



BULLETIN



FACILITATION OF TRANSPORT AND TRADE IN LATIN AMERICA AND THE CARIBBEAN

Efficiency —a key ingredient towards sustainable supply chains

Introduction

There is an urgent need to improve the performance of supply chains to make them not only more competitive, but also more sustainable. This is particularly important as supply chains are increasingly integrating production processes linking developed, transition and developing economies. Thus, supply chains have to function in different economic, social and environmental, as well as institutional and regulatory, contexts. Given the existing challenges, the goals of future sustainable development, competitiveness and profit, there is a clear link between sustainability and efficiency.

The connection between the functioning of the supply chain and businesses' commercial goals (efficiency) is not always clear, and it can be surmised that the link between efficiency and sustainability is even less well understood or accepted.

Today the supply chain industry is under significant pressure to meet the next delivery window and to ensure that drivers are available to make the vehicles arrive on time. The day-to-day challenges can, therefore, get in the way of making the changes that will bring about more efficient and sustainable global supply chains.

However, more and more often companies are setting sustainability goals themselves, in order to meet external demands coming from a growing number of concerned stakeholders and to stay in business. As a matter of fact, there has been an attitudinal shift towards the importance of sustainability strategies in businesses over recent years. The view that sustainability actions are costly, time-consuming and fail to add value appears to be losing ground, but significant differences still exist between different countries and regions. A majority of today's businesses consider the concept of sustainability to be important contributor to the firm-specific competitive

This *FAL Bulletin* aims to help industry and policy makers see and embrace the direct link between sustainability and efficiency, so that action to make supply chains and businesses more efficient and sustainable can be taken.

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advantage. Furthermore, several companies indicate that the sooner sustainability goals are implemented in the business strategy, the more concrete benefits will be obtained (Haanes and others, 2012).

At the same time, the economic relevance of supply chains is still underestimated by the industry. According to a recent study, 80% of supply chain managers still do not see their supply chain as an enabler of business strategies within their organizations, 55% of respondents do not regard their business's supply chain as a fundamental source of business value and competitive advantage and almost a third (29%) see it as purely an operational function. Finally, almost half (45%) do not believe that their organization's supply chain would deliver increased profitability.¹

Businesses need institutional and regulatory frameworks that push for sustainability and efficiency in the context of competitiveness and economic development. Given the regional and global span of supply chains, business is often done in incomplete, backward-looking and reactive frameworks which are neither complementary nor integrated across borders. These create inefficiencies in logistics and supply chains systems and do not proactively contribute towards improving our collective sustainability.

In short, current challenges to address include:

- Helping the business community understand that sustainability is actually in reach and delivers economic benefits (efficiencies).
- Alleviating the concerns of the companies which may have to compete in a framework where competitors are playing by different rules or standards. This is one of the key dilemmas: a competitor might be able to gain a competitive advantage by acting in a non-sustainable way.
- Determining what short-term actions can deliver long-term economic and sustainability benefits.
- Helping companies “walk the talk” of sustainability.
- Creating legislative incentives which support continuous progress towards attaining sustainability goals and avoid subsidizing inefficiency.

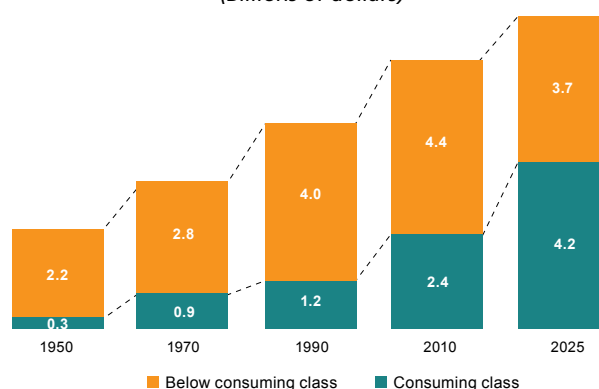
This *FAL Bulletin* aims to highlight a few of the good and simple initiatives and actions and to encourage dialogue between all actors in spreading and enhancing the link between sustainability and efficiency.

1. The future challenges

The continued expanding demand for material mobility and related logistics and supply chain services comes at a cost, particularly in rapidly developing economies. It raises demand for energy, initiates land-use debates, drives increased emissions and exploits natural resources.

The traditional geography of production and consumption is changing. By 2025 the part of the world population belonging to the consuming class will be—for the first time in history—greater than the group living in conditions below consuming class. The global consuming class will have grown by 75% between 2010 and 2025, and most of the population belonging to it in 2025 will be living in the countries today considered as emerging markets.

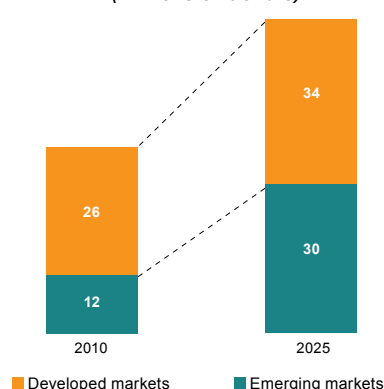
Figure 1
WORLD POPULATION
(Billions of dollars)



Source: The authors, based on H. Kharas, A. Maddison, McKinsey Global Institute (2012).

Note: Consuming class: daily disposable income is equal or greater than \$10; below consuming class: less than \$10; incomes adjusted for purchasing-power parity. Data for 2025 are projections.

Figure 2
WORLD CONSUMPTION
(Trillions of dollars)



Source: The authors, based on H. Kharas, A. Maddison, McKinsey Global Institute (2012).

Note: Estimate based on 2010 private-consumption share of GDP per country and GDP estimates for 2010 and 2025; assumes private consumption will remain constant. Data for 2025 are projections.

¹ Hitachi Consulting (2013), “The Supply Chain Disconnect: 80% of Managers Don’t See Supply Chain as Business Strategy Enabler” (link).



The changes are accompanied by a shift in industrial production; further economic growth and development will therefore change the configuration and scale of supply chains and sustainability challenges.

Given the current growth paradigm, the question is: to what extent can traditional logistics and supply chain strategies be transformed into more sustainable approaches which are ready to cope with future challenges?

But it is also important to know whether the necessary development of regulatory and political frameworks can be supported by industry, so that:

- Resources (land, labour and capital) are used more efficiently,
- The dependency on fossil fuels is curbed,
- The environmental impacts of freight mobility are limited,
- The quality of our logistics services is not jeopardized.

II. Can a common definition of sustainability of supply chains be found?

One barrier to action towards more sustainable supply chains is the magnitude of the debate around sustainability, the enormous number of definitions of it and the relatively technical nature of sustainability measures.

To trace the roots of the definition of sustainability, reference should be made to the Brundtland report (United Nations, 1987), in which sustainable development was defined as “[...] development that meets the need of the present without compromising the ability of future generations to meet their own needs”. In the beginning, however, the major concern was the efficient use of natural resources.

It has been pointed out that sustainability aims to reduce the long-term risks associated with resource depletion, fluctuations in energy costs, product liabilities and pollution and waste management (Shrivastava 1995). The macro-viewpoint includes social, environmental, and economic aspects. Sustainability is thus “a wise balance among economic development, environmental stewardship, and social equity” (Sikdar 2003, p. 1928).

The notion of sustainability is directly linked to the concept of corporate social responsibility (CSR). “Corporate Social Responsibility is the continuing commitment by business to contribute to economic development while improving the quality of life of the workforce and their families as well as of the community and society at large.” (WBCSD 1998, p.3). Despite the fact that CSR is often seen as a credible strategy, there is still an issue of inconsistency between what is said to be done and what is actually done.

Several companies are proactive in establishing goals, but when it comes to actual actions taken the results come off as mediocre, if not poor (Kiron and others, 2013).

Interviews with industry and reviews of the literature clearly demonstrate that no agreement on the actual definition of sustainability in point of fact has been reached, despite its widespread presence in political and industry-sector discussions.

While there are many definitions of sustainability and even of what a supply chain is, a clear notion on what sustainability is necessary to achieve maximum benefit across entire industries and country borders.

Simplifying existing measures and linking efficiency and sustainability could encourage more people and organizations to take action today. Even if they are small actions to start with, if every player in the supply chain saved 10% of its fuel consumption, the overall savings would be significant.

Sustainable supply chains integrate issues and flows that extend beyond the core of supply chain management such as: product design, manufacturing, by-products produced during product use, customer service, product life extension, product end-of-life, and post-disposal disposition of products. Sustainability is reached by the integration of a company’s social, environmental, and economic goals through the systemic coordination of key inter-organizational business processes to improve the long-term economic performance of the individual company and its value network. (Carter and Rogers, 2008).

III. Removing the confusion —the essence of sustainable supply chains

Common themes and principles are found when studying the definitions of businesses² and international organizations:

- Sustainability includes three dimensions: economic, social and environmental.
- Sustainability is not a phase or a fashion, it is a necessity.
- It is equivalent to being competitive in the long term.
- Sustainability must be measurable (benchmark).
- It requires proactive approaches.
- Sustainability can only be reached when public and private sector co-operate.
- Sustainability means that organizations need to reach beyond their organizational boundaries (coordination; we cannot do it alone).

² Survey amongst F&L member companies.

It is also generally recognized that to reach efficient, sustainable and coordinated supply chains, industry needs:

- Measurable outcomes.
- Commitment from the boardroom to the shop-floor.
- Effective and predictable public administration and policies.
- Collaboration.
- Corporate Social Responsibility (CSR).

To achieve results, three groups of actors (public and private) must converge: the logistics sector (how we do business), society (how we consume) and legislators (how we motivate, support, regulate). In this sense, to achieve global sustainable growth in a resource-constrained world, it must be assumed that business takes responsibility to decrease the corporate footprint by using our resources in the most efficient way throughout our supply chains.

The efficiency-sustainability link/sustainability-efficiency link in supply chains can be based on the definition of efficiency. The Oxford Dictionary defines efficiency as “a measurable concept which relates to the input/output ratio of any task. It is defined as achieving maximum productivity with minimum wasted effort or expense (of a system or machine).” (Oxford Dictionaries, 2014). Efficiency, thus is complementary to the definition of sustainability. There is a strong case for the supply chain actors to improve efficiency and so advance sustainability, and whilst improving sustainability to progress efficiency.

IV. The perception of sustainability in supply chains —evidence from Brazil³

How sustainable companies operate depends on the environment in which they do businesses. A combination of the economic, political and social dimensions of the country forms the conditions for sustainable development. Traditionally, western European conditions are seen as favourable, considering a strong involvement of governmental institutions, which shape the corporate responsibilities of a company (Carbone and others, 2012). However, some emerging economies are starting to catch up and increase their commitment to sustainability at higher rates than the developed western Europe. This trend can be explained by the need to deal with environmental degradation in developing areas (Haanes and others, 2012). Due to changes in the geography of trade, new economic growth centres are relocating to developing countries. This entails increased interest in supply chains that involve trade with and between emerging markets, and relevance

of sustainability issues that arise as a consequence of the growing and changing trade flows (Wilmsmeier, 2013).

In general, sustainability practices in supply chains are considerably segmented, often targeting only particular aspects of sustainability. Among the supply chain actors, shipping lines usually demonstrate a more comprehensive approach and some supply chain actors are proactively trying to influence other stakeholders, by increasing customers' awareness of sustainability through commercializing the concept of sustainability. By way of example, companies expect suppliers and shippers to take major responsibilities for sustainability issues. Certification schemes are perceived as a way to facilitate integration of sustainability in the companies' strategies or to fulfil customers' demands.

Empirical data show that ports approach sustainability differently due to the role that they play in the supply chain network. They have to provide efficient infrastructure and effective services to handle the flows of cargo in a sustainable way. By way of comparison the port of Gothenburg, Sweden, covers both aspects, efficiency and sustainability, working towards the port's expansion and at the same time controlling environmental impacts of related transport flows, while Brazilian ports are still in the process of overcoming operational issues, such as port congestion and technological change, which makes that sustainability issues (i.e. environmental and social aspects) only play a limited role.

Sustainability is not commonly measured and the results are not widely distributed in Brazil, unless the company is an international player and thus has to comply with internationally set standards. In Brazil there are few incentives for measuring sustainability and publishing data, a situation which might be explained by the lack of demand from customers and government.

In Brazil most actors named profitability as a first and foremost criterion for being sustainable, thus the economic dimension of sustainability stands out. This is coherent with Carroll's model (Carroll, 1991), which has economic responsibilities as the base for sustainability. (See figure 1). The economic dimension is the root of efforts as shown in the following statement by a supply chain manager: “One can work around this [sustainability], talk about one thing or the other. But even if you are the world champion of ethics and environment and act nice to everyone, you will die [as a company] if you do not earn money”.

As the Brazilian economy is at an emerging stage, cost orientation among companies is a main priority, which automatically leaves less room for other dimensions of sustainability. Even in the academic world in Brazil, the word “sustainability” is associated mostly with economic growth.

³ Results are based on qualitative interviews with 22 supply chain actors in Brazil and Europe in May 2014.

Companies often limit sustainability to the reduction of negative environmental impacts. Brazilian interviewees stressed that legal responsibility for environmental violations follows the economic dimension and thus, companies have to comply with these laws in order to proceed to the next stage of sustainability. Hence, the regulative aspect is the next layer after the economic. Social aspects often seemed to be neglected, which indicates that Brazil is on the second stage of the four-stage sustainability pyramid (Carroll, 1991) (see below), mainly coping with institutional obstacles.

**Diagram 1
SUSTAINABILITY PYRAMID**



Source: Authors, based on Carroll, 1991.

The statement of Bretzke and Barkawi (2013, p.3), “You cannot design what you cannot define”, serves as an overall explanation, as the definition of sustainability differs between actors and the companies with more comprehensive understanding of sustainability had more efficient strategies towards reaching sustainability, including clear measurements.

Thus, the understanding of sustainability plays a significant role in how the concept is dealt with. “...the more typified and rationalized the concept of “sustainability” becomes, the greater the likelihood that some of its components will be accepted and legitimated by action in society, including business organization” (Jennings and Zandbergen, 1995). Sustainability should be tangible in order for people to grasp the concept and start to care about it. If people have a concrete understanding of sustainability with its benefits as well as consequences of neglecting it, they will be more motivated to comply with legislation and implement actions towards it.

Stakeholders

The reasons for different understandings of sustainability can be further explained from a stakeholder perspective. Freeman’s (1984) argumentation of this theory is

underpinned by his statement that the company is not fully self-sufficient but dependent on the external as well as the internal environment for further development. Companies should consider stakeholders’ interests before making strategies. This is done with different degrees of enthusiasm. With the exception of shipping lines, supply chain companies are quite passive in formulating strategies in collaboration with stakeholders, and often responsibility for implementation is passed on to other relevant actors. This leads to the assumption that sustainability is not that important after all. Almost all respondents mentioned that government and customers have by far the greatest influence on corporate actions and strategies regarding sustainability. Governments should set the minimum legislative requirements and customers should determine the direction taken by sustainability actions. In Brazil, customers’ demands are not as strong as in Western Europe, which means that sustainability actions are not very strong. The government is therefore the most important stakeholder for Brazilian businesses.

By way of example, stakeholders’ influence depends on how a port is run. Generally sustainability strategies are developed in accordance with legislation in a situation in which private or concessioned ports can expect rather considerable external pressure. Customer demand drives sustainability through high customer awareness and interest in sustainability, which is often not yet embedded in society in emerging economies.

Institutions

Institutions can be categorized as regulative, normative and cognitive (Scott, 1995). Regulative institutions are found to be dominant in respect of sustainability actions. By way of example, shipping lines behave in a rather similar, proactive way as they must face up to pressures placed on them by the same external global laws and regulations. Consequently, international ocean carriers work more extensively with environmental issues than other (national) actors in the supply chain.

Regulative institutions set rules, monitor compliance or punish or incentivise behaviour depending on circumstances. Brazil would appear to comply when it comes to regulations for the environment, but Brazilian port representatives and other supply chain actors claim that follow-up procedures are weak and poorly regulated overall. The lack of effective monitoring and penalization systems leads to low levels of compliance with legislation. This partly explains why the country has a long way to go in ensuring transparency. Terminals at ports are obliged to present environmental reports, but do not do so on a regular basis as drawing up reports is costly



and they face no sanctions if they fail to publish them. Moreover, little social legislation, with the exception of general employment regulations, is enforced in Brazil in comparison with western European countries.

Normative aspects shape the behaviour of the company as a reaction to values and social obligations that are common to a particular environment. Brazilian companies are not generally expected to behave in a public-spirited manner, so sound social practices are not widely implemented. However, if a company operates within an industry which has a significant environmental or social impact it should be expected to implement certain practices with a view to improving its behaviour.

Finally, cognitive aspects involve the business perspective, which is a function of a company's primary purpose, namely to be financially secure and bring profit. The importance of this pillar can be seen in the prioritization of sustainability dimensions since companies always value economic aspects when determining sustainability efforts.

Business context

Another aspect that might suggest an explanation of different approaches to sustainability is the environment the company operates in. As a primary factor, the country's economic development affects performance and, as a secondary, the industry and type of business have a significant influence.

Different economic systems give rise to different priorities in respect of sustainability. For example, Europe leans towards an environmental focus, unlike the United States where a rather philanthropic view dominates. In Latin America the economic climate matters most. The United Nations (2007) extend this theory by claiming that

in emerging markets, such as Brazil, the importance of sustainability is growing and there is an urgent need to address environmental degradation, but due to the focus on growth, priorities such as the environment are not taken into account in the current situation.

Furthermore, it is fair to expect that the scope of sustainability practices will depend of the size of companies. As Inyang (2013) has argued, major international corporations are seen in sharp focus since they both have potentially the largest budgets and are at greatest risk of public criticism. They thus need to take a relatively strong proactive stance in this regard. The largest companies interviewed had the most developed sustainability strategies. Small and medium-sized companies are expected to have a more limited input in such strategic development.

Another important aspect is the differences between industries. Sustainability performance can vary considerably among industries, and stakeholders present the greatest pressure (Carbone and others, 2012). Supply chain actors were found to be rather defensive in their efforts towards sustainability by obliging suppliers to conform to sustainability requirements. Still, what the customer asks for is what will ultimately be delivered. One might conclude that if a customer does not ask for sustainable products, there is little incentive for the company to develop sustainability. Further, the smaller the scale of businesses, the more isolated from each other the three main sustainability aspects become (Kechiche and Soparnot, 2012).

To conclude, there is a strong interrelationship between institutional frameworks, stakeholder relationships and the business context when it comes to perceptions of sustainability.

Social and institutional aspects

The perception of time and the value of the future differ from country to country. In a cultural context, where the perspective of time focuses on the immediate future, it is difficult to introduce a long-term perspective into decision-making, particularly if the environment for such decisions has in the past been volatile and often uncertain. Because of that, it is difficult for people to understand sustainability due to its rather long-term orientation, particularly when profitability today is perceived as the most important matter.

Social aspects, in terms of wage differences, are also related to the discussion of sustainability in the sense that if low salary levels and temporary contracts contribute to short-term decision making since such conditions give rise to instability and uncertainty. For developing countries,

the most crucial issues have to be dealt with before sustainability aspects such as proper labour conditions and environmental regulations can be established. Therefore, time perceptions clearly influence sustainability approaches.

Another factor which reaches much further than sustainability is governance. Interviews with Brazilian supply-chain actors revealed the lack of integration of and synchronization between different government bodies. Discussions also raised the issue of a certain lack of specialized port-sector knowledge among port authorities, resulting in an unequal dispersion of resources. For the port, such lack of knowledge is specifically harmful since insufficient organization leads to problems such as congestion and stagnating innovation. In the end, this may result in hampered growth since these bottlenecks slow trading procedures considerably. By way of example, none of the Swedish respondents emphasized any serious managerial issues in the Swedish government.

The prevailing short-term vision and poor management affect Brazilian perceptions of sustainability and implementation of it in the country, and since the public sector vision in transport, infrastructure and logistics also requires further integration and long-term perspectives, it can be said that the sustainability of supply chains is not currently in the mainstream of discussions.

The less comprehensive understanding of sustainability in Brazil leads to a decreased demand for it. Many people and companies treat sustainability as a costly and complicated concept, and therefore not a concern of theirs. In decision-making, the cheapest options are often still preferred over sustainability.

Beyond supply and logistics chains, a number of coordination issues become relevant, such as the integration of the various national legislations and regulatory frameworks by including such aspects as environmental standards.

V. The need for benchmarks

Benchmarks are a key driver in modern life's focus on process improvement. **Widely available, simple, pragmatic and accessible benchmarks** are necessary to enable many supply chain practitioners to become engaged and improve not only the efficiency but also the sustainability of supply chains. Benchmarks must be like-for-like measures to engage users to compare themselves and measure their own performance or there is an excuse for inaction.

There are various well-known initiatives, including, for example, the Global Reporting Initiative (GRI). While a general adaption of such standards can be used for transport and logistics, the measures they require are often bureaucratic and difficult to fulfil for many companies.

Benchmarks can be straightforward for different elements in the supply chain but need to encompass all areas of sustainability, including economic, social and environmental dimensions. By way of example, benchmarking energy efficiency reveals the potential for simultaneous improvements to economic and environmental performance.

Business should feel confident about innovating and trying new ideas as it is often the case that imaginative solutions can solve environmental challenges such as greenhouse gas emissions, pollution and congestion. Occasionally, overregulation can prevent innovative solutions from appearing. It should not be up to the legislator to decide what is feasible but rather the reverse.

VI. Small step from measuring efficiency to measuring sustainability

While the above-mentioned challenges exist for supply chains in different economic contexts, active work is already under way within many businesses who are leading the way in all areas of corporate social responsibility (CSR), energy efficiency and environmental standards. There

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