On the Distribution of Net Benefits from Sustainability Initiatives in Agri-Food Supply Chains

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Abstract

Sustainability initiatives are frequently imposed on upstream supply chain members by their more powerful downstream partners. This paper assesses the challenges of estimating costs and benefits for participants and the difficulties associated with identifying their locations and effects in the supply chain. The paper argues that the success and endurance of agri-food supply chains that purport to pursue sustainability objectives depend critically on the distribution of the associated costs and benefits. It calls on supply chain leaders to give careful consideration to the distribution of net benefits across the chain to ensure that opportunism and moral hazard are minimized.

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Introduction

Major U.S. food companies have become increasingly concerned with the sustainability of the global food chain and have begun to impose standards and regulations on their supply chain partners. While these standards and regulations may provide various benefits for stakeholders throughout the food supply chain, the costs of implementation and penalties for non-compliance are often borne heavily by less powerful upstream partners who tend to be more fragmented and make up only a small portion of downstream supply needs. However, for sustainability initiatives to ultimately be successful, full participation of these upstream partners is essential in minimize costs especially those associated with the hidden information and hidden action issues.

As an example of one such sustainability initiative, consider Walmart's Global Responsible Sourcing Initiative announced on October 21, 2008 in Beijing, China. In this announcement, Walmart laid out a series of sustainability goals and requirements for suppliers who want to do business with Walmart. These supplier requirements included: certified compliance with environmental laws and regulations, higher standards for product safety and quality, and the implementation of a traceability system to provide the name and location of every factory they use to make the products it sells (Walmart, 2008). Failure to implement these requirements results in exclusion from the Walmart supply chain. However, these requirements are not only costly to implement for the supplier, but also costly to monitor on the buyer (Walmart) side. As a result, incentives are potentially in place for suppliers to misrepresent their capabilities and to also shirk on their responsibilities under the sustainability initiative.

The purpose of this paper is to assess the challenges of estimating costs and benefits for participants and the difficulties associated with identifying their locations and effects in the supply chain. The paper argues that the success and endurance of agri-food supply chains that purport to pursue sustainability objectives depend critically on the distribution of the associated costs and benefits. It calls on supply chain leaders to give careful consideration to the distribution of net benefits across the chain to ensure that opportunism and moral hazard are minimized.

This paper is organized into four sections. The following section outlines the drivers of food company sustainability initiatives. These drivers include both supply-side and demand-side competitive pressures. The second section provides an overview of recent food company sustainability initiatives and compares several initiatives of companies throughout the agri-food supply chain. The final section discusses the challenges and implications of these sustainability initiatives for their upstream supply chains.

Drivers of Sustainability Initiatives

Food companies have engaged in sustainability initiatives for a number of reasons. These include both supply-side and demand side drivers. On the supply-side, sustainability initiatives centered on environmental concerns, and the introduction of "green" technology in particular, can be important sources of immediate and long-term cost savings. In fact as reported by a recent Pulse Canada report, the most cited initiatives that have been committed to by the top 50 food companies include those that reduce energy and water usage, packaging and transportation. These reduction goals have the dual advantage of not only reducing resource usage and environmental impact, but they also significantly reduce the costs of inputs and marketing.

On the demand side, food companies are responding to the increasing demand of consumers for sustainably produced products. According to the Natural Marketing Institute (2009) recent consumer segmentation research, LOHAS (Lifestyles of Health and Sustainability) consumers now make up 17% of the U.S. general population. These consumers are those that are active stewards of the environment and are willing to pay a premium for green and socially responsible products. In addition, consumers continue to demand food products that are fair trade and/or ethically produced, locally grown and support local economies, and have increasing concerns for food safety and health that are perceived by consumers to be mitigated by sustainable production methods.

Overview of Sustainability Initiatives

In response to many of these drivers, food and agribusiness companies have initiated various sustainability programs, both independently and collectively with other food companies, non-government organizations and regional governments. Although many of these initiatives focus on resource and cost reduction programs, criteria for participating in the supply chain, and charitable donations, other initiatives have used sustainability initiatives to capture competitive advantage through innovation (Porter & Kramer, 2006). These latter initiatives tend to focus on establishing alliances with supply chain partners to share information and risk, while aligning supply chain activities to meet sustainability objectives. In this section, we provide an overview of the sustainability initiatives that have been implemented in the global agri-food industry as well as detailed examples from several food companies throughout the agri-food supply chain.

According to a Pulse Canada report, over 80% of the top 50 food companies have made a public commitment to sustainability with many of those same companies having created an office of corporate social responsibility (CSR) within their organizations. These commitments can take many forms. However, in general, food companies have pursed two approaches to

sustainability initiatives: 1) establishing standards and codes of conduct, and 2) implementing value chain innovations (Genier, et al.).

Standards and Codes

The standard and codes approach has been widely used throughout the agri-food supply to provide incentives for upstream players to adopt specific management practices. These incentives may take the form of price premiums paid to suppliers who adopt certain practices or exclusion from the supply chain for those that fail to implement required programs. In general, the standards and codes for management practices fall under categories equivalent to the three pillars of sustainability -- environment, labor and social conditions, and economic viability – but also include food safety criteria as well. Furthermore, the set of standards and codes implemented by food companies maybe proprietary as in the cases of Walmart's Global Responsible Sourcing Initiative and the Rainforest Alliance's Certification program, or they maybe a result of collective industry organization (eg. SAI Platform, Roundtable on Sustainable Palm Oil). See table 1 for an overview different standards and codes programs. This approach has been described as a defensive approach to sustainability (Genier, et al.). For the most, standard and codes serve to redistribute the risks of sustainability initiatives and impose greater costs on upstream supply chain partners.

Value Chain Innovations

The second approach that agri-food companies have taken with regards to sustainability has been to set up formal strategic partnerships with their supply chain partners. These partnerships often include provisions to share both the benefits and costs of sustainability initiatives across the agri-food supply chain. In many cases, these types of initiative take the form of downstream stream partners providing expertise and training as well as sharing market

knowledge with upstream partners in return for a constant supply of sustainably produced inputs. Furthermore, this approach encourages learning on the part of both parties and creates opportunities for innovation and competitive advantage through the identification and measurement of value chain activities (Porter and Kramer, 2006). For examples of such initiatives see Genier, et al.

See table 2 for a detailed overview of types of sustainability initiatives that have been implemented by companies throughout the global agri-food supply chain.

Challenges and Potential Implications of these initiatives for supply chain partners

With the exception of a few initiatives (e.g. charitable donations), the types of sustainability initiatives described above require the participation and coordination of multiple supply chain players along the food supply chain to be successful. How this coordination is organized is a distinguishable feature of these programs and maybe a source of competitive advantage for agri-food companies.

As detailed above the dominant initiatives in the agri-food are those that impose requirements on supply chain partners through standards and codes in contractual arrangements. In essence, these requirements have the effect of shifting the costs and risks of the initiatives to less powerful supply chain players. Given the significant downstream consolidation of the agri-food sector, this typically means that risks and costs are shifted up the chain to those players that are least likely to be able to deal with these changes. As a result, sustainability initiatives provide incentives for suppliers to misrepresent their capabilities in meeting required sustainability standards and codes in order for them to enter (or remain in) the supply chain. The cost of not doing so (i.e. lost premiums, penalties, exclusion from the supply chain, etc.) may be

greater than the risks of greater caught. Similarly, imposed sustainability initiatives may also lead to the under investment in capital and labor resources by suppliers that have already entered into contracts to provide sustainably produced inputs. If monitoring costs are high or monitoring is ineffective it may pay a supplier to under invest in new technologies to improve quality to mitigate the additional costs of imposed on them the sustainability initiative.

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Table 1: Comparison of 14 independent standards and codes across the agri-food sector

		Global GAP	Rainforest Alliance/SAN	SCS-001	Ethical Trading Initiative	Common Code for the Coffee Community	Marine Stewardship Council	Basel Criteria for Responsible Soy Production	Roundtable on Sustainable Palm Oil	SA8000	Fairtrade Standards	IDF/FAO Guide to Good Dairy Farming Practice	SAI Principles & Practice for Sustainable Production (Cereals)	EISA	Utx Certified
Environment	Ecosystems & Biodiversity	X	X	X		X	X	X	X		X		X	X	X
	Natural Resource Inputs	X	X	X		X		X	X		X		X		X
	Manmade Inputs	X	X	X		X		X			X		X		X
	Energy Use and GHG Emissions	X		X		X		X			X		X		X
	Waste Management	X	X	X			X	X	X		X	X	X	X	X
	Production Practices	X	X	X			X	X	X		X	X	X	X	X
Labor Conditions	Occupational Health & Safety	X	X	X	X	X		X	X	X	X		X	X	X
	Terms of Employment		X	X	X	X		X	X	X	X		X	X	X
	Human Rights in the Workplace		X	X	X	X		X	X	X	X		X		X
	General Employee/Family Welfare		X	X	X	X				X	X		X	X	X
Local Economic /Community Benefits	Producers' Economic Viability			X				X	X				X		
	Flow of Economic Benefits		X	X				X			X		X	X	
	Social/Economic Rights of Others		X	X		X	X	X	X						
	Business Ethics					X		X	X						
	Education & Role Modeling								X					X	
Food Safety and Quality	Traceability	X	X	X		X		X					X		X
	Hygienic Production & Handling	X	X	X				X				X	X	X	X
	Quality of Inputs	X						X				X	X		X
	Quality of Management Systems	X	X	X		X					X				X

Source: Reproduced from Genier, et al.(Table 1)

Table 2: Summary of Key Sustainability Initiatives Mentioned in the CSR Reports of Select Top Agri-Food Companies

	PepsiCo	Coca Cola	Cargill	ADM	Tyson	Smithfield	Walmart	Kroger
Environmental Concerns (GHG emissions, water, waste)	X	X	X	X	X	X	X	X
Food Safety					X	X		X
Responsible Sourcing (no child labor, animal welfare)		X	X	X		X	X	X
Diversity - Suppliers		X	X	X			X	X
Employee Benefits/ Health and Safety	X	X	X	X	X	X	X	X
Diversity -Employees		X	X	X	X	X	X	X
Community -charity	X	X	X	X	X	X	X	X
Governance					X	X		X