

This Eurosif thematic report has been compiled with research conducted by Bank Sarasin. It provides an overview of sustainability challenges and opportunities in global procurement and supply chain management.

Procurement: Managing Globalized and Complex Supply Chains

The responsibilities of procurement functions in companies have moved away from the simple purchase of raw materials and finished goods towards a comprehensive supply chain management that includes risk assessments of quality, financial and extra-financial factors and monitoring of suppliers and sub-suppliers.

With the acceleration of globalization, companies have outsourced production processes to external suppliers and have relocated production sites. Historically, the major drivers for this trend have been cost reduction and enhancing manufacturing flexibility. Both outsourcing and relocation have resulted in the rise of low-cost countries, such as China, as production locations. As a part of this process, the complexity of supply chains has increased, not only in terms of regional distribution, but also in terms of the number of different players. Depending on the product, supply chains are composed of various steps with a large number of independent companies. For instance, a company selling apparel products has

direct suppliers ('Tier 1', e.g. garment factories), sub-suppliers ('Tier 2', e.g. manufacturers of dyed fabrics and accessories), sub-sub-suppliers ('Tier 3', e.g. spinners), and so forth, down to the raw material suppliers (e.g. cotton farmers).

As a consequence of these trends, it is more difficult for companies to control their supply chains and hence quality and supply security, as well as social and environmental impacts.

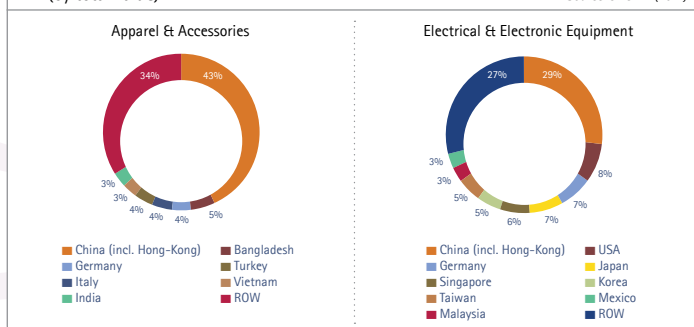
Textile and Clothing, Electronics and the related retailers downstream are among those sectors that have been most exposed to the outsourcing and offshoring trend. This paper focuses on these two industries. Another industry that is exposed to supply chain risks is the food industry, among others. Here, the supply chains are less complex, but social conditions (e.g. labour standards in plantations) and environmental impacts (e.g. water and chemicals use in agriculture, reduction of biodiversity) are likewise important.

Supply Chain Characteristics of the Clothing and Electronics Industries

Many brand names in the clothing industry have fully outsourced their production to contract manufacturers whose production sites and supply chains are located in emerging countries. The electronics industry has also outsourced production to contract manufacturers in Asia mainly, but to different degrees depending on the products. For example, more than 90% of the production of PC notebooks is outsourced, compared to less than 30% of the production of mobile phones¹.

Figure 1: Major Exporters of Apparel and Electrical & Electronic Equipment 2010 (by total value)

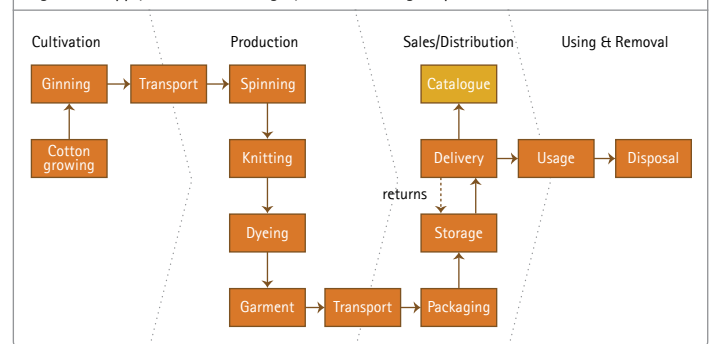
Source: UNCTAD (2011)



The players in the value chains have diversified as well. In the clothing industry there is a limited amount of large retailers and brand names that are served by many garment factories (Tier 1 suppliers), mostly located in emerging and developing countries like China, India, Bangladesh and Turkey. Companies like Adidas are working with more than 1,200 Tier 1 supplier factories². The whole production of textiles from spinning over to knitting to dyeing is composed of a large number of small to mid-sized companies, most of which are also located in these countries. Finally, these sub-suppliers are themselves served by a large number of cotton farmers.

Figure 2: Supply Chain of Clothing by Manufacturing Steps

Source: Systain, 2010



The situation is somewhat different in the electronics industry. Here fewer large companies dominate the value chain. The so-called Original Equipment Manufacturers (OEM), such as Hewlett Packard (HP), Apple and Sony, are using contract manufacturers (e.g. Flextronics, Foxconn) which are also comparatively large international companies. Electronic Manufacturing Services (EMS) companies provide the highly automated assembly of printed circuit boards, final assembly, configuration, distribution logistics and repair services. The Original Design Manufacturers (ODM) provide the design of computers and other electronic devices. EMS and ODM are supplied by a large number of electronic component manufacturers. Like in the textile and clothing industry, the majority of production sites are located in Asian emerging markets.

¹ Somo Centre for Research on Multinational Corporations (2008)

² Adidas (2011)

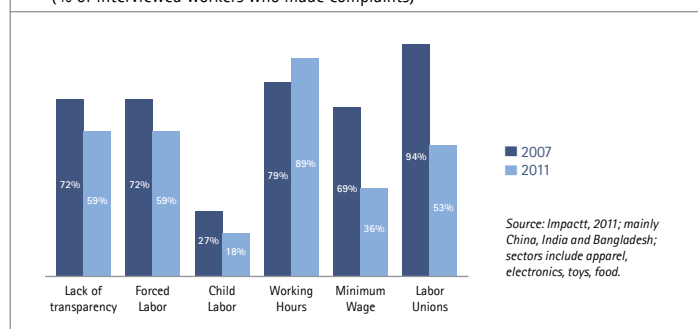


Environmental and Social Challenges

The outsourcing and offshoring of manufacturing to emerging and developing countries has resulted in challenges to raise environmental and social standards in these countries. For many years, multinational companies have been criticized by NGOs for poor labour conditions at their supplier factories. Originally, the focus of the campaigns was on the textile and clothing industry with large apparel brands such as Nike or Adidas in the spotlight. Recently the electronics industry has been targeted as well.

Over the last years, some improvements in labour conditions have been achieved as more and more of the large brands require compliance with minimum labour standards and conduct supplier audits, issues such as child labour, forced labour and wages below legal minimum have improved (see Figure 3). The same holds for occupational health and safety. Remaining issues include lack of independent labour unions (especially in countries like China) and excessive working hours. In China and India especially, there is a large number of migrant workers whose contract conditions are often below local standards. Concerns about labour conditions are not limited to factories in emerging and developing countries. For instance, in Italy, there are factories owned by Chinese companies that allegedly do not comply with local standards on wages, working hours, and occupational health and safety³.

Figure 3: Findings of Worker Interviews Conducted by Impactt in Asia, by Issue (% of interviewed workers who made complaints)



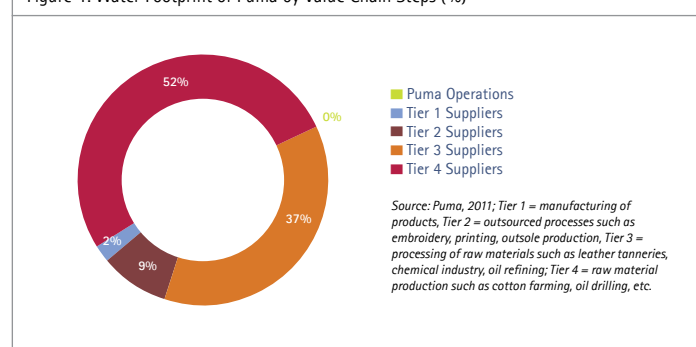
The scope of environmental and social challenges in supply chains has expanded from direct suppliers to further up the supply chain involving sub-suppliers and raw material suppliers. The textile industry, for example, has become more exposed to issues in their upstream supply chain, notably textile dyeing, leather tanneries and cotton farming. Examples include cotton sourced from Uzbekistan where forced child labour during the cotton-picking season is widespread, or leather sourced from cattle farming that contributes to the deforestation of the Amazon forest.

Recently, the concerns have shifted somewhat from social to environmental issues. In terms of textile supply chains, the recent Greenpeace "Dirty Laundry" report criticised that none of the major apparel brands had sufficient standards for their suppliers' wastewater discharges beyond local legal requirements. It is estimated the textile industry uses 25% of the chemical compounds produced (in terms of numbers), of which the majority is used during wet processing (dyeing, washing, printing and fabric finishing)⁴. In many emerging countries, notably China, the enforcement of emission standards is often weaker

than in industrialized countries. This does not only result in excessive local pollution, but hazardous substances can also end up in the final products, posing health risk for consumers. Greenpeace found 52 out of 78 articles of multinational clothing brands containing hazardous substances (so-called nonylphenol ethoxylates), which are banned in the EU.

Cotton farming is very water intensive. For the company Puma, cotton and other raw materials represent 52% of the water footprint of their product portfolio, comprised primarily of footwear and clothing items. Tanneries and chemical and fuel manufacturing account for another 37%⁵. Cotton farming also uses more pesticides than any other single major crop in the world, exposing farmers to health risks and freshwater resources to pollution risks.

Figure 4: Water Footprint of Puma by Value Chain Steps (%)



Electronic products can contain hazardous substances such as heavy metals or halogenated compounds that can be released into the environment in electronic wastes. Some of these substances are regulated and phased out (e.g. lead and 5 other substances by the EU RoHS Directive). Some substances are under observation for future regulation (e.g. brominated flame retardants and a number of potentially hazardous substances in the EU REACH Regulation), and the subject of campaigns by environmental and consumer rights groups. Furthermore, the use of 'conflict minerals' has been in the headlines for some time⁶. The industry uses tantalum and other minerals that are mined under primitive and hazardous conditions in the Democratic Republic of Congo and whose proceeds are used to finance the civil war. Protest by human rights activists and legal restrictions such as the Dodd Frank Act in the US put pressure on companies to reduce the use of these raw materials.

Other industries are also becoming more exposed to environmental and social risks upstream the supply chain. Food processing is an industry with typically high exposure to sustainability impacts in the supply chain. Agricultural production has considerable environmental impacts such as soil degradation, water consumption, water pollution and dispersion of hazardous crop protection chemicals. Other issues include the destruction of rainforests by palm oil plantations and child labour and precarious labour conditions in cocoa plantations. Therefore, the industry is under pressure to establish sustainable agriculture standards.

³ <http://www.guardian.co.uk/world/2010/nov/17/made-in-little-wenzhou-italy> (2010)

⁴ Greenpeace (2011)

⁵ Puma (2011)

⁶ www.enoughproject.org/conflict-minerals (2011)



The Business Case for Responsible Supply Chain Management

The social and environmental challenges of globalized supply chains are closely linked to financial risks for the companies involved.

Many companies are becoming more aware of the correlation between reputational and financial risks. Headlines about cases of child labour or poor labour conditions have damaged the reputation of some companies. This is most relevant for consumer goods companies, whose business success depends greatly on the reputation of their brands. The brand value can make up more than 50% of their market value. Issues around labour conditions in the supply chains have also resulted in regulatory actions. The Dodd Frank Act in the US requires companies to disclose sources of minerals they use, starting from 2012. The California Transparency in Supply Chains Act, which also goes into effect from 2012, requires larger companies to publish their policies addressing slavery and human trafficking in their supply chains. The UN Human Rights Council endorsed "the Guiding Principles on Business and Human Rights" in June 2011, which defines responsibilities of companies to protect human rights in their operations and supply chains. Although it is not legally binding, the Principles show clear direction for the future.

The complexity of the supply chains, as well as the use of hazardous substances in manufacturing processes, can pose product safety risks. For example, consumer protection bodies frequently find toxic residues in clothing products. This can trigger compensation claims or slumps in sales.

Implications of the EU Resource Efficiency Roadmap

In 2011, the European Commission published the "Roadmap to a Resource Efficient Europe" (COM(2011) 571), as one of the flagships of the "Europe 2020 Strategy". A key element of the roadmap is the promotion of sustainable consumption and production by setting appropriate price signals and clear environmental communication. A common methodological approach to measure environmental performance (environmental footprints) of products and services over the life cycle shall be established. Information about the environmental footprints of products shall be made available to consumers, and minimum standards for environmental footprints of products shall be defined. For companies whose supply chains are decisive for their environmental footprint (e.g. apparel and textile), the legal pressure to take measures to improve the environmental standards in their supply chains is increasing.

The classic manufacturing model, which relies heavily on low labour costs, is reaching its limit in some regions. In China, real wages rose by an average of 13% a year from 2000 to 2009, according to the ILO. Further wage increases are expected with emerging labour shortages on the horizon. Consequently, companies must move from China to other countries or change their business models to avoid losing competitiveness.

Globalized supply chains are also exposed to the risk of supply disruptions or raw material cost increases caused by resource scarcity, labour unrest or natural disasters. Scarcity of major resources such as oil, copper and other metals is a long-term trend that is a main reason for the recent price increases of such basic materials. The supply of rare earth materials, which are used in various products from wind turbines to mobile phones and hybrid cars, has been affected by China's recent decision to cut export quotas. Natural disasters have also caused supply chain disruption recently, particularly the earthquake in Japan and the flood in Thailand, both in 2011.

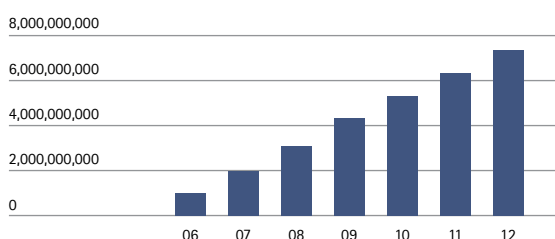
Supply Chain Disruptions: Causes and Consequences

In November 2011, the insurance company Zurich Financial reported that 85% of responding companies in 62 countries had experienced supply chain disruptions over the last 12 months:

- Adverse weather is the most common cause of disruption, reported by 51% of companies. Further natural disaster and climate related disruptions experienced by companies include earthquake/tsunami (21%), and volcanic ash cloud (13%). Other sustainability related supply chain disruptions include energy scarcity (8%), and incidents related to health & safety (7%), environment (5%), product safety (4%), and business ethics (3%). Rising threats include the loss of talent (e.g. layoffs by suppliers), up from 14th place in 2010 to 6th place in 2011.
- A loss of productivity led by supply chain disruptions affected nearly half of businesses, along with increased cost of working (38%) and loss of revenue (32%).
- 74% of companies agreed with the proposition that outsourcing and just-in-time/lean strategies were making their organizations more vulnerable to supply chain disruption.

Figure 5: Global Retail Sales of Organic Cotton Products (USD)

Source: Textileexchange, 2011



Responsible supply chain management, which takes into account environmental and social challenges, contributes to the reduction of these business risks. There are also direct business opportunities: companies that apply high environmental and social standards in their supply chains are able to benefit from the trend of 'ethical consumerism'. Consumers are attaching increasing importance to ethical, social and environmental aspects when purchasing products. The market for 'green', 'ethical', and 'organic' products has grown fast in recent years and is projected to continue this growth.

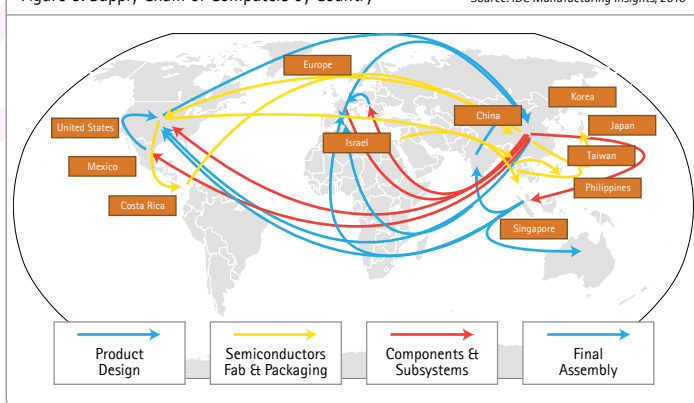


Company Trends and Best Practices

The relevance of supply chain issues differs among sub-sectors and companies. In the electronics industry, many computer companies have fully outsourced manufacturing, while large players in the mobile phone industry such as Nokia have kept the bulk of manufacturing in-house. In the apparel and textile sector, a large number of sporting goods and retail companies have fully outsourced manufacturing, while most high-end luxury goods brands, especially jewellery and watch makers, keep the majority of manufacturing in-house. Raw materials used in high-end luxury goods are sourced from a limited number of suppliers. Consequently, the degree of companies' exposure to sustainability issues differs, as do their efforts to integrate these issues into their supply chain management.

Figure 6: Supply Chain of Computers by Country

Source: IDC Manufacturing Insights, 2010



Commitment/Code of Conduct: Most leading electronics companies have a Code of Conduct that is based upon the Electronics Industry Citizen Coalition (EICC) code, an industry initiative. The EICC code includes principles related to labour conditions (e.g. forced labour, child labour, working hours, wages, freedom of association), occupational health and safety (e.g. prevention of accidents, industrial hygiene, sanitation), environment (reduction of environmental impact of production and products) and management systems (e.g. commitment, risk assessment, objectives, monitoring). Some companies have individual codes with more specific requirements, for example ISO 14001 certification of environmental management systems.

Unlike the electronics industry, the apparel and textile industry does not use a common comprehensive code. Most leading multinational brands have a Code of Conduct, which focus rather on labour rights. Many companies either establish their own codes or comply with the Ethical Trading Initiative's Base Code or Social Accountability International's SA 8000 standard, both of which are based on the

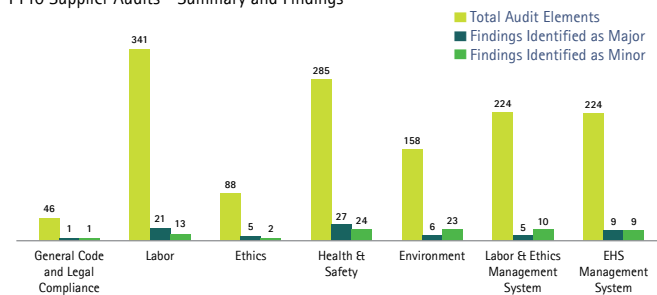
ILO Core Conventions. Laggards still do not address labour rights (freedom of association and collective bargaining). Only a few leaders have committed to pay living wages. Many companies do not address environmental issues more than by a general commitment to environmental responsibility and product safety. Few companies have specific requirements, such as resource efficiency and waste management.

Environmental & Social Standards and Monitoring Systems: Leading companies have implemented audit programs to monitor supplier factories for labour conditions and environmental management. The extent of these programs differs greatly among companies. There are still a large number of companies that do not have programs in place, and some have integrated only few sustainability aspects into quality audits. Leading companies have a multistage process, starting with risk assessment to identify suppliers with a high exposure to labour and environmental issues, followed by self-assessments, and finally regular on-site audits at key supplier factories carried out by internal staff or external auditors. In case of non-compliance findings, corrective action plans are defined. Some electronics companies like HP or Cisco publish the results of their audits. However, in general, transparency in the apparel and textile industry is more advanced. More and more companies report on audit results including non-compliance cases; some even disclose the list of their suppliers. Leading sporting goods and retail companies have supplier performance measurement mechanisms that have been fully integrated into their supplier assessment and their order placements.

Figure 7: Results of Supplier Audits for FY 2010 Published by Cisco Systems (numbers of audit elements)*

Source: Cisco Systems, 2011

FY10 Supplier Audits - Summary and Findings



* Major non-conformance: A significant failure in the management system that renders established processes or procedures ineffective; minor non-conformance: Typically, an isolated or random incident that does not necessarily indicate a systemic problem with the management system.



In the electronics industry, most companies have put in place restrictions on the use of potentially hazardous substances for their suppliers. While the elimination of certain substances is required by legal restrictions, leading companies have implemented programs to phase-out additional substances that are not (yet) restricted but are potentially hazardous, such as brominated flame-retardants, or PVC. In the apparel and textile industry, leading companies have initiated substance standards for final products. A few companies have standards for restricted substances that meet requirements for eco-labels (e.g. Oeko-Tex Standard 100). Nevertheless, according to Greenpeace, even leading companies lack substance standards that enable them to monitor chemicals used and discharged in their entire supply chain⁷.

Capacity Building Programs: In recent years, the usefulness of the auditing approach has been put into question. CSR requirements are typically not fully integrated into the purchasing and supply chain management process by the large brands, but treated as add-ons to otherwise unchanged purchasing requirements. Thus, suppliers have regarded CSR requirements as an additional burden and have not actively implemented such programs. It was also frequently reported that supplier factories have defrauded auditors.

Therefore, companies have started to cooperate with their suppliers by applying collaborative or capacity building approaches, aiming at assisting the companies in establishing higher CSR standards and at realising the benefits, such as product quality improvements, reduced employee turnover and cost reduction through production process improvements.

A few electronics companies such as Apple, HP and Nokia have started related initiatives. However, until now they have been restricted to training programs for suppliers on CSR general practices, and individual aspects such as health and safety, recruiting practices, labour rights and worker-management communication. The EICC, in cooperation with GeSi (a sustainable development initiative of telecommunication services and equipment providers), and along with NGOs and trade unions, have organised training programs for suppliers on health and safety and worker-management communication. Leading apparel and textile companies run their own training and workshops for factory managers to improve human resource management skills (incl. factory grievance systems). Some leading companies fully integrate CSR criteria into their supplier assessment by providing financial incentives like longer-term contracts for better performing suppliers. Many apparel and retail companies work with a range of stakeholders including trade unions, business associations, and NGOs in joint initiatives (e.g. the Ethical Trading Initiative) to tackle issues that require a broader and endemic approach, such as setting minimum wage standards in Bangladesh.

Case Study: Adidas Steps Towards More Sustainable Supply Chains

Over 80% of the Adidas Group's global athletic footwear is sourced from suppliers certified with ISO 14001 and OHSAS 18001⁸. Adidas focuses on improving its direct suppliers' self-governance skills in the areas of labour conditions, health and safety, environment and human rights. A combination of internal audits by trained employees and external audits are regularly conducted. Audit results are used for supplier evaluation and for identifying specific capacity building programs. Great efforts are made to build up effective dialogue mechanism between workers and managers by offering human resources management system trainings to factory managers, and multiconfidential reporting channels for workers. Adidas shares its internal compliance database with other brands to develop harmonized corrective action plans and joint auditing activities.

Industry Collaboration: More than in the clothing industry, the large electronics brands (OEMs) frequently work with the same EMS subcontractors (Tier 1 level). Therefore, it makes sense to cooperate in industry initiatives such as the EICC. Apart from the definition of a general Code of Conduct for electronics industry suppliers, the EICC has developed a standardised web-based tool for supplier self-assessments on corporate responsibility risks, has started to organise supplier audit programs for member companies carried out by independent auditors, and offers local capacity building training programs for suppliers on CSR issues. The EICC also runs projects on the installation of a carbon reporting system for supply chains and on the traceability of raw materials such as tantalum and tin to avoid sourcing of conflict minerals.

Leading apparel brands have been working together to improve labour standards in their supply chain. Such collaborations include the Better Work partnership between the ILO and the IFC and cooperation with the Fair Labour Association. Environmental projects are more focused on materials, of which the Leather Working Group and Better Cotton Initiatives are examples.

Product Labels: Aside from the initiatives of individual companies and industry associations to assure decent supply chain standards, product labels such as 'certified organic' and 'fair trade' are becoming increasingly popular. Labels are used mainly for food products, but also increasingly for apparel. As far as widely recognized labels are concerned, they provide comparatively high standards for agricultural production (e.g. organic vegetables, organic cotton, fair trade cocoa) by restricting the use of chemicals and with regular monitoring by independent organizations. In many cases these standards are stricter than companies' internal standards or industry standards. However, they often cannot be applied as such under the conditions of high volume production.

⁷ Greenpeace (2011)

⁸ Adidas (2010)



Recommendations for Investors

The complexity of supply chains makes it difficult for companies to fully understand and manage the environmental and social impacts of their business activities. However, the risks can lead to business consequences such as loss of reputation, supply chain disruptions, product safety problems or cost increases. Consequently, these issues constitute not only ethical challenges but also financial risks. Investors should therefore assess companies on their capabilities to reduce or avoid such risks by implementing responsible supply chain standards and practices.

To this end, investors should first estimate the exposure of a company to supply chain issues by looking at factors such as industry, degree of outsourcing and locations of suppliers. For example, certain industries like electronics (computers, mobile phones, television sets, etc.), apparel and textile, apparel retailers, food industry and food retailers have a comparatively high exposure. These industries are also exposed to regulatory risks such as existing restrictions on the use of certain hazardous substances (e.g. the European RoHS or REACH regulations) or intended requirements to assess and disclose environmental footprints of products (EU Roadmap to a Resource Efficient Europe).

Secondly, companies exposed to supply chain issues can be distinguished by the quality of their sustainable supply chain management, which should cover the following elements:

- Policies and standards: A supplier code of conduct based on the ILO Core Conventions as a minimum requirement, and global environmental standards (including substance standards) which are applied even in countries with lax local standards and poor regulatory compliance.
- Effective monitoring procedures: Regular audits prioritised on high risks in the supply chain (e.g. critical countries, critical manufacturing processes), including on-site visits and collaboration with independent external auditors.
- Collaboration and capacity building: Efficient use of audit results to improve supplier performance and conducting capacity building programs (trainings, consulting) based on non-compliance cases; mechanisms to facilitate the internal worker-management dialogue
- Active collaboration with competitors and stakeholders (local governments, trade unions, NGOs, etc.).
- Product labelling: In the retail and clothing sector especially, the proportion of sales from "green" or "ethical" products is an indicator for responsible supply chain management, as long as widely recognized labels with accepted environmental and social standards are applied.

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