

How Large Companies in Latin America and the Caribbean Can Influence Natural Resource Use and Environmental Impact Management in Their Value Chains

CASE STUDY

GREENING VALUE CHAINS



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About the Multilateral Investment Fund

The Multilateral Investment Fund is the innovation lab for the Inter-American Development Bank Group. It conducts high-risk experiments to test new models for engaging and inspiring the private sector to solve economic development problems in Latin America and the Caribbean. The MIF addresses poverty and vulnerability by focusing on emerging businesses and smallholder farmers with the capacity to grow and create economic opportunities.

About Trucost

Trucost provides data and insight to help its clients understand the economic consequences of natural capital dependency to manage risk from volatile commodity prices and increasing environmental costs - and ultimately build more sustainable business models, products and brand. Trucost offers expert advice and research to institutional investors, major corporations, both public and private, and to Government departments and associated agencies. Coverage includes the S&P 500, ASX 200, FTSE All-Share, Russell 1000, Nikkei 225, DJ STOXX and MSCI AWD and S&P/IFCI Large Cap indices.





EXECUTIVE SUMMARY

Micro, small, and medium enterprises (MSMEs) are major sources of natural resource consumption and environmental impacts such as greenhouse gas (GHG) emissions. At the same time, MSMEs make up a large part of the value chains of multinational and publicly traded companies, and therefore offer a unique point of entry to improve value chain environmental management practices while simultaneously promoting economic development in the region.

In this vein, the Multilateral Investment Fund (MIF), a member of the Inter-American Development Bank (IDB) Group, aims to improve MSME competitiveness through increased efficiency of natural resource inputs, reduction of air and water pollution, gaining higher prices for products that are certified through reputable green certifications, and increasing MSME sales by strengthening their positioning within the value chains of large companies with sustainability commitments.

To inform the MIF's strategic planning on how technical assistance can be best structured to improve the competitiveness of MSMEs in the Latin America and Caribbean (LAC) region through the promotion of best practices in natural resource management and environmental impact reduction, a study was undertaken by Trucost. As part of this study, Trucost's patented environmental extended input-output (EEIO) model was used to identify five economic sectors in LAC that are associated with the highest environmental implications regarding inputs (natural resource use) and outputs (environmental impacts) from production processes, specifically relating to the sectors' value chains. For each of these sectors, three large companies were identified for a more focused analysis of their activities relating to the management of value chain environmental impacts. A case study was developed for one large company per sector to document these in detail. This document summarizes the key findings and lessons learned from the case studies, indicating value chain sectors that can be targeted to most efficiently reduce value chain environmental impacts, as well as ways in which this targeting can be done.

The two tables below provide an overview of the sectors and companies included, as well as examples of value chain sustainability and MSME initiatives at the sectorial level.

Table 1/ LAC key economic sectors and large companies studied



Table 2/ Examples of value chain sustainability and MSME initiatives at sectorial level

Sector	Examples of value chain sustainability and MSME initiatives
Cross-sectorial	<ul style="list-style-type: none"> • Developing and implementing strategies to identify good sustainable value chain management practices and improvement opportunities amongst suppliers, including prioritizing community relationship building and local economic development, particularly in sourcing regions. • Selecting suppliers according to sustainability criteria, including certifying and promoting improvements in environmental performance. • Implementing programs to train and assist suppliers, including MSMEs, in developing environmentally, socially, and financially sustainable projects in their operations and processes – often in partnership with governments, financial institutions and NGOs. • Implementing value chain monitoring programs to identify and minimize environmental impacts and disseminate sustainability guidelines. • Partnering with research institutions to minimize environmental impact in the production chain. • Promoting MSME procurement.
Food products	<ul style="list-style-type: none"> • Providing small farmer suppliers access to seeds, fertilizers, and capacity building to implement agricultural best practices; replacing conventional refrigerant gases, and promoting of fuel-efficient vehicles among logistics suppliers. • Procurement of cardboard boxes with recycled content.
Soft drinks	<ul style="list-style-type: none"> • Reducing water consumption through implementing water efficiency initiatives. • Reducing GHG emissions through energy efficiency gains and appropriate disposal of Chlorofluorocarbon (CFC) refrigerants.
Personal products	<ul style="list-style-type: none"> • Procuring production process inputs such as fiber, fabric, cartons, plastics, and packaging from post-consumer recycled materials. Requiring recognized sustainable forest certifications where such materials are from virgin sources. • Building and developing community relationships in areas from which ingredients are sourced.
Chemicals	<ul style="list-style-type: none"> • Reducing purchased energy through implementing energy efficiency initiatives. • Reducing GHG emissions through purchasing and using alternative feedstocks (e.g. biomass or solid waste). These processes are also known as “green chemistry”.
Broadline retailers	<ul style="list-style-type: none"> • Encouraging local suppliers to commercialize environmentally friendly produce. • Developing and implementing initiatives that have potential to significantly improve the sustainability of distribution channels.

A range of **lessons** was also **identified around the management of environmental impacts and natural resource use in large companies' value chains** which can be applied to companies of different sizes and in various kinds of sectors. These lessons **include**:

- **Understand and quantify your value chain impacts.** As a first step, ensure that your organization identifies and prioritizes its most significant environmental impacts across its value chain. Companies in the five key sectors can look to this research for guidance on which value chain sectors, and which environmental inputs and outputs specifically, should be strategic priorities.
- **Engage with suppliers and create incentives.** After identifying the areas of your value chain that are most exposed to environmental risk, begin engaging with your suppliers in a targeted way. Develop an environmentally preferable procurement program that prioritizes spending with suppliers that meet environmental performance requirements. Offer technically oriented educational programs to the MSMEs in your value chain, specifically encouraging their shared learning, highlighting best practice examples, and providing opportunities to collaborate in their implementation.
- **Utilize available resources to facilitate improved performance.** The tools reviewed in this study provide assistance in one of three key areas, i.e. traceability/transparency of value chain, reporting of sustainability, and implementation of action. These tools are described in detail in Section 3 of the "Greening Value Chains Technical Study".
- **Engage with other stakeholders to create incentives.** Governments can be a key player in promoting environmental performance in MSMEs through regulation or incentives rewarding best practices (e.g. adopting more environmentally efficient technology). Financial institutions can support the development of sustainable value chains by helping MSME suppliers gain access to finance for environmental initiatives, such as energy efficiency and water management.



INTRODUCTION

Large multinationals and publicly traded corporations are advancing the management of natural resource consumption and environmental impacts in their value chains. MSMEs are a major contributor to the value chains of large publicly traded companies. While individually small, collectively MSMEs are a significant source of environmental impacts, including regarding natural resource consumption (inputs into production processes, for example water consumption) and environmental impacts (outputs from production processes, such as greenhouse gas (GHG) emissions). MSME management of environmental performance is often limited due to lack of awareness or training, absence of access to funding required to take capital intensive improvement steps, and limited availability of expertise and resources required to assist in the advancement of environmental management practices. As such, it can be difficult for large companies to encourage individual suppliers to allocate resources to sustainability initiatives if these suppliers are not convinced of the added value (WBCSD 1). This is further compounded for companies that may have hundreds or thousands of suppliers.

Nevertheless, companies have many compelling business reasons to improve the environmental performance of their value chains. These reasons include managing business risks to minimize business disruptions and protect the company's reputation, realizing business efficiencies and reducing the amount of money spent on material inputs, and developing more sustainable products to meet the respective demand of these growing markets.

Through the "Greening Value Chains Technical Study" which complements this case study document, five economic sectors in LAC were identified that have the highest environmental implications regarding inputs (natural resource use) and outputs (environmental impacts), specifically relating to the sectors' value chains¹. These sectors were identified by using Trucost's patented environmental extended input-output (EEIO) model to calculate both direct (operational) and indirect (value chain) impacts. This environmental impact information was reviewed both in

¹ A value chain refers to the full chain of activities, from raw materials, through various processes and ultimately to the sale of a product or service to consumers, whereas supply chain refers to just those activities that suppliers are responsible for.

terms of physical quantities (e.g. metric tons of GHG emissions), as well as in financial or cost terms (US\$) by utilizing natural capital valuation coefficients. Natural capital coefficients were calculated by applying producer prices to commodity inputs, a global price to greenhouse gas emissions, and regional values for other environmental inputs and outputs such as water and waste. The calculation of environmental costs allowed for the identification of each company's most significant environmental inputs and outputs. (For more information on this process, please see Section 2 of the "Greening Value Chains Technical Study.")

The sectors that were identified are:

- **Food products;**
- **Soft drinks;**
- **Personal products;**
- **Chemical manufacturing, and;**
- **Broadline retailers.²**

To capture the findings of the research and highlight best practices across these sectors, as well as challenges faced by these industries, a case study was developed for one representative large company in each of the identified sectors to document the value chain initiatives undertaken to manage environmental impacts through their suppliers. For each company, the top three environmental inputs and outputs were identified and then measured and ranked using information from the Trucost Environmental Register (TER) database³ of corporate environmental impact and natural capital valuation data. Each large company was chosen because of the significance of its economic presence in the LAC region, current level of activity in value chain environmental management, and level of engagement with MSMEs. Whereas these companies may be larger than their LAC industry peers, they are representative of companies operating in their sector. Therefore, the key findings are likely to be applicable to other companies in their sector, if not more broadly across sectors.

This study presents the results of each of these five case studies and the key findings and lessons learned from these experiences in the area of value chain environmental management.

² Retailers offering a broad line of products.

³ The TER covers the largest 5,000 public companies globally, around 200 of which in Latin America and the Caribbean.



B

**FIVE CASE
STUDIES**

CASE STUDY

ALICORP

Alicorp is a Peruvian food manufacturing company that also manufactures animal food products and personal care and cleaning products. Alicorp's sales are primarily in its home country of Peru, though the company also has manufacturing operations and some sales exposure in other LAC countries.

Food manufacturing is associated with substantial environmental impacts and has considerable economic significance within the LAC region. The companies in this sector across nine LAC countries⁴ within the project's researched universe account for environmental impacts of over US\$40 billion and revenue of more than US\$100 billion annually.

An EEIO was used to identify Alicorp's top three environmental inputs and outputs, and to model the company's value chain. The top environmental impacts, and the top five sectors of Alicorp's expenditures are shown in the table below.

Table 3/ Alicorp's top environmental inputs and outputs and value chain sectors

Key environmental inputs	<ul style="list-style-type: none"> • Water use • Agriculture • Fossil fuel-based energy
Key environmental outputs	<ul style="list-style-type: none"> • Greenhouse gases • Nutrient and organic pollutants • Acid rain, eutrophication, and smog precursors
Top 5 value chain sectors (% of total procurement spending)	<ul style="list-style-type: none"> • Management of companies and enterprises (10.6%) • Fruit farming (4.8%) • Grain farming (4.6%) • Soap and cleaning compound manufacturing (4.4%) • Paperboard container manufacturing (3.8%)

⁴ The 9 LAC countries are: Argentina, Bermuda, Brazil, Cayman Islands, Chile, Colombia, Mexico, Panama, and Peru.

From an environmental perspective, fruit and grain farming is a key area in Alicorp's value chain that requires considerable water consumption to grow the product crops. Similarly, soap and cleaning compound manufacturing is quite water intensive. Water is Alicorp's largest value chain environmental impact, accounting for 65% of the total; this is followed by greenhouse gases and nutrient and organic pollutants which each account for 13% of total value chain impact. While Alicorp's environmental intensity is roughly average for food products companies, to best reduce its indirect environmental impact Alicorp should target its suppliers involved in these operations specifically.

Alicorp recognizes the relevancy of its suppliers along its value chain and stresses that it has been actively providing training and technology transfer to enhance best practices among its suppliers. While the company acknowledges that its efforts have primarily been focused on social issues, such as the health and safety of its workers and suppliers and human nutrition, it has made a great start in managing the environmental impacts of its value chain. Having recently developed several initiatives to encourage sustainability throughout its value chain, Alicorp has identified opportunities to work with the government and financial institutions, to educate suppliers, and provide step-by-step guidance for MSMEs as a key tool to achieve its environmental sustainability goals.

The company's sustainable value chain initiatives include:

- A **project to decrease GHG emissions** from downstream transportation of products to Alicorp's clients. Alicorp upgraded the chilling systems in some of its fleet to use chilling panels, thus eliminating the use of coolants and reducing the risk of release of these potent GHGs.
- A **purchasing policy that prefers** packaging **materials with recycled content**.
- A **Sustainable Strategy Plan** that prioritizes implementing sustainability activities through 2021 with a focus on environmental, social and economic issues.
- A **Code of Conduct for stakeholders** that will incorporate environmental guidelines.
- Plans to **measure its operational footprint** for the first time, which may be expanded to measure Alicorp's value chain footprint in the future.

This focus on environmental performance will be highlighted in the company's Sustainable Strategy Plan for 2021, and Alicorp will release a Code of Conduct that will include environmental guidelines that focus on the company's suppliers. No external incentive schemes were identified as drivers of better practices, though the company aims to become a leader in the country's environmental and economic development, which has helped to drive improvement.

With these initiatives underway, Alicorp is ready to enhance its environmental performance and move closer to becoming a greater leader in environmental, social, and economic development in its home country of Peru. However, specific focus is needed to address Alicorp's exposure to water use throughout its value chain.

CASE STUDY

FOMENTO ECONÓMICO MEXICANO (FEMSA)

FEMSA is a Mexican company, founded 125 years ago, engaged in bottling and distributing the Coca-Cola Company's trademark beverages in Latin America and the Philippines. It also operates a convenience store chain called OXXO and has a strategic businesses division comprised of FEMSA Logística, Imbera, and ptm. FEMSA sells to 351 million consumers across 10 LAC countries.

The soft drink manufacturing sector has significant environmental impacts of over US\$4.1 billion across the nine LAC countries within this project's researched universe and has considerable economic significance within the region, accounting for nearly US\$37 billion of revenue annually.

Trucost used its EEIO to identify FEMSA's top three environmental inputs and outputs, and to model the company's value chain based on sector and public information. The key environmental impacts, and the top five sectors identified for FEMSA are shown in the table below.

Table 4/ FEMSA's top environmental inputs and outputs

Key environmental inputs	<ul style="list-style-type: none"> • Water use • Fossil fuel-based energy • Aggregates
Key environmental outputs	<ul style="list-style-type: none"> • Greenhouse gases • Acid rain, eutrophication, and smog precursors • Dust and particles
Top 5 value chain sectors (% of total procurement spending)	<ul style="list-style-type: none"> • Flavoring syrup and concentrate manufacturing (19.7%) • Aluminum product manufacturing from purchased aluminum (10.4%) • Plastics bottle manufacturing (9.4%) • Management of companies and enterprises (6.9%) • Paperboard container manufacturing (4.7%)

Producing the raw material for flavoring syrups and concentrates requires considerable water, and manufacturing aluminum and plastic bottles requires significant amounts of electricity. As such, these key categories of suppliers represent significant contributions to FEMSA's value chain environmental impact. Water is FEMSA's largest value chain environmental impact, accounting for 50% of the total, followed by greenhouse gases (25%) and nutrient and organic pollutants (11%). Targeting suppliers in these sectors would help FEMSA reduce its value chain environmental impacts most efficiently.

The company has undertaken many pilot programs and other initiatives aiming to better manage its indirect environmental impact:

- FEMSA established Supplier Guiding Principles, which define the company's minimum expectations with respect to their suppliers' sustainability management. This document consists of 16 principles grouped into topics regarding labor rights, environment, community, ethics, and values. These principles were designed based on international standards, including the OECD Guidelines for Multinational Enterprises and the United Nations Global Compact.
- FEMSA also applies the Supplier Guiding Principles provided by The Coca-Cola Company, which are a series of standards and policies for responsible sourcing to which the company adheres in its operations and with which it assesses key suppliers and contractors under international guidelines regarding respecting human rights, forced labor, and child labor, among other topics. More than 450 suppliers have been evaluated under this policy and more than 100 have an action plan in place to align the supply chain to the principles and values that govern Coca-Cola FEMSA's operations.
- FEMSA's Comercio business unit started a pilot program, Sustainable Sourcing OXXO, to identify and strengthen top suppliers' sustainability actions. As a result of this pilot, suppliers have incorporated social and environmental responsibility in their business strategies, including actions to improve the efficiency of their energy and waste management, as well as activities contributing to the development of the communities in which they operate. In line with this initiative, over 171 participants from 57 companies were part of the Supplier Development Diploma course in 2015 addressing various issues, including leadership and business management, to ensure product quality from receipt to shipment (FEMSA 2).
- As Coca-Cola System's main supplier of commercial coolers worldwide, FEMSA's refrigeration business unit, Imbera, has reduced its products' energy consumption by 50% since 2005. It has also become the first company to offer LED lighting and the leading manufacturer of commercial coolers with CO₂ as refrigerant gas in the Americas. Thanks to the company's sustainable commitment to product innovation and development, Imbera was recognized as the best supplier across all kinds of products and services that the Coca-Cola System acquires worldwide.
- In order to minimize its indirect environmental impact, Imbera made a commitment to substitute 50% of refrigerant gases with significant global warming potential (HFCs) with natural gas. This goal was achieved in 2015 through the introduction of new refrigeration technologies and system designs.
- FEMSA's logistics division, FEMSA Logística, has developed its own environmental management system, to promote several actions to reduce environmental impacts of transportation (i.e. implementing eco-efficiency systems, optimizing fuel consumption)..

In 2013, FEMSA Comercio, FEMSA Logística, Imbera, and PTM reported to the CDP Supply Chain Initiative⁵ for the first time, as suppliers of The Coca-Cola Company.

In addition to these programs, FEMSA is engaged in a number of partnerships:

- FEMSA's subsidiary Imbera joined the Environmental Leadership Program for Competitiveness that was developed by PROFEPA (Procuraduría Federal de Protección al Ambiente), an administrative body linked to the Department of Natural Resources and Environment. The program aims to improve the environmental performance of participating companies' value chains through eco-efficiency projects that generate economic savings and increase company competitiveness.
- FEMSA Logística, in alliance with the Mexican Ministry of Environment and Natural Resources (SEMARNAT), created an initiative called "Transporte Limpio" (Clean Transport). This initiative promotes strategies and/or technologies that decrease fuel consumption, operational costs, and emissions of pollutants into the atmosphere, thus promoting cargo transportation as more efficient, competitive, safe, and environmentally friendly. As part of this program, FEMSA Logística's fleet was recognized by the Mexican Ministry of Environment and Natural Resources (SEMARNAT) in 2015 for its excellent environmental performance for the fifth consecutive year (FEMSA Logística 1).
- FEMSA joined the "Cadenas Ecoeficientes" (Eco-efficient Chains) program, which supports micro-, small- and medium-size companies in Mexico that are part of the value chains of FEMSA, Walmart and Banorte with the objective to build supplier capacity regarding the management of energy, water and waste. This program was developed by Instituto Tecnológico de Monterrey in collaboration with the MIF. Suppliers from Coca-Cola FEMSA, FEMSA Logística completed this program in February 2016.
- In partnership with the Social Union for Mexican Business Owners (USEM), FEMSA supported MSME suppliers in a one year training program on social management practice implementation (FEMSA 1).
- The FEMSA Foundation collaborates with the Latin American Alliance of Water Funds and the Coca-Cola Company on the 'Water for the Future' program. This initiative is dedicated to the sustainable management of water in manufacturing plants in Central America and Colombia. Between 2014 and 2017, 'Water for the Future' aims to achieve the conservation of six thousand hectares of water basins as well as the replenishment of almost seven million cubic meters of ground water (Coca-Cola FEMSA 1).
- The FEMSA Foundation has been part of the Latin American Water Funds Partnership since 2011 in collaboration with The Nature Conservancy (TNC), the Inter-American Development Bank (IDB), and the Global Environment Facility (GEF). This conservation mechanism sustainably preserves regional water sources and protects 19 key water basins in seven countries. Through this alliance, FEMSA provides seed capital to local water funds serving as a transparent mechanism for investment, governance, conservation and monitoring of watersheds (Fundación FEMSA 1).

FEMSA is one of the most advanced companies with respect to its value chain environmental management practices, and its success has largely been due to its many active partnerships and its focus on the most important environmental issues facing its value chain. The company has also implemented many sustainable value chain programs to support suppliers in implementing new, and enhancing existing sustainability efforts that will serve FEMSA in the future.

5 The CDP provides a global natural capital disclosure system through which more than 4,500 companies from more than 80 countries and over 200 cities report, manage and share vital environmental information, including via a supply chain initiative (<https://www.cdp.net/supplychain>).

NATURA COSMÉTICOS SA

Brazilian cosmetics manufacturer Natura is renowned for its naturally based product development. It is engaged in the development, manufacture, distribution, and sale of cosmetics, with products ranging from deodorants to sunscreens, lipsticks, and perfumes.

The personal product manufacturing sector has a high environmental impact, accounting for over US\$0.7 billion, coupled with considerable economic significance within LAC, accounting for almost \$US 8 billion of revenue annually across the nine LAC countries within this project's researched universe.

The EEIO was used to identify Natura's top three environmental inputs and outputs, and to model the company's value chain. The top environmental impacts, and the top five sectors of Natura's expenditures are shown in the table below.

Table 5/ Natura's top environmental inputs and outputs

Key environmental inputs	<ul style="list-style-type: none"> • Water use • Fossil fuel-based energy • Aggregates
Key environmental outputs	<ul style="list-style-type: none"> • Greenhouse gases • Metal emissions to land • Acid rain, eutrophication, and smog precursors
Top 5 value chain sectors (% of total procurement spending)	<ul style="list-style-type: none"> • Management of companies and enterprises (23.9%) • Other plastics product manufacturing (6.3%) • Scientific research and development services (6.3%) • Other basic organic chemical manufacturing (5.6%) • Plastics bottle manufacturing (3.4%)

From an environmental impact perspective, both plastics and chemicals manufacturing are water- and energy-intensive sectors and are therefore significant contributors to Natura's value

chain environmental impacts. Water is Natura's largest value chain environmental impact, accounting for 43% of the total, which is followed by greenhouse gases (32%) and nutrient and organic pollutants (9%). Focusing efforts on the suppliers operating in these sectors would therefore be the most effective way to reduce Natura's value chain environmental impacts.

Natura has undertaken several steps to ensure it has identified the points of the value chain that can most effectively be targeted for environmental improvement:

- The company mapped the water footprint of its operations, including value chain, raw materials, and use and end-of-use product stages. Natura found that the greatest water use was in the product disposal phase (45.9%), followed by supply of raw materials and packaging materials (36.9%).
- The company analyzed 60% of its suppliers to identify those with good environmental management practices and opportunities for performance improvement. This analysis was expanded to include indirect input suppliers. The company monitors eight quarterly performance indicators including social and environmental impacts: CO2 emissions, water consumption, waste generation, investment in education, training of employees, and number of occupational accidents, social inclusion and private social investment. These data have been used to identify focus areas for improvement across Natura's value chain.
- Natura sources many of its ingredients from the Amazon, and is highly sensitive about the region's rich biodiversity and attempts to minimize its impact through a threefold strategy: focusing on investment in research and science, building capacity in the value chain, and education.
- Investing in research: Innovation and research in the Amazon present potential ethical challenges, but Natura has established individual agreements with its 2,500 MSME suppliers to guard against "biopiracy," or unethical commercialization of the region's genetic and cultural heritage.
- Building capacity: Natura works to add value within its value chain where possible. Since 2007, Natura has worked with over 120 small cocoa growers to train them in organic production.
- Education: Natura provides funding to help develop local leadership within Amazonian communities, with the aim of supporting the continued use of sustainable practices by educating future workers throughout value chain MSMEs.
- Natura has invited its suppliers to voluntarily report to the GRI's Business Transparency program, which requires the development of a sustainability report in line with GRI guidelines. It was the first Brazilian company to join the Business Transparency Program in 2012, and has had reports produced by over a dozen of its suppliers.
- The company joined the Roundtable on Sustainable Palm Oil (RSPO) in 2010, and buys palm oil products from suppliers with RSPO-certified plantations. By 2020 Natura aims to require its suppliers of raw materials to have RSPO certifications covering any palm oil included in their products. Natura has also been working with palm oil farmers to improve environmental management practices on their plantations, for example through agroforestry.

Natura has been very successful in identifying and managing its key value chain environmental impacts, both inputs and outputs. This success is supported by its significant engagement with the company's stakeholders. Natura works directly with its value chain, encouraging reporting and assisting its suppliers by providing training and access to resources to do this. Through the use of certification schemes such as RSPO, the Forest Stewardship Council (FSC), and the Sustainable Agriculture Network, Natura has encouraged best practices for these materials and inputs, and can be assured through third parties that these practices are being achieved.

Such successes have helped Natura to become widely recognized for its sustainability innovations and advanced policies regarding sustainable development. The company was also ranked the second most sustainable company in the world by Canadian research firm group Corporate Knights.

CASE STUDY

SOCIEDAD QUÍMICA Y MINERA (SQM)

SQM is a major chemical manufacturer based in Chile. It has a global presence across its five business lines: specialty plant nutrition, iodine and derivatives, lithium and derivatives, industrial chemicals, and potassium. In 2014, SQM operated commercial offices in more than 20 countries and sold its products to customers in 110 countries throughout Europe, America, Asia, and Oceania (SQM 2).

The commodity chemicals sector has a high environmental impact, accounting for over US\$4.7 billion across the nine LAC countries within this project's researched universe. At the same time, the sector has considerable economic significance within LAC, accounting for more than US\$50 billion of revenue annually across the nine countries researched.

Trucost's EEIO was used to identify SQM's top three environmental inputs and outputs, and to model the company's value chain. The top environmental impacts, and the top five sectors of SQM's expenditures are shown in the table below.

Table 6/ SQM's top environmental inputs and outputs

Key environmental inputs	<ul style="list-style-type: none"> • Water use • Aggregates • Fossil fuel-based energy
Key environmental outputs	<ul style="list-style-type: none"> • Greenhouse gases • Acid rain, eutrophication, and smog precursors • Dust and particles
Top 5 value chain sectors (% of total procurement spending)	<ul style="list-style-type: none"> • Fertilizer manufacturing (7.2%) • Natural gas distribution (5.8%) • Truck transportation (5.8%) • Management of companies and enterprises (5.7%) • Lessors of nonfinancial intangible assets (4.1%)

From an environmental impact perspective, fertilizer manufacturing requires significant amounts of natural gas, as does natural gas distribution, and truck transportation requires significant amounts of fossil fuels. These three sectors are significant contributors to SQM's value chain environmental impacts. Greenhouse gases represent SQM's largest value chain environmental impact, accounting for 43% of the total, followed by water use (20%) as well as acid rain, eutrophication and smog precursors (10%). Focusing efforts on the suppliers operating in these sectors would therefore be the most effective way to reduce SQM's value chain environmental impacts. SQM has committed to carrying out its work in harmony with the environment. The company has also committed to the development of communities in the regions where it operates and has won a number of awards for its work in this area. For example, the Municipality of Maria Elena honored SQM for its contribution to the industrial and economic development of northern Chile. Additionally, SQM signed an agreement to participate in "Más Proveedores de Tarapaca", a program to develop local mining industry suppliers and design solutions to the problems faced by mining companies in the region. 32 local suppliers associated with metal mechanics, electricity, and engineering and civil projects that are headquartered in the region participated (SQM 1).

Trucost found little evidence to suggest that the company's environmental management initiatives extend to its value chain, but SQM is highly active in the environmental management of its own operations. **The company has implemented initiatives in the following areas to improve its environmental performance:**

- **Energy:** Around 90% of SQM's energy requirements come from solar energy sources.
- **Water:** The company complies with all regulations, aims to improve its water efficiency and recycling, and has conducted analyses to evaluate potential ecosystem damage before extracting water for its operations.
- **Waste:** SQM disposes of its hazardous and non-hazardous waste responsibly and using innovative solutions. For example, around half of SQM's hazardous waste is reutilized as an alternate fuel source. The company also treats all water effluent and/or reuses it in the production process where possible.
- **Biodiversity:** The company implements biodiversity protection and impact mitigation plans in areas of high biodiversity value. SQM also participates in conservation efforts led by regional authorities and implements monitoring and control plans to cover vegetation, flora, fauna, and marine biota.

Opportunities exist for SQM to maximize the impact of these initiatives by engaging its suppliers in its environmental management practices and putting in place standard supplier requirements for vendors. There is also a significant opportunity for SQM to effect change in Chilean MSMEs' environmental management practices, particularly as the company already engages closely with small and local companies. Around 95% of SQM's suppliers are local, located in the Metropolitan, Tarapaca, and Antofagasta regions of Chile.

SQM could leverage its existing economic development-focused relationships, such as with "Más Proveedores de Tarapaca," and extend its activities to the environmental management realm, particularly since environmental permitting, access to local water resources, and land

rehabilitation are environmental management issues that are particularly relevant to the mining sector. The company could also potentially leverage its community partnerships in order to engage the community and its suppliers on environmental management activities. **SQM's current partnerships include:**

- **Regional councils**, such as the Regional Council on Mining Safety (Coresemin) – Antofagasta
- **Foundations**, including the Nitrates Museum Foundation
- **Municipalities**, for instance the Municipality of San Pedro de Atacama
- **Universities**, i.e. the University of Santiago de Chile

SQM has been successful in terms of managing its operational environmental impacts, however this success has yet to be translated to managing the environmental risks embedded in its value chain relating to natural resource use and environmental emissions. Moving forward, SQM may look to leverage its relationships and programs that engage with its partners and suppliers, and stimulate local community development so as to include responsible environmental management within its value chain.

WALMART DE MÉXICO Y CENTROAMÉRICA (WALMEX)

Walmart de México y Centroamérica (Walmex) owns the largest retail chain in Mexico and Central America. In 2014, Walmex operated more than 3,000 stores across six countries: Mexico, Guatemala, Costa Rica, Honduras, El Salvador, and Nicaragua.

The broadline retail sector has medium-high environmental impact, totaling over US\$1.7 billion across the nine countries researched, and considerable economic significance, accounting for almost US\$59 billion of revenue.

Trucost's EEIO identified Walmex's top three environmental inputs and outputs, and to model the company's value chain. The top environmental impacts, and the most important sectors of Walmex's expenditures are shown in the table below.

Table 7/ Walmex's top environmental inputs and outputs

Key environmental inputs	<ul style="list-style-type: none"> • Water use • Agriculture • Fossil fuel-based energy
Key environmental outputs	<ul style="list-style-type: none"> • Acid rain, and smog precursors • Greenhouse gases • Dust and particles
Top value chain sectors (% of total procurement spending)	<ul style="list-style-type: none"> • Real estate (15.2%) • Management of companies and enterprises (5.7%) • Monetary authorities and depository credit intermediation (3.4%) • Warehousing and storage (3.0%)

As a major retail company, Walmex has significant real estate requirements. From an environmental impact perspective, the real estate sector's most significant areas of exposure come from the electricity and fuel consumption required for lighting, cooling and refrigeration at the facilities. Of the most important sectors in terms of expenditures, water is Walmex's largest value chain

environmental impact, accounting for 41% of the total. This is followed by greenhouse gases (37%) and acid rain, and smog precursors (15%).

As part of Walmart, a huge multinational corporation, **Walmex must comply with its parent company's supplier guidelines, and can exert significant influence on its value chain, which it does through:**

- A supplier Code of Conduct that includes expectations for environmental practices and compliance with all environmental laws, including those relating to waste disposal, air emissions, discharges, toxic substances, and hazardous waste disposal. Factories are audited for compliance, and if they fail are asked for a remediation plan. Failure to improve will result in the factory being banned from selling its merchandise to Walmart.
- The company offers training programs to MSMEs to help them develop skills needed to improve their eco-efficiency (Walmex 1). Walmex, in collaboration with the National Environmental Ministry, implemented a program to train suppliers on the use of tools to develop eco-efficiency projects within their operations and in 2014 the online version of the program was launched in collaboration with the Instituto Tecnológico y de Estudios Superiores de Monterrey (Tec de Monterrey). The company's Environmental Leadership Program has assisted participating suppliers in reducing their operational energy use by identifying eco-efficiency opportunities in their processes.
- Walmex stresses collaboration as key to successful implementation of sustainability initiatives. The company hosted two-day sustainability fora aimed at bringing together suppliers, retailers, and specialists to share their experiences and best practices (Walmart Business 1).
- Since 2012 Walmex has disclosed its carbon emissions to CDP, and in 2015 it began requesting the disclosure of its main suppliers to the CDP Supply Chain program.
- Walmex signed on to the Environmental Leadership Program organized by the Mexican Ministry of Environment and Natural Resources (SEMARNAT), through which companies can share learnings and encourage industry-level best practices, avoid duplication of resource use, and enable more companies to improve practices jointly.

Walmex has been successful in managing its value chain environmental impacts through the engagement of its suppliers, in great extent due to the high degree of influence that Walmex has over its suppliers. Because of this level of influence, Walmart is able to enact strict guidelines that its suppliers need to respond to. Walmart has also been effective in prioritizing its efforts to the areas where they will be most effective. Before rolling out its energy-saving program, Walmart selected its top 200 suppliers in China, which constitutes 60% to 80% of its total value chain, and worked with them to develop best practices that could later be used globally. If the suppliers needed help, Walmart had consulting companies that specialize in energy efficiency to support them.

In addition to influencing its upstream environmental impacts, Walmex has also approached its downstream environmental impacts in innovative ways. Since 2011, the company has had a campaign to encourage consumers to reduce their use of plastic bags. The result was a 50% decrease in plastic bag waste.

Walmart has set ambitious goals in terms of sustainability. The achievement of these goals has relied on partnerships, which has been a key focus area for Walmex, and a continued focus and management of water use and greenhouse gases embedded in its value chain will be essential for the company's sustainability success.



CONCLUSIONS

To improve companies' environmental impact management within their value chains, several key themes have been identified, including by the "Greening Value Chains Technical Study." These themes include:

- Extending procurement strategies to consider all levels of the value chain;
- Identifying the most material environmental impacts arising in the value chain (e.g. greenhouse gas emissions, water use, etc.) to focus effort on key areas of improvement;
- Incorporating cross-functional approaches to business and environmental performance indicators that involve team members across various business divisions (procurement, sustainability, research & development, manufacturing, etc.);
- Building stronger communications with suppliers to support better decision making in sustainable procurement;
- Collaborating with competitors, suppliers, and other industry members to exchange knowledge and best practices;
- Using suppliers as force multipliers. Suppliers can be used to roll out best practices further to their own value chains, thereby multiplying the impact of improved environmental management.

The following steps present a best practice process for companies to improve value chain environmental impacts:

1. Map the value chain in order to gain better visibility of its physical and geographical framework;
2. Develop an understanding of key risks and opportunities which may affect value chain resilience;

3. Assess and prioritize the required actions;
4. Develop an action plan based on key risks and opportunities;
5. Implement action plan, integrated into suppliers' contracts where necessary.

In terms of the suppliers themselves, **best practices** and examples of the steps required to achieve this **include**:

- Identify material impacts within their operations;
- Collaborate with customers, and other suppliers within their own value chains, to share knowledge and help facilitate improvement;
- Seek involvement in wider projects and sustainability initiatives, such as voluntary government-organized initiatives to improve the environmental efficiency of operations or products.

Lessons learned from the management of environmental impacts and natural resource use in the value chains of the large companies studied can be applied to companies in other sectors with varying value chains. These lessons include:

1. Understand and quantify your value chain impacts

As a first step, ensure that your organization identifies and prioritizes its most significant environmental impacts across its value chain. Companies in the key sectors identified can look to this research, and the large companies highlighted in the case studies, for guidance on which value chain sectors, and which environmental inputs and outputs specifically, should be strategic priorities. Prioritizing efforts in this way allows companies to be both effective and efficient in reducing environmental impacts and the associated risks.

Several tools, such as the Historic Futures 'String' tool and Trucost's Natural Capital Analyzer Tool, both profiled in the accompanying Technical Study, can help companies identify their value chain impacts and provide platforms for supplier engagement. International best practice has shown that once baseline measurements have been established, large companies can set performance indicators and targets and assist suppliers in measuring, reporting, and managing priority impacts.

2. Engage with suppliers and create incentives

After identifying the areas of your value chain that are most exposed to environmental risk, begin engaging with suppliers in a targeted way. Target MSMEs with educational programs that provide technical support and encourage shared learning, highlight best practice examples, and provide opportunities to collaborate in their implementation. Analysis outside of this study has found that this can result in productivity increases and associated financial benefits. Adopting a collaborative approach to implementing environmental best practices throughout value chains helps suppliers overcome barriers of awareness and practical and financial

capacity to engage in sustainability initiatives. Best practice experiences have also found that large companies can begin with pilot programs with these objectives and tailor their approach over time to more effectively prioritize deployment of programs to key suppliers and supplier groups. Such programs can be developed following best practice as outlined by the UN Global Compact's recommended **best value chain practices**:

- **Determine the business case for a sustainable value chain program** – the drivers can be to manage risks, improve efficiencies and meet clients expectations;
- **Develop a Supplier Code of Conduct** – to be aligned with UN Global Compact Principles and potentially with other norms (e.g. ISO standards);
- **Determine the scope of the value chain program** – go beyond direct suppliers and integrate indirect suppliers;
- **Engage with suppliers** – identify communication channels, create incentives, and set audits to verify if they are actually applying the norms in the Supplier Code of Conduct;
- **Determine roles and responsibilities** – identify and coordinate the actors involved in value chain management (i.e. value chain board, supplier relationship managers);
- **Collaborate with stakeholders and industry leaders** – some of the benefits can be sharing best practices, sharing resources, increasing credibility, and creating consistencies amongst sustainability plans;
- **Determine goals and assess progress** – it is important to set procedures to assess the performance of the company against the goals initially determined.

3. Utilize available resources to facilitate improved performance

The tools reviewed in this study provide assistance in one of three key areas, namely traceability/transparency of value chain, reporting of sustainability, and implementation of action. These tools are described in detail in section 3 of the "Greening Value Chains Technical Study."

4. Engage with other stakeholders to create incentives

Governments and financial institutions are key players that can help enhance environmental sustainability within companies' value chains. Trucost found that companies are often willing to incorporate environmental best practices, but that stricter regulations and access to financial capital would translate this willingness into real action.

Creating partnerships between purchasing companies and using common requirements for suppliers are also effective ways to employ previously established methodologies and avoid duplication of efforts for both large companies and the MSMEs with which they engage.

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