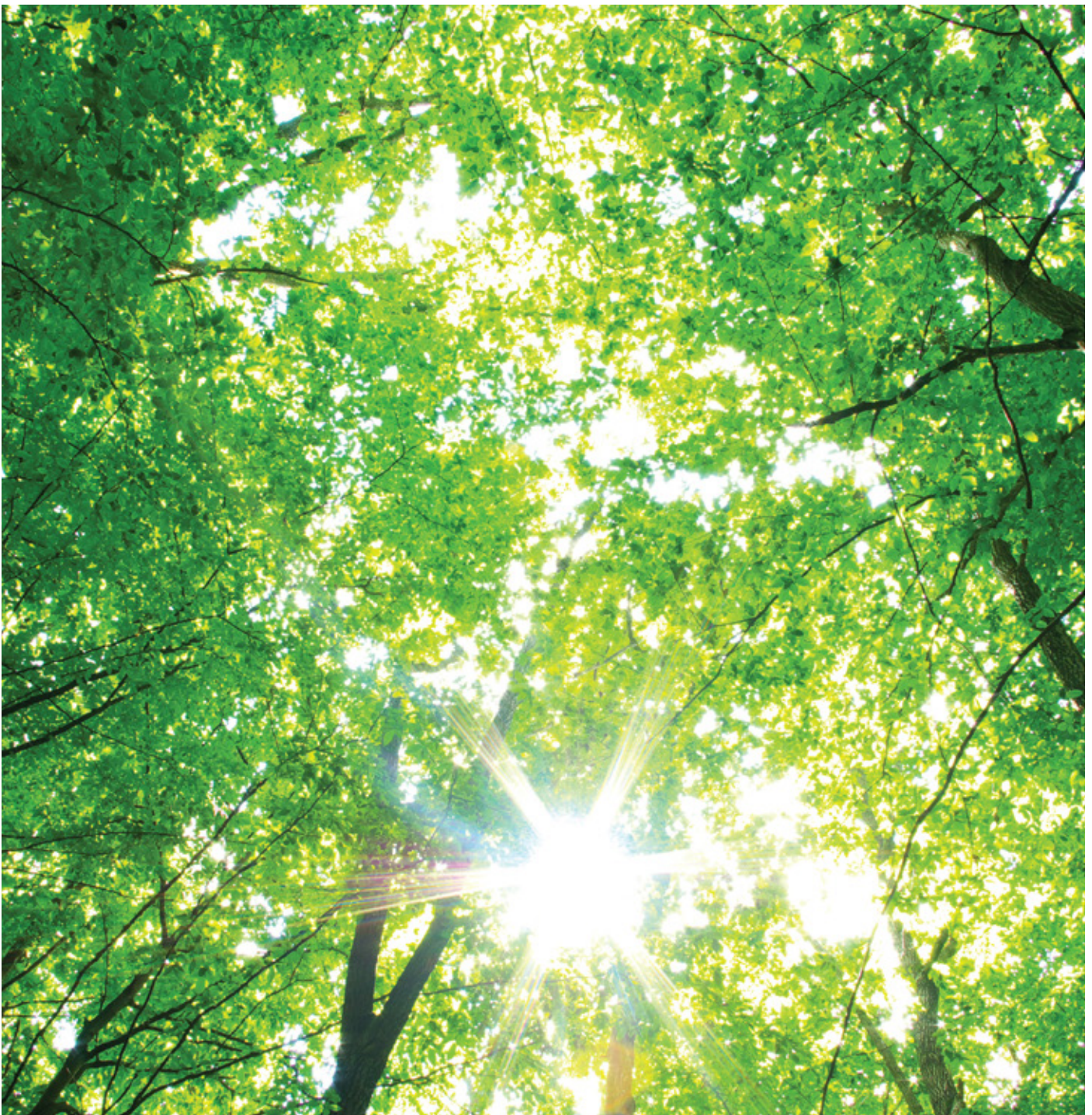

CDP SUPPLY CHAIN LATIN AMERICA 2016/2017 Deepening Engagement for a Low Carbon Future

CDP LATIN AMERICA

February 2017



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Executive Summary

Climate change continued to make headlines in 2016. In the aftermath of the historic COP21, the Paris Agreement was the object of unprecedented international cooperation, leading to its entry into force in November 2016.

Meanwhile, 2016 proved to be the hottest year on record [], highlighting the need for ambitious mitigation action and enhanced adaptation efforts. In Latin America, where many national governments have demonstrated leadership in the climate agenda, the possibility of combining GHG emissions reduction and development objectives becomes clearer as NDCs are put in place, posing new opportunities and challenges for businesses in all sectors.

For the third time, a Latin America report is prepared for the CDP Supply Chain Program. In 2016, 89 organizations in the world engaged in the Program, requesting information from over 770 suppliers in Latin America only. In partnership with WayCarbon, CDP has evaluated the data reported in order to draw insights about climate action in the region's businesses. The number of responses was 46% higher than in 2015, with a sharp increase in the participation of SMEs. Responses to the water questionnaire have also grown, confirming the materiality of climate change to businesses operations in the region, particularly in terms of water management and availability.

Also as a reflection of the region's heterogeneity, ambition levels and participation rates tend to be highly unequal within and across countries. The sectors of Industries, Consumer Staples, Materials and Consumers Discretionary tend to concentrate most of the respondents (84.7%), whereas Brazil and Mexico account for 83.7% of all participants in 2016.

A cross-country comparison reveals that high levels of exposure to climate-related events is not always followed by higher levels of companies' climate management maturity. In doing so, this analysis develops two composite indexes. The Climate Management Maturity Index (CMMI) assesses practices, governance and management in reporting companies. Additionally, a Climate Exposure Index (CEI) is used to evaluate climate exposure amongst reporting businesses. The combination of the two evaluations allows the classification of companies in four groups: Exposed, Resilient, Laggards and Strategists.

One important message from this report is that companies need to increase ambition and act to manage their climate risks. While Mexican businesses seem to transition towards more sustainable practices, Brazilian companies, on average, perform poorly when it comes to climate change maturity indicators: in Brazil, only 24% of companies monitor their GHG emissions (the figure is 42% for Mexican businesses). In total, 28% of the Latin American companies provided Scope 1 and 2 emissions data, which is still far from the ideal scenario. Ultimately, supply chains will not be able to offer substantial contribution to climate change mitigation if emissions monitoring is not a widespread practice.

Differences in performance can also be identified among cohorts of companies. In doing so this report groups companies according to their years of experience participat

ing in the CDP Supply Chain initiative.

Companies reporting for the first time are called Hookies, while companies reporting for the second year are denominated Learners and the Pioneers are the companies that report since 2014. Surprisingly, businesses reporting for the first time in 2016 (hookies) demonstrated better performance in comparison to the ones reporting for the second time in 2016 (learners). For instance, companies reporting for the second year are denominated Learners and the Pioneers are the companies that report since 2014.

Surprisingly, businesses reporting for the first time in 2016 (hookies) demonstrated better performance in comparison to the ones reporting for the second time in 2016 (learners). For instance, they were more likely to develop emission reduction initiatives (+105.8%) and integrate climate change into the business strategy (+116%) than their more senior peers. Pioneers (companies reporting since 2014), in turn, present better performance in all climate management aspects when compared to the companies reporting since 2015.

The superior performance of companies reporting since 2014 also stands true when it comes to emissions data. The group of pioneers had the highest proportion of companies reporting a decrease in emissions in comparison to the previous year (36.17%), besides demonstrating having the best capacity of assessing the evolution of their GHG emissions (74.47%). The majority of hookies (78.66%) and learners (60.74%) were not able to report such variation, either for not having any emissions data or due to 2016 being their first year of estimation.

When assessed from the sectorial standpoint, companies from the Telecommunication, Utilities and Financial sectors demonstrate, overall, better climate change management performance. On the other hand, potentially high-emitting sectors, such as Industries, Consumer Staples and Materials, must be supported and encouraged to identify and monitor their GHG emissions. Businesses reporting water management practices are heavily concentrated in the Consumer Staples sector, as Food & Beverage companies are highly exposed to water shortages.

Until the present, the increasing number of participants in the CDP Supply Chain Program does not seem to be followed by an actual increase in the quality of climate management. Identification of climate-related risks and opportunities appears to be a more consolidated action in Latin American businesses, although only a small portion of the respondents adopt specific climate risk management approaches and adopt water management practices.

As climate regulation evolves in Latin America, both scope and scale wise, and the window for limiting global warming to the level of 2oC becomes narrower, the need for increasing corporate sector engagement becomes more evident. As demonstrated by results, progress is particularly necessary in the field of emissions monitoring. Given the disparity of performance among reporting companies and the existence of wide room for improvement, dissemination of good practices among countries, sectors and businesses has the potential to play a decisive role in sustainability of supply chains in Latin America.

The Waycarbon Perspective

Henrique Pereira, Co-founder of WayCarbon



Time for action is now, and action must stretch beyond the corporate organizational boundaries.

Latin American businesses must enhance action. In 2016, the world experienced a new temperature record, stressing the urgency for ambitious mitigation and adaptation efforts. Yet analysis of this year's Latin American Supply Chain Program data unmask a worrying situation. Whilst engagement and participation increases, actual performance improvement could not be identified.

The ambitions set in Paris echoed around the globe as the Agreement entered into force in November 2016.

NDCs represent an unprecedented opportunity to align national mitigation and adaptation objectives, investments, and policies towards a low-carbon future. Nevertheless, businesses seem to be shortsighted.

The time for action is now, and action must stretch beyond corporate organizational boundaries. The business case for sustainability is indisputable as climate impacts, resource scarcity and the need for energy security are more relevant than ever to the private sector. Unfortunately, data shows that supply chains are falling short of mainstreaming sustainability as a strategic variable to business.

The increasing participation of companies reporting to CDP is great news. But progress is still slow on both climate and water management. The fact that so few companies are monitoring GHG emissions, or getting ready to deal with increasing exposure to water risks, demonstrates that the challenge is considerable. Still, it is a challenge that can be overcome.

Yet amidst these huge challenges, new tools are emerging. In 2017, CDP will broaden its initiative to cover forests and to understand how supply chains are monitoring and fighting deforestation, suppliers must get ready to catch up and take the next step.

The Supply Chain Program provides an exceptional opportunity for data-driven sustainability management. Purchasing companies should use this data. Investors should use this data. We all, as consumers, should use this data.

The time for discourse has passed. Innovation and emerging technologies already allow us to crack the complexity of supply chains. Purchasing organizations have the opportunity to demonstrate leadership by planning and taking decisions based on data and evidence.

Traditional sustainability metrics may be facing a dead-end, as they become less useful for tracking financial impacts, and therefore, influencing key decision-making within firms. More sophisticated analytics, on the other hand, are translated into meaningful numbers, like financial exposure to climate extremes, loss of natural capital or cash flow impacts, both positive and negative, due to carbon pricing instruments.

This report can be summarized into one single message: Latin American supply chains need to actually demonstrate significant improvement in performance. Companies have the power and the potential to deepen engagement and work together with their supply chains to co-create a low-carbon future.

Henrique Pereira
WayCarbon

Introduction

1.1 The Context

Latin America is responsible for 12.5% of global greenhouse gas (GHG) emissions [1]. In spite of its relatively small contribution compared to other regions, it encompasses countries that respond to reasonably large shares of the world's emissions, including Brazil and Mexico [2]. Latin American countries have demonstrated leadership and are taking significant steps to respond to climate change.

According to UNFCCC, 32 countries in the region have submitted their INDCs [3]. These national contributions can create an unprecedented opportunity if they are seen as low-carbon development plans, aligning national mitigation ambitions, investments, and policies, driving economic sectors towards a sustainable and decarbonized future.

A recent report by UNEP [4] draws a pathway to achieving net zero GHG emissions in the region by 2050. Priority activities include the decarbonisation of the energy sector, the electrification of cargo modals of transport, the integration of regional economic networks, the control of deforestation, the restoration of degraded land, the adoption of low-carbon agricultural practices and the implementation of mitigation measures in the industrial sector.

Aware of the urgency for action, Latin American countries are adopting economic instruments of carbon pricing. Mexico established a carbon tax in 2014 and announced, two years later, its plans to launch a national carbon market starting in 2018. Chile implemented a carbon tax and is considering setting up an emissions trading scheme (ETS) in 2017. In the region, Argentina, Brazil, Chile, Colombia, Costa Rica, Mexico and Peru are participants in the main supporting program for the establishment of carbon pricing instruments, the Partnership for Market Readiness (PMR) of the World Bank.

Furthermore, an increasing number of companies are adopting internal carbon prices. According to the CDP, 517 companies in the world are using internal carbon pricing and 732 plan to do so within two years. These figures represent a three-fold growth between 2014 and 2016. In Latin America, Brazilian companies have been in the leadership of carbon pricing initiatives, including a simulation of carbon markets amongst 29 participant companies.

Beyond mitigation, the submitted INDCs also include goals for adaptation to climate change, uncovering the vulnerabilities of the region [3]. Climate models project that the increase in global mean temperature will lead to a reduction of rainfall in Patagonia, central Brazil, the Caribbean and Central America; higher occurrence of tropical hurricanes; sea level rise; intensification of droughts; and an escalation of other extreme climate events [1].

Such events are relevant to society and to the main economic activities in the region, potentially disrupting production, supply chains, damaging assets and infrastructures.

As the region is highly heterogeneous in terms of economic development, the capacity to respond to these foreseen impacts varies from country to country. In fact, most countries are sensitive to such extreme events, lacking the required adaptive capacity. Latin America is, therefore, highly vulnerable to climate change.

The UN Economic Commission for Latin America and the Caribbean (ECLAC) estimates that the economic costs of climate change are between 1.5% and 5% of the region's GDP [5]. The Inter-American Development Bank (IADB) states that damages under a 2°C warming scenario will likely approach US\$100 billion a year by 2050 [6].

1.2 CDP Latin America Supply Chain Program

As the international climate agenda moves forward, particularly with the Paris Agreement entering into force in 2016, and as domestic emissions regulations spread around the globe, a fertile ground for action stands in front of businesses. While climate management maturity rises amongst the largest companies in the world, supply chains are still to be fully engaged and supported. It is ubiquitous the understanding that corporate climate action needs to move beyond organizational boundaries, exploring opportunities and managing risks in the supply chain.

CDP seeks to better understand how businesses are managing climate risks, exploring emerging opportunities and encouraging suppliers to take action. In 2016, 89 organizations in the world engaged their suppliers through CDP. As CDP supply chain members, they leveraged their US\$ 2.7 trillion of procurement spend to request information from over 770 suppliers in Latin America, on whose data this report is based.

The dataset analysed in this report represents the world's largest repository of information about corporate climate management in Latin America. CDP has worked with WayCarbon to evaluate this data and draw insights about how supply chains in Latin America are addressing climate change in their businesses.

"CDP Supply Chain has been supporting Braskem as an outstanding tool for collection of our supply chain data, creating an environment of collaboration and integration with suppliers and providing guidance about climate change and water management. These set of information allow the company to identify risks and opportunities in our supply chain."



2 World Bank (2014) Turn Down the Heat: Confronting the New Climate Normal. Washington – DC. 3 CAIT (2016) Climate Data Explorer. World Resources Institute (WRI). Washington – DC. 4 UNFCCC (2017) Database of INDCs as communicated by Parties. United Nations Framework Convention on Climate Change. Last accessed on January 18th, 2017. 5 UNEP (2016) Una vía para la Descarbonización Neta de la Economía Regional para Mediados de este Siglo. Documento de visión. UNEP DTU Partnership – April 2016.

6 ECLAC (2014) The economics of climate change in Latin America and the Caribbean: Paradoxes and challenges. Santiago, Chile, ECLAC, 2014. 7 Vergara, Walter, Ana R. Rios, Luis M. Galindo, Pablo Gutman, Paul Isbell, Paul H. Suding, and Joseluis Samaniego. (2013). The Climate and Development Challenge for Latin America and the Caribbean: Options for Climate Resilient Low Carbon Development. Washington, DC: Inter-American Development Bank.

Participation continues to grow and absolute responses were the highest on record, with 510 companies answering the questionnaire (Figure 1).

Total participation had almost doubled from 2014 to 2015 (+98%), reaching 349 participants, and has now increased by 46%. The response rate, however, was marginally down last year, reaching 66% against 67% in 2015 (Figure 2b). Another interesting trend relates to a sharp increase in the participation of Small and Medium Enterprises (SMEs) replying under the simplified questionnaire in 2016.

The full version of the questionnaire was used by 70% of participants in 2014, 75% in 2015 and 63% in 2016 (Figure 2a). This means that the number of companies providing information on climate risk management to the full set of questions available rose from 261 in 2015 to 321 in 2016 (+23%).

“Arcos Dorados joined GDP Supply Chain as part of the strategy to engage suppliers in assessing water risk and water-related impacts. We believe that only working together and in a collaborative way in the whole supply chain we will achieve our goals to minimize impacts and ensure to supplies that we need to serve our customers. We also help our suppliers promoting ways to exchange knowledge between them in order to help each other to reduce water consumption and share best practices. This year (2016) we also engage our suppliers on climate change issues, in order to find best practices to reduce the overall impact on natural resources.”
Leonardo Lima, Sustainability Director

“Latin America represents around 9.5% of the global suppliers providing information under CDP Supply Chain Program in 2016”

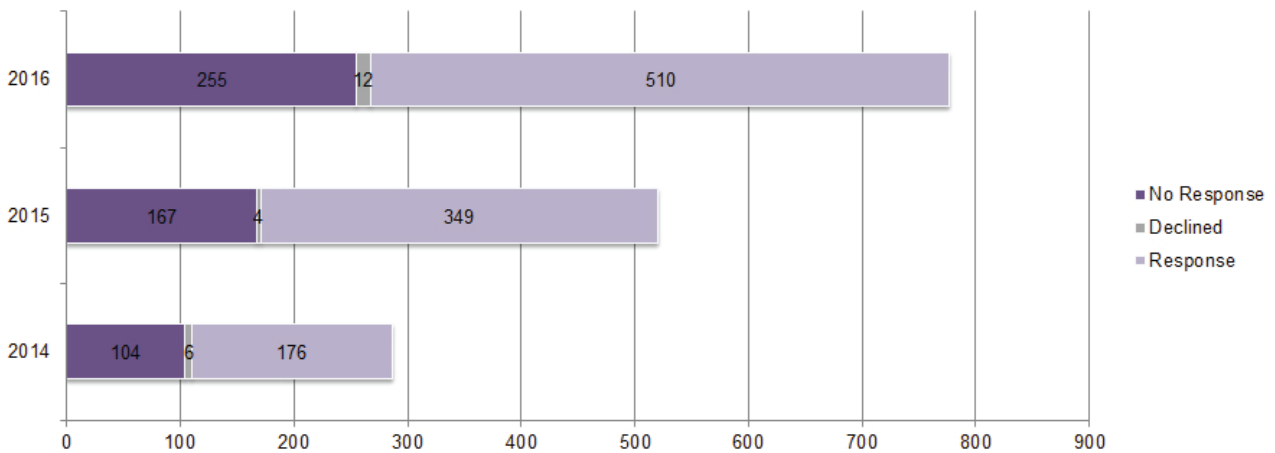


Figure 1. CDP Supply Chain Latin America: companies invited, responses, declined invitations and no response rates

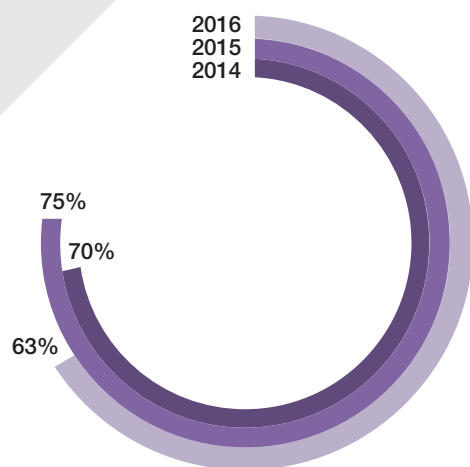


Figure 2a. Report Complexity - Full Questionnaire Response per year

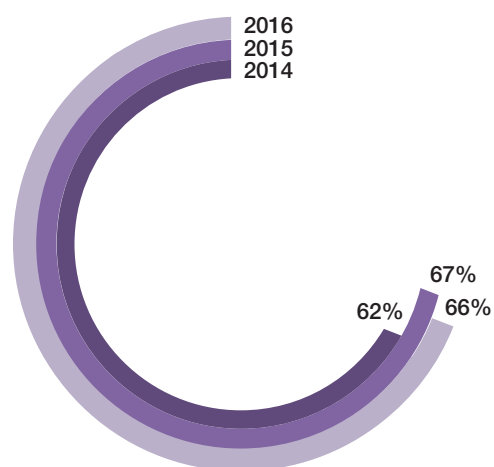


Figure 2b. Participation - Questionnaire Response Rate per year

Responses to the water questionnaire have also been growing (Table 1). In 2014, 32 companies provided information about water management and associated risks and opportunities. In 2015, the number rose to 113 (+253%) companies reporting under the water initiative, and, in 2016, 141 (+24.7%) companies. The numbers indicate that climate change is becoming material to businesses operations in Latin America, particularly in terms of water management and availability. In fact, the southeaster region of Brazil faced severe water stress between 2014 and 2015. In the same period, droughts have also been experienced across parts of the Caribbean, Central America and South America, particularly Bolivia. Meanwhile, flooding and landslides caused by torrential rain affected 411,000 people in Argentina, Ecuador, Bolivia, Brazil, Paraguay, Peru and Uruguay [].

Table 1. Questionnaire response by type - CDP Supply Chain Latin America

Questionnaire	2014	2015		2016	
	Participants	Participants	% Var	Participants	% Var
Climate Only	144	236	63.9%	369	56.4%
Water Only	-	65	-	19	-70.8%
Climate + Water	32	48	50.0%	122	154.2%
Total	176	349	98.3%	510	46.1%

Sectorial engagement is also on the rise (Figure 3). Four sectors have corresponded to the majority of the companies participating in the Latin American Supply Chain Program since the launch of the initiative in 2014. They are Industries, Consumer Staples, Materials and Consumers Discretionary. In 2016, these sectors represented 84.7% of all participants. Furthermore, the number of participating companies has not decreased in any of the identified sectors, having consistently risen in the vast majority of them.

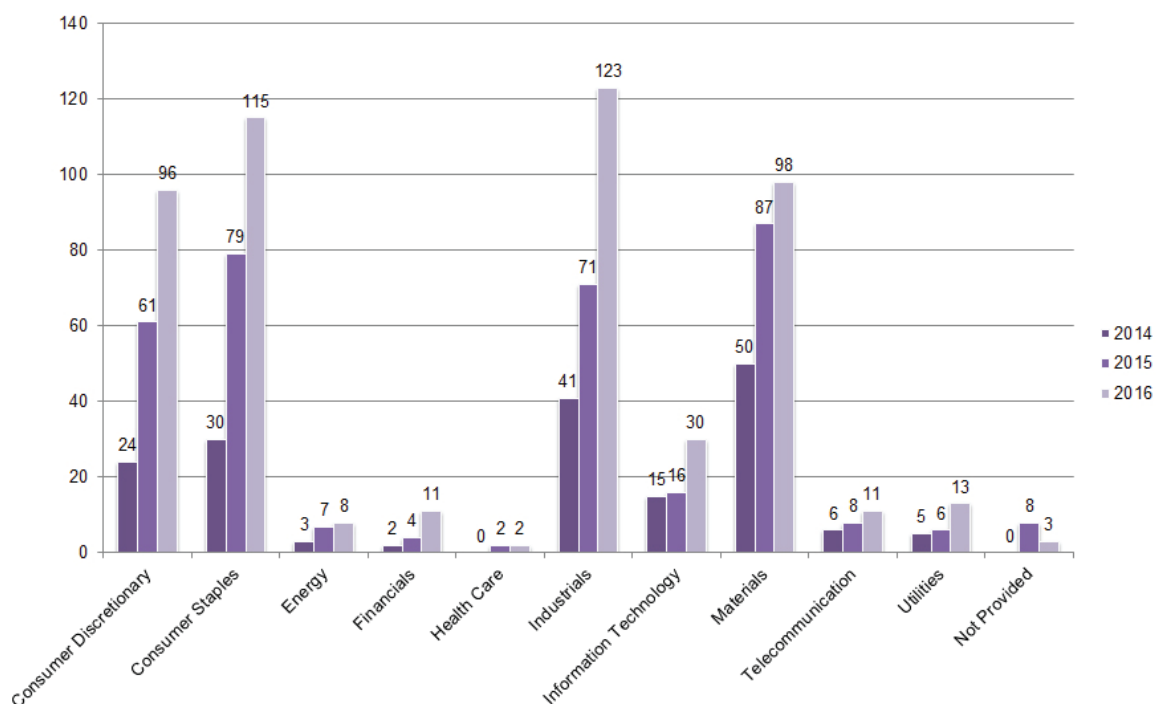
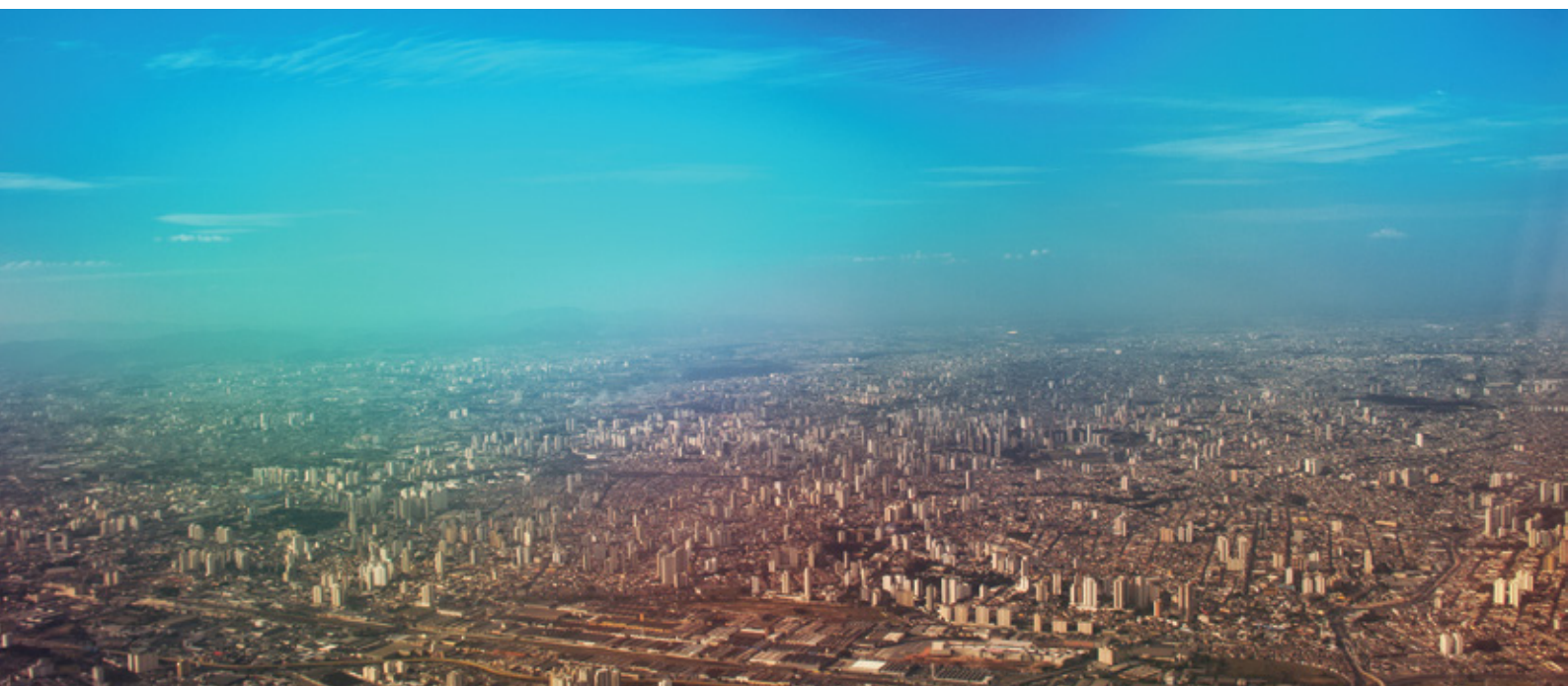


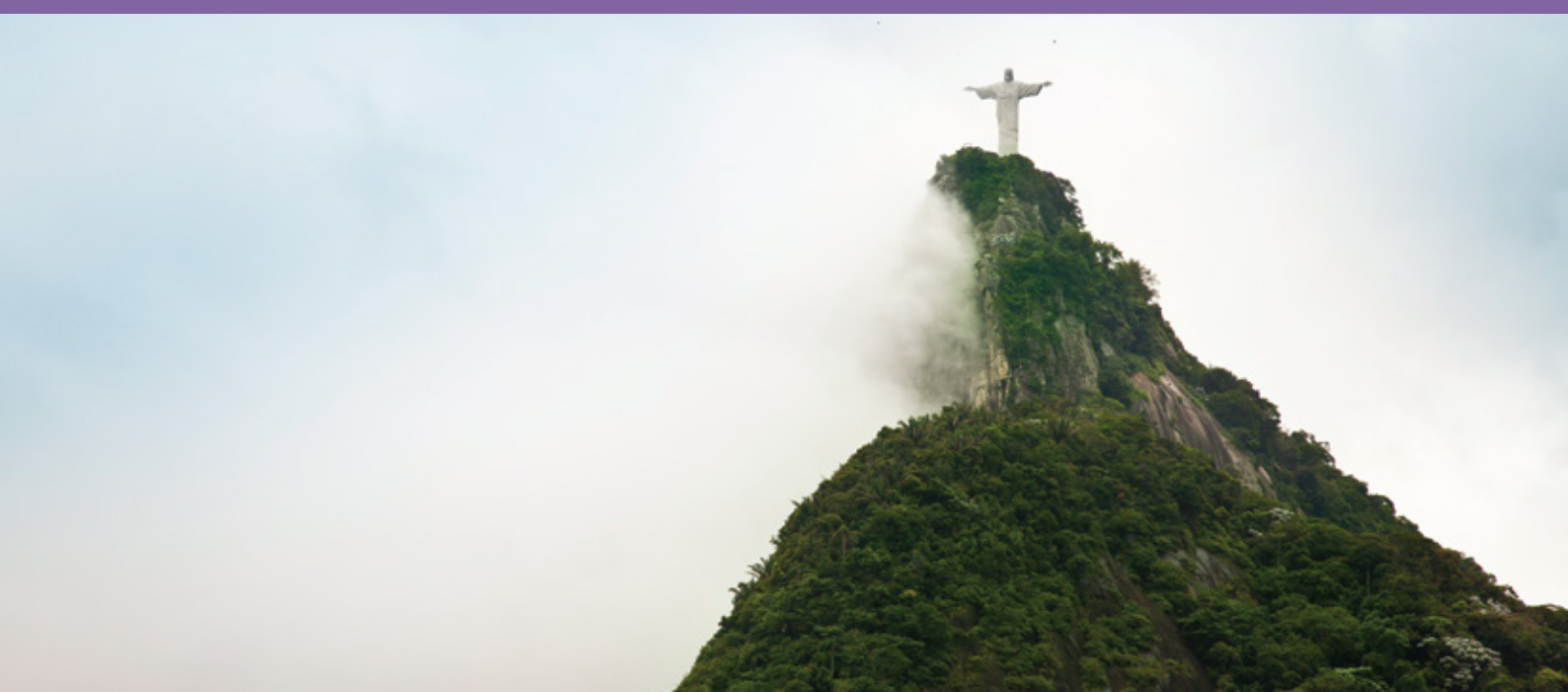
Figure 3. Participation by economic sector in the CDP Supply Chain Latin America

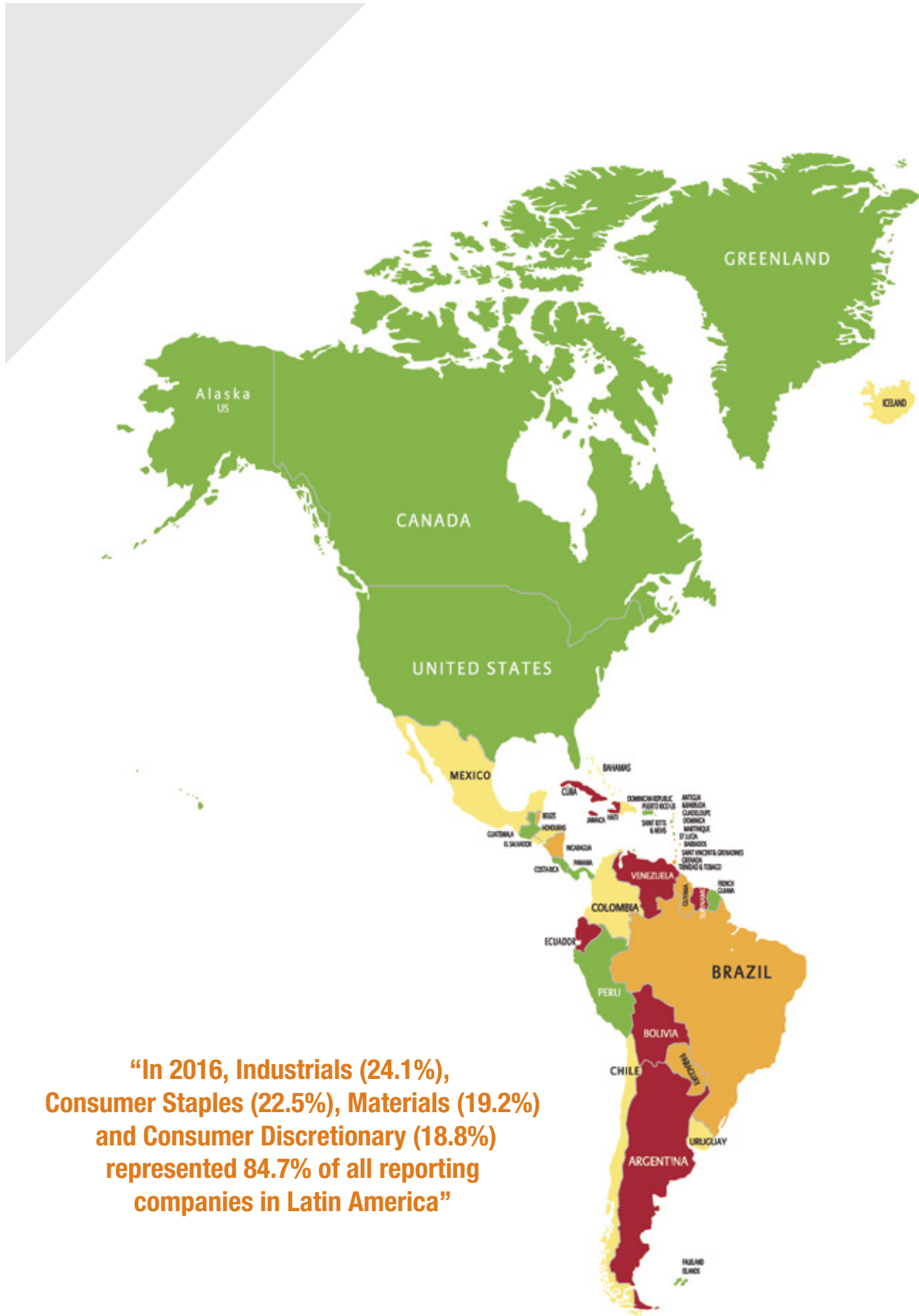
The number of countries represented by reporting companies also follows an upward trend (Table 2). From 2014 to 2016 the observed increase was 42.85%, with businesses from 20 different Latin American countries responding to the 2016 questionnaire. There is, however, a substantial prevalence of companies from Brazil and Mexico, both historically and in 2016 (Figure 4).

Table 2. Number of countries represented by reporting companies in the CDP Supply Chain Latin America from 2014 to 2016



Country	2014	2015	2016
Brazil	118	192	301
Mexico	27	93	126
Argentina	7	18	17
Colombia	5	9	17
Chile	3	7	4
Guatemala	3	1	2
Peru	3	3	4
British Virgin Islands	2	2	2
Paraguay	2	2	2
Venezuela	2	2	3
Bermuda	1	1	1
Costa Rica	1	6	8
Jamaica	1	1	1
Uruguay	1	2	4
Panama	-	4	4
El Salvador	-	3	3
Dominican Republic	-	1	-
Ecuador	-	1	8
Guyana	-	1	1
Honduras	-	-	1
Trinidad	-	-	1
Total	176	349	510





“In 2016, Industrials (24.1%), Consumer Staples (22.5%), Materials (19.2%) and Consumer Discretionary (18.8%) represented 84.7% of all reporting companies in Latin America”

Figure 4. Geographical distribution of participating companies in 2016

Although companies from Colombia, Costa Rica and Ecuador significantly increased their engagement and participation in CDP's Supply Chain Program, Brazil and Mexico host 83.7% of all participants in 2016 (Figure 5). Other relevant countries include Argentina (17), Colombia (17), Costa Rica (8) and Ecuador (8). The remaining 14 countries host 33 participating companies.

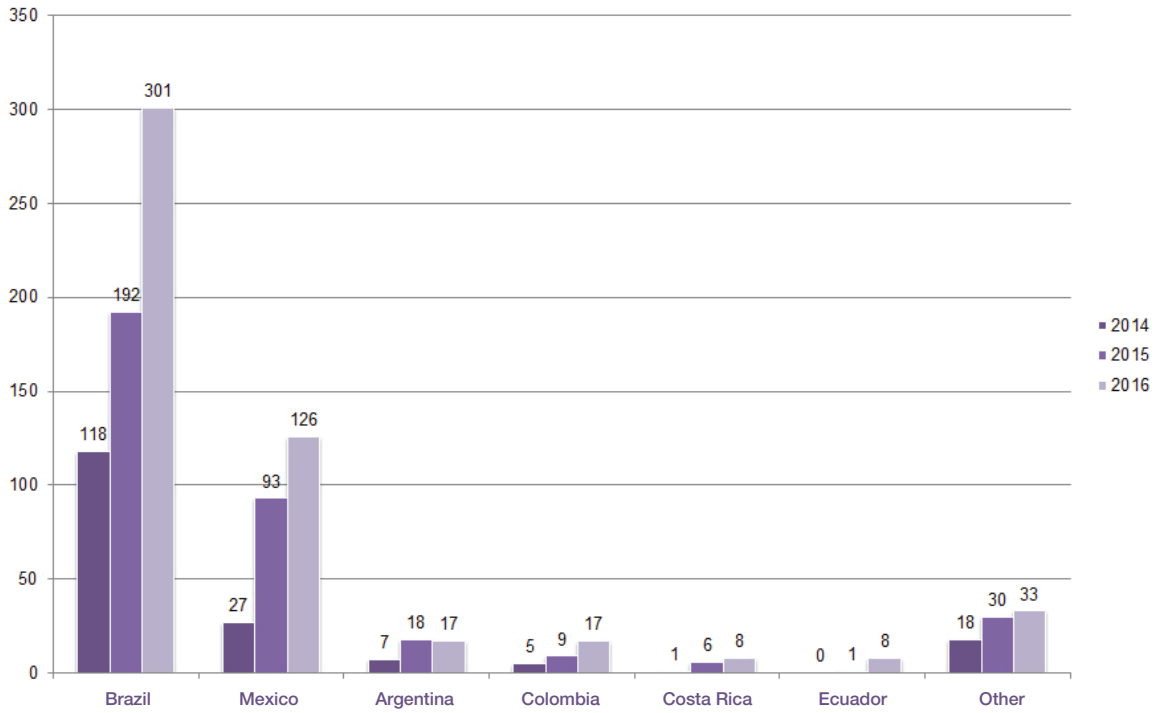


Figure 5. Number of reporting companies by country from 2014 to 2016



CDP Supply Chain - Forest

Managing Deforestation in the Supply Chain

It is estimated that 15% of global GHG emissions are due to forest loss and degradation resulting from deforestation. 80% of deforestation is due to land use change for agriculture and, of this, four “forest risk” commodities are mainly responsible: Cattle Products, Palm Oil, Timber Products and Soy. According to the System of Estimation of Greenhouse Gases Emissions (SEEG), in 2015 46% of Brazilian GHG emissions came from land use and land use change, 22% from agriculture and cattle ranching. These proportions can also be similar to other countries in Latin America that have their economies based on commodities exportation.

These four commodities pervade global supply chains and constitute a very real source of risk for companies. 77% of companies disclosing globally to CDP’s Forest Program in 2016 identified at least one operational, regulatory or reputational risk - related to producing, marketing or sourcing soft commodities - that could cause substantive change to their business operations, revenue or expenditure.

In fact, the total annual turnover at risk for the publicly listed companies that disclosed is estimated at up to US\$906 Billion.

CDP is the only global partner helping leading organizations manage climate and water risks and opportunities in a standardized way across their supply chain. Now, for the first time, we are offering companies the opportunity to do the same for deforestation.

Between 2016 and 2020 CDP will receive support from NORAD (Norwegian Agency for Development Cooperation) to implement the Project “The Power of Procurement: Catalyzing action on deforestation risks on supply chains in Latin America to China and Europe”. The main goal of this project is to engage the private sector and your suppliers to adopt policies, environment and social practices who will reduce the pressure on forests, through partnerships with public sector and non-government associations to reduce the deforestation.

Supply Chain – Forests affords members the opportunity to deepen engagement with key suppliers through the CDP information request. Suppliers respond to a standardized questionnaire once, annually. The results are shared with all requesting customers, enabling efficient reporting whilst maintaining confidentiality.

The CDP disclosure process drives action through superior analysis, progress tracking, target setting, supplier education and collaboration all backed up by our global support system.

Growing consumer and investor awareness is increasing the necessity for companies to source sustainably. For example, a highly damaging Greenpeace consumer campaign against Asia Pulp and Paper resulted in tens of millions of dollars in lost business from 2009 to 2013.

In 2015 the world’s largest sovereign wealth fund, Norwegian Government Pensions Fund Global, dropped 11 companies from their portfolio over deforestation concerns. The Brazilian company JBS stood out in CDP’s Forest report 2016 due to its good practices on traceability and collaboration to secure deforestation free supply of cattle.

The Paris Agreement, which has now entered into force, explicitly references the essential role of curbing deforestation in climate change mitigation efforts. This will drive international governments to greater action on halting deforestation.

Illegal material already poses a significant risk to companies should it enter the supply chain, however in this environment of strengthening regulation and with the fungible nature of many forest commodities the risk that illegal material poses to companies is set to grow. Additionally, reducing emissions from deforestation and forest degradation and removing carbon from the atmosphere through reforestation will figure as relevant measures in many Nationally Determined Contributions (NDCs) set by Latin American countries.

The supply chain is a key locus of action to generate substantive change on deforestation. Deforestation and the risks arising from deforestation are embedded in the primary phases of forest commodity production. Working to ensure that sourced materials are produced sustainably and will continue to be a major concern for companies seeking to mitigate risk and seize opportunities conferring a competitive advantage in the market. Chain Forests as founding members. Through this action they are helping shape the program from day one and demonstrating leadership in driving the development of this new disclosure program. The time is now to seize the initiative and gain the benefits of measuring and reducing deforestation-in the supply chain.

If your company are interest in join the program as a member, please contact lauro.marins@cdp.net for more information.

2. suppliers climate management maturity: a cross-country comparison

This section digs deeper into the questionnaire responses, developing a cross-country analysis of climate management maturity in Latin American supply chains. Furthermore, the proposed assessment seeks to identify if companies are equipped to deal with expected climate-related risks in their geography of operation. In doing so, two indicators are built. The Climate Management Maturity Index (CMMI) assesses practices, strategies and governance of climate change in reporting businesses.

The index is a composite of the Risk Management Approach (20%), Risk (10%) and Opportunity (10%) Identification, Emissions Monitoring (20%), Integration of Climate Change into the Business Strategy (20%) and Water Management (20%) practices. Individual replies of the 510 companies were weighted and aggregated by country. As will be further discussed, results should be interpreted with caution particularly in countries with a very small sample of companies,

like Bermuda (1), British Virgin Islands (2), Guatemala (2), Guyana (1), Honduras (1), Jamaica (1) Paraguay (2) and Trinidad & Tobago (1).

Additionally, a Climate Exposure Index (CEI) was calculated for Latin America for a 2030 climate scenario. The CEI includes four climate extremes contributing to drought (CDD), flood (R5Xday), and to the likelihood of occurrences of very cold (Tn10p) and hot (WSDI) days.

Data was processed by WayCarbon, based on the HadGEM2-ES climate model under an 8.5 representative concentration pathway (RCP). Results for each extreme are presented in Figure 6. The four indicators were aggregated and normalized to compose the Latin America CEI by country.

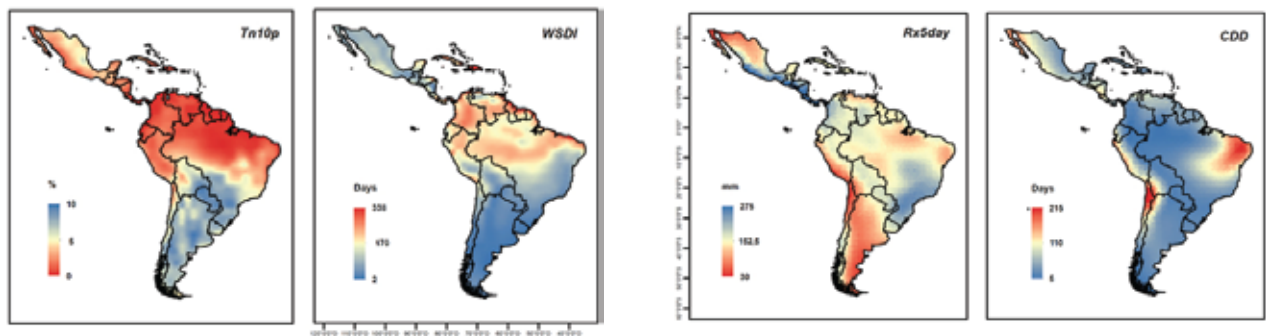


Figure 6. 2030 Climate Extreme projections in Latin America

R5Xday (mm) – monthly maximum consecutive 5-day precipitation (Flood), CDD (days) – maximum continuous dry days (Drought), Tn10p (%) – percentage of days within <10 percentile of cold nights (Cold Extreme), WSDI (days) – annual days with consecutive warm days (Heat Waves). HadGEM2-ES. RCP 8.5. Data Source: CMIP5. Data Processing: WayCarbon



2. suppliers climate management maturity: a cross-country comparison

The CMMI calculation resulted in a lower value of 0.20 and a higher value of 0.77, with a 0.37 median. As previously mentioned, results should be seen with caution as the highest values belong to companies in countries with very small participation. Further, it is worth pointing out that most of the companies with high CMMI values in the top three countries are global businesses, and hence, are used to compete and comply with regulations in mature international markets. Increased participation of companies from those countries would be necessary to minimize the possibility of bias in the analysis. Notwithstanding, results shed some light on how Latin American supply chains are managing climate change and its related risks.

The CEI calculation indicates which companies are most exposed to climate change according to their country of origin.

In Latin America, companies located in Honduras, Argentina, Peru, Colombia and Brazil are on the top of list. Three caveats must be highlighted in this analysis.

Firstly, climate models are highly uncertain, and therefore results should be seen as a comparative analysis amongst countries. Secondly, exposure considers only climate extremes and holds no regards for the capacity of countries to respond to potential climate impacts.

Thirdly, the low resolution of global climate models implies that in very small countries results may be lacking or prone to misinterpretation.

In large countries, on the other hand, the summarization of model results into single indicators might lead to the disregard for high variations within national territories.

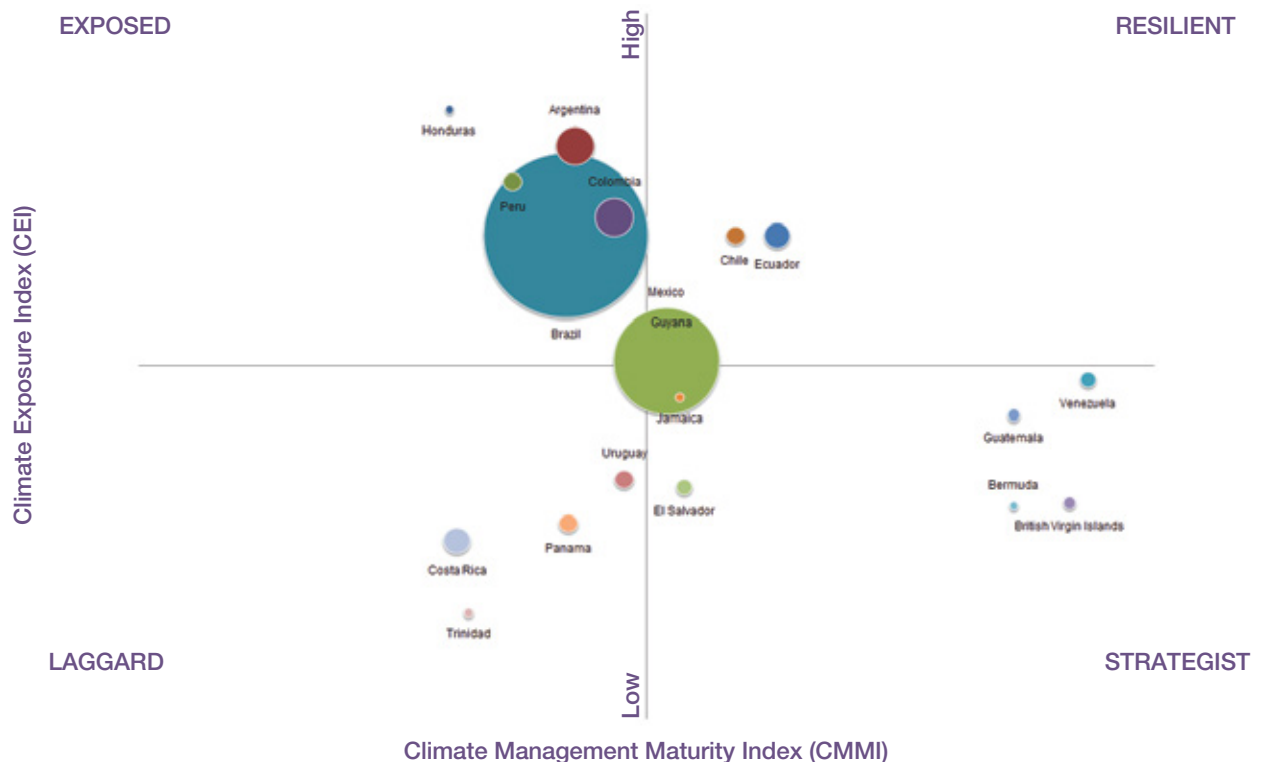


Figure 7. Cross-country comparison of suppliers' climate management maturity

Note: Axis X represents the CMMI, companies on the right-hand side present higher maturity. Axis Y represents the CEI, countries on the top are more exposed to climate change. The size of the bubbles reflects the number of companies reporting under the Latin America Supply Chain Program in 2016.

The analysis allows us to group companies into four quadrants (Figure 7). Companies with low CMMI and high CEI are considered exposed as they lack the basic means to deal with potential climate change impacts. On the contrary, companies with low CMMI and low CEI are considered laggards, as they do not systematically manage climate

change, neither are they expected to be severely affected by it. For high CMMI companies, they can be classified as resilient when CEI is high, as well, and as strategists when, in spite of a low CEI, they demonstrate leadership by regarding climate change as a strategic variable to their businesses.

2. suppliers climate management maturity: a cross-country comparison

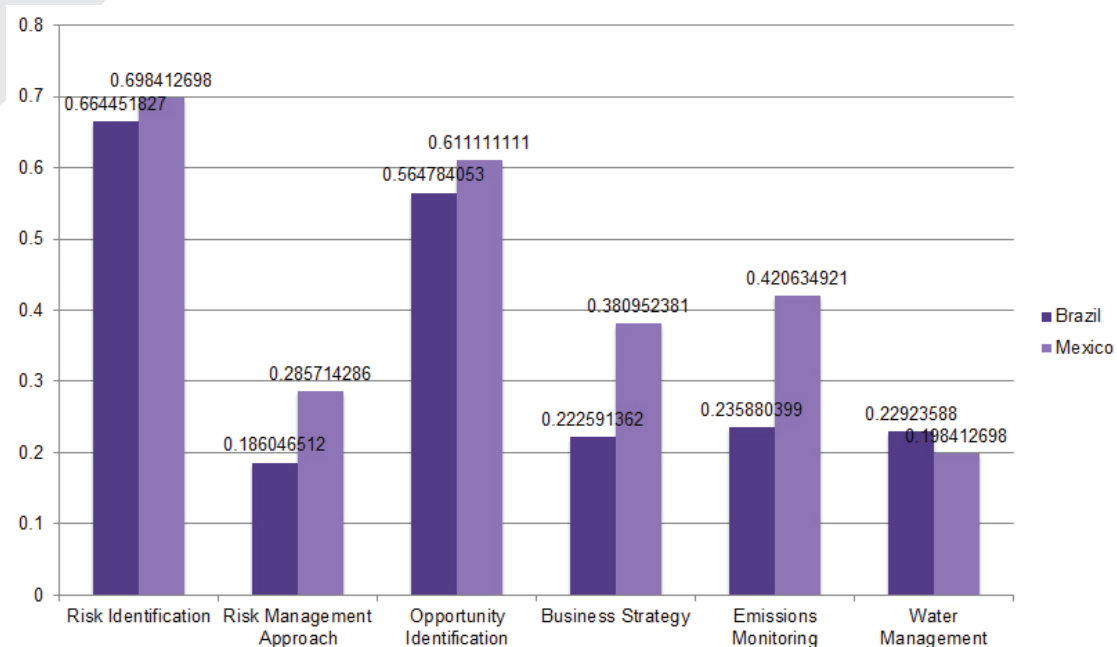


Figure 8. Brazil and Mexico supply chain CMMI decomposed by variable

Overall, procedures for identifying climate-related risks are observed in 66% of Brazilian businesses and 70% of Mexican companies. However, less than 30% of the reporting companies perform risk management either as a climate specific approach or integrated within other corporate risk management procedures. More specifically, only 19% and 29% of Brazilian and Mexican companies, respectively, have a specific climate risk management approach in place.

Further, in spite of the relevance of the theme for businesses, only 22% of Brazilian and 38% of Mexican companies integrate climate change into their business strategy. As climate regulation evolves, one would expect these values to become higher, particularly in Mexico. Finally, and certainly the most surprising result, only 24% of Brazilian companies are monitoring their greenhouse gas (GHG) emissions.

The share amongst Mexico businesses is 42%, higher in comparison with Brazilian suppliers, but still far from an ideal scenario in which companies systematically monitor and report their emissions.

Supply chains will not be able to act and reduce emissions if monitoring is not widely performed.

Database is still restricted, and future reports will indicate how climate management will evolve; however, one could argue that the increasing number of participants is not being followed by an actual increase in the quality of climate management.

In fact, results may indicate that supply chains are providing the easy and qualitative replies, like Risk and Opportunity Identification, and not genuinely acting to deal with Climate Risk Management, GHG Emissions Monitoring and Water Management. In Latin America, companies located in Honduras, Argentina, Peru, Colombia and Brazil are on the top of list. Three caveats must be highlighted in this analysis.

Firstly, climate models are highly uncertain, and therefore results should be seen as a comparative analysis amongst countries. Secondly, exposure considers only climate extremes and holds no regards for the capacity of countries to respond to potential climate impacts.

Thirdly, the low resolution of global climate models implies that in very small countries results may be lacking or prone to misinterpretation.

In large countries, on the other hand, the summarization of model results into single indicators might lead to the disregard for high variations within national territories.

3. CDP Supply Chain Latin America 2016: A Perspective From Reporting Experience and Sectorial Actions

Observations derived from the previous chapter suggest that results should be scrutinized not only in the aggregate of replies, but stratified in ways that underlying trends could be identified. In doing so, this chapter presents the results of the CDP Supply Chain Latin America in 2016 based on two approaches, one considering previous reporting experience and another according to the sector of reporting companies.

In the first approach, companies are classified as per their years of experience in reporting to CDP.

First-year companies are defined as hookies, while second-year companies are called learners and companies participating for the third consecutive year are named pioneers.

This analysis also allows for a cohort aggregation, where companies that participated for the first time in 2014 or 2015, and continued to participate in consecutive years, can be compared in terms of their initial performance and evolution.

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Table 3. Businesses participation by years of experience – CDP Supply Chain Latin America

	2014	2015	2016
Hookies (1st year)	124	183	164
Learners (2nd year)	-	78	100
Pioneers (3rd year)	-	-	57

Note:

SME replies were excluded from the sample to avoid bias results due to questionnaire changes between 2014 and 2016

From the 124 businesses that reported in 2014, 45.6% continued to participate throughout the program. The persistence rate declined over time for hookies. From 2014 to 2015, the persistence rate for first-time participants was 62.9% and from 2015 to 2016, the value declined to 54.6%.

Further, the persistence rate for learners reached 73% between 2015 and 2016, with 57 companies reaching the pioneer status in that year.

It is also worth noticing that the number of new companies reporting declined 10.38% between 2015 and 2016.

As the time-series of the reporting data increases, one would

enquire how experience in reporting (or inexperience) impacts the relative performance of suppliers' climate management. Figure 9 presents the 2016 results for hookies, learners and pioneers. Surprisingly, hookies demonstrated better performance in comparison to learners. Hookies were more likely to identify risk (+40.8%), monitor emissions (+38.7%), set emissions targets (+93.3%), develop emission reduction initiatives (+105.8%) and integrate climate change into the business strategy (+116%) than their peers in the group of learners. In fact, regarding the last topic, hookies were as likely as pioneers to bring climate change into the business strategy.

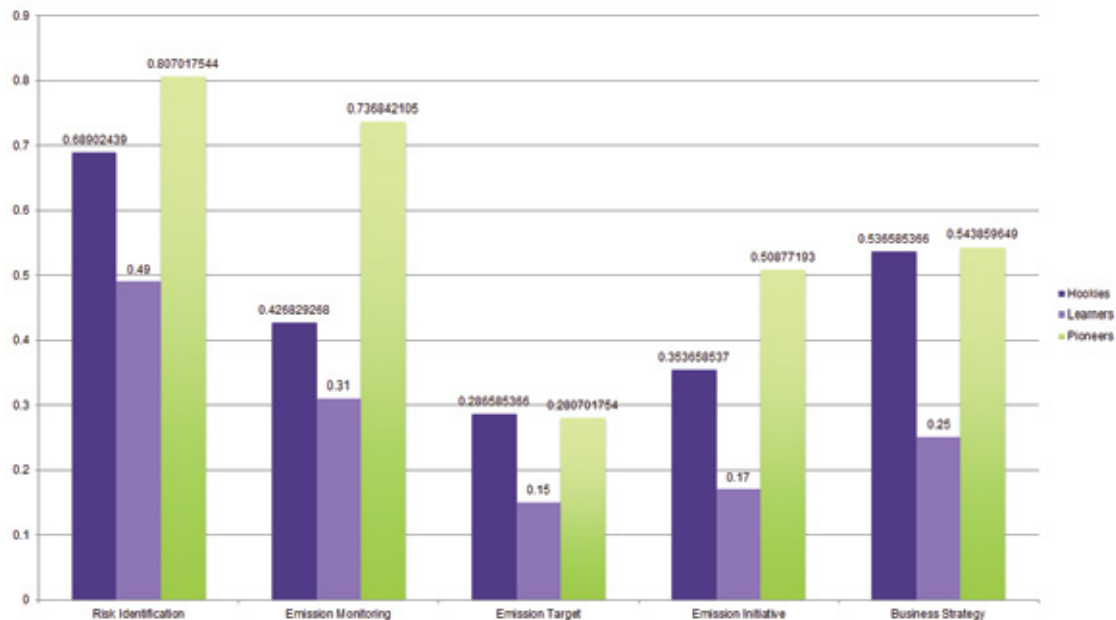


Figure 9. Selected climate management performance for companies reporting for the first (hookies), second (learners) and third year (pioneers) in 2016

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Results draw attention to another relevant question: have companies reporting for more than one year improved their performance? In fact, they have in some aspects.

Yet, it is not possible to identify a systematic correlation between reporting experience and improvement of climate management (Figure 10).

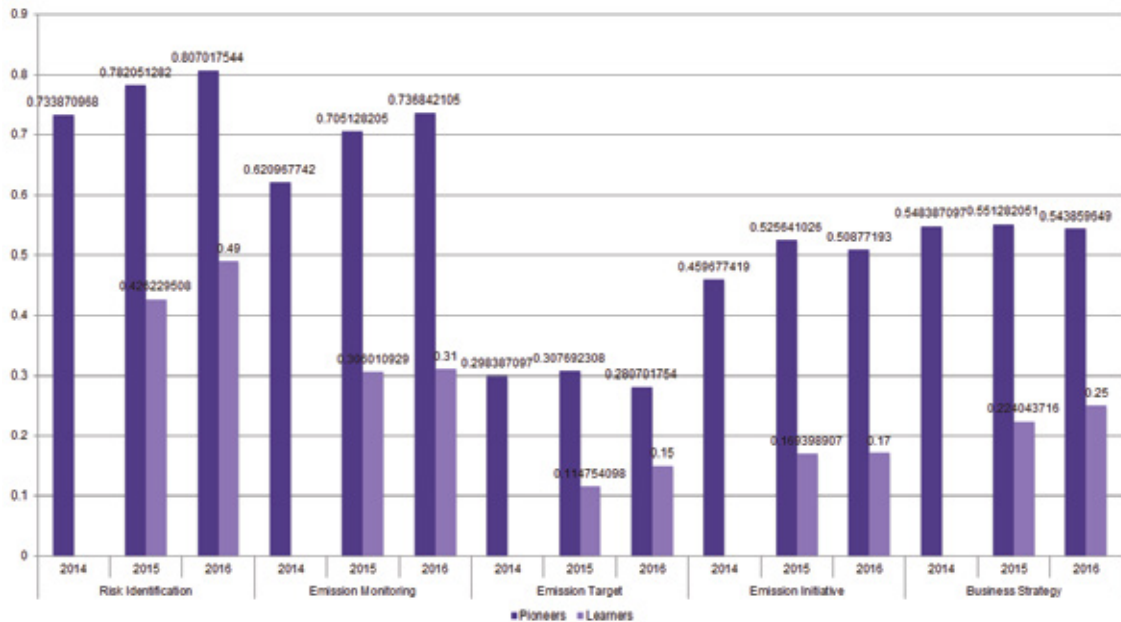


Figure 10. Evolution of selected climate management performance for companies that reported continuously since 2014 (Pioneers) and 2015 (Learners)

Pioneers improved their performance in risk identification (+10.95%), emissions monitoring (+19.35%) and emission reduction initiatives (+10.86%). Companies reporting since 2014 have not evolved in integrating climate change into the business strategy, figure that is stagnant in a level of around 55% of reporting companies. Finally, a marginal decrease was observed in the number of companies establishing emission reduction targets (-6.66%).

On the other hand, learners demonstrated evolution in risk identification (+13.95%), emissions target-setting (+36.36%) and in integrating climate change into the business strategy (+13.63%). Companies reporting since 2015 did not present a decrease in any of the aspects evaluated. However, values were stagnant for emissions monitoring (31%) and for emissions reduction initiative (17%).

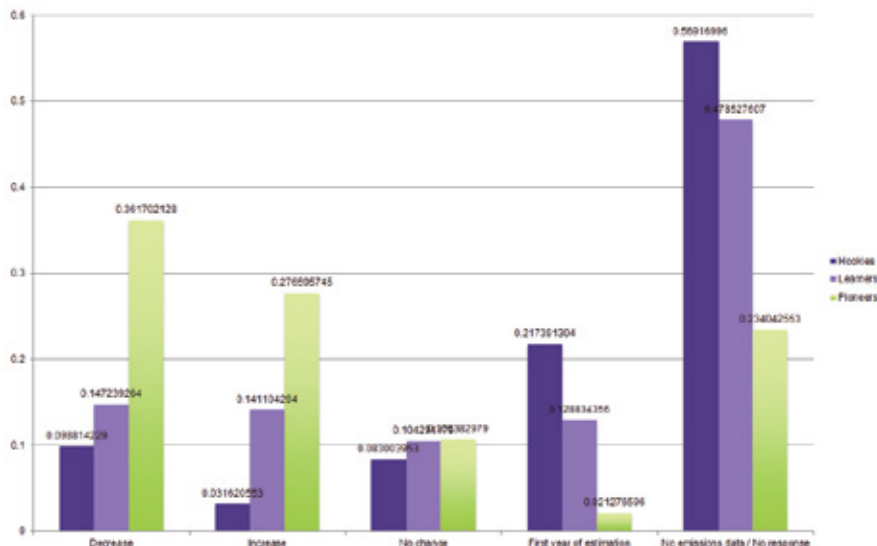


Figure 11. Reported evolution of GHG emissions for companies reporting for the first (hookies), second (learners) and third year (pioneers) in 2016

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The superior performance of companies reporting since 2014 also stands true when it comes to the evolution of emissions among respondents (Figure 11). Pioneers had the highest proportion of companies reporting a decrease in emissions in comparison to the previous year (36.17%, while only 14.72% of learners and 9.88% of hookies reported overall emission reductions over that period). Despite also presenting the highest proportion of companies increasing emissions in relation to 2015 (27.66%), the group of pioneers demonstrates having the best capacity of assessing the evolution of their GHG emissions (74.47% of companies in this group). The majority of hookies (78.66%) and learners (60.74%) were not able to report such variation, either for not having any emissions data or due to 2016 being their first year of estimation.

In absolute terms, reporting companies declared total emissions reductions of 3,816,136 tCO₂e in 2016. It is interesting noticing that 59% of reported reductions came from companies participating for the first time (hookies) and 38% from pioneers.

Further, from 60 companies that reported emissions in 2015 and 2016, 32 presented emission reductions in the period. Scope 1 and 2 emission reduction reported totalled 3,781,836 tCO₂e between 2015 and 2016.

Nevertheless, it is relevant to register that the data demonstrated inconsistencies, like discrepancies in the time series of reported emissions. In such cases, outliers were excluded from the analysis.

“It is also relevant the fact that companies reporting since 2014 present better performance in all climate management aspects when compared to the companies reporting since 2015”.

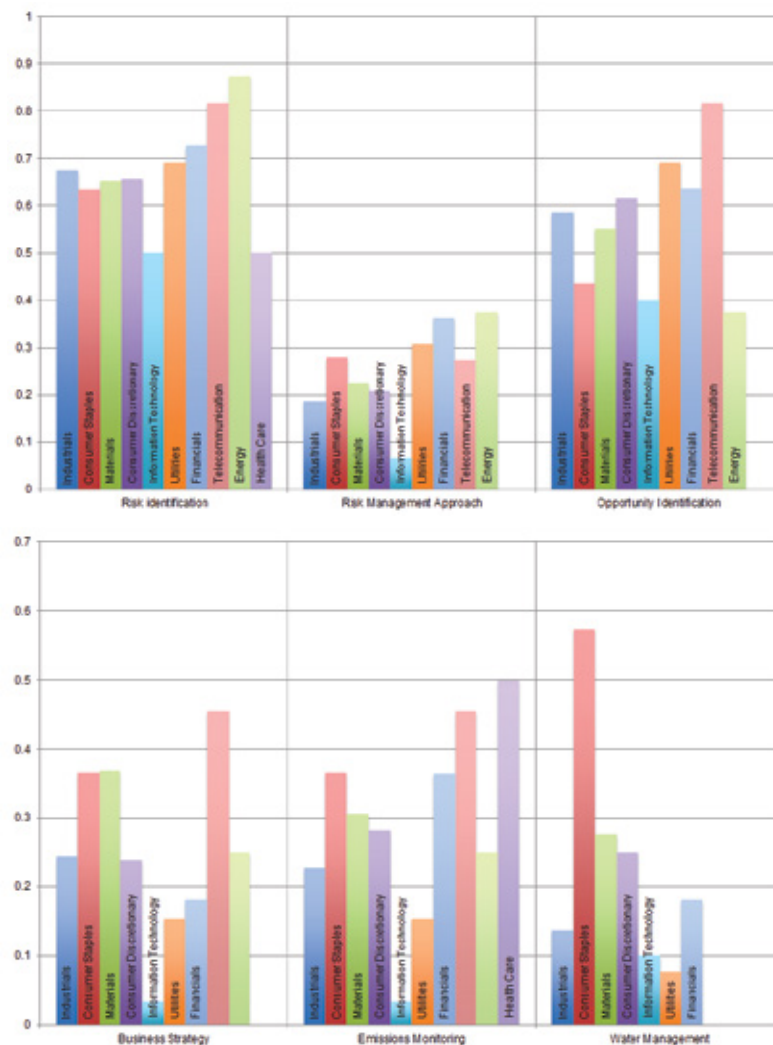


Figure 12. Selected climate management practices per sector

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As discussed, in terms of sectorial representation, companies are concentrated in four main sectors: Industrials, Consumer Staples, Materials and Consumer Discretionary (Figure 3). Figure 12 depicts the proportion of companies in each sector meeting the climate management criteria assessed.

In terms of risk identification, 88% of the Energy companies perform such activity, being followed by Telecommunication (82%) and Financial businesses (73%). In fact, risk identification has proven to be the most common climate management activity identified amongst reporting companies. In total, 332 (65%) companies declare risk identification as a practice.

On the contrary, only 113 (22%) reporting companies declare having a risk management approach for climate change. Such practice is more frequently observed amongst Energy (38%), Financial (36%) and Utilities (31%).

Performance enhances again when looking at opportunity identification. In total, 275 (54%) reporting companies declare identifying opportunities linked to climate-related developments. Once more, such practice is more frequently observed in telecommunication (82%), utilities (69%) and financial companies (64%).

Next, 143 (28%) reporting companies integrate climate change into their business strategy. This is, probably, the most relevant practice for businesses that aim to take climate change seriously, mitigating risks and exploring opportunities. Telecommunication companies are once again at the top of the list, with 45% of companies declaring such practice, followed by materials (37%) and consumer staples (37%) companies.

Undoubtedly, the most discouraging finding from the 2016 questionnaire is the small number of companies actually monitoring emissions. In total, 142 (28%) provided Scope 1 and 2 emissions data. Potentially high-emitting sectors, like Industries (23%), Consumer Staples (37%) and Materials (31%), must be supported and encouraged to identify and monitor their GHG emissions.

Finally, 140 businesses provided data on water management. These companies are heavily concentrated in the consumer staples sector (57%). This is not a surprise as Food & Beverage companies, and their supply chains, are highly exposed to water shortages. In second place, water management was a practice declared by 28% of businesses in the materials sector and 25% of companies in the consumer discretionary sector.



4. Setting the Ambition: Building Resilient Supply Chains in Latin America

This report revealed that supply chains in Latin America are falling short of meeting the climate challenge. Corporate climate action needs to move beyond organizational boundaries, exploring opportunities and managing risks in the supply chain.

In Latin America, where many national governments have demonstrated leadership in the climate agenda, the possibility of combining GHG emissions reduction and development objectives creates clear opportunities for businesses in all sectors. Yet, the observed increase in the participation of suppliers, in this year's program, haven't been accompanied by performance improvement.

The analysis demonstrated that a large share of Latin American suppliers is exposed to climate change, and that very few are addressing climate as a strategic business variable. Businesses must set a clear ambition: build responsible and climate resilience supply chains.

From a responsibility point of view, it is staggering the fact that only 28% of the Latin American companies provided Scope 1 and 2 emissions data. Ultimately, supply chains will not be able to offer substantial contribution to climate change mitigation if emissions monitoring is not a widespread practice.

Moreover, only 22% of reporting companies seems to be actually managing risks, either integrating climate change on the existing risk management systems or establishing climate specific risk management procedures.

Further, the data-series does not indicate convergence in climate management maturity amongst companies. In fact, it seems that companies that perform well in the first reporting year continue to do so, and the ones that underperform also continues to do so. Some improvements could be observed, but restricted to a few management aspects like risk and opportunity identification.

Finally, water is in the core of companies' vulnerability to climate change, both directly as an input, but mostly due to its nexus with energy and other raw material productions, particularly in the agribusiness and forestry sectors. In spite of its relevance, only 27.6% of reporting companies are providing data on water management.

As climate regulation evolves in Latin America, both scope and scale wise, and the window for limiting global warming to the level of 2oC becomes narrower, the need for increasing corporate sector engagement becomes more evident.

As demonstrated by results, progress is particularly necessary in the field of emissions monitoring and risk management. Given the disparity of performance among reporting companies and the existence of wide room for improvement, dissemination of good practices among countries, sectors and businesses has the potential to play a decisive role in sustainability of supply chains in Latin America.





Report Writers :

CDP Latin America

Juliana Campos Lopes
Director Latin America
juliana.lopes@cdp.net

Lauro Marins
Manager, CDP Supply Chain Latin America
lauro.marins@cdp.net

Rebeca Lima
Forest Supply Chain Latin America
rebeca.lima@cdp.net

Camila Yepes
Supply Chain Assistant, Latin America
camila.yepes@cdp.net

Contatos
Rua Fiação da Saúde, sala 21, Saúde – São Paulo/SP
– Brasil
CEP: 04144-020
Tel: +55 11 2305-6996
Fax: +55 11 2305-6116
www.cdpla.net



WayCarbon
Coordination
Henrique Pereira;
hpereira@waycarbon.com
Authors
Fábio Bicalho;
fbicalho@waycarbon.com

Leonardo Santiago;
leonardo.santiago@waycarbon.com

Mariana Teixeira; mariana.teixeira@waycarbon.com

Contact:
BHtec – Parque Tecnológico de Belo Horizonte
Rua Professor José Vieira de Mendonça, 770 – Sala
210
CEP 31310 – 260 - Belo Horizonte – MG
Telefone | Fax 55 31 3401.1074