National Safety Council

ACTIVATION GUIDE AND METHODOLOGY

The New Value of Safety and Health in a Changing World

Foundation

VALUING IMPACT

Contents

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1. Introduction

As discussed in *The New Value of Safety and Health in a Changing World (The New Value of Safety)* report to which this piece is a companion, the scope of safety and health has evolved in response to social, political, technological and economic change into a more holistic one that considers broader social and environmental factors and has begun to overlap with the concept of environment, social and governance (ESG). In addition, in recent years there has been a growing recognition of the importance of understanding the physical and social determinants of health, such as poverty and work arrangements, in improving health and safety. In June 2022, the International Labor Organization (ILO) declared a safe and healthy workplace as a fundamental right at work.

This "impact valuation" activation guide is intended to provide context, methodologies, metrics and case studies that can be utilized in the field to reckon with the changed scope of safety and health in 2023. Supporting this evolution with actual impact valuation metrics is key to influencing strategy and management decision-making processes. Impact valuation metrics translate complex outcomes into economic terms, making them tangible and comparable across various activities and businesses. These metrics can be directly compared with financial metrics, raising awareness even further beyond the traditional safety and health audience.

Throughout this guide, "safety" is used to refer to occupational safety and health, which frequently extends into other areas such as environmental (or EHS). Building on the ESG evolution mentioned above, the National Safety Council (NSC), in partnership and funded by Lloyd's Register Foundation (LRF), developed the concept of *The New Value of Safety*, connecting the human and organizational performance (HOP)[1] , total worker health (TWH)[2] and ESG aspects.

[1]See **Appendix A** for methodology
[2]Note: Because these questions were only asked of respondents who had confirmed cases of COVID-19, the rate of medical interventions and Long COVID-19 are likely higher than in the general population due to asymptomatic and mild infections not being confirmed with testing.

The New Value of Safety establishes a foundation enabling various stakeholders to commit to the practical modernization of safety programs, adoption of new safety strategies and enhancement of organizational culture. For the practical purposes of this guide, we have identified three groups of stakeholders that we target specifically for the operationalization of the proposed impact framework:

- **External stakeholders:** Civil society, governments and regulators, Non-Governmental Organizations (NGOs) and employees out of work are considered – this group is part of the "influencer" community as defined in *The New Value of Safety*

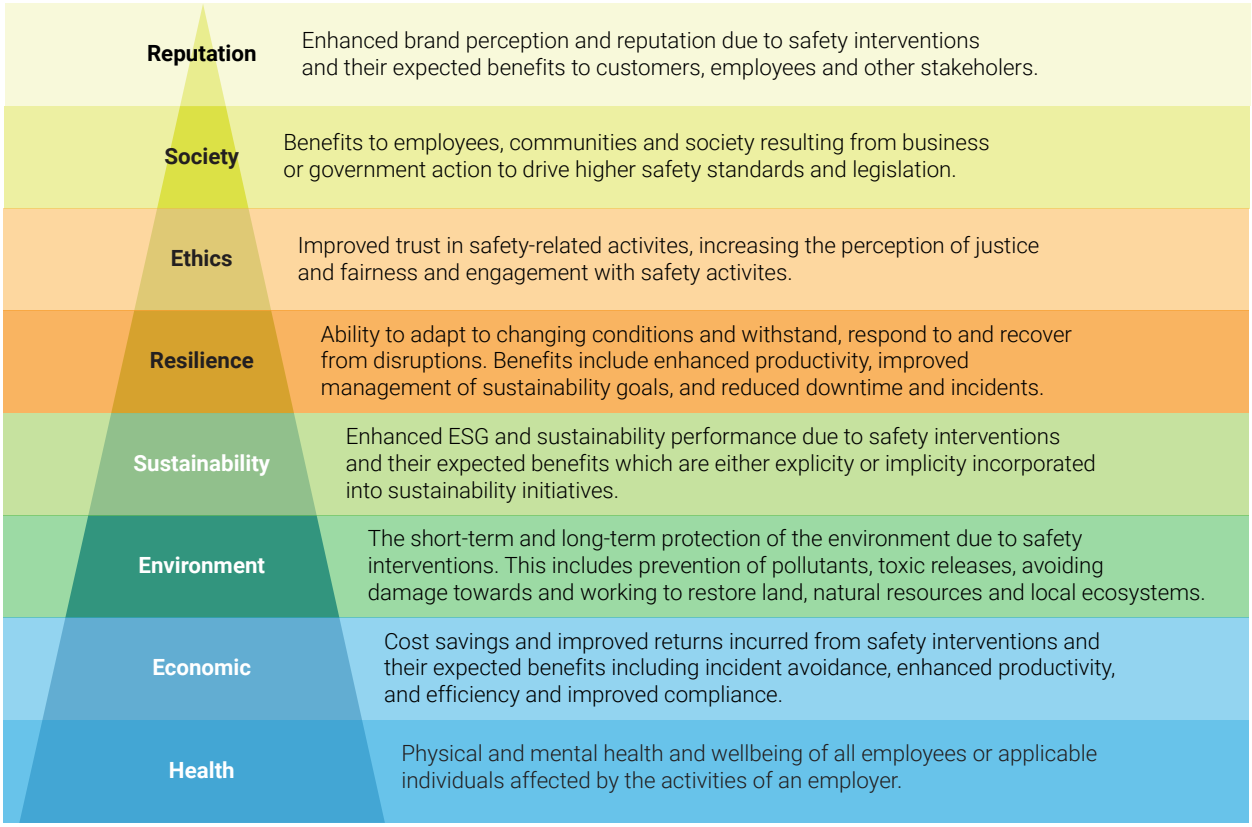

Figure 1: Hierarchy of Environment, Health and Safety Value (adapted from Yang, M (2022))
Source: The New Value of Safety and Health, 2023

- **Business Leaders/Boards:** Stakeholders with significant interest in the success and profitability of the business – they have a direct impact on the employees, customers, suppliers and communities
- **ESG Practitioners/Leaders and Investors:** This group encompasses people responsible for implementing ESG policies and practices within businesses or on the investors' side – this group is part of the financial community

While there are interconnected areas of value creation, each stakeholder's group will be concerned with their own specific impact drivers. For example, in civil society, safety generally relates to the overall wellbeing and protection of individuals and communities from injury, illness or environmental harm. Governments bear the responsibility for public health protection and fulfilling legal and regulatory obligations. In the case of employers and business leaders, their focus is centered on operational performance and revenue generation. However, this also includes considerations of employee wellbeing, reputation and organizational culture. Finally, for ESG practitioners and investors, the primary areas of interest related to safety are associated with intangible values, performance, access to capital, governance and compliance.

2. Objective and Use of the Activation Guide

This document aims to facilitate a more comprehensive accounting of the value generated by safety initiatives, enabling businesses to address safety holistically, mitigate risks and create more value for their respective audience.

This activation guide will be useful for the following applications:

Raise awareness and transfer knowledge: The core of the report is made for decision-makers across the three key audiences defined to support their understanding of the new valuation opportunities. The impact framework summary (section five) will assist in understanding the relevant outcomes of EHS activities and how to value them, while the illustrative case study (section six) will provide a real-world application to a multinational company.

Measure and value impact in a holistic way: This is meant to help understand the relative importance of different activities for businesses, investors or society. The technique of valuation, also referred to as monetization, is a great tool to raise awareness but also interpret and realize the value of EHS activities. More and more, organizations must demonstrate the impact they are having, justify their budget and support their plan to create a societal impact. Using impact valuation metrics is a great way to do this.

Create a comprehensive transformation and investment plan centered around value creation to secure leadership buy-in and support and promote a top-down safety culture: Whether an impact valuation is performed or not, the elements of this guide can be used to support engagements with internal and external stakeholders around the value of safety, linked to the main report.

Engage stakeholders and communicate the impact of safety initiatives: This is built on the concept of valuation which enables the better expression of results and value for different stakeholders in monetary terms, which is easily understood by a wide audience. Also, having numbers to discuss is very different than just giving assurance that one has an impact without evidence, which will help decision-makers drive action on several fronts.

3. Connection with the Areas of Value Creation

The New Value of Safety is linked to value creation across multiple dimensions, as explained in Figure 1. The impact framework presented in Table 1 below builds on those value dimensions and proposes specific outcomes, for which valuation methodologies are defined for each specific stakeholder audience (see **Appendix**).
Note: Section five provides more information on the impact framework and methodology itself.

Value Dimensions	Impact Framework Outcomes Name	Stakeholder Audience
Health	Improved quality of life	External stakeholders
Economic	Increased employees' productivity	Business leaders/boards, ESG practitioners and investors
	Employees' retention	Business leaders/boards, ESG practitioners and investors
	Career opportunities	External stakeholders
	Changed operation costs	Business leaders/boards
	Avoided household costs (worker/family)	External stakeholders
Environment	Reduced environmental impact risks	External stakeholders
Sustainability	Business continuity	Business leaders/boards, ESG practitioners and investors
Resilience	Employees' productivity	Business leaders/boards, ESG practitioners and investors
Ethics	Belonging	Business leaders/boards, ESG practitioners and investors
Society	Reduced cost to society (health care system/social benefits	External stakeholders
	Belonging	External stakeholders, ESG practitioners and investors
Reputation	Business reputation (goodwill value)	External stakeholders, ESG practitioners and investors

Table 1: The Link Between Outcomes and Framework Values for Stakeholders

4. The Case for Valuing Impact by Stakeholder

External Stakeholders (civil society, public sector, NGO, employees out of work)

Measuring safety is crucial to prevent negative consequences, such as increased health care costs and loss of life. Each year, an estimated 2.78 million workers die from occupational incidents and work-related diseases worldwide, while an additional 374 million workers suffer from non-fatal occupational incidents. This means 7,500 people die from unsafe and unhealthy working conditions every day. Workplace-related deaths exceed the average annual deaths from road incidents (999,000), war (502,000), violence (563,000) and HIV/AIDS (312,000), according to the International Labor Organization (2021). Also, the mental health and wellbeing of the population can be positively affected through strategies implemented in the workplace. According to Eurofound and EU-OSHA, 25% of workers in Europe experience excessive work-related stress; 51% of European Union workers say stress is common in their workplace.

Besides health and wellbeing, the economic impact is also significant for society. Almost 4% of GDP worldwide is lost due to work-related incidents, injuries and diseases. In the European Union, the cost of work injuries represents 3.3% of its GDP (EU-OSHA based on ILO 2017), and in the United States, the cost of preventable work injuries paid by the government in 2021 was USD 228 billion.

Moreover, industries such as forestry, mining and agriculture have a significant impact on the environment. Safety measures can protect natural habitats, while in manufacturing and construction, appropriate handling and disposal of hazardous materials can prevent pollution and reduce waste. For example, companies such as Henkel have shown that strong environmental actions are also delivering real operational results (McKinsey & Company, 2022).

The Case for Valuing Impact – External stakeholders

The intangible health-related quality of life values, such as mental health and wellbeing, environmental or health care costs, and other indirect costs to society, are often not captured by traditional approaches, and measuring them can help raise awareness. By quantifying these costs, communities and policymakers can identify areas for improvement and prioritize initiatives to address safety and health risks. This proactive approach can ultimately enhance overall wellbeing and reduce social costs. We recommend measuring key safety initiative outcomes such as improvement in quality of life, avoidance of social costs for the public sector, career opportunities, diversity and inclusion, and the reduction of environmental risks.

These outcomes are interconnected within the **framework of value creation** and themes with the following:

- **Health:** Employees and their families are integral to society, and promoting safety activities contributes to increasing both mental and physical wellbeing at a population level
- **Economic:** Safety activities generate economic benefits for society by reducing the medical costs workers must pay and alleviating the burden on the public sector in the health care system
- **Environment:** Improved health among workers reduces the risk of environmental impact
- **Ethics:** By incorporating holistic safety programs, such as diversity and inclusion initiatives, it becomes possible to enhance opportunities and foster a sense of belonging
- **Society:** Communities and society as a whole benefit from safety initiatives that improve the quality of life, reduce loss of life and mitigate the economic costs associated with injuries, fatalities and diseases

Business Leaders and Boards

From a business perspective, safety can impact the bottom line directly and indirectly. The direct impact includes increased medical expenses, workers' compensation claims, insurance premiums and legal fees. For example, approximately $44,000 per worker affected could be saved in compensation claims in the United States (National Council of Safety, 2021) by reducing the total number of injuries/diseases at workplaces.

In addition, lost days at work generate negative impacts on operational strategy and productivity. The United States private sector reported an overall figure of 1.5 % absentee hours (U.S. Bureau of Labor Statistics, 2022). On the other side, healthier employees are more productive. According to survey results from the nonprofit Health Enhancement Research Organization (HERO), 90% of employers have found a correlation between wellness promotion and employee performance (SHRM, 2015). Many other studies have revealed similar results, and both NSC and the American Society of Safety Professionals (ASSP) have reported a ~$4-6 return on investment for every $1 spent on safety initiatives.

Moreover, organizational retention rates and public perception can affect reputation. Negative publicity, public perception of an unsafe work environment and poor employer reputation can have long-term consequences, including decreased customer trust, loss of business opportunities, and difficulty attracting and retaining top talent. Companies that focus on safety for their workforce may create a culture that supports a healthy workforce and increases the percentage of employees engaged and committed to the organization's success (Grossmeier J. et al, 2016).

On the opportunity side, a positive correlation exists between reputation and stock performance. To illustrate, publicly traded companies honored with the Gallup Great Workplace Award witnessed a 115% growth in earnings per share (EPS), whereas their competitors only achieved a 27% EPS growth during the same period. (McKinsey & Company, 2022).

The Case for Valuing Impact – Business Stakeholders

Health and safety are critical for businesses to ensure legal compliance, cost savings, productivity, employee retention and reputation, among other outcomes. Therefore, measuring the value of safety will lead to the development of better operational strategies and cultural change. In addition, when businesses prioritize safety, they can help reduce the financial burden on governments and the public sector, allowing for better allocation of resources and increased wellbeing as well. We recommend measuring key safety initiative outcomes such as changes in operational costs, employee retention, employee productivity and reputation.

These outcomes are interconnected within the framework of value creation and themes with the following:

- **Economic:** Through the implementation of integrated safety strategies, companies have the potential to decrease both direct and indirect costs associated with occupational injuries and diseases – this includes minimizing expenses related to medical treatment, productivity losses and litigation costs
- **Resilience:** By engaging in safety activities, companies enhance their ability to adapt to changes by boosting retention rates, increasing productivity, reducing absenteeism and ensuring the continuity of business operations
- **Reputation:** Safety interventions generate an increase in reputational benefits, fostering consumer loyalty, stakeholder engagement and other positive outcomes that could have a significant impact on sales and revenues
- **Ethics:** Integrating ethical practices can foster a positive work culture, employee motivation and engagement, contributing to the overall success and long-term viability of the company – this also enhances the company's reputation, builds trust with stakeholders, and attracts ethically conscious customers and investors

ESG Practitioners and Investors

The growing reliance on intangible assets for business valuation highlights the importance of measuring safety for ESG practitioners and investors. Today, up to 85% of business valuation depends on intangible as opposed to real assets (World Economic Forum, 2018). The increasing importance of intangible valuation for ESG practitioners and investors is a challenge as most often data is lacking or not validated. Human capital is one factor among various others influencing this intangible value, within which health and safety play an important role. Safety best practices and strategies implemented at businesses will ensure that costs of operations and payroll remain low, talent is easily acquired and remains at a business, and that risk of litigation and risk to reputation remains under control.

On the opportunity side, measuring safety can reveal competitive advantages for investors. Companies with strong health and safety management practices often perform better financially, as demonstrated by the performance of companies in the Corporate Health Achievement. This portfolio, composed of companies that scored highly in the Corporate Health Achievement Awards, appreciated by 204% to 333% compared to the S&P 500 index appreciation of 105%. (Deloitte, 2022). Investing in such companies can lead to higher returns and long-term value creation for investors.

According to a KPMG report, occupational health and safety performance is considered a non-financial impact (risk) to businesses (KPMG, 2017). This has begun to influence change in non-financial impact (risk) measurement, valuation and public reporting on human capital. Regulation will only make this matter more important for companies.

In addition, post-COVID-19, consumers have become even more likely to prefer brands that offer robust sustainability credentials and a strong purpose, but industry surveys conducted in mid-2020 suggested that ESG topics slipped down companies' list of priorities during the pandemic (McKinsey & Company, 2022).

The Case for Valuing Impact – ESG Stakeholders

Valuing safety in an ESG context enables a more tangible and comparable analysis of companies' strategies, activities and results. We recommend measuring key safety initiative outcomes such as business reputation and business continuity. It is important to acknowledge this group, as part of the financial community, shares many common outcomes and areas of value creation with business leaders.

However, in addition to these shared indicators, it is worth emphasizing that areas related to intangible aspects can hold greater significance for ESG practitioners and investors, particularly about the following:

- **Economic:** By prioritizing safety, ESG practitioners and investors mitigate operational risks, safeguard human capital, enhance brand reputation and contribute to long-term financial performance
- **Sustainability:** By minimizing workplace hazards, businesses can reduce operational disruptions, absenteeism and associated costs – this leads to increased productivity, operational efficiency and overall business continuity
- **Ethics:** Emphasizing health and safety aligns with stakeholder expectations, builds trust, enhances brand reputation and attracts customers, investors and business partners who value ethical and socially responsible companies
- **Reputation:** Health and safety considerations are integral to regulatory compliance and legal obligations – by adhering to relevant health and safety regulations, businesses can avoid legal liabilities, penalties and reputational damage

5. Impact Framework and Methodology

The impact framework developed for this activation guide relies on the Natural Capital Protocol (Capitals Coalition, 2016)[3] , the Social and Human Capital Protocol (Capitals Coalition, 2019)[4] and the SROI method.[5] It is in line with other IRIS+ Global Impact Investing Network (GIIN)[6] frameworks and the Impact Management Project (IMP).[7]

This process was developed alongside similar principles from the IRIS+ framework but builds on the process recommended by the Social and Human Capital Protocol and the SROI frameworks. The first is more process-oriented, while the second is more measurement-oriented.

Table 2 presents the steps used in the assessment, from the definition of scope and objective to impact assessment, valuation and influence decision-making:

Step 1	Step 2	Step 3	Step 4	Step 5
Establishing objectives, scope and identifying stakeholders Establish boundaries on what the analysis will cover (theme, geography, etc.), who will be involved in the process (stakeholders) and how stakeholders are defined as people or organizations that experience change or affect the activity – whether positive or negative – because of the activity being analyzed.	**Mapping outcomes** Create an impact map, or a theory of change, building on the outcomes of the impact framework presented, connecting activities, outputs and outcomes systematically.	**Data collection** The data needed is usually divided into three categories: • Primary data collected from the organization • Data from reference studies • Literature and assumptions The Appendix provides a full methodology with the needed data points.	**Establish and value impact** Apply the methodology presented in this report and value/ evaluate the outcomes.	**Reporting, using and embedding** Influence decision-making and maximize societal value.

Table 2: Step-By-Step Process for Valuing Impact

The impact framework also relies on a definition of impact pathways, as illustrated in Figure 2.

Inputs	Activites	Outputs	Outcomes	Impacts
Resources necessary to carry out an activity	**The activities whose effects on social capital are to be analyzed and measured**	**The results of the activity in question**	**Changes in the lives of the target population**	**Change in the wellbeing of those affected over the longer term**

Figure 2: Illustration of a standard impact pathway

[3] https://capitalscoalition.org/capitals-approach/natural-capital-protocol/?fwp_filter_tabs=guide_supplement
[4] https://capitalscoalition.org/capitals-approach/social-human-capital-protocol/
[5] https://socialvalueuk.org/resources/a-guide-to-social-return-on-investment-2012/
[6] https://thegiin.org
[7] https://impactfrontiers.org/norms/

An impact pathway is a description of the causal chain of events and the expected outcomes that result from a particular intervention. It is a way of mapping out how an intervention is expected to bring about change affecting different stakeholders, starting from the inputs (resources) and activities through to the outputs (products), outcomes (short-term and medium-term effects) and ultimately the impact (long-term effects).

In the context of this activation guide, we identified three types of outcomes that can be used to value safety activities:

- Ones that directly affect safety
- Economic outcomes that can be translated in terms of impact on safety
- Economic outcomes that will bring financial value to stakeholders

The first two indicators contribute to societal value, while the third group of outcomes generates financial value. The next section describes these indicators with additional details in the Appendix.

Figure 3 represents the impact map or impact framework describing the expected outcomes for each stakeholder that results from safety activities:

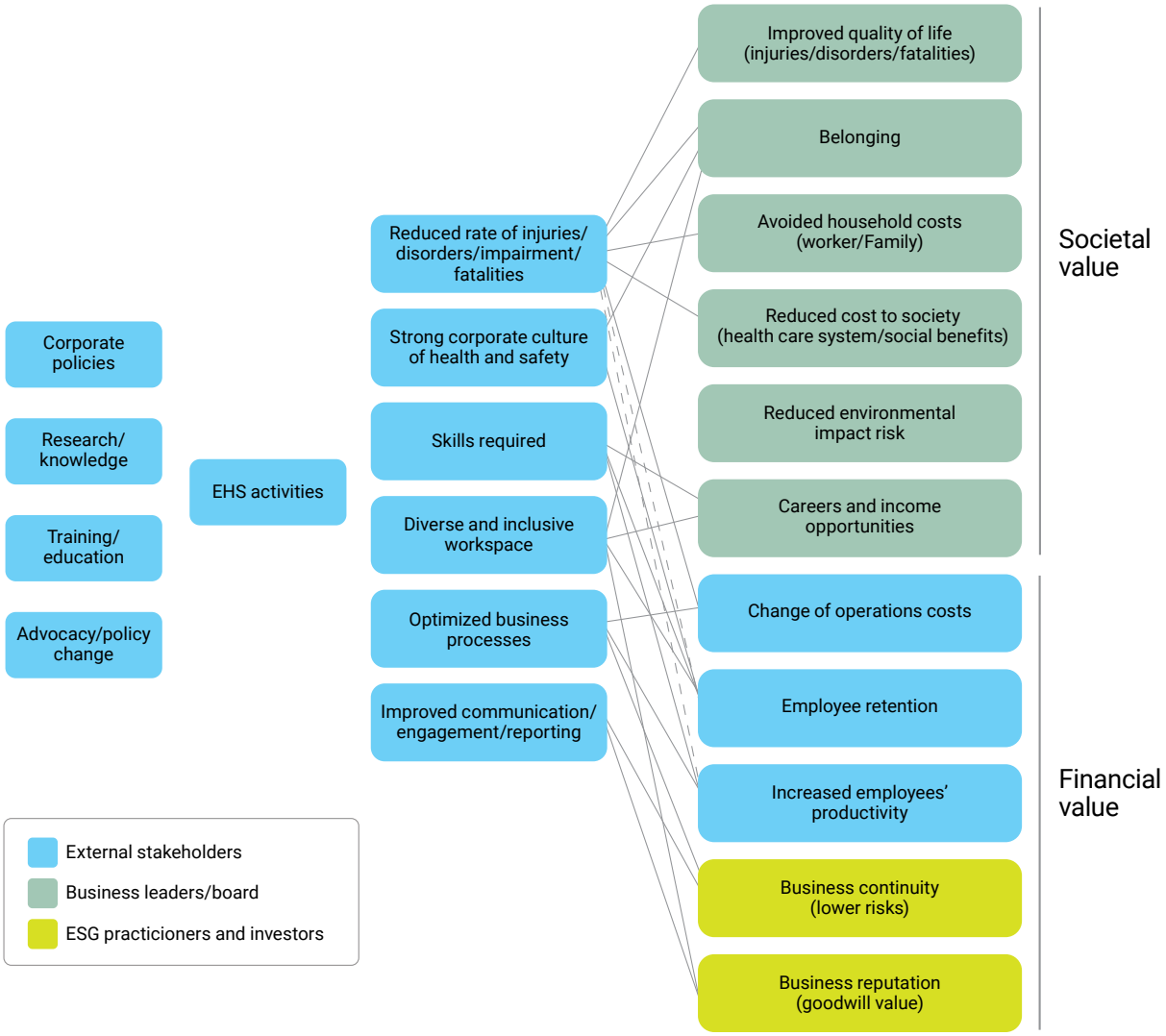

Figure 3: Impact Framework for Valuing the Impact of Safety Initiatives

[8]DALYs (disability-adjusted life years): The DALY is a measure of overall disease burden, expressed as the number of healthy years lost due to early death or due to living with ill health.

The purpose of this guide is to provide different valuation options and metrics and to adapt to each assessment context so that stakeholders' expectations can be pursued independently or in parallel. Each outcome of the impact framework can be utilized independently from others to build a custom selection of outcomes in line with the specificities of each project.

The valuation approach proposed here relies on a relevant, comparable and unique definition of impact, which reflects the safety, wellbeing or quality of life of individuals or groups of individuals. The option to measure impact in terms of economic outcomes is also provided as an alternative. These two complementary indicators are defined as:

Wellbeing Impact Indicator: This indicator can capture effects beyond economic outcomes, such as effects of integration and psychological health for people. It uses the metric of disability/quality-adjusted life years (DALY/QALY).[8] It allows us to translate economic outcomes into impact on safety or wellbeing by relying on health utility models applied to income, taxes or social costs. The Human Utility of Income (HUI)[9] and the Human Utility of Taxes (HUT) are practical and open-source methodologies to achieve this.

Economic Outcome Indicator: This indicator assesses the real financial or economic change for each stakeholder impacted (including governments, other businesses, etc.) and helps to engage with a range of stakeholders who are concerned about economic metrics (such as GDP) and costs in general. However, it is not a measure of societal value. This indicator is often an intermediate outcome that contributes to the safety/wellbeing impact as explained above.

A third indicator specifically measures the **economic outcomes for business and ESG practitioners and investors,** which reflects financial value.

Economic/Financial Impact: This indicator refers to the effect on operational costs, productivity, damage to a company's reputation and other consequences that can impact the overall financial success and sustainability of a business.

Building on these defined key indicators, Table 3 presents a short description of each sub-outcome and its valuation approach. A qualitative assessment of the maturity of the methods provided and their applicability is also included. The maturity of the method refers to its capacity to comprehensively capture the value intended to be measured. The **applicability** of the method refers to the availability of the data and parameters to apply the methodology. A more comprehensive explanation is provided in the Appendix.

[8]DALYs (disability-adjusted life years): The DALY is a measure of overall disease burden, expressed as the number of healthy years lost due to early death or due to living with ill health.
[9]The Human Utility of Income correlates health outcomes of life expectancy or quality of life with income inequalities within a country.

Outcome	Valuation Approach	Maturity of Method	Applicability of Method
Stakeholders: External stakeholders **Value perspective:** Societal value **Indicators:** Economic outcomes (1) or wellbeing impact (2)			
Improved Quality of Life (occupational injuries/ fatalities/diseases)	Refers to the overall health, wellbeing and satisfaction improvement that an individual experiences through the reduction of safety incidents and beyond. It can be measured using the indicators of QALY/DALY (Quality/Disability Adjusted Life Years). This wellbeing outcome does not have any equivalent to an economic outcome.	High	High
Avoided Household Costs (worker/family)	Workers, families and households tend to absorb additional costs (health care costs, the need for caregivers, out-of-pocket expenses, lost wages and loss of fringe/payroll benefits) that can be directly measured. To translate this economic outcome into wellbeing impact, Health Utility of Income (HUI) is used.	Medium	High
Belonging	Refers to employees who experience a change in belonging feeling/satisfaction/ integration because of the implementation of a safety strategy. There are two effects to be considered: 1) the direct increase in wellbeing that can be measured with the DALY indicator and 2) the creation of employment opportunities through the accumulation of relevant work experience.	Medium	Medium
Reduced Costs to Society (health care system/social benefits)	Refers to employees who experience a change in belonging feeling/satisfaction/ integration because of the implementation of a safety strategy. There are two effects to be considered: 1) the direct increase in wellbeing that can be measured with the DALY indicator and 2) the creation of employment opportunities through the accumulation of relevant work experience.	Medium	High
Reduced Environmental Impact Risk	A direct change of environmental impact (positive or negative) or avoided environmental impact risks from incidents can be assessed. Existing methodologies need to be considered, such as the Natural Capital Protocol or Life Cycle Assessment (ISO 14'044).	High	Low
Careers and Income Opportunities	Safety activities often involve training and capacity building, which have value beyond the reduction of injuries and can be leveraged in existing or new professional opportunities. This leads to future earning premiums (economic outcome). The HUI methodology can also be used to translate this into a wellbeing metric.	Medium	High
Stakeholders: Business/ESG practitioners and investors **Value perspective:** Business value **Outcomes:** Economic outcomes/financial value			
Change of Operations Costs	The average cost of an occupational injury or illness includes several factors such as wages replaced, employer adjustment costs, rehabilitation costs and presenteeism. To estimate this cost, statistics from various databases are used. Primary data can be used as well.	Medium	High
Employee Retention	Safety programs can increase an employee's retention, which leads to lower turnover and associated costs. The average cost of turnover can be obtained from the HR department.	High	Medium
Increased Employee Productivity	Safety can lead to better employee engagement, which in turn can increase productivity as well. To value this outcome, we estimate the increase in production output from employees as a percentage of their salary.	Medium	Medium
Business Continuity (lower risks)	Refers to the ability of an organization to continue operating or quickly resume operations in the event of unexpected disruptions. By reducing the risk of litigation or production disruption because of occupational injuries/diseases/fatalities, an organization can improve its resilience. The impact can be measured by calculating the potential increase in operational costs due to litigation or loss of production.	Medium	Low
Business Reputation	The reputation of a business is tied to customer perception, which can be influenced by safety results. To measure this reputation, the potential sales that could be lost due to a change in the customer's perception of safety performance can be estimated as a percentage.	Medium	Low

Table 3: Summary of Outcomes, Their Valuation Approach, Maturity and Applicability

6. Illustrative Case Study: Improved Health and Safety Practices Among NIKE's Suppliers

This section provides an illustrative application of the impact valuation framework presented in this report. We assessed Nike's supply chain management practices, valuing the impact of improving safety practices among its suppliers. The analysis considers both societal impacts, such as safety and wellbeing, as well as economic and financial benefits generated.

NIKE Context and Activities

NIKE, INC. is a leading global brand specializing in the design, development and marketing of athletic and lifestyle footwear, apparel and equipment. Central to its operations is an extensive value chain, which includes a vast network of more than 400 suppliers, predominantly located in Vietnam, Indonesia, China and Cambodia.

In 2018, NIKE defined a Culture of Safety (CoS) strategy and implementation program and conducted a pilot program to increase worker engagement within eight facility lines, achieving an 85% lower injury rate in the pilot lines compared to the traditional lines.[10] The CoS approach emphasizes enhancing local and enterprise-wide health and safety capabilities by empowering suppliers to manage their risks and boost competencies, including forming strategic partnerships, utilizing self-diagnostic tools and defining metrics for world-class performance.

The NIKE CoS presents a maturity model for health and safety, consisting of several progressive levels. Within this framework, suppliers begin at the compliance level and subsequently advance to the ultimate stage where safety is fully integrated into all operations and fundamentally interwoven into the supplier's values and culture.

Objective

This case study builds on the impact valuation framework and methodology proposed for *The New Value of Safety* report.

NIKE monitors the performance of its suppliers and their improvements closely. Based on NIKE's CoS approach, its suppliers advance in their maturity level of safety by increasing their quantitative and qualitative scores related to safety and engagement as a result of participating in the program.[11] In NIKE's CoS progression, suppliers begin at Compliance Level One, merely adhering to basic safety regulations. At Reactive Management Level Two, they actively manage risks and prevent accidents. Level Three, Proactive Management and Standardization, sees full adherence to NIKE's standards and the implementation of safety management systems. At this level, management tackles the root causes of accidents. Lastly, at Levels Four and Five, safety becomes a fundamental aspect of all operations and the supplier's culture.

This case study is intended to measure the value created by NIKE's suppliers as a result of improving their safety practices. The analysis considers both societal (safety/wellbeing impact) and economic/financial values generated for NIKE and its suppliers.

The societal value created for suppliers covers a variety of outcomes. The impact valuation reveals that the transition from Level Two to Level Three from 2021 to 2022 generated $170,309 in societal value, $619,600 in financial value for suppliers and an estimated $6.7 million in reputational value for NIKE.

[10]Global Sourcing at NIKE. **https://www.hbs.edu/faculty/Pages/item.aspx?num=55877**

Methodology and Data Sources

The analysis is based on the positive impact created at the supplier level, considering facilities progressing from safety maturity Level Two to Level Three, between the period of 2021 and 2022. The impact valuation reflects the change over this period, rather than the absolute value of NIKE programs overall and over time.

The societal value is built partly on primary data from NIKE, while the suppliers and NIKE business value are mostly estimated based on literature.[12] The primary data provided by quarter and per facility includes the maturity level of suppliers based on the Culture of Safety Maturity Assessment (CoSMA) database, engagement, and wellbeing questions, employee wellbeing scores per factory (EWB), number of workers per facility, and health and safety key performance indicators (KPIs) that collect safety, injury and illness information. The latter collects safety information and data on injury and illness, such as cases of injuries and illnesses per facility, time lost and hours worked, among others. The CoSMA database provides the results of the levels achieved per facility as a result of implementing the CoS program. The EWB is based on a survey comprising 16 questions covering various areas to measure worker wellbeing and engagement per site.

According to the maturity level information (CoSMA) provided by each supplier, 22 facilities moved to Level Three in 2022. One of these facilities isn't included in the analysis since this case study concentrates on suppliers transitioning from Level Two. This facility was excluded from the analysis because it transitioned from Level One to Level Three, and under this condition, it was outside the scope of the study. The total number of workers for the 21 sites under analysis moving from Level Two to Level Three is 71,062. This total represents the baseline for estimating the number of injury cases avoided due to the suppliers' level of improvement.

Considering the injury rate per level (total injuries by the number of annual workers at each level) and the difference in injury rates between levels, an estimation of 242 avoided injury cases was obtained. Based on the total number of injuries normalized by the number of workers, the estimated injury rate at Level Two is 0.7%, while the rate at Level Three is 0.4%, a difference of 0.34%.

Regarding the financial outputs, an estimation of total sales was taken from the 2022 financial statement.

Having calculated worker benefit and value created through improved safety maturity, number of avoided cases and estimated financial performance, we developed a set of relevant outcome metrics to value more comprehensive social and financial impacts.

The outcomes chosen from the main framework, as outlined in the full report, include the following:

Societal Value:

1. Improved quality of life
2. Belonging
3. Avoided household costs (workers/family)
4. Reduced cost to society (health care system/social benefits)
5. Career opportunities

Financial Value:

1. Change of operations costs
2. Increased worker productivity
3. Business continuity
4. Business reputation

Impact valuation results

Results are provided separately for the three different stakeholders: NIKE, suppliers and society.

[11] NIKE, INC. CULTURE OF SAFETY PLAYBOOK
[12] The European Agency for Safety and Health at Work (EU-OSHA)

Societal Value Results

The value of improved quality of life for workers shows the lowest societal value overall ($170,309) a year. This may stem from the fact that the injuries typically incurred are relatively minor and that suppliers are already working at a relatively high standard of safety performance.

Each facility generates an average societal value of $8,109 annually.

The **societal value** is higher for career opportunities ($48,661) and belonging ($44,142), taking into consideration that the change in practices improves worker belonging at work and generates transferable, valuable skills that can be utilized in the same company or elsewhere.

Row Labels	Sum of Societal value a year (USD)	Sum of Economic/ Financial value a year (USD)
Business - Supplier		
Cost saving		98,896
Productivity		520,726
Business - Supplier Total		**619,622**
Business - Nike		
Business continuity		51,173
Business reputation		6,650,243
Business - Nike Total		6,711,416
Society		
Improved quality of life	1,787	
Avoided household costs	20,192	
Belonging	44,142	
Career and income opportunities	48,661	
Reduced costs to society	55,528	
Society Total	170,309	

The savings in household costs ($20,192) and reduced costs to society ($55,528) are substantial. However, these estimations are based on secondary data and include different levels of injury severity, from low to high, which increases the average costs. These results might be overestimated, considering the severity of injuries at NIKE is assumed to be of low severity according to the safety maturity level of the suppliers under analysis in this case study (Level Three).

Business Value Results

Suppliers save costs because of the decreased rates of injuries and increased rate of engagement, leading to enhanced productivity. Suppliers that moved from Level Two to Level Three in 2022 generated $619,622 in value creation as a result. The financial value created by each facility is $349,097 and $103 per worker.

The **value to NIKE** is estimated in terms of business continuity and reputation. Business continuity value can be described as the reduction of risk of disruption stemming from a supplier. Considering the generally low severity of injuries in the supply chain, the overall benefit is relatively limited since these injuries are unlikely to result in substantial operational disruption. In terms of business reputation, the value generated may be much higher than calculations suggest given the increasing importance of supply chain worker safety in the minds of NIKE's customers. This case study estimates this value based on a fraction of NIKE sales

Key Findings and Recommendations

NIKE's maturity curve and program for suppliers deliver significant societal and business value. Overall, the 21 suppliers that moved from Level Two to Level Three from 2021 to 2022 created $170,300 of value to society, $619,600 of financial value for suppliers and an estimated $6.7 million of reputational value for NIKE.

The reduction of injuries and their subsequent benefits for worker wellbeing may be the smallest overall value creation element, potentially overshadowed by the benefits created via belonging and skills acquisition. Avoided social and household costs are most likely larger overall than wellbeing gains, even though the latter might be overestimated in the model.

Analysis shows that monitoring and reporting on environment, health and safety (EHS) initiatives could potentially evolve in the future in terms of KPIs to capture a wider value to society and business, beyond the traditional lost time rate and similar indicators. Capturing this value to society and business will open new opportunities to partner with stakeholders to further improve business value and provide valuable insight for organizational strategy.

The impact valuation approach gives greater visibility to the value created by EHS to society and business, as well as its relative scale (or, in ESG terms, materiality), which is not possible using traditional KPIs. Impact valuation will be very useful in engaging a variety of stakeholders to build on NIKE's value creation approach and overall benefit to the world.

7. Conclusion

This activation guide provides an impact framework, process and valuation methods that enable a comprehensive assessment of the safety and health initiatives of any organization. This framework facilitates evidence-based decision-making for all stakeholders involved, supporting the creation of positive societal impact while increasing the financial value of organizations.

The different valuation methods presented in this activation guide will allow:

- **External stakeholders to assess** the value derived from corporate actions on safety to determine their engagement with them, to aid in the development of new practices and regulations as well as investment and/or incentives supporting corporate actions
- **Business stakeholders** to convince internal leadership of the need to redefine the value of safety, support the development of new safety strategies and support the prioritization of activities to invest in and communicate the results of the strategy to internal and external stakeholders
- **ESG stakeholders** to embed the value of safety in investment decisions and engagement with businesses and to drive practice changes

The methodologies presented in this report are the first basis to assess the New Value of Safety, although we expect the field of impact valuation will evolve quickly in the future and new methodologies will develop, allowing us to refine the ones presented here. The National Safety Council will continue to track the evolution of this space and looks forward to the future of safety value and valuation.

8. Appendix I – Methodology

8.1. Note on Wellbeing Impact Valuation

The **wellbeing impact methodology** uses the metric of disability/quality-adjusted life years (DALY/QALY).[13] This is a highly relevant indicator, as life quality is one of society's ultimate objectives as a true measure of sustainability. Many societal impacts do not have an equivalent direct economic value, such as the value of societal integration (or belonging) and the reduced rate of disease in a population, but it is still essential to understand their contribution.

DALY can be monetized for the purpose of impact valuation studies or other applications. From a societal value perspective, any valuation of DALY/QALY must be constant across all geographies and aligned with human rights principles. Different valuation approaches can be used, such as the value of a statistical life (VSL) or the social utility of life:

> The **statistical value of life** (VSL) is the marginal rate of substitution between income (or wealth) and mortality risk. The VSL indicates how much individuals are willing to pay (WTP) to reduce the risk of death. Usually, this valuation approach results in higher estimates than the social utility of life. A standard estimate would be $200,000/DALY.
>
> The **social utility of life** expresses the value of life based on its utility to society and it is a slightly different concept from the statistical value of life. As such, it should be informed by the utility for a population or entire society rather than at the individual level. This value can be estimated based on the proxy of an average and ideal economic productivity approach. For this approach, the average productivity (in terms of GDP/capita) of advanced countries, such as OECD countries, can be used. For OECD countries, the value is $54,015/DALY.[14]

The ethical discussions surrounding the implementation of measures such as DALY or other metrics to assess the value of life raise various concerns. In summary, critics argue that quantifying the worth of human life through numerical metrics may undermine its intrinsic value and dignity. The subjectivity and potential cultural bias in determining the relative importance of health conditions and disabilities pose ethical challenges, as does the subjective nature of measuring quality of life.

Implementing metrics to measure quality of life provides benefits in terms of comparability and relevance. However, challenges exist in capturing the subjective and complex nature of quality of life, ensuring standardization across diverse populations, addressing ethical considerations and accounting for the full breadth of dimensions that constitute quality of life.

This guide provides alternatives and recommendations for valuation. However, its objective is not to take a position on which metric should be implemented.

Economic outcomes require utility models to translate effects into a change in the wellbeing of individuals (human capital) or groups of people (social capital). The Health Utility of Income and Taxes models (HUI and HUT), developed by Valuing Impact, can be used for this purpose. The HUI model relies on research developed by the WHO on the social determinants of health. It correlates health outcomes of life expectancy or quality of life with income inequalities within a country. The HUI accounts for the health gap due to income inequalities, the utility of income (which depends on a person's income level, as a poor person derives more utility from income than a more affluent person) and the baseline defined by the living wage.

The model is freely accessible and data at a country level and a global level are available. The HUI and HUT parameters are simple multipliers of the economic outcome (income or tax values) which are expressed in DALY/USD. More information on their development and use can be accessed from the main publication.[15]

[13]
[14] https://data.oecd.org/gdp/gross-domestic-product-gdp.htm
[15] https://www.valuingnature.ch/post/the-utility-of-income-and-taxes

8.2. Outcomes and Impact Valuation Methodologies

Figure 4 illustrates the three indicators proposed in the impact framework, their interconnection and their links to outcomes.

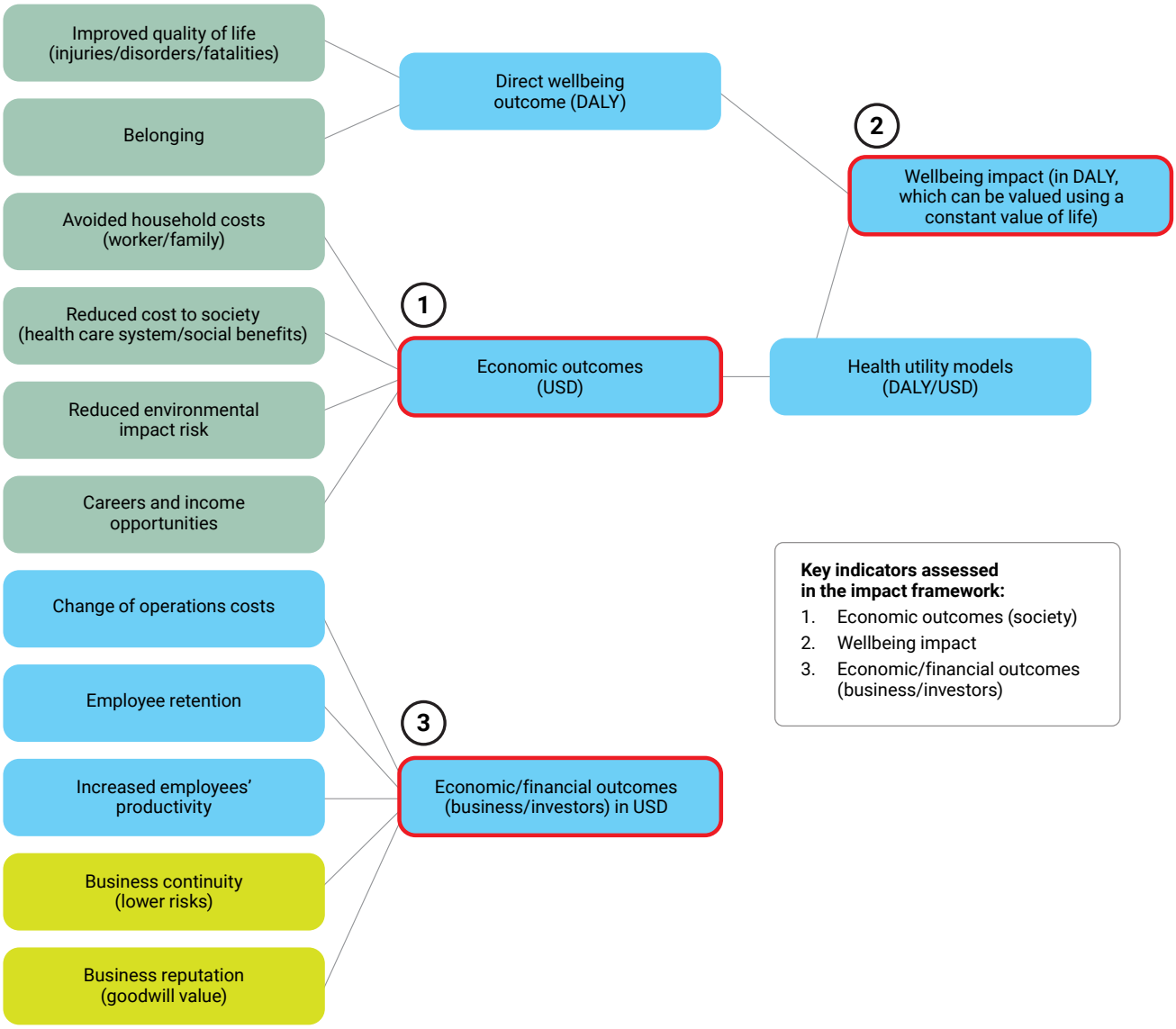

Figure 4: Illustration of the Key Indicators Proposed in the Impact Framework and Their Link to Outcomes

Table 5 presents a full description of each outcome and its valuation approach (a shorter version appeared on pages 12-14 of the main activation guide). A qualitative assessment of the maturity of the methods provided and their applicability is included.

Outcome	Valuation Approach	Maturity of Method	Applicability of Method
Stakeholders: External stakeholders **Indicators:** Economic outcomes (1) or wellbeing impact (2) – **Societal value**			
Improved Quality of Life (occupational injuries/ fatalities/diseases)	Quality of life refers to the overall wellbeing and satisfaction an individual experiences in various aspects of their life. The impact on wellbeing as a result of occupational injuries, fatalities or diseases can be measured using QALY/ DALY which is an indicator to measure the quality of life, and it is used in various fields such as public policy, medicine and social research. The Global Burden of Diseases, which provides estimates of mortality and morbidity across the world for all diseases and incident types, can be used to convert cases/incidents of occupational injuries, fatalities or diseases into wellbeing. These DALYs can be further valued in economic terms. We intentionally do not differentiate between the definitions of DALY and QALY. This indicator does not have an equivalent economic outcome.	High	High
Avoided Household Costs (worker/family)	As a result of occupational injuries/diseases, workers, families and households tend to absorb additional costs that include health care costs, the need for caregivers, out-of-pocket expenses, lost wages, loss of fringe/payroll benefits and home production losses. To translate this economic outcome into wellbeing impact, the method of the Health Utility of Income (HUI) is used.	Medium	High
Belonging	This concept refers to employees who experience a change in belonging feeling, overall satisfaction and integration at the workplace because of the implementation of a safety strategy. There are two effects to be considered: 1) the direct increase in safety/wellbeing for employees, and 2) the creation of employment opportunities and a financial improvement for individuals who wouldn't have such opportunities otherwise (diversity and inclusion). The level of direct impact depends on how strongly individuals feel a sense of belonging after the safety activity, which can be assessed through surveys to measure the value of wellbeing. In this instance, the DALY indicator is used. In addition, people who benefit from better integration are expected to receive a higher wage from the employment opportunity than they would have otherwise. The change in income is calculated from a baseline (economic outcome) and the impact is valued using the HUI indicator.	Medium	Medium
Reduced Costs to Society (health care system/social benefits)	Occupational injuries/diseases/fatalities generate costs for governments. The costs associated with health and safety systems in the public sector, including formal health care expenses, wage replacement and insurance replacement can be measured (economic outcome) using existing statistics. The wellbeing impact of these expenses can be valued using the Health Utility of Taxes method.	Medium	High
Reduced Environmental Impact Risk	A direct change of environmental impact (positive or negative) or avoided environmental impact risks from incidents can be assessed. Existing methodologies need to be considered, such as the Natural Capital Protocol or LCA (ISO 14'044). Due to scope, no further guidance is provided in this report on the topic.	High	Low
Careers and Income Opportunities	Safety activities often involve training and capacity building, which have value beyond the reduction of injuries and can be leveraged in existing or new professional opportunities. The benefit of the knowledge and skills acquired is measured based on how much workers can increase future earnings, which is called an earning premium. The earning premium is estimated using statistics from the World Bank[16], which serves to predict how much someone's earnings can increase due to their education or training. The earning premium cumulated over time represents the economic outcome. The wellbeing impact of this earning premium can be valued using the HUI valuation factors.	Medium	High

[16]Montenegro Claudio E. And Patrinos Harry Anthony (2014). Comparable estimates of returns to schooling around the world. World Bank Group. Policy research working paper 7020.

Outcome	Valuation Approach	Maturity of Method	Applicability of Method
Stakeholders: Business/ESG practitioners and investors **Outcomes:** Economic outcomes/financial value (3) – **Financial value**			
Change of Operations Costs	The average cost of an occupational injury or illness includes several factors such as wages replaced, employer adjustment costs (related to reorganizing work and training replacement staff to maintain output), rehabilitation costs (including medical and pharmacy expenses) and presenteeism (the combined cost of absenteeism and presenteeism). To estimate this cost, statistics from various databases are used to determine the average cost per country. Primary data can be used as well.	Medium	High
Employee Retention	Safety programs can increase employee retention, which leads to lower turnover and associated costs. The average cost of turnover can be obtained from the HR department. We provide a generic estimate of this cost in the methodology as well.	High	Medium
Increased Employee Productivity	Safety can lead to better employee engagement, which in turn can increase productivity as well. To value this outcome, we estimate the increase in production output from employees as a percentage of their salary. The data related to the increase in productivity can be provided by the HR department.	Medium	Medium
Business Continuity (lower risks)	Business continuity refers to the ability of an organization to continue operating or quickly resume operations in the event of unexpected disruptions. By reducing the risk of litigation or production disruption because of occupational injuries/diseases/fatalities, an organization can improve its resilience. The impact can be measured by calculating the potential increase in operational costs due to litigation. Additionally, production disruption can lead to loss of production, which can be estimated by multiplying the percentage reduction in the cost of goods by the probability of occurrence, which is typically low.	Medium	Low
Business Reputation	The reputation of a business is tied to customer perception, which can be influenced by safety results. To measure this reputation, the potential sales that could be lost due to a change in the customer's perception of safety performance can be estimated as a percentage. This value can be obtained through sector studies or surveys.	Medium	Low

Table 5: Outcomes, Their Valuation Approach, Maturity and Applicability (full explanations)

8.3. Outcomes impact valuation for societal value

8.3.1. Improved quality of life (occupational injuries/fatalities)[17]

$$Impact = \#Occupational\ injuries/diseases \cdot Disability\ weight\ (\%) \cdot Duration\ of\ change\ of\ wellbeing \cdot Value\ of\ life\ (\frac{USD}{DALY})$$

$$Impact = \#\ Occupational\ fatalities \cdot Remaining\ life\ expectancy\ (year) \cdot Value\ of\ life\ (\frac{USD}{DALY})$$

Outputs: # of injury/diseases/fatalities cases is an existing business KPI

Outcome: The outcome is the multiplication between the average disability weight (in %) and its duration (in years). The Global Burden of Disease (2019) publication provides disability weight for a range of injuries and diseases that can be used to directly match the injuries/diseases experienced by employees. The duration is typically based on primary data (the duration of the disability or absence from work) but can be estimated with safety or medical experts (an average can be considered between 5 and 25 days per case depending on the industry and country).

Wellbeing valuation factor: DALY valuation factor (see section 8.1).

Data Sources:

Primary Data from the Organization:

1. # of injuries/diseases/fatalities
2. Duration of the disability (years): days lost at work, expressed in years
3. Remaining life expectancy (year): based on the age of employees or using an average for the organization

Secondary Data:

4. Disability weight (%): Global Burden of Disease 2019[18]

[17] https://www.value-balancing.com/
[18] https://ghdx.healthdata.org/keyword/disability-weights

8.3.2. Avoided household costs

$$Impact = \#Occupational\ injuries\ or\ diseases \cdot Health\ care\ cost\ to\ employee\ family\ (\frac{USD}{case}) \cdot Case\ weight\ on\ household\ budget\ (\%) \cdot Health\ Utiliy\ of\ Income\ (\frac{USD}{DALY})$$

Outputs: # of injury/diseases/fatalities cases is an existing business KPI

Outcome (economic): The European Agency for Safety and Health at Work publication[19] provides the costs related to the employee/family for five European countries that deliver the average cost per event including health care costs, informal caregiver, out-of-pocket costs, wage losses, fringe/payroll benefit losses and home production losses. We extrapolated those costs to all countries in the world and calculated average costs per country's income group (World Bank classification, see sources of data below).

Case weight on the household's budget refers to the proportionate impact or burden that a specific incident or event has on the overall financial budgeting. This parameter is used when statistical or average data on health care cost to employee family is used, such as the placeholder data provided below. This parameter should be estimated based on income information, incident details and direct costs.

Wellbeing valuation factor: Health Utility of Income (HUI, see chapter 8.1).

Primary Data From the Organization:

1. # Occupational injuries/diseases/fatalities

Secondary Data:

2. Health care-related costs to the employee/family

   The table below presents the average cost per country according to the country's income groups.

   This data has been developed based on the EU OSHA publication and extended to all countries using correlations with parameters such as Purchasing Power Parity (PPP) and health care cost per capita per country from the World Bank.

	High income (USD/case)	Low income (USD/case)	Lower middle income (USD/case)	Upper middle income (USD/case)
Average	12.108	5.964	8.616	8.943
United States	19.924			
United Kingdom	18.561			
France	16.939			
China				12.936

[19] The value of occupational safety and health and the societal costs of work-related injuries and diseases European Risk Observatory Literature Review, 2019. The European Agency for Safety and Health at Work (EU-OSHA)

8.3.3. Belonging

$$Impact_{economic\ opportunity} = \#Employees \cdot Fraction\ of\ employees\ with\ higher\ belonging\ (\%) \cdot Employee\ average\ income\ gain\ \left(\frac{USD}{employee}\right) \cdot Health\ Utiliy\ of\ income\ \left(\frac{USD}{USD}\right)$$

$$Impact_{direct\ wellbeing} = \#Employees \cdot Fraction\ of\ employees\ with\ higher\ belonging\ (\%) \cdot Wellbeing\ from\ belonging\ \left(\frac{USD}{employee}\right) \cdot Value\ of\ Life\ \left(\frac{USD}{DALY}\right)$$

Outputs: The fraction of employees who experienced a change of belonging or integration (minorities, disabled persons or gender-based integration) after the implementation of the safety strategy. A survey of the employees can be useful to inform this output.

Outcome (wellbeing): The **economic opportunity** is calculated based on the additional income of employed minorities/disabled versus the baseline income they would get otherwise (it can be either no income if unemployed or a fraction of the current income).

The **direct wellbeing** that a group of people can experience through safety can be related to an avoided condition expressed in the Global Burden of Diseases, from the disability weight dataset expressed in %. We would recommend assuming a full year for this effect and consequently, the disability weight can be translated directly as a DALY.

The fraction of employees with a higher feeling of belonging is estimated based on the demographic statistics of employees, for example, selecting the ones targeted by integration measures.

Wellbeing valuation factor: DALY valuation factor (see chapter 8.1) for the direct wellbeing pathway and the Health Utility of Income (HUI, see chapter 8.1) for the economic opportunity.

Primary Data from Organization:

1. # of employees impacted (experiencing belonging effects specific to an intervention)
2. Employee average income gain
3. Wellbeing belonging (weighted factor DALYs). This factor can range from 0.1% to 1.0% depending on the intensity of the wellbeing created (strong 1%, medium 0.5%, weak 0.1%, for example) and should be measured in the same survey. If surveys demonstrate that 90%+ of output (employees) show an additional belonging feeling, the outcome could be considered strong (1%). Likewise, 50%-89% could be considered a medium outcome (0.5%) and below 49% weak (0.1%).

Secondary Data:

8.3.4. Reduced costs to society (health care system/social benefits)

$$Impact = \#\ Cases\ of\ occupational\ injuries/diseases \cdot Health\ care\ costs\ public\ sector\ \left(\frac{USD}{case}\right) \cdot Health\ Utiliy\ of\ Taxes\ \left(\frac{USD}{USD}\right)$$

Outputs: # of injury/diseases/fatalities cases is an existing business KPI, considering the ones with an absence from work (lost time)

Outcome (economic): The European Agency for Safety and Health at Work publication provides the total cost related to health and safety systems and the public sector for five European countries that deliver the average cost per event including all the expenses related to formal health care, share of wage replaced and insurance replaced. We extrapolated those costs to all countries in the world and calculated average costs per country's income group (World Bank classification, see sources of data below).

If needed, this outcome can be replaced by specific values that are context-specific to the assessment. A specific value might cover specific social benefits to compensate for some disability, unemployment, etc.

Wellbeing valuation factor: Health Utility of Taxes (HUT, see chapter 8.1)

Primary Data from Organization:

1. # of people who need medical leave due to injuries/diseases/disorders

Secondary Data:

2. Cost for medical leave/disability, retirement/death pension, public health and rehabilitation costs

   In the table below we can find the average cost per country according to the income level developed based on the EU OSHA publication.[20] The data has been developed based on the EU OSHA publication and extended to all countries using correlations with parameters such as current health care cost per capita (USD/capita) from the World Bank.

	High income	Low income	Lower middle income	Upper middle income
Average	3.745	56	235	831
United States	18.443			
United Kingdom	7.283			
France	7.585			
China				904

[20]The value of occupational safety and health and the societal costs of work-related injuries and diseases European Risk Observatory Literature Review, [2019]. The European Agency for Safety and Health at Work (EU-OSHA

8.3.5. Societal Value – Reduced Environmental Impact Risks

$$Impact = Activity\ output \cdot Impact\ driver\ per\ output \cdot Valuation\ factor$$

Outputs: Activity output can cover a variety of activities, from energy consumption, land and water use, emission of air pollutants, etc.

Outcome: Impact drivers are usually a characterization factor that translates an output flow into an impact indicator. Life Cycle Assessment (ISO 14044) is a good methodology to consider in this case, with impact methodologies such as ReCiPe. Databases such as ecoinvent[21] readily provide ReCiPe impact indicators for more than 10,000+ activities. Alternatively, the Capitals Coalition Natural Capital Protocol[22] is recommended to assess such impact.

Economic and wellbeing valuation factors: CE Delft 2018 publication[23] provides environmental prices (economic outcome) for a range of environmental impact indicators. To translate those economic costs into a wellbeing indicator, we recommend using an average and constant Health Utility of Taxes factor equal to 2 USD/USD.

Primary Data from Organization: depends on activity scope.

Secondary Data: depends on activity scope.

8.3.6. Careers and Income Opportunities (from training/skills)

$$\begin{aligned} Impact\ income \\ &= \#Duration\ of\ training\ (hours, days, months) \cdot Weighted\ value\ of\ training\ (\%) \\ &\cdot Earning\ premium\ of\ education\ \left(\frac{USD}{day,\ hour}\right) * Duration\ of\ the\ effect\ (years) \\ &\cdot Health\ Utiliy\ of\ Income\ \left(\frac{USD}{USD}\right) \end{aligned}$$

Outputs: # of employees with specific skills acquired through safety

Outcome: the outcome quantifies an earning premium expected from better employment opportunities allowed by the skills acquired.

Earning premium is quantified considering a proxy of earning premium from education in the world from the World Bank.[24] An average of 5% earning premium per year of education can be considered as a baseline. This earning premium multiplies the average income of the employee and the period (in years) in the future during which the effect is considered to happen. This period is typically estimated at 20 years. We divide the obtained value by the average expected hours of education per year, which we can estimate at eight months, 20 days per month and six hours of education per day on average (=960 hours/year of education).

Finally, the earning premium value obtained is multiplied by a weight representing the utility of the skill acquired externally on the job market (weighted value of training in %). Some training courses are only useful internally within a company while others will benefit the employee for their entire career, whatever the company. We recommend using 0%, 50% or 100% according to the increase in value and future job opportunities for the employee (low, medium, high). Low is when the training is only for internal purposes (e.g. knowing the evacuation route of the company). Medium is when the training is partially internally and partially externally driven. High is when the training has external value (e.g. the employee can add the training to their CV).

[21] https://ecoinvent.org/
[22] https://capitalscoalition.org/capitals-approach/natural-capital-protocol/?fwp_filter_tabs=guide_supplement
[23] https://cedelft.eu/publications/environmental-prices-handbook-eu28-version/
[24] Montenegro Claudio E. And Patrinos Harry Anthony (2014). Comparable estimates of returns to schooling around the world. World Bank Group. Policy research working paper 7020.

Wellbeing valuation factors: Health Utility of Income (HUI, see chapter 8.1)

Primary Data from Organization:

1. Hours of training/capacity building (in hours)

2. Weighted value of training (in %)

3. Employee average income (in USD/employee)

Secondary Data:

4. Future earning premium from education, based on a World Bank study[25](in %)

5. Duration of the effect (in years)

8.4. Business Value

8.4.1. Change of Operations Costs

$$Impact = \#\ \frac{Employees\ with\ occupational\ \frac{injuries}{diseases}}{disorders} \cdot Severity\ of\ case\ (\%) \cdot Change\ in\ operation\ costs\ (\frac{USD}{case})$$

Outputs: # of injury/disease/fatality cases

Outcome: The European Agency for Safety and Health at Work publication provides the most comprehensive figure of the total cost related to **lost income** to the employer for five European countries that share the average cost per event. This includes the share of wages replaced; employer adjustment costs (the costs associated with work reorganization and recruitment as well as the training of temporary or permanent replacement staff to maintain output); rehabilitation costs (medical and pharmacy costs) and presenteeism (absenteeism costs + presenteeism costs).

Primary Data from Organization:

1. # occupational injuries/diseases/fatalities

Secondary Data:

2. Change in operational costs (USD/case)

The following table provides average costs (in USD/case) per country income group (World Bank) developed based on the EU OSHA[26] publication and using Purchase Parity Power for a linear correlation model:

	High income	Low income	Lower middle income	Upper middle income
Average	6.642	3.272	4.726	4.906
United States	10.929			
United Kingdom	10.182			
France	9.292			
China				7.096

[25]Montenegro Claudio E. And Patrinos Harry Anthony (2014). Comparable estimates of returns to schooling around the world. World Bank Group. Policy research working paper 7020.

[26]The value of occupational safety and health and the societal costs of work-related injuries and diseases European Risk Observatory Literature Review, 2019. The European Agency for Safety and Health at Work (EU-OSHA)

8.4.2. Employee Retention

$$Impact = \#Employees \cdot Decrease\ of\ turn\ over\ (\%) \cdot Cost\ of\ hiring\ an\ employee\ including\ training\ and\ adapting\ the\ new\ employee\ \left(\frac{USD}{employee}\right)$$

Outputs: # of employees engaged by a safety initiative who experience an increased belonging effect

Outcome: The decrease in the turnover rate can be estimated at 10% for a placeholder; a more precise estimate can be provided considering statistics from an internal HR department. The cost of hiring an employee is usually obtained internally at companies, from internal HR, but can be estimated as 30% of their salary.

Note: *This pathway overlaps with the "Change of operations costs" pathway. This employee retention pathway can be used when more granular data exists, and more precise results need to be developed.*

Primary Data from Organization:

1. # of employees
2. Decrease in turnover – the HR department should provide the % decrease of turnover average from engaged employees thanks to safety engagement versus a control group.
3. The cost of turnover, which includes training and adapting the new employee, can be estimated at a one-time 30% of the employee salary per year or three months of wages. One way to measure the decrease in turnover might be a survey of belonging within the employee population.

Secondary Data:

8.4.3. Increased Employees' Productivity

$$Impact = \#Employees \cdot Productivity\ increase\ (\%) \cdot Average\ annual\ salary\ (USD/employee)$$

Outputs: # of employees concerned with the health and safety initiative

Outcome: The increase in productivity of an employee can be calculated as a percentage of the employee's annual salary and estimated (for instance between 5-25%) as the result of safety activities. HR statistics can also provide data related to the increase in productivity due to training.

Primary Data from Organization:

1. # of employees
2. Average annual salary

Secondary Data:

3. Productivity increase (%)

8.4.4. Business Continuity (lower risks)

$$Impact_{litigation} = \#Occupational\ injuries/disease \cdot Average\ cost\ of\ litigation\ (\frac{USD}{case}) \cdot Probability\ of\ litigation\ per\ event\ (\%) \cdot Decrease\ of\ H\&S\ events\ (\%)$$

$$Impact_{production\ disruption} = \#COGs\ value\ (USD) \cdot Probability\ of\ occurrence\ (\%) \cdot COGs\ reduction\ potential\ (\%)$$

Outputs: # of injury/disease/fatality cases and the value of Cost of Goods Sold (COGs)

Outcome: Litigation costs reflect the reduced risk of a decrease in sales over the year. This is measured by the average cost of litigation, nearly $115 million in the USA,[27] which we assume to occur with roughly 1% frequency. The probability of litigation per event might be expressed as a frequency, such as once every five years (20%). We can assume good EHS practices and results will decrease the potential risk of litigation by a specific % (we can assume 10% as a placeholder). All this data can potentially be obtained internally within an organization.

Production disruption is related to a physical event that prevents a company from operating its business normally. This can be, for instance, an incident involving staff in which production needs to be stopped. The avoided loss can be estimated with a % of avoided reduction of the Cost of Goods (the damage), multiplied by a probability of occurrence. The latter can be expressed by a frequency such as once every 10 years (0.1).

Primary Data from Organization:

1. # of occupational injuries/diseases/disorders
2. Cost of Goods Sold (COGs)

Secondary Data:

3. Average cost of litigation
4. Frequency of occurrence (litigation and physical disruption)
5. Potential avoided impact (% of COGS or rate of litigation reduced)

8.4.5. Business Value - Business Reputation

$$Impact = Total\ sales\ (\frac{USD}{year}) \cdot \%\ Consumers\ influenced\ by\ EHS$$

Outputs: The total sales reported in the company's Profit and Loss statement

Outcome: There is a percentage of consumers who are sensitive to companies' internal and supply chain policies, which affect their consumption choices. In the case of a strong safety strategy and implemented plan, consumers might show increased fidelity towards the brand, which can be expressed as a % of sales (usually relatively small).

Primary Data from Organization:

1. Total sales

Secondary Data:

2. % of consumers with high fidelity to the brand thanks to safety practices

[27] https://www.uscourts.gov/sites/default/files/litigation_cost_survey_of_major_companies_0.pdf

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