a common agreement about many common goods such as the oceans, air pollution, and water. Clearly, public policy will have to take a leadership role. This includes its ability to guide private efforts, such as through Trade Agreements, appropriately. Evita Schmieg illustrates in Chap. 6 how sustainability issues—from labour to environment—are increasingly integrated into trade agreements. It is a critical function of governments to establish such necessary framework conditions and not to expect that consumer or private sector efforts will be sufficient.

That is not to imply that there are not many useful private initiatives, rather it is an admission that they are simply not sufficient. For example, the International Organization for Standardization's Guidance on Social Responsibility (ISO 26000:2010) focuses its operationalisation on performance results and improvement and not on concrete or mandatory requirements. Similarly, other wide-ranging systems working in the private sector realm including the Global Compact, the Global Reporting Initiative (GRI) and many sectoral or national platforms such as the German Sustainability Codex all are strictly voluntary standards and revolve fundamentally around the weakest mechanism: self-reporting. While this is perhaps better than no reporting, one wonders how many prospective employers would hire students who graduated from schools that had only student self-reporting to gauge their academic accomplishments.

However, conditions to advance sustainability are not ideal in the public sector either. A lack of clarity and agreement has led to more than a few stalled and ineffective policies. The slow move toward solid metrics and results-based science slows progress and investment on many fronts even as swiftness seems a priority, especially for issues related to climate change and resource use. Our understanding and our approach must necessarily be as holistic as it is pragmatic; as Guus ter Haar and Lucas Simons note in their work (see Chap. 11), we need to not just tinker at improving the edges but to consider wide-scale structural change. UNCTAD's Chantal Line Carpentier and Isabel Garza Rodríguez illuminate in Chap. 2 how the evolution of the global agenda, including the new 2030 Agenda for Sustainable Development and the SDGs, now has powerful implications for how the private sector must be effectively engaged in tangible ways. The private sector clearly has a vital role to play and whether its roles are more circumscribed by policy and regulations or advanced by its own enlightened self-interest remains to be seen. As Robert Atkinson notes this may be changing with the general feeling in industry and business sectors is that the concept of sustainability is gradually moving from voluntary to mandatory (Chap. 8).

In their chapter on private regulation serving to provide sustainability governance of global supply chains, Marina Jentsch and Klaus Fischer (see Chap. 12) note the importance of a broader definition of governance[2] as indispensable, since the state is unable to act with the speed and accuracy necessary in today's fast paced environment. They show that the emergence of private standards has filled a vacuum left by government. Their extensive literature review suggests that because of the importance and risk associated with sustainability, the existing private sustainability governance instruments need to be more rigorously analysed, evaluated and further developed.

1.3 Private Sector Initiatives

In our fast-moving world, where government can rarely respond as quickly as the private sector, are companies the answer to sustainability? Most agree that it must be at least part of the answer. So how can that work when the private system has been engineered to be primarily self-serving and, more recently with fast-moving public trading, rewarded for short-term results regardless of potential long-term benefits. As Starbucks, a global trendsetter, was teetering between its current "business as usual" and a chance to make substantial sustainability differences in areas where it sources products, its then CEO remarked that such decisions that are likely to be good for the long-term prospects of the firm and for sustainability

[2] This definition goes beyond the traditional understanding of government providing most or all of the governance and notes "the sum of the many ways individuals and institutions, public and private, manage their common affairs (…) involving NGOs, citizens' movements, multinational corporations, and the global capital market" (Commission on Global Governance 2005).

overall are rarely taken into account by the market system that they succumb to. He noted that the pressure to deliver the right quarterly financial reports made that—and his job—very difficult.[3] This systemic problem makes it difficult to engage in sustainable practices when the incentives are for short-term returns. Some visionary CEOs disagree. A few years later, Unilever's CEO, Paul Polman, realising the problem, took a stand to not issue quarterly reports and to free up his firm from unproductive expectations. Curiously, and perhaps because it is also well run, his firm's move was rewarded by the market with higher share prices.

Smart corporate policy is vital to advance sustainability. Perhaps nowhere more so than in its day to day procurement practices. The world is full of firms whose marketing and CSR departments are touting sustainability goals or initiatives while the incentives at the core of their operations are achieving the opposite. The lack of visionary leadership is part of the problem, but another is the complexity of many global firms that does not allow senior managers to readily see the details of what is going on, much less influence them. Many operate as walled fiefdoms and need only meet their bottom line objectives to remain so. Organisations such as COSA or Sourcemap increasingly partner with firms to integrate the metrics and reporting that permit results-based management for sustainability within companies but an increased scale is needed. What are the lessons and the systems that work and how can we discern best practices?

Besides having transparent claims that can be verified, one of the simplest interventions would be to improve the sometimes ludicrous metrics used to only measure the basic practices or interventions. Measurement professionals call these interventions or outputs to denote what is being done. For example: how many farmers trained; how many women included; how many good policies in place. A better approach includes the outcomes or even impacts of such practices or interventions. This is the equivalent of focusing on how much of the house is built rather than how much a worker has been arranging or moving boards or bricks.

We now also have a burgeoning market for ecolabels that purport to confirm one or more sustainability practices. Of the 463 ecolabels[4] available on the market today some do measure outcomes and a few even measure impacts but many of the standards behind the ecolabels simply confirm practices that should lead to expected outcomes, if all goes well.[5] There is good reason for this, sustainability is complex and it is not easy to measure results. But, as interest grows, it is critical to focus more on actual outcomes and impacts.[6]

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[3] Personal conversation between Daniele Giovannucci and Starbucks CEO Orin Smith.

[4] July 2018 Ecolabel Index lists 463 ecolabels in 199 countries, and 25 industry sectors.

[5] Standards propagated by leading public ecolabels such as the Rainforest Alliance, GoodWeave, or Forest Stewardship Council increasingly integrate outcomes such as defined protected areas or worker housing requirements. Yet, as is true for food safety standards, it is increasingly necessary to distinguish results or actual outcomes, e.g. "% presence of bacteria" from the many processes to limit bacteria.

[6] Measuring impact is a science and difficult to do with the resources available to most sustainability-oriented standards. Outcomes are somewhat more accessible but are still more challenging to measure than process or interventions or inputs. For a more com-

It is the complexity that overwhelms simple messages that marketing professionals and consumers prefer. Nuance and realistic complexity are neither easy to convey nor very popular. So, the explosion of ecolabels—the majority of them private efforts, meaning they have limited public scrutiny or oversight—is easy to explain. We want somebody to tell us if something is sustainable because the realities are complex. Friederike Sorg et al. are among the researchers who point out that firms, especially retailers or brands, and consumers increasingly rely on standards for their decision making, particularly, but not only, for fish (see Chap. 14). This, of course, can be a useful market mechanism that pays a service to do the complex work and then conveys an easy to digest result (affixing a label) to buyers. This need is equally strong for buyers and so organisations like GLOBALG.A.P. are adding new approaches, such as their localg.a.p. approach to train producers and help them participate and eventually upgrade (see Chap. 32 by Uribe Leitz et al.). The key factor here is, of course, credibility. Some have it and many do not, so the landscape is littered with a sometimes disorienting array of standards, verifications, and certifications.

There are efforts to compare the labels, such as the ITC Standards Map and the Sustainability Standards Comparison Tool. Such efforts provide a valuable service, permitting a side-by-side view of the criteria of the standards. Comparison tools can greatly improve our understanding of the labels and what they claim to do. However, such static comparisons do have limitations. They look primarily at the content topics of the standard or system as well as the expected credibility of that system (based on its stated approach) but not at the actual results or implementation realities of the standard or the system. Some standards systems, such as Rainforest Alliance-UTZ and FSC are actually investing to get to some of that understanding through independent and rigorous impact evaluations; but many still are not.

As of yet, there is no comprehensive global approach to go beyond the claims made on paper and determine the extent to which those label claims actually occur or have the desired benefit. Since nearly everyone involved—from the standards to the targets of standards to the consumers that ultimately pay for them—is interested in the reality of standards, assessing their actual effectiveness is clearly the next step. While some guidelines exist for assessing impacts[7] and more research is emerging, there are two major barriers: cost and harmonisation. Both are addressed in the next section.

plete discussion, see *The COSA Measuring Sustainability Report: Coffee and Cocoa in 12 Countries* (COSA 2013, pp. 29–31; available online at: https://thecosa.org/wp-content/uploads/2014/01/The-COSA-Measuring-Sustainability-Report.pdf).

[7] ISEAL has established sound guidelines for its member organisations that include some of the most prominent standards bodies.

1.4 How the Monitoring and Evaluation of Sustainability has Evolved

The critical need for sustainability evaluations is becoming increasingly evident to all stakeholders, from policy makers and consumers to supply chain managers and producers. With resources and time always constrained, everyone wants to know whether their choices or investments are indeed improving sustainability. Some even want to understand the returns on their sustainability investments—and not only the financial returns since we can now consistently calculate some of the social and environmental benefits (or costs) as well.

Monitoring and evaluating sustainability presents some unique challenges in terms of both the intrinsic complexity (cost) and the lack of standardisation or harmonisation. Ruerd Ruben rightly elaborates in Chap. 18 that impact evaluation in particular needs to address the net effects at different scales (i.e. farm, chain, landscape, sector), from different perspectives (i.e. environmental, social, economic), and for different types of stakeholders (i.e. farmers, workers, traders, processors, consumers, etc.). As Keith Child notes in Chap. 16, evaluating sustainability means to also understand the "why" something occurred because only by getting clarity on the reasons (understanding contributions and even attribution), can we hope to scale up what works and dial back what does not. Part of that intrinsic complexity is the sometimes unclear dynamic between the factors noted above that can imply substantial synergies or trade-offs. Salma Halioui et al. illustrate in Chap. 20 the value of a system dynamics modelling approach for complex challenges in their approach to the solid waste management sector. Ruben, Child and Puri agree that good impact evaluation seeks insights through these dynamics and into what causes or hinders behavioural change.

Fig. 1.1 Ruerd Ruben

Fig. 1.2 Keith Child

Recent impact analyses illustrate the sometimes surprising failure of patterns or people to change despite the provision of well-known stimuli or incentives. To better understand key behavioural change interfaces Ruben highlights the im-

portance of multiple-agency approaches for capturing behavioural change and inclusiveness in value chain relationships (see Chap. 18).

What makes understanding this complexity even more challenging is that many researchers and evaluators have failed to adopt standardised approaches for even the simple things they measure. This critical aspect of harmonisation is often overlooked by managers, evaluators, and some researchers. This can be a natural evolution in the early exploratory phases of knowledge gathering where standardisation is not yet appropriate. However, as the sciences of sustainability and evaluation are maturing, there is considerable scope for harmonised approaches and to identify best practices. Without a systematic process, it is unclear whether what is observed in evidence or data is a reflection of an accurate assessment or merely a by-product of the approach or process used. Approaches that are *ad hoc* and difficult to replicate or verify make it nearly impossible to compare and to build up a reliable body of learning. Sustainability efforts are also very contextual and consequently researchers, projects, or supply chains can more effectively measure and compare actual outcomes and impacts locally with adapted standard tools that allow context to be seen rather than muddle the information. When metrics are harmonised or at least explicitly noted, measuring common topics such as cost of production, poverty or biodiversity can be aligned and readily compared. But often they are not. Unless a standard protocol is observed, it is very difficult to compare results, check research quality, or actually determine the value of one intervention versus another (Blackman Rivera 2010 and COSA 2013).

More and more institutions are realising the heavy costs of non-standardisation at the same time that they realise that many things can be standardised, though not all of course.[8] Considering the high stakes of sustainable development, we cannot afford to fail at engaging with more credible and standardised systems of tracking or evaluation. For development agencies, donors, and businesses alike, the persistent failure to standardise can result in poor oversight and slow learning. Experienced professionals know that when researchers follow a unique or self-directed protocol, it is nearly impossible to compare results, determine best practices, or to learn across crops or geographies. Harmonised indicators are a start and many groups have embarked on this initial phase. The World Bank's respected LSMS team is working steadily toward more standardised survey processes; harmonised indicators and metrics are also the prime mandate of the COSA learning consortium with 55 institutions and this trend spreading to organisations as diverse and varied as the Sustainable Food Lab, ISEAL, the InterAmerican Development Bank, McDonald's, the Sustainability Consortium, Lindt Chocolate, and the Government of Mexico.

[8] A number of harmonisation advances have been undertaken in recent years. Prominent examples include: FAO Sustainability Assessment of Food and Agriculture systems (SAFA for Smallholders) aligned FAO, COSA, Grameen, Soil&More; Shared Approach for Smallholder Performance Measurement aligned the Sustainable Food Lab, ISEAL, COSA, Rainforest Alliance, Wageningen, Nestlé, Root Capital, IDH, Mars, Ford Foundation; The InterAmerican Development Bank SAFE Platform aligns dozens of firms and institutions using common metrics and reporting into one knowledge base.

The cost of effective evaluation is decreasing but still represents a substantial investment for many organisations or projects. Part of that investment is in securing the necessary experience and good fieldwork to gather reliable data and to conduct effective analyses.[9] Improved and more widely accepted protocols for good evaluation (e.g. effective sampling designs, control group selection and matching models, mixed methods integration) increasingly serve to make evaluation efforts productive and useful for learning. New technology is also playing a major role from the ability to have high-frequency data gathering (e.g. SMS) to survey software that can eliminate data entry, minimise data cleaning, and dramatically reduce survey time while improving data accuracy in several ways (data piping, skip logic, internal validation, external quality controls, etc.).

Leading researchers and institutions are now advancing much greater methodological diversity and rigor and beginning to move away from the existing haphazard, fragmented, or merely anecdotal evaluation styles. More and more donors are attempting to impose the use of a solid scientific basis to reliably answer major questions. The investment stakes are high and fewer donors still rely on hidebound and outdated evaluation systems based on simplistic metrics from their logical frameworks (e.g. how many farmers trained or hectares influenced).

Fig. 1.3 Bob Picciotto

Leading development evaluation thinkers such as Howard White, the co-founder and former chief executive of the International Initiative for Impact Evaluation (see Fig. 1.4), have moved increasingly toward 'the right tool for the purpose' approach while maintaining the maximum rigor of process for reliable data. This counters the recent phases in the development community of excessive focus on a particular "method of the day", often fuelled by one or another celebrity

[9] With many methods available, experience is needed to select the appropriate tool or instrument. Evaluation is made difficult and can also be questionable in many cases when it must rely primarily on secondary data.

economist. Such fads can be costly and do not help us get to useful answers when sometimes a simple approach can serve better. Within the COSA consortium, the mandate is to "measure what matters". Bob Picciotto, the legendary Director General of the Independent Evaluation Group of the World Bank (see Fig. 1.3), warned us to "beware the randomistas"[10] as a caution that not every developmental activity can or should be evaluated just by a Randomized Control Trial. So, the notable recent work of Ruerd Ruben, Jyotsna Puri, and Keith Child (see Chaps. 18, 17 and 16 respectively) illustrate how new approaches can combine methods for optimal explanatory results and offer more open and multi-dimensional perspectives. Thoughtful approaches to measuring what matters are providing a more rigorous basis for understanding evidence and creating a solid foundation for both learning and accountability.

Fig. 1.4 Howard White

Fig. 1.5 Jyotsna Puri

Sometimes, less evidence paradoxically triggers larger claims. This problem does not occur solely in corporate marketing or CSR departments. A number of development agencies, consultancies, and NGOs are aiming for, or even sometimes claiming, a level of change that is 'transformational' or 'paradigm shifting'. Jyotsna Puri in Chap. 17 offers a schematic approach that could be used to characterise and assess transformational change, particularly the harder to see, yet critical, aspects that are often ignored, especially behavioural change. Ruerd Ruben outlines in Chap. 18 the case that value chain dynamics affect sustainability outcomes and are strongly influenced by the contracts, rules, and governance mechanisms that enable exchange relationships along the supply chain.

[10] Caution made public at the COSA Scientific Committee meetings in Stockholm.

1.5 Outlook and Emerging Issues: Perspectives from Select Initiatives

Throughout the understanding and management of sustainability we are confronted by the lack of functional knowledge that is presented in a way that can be utilised, and is made available in a timely manner. Tools are becoming available to better manage supply chains and projects from a sustainability perspective. Much of the problem starts at the beginning with the failure of many initiatives to clearly define (i.e. through program logic or theory of change) or to adequately map the factors that most affect them. If mapping is done well, then it is feasible to lay out the milestones along the relevant impact pathways that will lead to the defined objectives. Now we can actually monitor or measure the ongoing results so as to correct a course as it is being executed, and thus increase our chances of success in achieving a desired impact. More and more managers want to have an understanding of and control over the risks and opportunities in their supply chains or projects and the tools are increasingly available.

Thus, performance monitoring is coming into its own as it borrows from the rigor of impact assessment (good indicators and metrics) but strips down the process to the basic necessary information systems to clearly inform managers and do so in close to real time. This is much better than finding out what happened only years after the fact when the impact evaluation is done. As Jessica Mullan et al. show in Chap. 19, the real-world applications are vast and already realised by leading firms like Danone and Mondelēz International in very different supply chain applications. Technology is increasingly altering the possibilities as more and more functions can be carried out at low cost and even with an increasingly transparent process.

It is clear that the concern for being sustainable and the consumer market for sustainable products and services are clearly here to stay. Indeed, the market is growing. A recent Nielsen Global Corporate Sustainability Report[11] notes that the global sales of consumer goods from brands with a demonstrated commitment to sustainability grew four times faster than from those without such a commitment. Similarly, the annual State of Sustainability Initiatives reports (IISD, ITC, FiBL) substantial growth of sustainability certified (or verified) products across multiple sectors. So, our emergent understanding of sustainable development as dealing with complex conditions will likely drive the development of more standards and the concomitant greater need to know, which ones work and how well they work. This growth is abundantly evident, as demonstrated by the hundreds of ecolabels now in use—most of which did not exist prior to 2000.[12]

Most of the voluntary sustainability standards (VSS) arose in a context of uncertainty, offering tangible guidance about how to shift away from decades of un-

[11] Citation found in Chap. 15 by Lamolle et al.

[12] The Ecolabel Index offers this definition: A sign or logo that is intended to indicate an environmentally preferable product, service or company, based on defined standards or criteria.

sustainable practices. They initially offered much-needed solutions—a valuable public good—as both governments and companies struggled to understand and implement sustainable approaches. Many VSS focus predominantly on the issues surrounding production processes rather than on product qualities. As such, they deal with substantial levels of complexity. Their conveyance of a simple signal, i.e. a label that cuts through the complexity for companies and consumers alike, is one good reason why they will continue to proliferate.

Today, the awareness and understanding of sustainability has increased significantly. As the number and diversity of VSS has increased so have the questions about their effectiveness. Enrique Uribe Leitz and François Ruf, among other noted experts, point out in Chap. 24 the flaws in systems that not only prevent them from having the desired impact but also can serve to backfire and cause a backlash against these tools. One emerging concern is the potential barriers they may present in some cases for smaller enterprises or farmers (see Chap. 33 by Aidan Flanagan et al.) even as organic and fair trade systems engage special mechanisms to address smaller producers (see Chap. 34 by Mildred Steidle and Gerald Herrmann). Experts such as Edward Millard (see Chap. 27) point out the public value of well managed standards when applied to crops such as rubber.

Going forward, it seems likely that the future function of VSS may need to change from their traditional and somewhat limiting compliance-oriented approaches that they have applied in recent decades. If indeed sustainability standards can morph into paths of continuous improvement and innovation, then we may well see them reboot to greater relevance. Mathieu Lamolle et al. consider in Chap. 15 that a VSS Generation 3.0 would need to embrace innovation and technology with a focus on the process of becoming more sustainable, not just the output of an audit.

There are several paths emerging that can also serve to define standards, including industry platforms and new sector-wide models. Platforms for soy (RTRS), palm oil (RSPO), cocoa (WCF), forestry (FSC), bananas (AASB) and coffee (GCP and SCC) exemplify this trend as do the national sectoral platforms such as those initiated by UNDP's Green Commodities Programme in Indonesia and Peru. Friederike Martin et al. clearly note in Chap. 23 the purpose of the Global Coffee Platform to more inclusively provide answers to the intractable concerns of the sector. Similarly, Amparo Arellano Gill et al. outline in Chap. 26 how the Forest Stewardship Council (FSC) leverages positive change in the forest industry sector through its stakeholder engagement processes for consultation and dispute resolution. Franziska Rau illustrates in Chap. 36 the potential for joint public-private initiatives to eliminate deforestation from global supply chains, knowing that between 55 % and 80 % of global deforestation is driven by agriculture. There are also new approaches that are not oriented to standards. Sophie Grunze et al. note one valuable such direction: the validation of what it means to support a viable "living income" within agricultural value chains (see Chap. 35).

There is merit in such coordinated or consensus approaches but there is also the risk of insufficient public sector input and control so that such emergent standards become ineffective in altering practices and turn out to be little more than a bland panacea that can be waved at consumers or shareholders in an attempt to convince

them that something is being done.[13] Such platforms, if they are to succeed in driving sectoral sustainability and being credible, must invest in transparency, tangible results, and diversity, such that the platform can achieve substantial measurable effects. Some devolve into mere talking forums with modest outputs and merely mediocre progress or risk becoming bastions of protecting the status quo. Another of the great concerns for such platforms is that they must consider the danger of standards that put the onus on producers who may be the least able to invest in significant change.

We also must face the emerging issue of the terminology of sustainability that is susceptible to misuse. If we are to scale up sustainable practices quickly, we will need to better and more clearly define what are good practices such that a consumer can digest the message and act on it. This requires a measure of simplicity that, in itself, can contradict the intrinsic complexity of sustainability practices. We cannot simply 'dumb down' our metrics. Yet, the emerging messaging must be simple enough to be understandable at the consumer level. This is essentially the model of LEED certification used in construction or EnergyStar certification for appliances. Consumers need to be engaged since their purchase choices are often the ultimate arbiters and can thus encourage the adoption of better practices in value chains.

1.6 Conclusions

From auto manufacturing to agriculture and from gold mining to tourism, there is an increasing demand for green processes and supply chains that are driving a new generation of targeted activities and investments. The increase in ecological and social standards is one of the outcomes of this development and it is likely that standards and certifications will continue to increase because they present a useful shorthand for both corporate and consumer understanding. As green processes and standards proliferate and become more common, there is a concomitant need to understand both their effectiveness and their ROI.

The pace of discovery and research into sustainability has accelerated considerably in the last decade and the data can present new opportunities to improve efficacy. Chief among these is the clear appreciation that the levels of complexity are such that no one actor alone can make a substantial enough difference. In short, we need to work together and to leverage each other's capabilities.

It is also clear that there are so many divergent approaches that the ability to assess and evaluate critically is more necessary than ever. This is in part because there are few one-size-fits-all solutions and the localised need must be accounted for if solutions are to be lasting. In part, it is a necessity of successful innovation.

[13] While some platforms encourage a handful of civil society organizations to join or comment, this is rarely if ever sufficient to help ensure that a platform does indeed serve both private and public benefits in balance.

To address complex needs, innovation can be very useful but we need to also learn quickly and identify valuable characteristics or approaches that can be scaled.

The idea common in some technology circles is very appropriate for sustainable development: to fail forward and fail quickly. In other words, we need to learn from our efforts and advance our learning and we need to go through the process with eyes open so that useless approaches do not drag on beyond the time needed to test them and to learn.

Our ability to discern innovation and effective approaches is greatly dependent on our ability to measure what matters and to communicate the learning effectively. This era of sustainable consciousness has inspiration, altruism and ardour behind it. If we are to use these catalysts well, then we must be driven by a mature and clear understanding of what works and what does not. This understanding cannot be solely a passion; it must respectfully engage the social, economic and environmental dimensions in balance.

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