

# Implementing sustainable business practices within the food industry

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## Abstract

The drivers for the adoption of sustainable business practices are mostly economic, but firms are also motivated by the values and beliefs of employees and top management to reduce the firm's environmental impact. Government legislation, both current and anticipated, is also seen to encourage firms to adopt more sustainable business practices. Benefits for the firm include: cost reductions, improved profitability, a competitive advantage, access to new markets, improved image, improved employee satisfaction and government support. Internally, the main barriers for the firm are: costs, the prevailing business culture, information and technical barriers, other business priorities and personal reasons. Externally, the barriers are identified as: the lack of qualified suppliers, variable consumer demand and the lack of government support.

## Introduction

Current agricultural practices are not considered sustainable. Agriculture is the second largest emitter of greenhouse gases and is responsible for 70 percent of global water withdrawals (FAO, 2017). Each year, food production is responsible for the loss of 13 million hectares of forest (World Bank, 2007), soils are depleted, lakes and oceans are contaminated, and numerous other detrimental environmental consequences can be attributed to the food industry (Godfray and Garnett, 2014).

The transportation of agricultural inputs and the delivery of food to processors and supermarket shelves also contributes to global warming. Freight transport consumes approximately 25 percent of the petroleum in the world and produces more than 10 percent of the carbon emissions derived from fossil fuels (Spedding, 2008). To meet the increasing consumer demand for fresh fruit and vegetables all year round, a more diverse diet and specialty food products, the average meal now travels many thousands of miles before reaching the consumer's plate (Murray, 2008).

Another issue that contributes to the food industry's impact on the environment is food packaging. Food packaging represents approximately 20 percent of all household waste (Turner, 2008). With the demand for greater convenience and safe hygienic food, the use of food packaging materials is increasing, but the percent of recycling is low (Dris et al., 2015). In Europe, only 54 percent of the packaging (Packaging Waste, 2005) and 26 percent of the plastic waste is recycled (Europe, 2013). Similarly, in the US, approximately 50 percent of all food packaging ends up in landfill (EPA, 2010). As household incomes rise, so also does food waste. On the way from the paddock to plate, FAO (2011) estimate that as much as 32 percent of the food produced is lost. Food waste and loss first appears during the initial stages of food production but rather than to decrease, with greater prosperity, most of the food is wasted at the point of final consumption (Parfitt et al., 2010). Food waste has significant environmental, social and economic consequences, reducing the sustainability of the food system and contributing to the depletion of natural resources including seeds, fertilizers, irrigation, labour and other agricultural inputs.

Today, the food industry is perhaps facing its greatest challenge: how to feed an anticipated population of 9 billion people by 2050, whilst preserving the planet. According to the FAO (2009), to meet the anticipated demand, food production will need to increase by around 70 percent. Other studies forecast that food production will need to double (Tilman et al., 2011; OECD/FAO, 2012).

The current linear economic model is based on the notion of abundance however, our world is a finite resource. To ensure that these dual challenges can be met, the way in which our food is produced, processed and distributed must change.

One model that offers a viable solution is the circular economy (CE). CE is defined by the reuse, repair, reduction and recycling of existing materials and products (Jurgilevich et al., 2016). What was once considered waste now becomes a resource. Besides having a positive impact on the environment and society, CE practices could also be beneficial for the firms operating in the food industry.

However, the number of companies implementing CE practices is low. Despite the benefits for the planet, the community and the company itself, most firms in the food industry are reluctant to make the change. This study aims to identify the drivers, the benefits and barriers to the adoption of CE practices across the many firms operating at multiple stages of the food industry.

### **The circular economy**

The concept of the circular economy (CE) has been gaining popularity since the late 1970's. In this new model, resources become a part of the production process where the approach changes from a "make, use, dispose" to "re-use, repair and recycle".

The Ellen MacArthur Foundation (2013) introduced the following definition of the circular economy: "an industrial economy that is restorative or regenerative by intention and design". Bocken et al. (2016) defines the concept as "design and business model strategies [that are] slowing, closing and narrowing resource loops". Similarly, based on different contributions, Geissdoerfer et al. (2017) defined the circular economy as a "regenerative system in which resource input and waste, emission and energy leakage are minimised by slowing, closing and narrowing material and energy loops. This can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing and recycling".

For the firm, shifting to a CE model offers many benefits. Even although it generally requires a large investment at the beginning, a CE business model is about profit maximization. Stahel (2013) explains that reuse and service-life extension (contrary to planned obsolescence) is resource-efficient and thus profitable. In a study requested by the European Commission in 2015, more than two-thirds of the firms were satisfied with the return on their investments in resource efficiency improvements. Sneirson (2014) found that various sustainable practices were profitable in the long-term by creating new and bigger profit pools. Enz and Suguaw (1999) concluded that green practices enhanced competitiveness.

With more consumers concerned about the environmental impacts of their purchasing decisions, an eco-friendly business model gives legitimacy to the company and stronger emotional values are given to "green" brands (Hartmann and Ibáñez, 2006). Moreover, CE practices offer new ways of engaging customers and thus of improving customer loyalty. In addition, studies have shown that the adoption of sustainable environmental practices improve employee satisfaction and productivity (Schendler, 2001).

CE models allow a greater security of supply as well as reduced volatility. Indeed, in the shift to a circular business model, with the greater use of recyclable materials and less virgin input, the firm will have lower exposure to the volatility in material prices.

In the food industry, the adoption of more sustainable business practices is likely to have a positive impact on the use of water, groundwater pollution, pesticides and fertilizers, healthy soils and to minimise the loss of biodiversity. Existing crops are nutrient demanding. This results in the widespread application of nitrogen, phosphorus and potassium. Various practices may support the more efficient use of nutrients: a greater reliance on organic nutrient sources (Drinkwater et al., 1998); applying fertilizers in a more effective way in smaller and more frequent applications in response to crop demand; mixed farming; and crop rotation, reduced tillage, cover cropping and extended fallow periods (Tilman et al., 2001).

Water scarcity and groundwater pollution is another major issue in current agricultural production. Various technologies such as drip and pivot irrigation can maintain yields while improving the use of water and decreasing soil salinization (Naylor, 1996). Other practices using biotechnologies can also improve yields in water-limited environments (DeVries and Toenniessen, 2001).

Food processing is highly demanding of energy. In addition, much pollution and waste are related to the extensive use of food packaging. FAO (2011) estimates that 8-12 percent of the total food produced is lost during the processing stage. However, various processes allow the food waste to be converted into biofuels or energy, or to reprocess agro-industrial residues to create high-value chemicals, animal feeds and even biodegradable food packaging.

At the retail level, food losses are accentuated by poor conditions of storage, food reaching its sale-by-date or food failing to meet the retailers' standards for quality (Gustafsson, 2013). New post-harvest storage technologies need to be developed (Godfray and Garnett, 2014). In France,

supermarkets are obliged to pass food waste to charities while others have revised food standards to enable 'ugly' fruit and vegetables to be sold at a discount price (Jørgensen and Pedersen, 2018).

However, firms often encounter numerous barriers which can constrain the implementation of CE practices. These barriers can be divided into two categories: internal and external barriers.

Internally, the attitude of managers, their risk perception and their evaluation of the benefits derived from CE will directly influence the shift towards a more sustainable business model (Liu and Bai, 2014).

Even if managers promote a sustainable and environmentally-friendly attitude, the resistance to change (often due to past practices) and disengaged attitudes from employees can lead to various constraints (Oreg, 2003).

The lack of capital has been extensively cited as one of the most important barriers to CE. In the short term, there are inevitable upfront costs, such as retooling machines, relocating factories, developing new distribution and logistics, and retraining staff (Preston, 2012). Every activity is costly and requires large investments, especially in the optimisation of the supply chain (Dervojeda et al., 2014). Shifting to a green model presents various other expenses. The costs of recycled materials are often more expensive than the virgin materials. Furthermore, the environmental costs (externalities) are seldom considered in traditional financial reporting (Kok et al., 2013). Going green not only represents a large amount of time and money, but there is also an element of risk. It can be difficult for companies to find the balance between consumers social demands and shareholders needs for profit maximisation. Rademekers et al. (2011) have shown that the lack of technical breakthroughs and material substitution is an obstacle that prevents companies from enjoying the opportunities presented by the green economy.

Furthermore, the availability of good recycled material is still limited. Andersen (2007) found that the longer the product lasts, the longer it takes before the resources therein can be recycled.

Other studies have identified difficulties such as: the lack of expertise, lack of training, time restrictions, fear of failure, lock-in to resource-intensive infrastructures, and other investment priorities (Aggelogiannopoulos et al., 2007; Solis et al., 2001).

Externally, Rizos et al. (2016) found that the lack of supply and demand was the main barrier to the adoption of CE practices. Meqdadi et al. (2012) found that lack of environmental awareness from suppliers was a clear barrier to build a CE business model. Indeed, if firms are to benefit from the CE model, all actors need to be involved. Wycherley (1999) reported that suppliers are often reluctant to become involved in green supply chains because of the high costs involved that could impact negatively on their competitiveness.

Despite sympathy from many politicians, concrete measures are not always taken by governments towards environmental issues. Calogirou et al. (2010) recognized that the lack of government support and effective legislation was a significant barrier to environmental investments. In other instances, extensive collaboration between actors in the value chain can be seen as an abuse of market positions, which is prohibited to protect consumer interests (RecyclingMagazine.nl, 2012).

## **Methodology**

The primary data collection method for this research study were semi-structured executive face-to-face interviews. Similar numbers of respondents were selected at three different stages of the food value chain: producers (7); processors (6); and distribution and retail (6).

To reach companies in the food industry, databases found in Direct Etudiant were used. The search engine Google and the website Kompass provided contact telephone numbers for potential respondents. The French Chamber of Commerce website also proved to be a valuable source of information about companies in the food industry.

Potential respondents were first contacted by phone. Having reached the target person, a request was made for an email address onto which some background information was delivered and a request for an interview made. Ideally, the interview was undertaken face-to-face, but where the respondent was located some distance away, the interview took place either via Skype or by phone.

With the permission of the respondent, each interview is audio recorded. The interviews were then transcribed and analysed.

## Results

### *Drivers for sustainable business practices*

In the implementation of sustainable business practices, the primary motivations were internal to the firm, with most firms (52%) citing economic reasons. Cognisant of the need to invest in sustainable technologies, processes and systems, the positive impact on profitability was perceived to outweigh the positive and significant impact on the environment.

*“Without a doubt, this is an economic motivation. However, we reduce the ecological impact of our stores. But it is true that this is not the first driver, it is rather a happy consequence.”*  
(Distributor 2)

For a further 22 percent of firms, an improved image was seen to offer opportunities to differentiate the firm's products in the market and in a further 9 percent of cases to provide access to new markets. An improved image was most often cited among food processors, distributors and retailers who were closer to and more visible to the consumers. On the other hand, access to new markets was more often cited by food producers as they needed to comply with the quality standards imposed by food processors and retailers in what is often regarded as a saturated and highly competitive industry.

*“We are aware it helps for image, for the reduction of certain risks, that it reduces costs, that it creates internal cohesion for various types of projects.”* (Food processor 4)

*“My first driver was to gain the market with Unilever, although I already had started conservation agriculture.”* (Producer 3)

The motivation to implement more sustainable business practices came from both senior management and employees.

*“Actually, we had the idea in 2007. It was after a kind of brainstorming we have done with 200 employees of the company. They requested to reduce the environmental footprint of our products, and, as the first ingredient, we launched a sustainable program specifically. The willingness comes from employees to reduce our environmental footprint.”* (Food processor 6)

*“This is a way to be in harmony with my own values.”* (Producer 1)

*“I am passionate about environment so... the motivation is an objective. We set up objectives at the company level. It can be cost-savings, but it is also to reduce our impact on the environment.”* (Food processor 1)

*“The motivations are aligned with the company itself: image, costs.”* (Distributor 5)

Various other reasons may encourage firms in the food industry to adopt more sustainable business practices including anticipating future legislation or leading by example. However, it is important to note that, most the time, multiple drivers are present to support firms in their environmental decisions.

*“Mainly today, I think it is simply linked to a conviction that the company, in this competitive environment, needs to become one of the most inspiring in terms of sustainability.”* (Food processor 4)

*“There was a need to anticipate legislation. We wanted to anticipate the future constraints. In addition, we committed ourselves to fight against global warming.”* (Distributor 1)

*“You must know that supermarkets of a certain size are obliged to give by the Garot law. Our company relies on this for our economic model.”* (Distributor 4).

### *Benefits derived from the adoption of more sustainable business practices*

Cost reductions have been cited as one of the most important benefits when making the decision to invest in sustainable business practices. The cost savings realised depends on both the measure and the firm's position in the value chain (Table 1).

Food producers achieve cost savings primarily through a reduction in agricultural inputs, energy consumption and various other expenses. Indeed, reducing the application of both chemicals and fertilisers provides both a cost reduction and a positive impact on the environment. Similarly, the adoption of improved business practices such as closing cold room doors, reduces energy consumption whilst providing a cost saving.

Cost savings can also be achieved by reusing or recycling the amount of packaging which is used. Every firm has to deal with waste and to pay external actors to arrange for its disposal. Reducing the amount of waste produced will reduce the waste bill. In addition, various waste reduction practices are promoted by the EU, and the firm may receive some financial support.

Food waste can be reduced in store by reducing the quantity ordered to match more precisely the demand or the creation and promotion of new lines such as “ugly fruit and vegetables” to accommodate product that is suitable for consumption but may be misshapen, too small or in some other way defective. Product which is not fit for human consumption may be reutilised for animal feed or recycled to produce methane.

Table 1. Differences and similarities of CE benefits between actors in the food supply chain

CE benefit	CE practice	Producer	Food processor	Distributor
<b>Cost-savings</b>	Sustainable production	Specific to the producers	May be in the bid or specifications	
	Reducing agricultural inputs	Specific to the producers	May be in the bid or specifications	
	Reducing energy consumption		Especially at the food processor and distributor level	
	Reducing packaging		Specific to food processors	
	Food waste	Reusing food waste	Reusing food waste	Reusing food waste and donations
<b>Profitability</b>	Recycling cardboard, plastic			Especially at the distributor level
	Methane, biomass	Especially at the producer level		
<b>Access to new market</b>		Especially at the food producer level		
<b>Image</b>		Image toward all actors	Image toward distributors and consumers	Image toward consumers
<b>Differentiation</b>		Similar, no matter the position		
<b>Government support</b>		Waste management, CE projects	Packaging	Food donations
<b>Employees satisfaction</b>		Similar, no matter the position		
<b>Impact on the environment</b>		Similar, no matter the position		

In France, for food that is approaching its best before date, firms can benefit from a tax exemption by making food donations. Indeed, retail firms of a certain size are required by the Garot law to donate their food waste. Food waste can often be reused by other firms as a raw material. This will lower the waste bill and increase the firm’s profitability as the waste can be sold. By consolidating their waste with other firms, smaller companies can lower the costs of waste disposal. Similarly, recycling pre-sorted waste may allow the company to become more profitable. A number of distributors and retailers had already invested in baling presses to recycle cardboard or plastic which is then resold. Gaining access to new markets is an alternative way of improving profitability. Today, more buyers are integrating an increasing number of environmental elements into their bid specifications and potential suppliers must meet the required specifications. For this reason, most food producers have adopted one or more third party certified quality assurance systems to provide assurances to downstream buyers that they have implemented more sustainable business practices.

*“Yes, today we have GlobalGAP. If you are not certified, you cannot sell. Everyone is certified GlobalGAP.” (Producer 2)*

*“We ask our suppliers in our bidding process if they have a CSR charter. And we will, although it is too early because there are a lot of small suppliers that don’t even know what it is, prefer working with companies that have one. In five years’ time, if the company doesn’t have CSR, we won’t select it.” (Food processor 5)*

For food processors, distributors and retailers, the early adoption of CE practices may provide a competitive advantage, at least until competitors catch up. QA schemes offer the possibility to enter new markets and to gain instant recognition.

The implementation of sustainable business practices and quality assurance schemes greatly enhances the firm's image. The consumers preference for sustainable food products was noted by respondents and most firms understood the importance of communicating their sustainable business practices to consumers. Consumers however, are not always the first target in terms of communication. Indeed, in some cases, companies must first convince experts, government and NGOs. Furthermore, many sustainable business practices have now become normalised and as these no longer provide a point of differentiation, firms seldom talk about them.

Firms that have managed to involve their employees in their environmental actions observe greater pride and commitment from their employees. Working in accordance with company values provides a sense of belonging and improves relationships between colleagues which may increase productivity. Organisations also face less resistance to change. Various strategies were noted by firms to involve employees including the creation of mutual funds for CE projects or brainstorming about green projects with employees.

In some cases, financial support from the government or from public institutions may be forthcoming to assist in the development of sustainable business projects. For example, in the case of biogas projects:

*"You have to know that these projects are not profitable without aid. What brings profitability is aid. [...] The produced electricity is bought at 21 cents per kilowatt, when you, the consumer, buy at 12 cents per kilowatt. So the difference is paid by the government. The duration of the contract is 15 years."* (Producer 5)

*"Besides these aids, there are grants. There is a 20% grant from ADEME. This rate depends of each region. In our case, for an investment of €1.5 million, you have an annual income of €300,000."*

Economic support for sustainable business practices may also come from the European Union.

### ***Barriers to the implementation of more sustainable business practices***

The costs of implementation have been identified as one of the most important barriers to the adoption of CE practices among firms in the food industry. Costs can be significant, especially for large, long-term projects such as bio-gas or sustainable production programs. In these cases, not unexpectedly, some internal justification is required. In large companies, justifying the expense can be both difficult and time consuming. While many CE practices impact on the bottom line by reducing or reusing products or materials, it was often difficult to convince superiors of the potential benefits derived from the implementation of more sustainable business practices (Table 2).

However, one of the most significant barriers is the anticipated pay-back period. Large projects, such as methane production and renewable energy, require more investment and are generally profitable in the long-term. Family-based firms (food producers) are more likely to make these long-term investments as company shareholders are more concerned about the short-term return on investments. Similarly, small companies tend to be engaged in more collective CE actions, while large companies are more inclined to participate in individual projects. For some firms, as many sustainable practices are new and unproven, financial institutions are often reluctant to lend money.

In the short-term, the lack of time was often mentioned. As time is money, many firms could not afford to spend the time. Indeed, where there is a lack of time, firms need to either hire people to find the information, to handle the logistics and to manage the change within the organisation, or to train current employees. However, many of these sustainable business practices are complex and require employees to attain new skills:

*"After all they are not experts. It is been 20 years I have been working on the environment and I discover new things every day. From the beginning, when we train people, we should integrate these problems of CSR and the circular economy."* (Food processor 1)

*"For integrated biological production, it is not chemical. If it was, training would last one hour. We must have yellow panels to detect the insects, train the employees to recognise aphids, we must do preventive measures. It requires a lot of time."* (Producer 3)

Another frequently cited barrier towards the adoption of more sustainable business practices was the resistance to change. This was often considered as the main barrier, for individuals within the firm did not always share the same vision. This resistance from both managers and employees has various causes. People tend not to like change. Indeed, it may be very difficult for someone who has always

worked in a certain way to change their way of thinking. In addition, change managers need to take care of fear, which is common among employees in those cases. Pride may also present an obstacle.

Table 2. Differences and similarities of the CE barriers between actors in the food supply chain

CE barrier	Producer	Food processor	Distributor
<b>High front-costs</b>	Manageable in the long-term	A lot of justification is required for long-term projects	
<b>Small sustainable investment</b>	Not OK if it is costly to implement.		
<b>Time</b>	Complicated	OK if there is a CSR department	Complicated
<b>Human resources</b>	Complicated	OK is CSR department although there might be a training issue	Complicated
<b>Information</b>	All the information necessary		
<b>Technology</b>	Easier if cooperative	May be complicated	Easier because usually centralized
<b>Resistance to change</b>	Every actor is concerned, expect for companies based on CE		
<b>Personal convictions</b>	Every actor is concerned, expect for companies based on CE		
<b>Consumers demand</b>	Affecting both producers and food processors because they need to adapt		Mainly affects distributors
<b>Lack of suppliers</b>	Generally doesn't affect producers	Affects both	
<b>Legislation and government support</b>	Every actor is concerned as supports have been developed at all levels of the food supply chain. However, the administrative burden may be a constraint for companies without CSR department		

The resistance to change is even more complicated when working with people across multiple firms. Collective actions are an integral part of the CE. Thus, managers need to take into consideration differences in the objectives of the various actors involved in a CE project.

*“The biggest barrier is change management. I will give you an example. Imagine we want to set up a deposit system with Leclerc. It is a whole new logistic system to think about. People who need to change work and new jobs to create. This is a new logic that needs to be accepted. It is more complicated when there is more than one actor.” (Food processor 4)*

*“We have constraints from producers every year when we try to push the program forward. It requires negotiations. So, in terms of barriers, for me, it is more about cooperatives and producers that put barriers in place because of the requirements we have.” (Food processor 6)*

Some firms are unable to launch a sustainable business practices because of the lack of suppliers:

*“Today, the recycling system is complicated in France, because what could be recyclable isn't. Today, you can't recycle your steak container. If it can be recycled in Angers, it is not possible in Toulouse. Today, the recycling problem comes from the recycling centres that are not ready. Our company is ready, but not the other economic actors.” (Food processor 5)*

*“Externally, you have a technological issue. It means that today, to encourage circular economy, you have suppliers that don't have the technology and that don't invest quickly enough.” (Food processor 3)*

For other firms, even if the technology may be available, logistics may present an obstacle, more so when there are two or more companies involved. Some are these are time specific, for others, small volumes may present a barrier.

*“There is a logistical barrier. For example, for food waste donation, we let long expiry date products and we take the short expiry date ones. But the problem is these products must be scanned twice: one to guarantee the product is present in the store and one to give the information that it will be donated. Knowing that ten employees may need the machine at the same time, that one machine out of three may be broken, and that it must be done between 5 am and 8 am, the process can become very complicated.” (Distributor 4)*

*“Logistics may become nonsense. If we co-produce in Angers, then we must store it in a place that consumes energy, and afterward send it in high quantity to factories in Lorient, in Boulogne or in the south. Our environmental footprint will be higher than if we had just thrown it away.” (Food processor 2)*

*“Almost all waste is recyclable. The problem with the waste we cannot recycle is we have too small a quantity. It doesn’t interest a recycling company to come to pick up only one pallet. Supermarkets can’t store it. Indeed, they need space, and legislation to store the waste is restrictive.” (Distributor 2)*

The lack of technology may be caused by technical constraints or certain materials are simply too complicated or too costly to produce.

*“We have changed our trucks. I thought electric trucks could be a good idea. But electric vehicles only have a 300 km range. When we go to Amiens, the round trip is around 800 km. How do I do it?” (Distributor 3)*

*“Why aren’t we recyclable today? It is because our plastic is complex. In plastics, you have polyethylene and polypropylene. We use both layers in our containers. However, we need to change to one layer for our product to be recyclable. But this is very complicated technically. It looks simple but it is difficult because the film sticks less, the production chain slows down and there are issues with leakage.” (Food processor 5)*

For other firms, launching a CE project was simply not a priority. Even although the intervention was expected to be profitable, there were other more important things that needed to be done. Other firms cited the lack of interest or enthusiasm from top managers and directors to implement sustainable business practices.

Externally, while there is an increasing demand from consumers towards more sustainable business practices, there is considerable evidence to show that what consumers say and what consumers do can be very different.

*“A consumer may choose this store because his apple comes from Normandie and not Chile. But I doubt someone will change store because he knows that deliveries are done with clean energy.”*

*“Although the consumer doesn’t want plastic any more, we have never sold as many individual containers. [...] Between what the consumer says and what he does, we observe a real difference.” (Producer 2)*

*“Depending on the market, people are more or less sensitive to green practices. For example, when you buy an expensive bottle of whisky, you are not paying attention to the packaging. On the contrary, you want nice packaging, no matter the environmental cost.” (Food processor 1)*

For other consumers there are psychological issues. These issues may be specific to the market, or to the sustainable practices implemented.

*“I think about recycling. If I tell you that the water you drink comes from the Seine, has been recycled, and then treated in a water treatment plant, psychologically, some will think it is dirty, it is not good. This is a real social obstacle.” (Food processor 1)*

*“The only barriers we may have are psychological barriers at the consumer level. For example, certain consumers don’t think it is normal that plants don’t grow in the ground.” (Producer 4)*

Barriers may also arise from either the legislation or the lack of government support. While there are various government incentives to support companies that want to start sustainable projects, for some respondents, this assistance was insufficient. As many sustainable business projects are long-term, government assistance may be too short. Thus, projects may begin and work well, but the assistance will not be sufficient in the long-term to guarantee success.

*“We set up aids, financing programs, that encourage change, which is great. What we lack is medium-term and long-term financial support. [...] For example, the EIT approach has been encouraged over the last years, and now the funds diminish. To have financial support only for one or two years is sometimes complicated, as they are virtuous actions from an ecological point of view but not always an economical one. Some companies abandon the projects once there is no financial support anymore.” (SGO 2)*

For other firms, legislation can present obstacles.

*“Today, we sell our confectionary in bags. The legislation now tells us to change from 12 um bags to 50 ums bags, so that they become reusable. We suffer from the consequences. [...] It is completely insane. How can you prove that someone who bought a 50 um bag will reuse it? This is foolish.” (Distributor 3)*

*“If we have a lot of waste, we become a classified organization for the environment. There are then norms and we can't store less than ten metres from the fences, there are fire equipment to install... It is a real job to store and treat waste. So, depending on the volumes, we are limited.” (Distributor 2)*

## **Implications**

While many CE practices are both easy to implement and beneficial for the firm, others require coordinated action. For example, collective action is invariably required in dealing with both food waste and non-food waste. In most instances, the waste generated by one firm can be used by another. However, initiating and managing these new supply chains can be time consuming and requires collaboration with multiple actors often from outside the industry sector. In facilitating these new relationships, industry organisations may provide the conduit for companies to meet other firms which share the same ideas and to possibly commence business.

However, collective activities can be difficult to initiate as each actor seeks to position itself to gain the greatest benefit. Indeed, personal and organisational culture may impede rather than facilitate collective action. France, for example, tends to be very individualistic. In other instances, legislation may actively preclude or prevent collaboration.

In implementing more sustainable business practices, there are usually multiple benefits, some of which are internal, such as reduced costs, improved profitability or employee motivation and engagement, whereas others are external, such as improved image. It is also important to be aware of the support provided by government. Pre-empting shifts in legislation can provide a first mover advantage albeit that the opportunity to differentiate may be short lived. Communicating efficiently about the firm's environmental activities may give greater legitimacy to the firm and improve customer loyalty. Linking a sustainable story to the brand is an efficient communication tool.

On the other hand, internal communication is essential. Indeed, involving employees in sustainable business activities provides a greater sense of pride, meaning and involvement, which potentially increases productivity. In addition, it is crucial that senior managers are personally committed to CE projects and provide appropriate mechanisms to facilitate employee engagement, thereby reducing any resistance to change.

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