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# Impact Report for Kingdom of Spain



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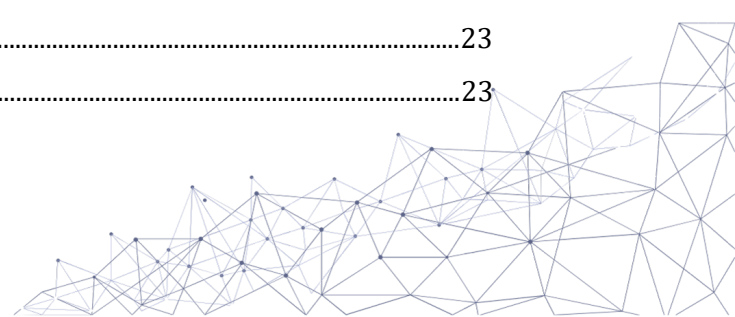
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## Introduction

Understanding the societal impact of public policy in economic sectors is vital for fostering growth while achieving transition and other policy goals. To this end, the present report offers key insights into the performance of specific sectors.

This document presents impact statements for Kingdom of Spain's NACE sectors.<sup>1</sup> The tables show the *direct impact* of companies' own operations as well as the *upstream impact* along their supply chains.<sup>2</sup> Positive or negative impact values are quantified in monetary terms and divided by each sector's macroeconomic output. These '*Impact Intensities*' (expressed in EUR of impact per EUR of output) enable comparability across countries, sectors, and companies. The output part of the formula is based on a macroeconomic assessment and reflects overall sector turnover volume.

Impact Intensities are provided for each impact driver across four stages of the value chain: Own operations, upstream tier 1, upstream tier 2, and upstream tier 3 to n.<sup>3</sup> Results are shown for specific countries—Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Korea, Spain, Switzerland, Türkiye, the UK, and the USA—as well as a global average.

The tables provide a foundation for 'Type 4' sector-based benchmarks;<sup>4</sup> companies can compare their reported or estimated impact with the table values. To ensure consistency, a company's impact must be monetized using the same value factor and scaled relative to revenue. In this way, company-specific Impact Intensity can be compared within the sector and across multiple sectors.

The comparison spans value chain stages within a company's control (own operations) and beyond (upstream). Impact Intensities are depicted for each upstream stage in the global supply chain, viewed from the perspective of the respective country. These stages are presented in tiers, enabling comparison with a company's global upstream supply chain. Note that these upstream impacts may not necessarily be located in the same country.

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<sup>1</sup> Eurostat, NACE Rev. 2. Statistical classification of economic activities in the European Community, <https://ec.europa.eu/eurostat/documents/3859598/5902521/KS-RA-07-015-EN.pdf>.

<sup>2</sup> VBA, VBA Impact Statement, 11.2024, [https://www.value-balancing.com/\\_Resources/Persistent/6/b/e/c/6bec726b5e28d5f75e2e5f153db845a3bbb93f2e/VBA\\_Impact%20Statement\\_Final.pdf](https://www.value-balancing.com/_Resources/Persistent/6/b/e/c/6bec726b5e28d5f75e2e5f153db845a3bbb93f2e/VBA_Impact%20Statement_Final.pdf).

<sup>3</sup> Tiers represent different levels of suppliers in the supply chain, where 'tier 1' refers to direct suppliers, 'tier 2' to the suppliers of those direct suppliers, and 'tier 3 to n' to all subsequent levels.

<sup>4</sup> VBA et al., Valuing Impact Materiality 2025, 2025, <https://www.value-balancing.com/en/publications/valuing-impact-materiality-report-1.html>.



The values are modeled using input-output modeling, as outlined in the System of National Accounts.<sup>5</sup> WifOR compiles the hybrid multi-regional model based on WIOD, EORA, and EX-IOBASE,<sup>6</sup> enhanced by estimates based on *satellite accounts*, as outlined in the System of Environmental-Economic Accounting.<sup>7</sup> The modeled effects are then multiplied by publicly available context-specific value factors<sup>8</sup> to capture their societal impact.<sup>9</sup>

The tables are complemented by bar charts showing each impact driver's effect (in EUR per EUR output) in all the four value chain stages.

## Responsibility of States

States have a primary duty to protect human rights and fundamental rights under international law, in accordance with the primacy principle. This obligation extends to preventing human rights abuses by third parties (including businesses) within their jurisdiction. This duty is grounded in legal obligations and reinforced by policy rationales that ensure consistency in enforcement.

## Responsibility of Business

Businesses, by contrast, have a responsibility (rather than a duty) to respect human rights. Their role is supportive of state obligations but remains distinct. While international law has yet to fully define the extent of corporate human rights responsibilities, the UNGPs establish that businesses, at minimum, must prevent and address human rights harms linked to their operations. Beyond compliance with legal obligations, involvement in adverse human rights impacts must be prevented or remedied. Human rights due diligence is required for this purpose; this due diligence process includes assessing risks, integrating findings into corporate decision-making, and mitigating or remedying any adverse impacts.

## Interplay

The interplay between *state obligations* and *business responsibilities* reflects a layered system of accountability: While states bear legal obligations to regulate corporate behavior, businesses have a practical responsibility to prevent harm. These responsibilities arise in

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<sup>5</sup> European Commission, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, and World Bank. 2009. System of National Accounts 2008. New York: United Nations. <https://unstats.un.org/unsd/nationalaccount/docs/SNA2008.pdf>.

<sup>6</sup> Scholz, Richard; Dorndorf, Tabea; Tesch, Jasmin; Köster, Robert; Croner, Daniel; Kalamov, Zarko; Setzer, Jana. 2025. Impact measurement using WifOR's sustainability footprint method. Methodological report. Version February 2025. WifOR Institute.

<sup>7</sup> United Nations, ed. 2014. *System of Environmental-Economic Accounting 2012: Central Framework*. New York, NY: United Nations.

<sup>8</sup> WifOR, Value Factors, <https://www.wifor.com/en/value-factors/#:~:text=Value%20factors%20convert%20physical%20units,dimensions%20and%20with%20financial%20indicators>

<sup>9</sup> Scholz, Richard; Albu, Nora; Croner, Daniel; Kalamov, Zarko; Mai, Lukas; Forin, Silvia; Tesch, Jasmin; Dorndorf, Tabea; Setzer, Jana. 2025. WifOR Impact Valuation. Methodological Report. Version February 2025. WifOR Institute.



different forms—whether they cause, contribute to, or are linked to human rights abuses. The nature of corporate involvement in human rights impacts determines their level of responsibility, with leverage and mitigation playing a critical role in addressing violations. Thus, while business responsibilities complement state obligations, they remain distinct and non-parallel, ensuring a balanced but clear accountability framework.

## Accountability

While global businesses in the main complement state efforts and uphold responsible practices, international law establishes the primacy of state responsibility. States must create robust legal frameworks to hold businesses accountable, while companies must conduct human rights due diligence to prevent, mitigate, and remediate adverse impacts. Together, these obligations form a layered system, where corporate responsibility reinforces (rather than replaces) state duties to address human rights risks. Impact accounting helps states and businesses alike understand their respective responsibilities in the context of human rights and broader social, environmental, and economic impacts. While companies must assess their roles within supply chains and address potential harms, it is the states that bear the primary responsibility to tackle these issues and implement policies that prevent extensive negative impacts. Regulatory frameworks should go beyond preventing harm. They should empower businesses to generate positive impacts throughout the value chain. Neither states nor businesses may evade their responsibilities. States cannot plead powerlessness given that international treaties and criminal law extend their reach beyond national boundaries. By the same token, businesses cannot excuse harmful actions by pointing to weak state enforcement of human rights protections.

## Benchmarks

This document explores the impacts of Spain's economy, focusing on direct and upstream supply chain impacts on the economic, environmental, and social domains. The analysis is based on the NACE classification of economic activities. Positive and negative impact values are quantified in monetary terms per unit of macroeconomic output (hereinafter "*Impact Intensities*"). The tables display these Impact Intensities in EUR per EUR output for each impact driver across five stages of the sector's value chain: own operations, upstream tier 1, upstream tier 2, and upstream tier 3 to n. The output data is derived from a macroeconomic assessment and reflects the turnover of each sector.

## Intensities

The tables help identify the domestic economic sectors with the largest impacts across the country-specific value chain serving the Spanish economy. By providing maximum transparency on where significant impacts occur throughout the value chain stages, our analysis enables policymakers and regulators to more effectively manage the impacts. It supports the crafting of regulatory frameworks to mitigate negative and enhance positive impacts.



## Sector Intensity Benchmarks

### Agriculture, Forestry and Fishing (A)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
<b>Air Emission</b>	-0.38	-0.02	-0.02	-0.02	-0.44
<b>Fair Wages</b>	-0.04	-0.03	-0.08	-0.12	-0.28
<b>GHG</b>	-0.10	-0.01	-0.01	-0.02	-0.14
<b>GVA</b>	0.53	0.16	0.12	0.17	0.98
<b>Human Rights</b>	-0.00	-0.00	-0.00	-0.00	-0.01
<b>Invasive Species</b>	-0.00	-0.00	-0.00	-0.00	-0.00
<b>Land Use</b>	-1.73	-0.07	-0.05	-0.04	-1.90
<b>Occupational Health &amp; Safety</b>	-0.05	-0.02	-0.02	-0.02	-0.10
<b>Ocean Plastic</b>	0.00	-0.00	-0.00	-0.00	-0.00
<b>Training</b>	0.00	0.00	0.00	0.00	0.01
<b>Waste</b>	-0.02	-0.00	-0.00	-0.00	-0.02
<b>Water</b>	-2.57	-0.17	-0.20	-0.18	-3.12

Source: WifOR / VBA, Table for Kingdom of Spain - Agriculture, forestry and fishing (NACE Code A), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Agriculture, Forestry, and Fishing sector in Spain reveals significant negative impacts across various categories, with "Land Use" and "Water" showing the highest negative intensities at -1.903416 and -3.120272 EUR per EUR output, respectively. In contrast, the "Training" variable presents a positive impact intensity of 0.012650 EUR per EUR output, indicating a beneficial effect in this area. Overall, the sector demonstrates a predominance of negative impacts, particularly in environmental categories, highlighting critical areas for improvement.





## Mining and Quarrying (B)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.03	-0.01	-0.01	-0.01	-0.06
Fair Wages	0.02	0.00	-0.08	-0.13	-0.19
GHG	-0.03	-0.02	-0.02	-0.02	-0.09
GVA	0.43	0.22	0.13	0.17	0.95
Human Rights	-0.00	-0.00	-0.00	-0.00	-0.01
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	0.00	-0.00	-0.01	-0.01	-0.03
Occupational Health & Safety	-0.02	-0.01	-0.01	-0.02	-0.06
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.01	0.01	0.00	0.00	0.02
Waste	-0.04	-0.00	-0.00	-0.00	-0.05
Water	-0.00	-0.00	-0.01	-0.03	-0.04

Source: WifOR / VBA, Table for Kingdom of Spain - Mining and quarrying (NACE Code B), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

In the Mining and Quarrying sector in Spain, the impact intensity table indicates predominantly negative impacts, particularly in categories such as "Fair Wages" and "Waste," with intensities of -0.194022 and -0.045976 EUR per EUR output, respectively. While "Training" shows a positive impact intensity of 0.022980 EUR per EUR output, it is overshadowed by the negative values in other areas, reflecting challenges in labor conditions and environmental management. Overall, the sector's negative impacts highlight significant areas for improvement, especially concerning social and environmental sustainability.



## Manufacturing (C)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.01	-0.03	-0.02	-0.02	-0.08
Fair Wages	0.03	-0.37	-0.17	-0.22	-0.74
GHG	-0.02	-0.03	-0.02	-0.03	-0.11
GVA	0.24	0.27	0.18	0.26	0.95
Human Rights	-0.00	-0.01	-0.00	-0.01	-0.02
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	0.00	-0.08	-0.03	-0.03	-0.15
Occupational Health & Safety	-0.02	-0.04	-0.02	-0.03	-0.12
Ocean Plastic	-0.00	-0.00	-0.00	-0.00	-0.01
Training	0.01	0.01	0.01	0.01	0.03
Waste	-0.00	-0.00	-0.00	-0.00	-0.01
Water	-0.00	-0.19	-0.11	-0.12	-0.42

Source: WifOR / VBA, Table for Kingdom of Spain - Manufacturing (NACE Code C), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Manufacturing sector in Spain reveals significant negative impacts, particularly in "Fair Wages" with an intensity of -0.740218 EUR per EUR output, indicating severe challenges in labor conditions. Additionally, environmental categories such as "Air Emission" and "Water" also show substantial negative impacts, with intensities of -0.081099 and -0.418455 EUR per EUR output, respectively, highlighting environmental concerns. Conversely, "Training" presents a positive impact intensity of 0.028969 EUR per EUR output, suggesting some potential for positive contributions in workforce development amidst the overall negative trends.



### Electricity, Gas, Steam and Air Conditioning Supply (D)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.01	-0.02	-0.02	-0.02	-0.07
Fair Wages	0.01	-0.18	-0.20	-0.24	-0.61
GHG	-0.07	-0.06	-0.04	-0.04	-0.21
GVA	0.25	0.24	0.19	0.26	0.94
Human Rights	0.00	-0.00	-0.01	-0.01	-0.02
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	0.00	-0.01	-0.01	-0.01	-0.03
Occupational Health & Safety	-0.00	-0.02	-0.02	-0.03	-0.08
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.01	0.01	0.01	0.01	0.03
Waste	-0.00	-0.01	-0.00	-0.00	-0.01
Water	-0.00	-0.00	-0.01	-0.04	-0.06

Source: WifOR / VBA, Table for Kingdom of Spain - Electricity, gas, steam and air conditioning supply (NACE Code D), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

In the Electricity, Gas, Steam, and Air Conditioning Supply sector in Spain, the impact intensity table indicates significant negative impacts, particularly in "Fair Wages" with an intensity of -0.610789 EUR per EUR output, reflecting serious labor-related issues. Environmental impacts are also notable, with "GHG" emissions showing a negative intensity of -0.211639 EUR per EUR output, underscoring the sector's contribution to greenhouse gas emissions. Conversely, "Training" presents a positive impact intensity of 0.027586 EUR per EUR output, suggesting some potential for positive contributions to workforce development amidst the overall negative trends.



## Water Supply; Sewerage, Waste Management and Remediation Activities (E)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
<b>Air Emission</b>	-0.01	-0.01	-0.01	-0.01	-0.04
<b>Fair Wages</b>	0.03	0.00	-0.04	-0.12	-0.12
<b>GHG</b>	-0.09	-0.02	-0.01	-0.02	-0.14
<b>GVA</b>	0.42	0.23	0.13	0.17	0.95
<b>Human Rights</b>	0.00	-0.00	-0.00	-0.00	-0.01
<b>Invasive Species</b>	-0.00	-0.00	-0.00	-0.00	-0.00
<b>Land Use</b>	0.00	-0.00	-0.01	-0.02	-0.03
<b>Occupational Health &amp; Safety</b>	-0.02	-0.01	-0.01	-0.02	-0.06
<b>Ocean Plastic</b>	0.00	-0.00	-0.00	-0.00	-0.00
<b>Training</b>	0.02	0.01	0.00	0.01	0.03
<b>Waste</b>	-0.00	-0.00	-0.00	-0.00	-0.01
<b>Water</b>	-0.00	-0.00	-0.01	-0.03	-0.04

Source: WifOR / VBA, Table for Kingdom of Spain - Water supply; sewerage, waste management and remediation activities (NACE Code E), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Water Supply, Sewerage, Waste Management, and Remediation Activities sector in Spain reveals notable negative impacts, particularly in "GHG" emissions with an intensity of -0.143240 EUR per EUR output, indicating a significant contribution to greenhouse gas emissions. Additionally, "Fair Wages" shows a negative impact intensity of -0.123676 EUR per EUR output, reflecting challenges in labor conditions within the sector. Conversely, "Training" presents a positive impact intensity of 0.034672 EUR per EUR output, suggesting potential for positive contributions to workforce development despite the overall negative trends in other areas.



## Construction (F)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.01	-0.01	-0.01	-0.03
Fair Wages	0.03	0.01	-0.03	-0.10	-0.08
GHG	-0.00	-0.01	-0.01	-0.02	-0.04
GVA	0.42	0.26	0.13	0.16	0.97
Human Rights	-0.00	-0.00	-0.00	-0.00	-0.01
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	-0.00	-0.00	-0.01	-0.01	-0.02
Occupational Health & Safety	-0.01	-0.01	-0.01	-0.02	-0.05
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.02	0.01	0.00	0.00	0.03
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	-0.00	-0.00	-0.01	-0.03	-0.04

Source: WifOR / VBA, Table for Kingdom of Spain - Construction (NACE Code F), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Construction sector in Spain indicates several negative impacts, particularly in "Fair Wages," which shows an intensity of -0.081138 EUR per EUR output, highlighting significant labor-related issues. Environmental impacts are also concerning, with "Air Emission" and "Water" exhibiting negative intensities of -0.029099 and -0.040135 EUR per EUR output, respectively, reflecting the sector's contribution to pollution and resource depletion. Conversely, "Training" presents a positive impact intensity of 0.033366 EUR per EUR output, suggesting some potential for positive contributions to workforce development amidst the overall negative trends.



## Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles (G)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.00	-0.00	-0.01	-0.02
Fair Wages	0.06	0.00	-0.02	-0.05	-0.01
GHG	-0.00	-0.01	-0.01	-0.01	-0.02
GVA	0.58	0.22	0.08	0.09	0.98
Human Rights	-0.01	-0.00	-0.00	-0.00	-0.01
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	-0.00	-0.01	-0.00	-0.01	-0.02
Occupational Health & Safety	-0.03	-0.01	-0.01	-0.01	-0.05
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.01	0.01	0.00	0.00	0.03
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	-0.01	-0.02	-0.01	-0.02	-0.06

Source: WifOR / VBA, Table for Kingdom of Spain - Wholesale and retail trade; repair of motor vehicles and motorcycles (NACE Code G), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles sector in Spain shows several negative impacts, particularly in "Water" with an intensity of -0.057703 EUR per EUR output, indicating significant resource depletion and pollution concerns. Additionally, "Fair Wages" reflects a negative impact intensity of -0.005517 EUR per EUR output, suggesting challenges in labor conditions within the sector. Conversely, "Training" presents a positive impact intensity of 0.026023 EUR per EUR output, indicating some potential for positive contributions to workforce development despite the overall negative trends in other areas.





## Transportation and Storage (H)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.03	-0.01	-0.01	-0.01	-0.05
Fair Wages	0.05	0.02	-0.06	-0.07	-0.07
GHG	-0.07	-0.01	-0.01	-0.01	-0.10
GVA	0.45	0.25	0.13	0.13	0.95
Human Rights	0.00	-0.00	-0.00	-0.00	-0.00
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	-0.00	-0.00	-0.00	-0.01	-0.01
Occupational Health & Safety	-0.02	-0.01	-0.01	-0.01	-0.06
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.01	0.01	0.00	0.00	0.03
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	-0.00	-0.00	-0.01	-0.02	-0.03

Source: WifOR / VBA, Table for Kingdom of Spain - Transportation and storage (NACE Code H), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Transportation and Storage sector in Spain reveals significant negative impacts, particularly in "GHG" emissions with an intensity of -0.101100 EUR per EUR output, indicating a substantial contribution to greenhouse gas emissions. Additionally, "Fair Wages" shows a negative impact intensity of -0.071043 EUR per EUR output, reflecting challenges related to labor conditions within the sector. Conversely, "Training" presents a positive impact intensity of 0.027136 EUR per EUR output, suggesting some potential for positive contributions to workforce development despite the overall negative trends in other areas.



### Accommodation and Food Service Activities (I)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.00	-0.01	-0.01	-0.03
Fair Wages	0.03	-0.00	-0.05	-0.09	-0.10
GHG	-0.00	-0.00	-0.01	-0.01	-0.03
GVA	0.59	0.17	0.09	0.12	0.97
Human Rights	-0.01	-0.00	-0.00	-0.00	-0.01
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	0.00	-0.01	-0.04	-0.03	-0.08
Occupational Health & Safety	-0.03	-0.01	-0.01	-0.01	-0.07
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.02	0.01	0.00	0.00	0.03
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	-0.00	-0.03	-0.13	-0.13	-0.29

Source: WifOR / VBA, Table for Kingdom of Spain - Accommodation and food service activities (NACE Code I), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Accommodation and Food Service Activities sector in Spain highlights several negative impacts, particularly in "Water," which shows a significant negative intensity of -0.292969 EUR per EUR output, indicating severe resource depletion and pollution issues. Additionally, "Fair Wages" reflects a negative impact intensity of -0.104669 EUR per EUR output, suggesting notable challenges in labor conditions within the sector. Conversely, "Training" presents a positive impact intensity of 0.029842 EUR per EUR output, indicating potential for positive contributions to workforce development amidst the overall negative trends in other areas.



## Information and Communication (J)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.00	-0.00	-0.01	-0.01
Fair Wages	0.06	0.01	-0.01	-0.06	0.00
GHG	-0.00	-0.00	-0.00	-0.01	-0.02
GVA	0.50	0.25	0.11	0.12	0.98
Human Rights	0.00	-0.00	-0.00	-0.00	-0.00
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	0.00	-0.00	-0.01	-0.01	-0.02
Occupational Health & Safety	-0.01	-0.01	-0.01	-0.01	-0.04
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.04	0.01	0.00	0.00	0.06
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	-0.00	-0.00	-0.01	-0.02	-0.03

Source: WifOR / VBA, Table for Kingdom of Spain - Information and communication (NACE Code J), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Information and Communication sector in Spain indicates relatively low negative impacts, particularly in "Air Emission" with an intensity of -0.012267 EUR per EUR output, suggesting minor contributions to air pollution. However, "Fair Wages" shows a positive impact intensity of 0.002949 EUR per EUR output, indicating some potential for better labor conditions despite the negative trends in other areas. Additionally, "Training" presents a positive impact intensity of 0.057237 EUR per EUR output, highlighting the sector's potential for contributing positively to workforce development.



### Financial and Insurance Activities (K)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.00	-0.00	-0.00	-0.01
Fair Wages	0.05	0.02	-0.00	-0.03	0.04
GHG	-0.00	-0.00	-0.00	-0.01	-0.01
GVA	0.58	0.22	0.08	0.07	0.94
Human Rights	0.00	-0.00	-0.00	-0.00	-0.00
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	0.00	-0.00	-0.00	-0.01	-0.01
Occupational Health & Safety	-0.00	-0.00	-0.00	-0.01	-0.02
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.03	0.01	0.00	0.00	0.05
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	-0.00	-0.00	-0.00	-0.01	-0.01

Source: WifOR / VBA, Table for Kingdom of Spain - Financial and insurance activities (NACE Code K), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Financial and Insurance Activities sector in Spain shows minimal negative impacts, particularly in "Air Emission" with an intensity of -0.006154 EUR per EUR output, indicating a relatively low contribution to air pollution. "Fair Wages" reflects a positive impact intensity of 0.035788 EUR per EUR output, suggesting some potential for improved labor conditions within the sector. Additionally, "Training" presents a positive impact intensity of 0.050981 EUR per EUR output, highlighting the sector's capacity to contribute positively to workforce development despite the overall negative trends in other areas.



### Real Estate Activities (L)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.00	-0.00	-0.00	-0.00
Fair Wages	0.00	0.00	-0.00	-0.01	-0.00
GHG	-0.00	-0.00	-0.00	-0.00	-0.00
GVA	0.88	0.06	0.02	0.02	0.99
Human Rights	0.00	-0.00	-0.00	-0.00	-0.00
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	0.00	-0.00	-0.00	-0.00	-0.00
Occupational Health & Safety	-0.00	-0.00	-0.00	-0.00	-0.01
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.03	0.00	0.00	0.00	0.03
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	0.00	-0.00	-0.00	-0.00	-0.00

Source: WifOR / VBA, Table for Kingdom of Spain - Real estate activities (NACE Code L), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Real Estate Activities sector in Spain indicates several negative impacts, particularly in "Air Emission" with an intensity of -0.001891 EUR per EUR output, reflecting a notable contribution to air pollution. Additionally, "GHG" emissions show a negative intensity of -0.003425 EUR per EUR output, highlighting the sector's role in greenhouse gas emissions. Conversely, "Training" presents a positive impact intensity of 0.032457 EUR per EUR output, suggesting potential for positive contributions to workforce development amidst the overall negative trends in other areas.



### Professional, Scientific and Technical Activities (M)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.00	-0.00	-0.01	-0.01
Fair Wages	0.10	0.02	-0.01	-0.05	0.06
GHG	-0.00	-0.00	-0.00	-0.01	-0.02
GVA	0.58	0.22	0.09	0.09	0.98
Human Rights	0.00	-0.00	-0.00	-0.00	-0.00
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	0.00	-0.00	-0.01	-0.01	-0.02
Occupational Health & Safety	-0.02	-0.01	-0.01	-0.01	-0.04
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.01	0.01	0.00	0.00	0.03
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	-0.00	-0.00	-0.01	-0.02	-0.03

Source: WifOR / VBA, Table for Kingdom of Spain - Professional, scientific and technical activities (NACE Code M), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Professional, Scientific, and Technical Activities sector in Spain reveals several negative impacts, particularly in "Air Emission" with an intensity of -0.009734 EUR per EUR output, indicating a significant contribution to air pollution. Additionally, "GHG" emissions show a negative intensity of -0.016974 EUR per EUR output, highlighting the sector's role in greenhouse gas emissions. Conversely, "Fair Wages" presents a positive impact intensity of 0.064545 EUR per EUR output, suggesting some potential for improved labor conditions amidst the overall negative trends in other areas.





### Administrative and Support Service Activities (N)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.01	-0.00	-0.01	-0.02
Fair Wages	0.04	0.01	-0.01	-0.06	-0.03
GHG	-0.00	-0.01	-0.00	-0.01	-0.03
GVA	0.57	0.22	0.09	0.10	0.98
Human Rights	0.00	-0.00	-0.00	-0.00	-0.00
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	-0.00	-0.00	-0.00	-0.01	-0.02
Occupational Health & Safety	-0.03	-0.01	-0.01	-0.01	-0.06
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.01	0.01	0.00	0.00	0.03
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	0.00	-0.00	-0.01	-0.04	-0.05

Source: WifOR / VBA, Table for Kingdom of Spain - Administrative and support service activities (NACE Code N), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Administrative and Support Service Activities sector in Spain indicates several negative impacts, particularly in "Air Emission" with an intensity of -0.016869 EUR per EUR output, reflecting a significant contribution to air pollution. Additionally, "GHG" emissions show a negative intensity of -0.025929 EUR per EUR output, highlighting the sector's role in greenhouse gas emissions. Conversely, "Training" presents a positive impact intensity of 0.026459 EUR per EUR output, suggesting potential for positive contributions to workforce development despite the overall negative trends in other areas.



## Public Administration and Defense; Compulsory Social Security (O)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.00	-0.00	-0.00	-0.01
Fair Wages	0.09	0.00	-0.01	-0.03	0.05
GHG	-0.01	-0.00	-0.00	-0.01	-0.02
GVA	0.74	0.12	0.05	0.06	0.96
Human Rights	0.00	-0.00	-0.00	-0.00	-0.00
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	-0.01	-0.00	-0.00	-0.01	-0.02
Occupational Health & Safety	-0.13	-0.01	-0.00	-0.01	-0.15
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.02	0.00	0.00	0.00	0.03
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	-0.01	-0.00	-0.01	-0.02	-0.04

Source: WifOR / VBA, Table for Kingdom of Spain - Public administration and defense; compulsory social security (NACE Code O), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Public Administration and Defense; Compulsory Social Security sector in Spain indicates significant negative impacts, particularly in "Occupational Health & Safety," which shows an intensity of -0.145092 EUR per EUR output, reflecting serious concerns regarding worker safety and health conditions. Additionally, "GHG" emissions exhibit a negative intensity of -0.022305 EUR per EUR output, highlighting the sector's contribution to greenhouse gas emissions. Conversely, "Training" presents a positive impact intensity of 0.029908 EUR per EUR output, suggesting potential for positive contributions to workforce development amidst the overall negative trends in other areas.



## Education (P)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.00	-0.00	-0.00	-0.01
Fair Wages	0.14	0.00	-0.01	-0.02	0.11
GHG	-0.00	-0.00	-0.00	-0.00	-0.01
GVA	0.87	0.06	0.03	0.03	0.98
Human Rights	0.00	-0.00	-0.00	-0.00	-0.00
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	0.00	-0.00	-0.00	-0.00	-0.01
Occupational Health & Safety	-0.09	-0.00	-0.00	-0.00	-0.10
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.03	0.00	0.00	0.00	0.03
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	-0.00	-0.00	-0.01	-0.01	-0.02

Source: WifOR / VBA, Table for Kingdom of Spain - Education (NACE Code P), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Education sector in Spain reveals several negative impacts, particularly in "Occupational Health & Safety," which shows an intensity of -0.101370 EUR per EUR output, indicating significant concerns regarding the health and safety of workers in this sector. Additionally, "GHG" emissions exhibit a negative intensity of -0.009342 EUR per EUR output, highlighting the sector's contribution to greenhouse gas emissions. Conversely, "Fair Wages" presents a positive impact intensity of 0.112320 EUR per EUR output, suggesting a relatively favorable labor condition compared to other sectors, alongside a positive contribution to workforce development indicated by the "Training" impact intensity of 0.029738 EUR per EUR output.



## Human Health and Social Work Activities (Q)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.00	-0.00	-0.01	-0.01
Fair Wages	0.10	0.01	-0.02	-0.05	0.03
GHG	-0.00	-0.01	-0.01	-0.01	-0.02
GVA	0.64	0.16	0.07	0.08	0.96
Human Rights	0.00	-0.00	-0.00	-0.00	-0.00
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	0.00	-0.00	-0.01	-0.01	-0.02
Occupational Health & Safety	-0.06	-0.01	-0.01	-0.01	-0.09
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.02	0.00	0.00	0.00	0.03
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	-0.00	-0.01	-0.02	-0.03	-0.05

Source: WifOR / VBA, Table for Kingdom of Spain - Human health and social work activities (NACE Code Q), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Human Health and Social Work Activities sector in Spain indicates several negative impacts, particularly in "Occupational Health & Safety," which shows an intensity of -0.088321 EUR per EUR output, reflecting significant concerns regarding the health and safety of workers in this sector. Additionally, "GHG" emissions exhibit a negative intensity of -0.021543 EUR per EUR output, highlighting the sector's contribution to greenhouse gas emissions. Conversely, "Fair Wages" presents a positive impact intensity of 0.031659 EUR per EUR output, suggesting relatively favorable labor conditions, alongside a positive contribution to workforce development indicated by the "Training" impact intensity of 0.026805 EUR per EUR output.



## Arts, Entertainment and Recreation and Other Services and Activities (R&S)

Variable	direct	upstream tier 1	upstream tier 2	upstream rest	Total
Air Emission	-0.00	-0.00	-0.00	-0.01	-0.01
Fair Wages	0.08	0.01	-0.01	-0.05	0.03
GHG	-0.00	-0.01	-0.00	-0.01	-0.02
GVA	0.61	0.20	0.08	0.08	0.96
Human Rights	-0.01	-0.00	-0.00	-0.00	-0.01
Invasive Species	-0.00	-0.00	-0.00	-0.00	-0.00
Land Use	0.00	-0.00	-0.01	-0.01	-0.02
Occupational Health & Safety	-0.02	-0.01	-0.01	-0.01	-0.05
Ocean Plastic	0.00	-0.00	-0.00	-0.00	-0.00
Training	0.01	0.01	0.00	0.00	0.02
Waste	-0.00	-0.00	-0.00	-0.00	-0.00
Water	-0.00	-0.01	-0.01	-0.03	-0.05

Source: WifOR / VBA, Table for Kingdom of Spain - Arts, entertainment and recreation and other services and activities (NACE Code R&S), 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025.

The impact intensity table for the Arts, Entertainment and Recreation; Other Services sector in Spain reveals several negative impacts, particularly in "GHG" emissions, which show an intensity of -0.021896 EUR per EUR output, indicating a notable contribution to greenhouse gas emissions. Additionally, "Occupational Health & Safety" reflects a negative impact intensity of -0.045596 EUR per EUR output, highlighting concerns regarding the health and safety of workers in this sector. Conversely, "Fair Wages" presents a positive impact intensity of 0.027430 EUR per EUR output, suggesting relatively favorable labor conditions, along with a positive contribution to workforce development indicated by the "Training" impact intensity of 0.024483 EUR per EUR output.

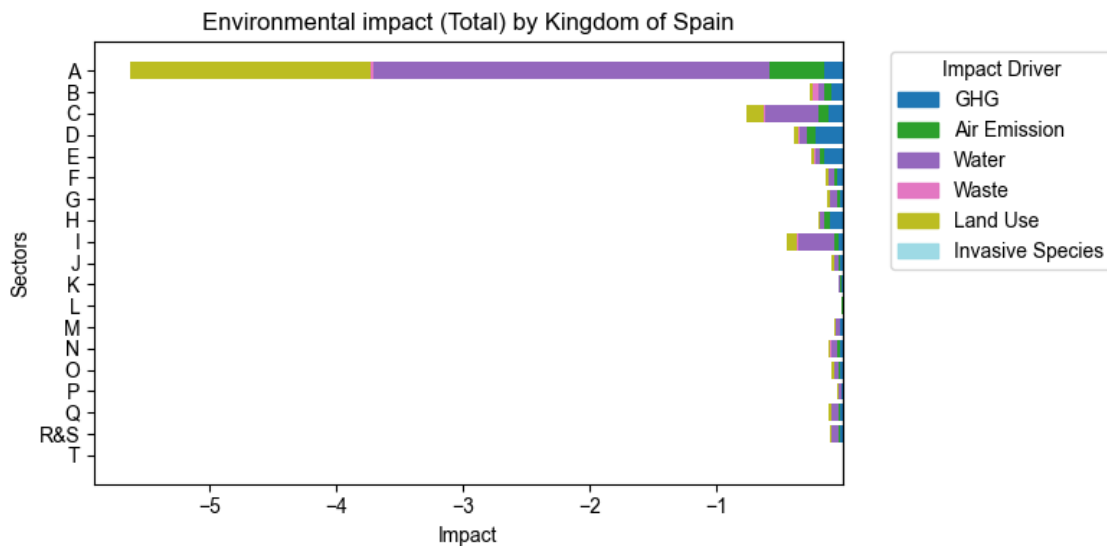


## Overview

The overall assessment of the Kingdom of Spain, utilizing the Value Balancing Alliance and WifOR methodologies, reveals significant environmental and social impacts across various NACE sectors. Environmental impact intensities indicate that sectors such as Agriculture, Manufacturing, and Transportation contribute notably to greenhouse gas emissions and water usage, particularly in upstream stages of the value chain. Social impacts highlight challenges in fair wages and occupational health and safety, with certain sectors demonstrating a positive contribution to training, suggesting potential for workforce development. The analysis underscores the importance of addressing both upstream environmental burdens and social conditions to enhance sustainability and equity. Ultimately, targeted interventions in supply chain management and labor practices are essential for improving the overall impact profile of the Spanish economy.

## Environmental Impact ESP

### Total

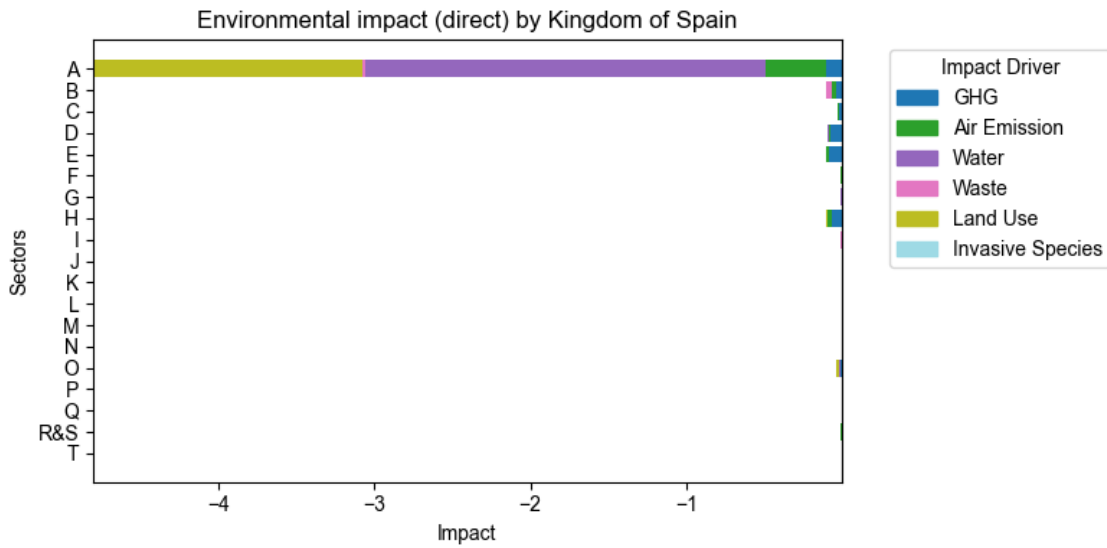


Source: VBA/WifOR, Overview of environmental impact, Total in Kingdom of Spain, 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025



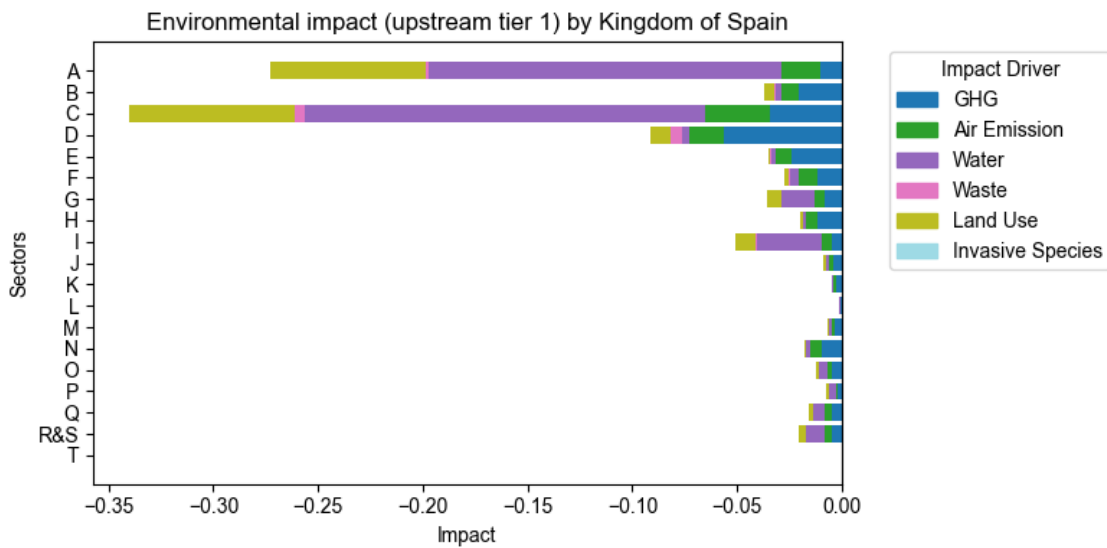


direct



Source: VBA/WifOR, Overview of environmental impact, direct in Kingdom of Spain, 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025

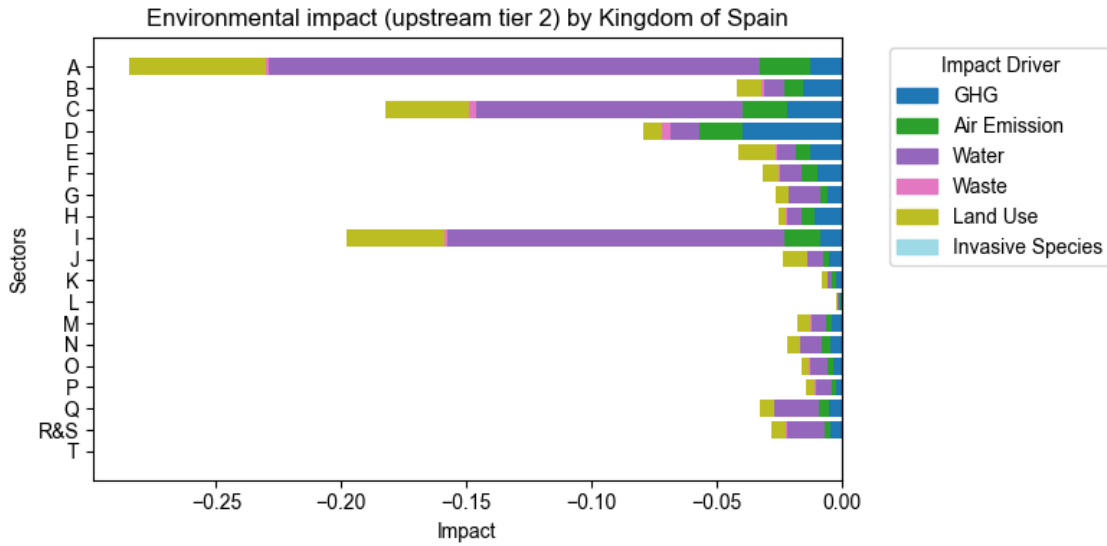
upstream tier 1



Source: VBA/WifOR, Overview of environmental impact, upstream tier 1 in Kingdom of Spain, 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025

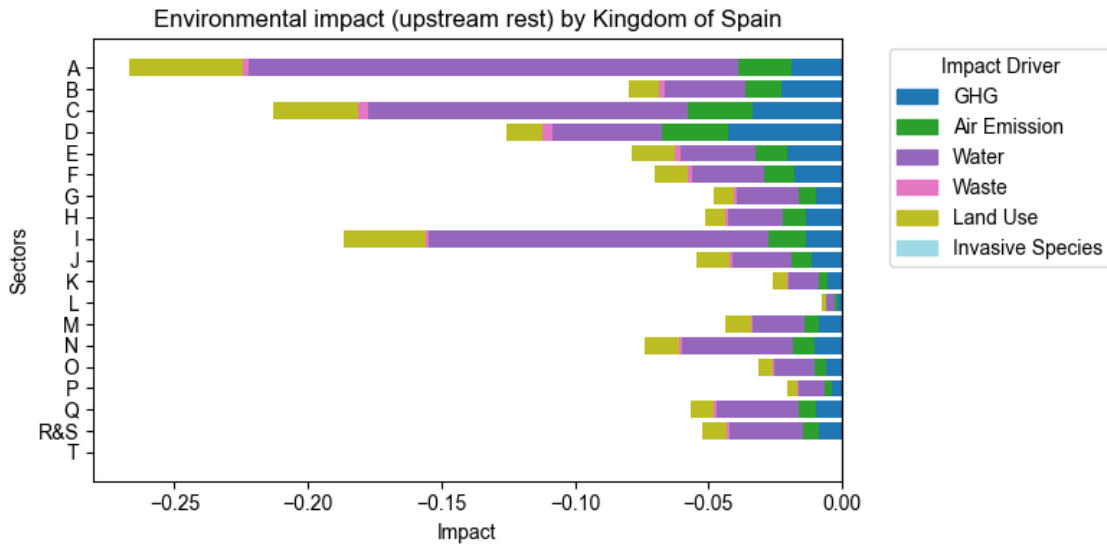


upstream tier 2



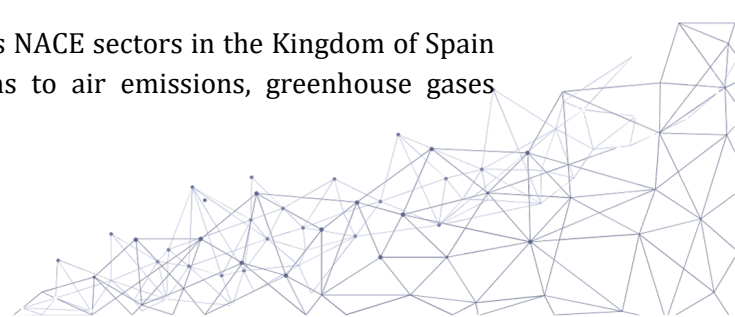
Source: VBA/WifOR, Overview of environmental impact, upstream tier 2 in Kingdom of Spain, 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025

upstream rest



Source: VBA/WifOR, Overview of environmental impact, upstream rest in Kingdom of Spain, 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025

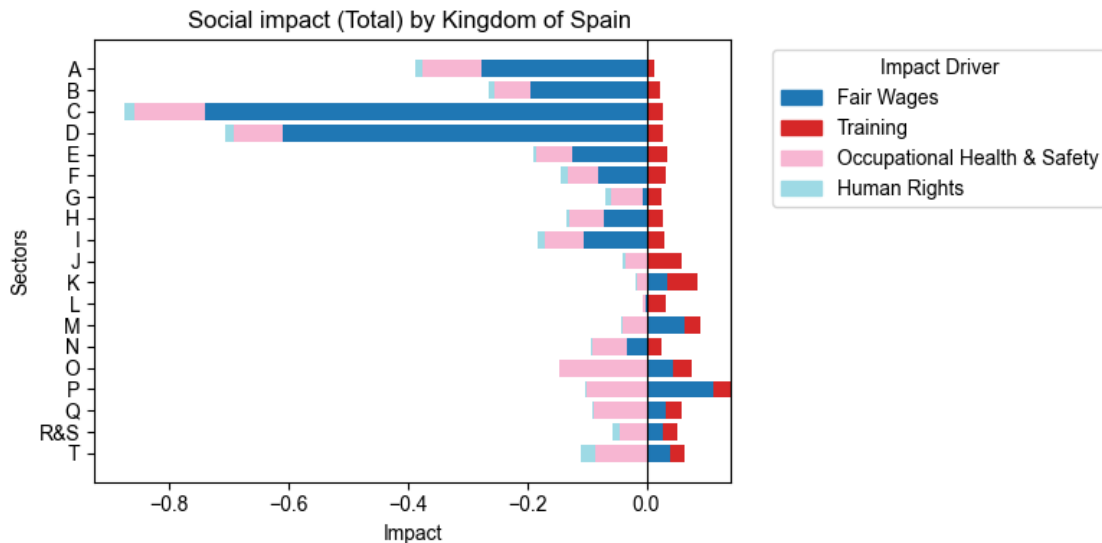
The environmental impact intensities across various NACE sectors in the Kingdom of Spain reveal significant differences in their contributions to air emissions, greenhouse gases



(GHG), water usage, waste generation, land use, and invasive species across different stages of the value chain. Direct impacts tend to be lower compared to upstream impacts, particularly in upstream tier 1 and tier 2 stages, where the cumulative effects of resource extraction and processing become more pronounced. For instance, sectors like Agriculture and Manufacturing show higher negative intensities in GHG and water impacts upstream, indicating their substantial environmental footprint during production processes. Conversely, the direct impacts in sectors such as Education and Public Administration are relatively minimal, suggesting that their environmental effects are more contained. Overall, the upstream stages exhibit a more significant environmental burden, highlighting the importance of addressing these impacts in supply chain management and sustainability initiatives.

## Social Impact ESP

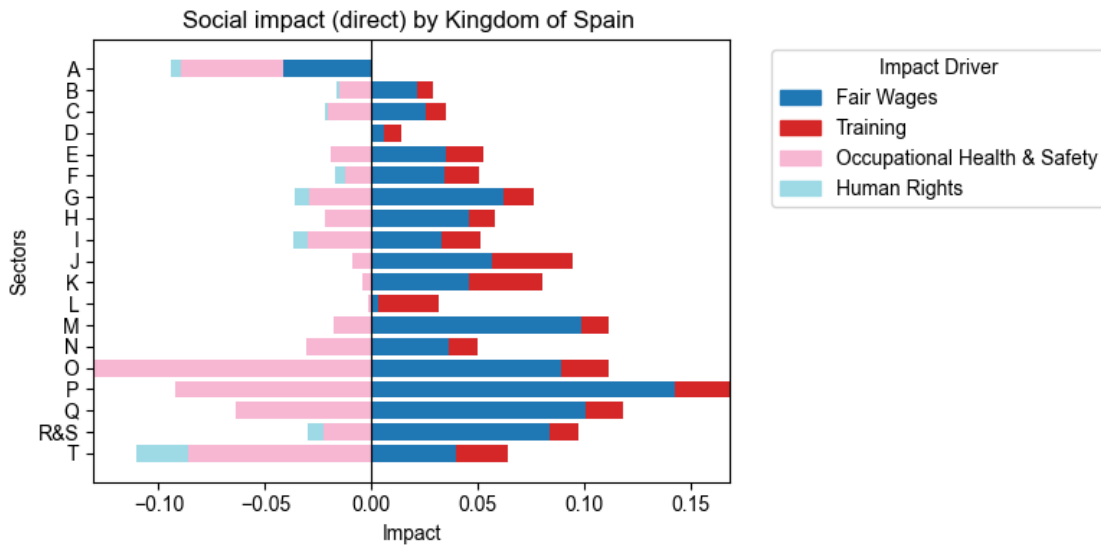
### Total



Source: VBA/WifOR, Overview of social impact, Total in Kingdom of Spain, 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025

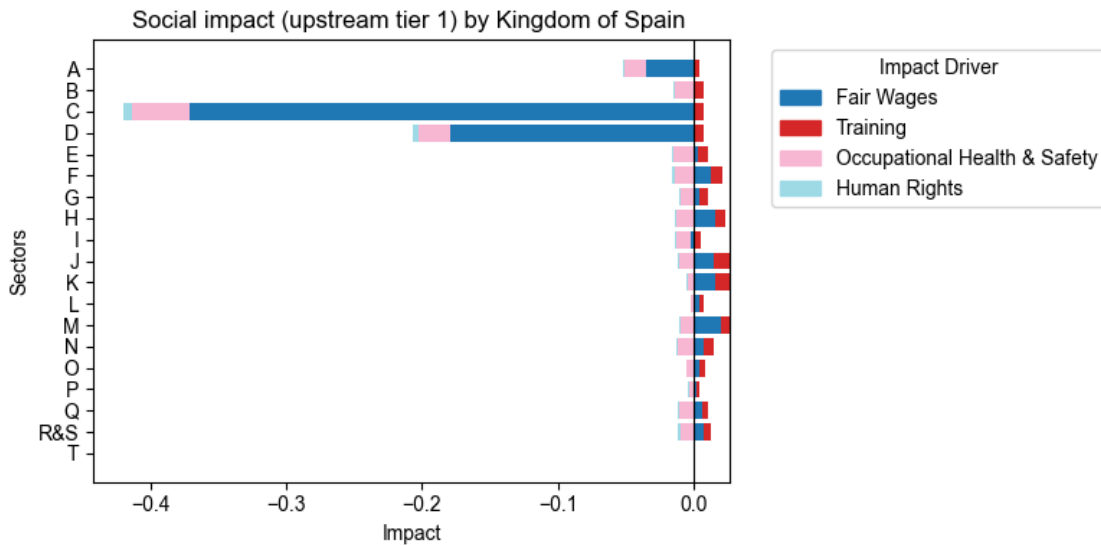


direct



Source: VBA/WifOR, Overview of social impact, direct in Kingdom of Spain, 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025

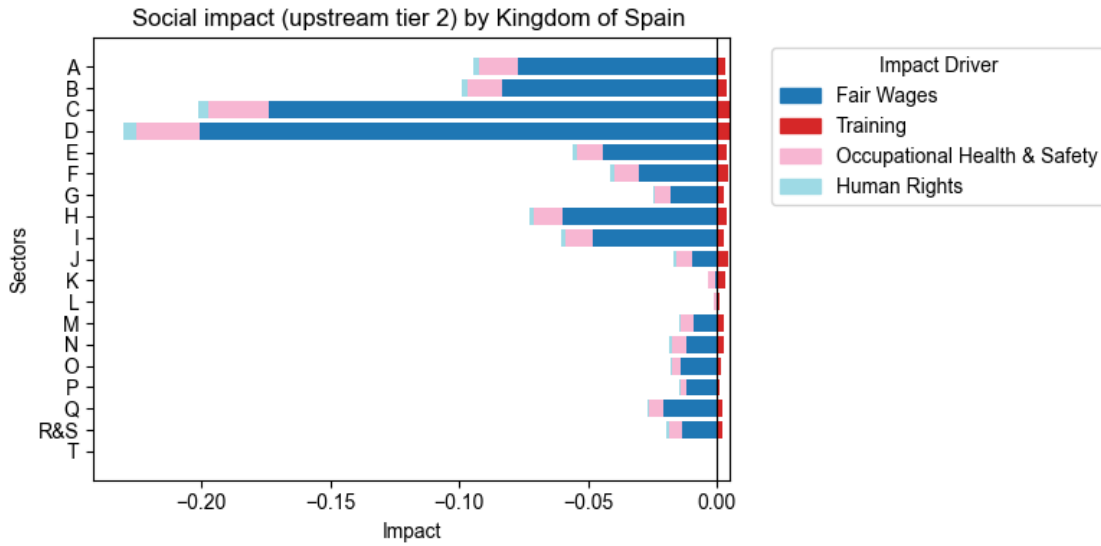
upstream tier 1



Source: VBA/WifOR, Overview of social impact, upstream tier 1 in Kingdom of Spain, 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025

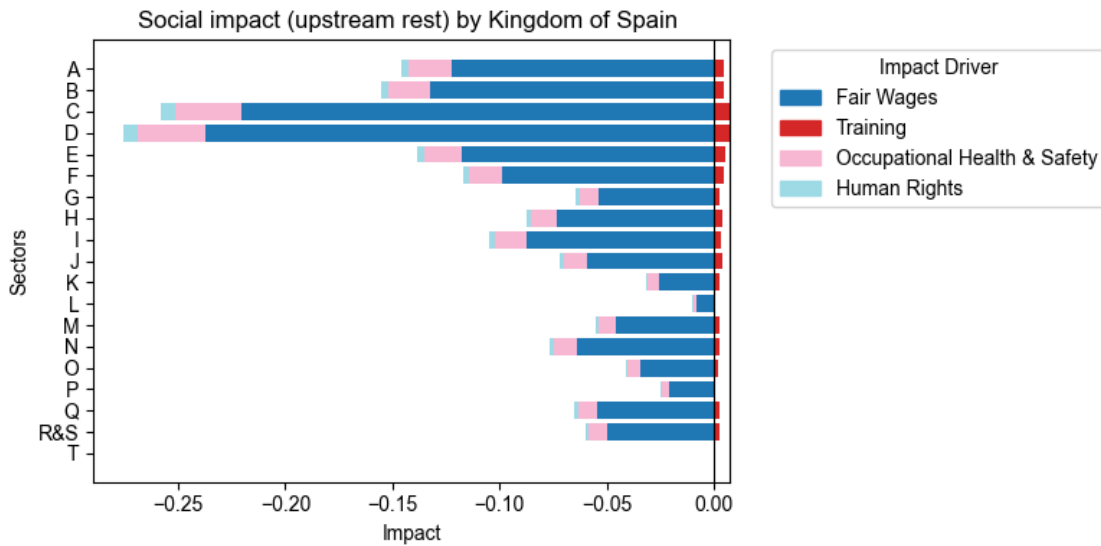


upstream tier 2



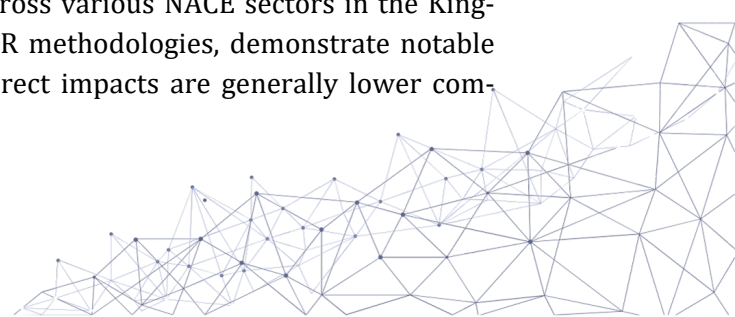
Source: VBA/WifOR, Overview of social impact, upstream tier 2 in Kingdom of Spain, 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025

upstream rest



Source: VBA/WifOR, Overview of social impact, upstream rest in Kingdom of Spain, 2024, Calculated based on WifOR Institute, WifOR Value Factors, Version February 2025

The impact intensities of environmental impacts across various NACE sectors in the Kingdom of Spain, as assessed using the VBA and WifOR methodologies, demonstrate notable variations at different stages of the value chain. Direct impacts are generally lower com-



pared to upstream impacts, particularly in upstream tier 1 and tier 2 stages, where the cumulative effects of resource extraction and processing are more pronounced. For instance, sectors like Agriculture and Manufacturing exhibit higher negative intensities in GHG emissions and water usage upstream, indicating their significant environmental footprint during production processes. The methodologies highlight the importance of considering both direct and indirect impacts, as upstream activities often contribute disproportionately to overall environmental degradation. This underscores the need for targeted interventions in supply chain management to mitigate environmental impacts effectively.



## Application

Beyond comparing company and sector impacts, the data presented here can support various additional applications. This chapter highlights several such use cases.

Impact benchmarks can help state institutions assess risks, guide investments and funding strategies, inform procurement decisions, enforce compliance, and shape policies that promote human rights protection, environmental sustainability, and economic growth. By applying country-specific and industry-specific impact benchmarks, governments and regulatory bodies can reduce liabilities, such as pollution and labor exploitation, while ensuring fair competition.

Collection of ideas				
	Regulation & Compliance	Policy & Economic Planning	Investment & Development Finance	Risk Assessment
<b>Institution</b>	Ministries	Development Institutions	Development Banks	Insurance Entities
<b>Vision of application</b>	Benchmarks could support industry-specific sustainability target setting and provide valuable insights for cost-benefit analyses of regulations	Development institutions could use benchmarks to shape industry-specific sustainability goals like labour protection guidelines	Benchmarks could help guide funding decisions for large projects, ensuring proper risk mitigation, particularly in sectors such as agriculture	Insurers could assess risks using industry benchmarks, helping determine eligibility and pricing for political risk insurance
	Public Procurement & Infrastructure	International Trade & Market Access	Accountability & Consumer Protection	Supply Chain Management
<b>Institution</b>	Public-Private Partnerships	Trade Ministries	Consumer Protection Agencies	Export Credit Agencies
<b>Vision of application</b>	Governments could use country-specific impact benchmarks to compare and select private sector partners (e.g., Infrastructure projects)	Trade ministries could apply sustainability benchmarks to imported goods (e.g., carbon intensity benchmarks for minerals)	Transparency rules could be enforced, requiring companies to disclose their impacts relative to benchmarks to prevent false claims and ensure accountability	Export credit agencies could use environmental and social benchmarks in financing decisions to promote ethical and sustainable supply chains

Figure VBA, Policy Applications, 2025

Impact Intensities represent the average environmental, social, and economic impact per sector output across countries, regions, and globally. They serve as a reference point for assessing an organization’s sustainability performance in its own operations and supply chains across industries and geographies. By comparing their performance to sector averages, companies and other organizations can determine whether they meet or exceed benchmarks and set specific targets for improvement.<sup>10</sup>

<sup>10</sup> VBA et al., Valuing Impact Materiality 2025, 2025, [www.value-balancing.com](http://www.value-balancing.com).



Beyond internal assessments, Impact Intensities encourage collaboration with suppliers and partners, fostering sustainability improvements across shared supply chains. By identifying high-impact tiers or regions, companies can make informed decisions about production and sourcing. On a global scale, comparing benchmarks across countries highlights regions with critical sustainability challenges, enabling firms to focus efforts where they are most needed. These benchmarks also help organizations anticipate risks beyond production, such as regulatory pressures or resource availability constraints. By revealing industries and countries where unsustainable environmental or social challenges could lead to future restrictions, they support strategic decisions on production, sourcing, resource allocation, and diversification. Additionally, they help companies effectively communicate sustainability achievements across diverse markets.

The benchmarks serve as a key reference for materiality assessments, helping companies prioritize impacts, allocate resources efficiently, and align with stakeholder and sustainability goals. They provide reliable data for transparent reporting, enabling companies to demonstrate their performance to investors, customers, and other stakeholders. This fosters trust, ensures compliance with standards, and enhances corporate reputation.

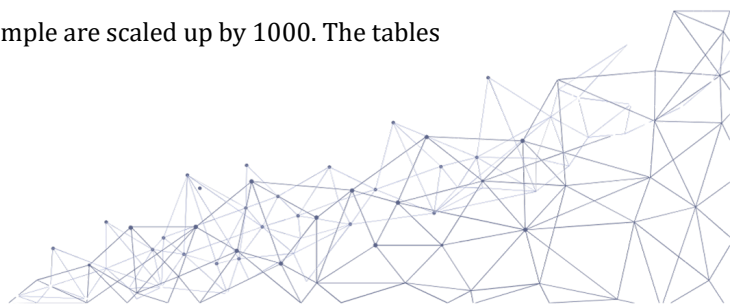
As sustainability becomes increasingly important and disclosure regulations evolve, assessment and reporting methodologies must keep pace. Impact Intensity benchmarks offer valuable guidance for improving practices, refining sustainability reporting, sharpening decision-making, and optimizing resource allocation. It is important to note that Impact Intensities are monetized using WifOR value factors, and meaningful comparisons require companies to calculate their impacts using the same methodology.

To illustrate how these benchmarks can be applied in practice, consider the following example: In Australia's Consumer Goods sector, an increase of EUR 1000<sup>11</sup> in production results in an average negative impact of EUR 6.98 from greenhouse gas (GHG) emissions within a company's own operations. Direct suppliers contribute another EUR 16.04, while suppliers' suppliers account for EUR 10.20 globally, and the remaining global supply chain adds EUR 15.77. Altogether, the total damage due to GHG emissions across the entire value chain amounts to approximately EUR 49 per EUR 1000 of output. This indicates that the majority of GHG emissions are driven by the upstream supply chain rather than the direct operations of Consumer Goods companies.

A company operating in this sector in Australia can compare these Impact Intensity benchmarks with its own data to evaluate its performance. To calculate its own GHG Impact Intensities, the company must take its environmental data per country and value chain stage, divide it by its output or turnover (own operations in the respective country), and multiply the result with the WifOR value factor:

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<sup>11</sup> For ease of interpretation, the numbers in this example are scaled up by 1000. The tables show impact per EUR 1 of output.





$$GHG\ Intensity_{c,v} = \frac{GHG\ emissions_{c,v}}{Output_c} * WifOR\ value\ factor\ for\ GHG\ emissions^{12}$$

If the company's calculated GHG Intensity values are lower than the benchmark, this indicates a smaller GHG footprint relative to the sector average. Conversely, higher values suggest a larger-than-average impact.

For a materiality assessment, Impact Intensities at or above the sectoral benchmark can be considered material, signaling areas that may require targeted sustainability measures.

## Caveats

### Data Accuracy

The input-output model used to calculate the Impact Intensities integrates satellite accounts for various indicators, constructed using multiple data sources. These accounts aim to accurately portray industry effects across all countries based on the best available knowledge and data.<sup>13</sup> However, varying data availability across indicators, countries, and sectors necessitates certain extrapolations and assumptions. WifOR is committed to continuously updating its data to improve accuracy and minimize errors or gaps. As such, the results here represent a snapshot, capturing current impacts as comprehensively as possible. Despite inherent limitations, this dataset remains, to the best of our knowledge, the most detailed, granular, and comprehensive source available for assessing industrial impacts.

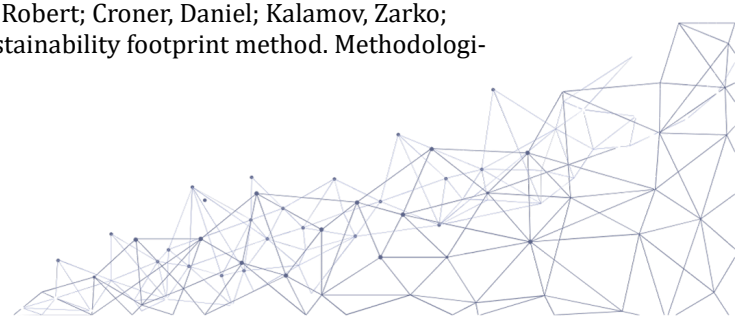
### Impact Valuation

Impact Valuation advances traditional reporting beyond disclosure of companies' social and environmental effects in disparate units (e.g., GHG emissions in metric tons or occupational accidents in numbers of events). It captures the environmental and social changes caused by these outputs, tracks their broader impact on society, and conveys these effects in monetary terms—a unified metric that enables comparison across a diverse range of indicators.

Various approaches exist to quantify the societal value of indicators. In the present assessment, the indicators were monetized using the WifOR Impact Valuation methodology, with publicly available value factors. WifOR primarily focuses on damage costs to measure impacts. However, this is not feasible for all indicators, as some impact pathways and their consequences remain insufficiently understood. Each indicator therefore follows a specific valuation approach. For example, GHG emissions contribute to climate change regardless of their source and are thus valued using a 'social cost of carbon' approach and a global value factor. By contrast, water consumption is assessed based on economic damage and human

<sup>12</sup> c = country of operation; v = value chain level

<sup>13</sup> Scholz, Richard; Dorndorf, Tabea; Tesch, Jasmin; Köster, Robert; Croner, Daniel; Kalamov, Zarko; Setzer, Jana. 2024. Impact measurement using WifOR's sustainability footprint method. Methodological report. 2024 WifOR Institute.



health impacts, yielding country-specific value factors that reflect local water scarcity. This means water consumption in highly water-stressed regions will generate a disproportionately higher impact, in some cases exceeding that of GHG emissions at global level. Given such methodological idiosyncrasies, comparisons between indicators should be interpreted cautiously, as differing valuation approaches limit direct comparability, especially on a worldwide level.

### Double Counting

Impact Valuation carries the risk of *double counting*, as different impact drivers may share the same, or overlapping, impact pathways. This challenge is particularly relevant when analyzing multiple indicators together. For instance, waste incineration releases air pollutants that contribute to respiratory disease and health-related costs—accounted for in the value factor for *Waste*, but also included in the factor for *Air Emission*. Simply subtracting this impact from the waste coefficient would underestimate the true impact of waste, while summing both indicators would lead to double counting.

### Economic Impact

Gross Value Added (GVA) is a key metric for assessing a company's economic contribution across value chains. It represents the economic value generated through company operations after deducting the cost of inputs and services used in production. Often, the total GVA across the entire value chain approximately matches the direct output of a company—if a company generates EUR 1,000 in direct output, the total GVA across its supply chain and internal operations typically also equals EUR 1,000. This equivalence is down to the fact that GVA encompasses all value-creation activities, from raw materials production to final goods and services, and is therefore distributed across all stages of the value chain. The distribution varies by industry and location: manufacturing or heavy engineering often rely on extensive supplier networks, resulting in significant upstream GVA contributions, while software development or advanced technology focus on highly integrated operations and tend to generate a substantial proportion of GVA internally.

### Netting Impacts

Impact Valuation seeks to enhance transparency, an aim that cannot be achieved if results are overly aggregated. Expressing diverse impacts using a common monetary metric does reduce complexity, but it also risks obscuring critical nuances. And while simplification can be useful, it should not carry the implication that negative impacts can be offset by positive ones.

There are certain cases where netting impacts can be appropriate (e.g., aggregating an indicator across different locations). But practices such as netting across different indicators can lead to *greenwashing* and a misrepresentation of results. This risk is particularly relevant for economic impact (represented by GVA), which has therefore been intentionally excluded from the charts below.



In the current phase of Impact Valuation development, limitations remain, including overlapping indicators (double counting), divergent valuation approaches, and data gaps that hinder a fully comprehensive assessment. Moreover, different impacts affect different groups unevenly, meaning that a positive impact on one group does not necessarily compensate for a negative impact on another (for instance, extra vocational training for managers cannot offset agricultural losses caused by water scarcity).





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