Efficiency - a Key Ingredient Towards Sustainable Supply Chains

Sustainability for long term competitiveness and profit

Position Paper on Efficient and Sustainable Supply Chains
presented to International Transport Forum's Annual Summit of Ministers
in Leipzig on 21 May 2014

The European Freight and Logistics Leaders' Forum and
The Economic Commission for Latin America and the Caribbean

Table of Contents

Introduction

The European Freight and Logistics Leaders' Forum (F&L) in co-operation with the United Nations Commission for Latin America and the Caribbean (ECLAC) is convinced that there is an urgent need to improve the performance of supply chains to make them more sustainable. This is particularly important as supply chains are increasingly integrating production processes in developed, transition and developing countries. Thus, supply chains have to function in different economic, social and environmental, institutional and regulatory contexts.

Given the existing challenges and the goals of future development, competitiveness and profit, a clear link exists between sustainability and efficiency and vice versa.

Every day we as supply chain practitioners experience the challenges of being efficient in logistics operations in our own businesses and the wider supply chains as well as in the institutional contexts we work in. The aim of this paper is to help other practitioners see and embrace the direct link between sustainability and efficiency so that action can be taken to make more efficient-sustainable supply chains happen. This has benefits for everyone involved.

Not everyone can see a clear connection between their supply chain and their business commercial goals (efficiency) and so we surmise that the efficiency - sustainability link is even less well understood or accepted.

"80% of supply chain managers 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."

"Almost half (45%) did not believe that their organization's supply chain would deliver increased profitability" [1]

We understand the huge pressures on supply chain professionals today - to meet the next delivery window, to ensure the drivers are available to make the vehicles arrive on time - and we know that the day-to-day can get in the way of making the changes that will bring about more efficient-sustainable global supply chains.

Therefore we propose a number of simple steps that can be made today.

[1] Hitachi Consulting (2013), "The Supply Chain Disconnect: 80% of Managers Don't See Supply Chain as Business Strategy Enabler" (link)

Active work is already underway within many businesses who are leading the way in all areas of corporate social responsibility (CSR), energy efficiency and environmental standards, but there is still ample scope for most businesses yet to see the sustainability - efficiency link and to “walk-the-talk” of sustainability.

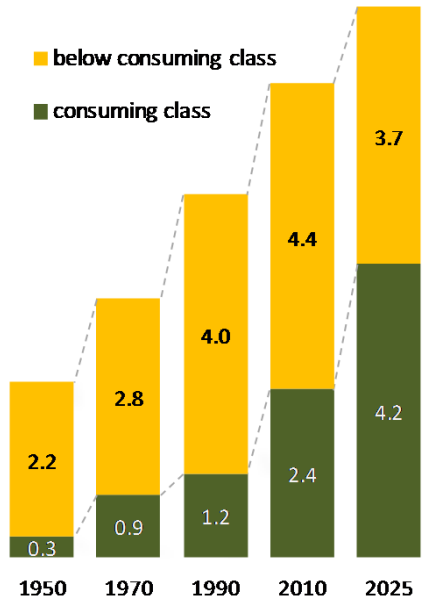
On the other hand businesses need institutional and regulatory frameworks that push for sustainability and efficiency in the context of competitiveness and economic development. Given the regional and global spanning of our supply chains we often have to do business in incomplete, backward-looking and reactive frameworks which are not complementary across borders. These create inefficiencies in logistics and supply chains systems and do not proactively contribute towards improving our collective sustainability.

This paper aims to spread a few of the good and simple actions and to encourage more dialogue between all actors in spreading and enhancing the sustainability-efficiency link.

We ask that action is taken on creating simple benchmarks that are easily accessible and relevant. We do this in the knowledge that benchmarking raises the performance bar - the old adage “if you can measure it you can manage it” holds true.

The Future Challenges

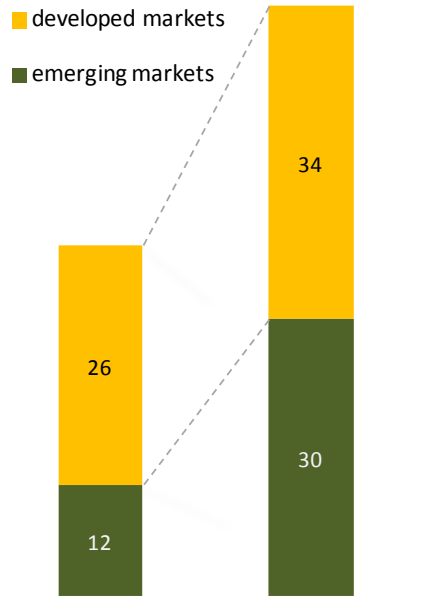
Economic development is traditionally accompanied by a transformation of mobility which is a key requirement for both emerging and "developed" societies. Logistics is inherently linked to the evolution of mobility because of the need for cargo transport. But the ever-expanding demand for material mobility and related logistics / supply chain services comes at a cost. It raises demand for energy, initiates land use debates, drives increased emissions and exploits natural resources.



Source: Authors, based on A. Maddison, 2012)
Notes: consuming class: daily disposable income is equal or greater $10, below consuming class, less $10; incomes adjusted for purchasing-power parity. 2025 projected data

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, and the global consuming class will have grown by 75% between 2010 and 2025. Additionally, most of the population belonging to the consuming class in 2025 will be living in the countries today considered as emerging markets.

The changes are accompanied by a shift of industrial production; economic growth/development will lead to a new configuration and scale of supply chains and sustainability challenges.



Source: Authors, based on A. Maddison, 2012)
Notes: Estimate based on 2010 private-consumption share of GDP/country and GDP estimates for 2010 and 2025, assumes private consumption will remain constant. 2025 projected data

Given the current paradigm of growth, the question is "how far can we transform traditional logistics and supply chain strategies into more sustainable approaches which are ready to cope with future challenges?"

But also, "how can we proactively support and drive the necessary development regulatory and political frameworks?" so that we can:

- Use our resources (land, labour and capital) more efficiently?
- Curb our dependency on fossil fuels?
- Limit the environmental impacts of freight mobility?
- Ensure we do not jeopardize the quality of our logistics services?

Too Much Noise Leads to Inaction

In our research for this paper we found that one barrier to action is the large amount of debate around sustainability, the enormous number of definitions in this area and the relatively technical nature of sustainability measures (for example Mg CO^2 per KM etc). But at the same time we found that by simplifying the measures and linking efficiency and sustainability together we hope to engage more people and organizations in taking action today even if they are small actions to start with - if every player in the supply chain saved 10% of their fuels used, the overall savings would be significant.

Finding a Common Definition of Sustainability

One reason for confusion/inaction has been the multiple definitions of sustainability which exist. Interviews with industry as well as literature reviews clearly demonstrate that since the sustainability concept became popular in 1987[2], no agreement on the actual definition of sustainability has actually been reached.

While there are many definitions of sustainability and even of what a supply chain is, we must decide what sustainability is and the correct level for the common definition so that we can begin to **achieve maximum benefit across entire industries and even country borders.**

Sustainability is generally defined as using resources to meet the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987; Daly and Cobb, 1994) and with this sustainability aims at reducing long-term risks associated with resource depletion, fluctuations in energy costs, product liabilities, and pollution and waste management" (Shrivastava 1995, p. 955). The macro-viewpoint includes social, environmental, and economic aspects. Sustainability thus is "a wise balance among economic development, environmental stewardship, and social equity" (Sikdar 2003, p. 1928).

Sustainable supply chains must 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, p. 368).

Too many – often contradictory – definitions mean that our sustainability discussions are frequently not productive. Even in our own research, we obtained ten different answers from ten different business leaders (overleaf):

[2] United Nations Conference on Environment and Development (UNCED)

"Sustainability considers social, environmental and economic aspects. *Corporate sustainability* refers to efforts a company makes to conduct business in a socially and environmentally responsible manner. It includes various elements like sustainable development, corporate social responsibility (CSR), stakeholder concerns and corporate accountability.

Sustainable supply chains are solutions that improve the short and long-term economic and environmental performance while also taking social impact into consideration. They are reliable, safe and secure, covers risk management and value creation and by doing so they contribute to society development and welfare".

Sustainable supply chains **maximise the total value delivered at optimized impact** to its surroundings.

We understand sustainability as *thinking and acting in terms of generations* – as we have done for more than 150 years.

"Sustainable supply chains today enable future generations to make their own operating decisions about how their supply chain should run, that are dynamic not only in response to business and customer need and that continually drive efficiently end-to-end to reduce cost now and in the future. For the whole supply chain to be efficient and sustainable there must be year-on-year improvement based on *clear KPIs and benchmarks".*

"We have a challenging *'Sustainable in a Generation'* approach to operations which includes eliminating fossil fuel energy use, and greenhouse gas emissions, minimizing our impact on water quality and availability and mitigating impacts of waste by 2040.

The company is pursuing *absolute reductions* even when production volumes increase. Goals are more challenging than the most ambitious local, regional or national targets. Four strategies in place are: operational efficiency, capital efficiency, new technology, renewable energy.

All targets are based on best-available scientific data. We take it seriously – the sustainability targets are heavily influencing our design, build and management of operations".

"We find ourselves at the beginning of the Century Of The Environment, whether we want it or not. Everyone considering himself a realist during this century will find himself forced to justify his behaviour in the light of what he has been doing for the preservation of the environment" (Ernst Urlich von Weizsaecker).

The question is: shall we sit in the back seat and focus on defending / optimising ourselves? Or shall we lean forward to the steering wheel and try to drive that van? If we want to drive – as we owe our planet – then we need to do more and this statement fully applies to our position.

A sustainable supply chain takes into account the *next generation* and does not jeopardize their future. Considering that **both** the *environment and the economy are necessary to the society*:

- The sustainable supply chain leaves necessary natural resources available for the generations to come (which does not implicate a Malthusian approach).
- Sustainable supply chains offer companies the opportunity to play to their competitive advantage by letting them be efficient (diversity of the equipment used, diversity of organisations). Administrative barriers, unnecessary standardisation are banned. Creativity and investment are encouraged.
- A balanced approach is needed between protection of the environment and protection of economic activities, with a protection of ecological areas. The principle of compensation must be eligible for economic activities, taking into consideration their "economic environment and economic sustainability".

Removing the Confusion – Pure Definition of Sustainability

Common Themes and Principles in Sustainability Definitions

We must meet the needs of the present generation without compromising the ability of future generations to meet their own needs and make their own decisions. Common themes and principles are found when studying the definitions of responsible businesses[3] and international organisations:

- 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 (benchmarked).
- It requires proactive approaches.
- Sustainability can only be reached when public and private sector co-operate.
- Sustainability means that organisations need to reach beyond their organizational boundaries (co-ordination, we cannot do it alone).

To reach efficient, sustainable and co-ordinated supply chains the practitioner needs:

- Measurable outcomes;
- Commitment from the boardroom to the shop-floor;
- Effective and predictable public administration and policies;
- Collaboration;
- CSR (corporate social responsibility).

Finally, three actor groups must converge: **the logistics sector** (how we do business), **society** (how we consume) and **legislators** (how we motivate and support). In this sense, to achieve global sustainable growth in a resource-constrained world, we must assume business takes responsibility to decrease the corporate footprint by using our resources in the most efficient way throughout our supply chains.

Current Challenges to Solve

Our survey of F&L members[3] identified several key questions and challenges that need to be solved to achieve sustainable supply chains:

1. Failing to help people understand that sustainability is actually easy and delivers economic benefit (efficiency).
2. What happens if we have to compete in a framework where our competitors are playing by different rules / standards? This is one of the key dilemmas – a competitor can act in a non-sustainable way and undermine you.
3. We must clarify what short term actions can deliver long term economic and sustainability benefits.
4. How to commit practitioners to do what they say they will do and “walk the talk”.

[3] Survey amongst F&L member companies

5. Markets may be distorted by subsidies from the public sector.
6. Legislators need to create incentives to support continuous improvement towards sustainability goals.

The Efficiency-Sustainability Link / Sustainability-Efficiency Link

The link between efficiency and sustainability in supply chains can be clearly justified.

> **Efficiency is 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) –** *The Oxford Dictionary*

Efficiency is complementary to the definition of sustainability. There is a strong case for the supply chain practitioner to improve efficiency and so improve sustainability, whilst improving sustainability to improve efficiency.

- **An excellent example appears in the Harvard Business Reviews ideas cast:**

  "UPS in America decided to stop taking left turns, because when you cross the traffic you have to wait and idle the engine. It sounds crazy but by using widely available route planning tools to avoid left turns, UPS saved 3m gallons of fuel and reduced insurance costs – because crossing traffic is risky and then more accidents occur[4]."

  So by using widely available route planning tools, efficiency is delivered by reduced fuel and insurance costs, sustainability is achieved through reduced emissions from the vehicles and the business becomes a better citizen by reducing traffic risks for their staff and the public. There is growing evidence that collaboration with customers also improves customer satisfaction.[5]

- **Nestle[6] - Smarter Distribution**

  More than 125,000 tonnes of Nestlé products are transported to customers from our factories and distribution centres every day. They found that smarter route planning and shifting to different modes of transport can have a marked positive impact on greenhouse gas emissions, noise and road congestion. In Poland they decreased GHG emissions by a

[4] "Green Innovation - Wacky Ideas", "Green to Gold" by Andrew Winston.

[5] CHEP transport collaboration programme

[7] Mars Inc Principles in Action Summary 2012

[6] Nestle.com

fifth in 2013 by relocating one of their distribution centres. The move also lowered distribution costs by a quarter and cut 60 km off each domestic delivery journey. Across Europe in 2011 Nestlé achieved a reduction of more than 5,000 tonnes of CO^2 emissions by switching from long-distance road transportation to rail or short-sea shipping.

- **Mars Inc.**[7]

"Our Five Principles foster a culture of ethics and integrity that makes us proud to be Mars Associates. With a business that continues to grow globally, often in places where cultural norms may differ and regulations may be unlike Mars' standards, it is our Five Principles that serve as our guide."

The Five Principles are:

1. Quality
2. Responsibility
3. Mutuality
4. Efficiency
5. Freedom

In the United States, Mars Petcare's supply chain operations and commercial teams collaborated to make delivery of pet food products more efficient. Their work saved 100,000 gallons of fuel and US$1 million per year, while reducing GHG emissions by 2 percent.

- **Procter and Gamble – 2013 Sustainability report**[7]

P&G is the largest consumer packaged goods company in the world. "Our size presents us with the responsibility to operate sustainably and use resources efficiently. It also offers us the opportunity to develop sustainable innovations that make every day better for the planet, and for the people we touch — whether that's our suppliers, retail partners, consumers, or employees."

- **Bavaria / Heinz / Mars / Samskip – Converting 15,000 Loads to the "Blue Road"**[8]

This project took 15,000 containers from the road and shipped them by barge from loading locations (Elst, Lieshout and Veghel) to the Port of Rotterdam short sea terminal. Benefits:

- No extra cost over using road.
- 1.2 kg of CO^2 saved per move.
- Measurable reduction in A15 congestion with 10,000 truck moves, particularly in mornings.

[7] P&G Sustainability report 2013

[8] Presentation at F&L Event Rotterdam November 2013, presentation on request

Transaid[9]

Western Europe focuses driver training on efficiency and sustainability benefits but elsewhere in the world there is a need for driver training to save lives and associated social and economic costs. In Africa there is a shortage of skilled bus and truck drivers. Poor infrastructure, badly maintained and overloaded vehicles and lack of legal enforcement all contribute to the increasing death toll. Commercial vehicle drivers in parts of Africa can sometimes spend only four minutes behind the wheel before taking to the road as drivers. With such limited resources for training, it is no surprise that traffic collisions are the third biggest cause of premature death in Africa after HIV/AIDS and malaria. In fact, African men aged between 15 and 34 are more likely to die in road collisions than from disease.

Transaid established its flagship road safety programme *Professional Driver Training Project* in 2008 to tackle these dramatic statistics challenges. To date more than 3,500 PSV and HGV students have received their training and a brand new bus and truck driver training curriculum have been developed and approved at the government legislation level in Tanzania, with the PSV driver training curricula being signed off and mandated as national standard.

Country	Estimated road traffic death rate per 100,000 population*	Gross national income per capita*
Tanzania	22.7	$530
Uganda	**28.9**	**$500**
United Kingdom	3.7	$38,140
Zambia	23.8	$1,070
***WHO Global Status Report on Road Safety 2013**		

Direct Rail Services[10]

Working in partnership, DRS and Stobart Rail combined road and rail capabilities to create a tailor-made solution for Tesco. The service provides a highly efficient distribution across the UK from Tesco's Daventry depot.

LESS CO^2 for a Better Environment

As a responsible retailer, Tesco placed a high priority on meeting their environmental obligations. *"This new service is part of our ongoing commitment to be zero carbon by 2050," said Nigel Jones, Tesco's UK Logistics Director. He emphasises that "utilising rail services allows us to transport products across the country in the most sustainable way, taking thousands of lorries off the road each year and reducing our carbon emissions. In addition to transferring goods from our central depot to other points for distribution to the stores, the trains will also return to our depot with goods from our key suppliers making the service even more efficient"*.

[9] References page 21

[10] References page 21

Switching to an intermodal delivery solution is set to save an estimated 26 million lorry miles every year, with a correspondingly dramatic reduction in CO^2 as the full range of intermodal services come online. On average, each rail journey takes 77 heavy goods vehicles off the UK's already congested roads. This results in dramatic fuel savings and can reduce CO^2 emissions by up to 80% depending on the route.

Small Step From Measuring Efficiency to Measure Sustainability

Good practice in business is to measure key performance indicators such as sales, costs, resource usage etc. In many cases business are measuring these KPIs and most of them are related to efficiency – but they also measure sustainability for example, fuel use, empty mileage.

- A business can only compare itself when it has measurements to use.
- Many measures already exist which focus on efficiency. This is also sustainability.
- Measurement is the first step, but then it is necessary to compare against the benchmark (like-for-like measurement).
- There may need to be government involvement in good like-for-like measure.

The Need for Benchmarks

Benchmarks are a key driver in modern life of process improvement. To enable more supply chain practitioners to become engaged in improving their efficiency and sustainability, there is a need for simple easy-to-access benchmarks.

Benchmarks can be straightforward for different elements in the supply chain but they do need to be established for all areas of sustainability, covering the economic, social and environmental dimensions.

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

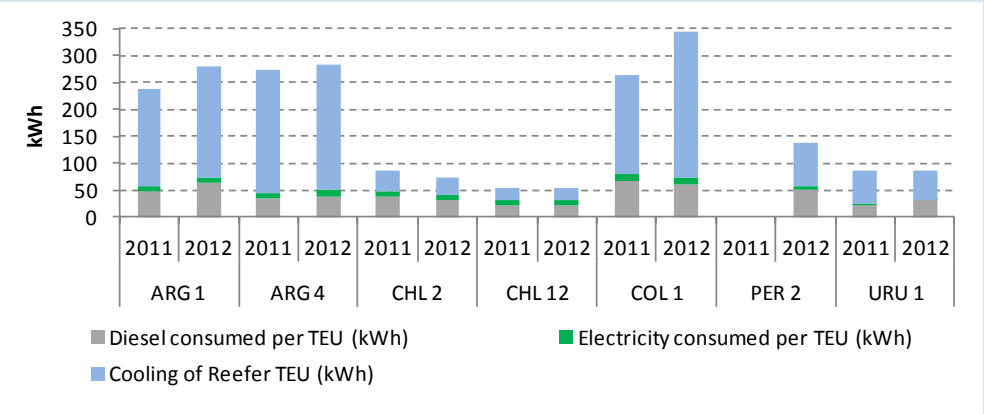
This example shows how benchmarking energy efficiency reveals potential to improve economic and environmental performance:

Example: Benchmarking energy consumption per reefer TEU in container terminals

Supply chains are changing not only in terms of their geography, but also their structure.

One relevant sector is reefer trades which have undergone a significant expansion in volume. The sector's supply chains are diversifying into chilled, controlled atmosphere and frozen cargoes, shifting in terms of their geography (growing importance of South-South links), and moving a greater variety of fresh produce.

These changes have highly relevant implications for energy consumption in supply chains and quality control (traceability, monitoring etc.). In Latin America evidence exists that these reefer trades make up over 60% of energy consumption in a container terminal where the overall energy consumption of that terminal is equivalent to the energy consumption of a region with 600 thousand inhabitants.



Source: ECLAC DRNI, 2014

Creating A Better Dialogue

Creating a better dialogue means improving the chances of better decisions for the future. However, as is always the case, there is much that is yet to be done. We need to start cooperation towards improving efficiency of operations, and regulatory and institutional frameworks, based on the knowledge that:

1. Efficiency makes us more sustainable.
2. Sustainability can make us more competitive - but for that we need a level playing field in global supply chains (subsidies, competition, regulations).
3. Everyone involved in the global supply chain needs to be engaged in the efficiency and sustainability journey.
4. Industry leaders and governments need to show that achieving sustainability can be easy and has a direct link with efficiency.
5. Sustainable business requires good reporting. Benchmarking raises performance over time and across sectors.
6. Existing initiatives for global supply chain benchmarking are important building blocks but need to be relevant and executable for supply chain practitioners.
7. Benchmarks must be transparent, factual and concrete.
8. Small steps need to be celebrated as much as the major projects.
9. The ongoing and future dialogue for sustainability and efficiency needs to be conducted within and across organisations at a local and practical level.

The reliability and sustainability of supply chains is dependent on the facilitation of international trade and services not only in developed countries but increasingly in developing countries. Thus issues like security (e.g. asphalt piracy), safety (e.g. road safety and standards) and institutions (e.g. bureaucracy at border crossings and customs) significantly affects the reliability of supply chains. Thus there are emerging questions about how the prevalent challenges can be addressed and solved.

As social and economic conditions in the countries of origin and destination are main drivers of these challenges, it might be relevant to discuss how the private sector can contribute more to improve these conditions and in what way already implemented practices are addressing these challenges, especially in developing countries.

Practical Results from F&L Members

Action	Measurement	Results	Area			Term		
			Social	Environment	Economic	Short	Medium	Long
Collaborative Transportation[11] - Starting with network analysis and finding logistics synergies, the programme aims to complete transport loops and reduce empty miles.	• Km under collaboration • Cost savings • CO^2 reductions	• Successful collaboration with more than 81 partners. • 2.88 million kilometers across network each year has removed 2,340 tonnes of CO^2 emissions. • Cost reductions. • Reduced fuel. • Reduced CO^2 emissions from fleet. • Opportunity for CSR reporting.		X	X	X	X	X
Efficient transport systems are built on intermodal system thinking - utilising the advantages of each mode and combining them in an optimal "seamless" way which optimizes cost efficiency and environmental impact. Information technology plays an important role.	Focus on developing the system in collaboration with partners.	• Improve reliability. • Reduce costs • Reduce environmental impact. • Environmental impact.		X	X		X	X
Equip warehouses with environmentally friendly technology eg LED – light concepts, insulation, use of solar/ photovoltaik, use of rainwater, heat recovery, use of wood for bearing structure…		• Reduced energy consumption. • CO^2 reduction • Cost reduction.		X	X			X
Manage unpredicted deviations from established supply chain setups in a structured way by using predictive information and management tools.	Impact on the overall organisation and performance of supply chains.	• Improve efficiency by shorter reaction times. • More precision = better customer service. • Less cost and environmental impact.		X	X		X	

[11] CHEP transport collaboration programme

Action	Measurement	Results	Area			Term		
			Social	Environment	Economic	Short	Medium	Long
Reusable Packaging/Pooling[12] **-** Pooling activities ensure a high reutilization of shared pallets, boxes and other types of packaging material. A powerful network generates transport efficiencies as pallets are delivered and collected in short distances.	• Cost reduction • CO^2 reduction • Waste reduction • Resource-need reduction	• 75% wood waste reduction • 66% timber use reduction • 50% CO^2 reductions • **Pooled pallets** benefits versus non pooled solutions, according to life ISO certified life cycle analysis results.		X	X	X	X	X
CO^2 neutral facilities - introduce wind-power and bio-fuel for production of electricity and heat.	• Set targets to reduce tonnes of CO^2	• Volvo experienced reduction of 13% CO^2 in manufacturing sites including warehousing. • ISO14001 certification of all sites.		X				X
Sourcing – Assess suppliers from "high-risk" countries.	• Reduce risk • Maximise synergies	• Volvo target is 100% self-assessment (2013) and 68% completed the self-assessment which corresponded to 80% of spend. • ISO14001 certification by all automotive components suppliers - 2013 result is more than 94% of spending.	X	X	X		X	X
Use tyres with resistance to rolling / permanent control of tyre inflation pressure[13]	• Cost and emission reductions	• Fuel saving of approx. 6 %. • CO^2 reduction and cost reduction			X	X		

[12] Pallet Pooling Data – CHEP sustainability modelling
[13] KWS Saat

Action	Measurement	Results	Area			Term		
			Social	Environment	Economic	Short	Medium	Long
Preventative maintenance eg engine checks / bord computer usage / telematics systems[14]	• Cost reduction • Fuel savings • Improved road safety	• Technical issues leading to high fuel consumption can be detected (earlier) and removed. • Inefficient drivers can be found (earlier). • Measurements can help to detect what drivers do wrong.	X	X	X	X		
Routing and scheduling software – utilize systems to optimize route planning and review impact regularly. Plan for drivers to meet driving hours and stop in safe places.	• Improve efficiency • Improve customer satisfaction • Improve staff satisfaction / retention	• Efficient routing and scheduling can save emissions by as much as 400 tonnes of CO^2 per annum (footnote 14). • Increased on-time deliveries and customer satisfaction. • Lower mileage and cost per delivery. • Lower insurance costs from safer routes and reduced accidents. • Less stress for drivers.	X	X	X	X		
Plan capital investment for fleet to ensure replacement programme	• Reduce emissions • Improve staff satisfaction / retention	• Utilising up-to-date technology can reduce particulate emissions resulting in CO^2 reduction of 500 tonnes per annum (footnote 14). • Better driver experience.	X	X	X		X	X
Shared Locations[15] - Players operating in the same supply chain share location for their activities. Benefits include operational efficiencies and completely eliminated transportation legs.	• Km reduced • Cost savings • CO^2 reductions	• 1.56 million km reduced. • 1,650 tonnes of CO^2 saved.		X	X		X	X

[14] John G Russell Group based on fleet of 260 vehicles (John G Russell Transport)
[15] CHEP Total Pallet Management programme

Action	Measurement	Results	Area			Term		
			Social	Environment	Economic	Short	Medium	Long
Multimodal Transportation[16] - Move from road based transportation to other modes (barge or ship or train). Eg Istanbul via Trieste / Bari using intermodal with rail (Port of Bari has daily vessel connections with Greece, Turkey, Albania, Montenegro, Croatia and Serbia).	• % transport in non-road mode • Cost savings • CO^2 reductions	• 12% of transport km in non-road mode. • 8,300 tonnes CO^2 saved. • Reduced transit times		X	X		X	X

Business should feel confident about innovating and trying new ideas - it is often the case that imaginative solutions can solve environmental challenges such as GHGs, pollution and congestion. Occasionally over-regulation can prevent innovative solutions from appearing. It should not be up to the legislator to decide what is feasible but rather the reverse – the regulator should be careful not to prevent any technological and market rupture but to promote the development of new solutions through incentives. For example:

- Unit 45 proposed a relevant solution for intermodality which has been adopted by the market. The capacity of this unit to generate containerization and then intermodality could have been put at stake by a restrictive regulation over the dimensions of the containers.
- Lohr group proposed a technological solution allowing the loading of classic trailers. Added to an organization sticking to the road haulier requirement (at least 2 departures a day), ViiA rail operator can generate modal shift and intermodality.

[16] CHEP transport collaboration programme

Notes on Authors

The European Freight and Logistics Leaders' Forum (F&L)

F&L is a cross-industry non-profit debating forum which brings together leaders of global organisations in chemicals, FMCG, paper, food and drink, metal, petrochemicals, vehicle manufacture, agriculture, legal services, transport innovation, road, rail, sea, inland waterways, ports, consultancy, technology and insurance/risk to challenge, debate and discuss global supply chain issues.

F&L represents businesses responsible for more than €190 billion combined annual sales through more than 1 million employees in more than 150 countries.

On a grid which ranks businesses on their performance and level of sustainability leadership, F&L members consider themselves to be transformational, ie they combine market-leading financial performance with sustainability leadership and they are interested in turning sustainability to business advantage. That is why the Forum can offer an unrivalled cross-industry breadth of perspective along with a neutral viewpoint which has only the competitiveness of business as heart.

Contact:

- F&L Sec General **Gavin Roser** +44 (0) 7974 724 173 / SecGen@EuropeanFreightLeaders.eu
- F&L Secretary **Audrey Macnab** +32 (0) 2 372 91 68 / Sec@EuropeanFreightLeaders.eu
- **Linked in:** F&L's linked-in group
- **Website:** www.EuropeanFreightLeaders.eu
- **Address:** 146 Avenue Louise, c/o Billit, 1050 Brussels, Belgium

The Economic Commission for Latin America and the Caribbean (ECLAC)

Natural Resources and Infrastructure Division (DRNI)

Latin America and the Caribbean (LAC) show significant limitations in providing infrastructure services which could seriously affect trade competitiveness and future development in the region. Infrastructures and their provision of services are lacking; the relevant public policies are multiple and disjointed; and, in a majority of cases, there is an utter absence of sustainability criteria applied in the conception and design of projects. In spite of the recent progress in economic development, the region has a lack of national long term development strategies and the absence of sustainability criteria has promoted inefficient transport and logistics chains. Thus, the sustained growth bears enormous negative externalities for society. This implies not only challenges when facing market failures, but also for agents and industries' competitiveness, and it limits capturing value-added and economic returns.

ECLAC has successfully promoted the development of logistics and infrastructure projects within a framework of regional integration policies during the last two biennia. ECLAC is working with the countries to develop infrastructure provision and logistics policies that include a regional and sustainable perspective.

This initiative supports Latin America and the Caribbean governments and industry in designing and implementing integrated logistics strategies.

In the contexts of ECLAC's Natural Resources and Infrastructure Division work plan this initiative represents an opportunity and mutual benefits for emerging and developing countries to interchange experiences and perspectives for a more sustainable development of supply chains and to advance towards more integrated logistics policies and a more equitable and inclusive development.

Contact:
ECLAC, Natural Resources and Infrastructure Division, Infrastructure Services Unit
Ricardo J. Sánchez and Gordon Wilmsmeier

- **Email:** Ricardo.Sánchez@cepal.org , Gordon.Wilmsmeier@cepal.org
- **Phone:** +56 (2) 2210 2640
- **Website:** www.eclac.org
- **Address:** , Av. Dag Hammarskjöld 3477, Vitacura, Santiago de Chile.
- **Postal address:** Casilla 179-D, Santiago de Chile, 7630412.

References

- Commission of the European Communities (European Commission) 2013. European Technology Platform on Logistics ALICE Launched. European Commission Research and Innovation – Transport.
- Greenhouse Gas (GHG), 2013. Corporate Value Chain (Scope 3) Accounting and Reporting Standard.
- Harland, C. 1996. Supply Chain Management: Relationships, Chains and Networks. British Journal of Management. Vol. 7, Special Issue, S63 – S80 (March 1996)
- Linton, J., Klassen, R., Jayaraman, V. 2007. Sustainalbe Supply Chains: An Introduction. Journal of Operations Management.
- United Nations Conference on Environment and Development (UNCED), 1992. Rio de Janeiro, Brazil, June 1992. Agenda 21.
- United Nations World Commission on Environment and Development, 1987. Our Common Future. Oxford University Press. United Kingdom.
- Mars Inc PIA Summary 2012
- P&G 2013 Sustainability Report
- Nestle – Nestle.com
- Wilmsmeier, G., Froese, J., Zotz, A. and Meyer, A. 2014. Energy Consumption and Efficiency: Emerging Challenges from Reefer Trade in South American Container Terminals. Bulletin FAL, No 329. ECLAC, DRNI, Santiago, Chile
- Pérez-Salas , G. 2013. The need to facilitate and secure logistics processes in Latin America and the Caribbean, Bulletin FAL, No 321. ECLAC, DRNI, Santiago, Chile
- Lupano, J.A. 2013.La infraestructura de transporte sostenible y su contribución a la igualdad en América Latina y el Caribe. LC/W.561, ECLAC, Santiago, Chile.
- ECLAC, 2014. Compacts for Equality.Towards a Sustainable Future. Thirty Fifth Session of ECLAC, Santiago, Chile.
- www.internationaltransportforum.org with some input from **Jari Kauppila**, Ph.D, Senior Economist , Head of Outlook and Statistics Unit. **Email:** jari.kauppila@oecd.org. **Phone:** + 33 (0)1 45 24 97 21
- Transaid is a not-for-profit organisation which was established by the UK transport and logistics industry as means of sharing supply chain skills and knowledge with partners in developing countries. http://www.transaid.org/
- DRS build tailor-made transport solutions, where necessary partnering with other specialist logistic suppliers to offer a one-stop-shop and a purpose build turnkey service. http://www.directrailservices.com.