

## INDEPENDENT TERMINAL EVALUATION

Sustainable and inclusive industrial development of the  
automotive supply chain through enhanced quality and  
productivity in Colombia

UNIDO project ID: 150066



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION

Distr. GENERAL

EIO/IEU/21/R.21

April 2023

Original: English

This evaluation was managed  
by the responsible  
UNIDO Evaluation Officer  
with quality assurance by the  
Independent Evaluation Unit

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Mention of company names and commercial products does not imply the endorsement of UNIDO. The views and opinions of the team do not necessarily reflect the views of the involved Governments and of UNIDO.

This document has not been formally edited.

# Table of Contents

Acknowledgments	iv
Acronyms and abbreviations	v
Glossary of evaluation-related terms	vi
Executive Summary	vii
1. Introduction	1
1.1. Evaluation objectives and scope	1
1.2. Project and country background	1
1.3. Overview of the project	4
1.4. Theory of Change	7
1.5. Evaluation methodology	2
2. Project's contribution to Development Results - Effectiveness and Impact	14
2.1. Project's achieved results and overall effectiveness	14
2.2. Progress towards impact	28
3. Project's quality and performance	30
3.1. Design	30
3.2. Relevance	32
3.3. Coherence	32
3.4. Efficiency	33
3.5. Sustainability of benefits	34
3.6. Gender mainstreaming	35
4. Performance of partners	38
4.1. UNIDO	38
4.2. National counterparts	38
4.3. Donor	38
5. Factors facilitating or limiting the achievement of results	39
5.1. Monitoring and evaluation	39
6. Conclusions, recommendations, and lessons learned	41
6.1. Conclusions	41
6.2. Recommendations	44
6.3. Lessons learned	44
Annex 1 – Evaluation criteria	46
Annex 2 – List of stakeholders interviewed	48
Annex 3 – Interview Protocol	50
Annex 4 –UNIDO surveyed companies and EAM strict automotive industry - a comparison	53
Annex 5 – List of companies surveyed	54

## **Acknowledgments**

The authors would like to thank all the persons consulted during the evaluation process for the time and information provided, as well as the necessary clarifications when needed.

More specifically, a sincere appreciation to the members of the UNIDO project team in Colombia (Jaime Mongui, Jessica Angulo de Castro, and Natalia Muñoz), the UNIDO project team in Vienna, Austria (Juan Pablo Diaz-Castillo, Fabio Russo, and Stefan Kratzsch), the representatives of KOICA (Seung Chul Lee and Paula Tocancipa) and the representatives of the Government of Colombia including Ministry of Commerce, Industry and Tourism (Aurelio Enrique Mejía, Angela Goyeneche); Colombia Productiva, former PTP (Daniel Colmenares); and ProColombia (Manuel Salgado, Gabriel Jaime Gómez, and Laura Ricon. At the same time, the Colombian automotive stakeholders such as the Colombian Association of Auto Parts Manufacturers -ACOLFA in Spanish- (Camilo Llinas and Alberto Macias) and the National Business Association of Colombia -ANDI in Spanish- (Juliana Rico). From the technical expertise, the Colombian Institute of Technical Standards and Certification -ICONTEC in Spanish- (Monica Vivas and Daniel Trillos) and the National Metrology Institute -INM in Spanish- (Xavier Gomez and Aristides Dajer).

Finally, special thanks to the members of the Vienna UNIDO Independent Evaluation Division, Adot Killmeyer-Oleche and Johannes Dobinger, for the valuable follow-up and guidance by the authors throughout the evaluation.

Evaluation team:  
Ezequiel Tacsir  
Juliana Arbelaez

## Acronyms and abbreviations

Acronyms	Definition
ACOLFA	Colombian Association of Auto Parts Manufacturers (Asociación Colombiana De Fabricantes De Autopartes)
APR	Annual Progress Report
ANDI	National Business Association of Colombia (Asociación Nacional de Industrias)
ICONTEC	Colombian Institute of Technical Standards and Certification
INM	National Metrology Institute
KOICA	Korea International Cooperation Agency
Latam	Latin American countries
MINCIT	Ministry of Commerce, Industry and Tourism
MTE	Mid-Term Evaluation
PTP	Programa de Transformación Productiva
SDG	Sustainable Development Goal
TE	Terminal Evaluation
TOC	Theory of Change
ToR	Terms of Reference
UNIDO	United Nations Industrial Development Organization

## Glossary of evaluation-related terms

Term	Definition
Quality at Entry	It refers to the quality of the project design. Whether the defined timeframe, the identified stakeholders, and assigned roles were adequate, and the indicators were SMART, etc.
Coherence	Logical relationship between the parties so that there is no contradiction or opposition between them, including within the UN system.
Exit Strategy	A strategy established so that results persist in the future, after project completion.
Effectiveness	The extent to which objectives stated were achieved.
Efficiency	This is a measure of how the resources invested in the activities were converted into results.
Impact	Positive and negative intentional, and unintentional, direct and indirect effects produced by an intervention in the long-term.
Smart Indicators	The criterion used to assess whether the indicators to measure progress towards objectives are specific, measurable, achievable, realistic, and time-bound.
Intervention	External action to support a national effort to achieve specific development goals.
Lessons Learned	Generalizations based on evaluation experiences to be applied in broader contexts.
Baseline	The pre-intervention status against which the impact of the intervention is measured.
Logical Framework	Planning and management tool used to guide the planning, implementation, and evaluation of an intervention, in keeping with an objectives/results-based management system.
Outputs	Outputs in terms of physical and human capacities resulting from an intervention.
Relevance	The extent to which the objectives of an intervention are consistent with the beneficiary's requirements, country needs, global priorities, and partners' and donors' policies.
Results	The expected effects of an intervention's outputs.
Risks	Factors, usually beyond the scope of the intervention that could affect the fulfillment of objectives.
Sustainability	The likelihood for a continuation of an intervention's benefits after completion.
Theory of Change	A tool to identify causal relationships between outputs, outcomes, and impacts, as well as the drivers and barriers to achieving them.

## **Executive Summary**

This report presents the results of the independent terminal evaluation of the project “Sustainable and Inclusive Industrial Development of the Automotive Supply Chain through Enhanced Quality and Productivity in Colombia” (hereafter, referred to simply as ‘the project’). This terminal evaluation (TE) was planned, budgeted, and commissioned by UNIDO, and it was carried out between October and December 2021.

The TE was undertaken by an independent, external team composed of an international evaluation consultant Ezequiel Tacsir, in the role of Team Leader, and Juliana Arbelaez, national evaluation consultant, and was supervised by Ms. Adot Killmeyer-Oleche, from UNIDO’s Independent Evaluation Division.

Given the restrictions imposed by the COVID-19 pandemic on movement and gatherings, including any travel outside of the duty station requires approval of the UNIDO Director General, for pragmatic reasons, this TE is being carried out wholly using remote means (interviews, survey), without engaging in face-to-face meetings.

This TE was conducted based on the Terms of Reference (ToR) for this evaluation, the Project Document, the Annual Progress Reports (APR), the monitoring sheets, the Steering Committee minutes, the Mid-Term Evaluation provided by UNIDO, and enriched with inputs from the interviews and the survey conducted by the evaluation team with the support of the UNIDO project team in Colombia.

Based on the comprehensive assessment conducted, the overall project rating was considered Satisfactory. Considering some limitations observed in project design and other operational shortcomings, this rating reflects the adequate level of achievement of objectives, and the fact that project implementation exceeded expectations in several of the goals set for each component and generated several positive results, with good possibilities to sustain and expand them in the future.

### ***Project conception***

The project was conceived by UNIDO and the Korea International Cooperation Agency (KOICA) in December 2016. The project’s overall objective was to “*foster Colombia’s integration into the regional and multilateral trading systems/supply chains by enhancing its trade capacities, competitiveness, and performance*”. The project aimed at generating synergies for local stakeholders by using well-tested approaches and services for continuous improvement processes and business linkages development in the automotive industry. KOICA financed the project based on the convergence process stemming from the signed FTA between South Korea and Colombia that included special attention to several industrial segments including automobiles, tires, and synthetic resin. Moreover, a variety of successful South Korean initiatives and support institutions served as a benchmark and best practice examples for Colombia throughout the process.

### ***The automotive sector before the project***

From the outset, the automotive industry in Colombia has faced a complex set of challenges in quality, competitiveness, and participation in regional and global trade. Local vehicle manufacturers struggled to compete against foreign manufacturers whose products were constantly gaining market share due to the different Free Trade Agreements (FTA) signed.

Colombian vehicle and automotive parts manufacturers have historically seen themselves constrained to the national, Venezuelan, and Ecuadorian markets because due to costly logistics, and poor capacities to compete with suppliers from other Latin American markets particularly from Brazil or Mexico due, in turn, to lack of adequate production scale.

### ***The project in a nutshell***

The project spanned from January 1<sup>st</sup>, 2017, through October 31<sup>st</sup>, 2021, with a budget of US\$ 4,857,870. The project focused on five key technical components:

- i. Local actors will have the **capacity to implement the sectoral vision and strategy** (“PTP Business Plan”) with a focus on productivity improvement in the automotive industry.
- ii. The **national quality infrastructure is strengthened to improve the international competitiveness** of Colombian automotive component manufacturers.
- iii. **Local component suppliers (SMEs) upgrade competitiveness and comply with international standards**, technical regulations, and market requirements and **improve their productivity**.
- iv. **Local automotive component suppliers develop linkages within domestic and foreign** markets for inclusive value-chain development.
- v. **Local automotive component suppliers have enhanced technical R&D capacities and skills**.

To achieve these goals, the project involved a variety of national stakeholders including Ministerio de Comercio, Industria y Turismo (MINCIT) as the main government counterpart, as well as the sectorial support of Colombia Productiva (previously known as Programa de Transformación Productiva, PTP) and export promotion agency ProColombia. Private automotive firms were represented by the Asociación Colombiana de Fabricantes de Autopartes (ACOLFA) and the Asociación Nacional de Empresarios de Colombia (ANDI). Finally, the Project also involved institutions from the Colombian National Quality Subsystem such as Instituto Nacional de Metrología (INM), Instituto Colombiano de Normas Técnicas y Certificación (ICONTEC) and Organismo Nacional de Acreditación de Colombia (ONAC).

### ***Main results***

Overall, the project managed to overachieve, particularly with respect to its effectiveness levels. In this sense, stakeholders emphasize the role of the project in strengthening public sector capacities with respect to their ability to support companies in complying with the standards required by the global value chain. As a result, firms acting in different segments of the value chain could develop new products by collaborating with universities, offering their products to new domestic and foreign customers, and entering into other value chains or other market niches (e.g., yellow machinery). At the same time, automotive suppliers were significantly upgraded, with improvements in productivity and better capacities to meet (new) market demands.

#### RELEVANCE

At the global level, the project is highly aligned with the goals and targets of the 2030 Agenda under the understanding that it promotes the building of stronger economic foundations for the country. The 2030 Agenda set a strong commitment to contribute to strengthening productive capacities, productivity, and employment. As well described in the agenda, this commitment is properly addressed by having a “*well-educated workforce with the knowledge and skills needed for productive and fulfilling work*” and promoting women's employment, two key and well-defined components of the project. By supporting the inclusive and sustainable industrialization of Colombia, the project is highly related to SDG 9, under which the raise of the industry's share of employment and the gross domestic product is expected in 2030. The project is also aligned with



SDG 9 in its purpose of fostering Colombia's integration into the regional and multilateral trading systems, upgrading the technological capabilities of the industry sector, and supporting innovation.

At the national level, the design and implementation of the project integrated the strategies and the initiatives of the sectoral industry policy materialized in the Business Plan for the automotive industry developed by Colombia Productiva. This entity was created in 2008 by MINCIT to meet the challenges of the National Competitiveness and Productivity Policy (Conpes 3527, 2008), and later, of the Productive Development Policy (Conpes 3866, 2016). Mobility industries are one of the 18 prioritized sectors with which Colombia Productiva actively engages. As a result, a Business Plan for the automotive and auto parts sector was launched in 2009 and then updated in 2016. The Business plan included the vision for 2032, the goals on sales, exports, and jobs, as well as the strategies to achieve them. All these elements were relevant inputs that were considered in the design of the ProMotion project.

Even when it is well known that the participation of different private and public actors was essential for the definition of strategies and the prioritization of initiatives in the design of the project, both private automotive sector representation associations stated in interviews that they initially disagreed on some design points that, to some extent, suggest that at the onset of the project, there wasn't a shared view on the direction of the automotive sector in Colombia. There were two main disagreements: (1) the non-inclusion of the Technological Development Center (a long-standing project fostered by the private sector) and (2) voluntary certifications and technical regulations that should be implemented in the sector (once again, these visions in opposite directions result from different opinions about the market to which the industry and level of specialization should aim and the time horizon that is considered).

#### EFFECTIVENESS

Taking the Theory of Change (ToC) as a guiding device, it becomes clear the positive sizable impact of the project in the main considered outputs. Regarding the development and implementation of sectoral policies and support schemes with a focus on competitiveness (Output 1), 10 documents were produced doubling the original target for the project. Concerning strengthening the national quality infrastructure (Output 2), the 3 stated objectives were achieved.

In what refers to the improvement of the firms' productivity and compliance levels (Output 3), the project managed to involve 141 companies in different training courses, with almost 2,400 staff (of which around 40% were women). At the same time, 69 local automotive component suppliers showed improvements in key performance indicators (on-time delivery, standard compliance levels, PPM defectives, etc.) after participating in PRO-Motion activities that gave financial management support for enterprises, technical assistance to achieve IATF 16949:2016 certification, assistance for SMEs, among other programs. Output 4 was around the development of linkages between local automotive component suppliers with domestic and foreign buyers and investors. The project allowed to establishment of contact between potential buyers and sellers that resulted in 29 sales deals. Furthermore, 48 new business opportunities, customers, and investors abroad were identified for local component suppliers. The purpose of outcome 5 was to promote automotive component firms to invest in new product design and enhance technical research and development (R&D). According to the Synthesis Report, 12 new product designs or design validation processes were initiated by local suppliers, more than doubling the target of 5 new product designs.

The project showed to have a potential multiplier effect, stemming from the effectiveness exhibited in Outcome 5 which was oriented towards enabling automotive component firms to invest in new product design and enhance technical research and development (R&D). According to the Synthesis Report, 12 new product designs or design validation processes were initiated by local suppliers, more than doubling the target of 5 new product designs. We believe that, although

this achievement has long-lasting effects on firms' capabilities in the medium and longer-terms, there is mounting evidence that firms are financially constrained to support the expansion of these efforts throughout the life of the project.

According to the Project Monitoring Sheet, the project got an over-achievement in almost all the outcome indicators results. Regarding Outcome 1, in 2019 UNIDO experts participated in the design of sectoral strategies for the generation of new sources of growth captured in The Pact for the Mobility Industry document. In 2020, they also supported the construction of the recommendations guide for the industrial revival in the context of the health emergency due to COVID-19, as well as comment documents over two bills. It is worth mentioning that even when reports show 100% compliance on this outcome (4 documents were launched and the target was only 1), the UNIDO team in Colombia stated that the goal was to influence the updating of the sector's Business Plan, which was not achieved. There is a sectorial plan with approximately 7 years of validity that does not reflect the technological changes in the sector at a global level, only some recommendations were left to Colombia Productiva about this matter.

Concerning Outcome 2, the project also contributed to the adoption of helmet regulation and the improvement of the Regulatory Impact Assessments on glazing, seat belts, retro reflexive tapes, and brakes and tires for vehicles with more than 4 wheels and motorcycles. In this way, 100% compliance was achieved with 8 technical regulations revised or introduced using international references.

Outcome 3 measures the number of users of new or improved services introduced by local institutions such as DNP, INM, ICONTEC, SENA, ProColombia, and Colombia Productiva, with the project support. 9 out of 10 new services were adequately offered to reach the target number of users or even more. Only the product development and simulation processes were stopped due to the Covid-19 pandemic and resources were reallocated.

Compliance with requirements was also an important outcome variable for the project (Outcome 4). Virtual training and individual assistance activities were decisive in achieving the number of Colombian suppliers that met these requirements.

Outcome 5 measured the development of linkages between local automotive component suppliers with domestic and foreign buyers and investors. This project component sought to improve and develop an inclusive value chain for the automotive sector. Regarding match-making success opportunities captured by the project, the team established contact between potential buyers and sellers which resulted in 29 sales deals. It recognized the importance of the Portfolio of the Colombian Automotive Industry (hosted by Compra lo Nuestro platform and Colombia Productiva) and business networking events (executed by ProColombia), to achieve these results. Furthermore, 48 new business opportunities, customers, and investors abroad were identified for local component suppliers. It was the result of an internationalization strategy that included the launch of a website, the construction of a database with the contact information of purchasers, the registration of Colombian suppliers in purchase portals of large buyers, and investment promotion.

It should be mentioned that the COVID-19 pandemic affected the objectives and operation of the project. In particular, the project was modified to attend to the changing priorities due to the Covid-19 pandemic and based on the recommendations of the Mid-term Evaluation published in 2019. These changes were mainly applied in the project activities and the logical framework to, "better reflect the project activities and results, which in many aspects go far beyond what was originally foreseen", according to the MTE. Additionally, the project management team was creative enough to work around the physical restrictions imposed by the pandemic to set up several virtual training and other forms of interactions with beneficiaries.

## PROGRESS TO IMPACT

The project managed to generate a positive impact with their actions. The project not only contributed to strengthening the automotive value chain through training, as just mentioned but also by raising awareness and focus on the need for firms to meet international requirements and trading to international markets. Before the project, many companies were not interested in the internationalization of their operation. In addition, the project strengthened international compliance with quality standards precisely demanded by international buyers.

This change in terms of market orientation was not always easy to accept by sectoral chambers. Anticipating potential reactions, the program was designed to provide their intervention directly to the firms without the intervention, selection, or any type of filter by the sectoral chamber. This decision, in turn, not only allowed better impact but also expand the focus, reaching firms that have not been traditionally the object of support or attention from previous public programs. Overall, the project fostered changes in the attitude and/or behavior of the beneficiaries. In addition to the previously mentioned awareness and focus on international standards and markets, the project also contributed to generating greater confidence in SMEs, making them realize that they can compete internationally. Similarly, in the context of the COVID-19 pandemic, the project supported companies to adapt to the new reality and to produce biosecurity elements, as part of the economic reactivation strategy. This has contributed to building trust and resilience.

## SUSTAINABILITY

Sustainability beyond donor funding is one of the relatively weaker points of the project. Specifically, it seems very unlikely that the public sector will provide the budget needed to continue with some activities developed during the project. In fact, during the pandemic and given the likely efforts for economic recovery in 2022, some of the interviewees mentioned that the firms themselves considered very unlikely to be able to continue performing such activities based on a combination of public and their financial resources.

According to the UNIDO project team in Colombia, the project's sustainability of results not only depends on the availability of funds from the government counterparts and the socio-political risks, but also the auto parts and automotive industries' continuity in applying the lessons learned and best practices adopted from the trainings, certification, and trade strategies they participated as beneficiaries of the project. However, at the moment no strategy has been planned to evaluate the continuity of the results at the company level based on measurable indicators. Also, some firms reported to be financially constrained to engage their own resources for such investments, suggesting that they have not yet reaped on the returns of their investments.

The project contributed to generate a clear roadmap in terms of the quality infrastructure and technical regulations to be followed by Colombia. At the same time, it has contributed to generate increased interest of the authorities in the importance of the quality subsystem and how to better integrate these aspects in trade negotiations. In this sense, some of the technical regulations that are in discussion to be adopted as a national law are related to the strategy set by PRO-MOTION. The project produced key inputs such as information instruments, trade strategies and methodologies that have been adopted by the government counterparts and automotive industries, which according to the interviewees will be sustained and institutionalized. These methodologies have become best practices and are currently applied to projects from other industrial sectors. Furthermore, there are some cases in which the information or contributions of the project were incorporated into national policies. Such is the case of the Mobility Industry Pact, which represents the policy and roadmap for the economic reactivation of the sector. In the same way, it had an important participation in the Framework of the National Policy for Industries 4.0, through the provision of inputs from the beneficiary companies of the project.

Seven additional and improved services to the automotive industry by institutions of the National Quality Subsystem were launched. Some of those services were the installation of the hardness laboratory in charge of the INM and the development of the ICONTEC's e-conecta platform.

Moreover, labs that implemented at least 75% of the ISO 17025:2017 requirements added 12. The average compliance with this standard among these 12 laboratories was 47% at the baseline (September 2019), and it reached 83% in November 2020.

Therefore, some results still need some time to be completely implemented. For instance, not all services in the hardness laboratory are already provided and commercial agreements between suppliers and assemblers are in the early stages of negotiation. Once the results have finished their maturation process, a higher level of benefits for the industry is expected, as well as a greater institutionalization.

#### COHERENCE

Overall, the project included, and executed a strategy aimed at improving the capabilities of the firm in the sector to be capable of competing and be further focused on international markets. To do so it provided initial assessments of the firms, provided training, enhanced the quality system and helped to put in place an agenda of voluntary and technical requirements, and contributed to generating a shared vision and articulation spaces between parties. This coherent approach, rooted in the valuable initial diagnosis of the sector and the knowledge from the executing team, allowed materializing some of these results into public policy and strategies in Colombia.

#### GENDER MAINSTREAMING

Most of the firms did not observe any kind of contribution from the project to strengthen gender equality. Gender equality was the aspect of the industry in which companies declared a lower contribution because of PRO-Motion. The evaluation found that gender considerations were not embedded in the monitoring phase. Specifically, indicators used to track progress and outcomes lack a gender approach in their definition. The gender approach should be more explicitly mentioned in project indicators. Overall, the project has limited attention to gender and has neither any objective nor budget allocated to gender mainstreaming.

#### ***Lessons learned***

The PRO-MOTION project provides interesting lessons for other interventions. First, the project has managed to address and confront difficult challenges in a traditionally protected sector that, to some extent, lack a strategic vision on how to better integrate the global value chain, and faced important technological and quality backwardness. This experience, based on participatory consensus building and the ability to engage directly with firms provides an interesting opportunity and lessons to be replicated in different contexts.

Second, UNIDO is well-reputed and respected for its knowledge, sectoral experience, and role as an honest broker. At the same time, its transparency and procurement processes provide benefits throughout the project, calling for more active involvement of UNIDO's local offices.

The innovative approach of the project was successful and generated a range of valuable lessons on how to expedite development initiatives between private sector partners and developing countries. This is of relevance for traditionally protected sectors and/or countries facing a rapid transformation due to opening their markets in the context of FTA.

The innovative approach of the project generated a range of valuable lessons that can be transferred and applied to other sectors/industries in the country.

- Its ambition and scope, by focusing on a search for relevant changes in a sector that has been traditionally protected and not exposed to international competition
- Interest and contribution to building public sector capacities. This required investing not so attractive activities as revamping the quality system
- Being active in searching for potential beneficiaries, without the intermediating role of sectoral chambers. This, in turn, allowed for new beneficiaries not to be constrained in doing the same that has been done in the past

## Recommendations

Justification	Recommendation	Addressee of the recommendation
<p><b>The project M&amp;E strategy is based on tracking observed results on the beneficiary firms only. The M&amp;E strategy is weak since it did not include the identification of a control group nor a clear information collection strategy that would allow to infer the actual contribution of the program.</b></p>	<p><u>M&amp;E</u>: Rigorous M&amp;E should include quasi-experimental approaches and avoid selection biases by focusing only on beneficiary firms.</p>	<p>UNIDO Project Team and line managers</p>
	<p><u>Knowledge Management</u>: The project has developed a range of innovations that need to be documented with relevant data to enable future development partners to learn from and replicate the experience.</p>	

## Overall rating

Using the six-point rating system established in the UNIDO Evaluation Manual, the evaluation team rated each of the evaluation criteria, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory), the table below summarizes the scores awarded for each criterion, as well as the overall project score.

*Table 1. Project Evaluation Criteria Rating and Scores.*

Index	Evaluation criteria	Rating	Score
A	Project Design	S	5
1	Overall Design	S	5
2	Logical Framework	MS	4
B	Project Performance	S	5
1	Relevance	HS	6
2	Coherence	HS	6
3	Effectiveness	HS	6
4	Efficiency	S	5
5	Sustainability of Results	MS	4
6	Progress towards impact	MS	4
C	Cross-cutting Criteria	MS	4
1	Gender	MU	3
2	Environmental and Social Aspects	S	5
3	Monitoring and evaluation:	4	4
	M&E Design	MS	4
	M&E Implementation	S	5
4	Results-Based Management	S	5

Index	Evaluation criteria	Rating	Score
D	Institutional Performance	S	5
1	UNIDO	S	5
2	National Counterparts	MS	4
3	Donor	S	5
	<b>Overall Assessment - Achievement of objectives and results</b>	S	5

Ratings: HS- Highly Satisfactory; S-Satisfactory; MS-Moderately Satisfactory; MU-Moderately Unsatisfactory; U- Unsatisfactory; HU-Highly Unsatisfactory.

### **Conclusions**

The project was confronted with the need to contribute to the revamping of the automotive ecosystem that would ensure sustained development of the automotive value chain. The challenges and weaknesses originally faced were -to a great extent- related to the legacy of a traditionally protected sector that was mostly concerned with quality requirements prevalent in the domestic market. In this sense, many of the firms operating in the different tiers lack an adequate vision of the opportunities and prospects of the international market. In this sense, there was an initial shared vision of the opportunities and the perils faced by a changing international landscape. Although some of these restrictions constrained some activities, progress, and success, the Project succeeded in:

1. Establishing a basis for continued government and private sector collaboration in ensuring markets and skills for automobile production in Colombia
2. Bring to the front of the scene the importance of quality certification, requirements, and the institutions that integrate the quality system
3. Contributed to behavioral changes and new impulses to the firm engaging in innovation activities, including new product design and R&D
4. Set the stage for more bold action on gender mainstreaming. Although a lot needs to be done to encourage women's participation in the various levels and layers of the ecosystem, the project managed to put in place a set of ambitious activities that are likely to provide interesting outcomes soon.

At the same time, and exceeding the concerns of the project, the activities, methodologies, and bold attitudes caught the eye of the national authorities, who applied the approach to other sectors of the Colombian economy.



## 1. Introduction

This report presents the results of the independent terminal evaluation of the project “Sustainable and Inclusive Industrial Development of the Automotive Supply Chain Through Enhanced Quality and Productivity in Colombia” (hereafter, referred to simply as ‘the project’). This terminal evaluation (TE) has been planned, budgeted, and commissioned by UNIDO, and it was carried out between October and December 2021.

The TE has been undertaken by an independent, external team composed by an international evaluation consultant Ezequiel Tacsir, in the role of Team Leader, and Juliana Arbelaez, national evaluation consultant. The Evaluation Team operates under the supervision of Ms. Adot Killmeyer-Oleche, Evaluation Manager, from UNIDO’s Independent Evaluation Division.

Given the restrictions imposed by the COVID-19 pandemic on movement and gatherings, including any travel outside of the duty station requires approval of the UNIDO Director General, for pragmatic reasons, this TE is being carried out wholly using remote means (interviews, survey), without engaging in face-to-face meetings.

This TE has been developed based on the Terms of Reference (ToR) for this evaluation, the Project Document, the Annual Progress Reports (APR), the monitoring sheets, the Steering Committee minutes, the Mid-Term Evaluation provided by UNIDO, and enriched with inputs from the interviews and the survey conducted by the evaluation team with the grateful support of the UNIDO project team in Colombia.

### 1.1. Evaluation objectives and scope

The Independent Terminal Evaluation has two objectives:

- I. Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability, and progress to impact; and
- II. Develop a series of findings, lessons, and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

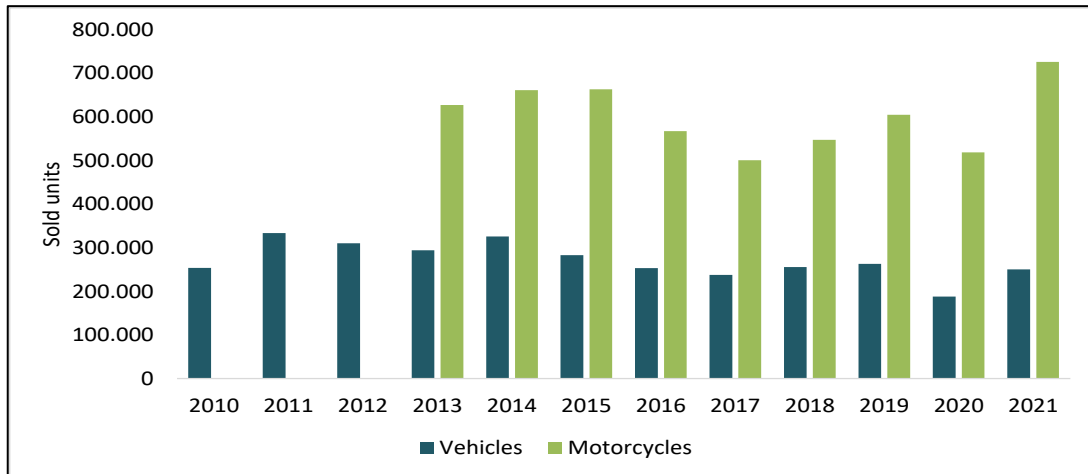
The terminal evaluation covers the project from its starting date on January 1, 2017, through October 31, 2021. This evaluation aims to independently assess the project to help UNIDO to improve performance and results of ongoing and future programmes and projects.

### 1.2. Project and country background

The automotive supply value chain in Colombia is made up of assembly, auto parts and accessories manufacturing companies including original equipment manufacturers (OEM), Tier 1, and lower-tier suppliers, as well as aftermarket companies. In 2019, Colombia was the fourth-largest producer of vehicles in Latin America, and the second-largest producer of motorcycles with more than 127,000 and 650,000 units produced respectively.

From 2010 to 2021, total sales of vehicles and motorcycles in the country do not show a clear growth pattern (Figure 1), however, motorcycle sales are considerably higher during the study period. On average, annual vehicle sales are just over 270.000 units, while more than 600.000 units of motorcycles are sold on average each year. In 2020, the total number of new automotive vehicles sold was just above 188,000, implying a 29% decrease compared to the previous year. This number grew to 250.272 units in 2021, well below the 258,000-average observed during the 5-year period before the pandemic (2015-2019).

Figure 1. Vehicles and motorcycles sales. Units. (2010-2021).

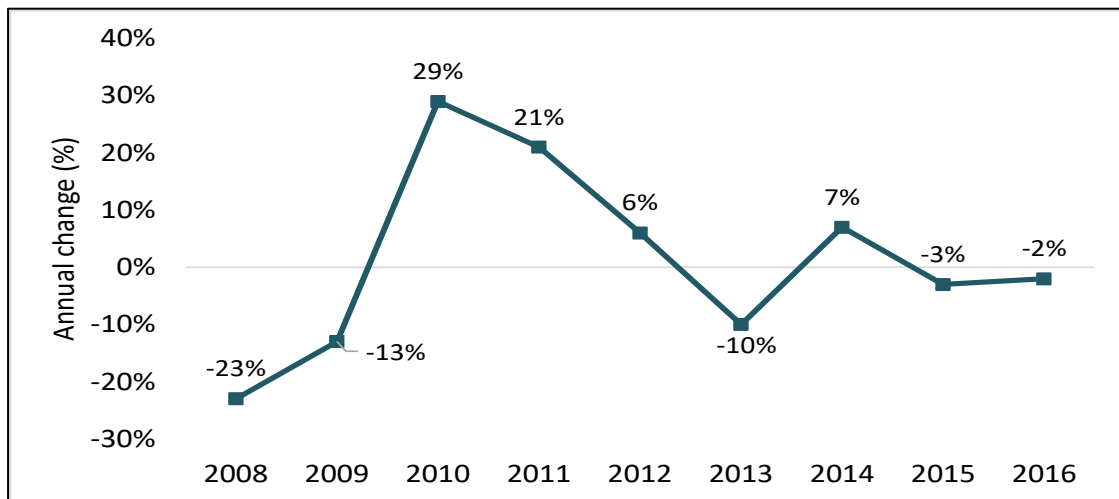


Source: Own elaboration based on ANDI data.

Even when the automotive sector had a significant recovery in 2021 after the drop in sales due to the COVID-19 pandemic, it is worth mentioning that the world supply suffered important limitations that affected the flow of auto-parts and increased vehicle prices. Therefore, the proportion of transfers of used vehicles over new vehicle registrations in the country went from 3,5 in 2019 and 2020 to 6,7 in 2021. That is to say, for each new vehicle registered, approximately seven used vehicles were transferred.

The automotive sector represents 3.6% of industrial production and vehicle sales constitute 1.5% of GDP. It is also the eighth generator of industrial employment; more than 72.000 workers obtain their livelihood from the motor vehicle industry, auto parts and trade related activities. Figure 2 presents the annual change in sectoral GDP of the manufacturing of transport equipment from 2008 to 2016. Annual changes in this sector exhibit highly volatile behavior, reaching growth of 29% and 21%, but also decreases of 23%, 13% and 10%.

Figure 2. Transport equipment manufacturing sectoral GDP annual change.



Source: Own elaboration based on ANDEMOS data.

The Colombian automotive industry is especially attractive for assemblers because of its low motorization index equal to 81 vehicles (for family and tourism use) per 1,000 inhabitants, which is below other countries in Latin America such as Chile (204) and Argentina (241). This feature represents an opportunity for growth, not only to cover the national demand but also to become an export platform for the region.



From the outset, the automotive industry in Colombia has faced a complex set of challenges in quality, competitiveness, and trade. Local vehicle manufacturers struggle to compete against foreign manufacturers whose cars are constantly gaining market share due to the signed Free Trade Agreements (FTA). Colombian vehicle and automotive parts manufacturers have historically seen themselves constrained to the national, Venezuelan and Ecuadorian markets because:

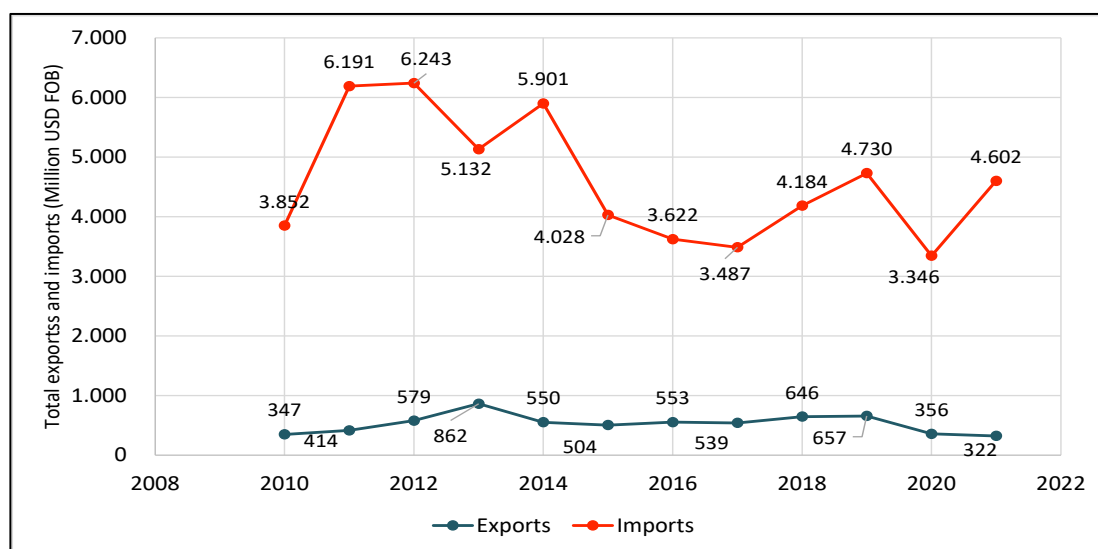
- a) logistics to reach other markets in Latin America are costly,
- b) those other markets are already covered by suppliers in Brazil or Mexico, or
- c) they require a scale, which Colombian suppliers cannot deliver with their installed capacity. FTAs have harmed this sector due to the rise of cheap imports.

Ten years ago, imported cars represented 50% of sales, in 2021 that number dropped to less than 25%, challenging local Original Equipment Manufacturers (OEMs). The main countries with which Colombia has signed FTA that include important advantages for the importation of vehicles are Mexico, Argentina, Brazil, the United States, Canada, European Union, and South Korea. With most of these, tariff reductions processes began several years ago and today the market offers vehicles of various origins with zero tariffs. The full tariff imposed on foreign passenger vehicles equals 35%, while the tariff is equal to 15% for cargo and passenger transport vehicles.

In the case of Mexico and Mercosur (Argentina and Brazil), reductions in tariffs began to operate several years ago. Canada achieved zero tariffs in 2020 and United States in 2021. Vehicles produced in countries belonging to the European Union are free of tariffs since 2021 as well, but the benefit will be applied for buses and trucks only in 2023. Finally, the tariff reduction process for vehicles imported from South Korea will continue until 2025.

Figure 3 shows imports and exports of automobiles, tractors, motorcycles, parts and accessories (Chapter 87 according to tariff classification: Vehicles other than railway or tramway Rolling stock, and parts and accessories) from 2010 to 2021. There is a negative commercial balance for all years considered, however, the gap in 2017 is smaller than in all previous years. In 2020, imports fell to US\$ 3,345 million, their minimum value within the period analyzed. Even when the gap in the first year of the pandemic was reduced by the fall in imports, foreign vehicles imports reach values close to those before 2020.

*Figure 3. Annual exports and imports of vehicles, motorcycles, auto parts and motorcycle parts.*



Source: Own elaboration based on DANE-DIAN data.

### 1.3. Overview of the project

The project was conceived by UNIDO and the Korea International Cooperation Agency (KOICA) in December 2016. The project's objective was to enhance the integration of the country into the regional and multilateral trading systems and supply chains by improving its trade capacities, competitiveness, and performance. Due to UNIDO's in-depth understanding of the automotive sector and establishing a relevant network of technical experts and collaborating institutions, it executed the project in Colombia. The project aims to generate synergies for local stakeholders by using well-tested approaches and services for continuous improvement processes and business linkages development in the automotive industry. KOICA has financed the project based on the FTA between South Korea and Colombia industrial segments including automobiles, tires and synthetic resin. Moreover, a variety of successful South Korean initiatives and support institutions served as a benchmark and best practice example for Colombia.

Therefore, UNIDO's experience in the automotive industry allows them to assist the country advising policymakers develop and implement support schemes for the industry. Three key approaches are used by UNIDO in achieving the project's objectives: 1) know-how transfer to local staff, employing both national and international experts in various fields of the sector who transmit confidence and knowhow to locals; 2) international experience exchange, including UNIDOS's international network of companies, experts and institutions; 3) holistic approach to upgrading, which does not only focus on costs, quality and delivery parameters but also includes sustainability considerations such as resource efficiency, working conditions and operational safety.

National stakeholders include government counterparts, private automotive sector representation, institutions from the Colombian National Quality Subsystem, among others. Some of them are:

- **Ministerio de Comercio, Industria y Turismo (MINCIT):** it is a government organization that promotes economic development, business growth, trade, foreign investment and tourism management of the country's regions through the strengthening of entrepreneurship, formalization, competitiveness and sustainability. Within their competency framework, MINCIT formulates, runs, and coordinates general policies, programs and projects for the development of the productive sectors of industry, SMEs, the domestic and foreign trade of goods, services and technology. MINCIT was the official Government counterpart for the project.
- **Colombia Productiva (previously known as Programa de Transformación Productiva, PTP):** it was created by MINCIT to meet the challenges of the National Productivity and Competitiveness Policy (CONPES 3527, 2008). Colombia Productiva is an executor of the country's industrial policy, helping the industry and the companies to produce more, achieve higher quality levels and greater added value. Within the strategic sectors prioritized by Colombia Productiva are the industries of the movement, made up by the automotive, shipbuilding and aerospace sector. The PTP acted as the operational counterpart for UNIDO. In this manner, the project implementation was aligned with the initiatives and work plan pursued by Colombia Productiva aimed at supporting the automotive sector. Additionally, Colombia Productiva and the Ministry were responsible for representing the Government and ensuring coordination with other government stakeholders.
- **ProColombia:** it is the Government's Tourism, Foreign Investment and Exports Promotion agency responsible of the effective insertion of Colombian companies into international markets as well as providing specialized services to foreign companies interested in acquiring Colombian goods and services. The organization operated as an entity associated to MINCIT and disposes of a network of 28 liaison offices around the globe (including India, Russia, Turkey and China) that have helped to identify export

opportunities also for automotive companies in Colombia. ProColombia has a unit dedicated to serve specifically the automotive industry, which is linked to the Directorate of Manufacturing. In terms of concrete activities to attract additional OEMs or automotive suppliers to Colombia or to secure business for local firms in the sector, the organization coordinates the participation of firms in business roundtables and relevant events within Colombia and abroad and also facilitates direct business contacts.

- **Instituto Nacional de Metrología (INM):** INM is the National Metrology Institute in Colombia and has the responsibility of being the custodian of the national physical measurement standards. Moreover, it offers calibration services on measurement equipment in industrial and scientific context. It further ensures traceability of primary measurement standards used by the legal sector.
- **Instituto Colombiano de Normas Técnicas y Certificación (ICONTEC):** the national standard body ([www.icontec.org](http://www.icontec.org)), is a private company established by Decree 2269/1993 that covers not only the preparation, distribution and selling of standards, but also acts as a Certification and Inspection Body. It offers various services to the industries like courses, assistance in implementing internal QMS and calibration services. It has four laboratories covering measurements on temperature, mass, length, pressure and volume. For the certification and inspection activities ICONTEC is accredited not only by ONAC but also by other international accreditation bodies in order to gain international recognition.
- **Organismo Nacional de Acreditación de Colombia (ONAC):** it is the national accreditation body of Colombia, its main objective is to provide independent attestation of the technical capabilities of the conformity assessment service providers; it functions as Colombia's National Accreditation Board, in accordance with designation under article 3, Decree 4738/2008, subsequently modified under Decree 323/2010, and ratified by Decree 2121/2012; it enforces and coordinates the functions related with accreditation described under Decree 2269/1993, as well as norms which amend, substitute and/or modify these; is also in charge of keeping record of the accredited conformity assessment bodies.
- **Asociación Colombiana de Fabricantes de Autopartes (ACOLFA):** The national auto-parts manufacturers association was founded in 1974 counts with 23 affiliates, which are suppliers to OEMs (importers are not granted membership; OEMs are members of ANDI). The association represents the interests of auto-parts suppliers vis-à-vis the government, produces statistical yearbooks (figures only – no analysis), and has cooperation agreements with peer organizations in the Americas as well as with the Spanish Chamber for data exchange and support for fare participation. It is headed by a president and counts with 1 technical staff member.
- **Asociación Nacional de Empresarios de Colombia (ANDI):** The national business association of Colombia is organized in sectoral chambers. The automotive chamber represents OEMs, automotive component manufacturers and motorcycle producers. It represents the interests of its members (heavily dominated by OEMs), provides information about national and international policies that impact the industry, supports FTA negotiation processes, and provides recommendations regarding the relevant legislative frameworks (e.g. environmental laws, consumer rights, transportation regulation). The automotive chamber consists of 3 staff members. ANDI regularly circulates a questionnaire to its automotive chamber members on the current state of the industry, production levels, etc.).

The project spans from January 1<sup>st</sup>, 2017, through October 31<sup>st</sup>, 2021, with a USD 4,857,870 budget aimed to enhance the quality and productivity of the automotive supply chain in Colombia. The project focus on five key technical components:

- i. Local actors will have the capacity to implement the sectoral vision and strategy (“PTP Business Plan”) with a focus on productivity improvement of the automotive industry.
- ii. The national quality infrastructure is strengthened to improve the international competitiveness of Colombian automotive component manufacturers.
- iii. Local component suppliers (SMEs) upgrade competitiveness and comply with international standards, technical regulations and market requirements and improve their productivity.
- iv. Local automotive component suppliers develop linkages within domestic and foreign markets for inclusive value-chain development.
- v. Local automotive component suppliers have enhanced technical R&D capacities and skills.

Considering the focus of the project, PRO-Motion has intervened companies at three different levels during its 4 years of implementation:

1. Academic agenda, courses, workshops, and short workshops: Theoretical courses with certain practical components lasting between 8 and 24 hours. The topics to be dealt with at this level of intervention correspond to generic needs applicable to the vast majority of beneficiary companies.
2. Individual support/accompaniments: They have an hourly intensity of between 40 and 80 hours per company, which are distributed over 2 or 3 months, and are 70% practical and 30% theoretical. These interventions seek to know, analyze, and close gaps or specific problems identified within companies through personalized support.
3. Supplier development program - CCM World Class Competitor: Specialized support was provided to 31 companies for over 2 years based on an initial diagnosis of the specific needs of each company in terms of quality, productivity, and compliance with standards and competitiveness.

It should be noted that each of these interventions had their own call and selection process, so it was not a unique process. In some interventions, a visit to the plant and an interview with the surrendered person were a next step after the verification of the first requirements. However, the overall selection criteria were defined before the launching of the different calls and usually included:

- Prior Participation in Development Programs
- Availability of dedicated person to support the program
- Constitution of the Company
- Quality Management Systems implemented
- Link to the value chain
- Debt Ratio Total Liabilities / (Liabilities + Equity)
- Recommended by customer, assembler, or component manufacturer
- Verification in SARLAFT

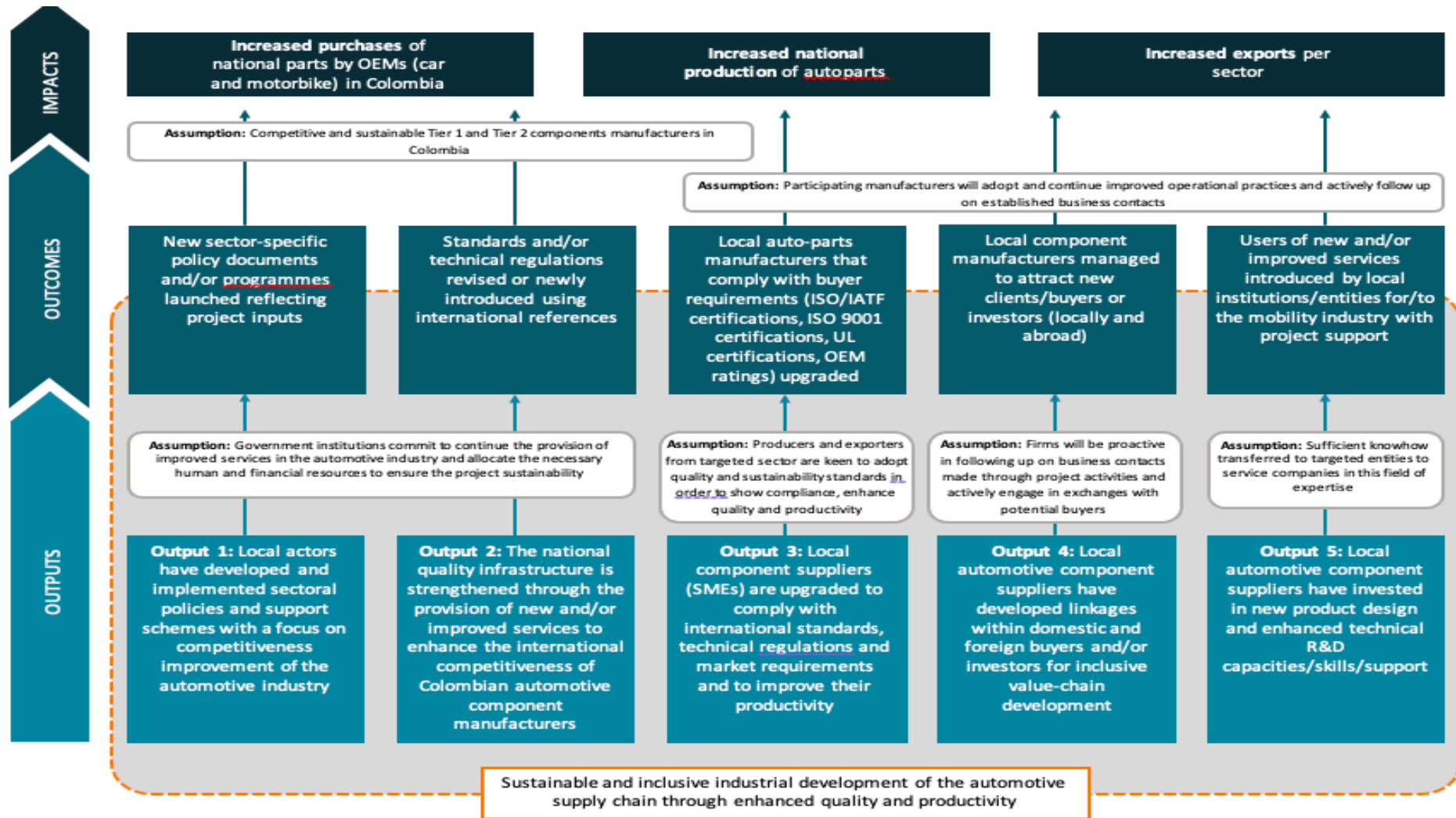
For other calls focused on strengthening the suppliers of the assemblers, the selection was made according to the application of the assembler of suppliers that had critical problems or greater quality problems.

#### 1.4. Theory of Change

The evaluation used a theory of change (ToC) to identify causal and transformational pathways from the project outputs to outcomes and longer-term impacts, and drivers as well as barriers to achieve them. The learning from this analysis was useful to feed into the design of the future projects so that the management team could effectively manage them based on results. A detailed and activity-focused ToC was developed in 2018, after the project document was formulated. For the purposes of this evaluation, the initial ToC has been simplified and refocused to the results and long-term impacts, taking into consideration assumptions that the project aimed to contribute and towards its sustainability and progress to impact. The ToC is presented in **Error! Reference source not found.**

Firstly, the project is developed around 5 outputs (lighter squares at the bottom of the figure); the first two refer to interventions in the institutional environment while the remaining 3 aim to upgrade local automotive suppliers' performance and results. Differentiating between these outputs is important because the activities and their respective verification measures are organized following this structure. Assumptions were taken, adapted, and simplified from the external factors that could affect the normal achievement of the objectives (white squares). Outcomes (in the middle) present a more specific version of each output as well as those results that must be achieved from the public and private sectors to reach the three main expected impacts of the project (darkest squares at the top of the figure). Even when each output is essentially related to an outcome, more than one output can lead to the achievement of an outcome.

Figure 4. Theory of Change



Source: Own elaboration based on Project documentation.

## **1.5. Evaluation methodology**

### **1.5.1. Evaluation objectives**

This evaluation was conducted in accordance with the UNIDO Evaluation Policy<sup>1</sup> and the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle<sup>2</sup>. This evaluation has two objectives:

- i. Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability, and progress to impact; and
- ii. Develop a series of findings, lessons, and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

### **1.5.2. Evaluation questions**

The evaluation addressed the following questions:

1. What are the key drivers and barriers to achieve the long-term objectives? To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long-term objectives?
2. How well has the project performed? Has the project done the right things? Has the project done things right, with good value for money?
3. What have been the project's key results (outputs, outcomes, and impact)? To what extent have the expected results been achieved or are likely to be achieved? To what extent the achieved results will sustain after the completion of the project?
4. What lessons can be drawn from the successful and unsuccessful practices in designing, implementing, and managing the project?

### **1.5.3. Evaluation approach and scope**

This evaluation adopted a participatory approach whereby all key parties associated with the project were informed and consulted throughout the evaluation. The evaluation used an evidence-based approach with a robust analytical foundation.

The purpose of the Evaluation was to:

- Independently assess the project to help UNIDO improve performance and results of ongoing and future programmes and projects.
- Develop a series of findings, lessons, and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

The Terminal Evaluation aimed at enhancing the design and implementation of ongoing and future initiatives by UNIDO. The target audience for this TE includes: i) UNIDO as implementing agency; ii) KOICA, as the project donor; iii) the Ministry of Commerce, Industry and Tourism (MINCIT) of Colombia, as the government coordinating agency; and iv) other stakeholders that were consulted during the TE and will be interested in the evaluation results and recommendations.

The evaluation used a mix of methods to collect data and information from a range of sources and informants. It paid attention to triangulating the data and information collected before forming its assessment. This was essential to ensure an evidence-based and credible evaluation, with robust analytical underpinning.

---

<sup>1</sup> UNIDO. (2015). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/(M).98/Rev.1)

<sup>2</sup>UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)

To triangulate findings, data was collected from the following means:

- **Desk and literature review:** key project documentation including the original project document, output reports, annual progress reports, monitoring sheets, minutes from the Steering Committee and the Mid-Term Evaluation. The evaluation team also reviewed the document “Characterization of the Colombian Automotive Industry” developed as a study of the project.
- **Interviews:** the evaluation team conducted 8 virtual interviews through Zoom and Google Meet with UNIDO Management and staff involved in the project, national counterparts and stakeholders. One of the stakeholders that was planned to interview decided to respond to the interview questions through email. The list of stakeholders that were interviewed during the main evaluation phase was suggested by UNIDO project country team, based on the stakeholders that were involved in the project implementation and were key in the Colombian automotive industry. To conduct the interviews, stakeholders were grouped by organization to make it more efficient given time limitations and data collection expectations. In the case of UNIDO officials involved in the project, two interviews were conducted: i) an interview to UNIDO project team members in Colombia; and ii) an interview to UNIDO project team members at the headquarters in Vienna, Austria. The list of the interviews conducted is available in Annex 2.

Structured and semi-structured interviews were conducted using a protocol designed by the evaluation team, based on the detailed questions to assess the evaluation criteria considered for this evaluation as described in Table 1. The interview format was adjusted accordingly, as some stakeholders had deeper insight to some aspects than others. The Interview Protocol contained a set of 24 questions and the duration of the interviews was around 60 minutes. (See Annex 3)

- **Exploiting existing Survey conducted by UNIDO project team in Colombia (2021):** This data was used as the main resource to analyze and get an overall view of the impact of the project. Specifically, 3 objectives were sought with the survey: (i) to present the current state of the industry and characterize the development of the sector in the last four years, (ii) to identify the contribution of the PRO-Motion project in the development of the sector and, (iii) to generate recommendations based on the industry real needs so that institutions could shape more relevant and effective initiatives and activities that address better the challenges the industry faces. The survey questionnaire had 285 questions and was structured around the following topics:

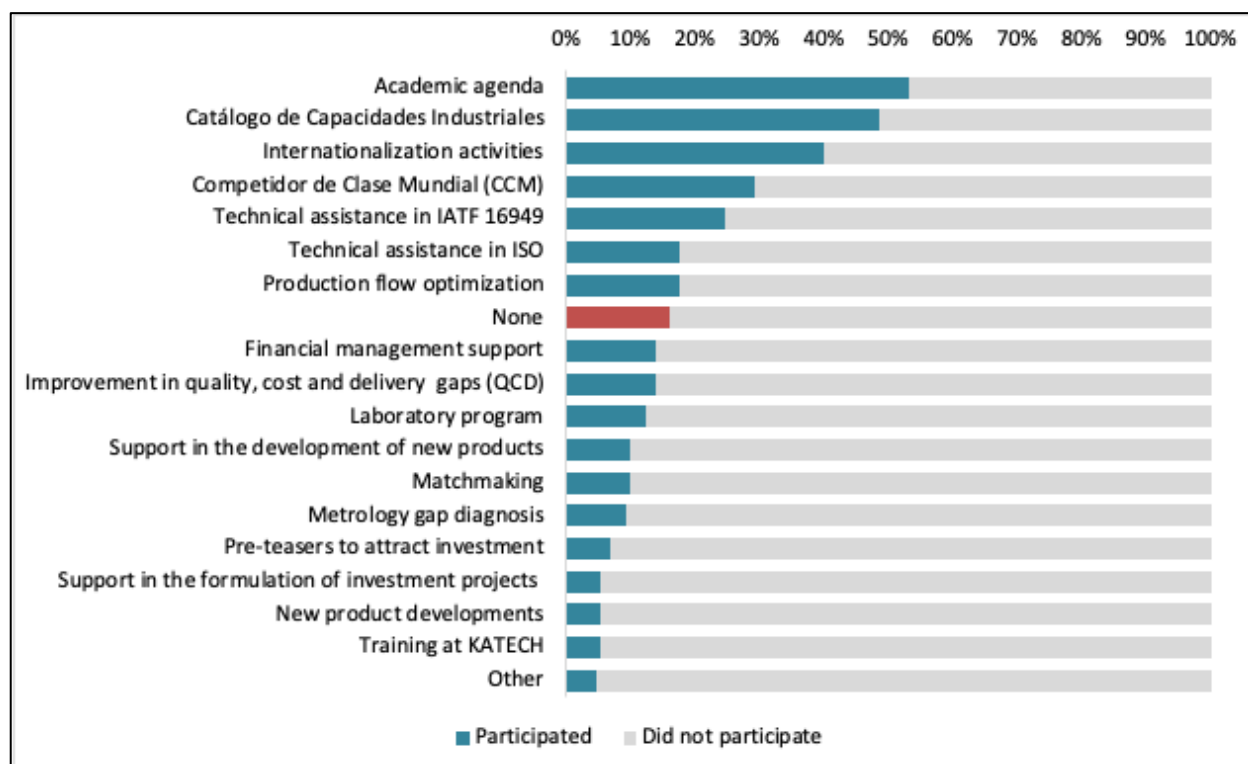
1. Policies for productive development
2. National quality infrastructure
3. Quality and productivity
4. Productive chains, search for new markets and direct foreign investment
5. Financial management
6. Innovation and development
7. Impact of the emergency caused by COVID-19 in the sector

Overall, 137 different companies responded to at least one chapter of the survey conducted by the UNIDO project team in Colombia (responses from 5 more companies were received, however, they did not report beyond contact information). Moreover, only 123 different companies satisfactorily completed all the chapters of the survey. On the other hand, when comparing the survey information with the Mapping Core document, the TE team was able to match 129 out of 143 companies (including those that only provided contact information). Nevertheless, 6 out of 129 matched companies were not included according to the mapping document between the 186 beneficiary companies of the project, even when some of them identified in the survey those activities in which they were enrolled. A comparison of some main characteristics between the surveyed companies and the strict automotive sector is presented in Annex 4.



In addition, among those companies that responded to the survey, 83.8% participated in at least one activity of the project. Besides, half of the companies that participated in PRO-Motion were enrolled in 3 or more activities. The company that had the highest participation enrolled in all 17 activities. Figure 4 shows the proportion of surveyed companies that participated in each project activity. Particularly, the academic agenda was the activity in which most companies participated (53.1% of surveyed companies). Other activities with high participation were *Catálogo de Capacidades Industriales* (40.5%), internationalization activities (40%) and *Competidor de Clase Mundial* program (29.2%). The activity with the lowest participation was the training at KATECH, with only 5.4% of beneficiary companies.

Figure 4. Participation of surveyed companies in PRO-MOTION activities.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

- Survey for non-respondent firms on the existing survey:** Additionally, a shorter online survey was developed among 1) those firms that did not answer back to UNIDO's survey previously mentioned, and 2) some companies of the automotive sector that did not participate in the project. These surveys were distributed to a pool of 90 firms, made from two different groups. First, there are 58 firms that, although participating in the program, failed to complete the survey. Secondly, 32 firms that although did not participate in the program, make part of the sector and the program collected some contact information. These surveys were meant to protect the results from some selection bias in terms of answering the survey (i.e., It might be the case that those firms that decided not to answer (completely) the survey are those that have benefited less from the program. Had been not accounted for that, we might be overstating the role of the program.

The information gathering process was carried out using the platform SurveyMonkey. The survey was sent via email on December 7<sup>th</sup>, 2021, to the pool of 90 companies which is presented in Annex 4. This list was prepared using data provided by the UNIDO project team in Colombia, however, 25 out of 138 emails bounced back (for some companies there was more than one email associated). A reminder was sent via email on December 15<sup>th</sup>, 2021. Besides, the UNIDO project team in Colombia supported the contact process by sending emails to the same pool of companies twice.

Regardless of efforts, only 4 companies responded (incompletely) to the survey; 2 companies that had participated in the project and 2 that had not. This is not surprising since the project team in Colombia had done a thoughtful job in order to cover the largest number of companies in the first survey. Therefore, the sample of companies that were targeted for the second survey were those that had already refused to respond to the first one.

Those companies that participated in the project found the development of new products and lab improvements as key changes promoted by PRO-Motion that had increased their comparative advantage in the market and improved processes. On the other hand, both companies that had not participated in PRO-Motion claimed that they had not done so because the project was not interesting for the companies and the company did not meet the requirements and there was little information.

#### **1.5.4. Evaluation criteria**

The evaluation was carried out following the methodology and evaluation criteria defined by UNIDO Independent Evaluation Unit. The evaluation criteria aimed to conduct a comprehensive assessment of the project in all areas. The table below provides the key questions used to produce the final assessment for each dimension considered in this Terminal Evaluation.

Table 2. Key questions guiding the TE evaluation

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
<b>RELEVANCE</b>			
1. <b>How relevant was the project to UNIDO?</b>	<ul style="list-style-type: none"> <li>Was the project a technically adequate solution to the competitiveness and international insertion problem?</li> <li>Did the project respond to the cause of the problem?</li> <li>Did the project respond to UNIDO's comparative advantage based on its knowledge and sectoral experience?</li> </ul>	<ul style="list-style-type: none"> <li>Documented evidence of priority needs for UNIDO, KOICA, and national stakeholders in the automotive sector in Colombia</li> <li>Analysis of the project's comparative advantage and feedback from stakeholders both qualitative and quantitative</li> </ul>	<ul style="list-style-type: none"> <li>Document and desk review</li> <li>Project records based on output reports, annual progress reports, monitoring sheets on the different outputs</li> <li>Stakeholder &amp; participant Interviews and opinions included in minutes from the Steering Committee and the Mid-Term Evaluation</li> </ul>
2. <b>To what extent was the project suited to the priorities and policies of the target group, recipients, and donor?</b>	<ul style="list-style-type: none"> <li>How did the project fulfil automotive, and auto-parts firms needs for better management, quality compliance and requisites by external markets?</li> <li>To what extent was the project aligned with the development priorities of Colombia, in particular regarding its FTA agenda and international commitments.</li> <li>How did the project reflect KOICA policies and priorities?</li> <li>Are the original project objectives still valid and pertinent for the target group, considering the elapsed time and project revisions?</li> </ul>	<ul style="list-style-type: none"> <li>Alignment of the Theory of Change (TOC) of the program with official documents</li> <li>Level of involvement and satisfaction of relevant stakeholders documented in sectoral documents and/or strategies</li> </ul>	<ul style="list-style-type: none"> <li>Strategic documents</li> <li>Supervision mission &amp; project reports</li> <li>Government representative interviews</li> <li>UNIDO staff and stakeholder interviews</li> <li>Survey analysis for participant firms</li> <li>Participant semi-structured and structured interviews</li> </ul>
<b>EFFICIENCY</b>			
3. <b>How economically were resource inputs converted to results?</b>	<ul style="list-style-type: none"> <li>How economically were resources used to produce results?</li> <li>To what extent were expected results achieved within the original budget?</li> </ul>	<ul style="list-style-type: none"> <li>Budget allocation and expenditure review</li> <li>Comparison with other projects for</li> </ul>	<ul style="list-style-type: none"> <li>Project records based on output reports, annual progress reports, monitoring sheets on the different outputs</li> </ul>

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
<b>4. Has the project achieved good value for money?</b>	<ul style="list-style-type: none"> <li>• What factors impacted the efficiency of achievement of results?</li> <li>• Did the project efficiently achieve results compared with alternative approaches?</li> <li>• What measures were taken during planning and implementation to ensure efficient use of resources?</li> <li>• Was there potential for greater results with the same resource inputs?</li> <li>• Were expected inputs from UNIDO and counterparts provided as planned?</li> <li>• How was the impact of the pandemic? Did it influence costs?</li> </ul>	<p>approach and costs per participant.</p> <ul style="list-style-type: none"> <li>• Counterfactual analysis</li> </ul>	<ul style="list-style-type: none"> <li>• Interviews and opinions of stakeholders</li> </ul>
<b>5. How timely was the delivery of expected results?</b>	<ul style="list-style-type: none"> <li>• To what extent were expected results achieved within the original timeframe and what revisions and adjustments were needed?</li> <li>• What factors impacted the efficiency of achievement of results?</li> <li>• To what extent the pandemic influenced the timely delivery of the results?</li> <li>• Were project activities in line with scheduling in work plans?</li> </ul>	<ul style="list-style-type: none"> <li>• Account of revisions and adjustments</li> <li>• Timeline review</li> </ul>	<ul style="list-style-type: none"> <li>• UNIDO documents</li> <li>• Project documents</li> <li>• Project staff interviews</li> <li>• Stakeholder interviews</li> <li>• KPI Table</li> </ul>
<b>EFFECTIVENESS</b>			
<b>6. Has the project done things right?</b>	<ul style="list-style-type: none"> <li>• What is the quality of results?</li> <li>• How do Colombian stakeholders perceive results achieved?</li> <li>• Are results achieved attributable to the project?</li> <li>• Were intended target groups reached by project results?</li> <li>• Is there valid evidence of results achieved?</li> </ul>	<ul style="list-style-type: none"> <li>• Performance by component, activity &amp; indicators based on the revised TOC</li> <li>• Stakeholder and participant perceptions on performance</li> <li>• Stakeholder and participant perceptions on targeting</li> </ul>	<ul style="list-style-type: none"> <li>• Project documents</li> <li>• Progress reports &amp; project database</li> <li>• Relevant government policies</li> <li>• Sectoral chambers documents</li> <li>• Stakeholder interviews and Steering Committee documents</li> <li>• Survey collection and analysis</li> <li>• Participant interviews</li> </ul>

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
<p>7. <b>To what extent have the expected results been achieved or are likely to be achieved?</b></p> <p>8. <b>What are the project's key results (outputs, outcome and impact)?</b></p>	<ul style="list-style-type: none"> <li>• For each project component: were targets achieved?</li> <li>• What are the main results of the project at the output and outcome level?</li> <li>• Were different results achieved in different areas? What are the reasons for any variance?</li> <li>• How was the impact of the pandemic? Did it influence the key results?</li> </ul>	<ul style="list-style-type: none"> <li>• Performance by component, activity &amp; indicators</li> <li>• Project staff, stakeholders, and participant feedback on results</li> </ul>	<ul style="list-style-type: none"> <li>• Project documents</li> <li>• Progress reports &amp; project database</li> <li>• Laboratory documents</li> <li>• Industry documents</li> <li>• Promotional materials</li> <li>• Survey analysis</li> <li>• Staff and stakeholder interviews</li> </ul>
<p>9. <b>What are the key drivers and barriers to achieve the long-term objectives?</b></p>	<ul style="list-style-type: none"> <li>• What factors have affected the achievement of expected results?</li> <li>• What factors have assisted towards the achievement of expected results?</li> </ul>	Project staff, stakeholders, and participant feedback on results	<ul style="list-style-type: none"> <li>• Project documents</li> <li>• Progress reports &amp; project database</li> <li>• Industry documents</li> <li>• Survey analysis</li> <li>• Staff and stakeholder interviews</li> </ul>
<b>COHERENCE</b>			
<p>10. <b>To what extent was the project aligned with the global development agenda?</b></p>	<ul style="list-style-type: none"> <li>• To what extent was the project aligned with the goals and targets of the 2030 Agenda?</li> <li>• To what extent was the project aligned with the principles of the 2030 Agenda?</li> <li>• Has the extent of alignment with global agendas changed over time?</li> </ul>	<ul style="list-style-type: none"> <li>• Document review</li> <li>• Interviews with project staff</li> </ul>	<ul style="list-style-type: none"> <li>• Project design documents</li> <li>• Staff and stakeholder interviews</li> </ul>
<p>11. <b>To what extent does the project avoid duplication with other similar interventions?</b></p>	<ul style="list-style-type: none"> <li>• To what extent did the project design acknowledge the work of other development actors in the sector?</li> <li>• To what extent did project implementation address gaps in other interventions?</li> </ul>	Document review/Interviews with project staff	<ul style="list-style-type: none"> <li>• Project design documents</li> <li>• Staff and stakeholder interviews</li> </ul>
<b>PROGRESS TO IMPACT</b>			
<p>12. <b>Are there opportunities for broader impact from project results?</b></p>	<ul style="list-style-type: none"> <li>• To what extent are lessons and results from the project incorporated into broader stakeholder mandates and initiatives?</li> <li>• Has institutional change resulted from the project, particularly in Colombian authorities?</li> </ul>	<ul style="list-style-type: none"> <li>• Strategic review of context</li> <li>• Public documents from Colombian authorities regarding</li> </ul>	<ul style="list-style-type: none"> <li>• Document review</li> <li>• Relevant government policies and strategies</li> <li>• Staff and stakeholder interviews</li> </ul>

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
	<ul style="list-style-type: none"> <li>To what extent are the project's results replicable in other sectors in the country and in other interventions in different countries?</li> </ul>	<ul style="list-style-type: none"> <li>replicability and cross-transfer of experiences</li> </ul>	<ul style="list-style-type: none"> <li>Survey analysis</li> </ul>
13. <b>What long term effects have been produced by the project?</b>	<ul style="list-style-type: none"> <li>What difference has the project made for beneficiaries?</li> <li>To what extent are changes attributable to project activities?</li> <li>What are the social, economic and environmental effects, either short-, medium- or long-term, on a macro and micro level?</li> </ul>	<ul style="list-style-type: none"> <li>Project outcome indicator performance</li> <li>Strategic analysis of context for contribution to impact</li> </ul>	<ul style="list-style-type: none"> <li>Document review, particularly progress reports</li> <li>Staff and stakeholder interviews</li> <li>Participant interviews</li> <li>Survey analysis of participants</li> </ul>
14. <b>What effects from the project were intended and unintended, both positive and negative?</b>	<ul style="list-style-type: none"> <li>What economic performance effects resulted from the project?</li> <li>What social inclusiveness effects resulted from the project, particularly related with gender and youth?</li> <li>Were any results transformational? What environmental safeguard effects resulted from the project?</li> </ul>	<ul style="list-style-type: none"> <li>Contribution analysis from Theory of Change</li> </ul>	<ul style="list-style-type: none"> <li>Project documents</li> <li>Staff and stakeholder interviews</li> <li>Participant interviews and FGDs</li> <li>Survey analysis</li> </ul>
15. <b>To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long-term objectives?</b>	<ul style="list-style-type: none"> <li>To what extent has the project contributed to reduced policy barriers?</li> <li>To what extent has the project contributed to the application of new knowledge?</li> <li>To what extent has the project contributed to diversified products, markets and/or meeting more stringent technical requirements?</li> <li>To what extent has the project contributed to the increased availability of new technology and infrastructure, particularly at the quality system in Colombia?</li> </ul>	<ul style="list-style-type: none"> <li>Contribution analysis from Theory of Change</li> </ul>	<ul style="list-style-type: none"> <li>Project documents</li> <li>Staff and stakeholder interviews</li> <li>Participant interviews and FGDs</li> <li>Government stakeholder interviews</li> </ul>
<b>SUSTAINABILITY</b>			
16. <b>To what extent are the achieved results likely to sustain after project completion?</b>	<ul style="list-style-type: none"> <li>Will project results be sustained after the end of donor funding?</li> <li>To what extent have results and outputs been institutionalized?</li> </ul>	<ul style="list-style-type: none"> <li>Institutional assessment</li> </ul>	<ul style="list-style-type: none"> <li>Project documents</li> <li>Government documents, including sectoral strategies, policies and instruments</li> </ul>

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
	<ul style="list-style-type: none"> <li>• What is the rate of uptake of new instruments and technologies? Will these rates be sustained/ improved?</li> <li>• Have improved systems been incorporated into state budgets?</li> <li>• Is adequate staffing and support being applied to continue processes?</li> <li>• What progress was made towards the conditions needed to address the long-term objectives?</li> </ul>	<ul style="list-style-type: none"> <li>• Stakeholder feedback on sustainability initiatives</li> <li>• Project outcome indicator performance</li> <li>• Public policy documentation</li> <li>• Stakeholder feedback and documentation on budget allocations</li> <li>• Contribution analysis from Theory of Change</li> </ul>	<ul style="list-style-type: none"> <li>• Stakeholder and participant interviews</li> <li>• Survey analysis</li> <li>• Synthesis of data sources</li> </ul>
<b>17. How resilient to risk are project benefits?</b>	<ul style="list-style-type: none"> <li>• What is the likelihood of financial and economic resources not being available beyond the end of the project?</li> <li>• Are there any social or political risks that may jeopardize the sustainability of project outcomes?</li> <li>• Is the level of stakeholder ownership sufficient to allow for the continuation of project benefits and outcomes?</li> <li>• Are stakeholders aware of the potential of continuing project benefits?</li> <li>• Is there sufficient public and stakeholder awareness of project activities and benefits to support the project's long-term project objectives?</li> <li>• Have risk management plans been established, including monitoring actions?</li> </ul>	<ul style="list-style-type: none"> <li>• Risk analysis</li> <li>• Contribution analysis</li> <li>• Stakeholder and participant feedback on ownerships and risks</li> </ul>	<ul style="list-style-type: none"> <li>• Synthesis of data sources</li> <li>• Stakeholder and participant interviews and focus groups.</li> </ul>
<b>PERFORMANCE OF PARTNERS</b>			
<b>18. What was the quality of implementation?</b>	<ul style="list-style-type: none"> <li>• To what extent did project executing entities deliver effectively?</li> <li>• How well did the project executing entities identify and manage risks?</li> </ul>	<ul style="list-style-type: none"> <li>• Feedback from project staff and donor representatives</li> <li>• Document review</li> </ul>	<ul style="list-style-type: none"> <li>• Project documents</li> <li>• Interviews with project staff</li> <li>• Interviews with donor representatives</li> </ul>

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
19. <b>What was the quality of execution?</b>	<ul style="list-style-type: none"> <li>• Were funds used appropriately?</li> <li>• How successful was the procurement and contracting of goods and services?</li> </ul>	<ul style="list-style-type: none"> <li>• Feedback from project staff and donor representatives</li> <li>• Document review</li> </ul>	<ul style="list-style-type: none"> <li>• Project documents</li> <li>• Interviews with project staff</li> <li>• Interviews with donor representatives</li> </ul>
<b>LESSONS LEARNED</b>			
20. <b>What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the project?</b>	<ul style="list-style-type: none"> <li>• Has UNIDO and its partners documented and addressed the lessons in potential follow-on activities?</li> <li>• Have lessons learned identified during the mid-term review been actioned?</li> </ul>	<ul style="list-style-type: none"> <li>• Performance by component, activity &amp; indicators</li> <li>• Staff and stakeholder feedback on implementation lessons</li> <li>• Project staff, stakeholder and participant feedback on results</li> </ul>	<ul style="list-style-type: none"> <li>• Document review</li> <li>• Project staff and stakeholder interviews</li> <li>• Survey analysis</li> <li>• Synthesis of data sources</li> </ul>



Taking into consideration the questions, a six-point rating system was applied to assess each of the evaluation criteria, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory). Table 3 shows the project rating criteria with the score depending on the level of satisfactory and unsatisfactory.

*Table 3. Project Evaluation Criteria Rating and Scores.*

Index	Evaluation criteria	Rating	Score
A	Project Design	S	5
1	Overall Design	S	5
2	Logical Framework	MS	4
B	Project Performance	S	5
1	Relevance	HS	6
2	Coherence	HS	6
3	Effectiveness	HS	6
4	Efficiency	S	5
5	Sustainability of Results	MS	4
6	Progress towards impact	MS	4
C	Cross-cutting Criteria	MS	4
1	Gender	MU	3
2	Environmental and Social Aspects	S	5
3	Monitoring and evaluation:	4	4
	M&E Design	MS	4
	M&E Implementation	S	5
4	Results-Based Management	t.b.d	t.b.d
D	Institutional Performance	S	5
1	UNIDO	S	5
2	National Counterparts	MS	4
3	Donor	S	5
	<b>Overall Assessment – Achievement of objectives and results</b>	S	5

Ratings: HS- Highly Satisfactory; S-Satisfactory; MS-Moderately Satisfactory; MU-Moderately Unsatisfactory; U- Unsatisfactory; HU-Highly Unsatisfactory.

The conduct of this evaluation was as important as the deliverable that it was intended to produce. Accordingly, the engagement with informants was conducted in a manner that promoted balanced reflection and endeavors to generate new insights. In this light, the Evaluation Team used their interviewing and coaching skills to structure exchanges with respondents to

facilitate reflection and develop insights, using a retrospective lens as well as stimulating recommendations to enhance the sustainability of the project's results and benefits.

## 2. Project's contribution to Development Results - Effectiveness and Impact

### 2.1. Project's achieved results and overall effectiveness

The Effectiveness of the project is evaluated as Highly Satisfactory.

Taking the Theory of Change (ToC) as a guiding device, it rapidly becomes clear the impact of the project in the main dimensions considered. Overall, the project exhibited over-achievement in several indicators. The sections below will address in greater detail the contribution of the project to the different outcomes. Several aspects were fulfilled and were mentioned by different stakeholders and reported in the different monitoring reports:

- Public sector capacities were strengthened so that the entities of the sector could support companies in complying with the (more stringent) standards required by the global value chain. The joint work between entities also made it possible to define the responsibilities of each one and better articulate them. In addition, a closer link with the automotive industry has been achieved because now companies know better the services offered by these entities.
- Manufacturers were able to 1) develop new products (as a result of joint work with universities), 2) offer their products to new domestic and foreign customers, even in other value chains or other market niches (e.g., *yellow machinery*). This results from broadening the vision of companies about the industry's potential to export and reach other markets. The project managed to make visible opportunities that were not previously clearly recognized.
- The expectation of generating commercial agreements for the companies was fulfilled and was achieved through trade fairs, business conferences, database registration and other activities that strengthened ties between buyers and sellers. Currently, companies are in contact with buyers but the business itself has not materialized because these types of negotiations are usually medium and long-term. However, the project allowed companies to understand how to interact with the assemblers, how the supply chain works, how to register in the supplier databases, etc.
- Suppliers of assembly companies were significantly upgraded. Improvements in savings, competitiveness and productivity were achieved. Nowadays, companies in the sector have greater capacities and are better prepared to meet market demands. Besides, methodologies implemented during the project were considered highly effective to the extent that they were adapted to other projects beyond the automotive sector.
- It was possible to articulate the national vision with the international vision in terms of normalization processes. Colombia began to participate in international committees because that guideline was established with the project. Some typologies that previously did not coincide with the international ones were unified. Furthermore, the strengthening of the Instituto Colombiano de Normas Técnicas y Certificación (ICONTEC) allowed for faster normalization processes, identifying the needs of the stakeholders, and working on more timely technical standards. The leadership and decision-making skills of the managers in charge of the commissions were also strengthened.
- Investing in the hardness laboratory, in charge of the Instituto Nacional de Metrología (INM), was the result of listening to the needs of the industry about the magnitudes of interest. Although the laboratory was launched recently and there are still some services to be included in the short term, by providing these hardness services to the industry

companies are expected to improve their quality levels, reduce their defective products, among other advantages.

- According to the survey data, among those companies that participated in PRO-Motion, 79.9% detected at least one immediate change in their company because of their participation in the project. However, this rate rose almost 95% among those companies that participated in more than three activities, while the rate was 66.7% for those that participated in three or fewer activities, which means that immediate changes are more likely to be observed the more activities are carried out by companies. As Figure 5 illustrates, the most frequent immediate changes experienced by the beneficiary companies were the adoption of best management practices (63.3%) and greater compliance with standards and customer requirements (46.8%). Similarly, the average number of immediate perceived changes for firms with a high participation almost doubles the changes perceived by companies with lower participation (1.9 against 1.0).

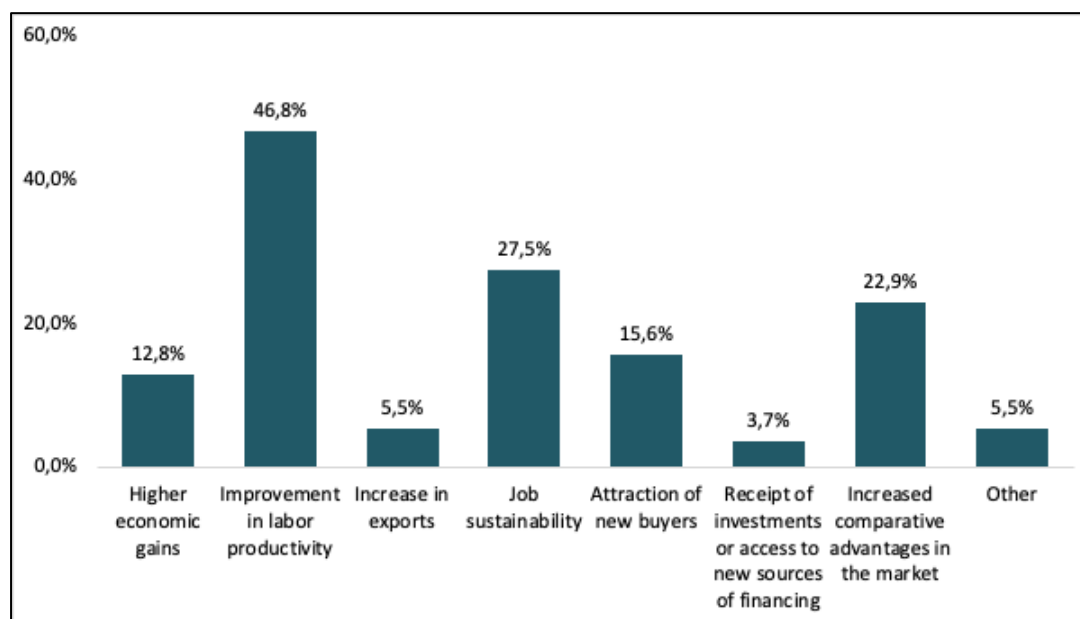
Figure 5. Immediate changes in companies because of their participation in PRO-MOTION.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

In the same way, 77.1% of the companies that participated in the project found some benefit as a result of the intervention. As in the previous case, this proportion moves up to 92.3% when only companies that participated in more than three activities are considered. Conversely, just 63.2% of the companies that enrolled in three or fewer activities noticed some kind of benefit. In addition, improvement in labor productivity was the most frequent benefit in companies because of PRO-Motion intervention (46.8%), followed by job sustainability (27.5%) and increase in comparative advantages in the market (22.9%), as is shown in Figure 6.

Figure 6. Benefits in companies because of their participation in PRO-MOTION.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

Some deeper results and achievements of the project towards the outputs is presented below. Data from the online survey conducted by UNIDO's project team in Colombia and the Synthesis Report prepared by UNIDO in November 2021 were used in this section.

Finally, it should be noted that the project was modified to attend the changing priorities due to the Covid-19 pandemic. In this sense, during the last two years of implementation, the Program migrated to a virtual modality in some activities that allowed covering a greater number of companies. This change with respect to the implementation was due to COVID-19 pandemic that imposed restrictions on mobility, and physical activities.

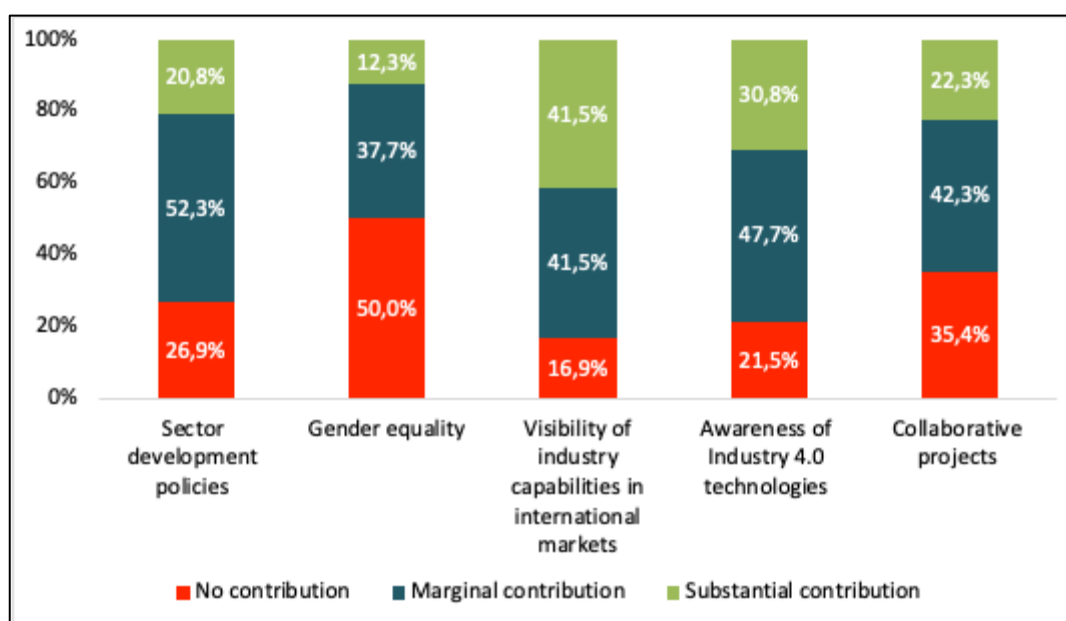
### 2.1.1. Output 1: Development and implementation of sectoral policies

Outcome 1 refers to the development and implementation of sectoral policies and support schemes with a focus on competitiveness improvement of the automotive industry by local actors. Although the target seemed to many quite ambitious by including five policy documents, legal frameworks, or government programs, the project contributed to the development of 10 documents. In the 2017-2018 period, four action plans for the implementation of the Business Plan for the mobility sector were developed jointly with Colombia Productiva. Additionally, in 2019, UNIDO experts participated in the design of sectoral strategies for the generation of new sources of growth captured in The Pact for the Mobility Industry document. Finally, in 2020, UNIDO experts also supported the construction of the recommendations guide for the industrial revival in the context of the health emergency due to the COVID-19 pandemic, as well as producing documents and recommendations over two different bills. It is worth mentioning that even when reports show 100% compliance on this outcome, UNIDO team in Colombia stated that the goal was to influence the updating of the sector's Business Plan, which was -to this date- not achieved. Basically, there is a sectorial plan with approximately 7 years of validity that does not reflect the technological changes in the sector at a global level nor the changes in perspective that the sector in Colombia witnessed. In this respect, PROMOTION only managed to produce some recommendations for Colombia Productiva about this matter.

This output also required at least one market research activity as an input to define or monitor industrial development policies; successfully, eight mapping documents were achieved. A characterization of the industry value chain was carried out in 2017 and 2019. Moreover, the Colombian quality infrastructure, industry capabilities, companies' financial status and metrological gaps were mapped from 2017 to 2021.

After asking surveyed companies about the project's contribution to some aspects of the industry, 73% answered that PRO-Motion had had a substantial or marginal effect on the development of sector policies, as Figure 8 illustrates. Several companies (78%) also identified some kind of contribution from PRO-Motion on Industry 4.0 awareness. In fact, from 2019 to 2021 UNIDO organized 20 webinars on Industry 4.0 industrial applications and contributed to the elaboration of the National Policy Framework for Industry 4.0, which was delayed due to change in policy priorities due to COVID-19.

Figure 7. Project contribution to improve some aspects of the industry.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

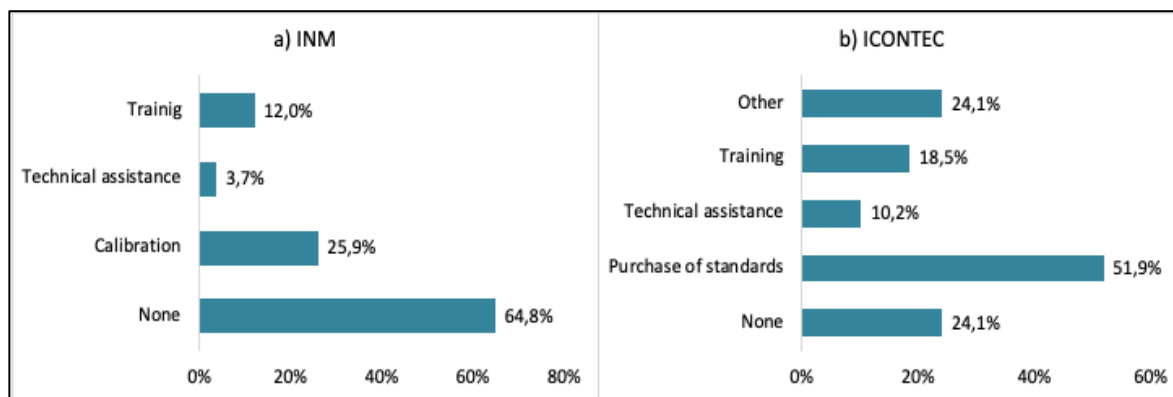
### 2.1.2. Output 2: Strengthening the national quality infrastructure

The second output is about strengthening the national quality infrastructure through the provision of new and/or improved services to enhance the international competitiveness of Colombian automotive component manufacturers. Again, 100% compliance was achieved in the three objectives of this output. First, 224 staff members from relevant institutions of the sector participated in courses such as the online training course on Regulatory Impact Analysis developed for the DNP, or the course on Industrial Policy Improvement for the Colombian Auto-industry. Second, seven additional and improved services to the automotive industry by institutions of the National Quality Subsystem were launched. Some of these include the installation of the hardness laboratory in charge of the INM and the development of the ICONTEC's e-conecta platform. Third, 12 labs implemented at least 75% of the ISO 17025:2017 requirements. In fact, the average compliance with this standard among these 12 laboratories was 47% at the baseline (September 2019), and it reached 83% in November 2020.

Even when most of the surveyed beneficiary companies did not use any services offered by the Instituto Nacional de Metrología (INM) between 2017 and 2020, 25.9% of them used calibration

services and 12% were trained by the institute. However, only 3.7% of companies were beneficiaries of technical assistance (Panel a of Figure 8). On the other hand, services provided by the Instituto Colombiano de Normas Técnicas y Certificación (ICONTEC) were more widely used by the same sample of companies. For instance, half of them consulted or purchased standards. Besides, 18.5% of companies were trained by the ICONTEC, while 10.2% were supported with technical assistance. Finally, 24.1% of them used other kinds of services, mainly certification audits (Panel b of Figure 8).

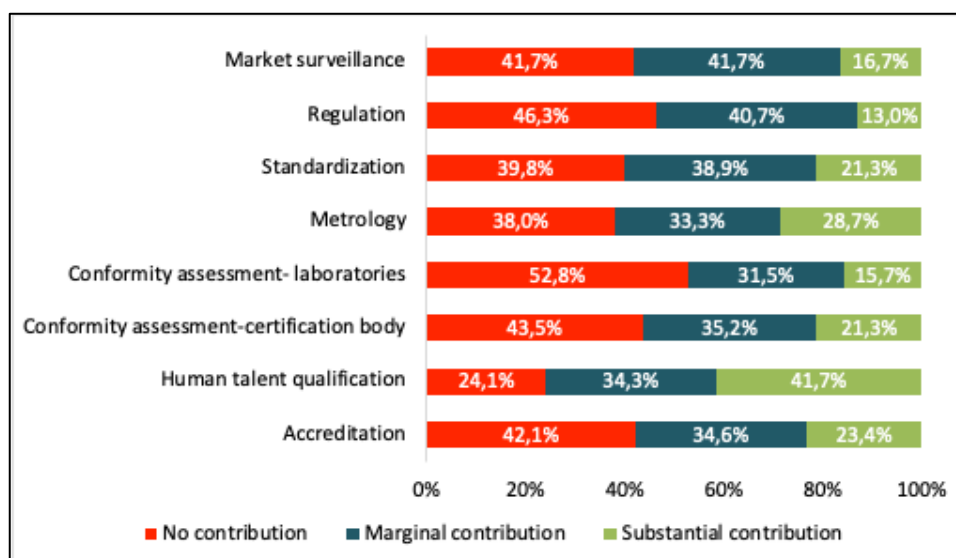
Figure 8. Services from the INM and the ICONTEC used by companies from 2017 to 2020.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

Finally, Figure 9 shows how beneficiary companies believe the project affected some functions of the national quality infrastructure such as regulation, standardization, metrology, etc. Unfortunately, more than a third of companies found no contribution in all functions except one.

Figure 9. Companies' perception about the contribution of the project to improve the functions of the national quality infrastructure.



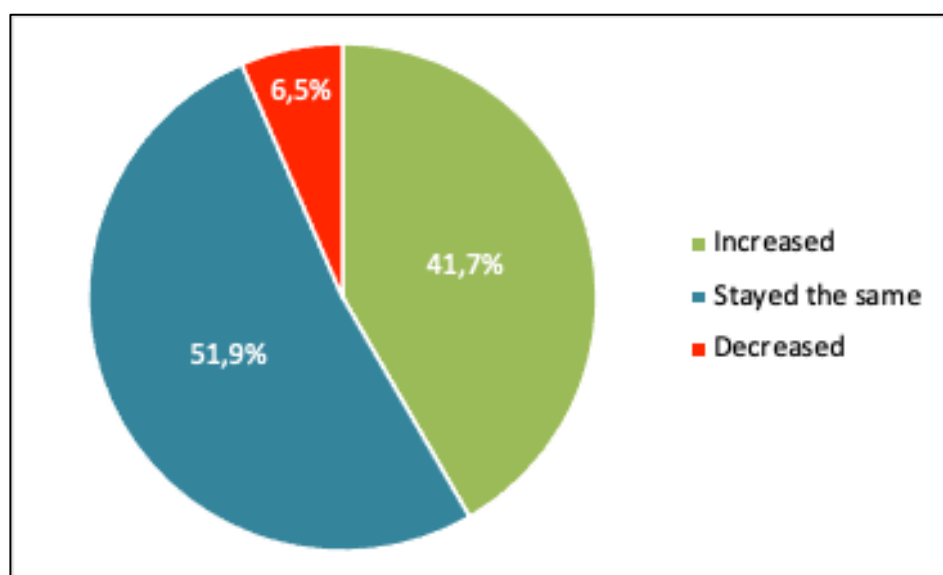
Source: Own elaboration based on UNIDO project team in Colombia survey data.

### 2.1.3. Output 3: Productivity and compliance

Output 3 refers to the improvement in productivity and compliance with international standards, technical regulations, and market requirements by local component suppliers. In total, 141 companies participated in the project's training courses that included more than one hundred conducted webinars on topics such as quality, laboratories, Industry 4.0, exports, industrial reactivation, etc. In terms of the number of staff members, 888 women and 1,508 men participated in these activities. On the other hand, 69 local automotive component suppliers showed improvements in key performance indicators (on-time delivery, standard compliance levels, PPM defectives, etc.) after participating in PRO-Motion activities that gave financial management support for enterprises, technical assistance to achieve IATF 16949:2016 certification, assistance for SMEs, among other programs. Once again, the project documentation reported a 100% compliance in this output since a greater number of people trained and companies with improvements than targeted was achieved.

Figure 10 shows that half of the surveyed beneficiary companies claimed that the technical metrology skills of their employees had not changed from 2017 to 2020, 41,7% recognized an improvement of their skills and just 6,5% experienced a decrease. Besides, almost 70% of companies suggested that the activities of the project could have helped to improve technical metrology competences (Figure 11, left side). Among those beneficiary companies that answered this question, 56,8% believed that PRO-Motion increased these competences through the improvement in measurement processes, while half of the companies identified the improvement in the elaboration of measurement instructions as a key factor. Confidence in measurements, reduction in reprocesses costs and improvement in productive infrastructure were also important for some companies (Figure 11, right side).

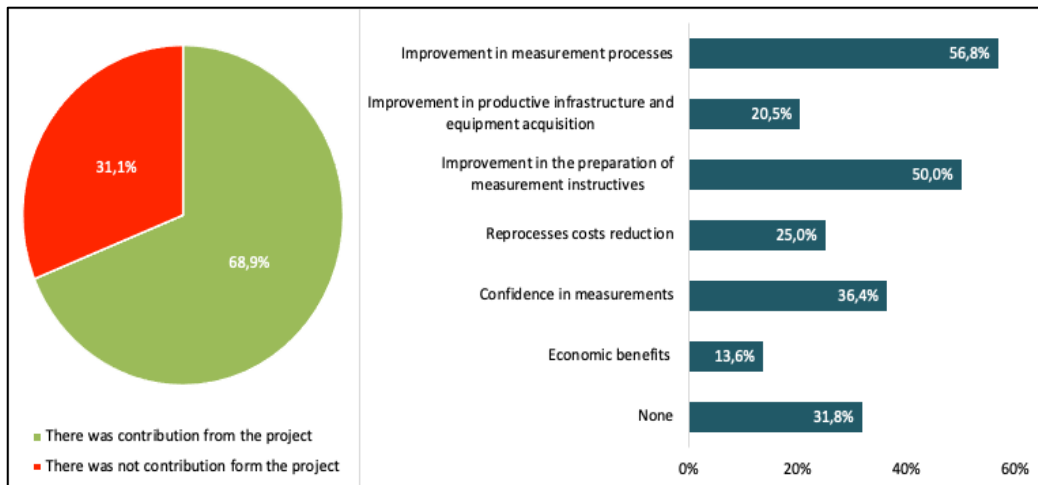
*Figure 10. Compared to 2017, how employees' technical metrology skills changed.*



*Source: Own elaboration based on UNIDO project team in Colombia survey data.*



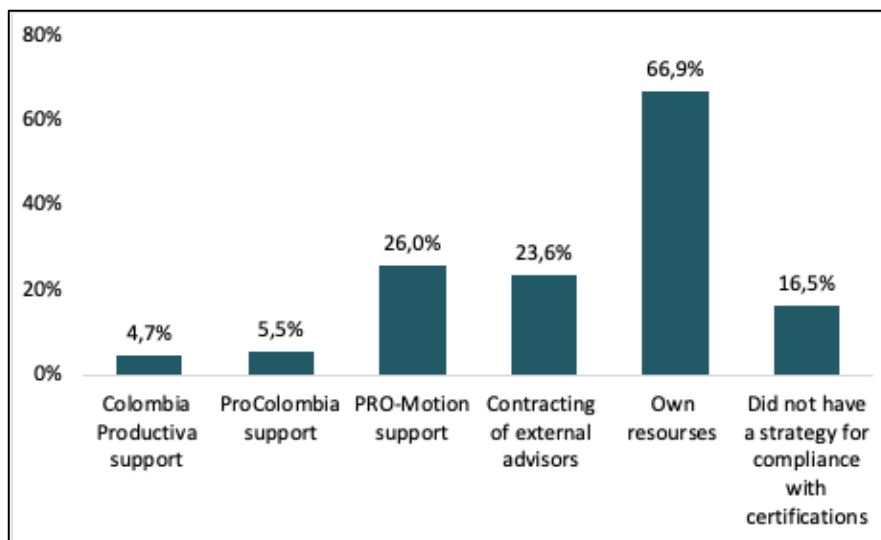
Figure 11. Companies' perception about how PRO-MOTION improved technical metrology competences.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

On the other hand, Figure illustrates the different strategies used by the beneficiary and non-beneficiary companies to meet the certifications required by their clients from 2017 to 2020. Almost 70% of these companies used their own resources, that is, their internal team. However, the second most common strategy was the support of PRO-Motion. Specifically, a quarter of surveyed companies found the project as a tactic for improving their certification compliance level.

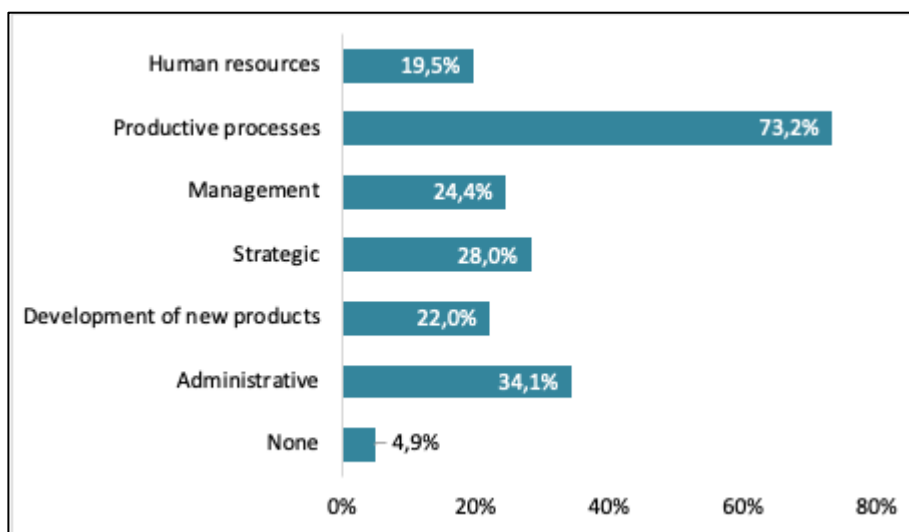
Figure 3. Strategies used from 2017 to 2020 by companies to comply with certifications required by their clients or potential clients.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

Among beneficiary surveyed companies, 76,6% claimed they had participated in PRO-Motion academic agenda courses. Then, these companies were asked about what processes had improved because of their participation, results are shown in Figure 12. The academic agenda seems to have had a significant impact on productive processes since 73,2% of companies noticed an improvement. Administrative, strategic processes were also positively affected in 34,1%, 28% and 24,4% of companies, respectively. Finally, 22% of companies are better off in the development of new products while 19,5% observed an improvement in human resource areas after participating in these activities.

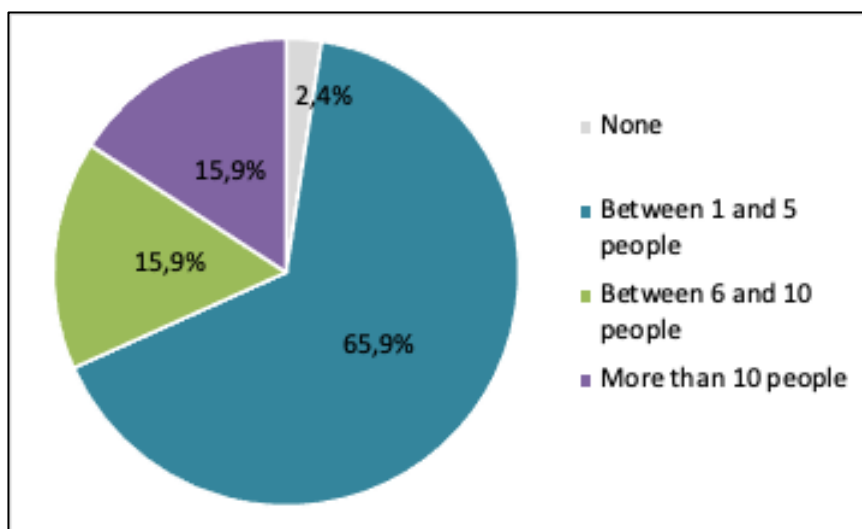
Figure 12. Company process improvements as a result of the implementation of the academic agenda learning.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

Besides, more than two-thirds of the companies that participated in the academic agenda courses claimed that for each attendee, the knowledge was shared with at least 6 and up to 10 workers. Even better, almost 16% of companies believed that the knowledge was shared with more than 10 employees (Figure 13).

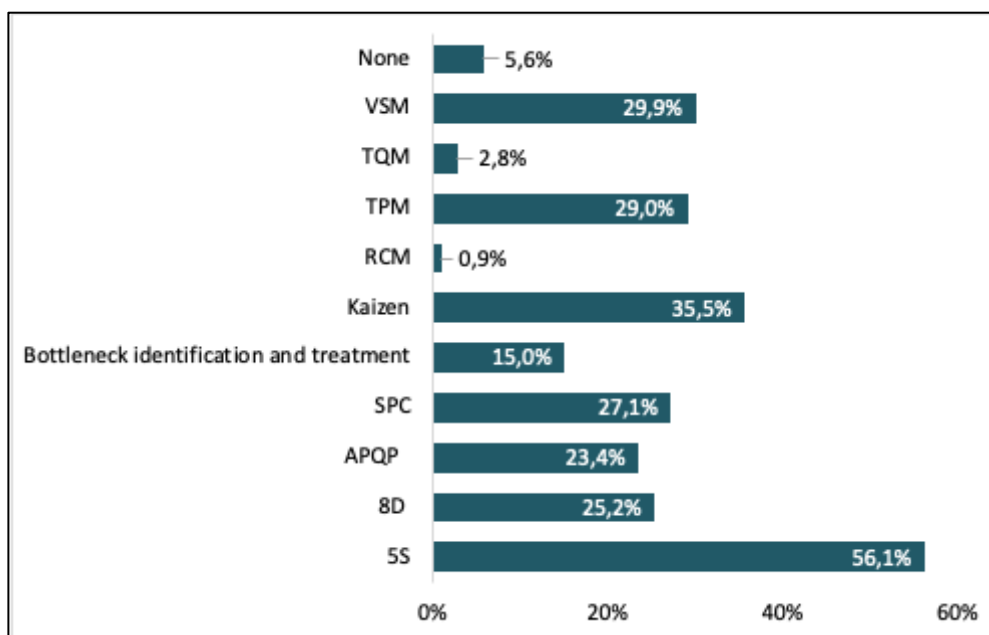
Figure 13. Number of people to whom the knowledge was replicated for each participant of the academic agenda courses.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

It is worth mentioning that PRO-Motion allowed the adoption of several operational tools and methodologies within the companies. The proportion of surveyed beneficiary companies that started using or strengthened the use of each of these tools is shown in Figure 14. Noticeably, the most popular was the 5S methodology (56,1% of companies), which is a technique spread all over the world. Other methodologies highly improved or accepted by companies were Kaizen (35,5%), Value Stream Mapping (29,9%), Total Productivity Maintenance (29,0%), Statistical Process Control (27,1%), Eight Disciplines problem solving and Advanced Product Quality Planning (23,4%).

Figure 14. Beneficiary companies that started using or strengthened the use of operational tools.

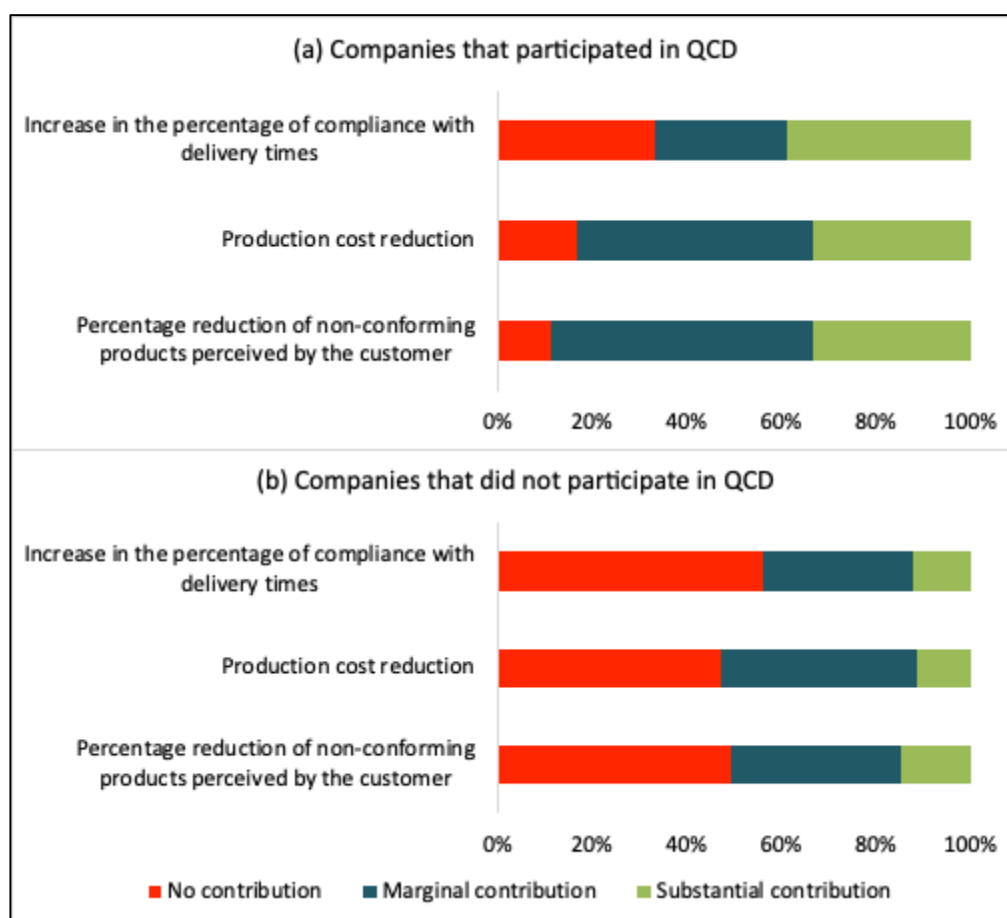


Source: Own elaboration based on UNIDO project team in Colombia survey data.

The way compliance with certifications in beneficiary companies changed from 2017 to 2020. Three certifications prevail over the rest, these are ISO 9001 (2015), ISO 14001 (2015) and IATF 16949 (2016). The project helped companies to improve their compliance with 7 out of 12 certifications; the impact was mainly important for 15% of companies that upgraded ISO 9001 certification due to PRO-Motion activities.

It is important to understand that the project could have had different effects depending on the activities in which the companies participated. For instance, Figure shows how companies reported PRO-Motion had contributed to 1) reducing the percentage of non-conforming products perceived by the customer, 2) reducing production costs and 3) increasing the percentage of delivery time compliance, according to their participation in the activity Improvement in quality, cost and delivery gaps (QCD). Specifically, Figure shows the proportion of companies that reported no contribution, a marginal contribution or a substantial contribution for each result mentioned above. Indeed, those companies that participated in the QCD activity (whose mission is closely linked to these results) more frequently reported marginal and substantial contributions than the companies that did not participate in this activity. For example, in the case of production cost reduction, only 16.7% of companies that were enrolled in the activity found no contribution in this result, versus 47.2% among companies that were not enrolled.

Figure 8. Project contribution according to participation in QCD.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

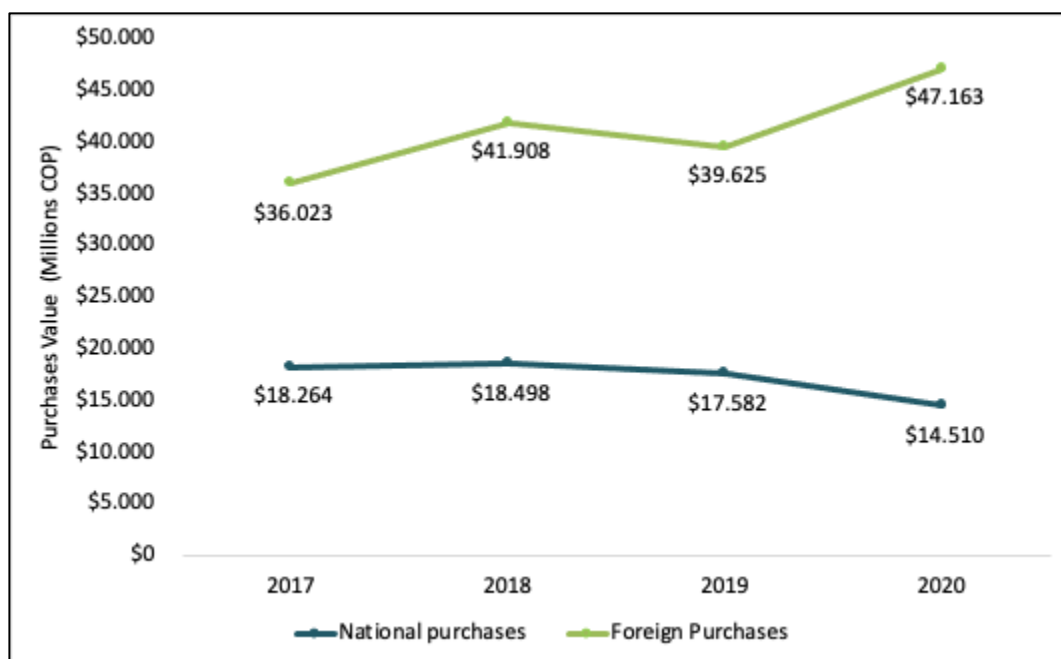
#### 2.1.4. Output 4: Linkages with buyers and investors

Output 4 measures the development of linkages between local automotive component suppliers with domestic and foreign buyers and investors. This project component sought to improve and develop an inclusive value chain for the automotive sector. Regarding match-making success opportunities captured by the project, the team established contact between potential buyers and sellers that resulted in 29 sales deals. It is recognized the importance of the Portfolio of the Colombian Automotive Industry (hosted by Compra lo Nuestro platform and Colombia Productiva) and business networking events (executed by ProColombia), to achieve these results. Furthermore, 48 new business opportunities, customers and investors abroad were identified for local component suppliers. It was the result of an internationalization strategy that included the launch of a website, the construction of a database with contact information of purchasers, the registration of Colombian suppliers in purchase portals of large buyers and investment promotion.

Concerning purchases, Figure shows national and foreign purchases of beneficiary surveyed companies from 2017 to 2020 (in 2017 million COP). It is worth mentioning that the average value of foreign purchases is greater in all years studied, even when 25% of the sample had no purchases abroad. The gap for 2020, the last year, is especially large and equal to CO\$ 32 billion. On the other hand, 42.1% of beneficiary companies and 36,8% of non-beneficiary companies made new substitutions of imports for national suppliers. Besides, 95% of surveyed beneficiary

companies claimed that only less than 20% of the value of new substitutions were made due to PRO-Motion.

Figure 19. Average value of domestic and foreign purchases from 2017 to 2020.

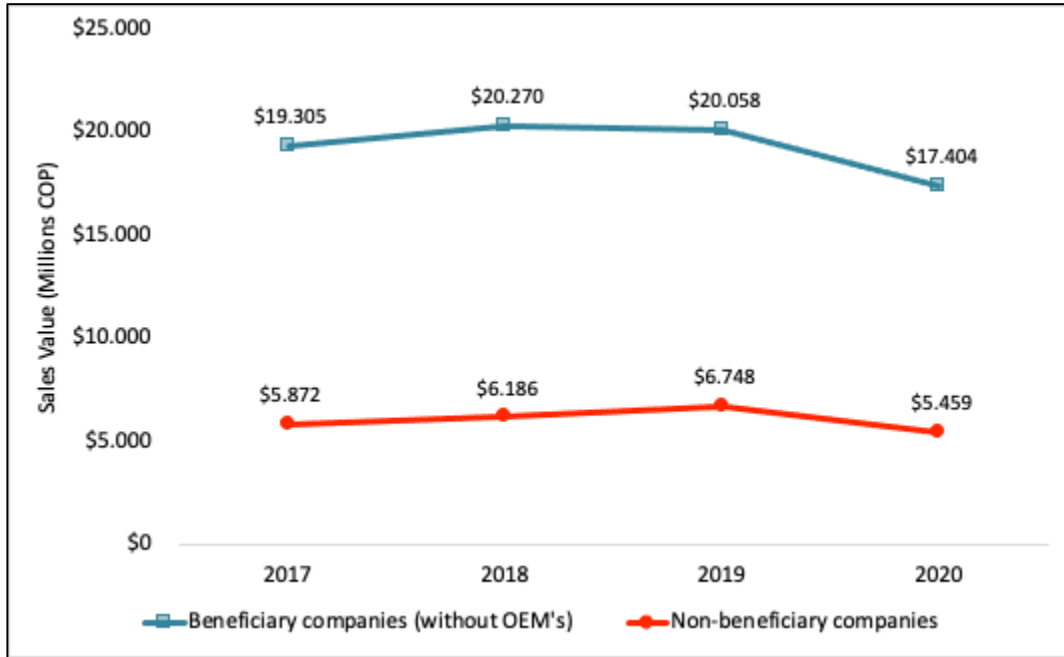


Note: Value of sales in 2017 COP.

Source: Own elaboration based on UNIDO project team in Colombia survey data.

In terms of the value of domestic sales, Figure 15 illustrates the evolution of this variable between 2017 and 2020. It presents the average value of domestic sales for both beneficiary and non-beneficiary companies, with the exception that six OEMs were excluded from the group of beneficiaries since the average value of their sales was approximately 34 times higher than the average value for the group without them. This way, Figure 15 presents a more faithful representation of most small and medium-sized companies in the automotive sector. As in the case of the previous variables, the group of companies that participated in PRO-Motion has on average a better performance than those that did not participate, that is to say, beneficiary companies have on average higher domestic sales. Also, this value grew for both groups between 2017 and 2018 (from 19,304 to 20,269 million COP for the beneficiary group and from 5,871 to 6,185 million COP for non-beneficiary companies) but decreased for the beneficiary group in 2019 (from 20,269 to 20,057 million COP), even when it continued to increase for those companies outside the project (from 6,185 to 6,748 million COP). Compared to the previous year, domestic sales were lower for both groups, but that is well explained by the crisis derived from the covid-19 pandemic (ending up at COP 17,404M and COP 5,458 million, respectively).

Figure 15. Average value of domestic sales from 2017 to 2020.

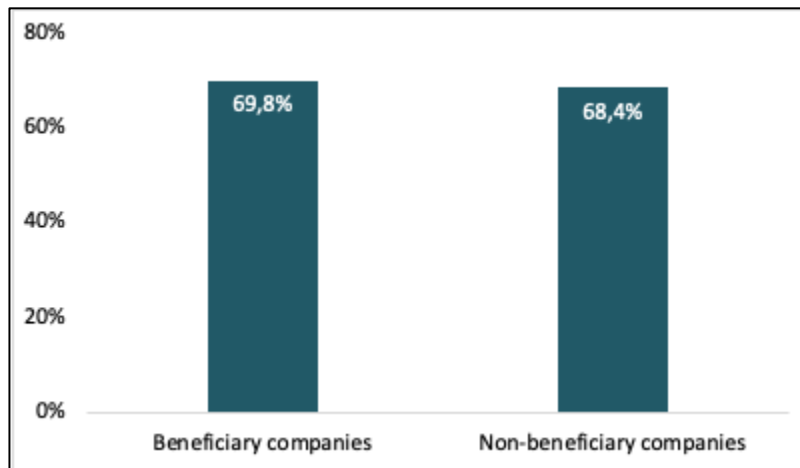


Note: Value of sales in 2017 COP.

Source: Own elaboration based on UNIDO project team in Colombia survey data.

Figure shows the proportion of companies that exported between 2017 and 2020 according to its participation in the project. In this case, both beneficiary and non-beneficiary companies have a similar rate; 69.8% of companies that participated in PRO-Motion and 68.4% of companies that did not participate in the project exported.

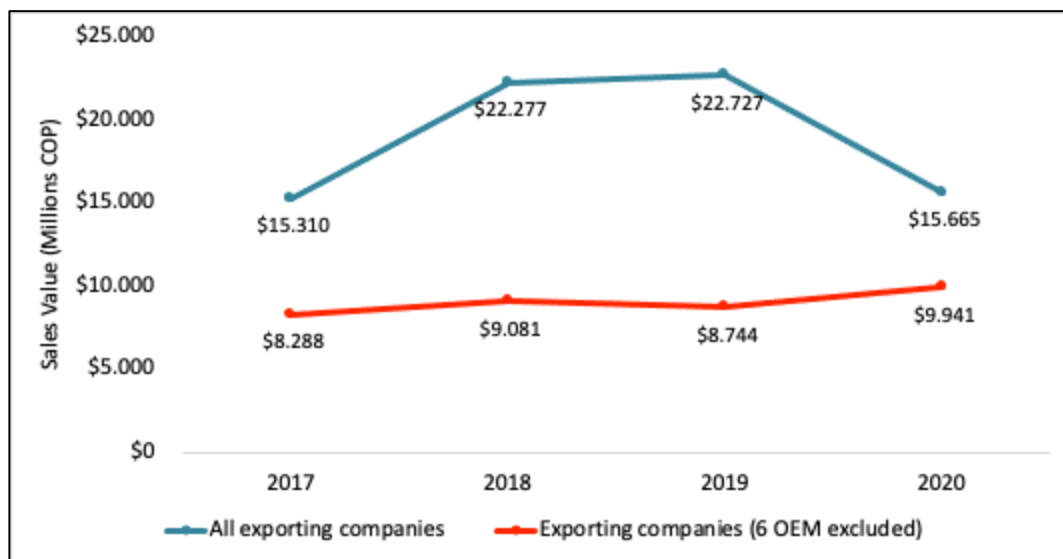
Figure 16. Proportion of companies that exported between 2017 and 2020.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

For beneficiary companies, Figure shows the average value of exports from 2017 to 2020 just considering companies that did export. Like Figure 15, average values are shown for all beneficiary exporting companies and for the same sample but excluding six OEMs as a way to obtain more realistic statistics for the sector. While exports for all companies but OEMs had a slow and sustained increase over the years, the exports when including OEMs increased in the first two periods and then decreased in the last.

Figure 17. Average value of foreign sales from 2017 to 2020.



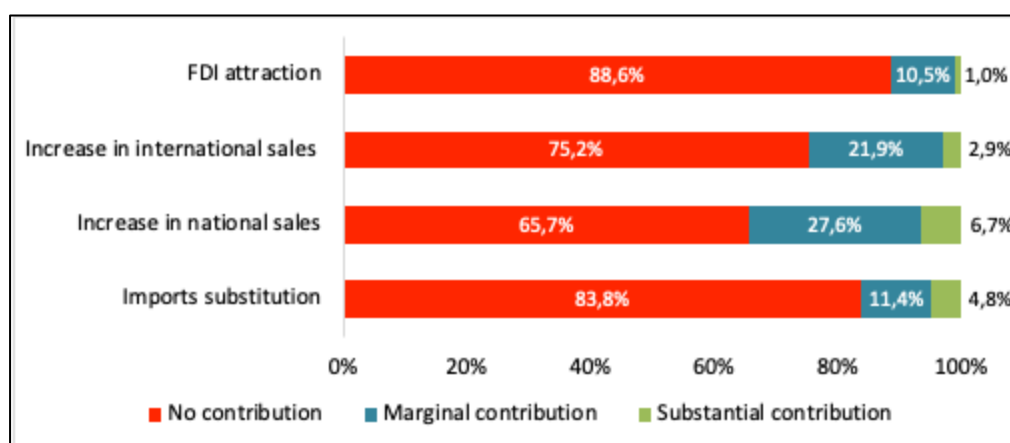
Note: Value of sales in 2017 COP.

Source: Own elaboration based on UNIDO project team in Colombia survey data.

About Foreign Direct Investment (FDI), only 5% of beneficiary surveyed companies received FDI between 2017 and 2020.

Finally, Figure shows the proportion of beneficiary companies that found no contribution, a marginal contribution or a substantial contribution from PRO-Motion to enhance some characteristics such as FDI attraction, national and international sales and imports substitution. Unfortunately, most of the surveyed companies found no contribution in all four items. Almost 90% of companies claimed the project had not contributed to attracting FDI to their companies. However, it is well known that even most companies do not reach the necessary requirements for this, the project trained and made companies aware of these issues.

Figure 18. Companies' perception about the contribution of the project to sales and FDI.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

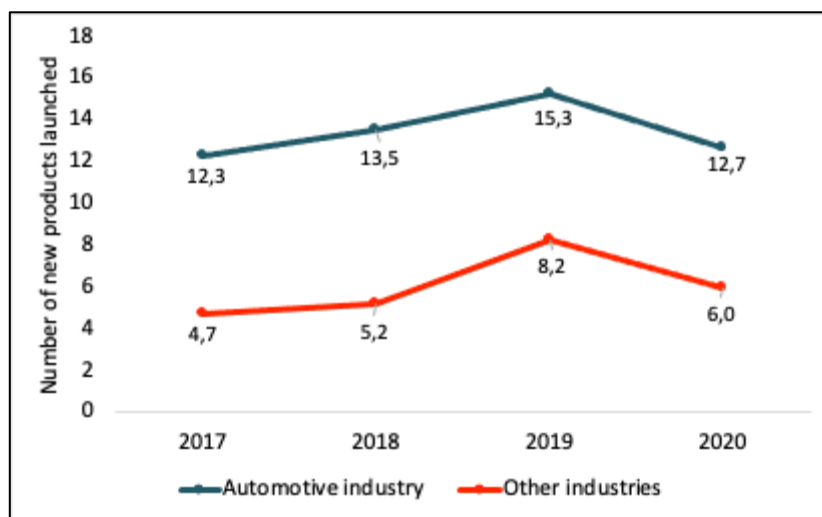
### 2.1.5. Output 5: New product design and R&D

The purpose of outcome 5 is for local automotive component suppliers to invest in new product design and enhance technical research and development (R&D) capacities and skills. According to the Synthesis Report, 12 new product designs or design validation processes were initiated by

local suppliers. Because the project had targeted 5 new product designs, this output got a 100% compliance level as well.

Figure illustrates how many new products on average were launched by beneficiary companies. From 2017 to 2019, companies increased the number of new products launched inside and outside the automotive industry, however, the number of new products launched in the automotive industry is on average twice as many as those launched in other industries. In both markets, there was a decrease in launches in 2020 compared to 2019.

*Figure 19. Average number of new products launched by beneficiary companies in the automotive industry and other industries from 2017 to 2020.*

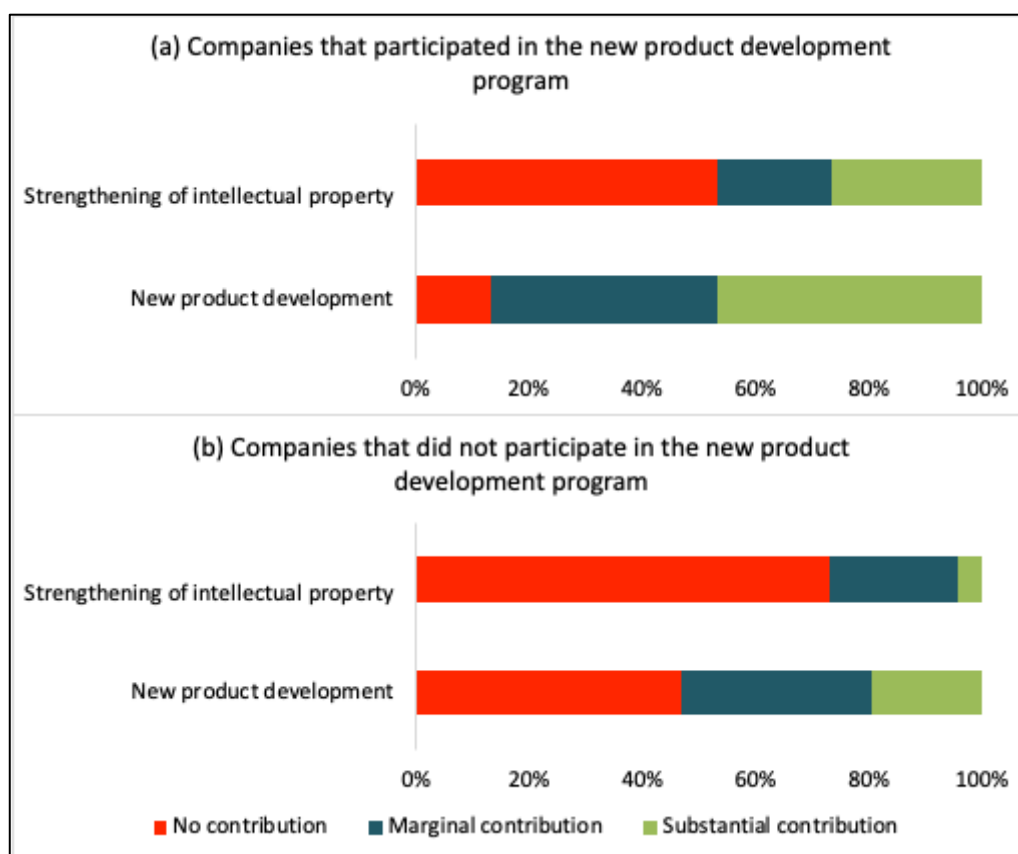


*Source: Own elaboration based on UNIDO project team in Colombia survey data.*

Similar behavior of Figure is found when analyzing the effect of the program on the strengthening of intellectual property and on the development of new products. Among those companies which participated in the new product development program, 46.7% of companies found a substantial effect of the program on the development of new products and 26.7% found a substantial effect of the program on the strengthening of the intellectual property, whereas just 19.6% and 4.4% of companies that participated in PRO-Motion but not in this activity found a substantial effect, respectively (Figure ).



Figure 20. Project contribution according to participation in the new product development program.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

## 2.2. Progress towards impact

The progress towards impact of the project is evaluated as Moderately Satisfactory. Overall, the project managed to generate impact with their actions. The project not only contributed to strengthening the automotive value chain through training, as just mentioned, but also by raising the awareness and focus on the need for firms to meet international requirements and trading to international markets. Prior to the project many companies were not interested in internationalization of their operation. In addition, the project strengthened international compliance with quality standards precisely demanded by international buyers.

This change in terms of market orientation was not always easy to accept by sectoral chambers. Anticipating potential reactions, the program was designed to provide their intervention directly to the firms without the intervention, selection, or any type of filters by the sectoral chamber. This decision, in turn, not only allowed better impact but also expand the focus, reaching firms that have not been traditionally object of support or attention from previous public programs. Overall, the project fostered changes in the attitude and / or behavior of the beneficiaries. In addition to the previously mentioned awareness and focus on international standards and markets, the project also contributed to generating greater confidence in SMEs, making them realize that they can compete internationally. Similarly, in the context of the COVID-19 pandemic, the project supported companies to adapt to the new reality and to produce biosecurity elements, as part of the economic reactivation strategy. This has contributed to building trust and resilience.

The project contributed to strengthening the automotive value chain through training and particularly by raising the awareness and focus on the need for firms to meet international

requirements and trading to international markets. Prior to the project many companies were not interested in internationalization of their operation. In addition, the project strengthened international compliance with quality standards precisely demanded by international buyers.

### **2.2.1. Behavioral change**

Thanks to the work with SENA and some universities in the country, it has been possible to encourage the technical and vocational preparation of young people for their participation in the industry. Likewise, some of the training that was carried out addressed issues related to the environment such as the efficient use of energy.

### 3. Project's quality and performance

#### 3.1. Design

The design of the project is evaluated as Satisfactory. In fact, a great deal of the success of the project can be explained by a participatory design, involving different stakeholders in the country. At the same time, its success and sharp design benefited from a good knowledge of the initial situation and the building of consensus to challenge the *status quo*.

The project preparation process included a qualified team of international consultants at the same different stakeholders both from the private and public sector report had an active role or contribution to the project design. This participatory design allowed the project to be built around a well-established and sounded consensus of the challenges ahead and propose an according solution. In fact, UNIDO's experience, prior knowledge and be considered as an honest broker contributed to generate the minimum required consensus between the stakeholders. In fact, the project was ambitious in terms of its objectives and was widely characterized by the stakeholders as a not-usual project in its conception due to the diverse type of interventions, beneficiaries and activities involved. The results achieved have also contributed to provide confidence in the public sector to execute complex projects affecting other industrial activities.

In terms of consistency with the country's priorities, the project design was aligned with Colombia's National Development Plan 2010-2014 and its Productive Transformation Programme currently known as *Colombia Productiva*, which promoted to increase auto parts and automotive industry exports, through an efficient coordination between public-private sectors. This objective is reflected in the project document components (outputs) and effectively disaggregated into results outcomes, outputs and activities in the logical framework.

At the same time, the project was modified to attend the changing priorities due to the Covid-19 pandemic and based on the recommendations of the Mid-term Evaluation published in 2019. These changes were mainly applied in the project activities and the logical framework to, "better reflect the project activities and results, which in many aspects go far beyond what was originally foreseen", according to the MTE. The ideal scenario when designing a project is to maintain consistency and coherence from the design of the intervention until the end of the project implementation. Indicators should be carefully and mindfully chosen, and defined from the design phase, ensuring that they are SMART (Specific, Measurable, Achievable, Relevant and Time-bound) throughout the whole project implementation.

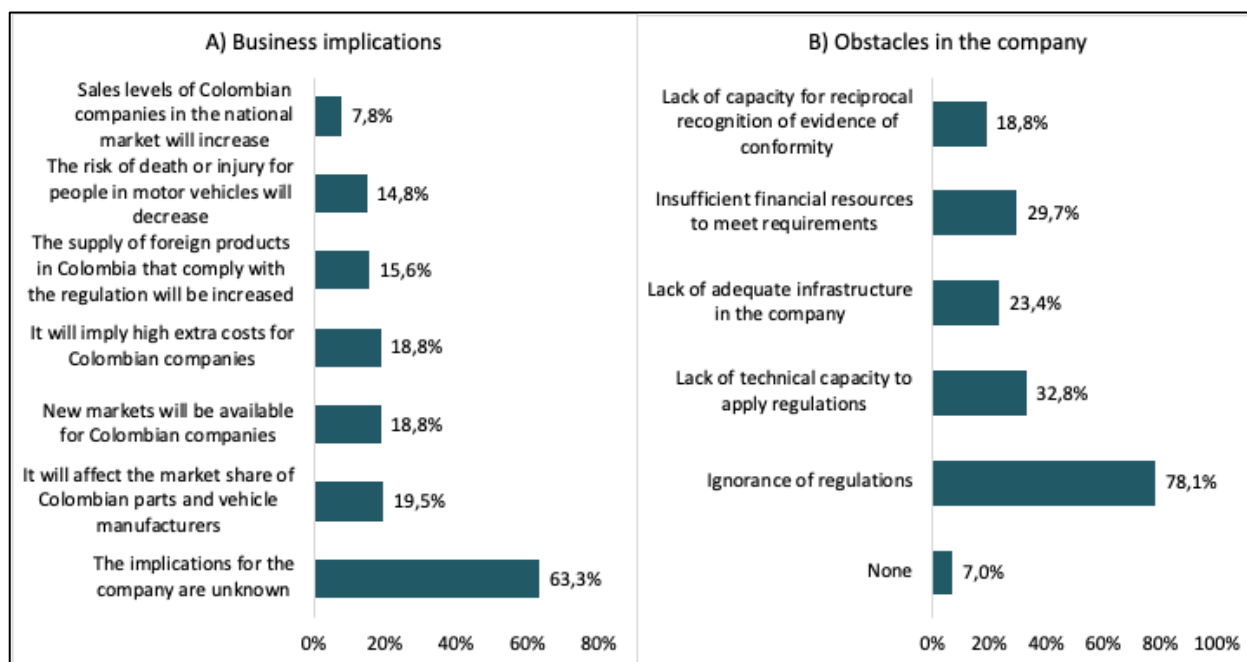
Even when it is well known that the participation of different private and public actors was essential for the definition of strategies and the prioritization of initiatives in the design of the project, both private automotive sector representation associations stated in interviews that they disagreed on some design points. These different views on the quality of the project design resulted from the fact that different segments of the value chain held different opinions about the objective market, the level of specialization and the time horizon required to achieve those changes. The points mentioned as disagreements regarding the design included:

- ACOLFA felt that one of the main components and objectives of the project would have been to create the technological development center [TECNA], which was intended to carry out functional and homologation tests of auto parts produced in the country, and thus reduce time, costs and meet buyers' requirements.
- Of particular importance, is the fact that there are contrary views regarding voluntary certifications and technical regulations that should be implemented in the sector. These visions in opposite directions result from different opinions about the market to which the industry and level of specialization should aim and the time horizon that is

considered. For instance, the Colombian government chose to follow WP29 guidelines, a decision that does not seem to please ANDI. While ICONTEC believes that adopting WP29 helps guide national standardization committees and UNIDO team in Colombia sees this strategy as an opportunity to avoid creating regulations that only apply to Colombia and a way to start thinking about economies of scale, ANDI believes that this determination obstructs trade because so far, and for the coming years, the country's export target is Latin America, a region that does not belong to the WP29.

- Regarding the previous issue, surveyed companies were asked about what internal implications and obstacles they believed the adoption of UNECE regulations would cause (results are shown in Figure ). In the first place, 63.3% of companies ignore the effect that UNECE regulations could have on their own business. However, among the rest, a significant group assumes a negative effect reflected in changes in the market share of Colombian parts and vehicle manufacturers (18.8% of surveyed companies) and high extra costs for Colombian companies (18.8%). On the other hand, some companies believe that the effect would be positive, meaning that new markets would be available (18.8%) and sales in the national market would increase as well (7.8%). Companies' opinions about UNECE are also divided. Second, most companies (78.1%) believe that the obstacle that they would face would be the ignorance of these regulations, but the lack of technical capacity (32.8%) and financial resources (29.7%) are also considered.

Figure 21. Companies' perception about the effect of adopting UNECE regulations.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

- Likewise, if the participation of other actors such as ProColombia exports in the project design had been deeper, resources could have been allocated for the development of certain activities that were considered limited during implementation. ProColombia Inversiones also considered that the design should include a stage after the pre-teaser that would match companies in Colombia with counterparts that may be interested.

The project had to adjust the activities according to the needs and restrictions of the Covid-19 pandemic. However, the project was considered to have successfully reinvented itself to bring relief to the sector.

### **3.2. Relevance**

The relevance of the project is evaluated as Highly Satisfactory and considered, along with the degree of appropriation of the activities promoted during execution, one of the most salient aspects of PRO-MOTION.

In the first place, the project is highly aligned with the goals and targets of the 2030 Agenda under the understanding that it promotes the building of stronger economic foundations for the country. The 2030 Agenda is commitment to strengthening the productive capacities, productivity, and productive employment of least developed countries, which is basically the overall objective of this project focused on the automotive and auto parts industry. As well described in the agenda, this commitment is properly addressed by having a “well-educated workforce with the knowledge and skills needed for productive and fulfilling work” and promoting women employment, two key and well-defined components of the project. By supporting the inclusive and sustainable industrialization of Colombia, the project is highly related to SDG 9, under which the raise of the industry’s share of employment and gross domestic product is expected in 2030. The project is also aligned with SDG 9 in its purpose of fostering Colombia’s integration into the regional and multilateral trading systems, upgrading the technological capabilities of the industry sector and supporting innovation.

At the national level, there is no doubt that the design of the project integrated the strategies and the initiatives of the sectoral industry policy materialized in the Business Plan for the automotive industry developed by Colombia Productiva. This entity was created in 2008 by MINCIT to meet the challenges of the National Competitiveness and Productivity Policy (Conpes 3527, 2008), and later, of the Productive Development Policy (Conpes 3866, 2016). Moving Industries is one of the 18 prioritized sectors with which Colombia Productiva works. This way, a Business Plan for the automotive and auto parts sector was launched in 2009 and then updated in 2016. The Business plan included the vision to 2032, the goals on sales, exports, and jobs, as well as the strategies to achieve them; all these elements were decisive in the design of this project.

The relevance of the project lies in the fact that it contributed to partially reversing some of the challenges faced by a traditionally protected sector that could be characterized as lacking adequate management practices and quality standards. In fact, the project by being rooted in a strong and clear identification of the cause of the problem and the sense of urgency due to the decision to advance in FTAs were key elements that contribute to provide an adequate solution to the automotive industry.

The relevance score includes several criteria and public policies, among them (i) the importance given by the country to revamping their quality subsystem; (ii) Colombia’s recognized efforts to open markets and lay out regional agreements; and (iii) the trajectory of developing sectoral strategies with public-private cooperation. Although the project did not affect particular national strategies, the project became an appropriate mechanism to promote greater awareness about the importance of quality infrastructure, compliance and participation in relevant quality forums worldwide. These priority issues clearly show the significant relevance that the actions proposed by the project had to national authorities during design and implementation.

### **3.3. Coherence**

The coherence of the project is evaluated as Highly Satisfactory. Overall, the project included, and executed and over compassing strategy aimed at improving the capabilities of the firm in the sector to be capable of competing and be further focused on international markets. To do so it provided initial assessments of the firms, provided training, enhanced the quality system and helped to put in place an agenda of voluntary and technical requirements and contributed to generate a shared vision and articulation spaces between parties. This coherent approach, rooted

in the valuable initial diagnosis of the sector and the knowledge from the executing team, allowed to materialize some of these results into public policy and strategies in Colombia.

### 3.4. Efficiency

The Efficiency of the project is evaluated as Satisfactory. The project was implemented within the terms stipulated despite having to adjust in order to properly respond to the COVID-19 pandemic. As a response, it was needed to extend the completion of the project. The efficiency analysis pertains to how economically the resources mobilized by the project (mostly time, money and expertise) were converted to the expected results. The effectiveness assessment in the previous section provides evidence that the project achieved almost all its expected outputs and outcomes.

The efficiency of the PRO-MOTION Project was assessed considering the use of resources, the cost-effectiveness of financed activities, and the contribution of co-financing to the achievement of the objectives set.

The total donor funding for project implementation was of US\$ 4,857,870, of which the vast majority were provided by KOICA. The analysis of the use of financial resources is based on two specific dimensions: on the one hand, the comparison between the original budgetary allocations and the amounts spent; on the other hand, the relevance of the resources allocated to the different activities and project categories of expenditure.

The first parameter considered was the use of resources available. In this regard, the project's performance was satisfactory; a total of US\$ 4.3 million (or 88% of the funds allocated) had been disbursed at project completion.

However, it is important to note that this financial performance could only be achieved after an implementation period that should be characterized as containing two very differentiated phases. Each of these phases correspond to the responsible person in charge of the execution and overall coordination of the project from UNIDO. While under the guidance of the first coordinator, there was some criticism from private sector representatives, the second coordinator, who has been widely recognized as knowledgeable of the sector, dedicated and committed to the success of the project, allowed the project to improve its performance.

During the implementation of the project, the following situations were identified that generated delays in the implementation of the project according to the schedule initially established:

- Change of government. During this process, the execution of some outputs was delayed due to the change of public officials in the partner entities and the introduction of new priorities by the new government.
- COVID-19 pandemic. Some activities related to training with KATECH, business roundtables and activities to promote exports were delayed. In general terms, the schedule was fulfilled to a greater extent without this implying the total absence of delays in the planned activities.

In general terms, the project was implemented within the terms stipulated. However, it is necessary to mention that the COVID-19 pandemic, a factor that is clearly external to the project, forced a revision of the project components to this new reality, to change some results and to extend the completion of the project.



### 3.5. Sustainability of benefits

Overall, the sustainability of the project is assessed as moderately unsatisfactory. However, a distinction should be made in terms of the capabilities and enthusiasm generated (particularly in the public sector) from financial sustainability based on the availability of resources.

Sustainability beyond the donor funding is one the relatively weaker points of the project. Specifically, it seems very unlikely that the public sector will provide the budget needed to continue with some activities developed during the project. In fact, during the pandemic and given the likely efforts for the economic recovery in 2022, the interviewees mentioned that they the firms themselves considered very unlikely to continue performing such activities based on a combination of public and their own financial resources.

According to UNIDO project team in Colombia, the project's sustainability of results not only depends on the availability of funds from the government counterparts and the socio-political risks, but also the auto parts and automotive industries' continuity in applying the lessons learned and best practices adopted from the trainings, certification, and trade strategies they participated as beneficiaries of the project. However, to this date no strategy has been planned to evaluate the continuity of the results at the company level based on measurable indicators. Also, firms reported to be financially constrained to engage their own resources for such investments, suggesting that they have not yet reaped on the returns of their investments.

The project contributed to generate a clear roadmap in terms of the quality infrastructure and quality regulations to be followed by Colombia. At the same time, it has contributed to generate increased interest of the authorities in the importance of the quality subsystem and how to better integrate these aspects in trade negotiations. In this sense, some of the quality and technical regulations that are in discussion to be adopted as a national law are related to the strategy set by PRO-MOTION. The project produced key inputs such as information instruments, trade strategies and methodologies that have been adopted by the government counterparts and automotive industries, which according to the interviewees will be sustained and institutionalized. These methodologies have become best practices and are currently applied to projects from other industrial sectors. Furthermore, there are some cases in which the information or contributions of the project were incorporated into national policies. Such is the case of the Mobility Industry Pact, which represents the policy and roadmap for the economic reactivation of the sector. In the same way, it had an important participation in the Framework of the National Policy for Industries 4.0, through the provision of inputs from the beneficiary companies of the project.

It is well mentioning that seven additional and improved services to the automotive industry by institutions of the National Quality Subsystem were launched. Some of those services were the installation of the hardness laboratory in charge of the INM and the development of the ICONTEC's e-conecta platform. Moreover, labs that implemented at least 75% of the ISO 17025:2017 requirements added 12. In fact, the average compliance with this standard among these 12 laboratories was 47% at the baseline (September 2019), and it reached 83% in November 2020.

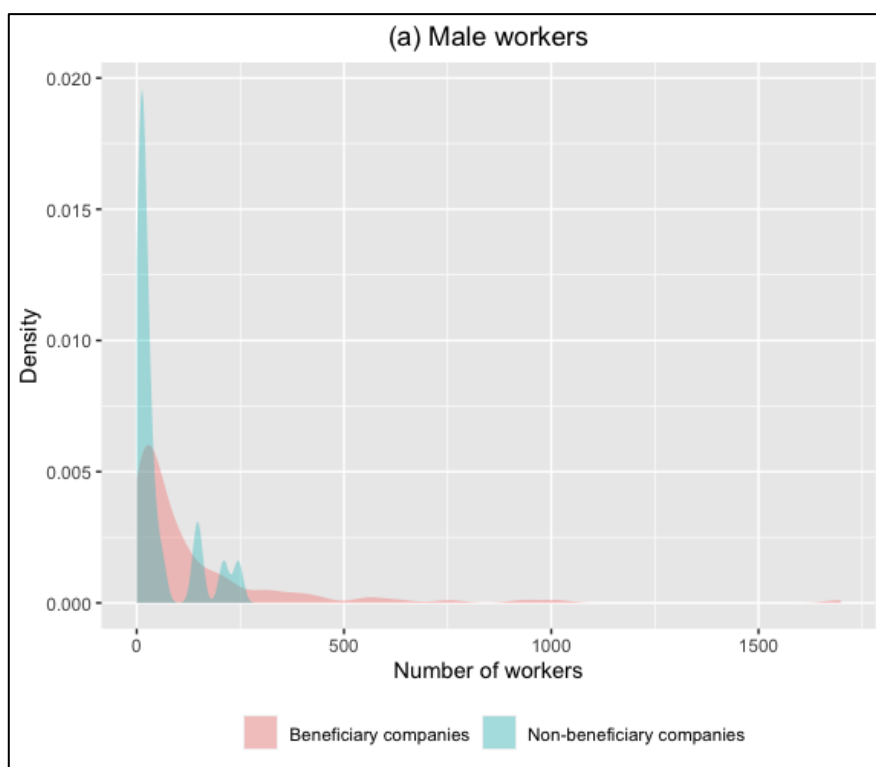
Therefore, some results still need some time to be completely implemented. For instance, not all services in the hardness laboratory are already provided and commercial agreements between suppliers and assemblers are in early stages of negotiation. Once the results have finished their maturation process, a higher level of benefits for the industry is expected, as well as a greater institutionalization.

### 3.6. Gender mainstreaming

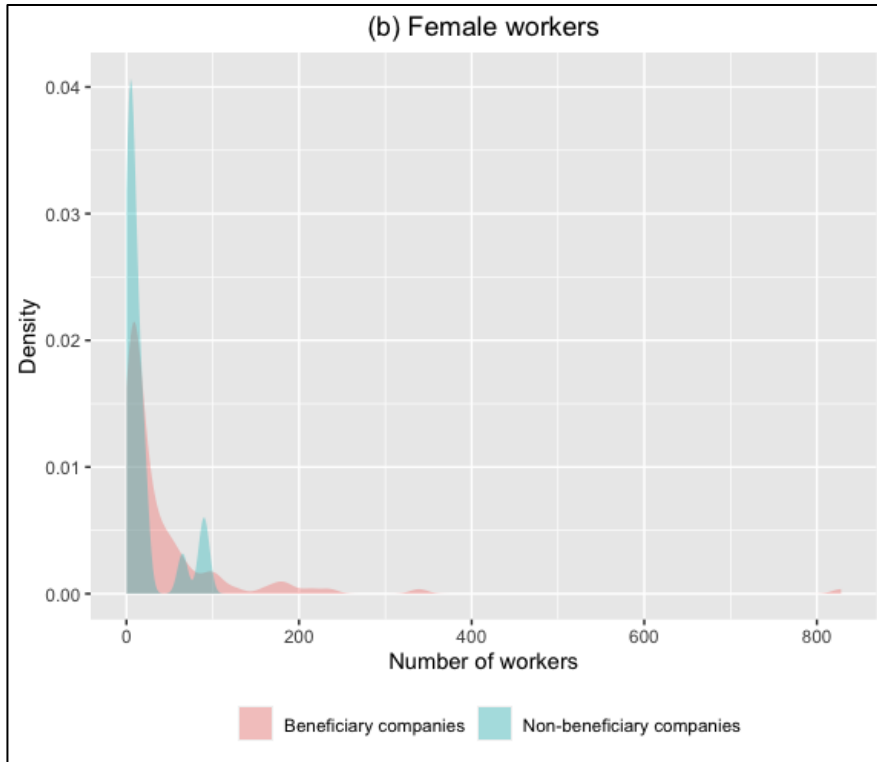
With respect to gender mainstreaming, the project is moderately unsatisfactory. Overall, most of the firms did not report any progress in gender equality due to the project activities. Also, gender considerations were not embedded in the monitoring strategy.

Gender mainstreaming is a relevant topic due to the low participation of women in the industry. Using survey data, Figure shows the density distribution of both male (panel a) and female (panel b) workers for those firms that participated in PRO-Motion against those that did not participate. In general, it is possible to appreciate that companies that participated in the project are on average larger since they have -overall- more workers. Furthermore, Figure reveals that female workers are found in smaller proportions in companies. In fact, the average number of women working in companies that participated in PRO-Motion is equal to 44.7, against 140.6 male workers. The companies that did not participate have on average 18.3 female workers and 50.3 male workers, which reflects that these companies have fewer workers but the ratio of women to men remains similar (around 1:3 women to men). However, two things should be considered in the analysis. First, the median values are considerably lower than the mean values for all cases, which means there are some companies (basically OEM) much larger than the average company of the sector. Second, it is important to understand that the sample of surveyed companies that did not participate in PRO-Motion is much smaller than the one that did participate in the project.

Figure 22. Kernel density estimation of male and female workers by company.



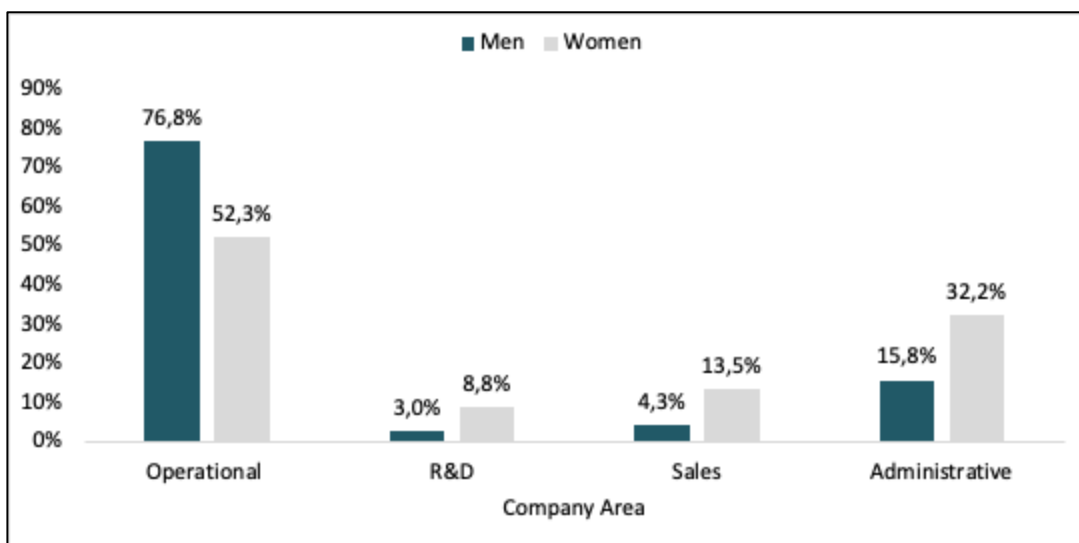




Source: Own elaboration based on UNIDO project team in Colombia survey data.

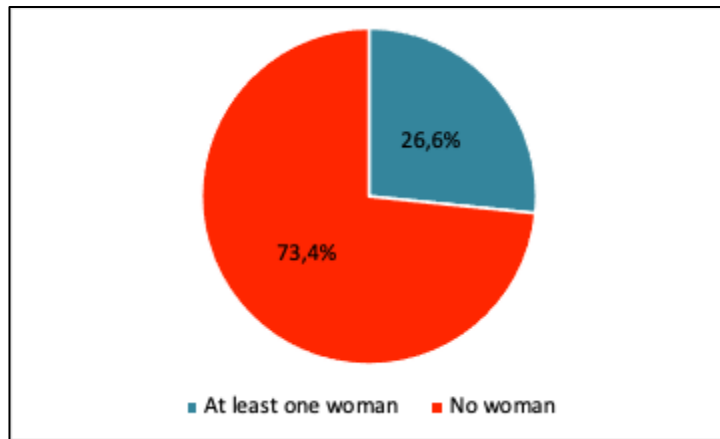
Figure shows the average distribution of workers by sex and area for those companies that participated in any activity of the project. It is interesting how most male workers (76.8%) are engaged in operational areas of the companies, while only a little more than half of the female workers (52.3%) are found in this area. On the other hand, the proportion of female employees in administrative areas is twice the proportion of men (32.2% versus 15.8%) and approximately three times in sales and innovation and development areas. However, in December 2020, only 26.6% of these companies reported that at least one woman was in charge of the presidency or the general management department of the company (Figure ).

Figure 23. Average distribution of workers by area.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

Figure 29. Companies with at least one woman in the presidency.



Source: Own elaboration based on UNIDO project team in Colombia survey data.

It is worth mentioning that 50% of the companies surveyed did not observe any kind of contribution from the project to strengthen gender equality, while 37.7% and 12.3% of companies found a marginal contribution and a substantial contribution respectively (Figure 7). In fact, gender equality was the aspect of the industry in which companies declared a lower contribution because of PRO-Motion.

The evaluation found that gender considerations were not fully embedded in the monitoring phase beyond the generation of gender segregated data. Specifically, indicators used to track progress and outcomes lack a gender approach in their definition. Gender approach should be more explicitly mentioned in project indicators. Overall, the project has limited attention to gender, and has neither any objective nor budget allocated to gender mainstreaming.

It should be noted that several activities were carried out with UN Women. These activities were aimed at sharing experiences, training, and awareness about the participation of women in the Colombian industrial sector. Nevertheless, there is no evidence that allows to infer or estimate actual effects that can be linked directly to these activities.

## **4. Performance of partners**

### **4.1. UNIDO**

UNIDO's experience and executing and coordinating team were key elements to successfully complete the project. It has been widely appreciated for the sectoral and country knowledge and experience, particularly once the second coordinator was in charge. It was stressed that UNIDO "knew the sector dynamics, the actors, and the actors knew them". In the same vein, and despite some technical limitations in the sectoral chambers, UNIDO maintained a fluid communication with ANDI, ACOLFA, ANDEMOS, Asopartes. In this respect, the biannual committees were essential for all the stakeholders involved to contribute together to overcoming difficulties in the implementation of the project. The committees were key to making decisions and rethinking some strategies.

### **4.2. National counterparts**

One of the important value-added of the project lies in the solid work that was carried out to strengthen the industry with the institutional framework and the policy-making processes for the sector in Colombia. In this way, different participatory spaces and inputs were generated with the purpose of identifying the needs of the industry, influencing the development of the corresponding policies and helping the institutions to generate adequate initiatives to address these needs.

The strengthening of this coordination has not been limited only to the automotive industry but has also made it possible to improve the services offered by institutions to other economic sectors. For this reason, it could be said that this added value constitutes a gain for Colombia and represents an important opportunity for the sustainability of the project's results.

During the project implementation period, important contributions were made to the strategies proposed by the Colombian government for the definition of policies on issues such as Industries 4.0, the strengthening of laboratories to meet quality requirements, the creation of tools to provide know the capabilities of the industry to potential investors, and the development of R&D capabilities in companies, among others. All these initiatives, which are outlined in the National Development Plan, were addressed within the framework of the project and in joint work with institutions such as DNP, INM, Colombia Productiva, Procolombia, among others.

The UNIDO team in Colombia felt a certain abandonment on the part of the sector policy implementer, that is, Colombia Productiva. They felt that they ignored the sector because they had PRO-Motion to guarantee results in the sector.

Both the UNIDO team in Colombia and the Ministry of Commerce believe that the sectoral chambers need to be technically strengthened. The unions appear to have more political than technical representation, which makes dialogue between the government and the unions difficult (from the government's point of view). However, UNIDO's strategy was to have constant communication with ANDI, ACOLFA, ANDEMOS, Asopartes.

### **4.3. Donor**

KOICA's main role was to provide the necessary funds for the fulfillment of the activities and the achievement of the objectives set out in the project. Additionally, KOICA was in charge of the implementation of the capacity development program, through which a course was offered in Korea to improve public policies for the automotive industry in Colombia, as well as monitoring and evaluation activities.

As part of the M&E activities, the donor periodically requested UNIDO to send annual reports that included their respective budget execution reports. Additionally, KOICA carried out several field visits in order to monitor the activities carried out in the regions. However, although they were not fully satisfied with some of the M&E methods, they were not capable of influencing changes and/or generation of more robust evidence on the impacts and relevance of the project.

## **5. Factors facilitating or limiting the achievement of results**

### **5.1. Monitoring and evaluation**

Monitoring and evaluation were implemented by the UNIDO project team in Colombia and subsequently validated by the UNIDO project team in Vienna. M&E was operationalized through a series of instruments to track the project activities, outputs, outcomes, and impacts including the logical framework, the annual progress reports (APR), the progress monitoring sheets, and the Mid-Term Evaluation. The project document includes a section describing the reporting, monitoring and evaluation activities that were planned and that were fulfilled during the project implementation accordingly.

The project document had a comprehensive logical framework matrix indicating the project's expected results in terms of development impact/goal, outcomes, outputs, and activities, each of these with their relevant indicators, means of verification and assumptions. According to the Progress Annual Report 2018, the logical framework was reviewed and updated based on observed realities, changes and needs, which was proposed and accepted in the Steering Committee Meeting in June 2018 and officially approved by KOICA in October 2018.<sup>3</sup> Following the recommendations of the Mid-term Evaluation, changes were applied to the project activities and the indicators, and an updated logical framework was approved by the Steering Committee in December 2019.<sup>4</sup> Overall, the logical framework had three versions throughout the project implementation. Although the reviews and updates to the logical framework aimed to better reflect the project activities and results, the constant adjustments show inconsistent planning from the beginning of the project and unclear basis for activity review to measure results.

About the reporting and monitoring, a total of five progress annual reports were submitted presenting a narrative overview of the activities undertaken during the reported period and the work plan for the following 12 months. APRs were informative and detailed from the operational and financial level, using the indicators as point of reference of what was achieved and the challenges that arose during the reported period. A complementary instrument to the APR was the monitoring sheet, an instrument applied to track the indicators in the logical framework. The monitoring sheet was applied to track the progress of key performance indicators each year of the project implementation. Due to the multiple adjustments of the logical framework, some indicators were not tracked each year because they were removed, updated, or added to a new version of the logical framework. This situation presents inconsistencies and a lack of coherence in the M&E process that reflects unclear progress or setback towards the objectives to obtain the expected results. Additionally, indicators in the logical framework were missing a baseline, which is imperative since it provides information about the performance of an indicator from the beginning of the project. It also provides data about the progress or the lack of it from the initial conditions of the project. Targets were also missing in some indicators and did not include the corresponding year to achieve the target. This is seen in the development goal/impact indicators.

In terms of evaluation, a Mid-Term Evaluation (MTE) was conducted as planned in 2019. The MTE was detailed, analytical and addressed the achievements, challenges, lessons learned and recommendations of the first two years of the project implementation. Although various of the

---

<sup>3</sup> UNIDO. Progress Report IV. Annual Report 2018. Page 13

<sup>4</sup> UNIDO. Progress Report VI. Annual Report 2019. Page 11

recommendations were addressed by UNIDO project team, the MTE recommended that a baseline was identified for indicators at development goal/impact level of the logical framework and that collection of relevant data started in the remaining part of the project to facilitate impact assessment upon project completion. This recommendation was not fulfilled, and the monitoring sheets evidence the absence of baseline for the remaining part of the project.

It should be mentioned that for the donor some aspects of the M&E implementation are one of the most striking weaknesses of the project. In particular, the donor felt that it was too simplistic and limited to measure only the number of people/spaces that have been involved in training activities without paying attention to the actual changes in roles and/or knowledge within the firms. The project was limited to applying "Satisfaction surveys" to participants.

Finally, it should be mentioned that the M&E strategy is weak since it did not include the identification of a control group nor a clear information collection strategy that would allow to infer the actual contribution of the program in a more quasi-experimental setting. Also, as it was briefly mentioned in the preceding section, this evaluation found that gender considerations were not embedded in the monitoring phase. Specifically, indicators used to track progress and outcomes lack gender approach in their definition. Gender approach should be more explicitly mentioned in project indicators.

Overall, the project with respect to the M&E is assessed as moderately satisfactory/satisfactory.

## 6. Conclusions, recommendations, and lessons learned

### 6.1. Conclusions

From the outset, the automotive industry in Colombia has faced a complex set of challenges in quality, competitiveness, and trade. Local vehicle manufacturers struggle to compete against foreign manufacturers whose cars were constantly gaining market share due to the signed Free Trade Agreements (FTA). Colombian vehicle and automotive parts manufacturers have historically seen themselves constrained to the national, Venezuelan and Ecuadorian markets because due to costly logistics, competition in other Latam markets by suppliers from, mostly, Brazil or Mexico and, productively, lack of adequate production scale.

Taking these elements in consideration, UNIDO and KOICA conceived with the support and interaction with national stakeholders a project with the objective to enhance the integration of the country into the regional and multilateral trading systems and supply chains by improving its trade capacities, competitiveness, and performance. PRO-MOTION spanned from January 1<sup>st</sup>, 2017, through October 31<sup>st</sup>, 2021, with a budget of US\$ 4,857,870 devoted to enhancing the quality and productivity of the automotive supply chain in Colombia. In particular, it focused on five key technical components:

- i. Local actors will have the capacity to implement the sectoral vision and strategy (“PTP Business Plan”) with a focus on productivity improvement of the automotive industry.
- ii. The national quality infrastructure is strengthened to improve the international competitiveness of Colombian automotive component manufacturers.
- iii. Local component suppliers (SMEs) upgrade competitiveness and comply with international standards, technical regulations and market requirements and improve their productivity.
- iv. Local automotive component suppliers develop linkages within domestic and foreign markets for inclusive value-chain development.
- v. Local automotive component suppliers have enhanced technical R&D capacities and skills.

Due to UNIDO’s in-depth understanding of the automotive sector and establishing a relevant network of technical experts and collaborating institutions, it executed the project in Colombia. The project aimed at generating synergies for local stakeholders by using well-tested approaches and services for continuous improvement processes and business linkages development in the automotive industry. KOICA has financed the project based on the FTA between South Korea and Colombia industrial segments including automobiles, tires and synthetic resin. Moreover, a variety of successful South Korean initiatives and support institutions served as a benchmark and best practice example for Colombia.

To achieve these goals, the project involved a variety of national stakeholders including government counterparts, private automotive sector representation, institutions from the Colombian National Quality Subsystem, among others. Some of them are: Ministerio de Comercio, Industria y Turismo (MINCIT), Colombia Productiva (previously known as Programa de Transformación Productiva, PTP), ProColombia, Instituto Nacional de Metrología (INM), Instituto Colombiano de Normas Técnicas y Certificación (ICONTEC), Organismo Nacional de Acreditación de Colombia (ONAC), Asociación Colombiana de Fabricantes de Autopartes (ACOLFA), Asociación Nacional de Empresarios de Colombia (ANDI)

The project was confronted with the need to contribute to the revamping of the automotive ecosystem that would ensure sustained development of the automotive value chain. The challenges and weaknesses originally faced were -to a great extent- related to the legacy of a traditionally protected sector that was mostly concerned with quality requirements prevalent at the domestic market. In this sense, many of the firms operating in the different tiers lack an

adequate vision of the opportunities and prospect of the international market. In this sense, there was an initial shared vision of the opportunities and the perils faced by a changing international landscape. Although some of these restrictions constrained some activities, progress and success, the Project succeeded in:

1. Establishing a basis for continued government and private sector collaboration in ensuring markets and skills for automobile production in Colombia
2. Bring to the front of the scene the importance of quality certification, requirements and the institutions that integrate the quality system
3. Contributed to behavioral changes and new impulses to firm engaging in innovation activities, including new product design and R&D
4. Set the stage for more bold action on gender mainstreaming. Although a lot needs to be done to encourage women participation in the various levels and layers of the ecosystem, the project managed to put in place a set of ambitious activities that are likely to provide interesting outcomes in the near future

At the same time, and exceeding the concerns of the project, the activities, methodologies and bold attitudes caught the eye of the national authorities, who applied the approach to other sectors of the Colombian economy.

Overall, the project managed to overachieve with respect to its Effectiveness. In this sense, stakeholders emphasize the role of the project in strengthening public sector capacities with respect to their ability to support companies in complying with the standards required by the global value chain. As a result, firms were able to develop new products by collaborating with universities, offer their products to new domestic and foreign customers, entering new other value chains or other market niches (e.g., yellow machinery). At the same time, automotive suppliers were significantly upgraded, with improvements in productivity and better capacities to meet (new) market demands.

Taking the Theory of Change (ToC) as a guiding device, it becomes clear the impact of the project in the main considered outputs. In particular, with reference to the development and implementation of sectoral policies and support schemes with a focus on competitiveness improvement of the automotive industry by local actors (Output 1), 10 documents were produced doubling the goal for the project. With respect to strengthening the national quality infrastructure (Output 2), the 3 stated objectives were planned. In what refers to the improvement of the firms' productivity and compliance levels (Output 3), the project managed to involve 141 companies in different training courses, with almost 2,400 staff (of which around 40% were women). At the same time, 69 local automotive component suppliers showed improvements in key performance indicators (on-time delivery, standard compliance levels, PPM defectives, etc.) after participating in PRO-Motion activities that gave financial management support for enterprises, technical assistance to achieve IATF 16949:2016 certification, assistance for SMEs, among other programs. Output 4 was around the development of linkages between local automotive component suppliers with domestic and foreign buyers and investors. The project allowed to establish contact between potential buyers and sellers that resulted in 29 sales deals. Furthermore, 48 new business opportunities, customers and investors abroad were identified for local component suppliers. The purpose of outcome 5 was to promote automotive component firms to invest in new product design and enhance technical research and development (R&D). According to the Synthesis Report, 12 new product designs or design validation processes were initiated by local suppliers, more than doubling the target of 5 new product designs.

At the same time, the project managed to generate impact with their actions. The project not only contributed to strengthening the automotive value chain through training, as just mentioned, but also by raising the awareness and focus on the need for firms to meet international requirements and trading to international markets. Prior to the project many companies were not interested in internationalization of their operation. In addition, the project strengthened international

compliance with quality standards precisely demanded by international buyers. This change in terms of market orientation was not always easy to accept by sectoral chambers. Anticipating potential reactions, the program was designed to provide their intervention directly to the firms without the intervention, selection, or any type of filters by the sectoral chamber. This decision, in turn, not only allowed better impact but also expand the focus, reaching firms that have not been traditionally object of support or attention from previous public programs. Overall, the project fostered changes in the attitude and / or behavior of the beneficiaries. In addition to the previously mentioned awareness and focus on international standards and markets, the project also contributed to generating greater confidence in SMEs, making them realize that they can compete internationally. Similarly, in the context of the COVID-19 pandemic, the project supported companies to adapt to the new reality and to produce biosecurity elements, as part of the economic reactivation strategy. This has contributed to building trust and resilience.

Using the six-point rating system established in the UNIDO Evaluation Manual, the evaluation team rated each of the evaluation criteria, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory), the table below summarizes the scores awarded for each criterion, as well as the overall project score.

*Project Evaluation Criteria Rating and Scores.*

Index	Evaluation criteria	Rating	Score
A	Project Design	S	5
1	Overall Design	S	5
2	Logical Framework	MS	4
B	Project Performance	S	5
1	Relevance	HS	6
2	Coherence	HS	6
3	Effectiveness	HS	6
4	Efficiency	S	5
5	Sustainability of Results	MS	4
6	Progress towards impact	MS	4
C	Cross-cutting Criteria	MS	4
1	Gender	MU	3
2	Environmental and Social Aspects	S	5
3	Monitoring and evaluation: M&E Design M&E Implementation	4	4
		MS	4
		S	5
4	Results-Based Management	S	5
D	Institutional Performance	S	5



Index	Evaluation criteria	Rating	Score
1	UNIDO	S	5
2	National Counterparts	MS	4
3	Donor	S	5
	<b>Overall Assessment - Achievement of objectives and results</b>	MS	5

Ratings: HS- Highly Satisfactory; S-Satisfactory; MS-Moderately Satisfactory; MU-Moderately Unsatisfactory; U-Unsatisfactory; HU-Highly Unsatisfactory.

## 6.2. Recommendations

### *List of recommendations*

Justification	Recommendation	Addressee of the recommendation
<b>The project M&amp;E strategy is based on tracking observed results on the beneficiary firms only. The M&amp;E strategy is weak since it did not include the identification of a control group nor a clear information collection strategy that would allow to infer the actual contribution of the program.</b>	<b>M&amp;E:</b> Rigorous M&E should include quasi-experimental approaches and avoid selection biases by focusing only on beneficiary firms. <b>Knowledge Management:</b> The project has developed a range of innovations that need to be documented with relevant data to enable future development partners to learn from and replicate the experience.	UNIDO Project Team National authorities

## 6.3. Lessons learned

The PRO-MOTION project provides interesting lessons for other interventions. First, the project has managed to address and confront difficult challenges in a traditionally protected sector that, to some extent, lack of a strategic vision on how to better integrate in the global value chain and faced important technological and quality backwardness. This experience, based on a participatory consensus building and the ability to engage directly with firms provides an interesting opportunity and lessons to be replicated in different contexts.

However, The potential disruptive effect of the Pandemic and similar global events should trigger a reassessment of the overall logic of the project to meet the new international context. Similar events that should trigger a similar adjustment might include global recessions.

Second, UNIDO is well-reputed and respected by its knowledge, sectoral experience, and role as honest broker. At the same time, its transparency and procurement processes provide benefits throughout the project, calling for a more active involvement of UNIDO's local offices.

The innovative approach of project was successful and generated a range of valuable lessons on how to expedite development initiatives between private sector partners and developing countries. This is of relevance for traditionally protected sectors and/or countries facing a rapid transformation due to opening their markets in the context of FTA.

The innovative approach of the project generated a range of valuable lessons that can be transferred and applied to other sectors/industries in the country:

- Its ambition and scope, by focusing on a search for relevant changes in a sector that has been traditionally protected and not exposed to international competition
- Interest and contribution in building public sector capacities. This required investing not so attractive activities as the revamping on the quality system
- Being active in searching for potential beneficiaries, without the intermediating role of sectoral chambers. This, in turn, allowed for new beneficiaries and not to be constrained in doing the same that has been done in the past

## Annex 1 – Evaluation criteria

Table A1. Project evaluation criteria.

Index	Evaluation criteria	Mandatory rating
<b>A</b>	<b>Progress to Impact</b>	<b>Yes</b>
<b>B</b>	<b>Project design</b>	<b>Yes</b>
1	<ul style="list-style-type: none"> <li>• Overall design</li> </ul>	Yes
2	<ul style="list-style-type: none"> <li>• LogFrame</li> </ul>	Yes
<b>C</b>	<b>Project performance</b>	<b>Yes</b>
1	<ul style="list-style-type: none"> <li>• Relevance</li> </ul>	Yes
2	<ul style="list-style-type: none"> <li>• Effectiveness</li> </ul>	Yes
3	<ul style="list-style-type: none"> <li>• Efficiency</li> </ul>	Yes
4	<ul style="list-style-type: none"> <li>• Sustainability of benefits</li> </ul>	Yes
<b>D</b>	<b>Cross-cutting performance criteria</b>	
1	<ul style="list-style-type: none"> <li>• Gender mainstreaming</li> </ul>	Yes
2	<ul style="list-style-type: none"> <li>• M&amp;E:               <ul style="list-style-type: none"> <li>✓ M&amp;E design</li> <li>✓ M&amp;E implementation</li> </ul> </li> </ul>	Yes
3	<ul style="list-style-type: none"> <li>• Results-based Management (RBM)</li> </ul>	Yes
<b>E</b>	<b>Performance of partners</b>	
1	<ul style="list-style-type: none"> <li>• UNIDO</li> </ul>	Yes
2	<ul style="list-style-type: none"> <li>• National counterparts</li> </ul>	Yes
3	<ul style="list-style-type: none"> <li>• Donor</li> </ul>	Yes
<b>F</b>	<b>Overall assessment</b>	<b>Yes</b>

*Table A2. Project rating criteria.*

Score		Definition	Category
6	Highly satisfactory	Level of achievement clearly exceeds expectations and there is no shortcoming.	SATISFACTORY
5	Satisfactory	Level of achievement meets expectations (indicatively, over 80-95 per cent) and there is no or minor shortcoming.	
4	Moderately satisfactory	Level of achievement more or less meets expectations (indicatively, 60 to 80 per cent) and there are some shortcomings.	
3	Moderately unsatisfactory	Level of achievement is somewhat lower than expected (indicatively, less than 60 per cent) and there are significant shortcomings.	UNSATISFACTORY
2	Unsatisfactory	Level of achievement is substantially lower than expected and there are major shortcomings.	
1	Highly unsatisfactory	Level of achievement is negligible and there are severe shortcomings.	

## Annex 2 – List of stakeholders interviewed

<b>A. List of interviews to conducted during the main evaluation phase</b>				
<b>Name</b>	<b>Date</b>	<b>Organization</b>	<b>Role</b>	<b>Location</b>
Jaime Mongui	November 25, 2021	UNIDO	PRO-Motion Team Leader in Colombia	Cali, Colombia
Jessica Angulo De Castro	November 25, 2021	UNIDO	National Technical Coordinator - GMAP project	Bogotá, Colombia
Fabio Russo	November 26, 2021	UNIDO	Senior Industrial Development Officer - Lead Project Manager (implementation of outputs 1 and 5)	Vienna, Austria
Juan Pablo Diaz-Castillo	November 26, 2021	UNIDO	Industrial Development Officer - Project Manager (Implementation of outputs 2 and 3)	Vienna, Austria
Stefan Kratzsch	November 26, 2021. Was not able to attend the interview	UNIDO	Industrial Development Officer Project Manager (Implementation of output 4)	Vienna, Austria
Paula Tocancipá	December 3, 2021. Sent answers through email	KOICA	Projects Coordinator	Bogotá, Colombia
Seung Chul Lee	December 3, 2021. Sent answers through email	KOICA	Deputy Director	Bogotá, Colombia
Aurelio Enrique Mejía Mejía	December 3, 2021. Was not able to attend the interview	MINCIT	Director of Regulation	Bogotá, Colombia
Angela Goyeneche	December 1, 2021.	MINCIT	International Cooperation Projects Coordinator	Bogotá, Colombia
Daniel Colmenares	December 1, 2021.	Colombia Productiva	Movement Industries Manager	Bogotá, Colombia
Juliana Rico	November 30, 2021	ANDI	Director of the Chamber of Automotive Industry	Bogotá, Colombia
Camilo Llinas	November 25, 2021. Was not able to attend the interview.	ACOLFA	Executive President	Bogotá, Colombia
Alberto Macias	November 25, 2021.	ACOLFA	Executive Vice-president	Bogotá, Colombia

<b>A. List of interviews to conducted during the main evaluation phase</b>				
<b>Name</b>	<b>Date</b>	<b>Organization</b>	<b>Role</b>	<b>Location</b>
Manuel Salgado Pardo	November 29, 2021	ProColombia	Asia Investment Manager	Bogotá, Colombia
Gabriel Jaime Gomez Arbelaez	Noviembre 26, 2021. Was not able to attend.	ProColombia	Metallurgical Manager	Bogotá, Colombia
Laura Rincón	Noviembre 26, 2021	ProColombia	Exports Advisor	Bogotá, Colombia
Mónica Vivas	November 30, 2021	ICONTEC	Director of Standardization	Bogotá, Colombia
Daniel Trillos	November 30, 2021	ICONTEC	Chief of Standardization	Bogotá, Colombia
Xavier Alhim Gómez Sarmiento	November 29, 2021	INM	Deputy Director of Physics	Bogotá, Colombia
Aristides Calendario Dajer Espeleta	November 29, 2021	INM	General Secretary	Bogotá, Colombia

<b>B. List of interviews conducted during the inception phase</b>				
<b>Name</b>	<b>Email</b>	<b>Organization</b>	<b>Role</b>	<b>Location</b>
Adot KILLMEYER-OLECHE	<a href="mailto:a.killmeyer-oleche@unido.org">a.killmeyer-oleche@unido.org</a>	UNIDO	Senior Evaluation Officer, Independent Evaluation Division (ODG/EIO/IED)	Vienna, Austria
Natalia MUÑOZ	<a href="mailto:n.munoz@unido.org">n.munoz@unido.org</a>	UNIDO	Project Assistant	Cali, Colombia

## Annex 3 – Interview Protocol

This evaluation has been commissioned by UNIDO for an independent assessment of the “Sustainable and Inclusive Industrial Development of the Automotive Supply Chain through Enhanced Quality and Productivity in Colombia project. It has 2 dimensions: a) **Backward-looking**: assessing performance and achievements particularly over the past 4 years b) **Forward-looking**: gathering stakeholder input and recommendations to sustain its results and benefits.

### Introduction:

1. What was your role in the project?  
*¿Cuál fue su rol durante el proyecto?*
2. Thinking from a few years back, what were the project's main expected contributions?  
*Pensando en el pasado ¿Cuál esperaba usted que serían las contribuciones más importantes del proyecto?*
3. Which ones were achieved?  
*¿Cuáles se lograron?*
4. Which ones did not?  
*¿Cuáles no se lograron?*
5. Are you satisfied with your contribution?  
*¿Está satisfecho con su contribución al proyecto?*

### Relevance

6. What is the “Sustainable and Inclusive Industrial Development of the Automotive Supply Chain through Enhanced Quality and Productivity” key added value for Colombia?  
*¿Cuál es el valor agregado del proyecto “Desarrollo industrial sostenible e inclusivo de la cadena de suministro automotriz a través de la mejora de la calidad y la productividad” para Colombia?*
7. How did the project contribute to the automotive supply chain industries in Colombia?  
*¿De qué manera el proyecto contribuyó a las industrias de la cadena de suministro automotriz en Colombia?*

8. In which way does the project have contributed to the government institutions priorities? Have the appropriate institutions and beneficiaries been involved in the project?  
*¿De qué manera el proyecto ha contribuido a las prioridades de las instituciones gubernamentales? ¿Se han involucrado al proyecto las instituciones y los beneficiarios pertinentes?*
9. How has the project contributed to enhancing the trade capacities, competitiveness, quality and productivity of the Colombian automotive supply chain?  
*¿Cómo ha contribuido el proyecto a mejorar las capacidades en el comercio, la competitividad, la calidad y productividad de la cadena de suministro automotriz colombiano?*

### **Effectiveness**

10. What would you consider are the key successes of the project?  
*¿Cuáles considera que son los principales logros del proyecto?*
11. What would you consider are the main weaknesses/shortfalls of the project?  
*¿Cuáles considera que son las principales debilidades del proyecto?*
12. To what extent did the project achieve its objectives (outputs and outcomes), against the original/revised target(s)?  
*¿En qué medida el proyecto logró sus objetivos (productos y resultados), en comparación con las metas originales / revisadas?*

### **Efficiency**

13. What measures have been taken during planning and implementation to ensure that resources are efficiently used?  
*¿Qué medidas se tomaron durante la planeación y la implementación del proyecto para asegurar que los recursos fueran utilizados eficientemente?*
14. To what extent were the project's activities implemented in line with the schedule of activities as defined in the project document and annual Work Plans?  
*¿En qué medida las actividades del proyecto fueron implementadas de acuerdo con el cronograma de actividades definido en el documento del proyecto y los planes anuales de trabajo?*
15. Has the project delivered sufficient results within the expected timeframe? Was this done in an efficient manner?  
*¿Considera que el proyecto obtuvo resultados suficientes en el plazo previsto? ¿Se hizo esto de manera eficiente?*



## **Sustainability**

16. Will the project results and benefits be sustained following the end of KOICA and UNIDO support?  
*¿Considera que los resultados y beneficios del proyecto serán sostenibles una vez finalizado el apoyo de KOICA y de ONUDI?*
17. To what extent have the activities, outputs and results been institutionalized?  
*¿En qué medida las actividades, productos y resultados han sido institucionalizados?*
18. Do you consider that the “Sustainable and Inclusive Industrial Development of the Automotive Supply Chain through Enhanced Quality and Productivity in Colombia” will continue to operate, following the exit of UNIDO and the Korean government support?  
*¿Considera que el proyecto “Desarrollo industrial sostenible e inclusivo de la cadena de suministro automotriz a través de la mejora de la calidad y la productividad en Colombia” continuará funcionando tras la salida de UNIDO y el apoyo del gobierno coreano?*
19. What is the likelihood of financial and economic resources not being available once the project ends to ensure its sustainability?  
*¿Cuál es la probabilidad de que no haya recursos económicos y financieros disponibles una vez que finalice el proyecto para asegurar su sostenibilidad?*
20. Are there any social or political risks that may jeopardize the sustainability of project outcomes?  
*¿Existe algún riesgo social o político que pueda poner en peligro la sostenibilidad de los resultados del proyecto?*
21. Is there sufficient public/stakeholder awareness in support of the project’s long-term objectives?  
*¿Existe suficiente conciencia pública y de las partes involucradas en el proyecto, en apoyar los objetivos del proyecto a largo plazo?*

## **Progress to impact**

22. What changes in beneficiaries’ attitude and/or behaviour have been stimulated and supported by the project? Please provide specific examples. Are they replicable? Can they be upscaled?  
*¿Qué cambios en la actitud y/o comportamiento de los beneficiarios han sido estimulados y apoyados por el proyecto? ¿Son replicables? ¿Se pueden mejorar?*
23. Are you aware of any information, lessons learned, or specific results that have been incorporated into broader stakeholder mandates or initiatives (e.g. laws, policy, regulation, projects)?  
*¿Conoce alguna información, lecciones aprendidas o resultados específicos que se hayan incorporado en los mandatos o iniciativas de las partes involucradas (instituciones gubernamentales, asociaciones y empresas de la cadena de suministro automotriz) en el proyecto (por ejemplo: leyes, políticas, regulaciones, proyectos)?*

24. What are the impacts generated by the project to all individuals and the community, in the areas of employment, education, and training?  
*¿Cuáles son los impactos generados por el proyecto en los individuos y en la comunidad, en las áreas de empleo, educación y formación para el trabajo?*

#### **Annex 4 –UNIDO surveyed companies and EAM strict automotive industry - a comparison**

The following table presents some indicators related with the number of workers, sales and purchases of the beneficiary companies surveyed by UNIDO project team in Colombia in comparison with the strict automotive industry using data from the Annual Manufacturing Survey (EAM) conducted by the National Administrative Department of Statistics of Colombia (DANE). That is to say, the strict automotive industry refers to those companies whose main economic activity, in accordance with the International Standard Industrial Classification of All Economic Activities (ISIC), fit ISIC codes (Rev.4): 2910, 2920, 2930, 3091, namely, manufacture of motor vehicles, manufacture of bodies (coachwork) for motor vehicles, manufacture of parts and accessories for motor vehicles and manufacture of motorcycles, respectively. It should be mentioned that only slightly more than half of the beneficiary companies surveyed by UNIDO classify in this category.

<b>Indicators</b>	<b>UNIDO survey</b>	<b>EAM</b>
Average total female workers	41.6	26.5
Average total male workers	130.8	98.0
Average female workers in operational areas	23.7	14.0
Average male workers in operational areas	103.9	80.7
% Companies which exported	68.8%	52.7%
Average domestic sales value	\$56,492,687,596	\$33,216,833,611
Average foreign sales value (among the companies that exported)	\$51,908,259,413	\$12,759,235,153
Average domestic purchases value	\$16,983,735,075	\$12,265,265,000
Average foreign purchases value	\$38,931,194,560	\$15,653,961,241

## Annex 5 – List of companies surveyed

### A. List of beneficiary companies that did not respond to the survey

Company	Name	Email	Role	Location
ALCATEK S.A.	Alejandro Lenis Idarraga	<a href="mailto:alejandro.lenis@alcatek.com.co">alejandro.lenis@alcatek.com.co</a>	Ingeniero de calidad	Cali
ARMAS INTERNACIONAL		<a href="mailto:pmunoz@armas.com.mx">pmunoz@armas.com.mx</a>		Itagui
ARNESES Y GOMAS S.A.	Milena Forero Dario Rodriguez	<a href="mailto:d.rodriguez@ayg.com.co">d.rodriguez@ayg.com.co</a> ; <a href="mailto:aalvarez@ayg.com.co">aalvarez@ayg.com.co</a> ; <a href="mailto:drodriguez@ayg.co.co">drodriguez@ayg.co.co</a>		Bogotá
ASA INDUSTRIES	Oscar Araujo	<a href="mailto:gerencia@asaindustries.com">gerencia@asaindustries.com</a> ; <a href="mailto:compras@asaindustries.com">compras@asaindustries.com</a>	Gerente	Cali
AUTOS Y ACCESORIOS	Luis Fernando Velez	<a href="mailto:autoplusventas@une.net.co">autoplusventas@une.net.co</a>	Gerente	Medellín
CAELCA S.A.S.		<a href="mailto:gcalidad@caelca.com.co">gcalidad@caelca.com.co</a> ; <a href="mailto:gerencia@caelca.com.co">gerencia@caelca.com.co</a> ; <a href="mailto:industria@caelca.com.co">industria@caelca.com.co</a> ; <a href="mailto:javier.rincon@caelca.com.co">javier.rincon@caelca.com.co</a>		Bogotá
CARGO INDUSTRIAS	Oscar Alberto Muñoz	<a href="mailto:oamuno1974@gmail.com">oamuno1974@gmail.com</a> ; <a href="mailto:info@cargoindustrias.com">info@cargoindustrias.com</a>	Gerente	Medellín
COLOMBIANA DE PARTES GP	Monica Martinez	<a href="mailto:colpartesgp@gmail.com">colpartesgp@gmail.com</a>	Gerente	Bogotá
DANCOR - DANIEL CORTES INDUSTRIA METALMECÁNICA	Carlos Cortes Rocha	<a href="mailto:inddancorsa@gmail.com">inddancorsa@gmail.com</a> ; <a href="mailto:entel2000@hotmail.com">entel2000@hotmail.com</a>	Director de Ingeniería Y Proyectos	Bogotá
DIPROWEAR COLOMBIA SAS	Leila Catalina Rodriguez	<a href="mailto:leilacatalina@sualan.com">leilacatalina@sualan.com</a>	Director Técnico Comercial	Cali
DISTRECOL LTDA	María Victoria Castelblanco	<a href="mailto:produccion@distrecol.com">produccion@distrecol.com</a> ; <a href="mailto:mv_castelblanco@yahoo.com">mv_castelblanco@yahoo.com</a> ; <a href="mailto:comercial@distrecol.com">comercial@distrecol.com</a> ; <a href="mailto:mercadeo@distrecol.com">mercadeo@distrecol.com</a>	Gerente General	Bogotá
D'MARCO AEREO	Elbert Francisco Espinel	<a href="mailto:comercial@dmarcoaereo.com">comercial@dmarcoaereo.com</a>	Director Comercial	Bogotá
FABRICAMOS RETENES S.A.S.	Jose Ortiz	<a href="mailto:info@fabricamosretenes.com">info@fabricamosretenes.com</a>	Gerente Comercial	Armenia
FRACO	Javier Ochoa	<a href="mailto:fraco@fraco.com.co">fraco@fraco.com.co</a> ; <a href="mailto:javier.ochoa@fraco.com.co">javier.ochoa@fraco.com.co</a> ; <a href="mailto:mercadeo@fraco.com.co">mercadeo@fraco.com.co</a> ; <a href="mailto:negocios.intl@fraco.com.co">negocios.intl@fraco.com.co</a> ; <a href="mailto:ventas.nacionales@fraco.com.co">ventas.nacionales@fraco.com.co</a>		Bogotá

Company	Name	Email	Role	Location
FUNDICIONES ESPITIA Y CIA LTDA	Hugo Espitia	<a href="mailto:gerenciaespitia@une.net.co">gerenciaespitia@une.net.co</a>	Gerente	Medellín
FUNDICIONES UNIVERSO	Carlos Fernando Martinez Ibañez	<a href="mailto:cmartinez@fundicionesuniverso.com">cmartinez@fundicionesuniverso.com</a> ; <a href="mailto:carlosmartinez@fundicionesuniverso.com">carlosmartinez@fundicionesuniverso.com</a>	Director I+D+I	Cali
FUNDICOM S.A	Ricardo Prada	<a href="mailto:riprada@gmail.com">riprada@gmail.com</a>	Gerente General	Bogotá
FUTECO	Jairo Roberto Gonzalez	<a href="mailto:jaiorobertog@gmail.com">jaiorobertog@gmail.com</a>	Ingeniero Metalúfico	Duitama
GUAYAS BECERRA & GRACIAS EN C	Hernan Cuadrado	<a href="mailto:gindustrial@guayasbyg.com.co">gindustrial@guayasbyg.com.co</a>	Industrial Manager	Bogotá
HERRAGRO S.A.	Rafael Henao	<a href="mailto:rhenao@herragro.com">rhenao@herragro.com</a> ; <a href="mailto:carango@herragro.com">carango@herragro.com</a>	Gerente Técnico	Manizales
ICOLFIBRA	Carolina Gil	<a href="mailto:mercadeo.icolfibra@gmail.com">mercadeo.icolfibra@gmail.com</a>	Coordinadora Comercial	Medellín
IDERNA	Daniel Loaiza	<a href="mailto:daniel.loaiza@iderna.com">daniel.loaiza@iderna.com</a>	Gerente Producción	Manizales
IMP INDUSTRIAS DE MOLDEADOS EN POLIURETANO SAS	Dario Castillo	<a href="mailto:impsas@outlook.es">impsas@outlook.es</a> ; <a href="mailto:gerencia.impsas@outlook.es">gerencia.impsas@outlook.es</a>	Gerente	Bogotá
INDUSTRIA DEL CAUCHO - JORGE MONTOYA S.A.S	Carlos Mario Velez Ciro	<a href="mailto:calidad.indelca@gmail.com">calidad.indelca@gmail.com</a>	Coordinador de Calidad	Antioquia
INDUSTRIAS ACUÑA INAL	Angel Acuña Llanes	<a href="mailto:angel@inal.com.co">angel@inal.com.co</a> ; <a href="mailto:gerencia@inal.com.co">gerencia@inal.com.co</a> ; <a href="mailto:angel@inal.co">angel@inal.co</a>	Gerente General	Bucaramanga
INDUSTRIAS CAMPI S.A.S. - INCAMPI	Rosa Maria Riveros Garay	<a href="mailto:financieratromec@incampi.com">financieratromec@incampi.com</a>	Director Administrativo	Bogotá
INDUSTRIAS CARRES	Carlos Gilberto Restrepo A.	<a href="mailto:info@industriascarres.com">info@industriascarres.com</a> ; <a href="mailto:carloseliecer.restrepo@gmail.com">carloseliecer.restrepo@gmail.com</a>	Gerente	Cali
INDUSTRIAS DONSSON	Simon Betancourt	<a href="mailto:sbetancourt@donsson.com">sbetancourt@donsson.com</a> ; <a href="mailto:marketgina@gmail.com">marketgina@gmail.com</a> ; <a href="mailto:gbetancourt@donsson.com">gbetancourt@donsson.com</a> ; <a href="mailto:mercadeo@donsson.com">mercadeo@donsson.com</a>	Gerente Administrativo	Bogotá - Cota
INDUSTRIAS ELECTROMECAÑICAS ACUÑA LTDA.	Orlando Acuña Llanes	<a href="mailto:inalcolombia@inal.com.co">inalcolombia@inal.com.co</a>	Representante Legal	Bucaramanga
INEMA S.A	Maria Frady Anacona	<a href="mailto:asesor@inema.com.co">asesor@inema.com.co</a> ; <a href="mailto:mercadeo@inema.com.co">mercadeo@inema.com.co</a>	Directora de Calidad	Bogotá

Company	Name	Email	Role	Location
INGENIERÍA , EQUIPOS Y SUMINISTROS S.A.S.	Julian Dario Rendon Vera	<a href="mailto:proyectos@ingeq.com.co">proyectos@ingeq.com.co</a>	Auxiliar de Ingenieria	Medellín
INMEJOSA	George Saenz	<a href="mailto:ggeneral@inmejosa.com">ggeneral@inmejosa.com</a>	Gerente	Bogotá - Tocancipá
INTEGRATED ENGINEERING SERVICES SAS	Nathaly Lopez	<a href="mailto:dirfinanciera@ies-col.com">dirfinanciera@ies-col.com</a>	Financial Director	Bogotá
ISLECAR	Carlos Garcia	<a href="mailto:carlosgarcia@islecargroup.com">carlosgarcia@islecargroup.com</a>	Gerente General	Bogotá
MAC JCI	Wilmer Palacio	<a href="mailto:wilmer.palacio.trujillo@jci.com">wilmer.palacio.trujillo@jci.com</a>	Quality Manager	Cali
MAQUINAMOS INDUSTRIAS SAS	Anderson Vanegas	<a href="mailto:administracion@maquinamosindustrias.com">administracion@maquinamosindustrias.com</a>	Ingeniero	Medellín - Marinilla
METALMIND SAS		<a href="mailto:calidad@metalmind.com.co">calidad@metalmind.com.co</a> ; ; <a href="mailto:info@recubrimientosindustriales.com.co">info@recubrimientosindustriales.com.co</a>		Bogotá
METAVAL BOGOTA LTDA	Tito Alejandro Alvarez	<a href="mailto:gerencia@metavalbogota.com.co">gerencia@metavalbogota.com.co</a>	Gerente	Bogotá
MULTICOCHES S.A	Oscar Alzate Castro	<a href="mailto:oscar.alzate@multicochessa.com">oscar.alzate@multicochessa.com</a>	Gerente	Medellín
MUVIFASA	Alvaro Munevar	<a href="mailto:gerencia@muvi-fasa.com">gerencia@muvi-fasa.com</a>	Gerente	Bogotá
NORMARH S.A.S	Carmenza Hurtado	<a href="mailto:gerencia@normarh.com">gerencia@normarh.com</a> ; <a href="mailto:direccioncomercial@normarh.com">direccioncomercial@normarh.com</a>	Gerente General	Pereira
PLAST-INNOVA S.A.	Alex Rodriguez	<a href="mailto:d.administrativo@plast-innova.com.co">d.administrativo@plast-innova.com.co</a>	Director Administrativo	Bogotá
PRODUCTOS BOXEADOR DE COLOMBIA S.A.S.	Fernando Guzmán	<a href="mailto:gerencia@productosboxeador.com">gerencia@productosboxeador.com</a>	Gerente General	Bogotá
RECO SA	Lina Sanchez	<a href="mailto:analista.calidad@reco-sa.com">analista.calidad@reco-sa.com</a> ; <a href="mailto:idesarrollo@reco-sa.com">idesarrollo@reco-sa.com</a> ; <a href="mailto:sghumana@reco-sa.com">sghumana@reco-sa.com</a>	Ingeniería y Desarrollo	Medellín
REPARACION Y CARROCERIAS SAS	Jaime Bayona	<a href="mailto:proyectosreparcar@gmail.com">proyectosreparcar@gmail.com</a>	Gerente	Medellín
SAAM APROVECHAMIENTOS INDUSTRIALES	Rodrigo Marín Escobar	<a href="mailto:rmarin@saamai.com.co">rmarin@saamai.com.co</a>	Gerente	Cali
SERVIKOM LTDA	Roberto Soto	<a href="mailto:rsoto@servikom.com.co">rsoto@servikom.com.co</a>	Gerente General	Bogotá
SPEED TURBO COLOMBIA SAS	Juan Guerrero	<a href="mailto:juang@spturbos.com">juang@spturbos.com</a>	Director	Medellín
SUPERPOLO		<a href="mailto:ddelgado@superpolo.com.co">ddelgado@superpolo.com.co</a> ;		Bogotá

Company	Name	Email	Role	Location
		<a href="mailto:jsantamaria@superpolo.com.co">jsantamaria@superpolo.com.co</a> ; <a href="mailto:fortiz@superpolo.com.co">fortiz@superpolo.com.co</a>		
SUPER TAPI AUTOBUS Y COMPAÑÍA LTDA	Juan Sebastian Jaque Pulido	<a href="mailto:ejaque@hotmail.com">ejaque@hotmail.com</a>	Asistente de Gerencia	Bogotá
TECNICA SARAY	Juan Fernando	<a href="mailto:gerente@tecnikasaray.com">gerente@tecnikasaray.com</a>	Gerente	Cali
TERCIOPELOS Y PELUCHES LTDA.	Omar Cabrera	<a href="mailto:ocabrera@terpeltexil.com">ocabrera@terpeltexil.com</a>	Ingeniero de Producción	Bogotá
TOIPLAST LTDA.	Viviana Cuero	<a href="mailto:vivianacuero@topiplast.com">vivianacuero@topiplast.com</a>	Gerente	Bogotá

**B. List of beneficiary companies that only sent their contact information and to be contacted**

Company	Name	Email	Role	Location
CARRERA ARANGO SAS	Sandra Basto	<a href="mailto:sandra.basto@carrera-arango.com">sandra.basto@carrera-arango.com</a>		Bogotá
MARCA ZETA SAS	Martha Lucia Cock Posada	<a href="mailto:comercial@marcazeta.com">comercial@marcazeta.com</a>	Gerente Comercial	Medellín
COMET ZONA FRANCA LTDA	Miguel Ruiz; Gabriel Lopez	<a href="mailto:ingenieria@comet.com.co">ingenieria@comet.com.co</a> ; <a href="mailto:gabriel.lopez@comet.com.co">gabriel.lopez@comet.com.co</a>	Jefe de Calidad	Bogotá
SUPERTEX	Jorge Perdomo	<a href="mailto:auxsillines@supertexin.com">auxsillines@supertexin.com</a> ; <a href="mailto:pgalan@supertexinc.com">pgalan@supertexinc.com</a>	Auxiliar Planeación Compras	Cali
DANA - INDUSTRIA DE EJES Y TRANSMISIONES S.A.	Luis Caro; David Delgado	<a href="mailto:luis.caro@dana.com">luis.caro@dana.com</a> ; <a href="mailto:carlos.estrada@dana.com">carlos.estrada@dana.com</a> ; <a href="mailto:david.delgado@dana.com">david.delgado@dana.com</a>	Coordinador de Área Técnica; Gerente de Planta	Bucaramanga

**C. List of non-beneficiary companies from the automotive sector to be surveyed**

Company	Name	Email	Role	Location
ACERIAS DE COLOMBIA ACESCO SA	Rafael Rozo	<a href="mailto:rrozo@acesco.com">rrozo@acesco.com</a>	Director Comercial	Malambo

Company	Name	Email	Role	Location
AFILASOL	Alfonso Sepulveda Hoyos	<a href="mailto:info@afilasol.com">info@afilasol.com</a>	Jefe de Producción	Bucaramanga
BOHLER COLOMBIA	Luis Alfredo Parra	<a href="mailto:monica.bautista@bohlercolombia.com">monica.bautista@bohlercolombia.com</a>	Ingeniero de Planta	Bogotá
CARRERA ARANGO SAS	Sandra Basto	<a href="mailto:sandra.basto@carrera-arango.com">sandra.basto@carrera-arango.com</a>	Gerente Comercial	Bogotá
CARROCERÍAS EL ABARCO SAS	Sergio Blanco	<a href="mailto:info@carroceriaselabarco.com">info@carroceriaselabarco.com</a>	Gerente	Cali
COLOMBIA INDUSTRIAL & AUTOMOTRIZ - LUBRISTONE		<a href="mailto:exportaciones@lubristone.com">exportaciones@lubristone.com</a> ; <a href="mailto:luis.ramirez@lubristone.com.co">luis.ramirez@lubristone.com.co</a>		Cali
CNC LASER DE COLOMBIA S.A.	Carlos Francisco Liceaga	<a href="mailto:carlosventas0208@hotmail.com">carlosventas0208@hotmail.com</a> ; <a href="mailto:gerencia@cnclasersa.com">gerencia@cnclasersa.com</a> ; <a href="mailto:dircomercial@cnclasersa.com">dircomercial@cnclasersa.com</a>	Gerente Comercial	Bogotá
FILTROS AYZ	Alejandra Zapata	<a href="mailto:alejandra.zapata@filtrosayz.com">alejandra.zapata@filtrosayz.com</a>	Directora Comercial	Bogotá
FOTON (DANA)	David Delgado	<a href="mailto:David.Delgado@dana.com">David.Delgado@dana.com</a>	Gerente de planta	Bogotá
IDEPLAS S.A.	Francisco Hernandez	<a href="mailto:marcela.romero@ideplas.com">marcela.romero@ideplas.com</a>	Jefe de Calidad	Bogotá - Funza
IMAPAR	José Lucas Dugand	<a href="mailto:gerencia@imapar.com.co">gerencia@imapar.com.co</a> ; <a href="mailto:contabilidad@imapar.com.co">contabilidad@imapar.com.co</a>	Gerente General	Bogotá
INCOFRENOS	Reinaldo Ávila	<a href="mailto:gerencia@incofrenos.com">gerencia@incofrenos.com</a>	Gerente	Medellín
INDUSIGMA	Juan B. Leon Suarez	<a href="mailto:info@indusigma.com.co">info@indusigma.com.co</a>	Gerente	Duitama
INDUSTRIA MILITAR INDUMIL	Juan Carlos López Alarcon; Consuelo Ostos	<a href="mailto:jlopez2@indumil.gov.co">jlopez2@indumil.gov.co</a> ; <a href="mailto:cone271@hotmail.com">cone271@hotmail.com</a> ; <a href="mailto:mcv.indumil@gmail.com">mcv.indumil@gmail.com</a>	Jefe de Investigación y Desarrollo Tecnológico	Bogotá
INDUSTRIAL DE RESORTES - INDURES	Hector Guillermo Blandon	<a href="mailto:gerencia@indu-res.com">gerencia@indu-res.com</a>	Director	Bogotá
INDUSTRIAS ELECTROMECHANICAS MAGNETRON S.A.S	Alberto Guzman	<a href="mailto:aguzman@magnetron.com.co">aguzman@magnetron.com.co</a>	Gerente General	Pereira
INDYMETAL	Camilo Castiblanco	<a href="mailto:contabilidad@indymetal.com.co">contabilidad@indymetal.com.co</a> ; <a href="mailto:indymetal@indymetal.com.co">indymetal@indymetal.com.co</a>	Gerente	Bogotá

Company	Name	Email	Role	Location
INGENIERÍA Y PARTES SAS	Omar Barreto	<a href="mailto:ingenieriaypartes@hotmail.com">ingenieriaypartes@hotmail.com</a> ; <a href="mailto:omarangel122@hotmail.com">omarangel122@hotmail.com</a>	Gerente	Bogotá
INR INVERSIONES REINOSO CÍA	Alvaro Reinoso	<a href="mailto:a_reinoso@inr.com.co">a_reinoso@inr.com.co</a> ; <a href="mailto:jpolaiza@hotmail.com">jpolaiza@hotmail.com</a>	Director Financiero	Bogotá
INTERCALCO IMPRESORES S.A.		<a href="mailto:icyepes@ntercalco.com.co">icyepes@ntercalco.com.co</a>		Medellín
INTROQUEL S.A.S.	Omar Pinzones	<a href="mailto:introquel@outlook.com">introquel@outlook.com</a>	Gerente	Bogotá
LASER	Luisa Sosa	<a href="mailto:subgerente@carroceriaslaser.com">subgerente@carroceriaslaser.com</a>	Subgerente	Bogotá
LUBRIGRAS		<a href="mailto:gproduccion@lubrigras.net">gproduccion@lubrigras.net</a>		Bucaramanga
MASITEC	Jorge William herrera	<a href="mailto:jwherrera@masitec.com.co">jwherrera@masitec.com.co</a>	Gerente	Bogotá
MECANIZADOS Y HERRAJES	Luz Cruz	<a href="mailto:ventasgalindohugo@hotmail.com">ventasgalindohugo@hotmail.com</a>	Administradora	Bogotá
METALGREEN	Hector Higuera	<a href="mailto:comercial@metalgreen.com.co">comercial@metalgreen.com.co</a>	Ingeniero Comercial	Bucaramanga
MUISCA		<a href="mailto:autobusesmuiscasas@hotmail.com">autobusesmuiscasas@hotmail.com</a>		Duitama
PLADESAN	Juan Manuel Gimenez	<a href="mailto:juan.gimenez@pladesan.com">juan.gimenez@pladesan.com</a>	Director de Proyectos	Bucaramanga
SERVIZINC LTDA		<a href="mailto:servizinc@hotmail.com">servizinc@hotmail.com</a>		Bogotá
TANUZI	Fabio Andrés Gonzalez	<a href="mailto:gerencia@industriastanuzi.com">gerencia@industriastanuzi.com</a>	Gerente	Bucaramanga
TECNICAR	Luis Alberto Angel	<a href="mailto:indtecnicar@hotmail.com">indtecnicar@hotmail.com</a>	Gerente	Duitama
TPD SAS	Jesus Dueñas	<a href="mailto:ingjesus@tpdltda.com">ingjesus@tpdltda.com</a>	Gerente General	Bogotá