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**Development of an Environmental, Social and
Governance (ESG) Protocol in the Cinema and
Entertainment Industry in the Context of the Turin
Metropolitan Area**

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Development of an Environmental, Social and Governance (ESG) Protocol in the Cinema and Entertainment Industry in the Context of the Turin Metropolitan Area

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Abstract - English

The cinema and entertainment industry, while central to public culture, can also have harmful consequences for the environment, local communities, and the territorial and spatial contexts in which productions are set, issues that intersect with architectural and urban conditions. The film industry is characterised by its extensive energy use, global travel, large waste outputs, and excessive consumption of natural resources. The industry also grapples with challenges of gender and racial equity, and labour precarity. Environmental, Social, and Governance (ESG) practices are now central in conversations about sustainability globally. However, the film industry has yet to establish a consistent framework for implementing ESG practices. This research has been carried out as part of the project “Innovation and Training for a Green Transition in the Cultural and Film Sector” (INFO-SCC), led by the research team at Politecnico di Torino and funded by the Italian Ministry of Culture through the National Recovery and Resilience Plan (PNRR). The INFO-SCC project aims to support the regional cultural and film sector in developing ESG indicators and tools for guiding greener and more responsible production practices. The project involves partnerships across academia, cultural institutions, and the cinema and entertainment industry. In this context, the objective of this thesis is to evaluate the possible application of ESG criteria in the cinema sector through participatory methods, contributing research insights to the broader aims of the INFO-SCC project. The methodology includes literature review, development of a survey, interviews, and two participatory workshops using interactive methods, including Playing cards and World Café, which led to a set of priority sustainability domains being identified and a path towards measurable indicators generated for each of them. Early traction has shown that it is possible to build a context-specific ESG performance framework for film, based directly on stakeholder engagement. This thesis not only addresses an existing gap in the cinema industry in terms of its ESG standards, but also presents a practical strategy to identify significant KPIs that can lead to more accountable, equitable, and sustainable behaviours around filmmaking.

Keywords: ESG Indicators, Cinema Industry, Environmental Sustainability, Key Performance Indicators, Sustainable Production.

Abstract - Italian

L'industria cinematografica e dell'intrattenimento, pur occupando una posizione centrale nella cultura pubblica, può generare conseguenze dannose per l'ambiente, le comunità locali e i contesti territoriali e spaziali in cui le produzioni hanno luogo, aspetti che si intersecano con dinamiche architettoniche e urbane. Il settore cinematografico è caratterizzato da un elevato consumo energetico, da spostamenti internazionali, da ingenti quantità di rifiuti e da un uso eccessivo delle risorse naturali; al contempo deve affrontare criticità legate all'equità di genere e razziale e alla precarietà lavorativa. I criteri Environmental, Social, and Governance (ESG) sono oggi centrali nel dibattito globale sulla sostenibilità; tuttavia, l'industria cinematografica non dispone ancora di un quadro coerente per la loro applicazione. La presente ricerca è stata condotta nell'ambito del progetto “Innovazione e Formazione per una Transizione Green nel Settore Culturale e Cinematografico” (INFO-SCC), coordinato dal Politecnico di Torino e finanziato dal Ministero della Cultura con fondi PNRR. Il progetto INFO-SCC mira a sostenere il settore culturale e cinematografico regionale nello sviluppo di indicatori e strumenti ESG per orientare pratiche di produzione più sostenibili e responsabili, coinvolgendo partenariati tra il mondo accademico, le istituzioni culturali e l'industria del cinema e dell'intrattenimento. In questo contesto, l'obiettivo della tesi è valutare la possibile applicazione dei criteri ESG nel settore cinematografico attraverso metodi partecipativi, contribuendo agli obiettivi più ampi del progetto INFO-SCC. La metodologia adottata comprende una revisione della letteratura, la messa a punto di un questionario, la conduzione di interviste e due workshop partecipativi basati su metodi interattivi, tra cui Playing Cards e World Cafè, che hanno portato all'identificazione di ambiti prioritari di sostenibilità e alla definizione di un percorso verso indicatori misurabili. I risultati preliminari dimostrano che è possibile sviluppare un quadro di valutazione ESG contestualizzato per il settore cinematografico, fondato sul coinvolgimento diretto degli stakeholder. Questa tesi non solo colma una lacuna esistente negli standard ESG dell'industria cinematografica, ma propone anche una strategia per individuare KPI significativi in grado di promuovere comportamenti più responsabili, equi e sostenibili nella produzione audiovisiva.

Parole chiave: Indicatori ESG, Industria cinematografica, Sostenibilità ambientale, Indicatori chiave di prestazione (KPI), Produzione sostenibile.

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1. Chapter 1: Introduction

1.1 Background and context

1.1.1 Climate Crisis

In recent years, the impacts of climate change have intensified dramatically, turning environmental and social sustainability into global concerns that require immediate action. With rising global temperatures, intense weather phenomena, and ecological upheavals no longer being future threats but current events impacting millions around the globe, the scientific warnings of these repercussions, presenting clear indications of the causes and the potentially disastrous effects if not curbed, can no longer be ignored. However, despite this near-universal consensus on climate change, a significant gap remains between the severity of the crisis and the international policy response. Since the mid-20th century, environmental psychologists have been working on how to explain and encourage environmentally friendly behaviour. But as the 21st century progressed, these problems became increasingly urgent, demanding prompt attention and action (Clayton, 2024).

The production of coal, oil, and gas releases billions of tonnes of CO₂ into the atmosphere annually. Greenhouse gas emissions from human activity are at an all-time high and show no signs of decreasing. Sea levels are already rising as a result of the polar and mountain regions' glaciers and ice sheets melting more quickly than before. Nearly 40% of people on the planet reside within 100 kilometres of a coast, and nearly two-thirds of cities with a population of five million or more are situated in regions vulnerable to sea level rise. Within our lifetimes, entire neighbourhoods of New York, Shanghai, Abu Dhabi, Osaka, Rio de Janeiro, and many other cities may be underwater, forcing residents to relocate (United Nations).

Climate change is one of the most significant global challenges of the 21st century and requires rapid and coordinated action at the international level. The Paris Agreement represents a major advance in global climate governance in the face of growing environmental risks. The Paris Agreement is the first legally binding international accord that brings all countries to fight against climate change and to adapt to climate impacts. The Paris Agreement was adopted on December 12, 2015, by 196 Parties at the 21st session of the Climate Change Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (the UNFCCC) and entered into force on November 4, 2016. The goal of the Paris Agreement is to

limit the extent of global temperature rise to below 2°C above pre-industrial levels and to work to limit it to 1.5°C. More recently, the more ambitious target of 1.5°C has received considerable attention in light of the scientific consensus, particularly from the Intergovernmental Panel on Climate Change (IPCC), regarding the significantly increased risks posed by exceeding the 1.5°C threshold. If this threshold is exceeded, the environmental consequences may be catastrophic and potentially irreversible, including the increase in frequency and intensity of heat waves, droughts, and heavy rainfall events. As highlighted by the IPCC, reductions in greenhouse gas emissions must start immediately to avoid such outcomes. Global greenhouse gas emissions must peak no later than 2025 and then decline by approximately 43% by 2030. Accordingly, the Paris Agreement provides both a legal framework and a moral obligation for both developed and developing countries to commit to climate action. The Paris Agreement is an important piece of the multilateral effort in protecting the Earth for present and future generations, due to its binding nature and global reach (UNFCCC).

To effectively address climate change, it must be viewed as a serious issue and integrated into the very fabric of our social and economic systems. Solutions must not only minimise environmental harms but also promote equity, ensuring that no one is left behind in the pursuit of a sustainable future. The IPCC reinforces that any climate solutions must be fair and just, both in process and in resource allocation, so that they result in a more effective and equitable development outcome (World Bank, 2024).

While global frameworks such as the Paris Agreement underscore the need for urgent and equitable action on the climate crisis, innovation of both technology and institutions is a major enabling factor of change. An all-encompassing digital agenda, as portrayed in UNDP's Digital Strategy 2022-2025, illustrates this point. By combining interoperable digital infrastructure, local innovation ecosystems, and improved digital capabilities, inclusive, sustainable, accountable digital ecosystems that respect the human right to digital development can be fostered.

In the creative sector, digital capabilities support environmental accountability through lower carbon emissions and better material usage via virtual production. They also support social

accountability through increased access and participation and improve governance by increasing transparency and supporting data-driven decision-making (UNDP, 2022).

The elements shown in the figure are also subject to influences from a supportive institutional and regulatory environment, organisational culture (e.g., shared values and mindsets), systems thinking, data governance, and ICT infrastructures (Mansurov et al., 2023).



Figure 1.1: UNDP's whole-of-society digital approach. Source: https://digitalstrategy.undp.org/documents/Digital-Strategy-2022-2025-Full-Document_ENG_Interactive.pdf

1.1.2 Social Crisis

The absence of social justice-based considerations in climate adaptation strategies directly contributes to exacerbating existing inequality and instigating social crises more broadly. Climate change does not affect all populations uniformly, its impact is skewed towards already marginalised communities, ramping up economic and social instability. While the EU Adaptation Strategy acknowledges these disparities, more concrete actions are needed to

address their root causes. Such actions would better protect vulnerable groups from environmental harm and systemic injustice (European Commission).

Modern social crises have become very pressing worldwide, affecting governments and communities and threatening social stability and well-being. For the purpose of this discussion, any situation that poses a threat to social life could, in general, be referred to as a crisis, in spite of differences in perception. A clear identification of these challenges will help in finding their solutions through early action (Panagiotopoulos et al., 2016).

In times of crisis, having timely and factual knowledge about the situation is vital to develop effective solutions. The COVID-19 pandemic revealed and widened existing inequalities across Europe, even prior to Russia's invasion of Ukraine in 2022. Energy poverty was triggered by the war, which in turn led to an energy and cost-of-living crisis. The crushing energy prices have driven even middle-class households to the brink, and so energy policy is now a key issue of conversation in the EU. Some experts have referred to the situation as a “social catastrophe” and the “existential crisis” of societies in Europe. With inflation and energy prices at an all-time high, huge demonstrations have erupted in several countries (Adam et al., 2023).

Both gender oppression and the climate crisis interrelate in various ways. Feminist advocates since the 1990s have made an extensive push for international climate policies to accommodate divergent conditions challenging women. The Paris Agreement does incorporate gender mainstreaming, but in most such policy documentation, no concrete strategies exist for these inequalities to be effectively managed (Allwood, 2020).

1.1.3 The European Green Deal and ESG Frameworks

In 2015, the United Nations provided a plan of action for peace and prosperity for people and the planet, through the 2030 Agenda for Sustainable Development. The agenda contained 17 Sustainable Development Goals (SDGs) to resolve urgent global problems affecting people and the environment. The SDGs demonstrate that sustainable development is not only a principle for development, but is an interdependent statement, meaning that eradicating poverty, bettering health and education, reducing inequality, and economic growth must occur with the fight against climate change and degradation of natural resources. The SDGs promote a universal

agenda, thus inviting all countries and stakeholders to work together and act in partnership in achieving the goals. The SDGs are interrelated and indivisible, meaning the economic, social and environmental dimensions of development must be balanced. In this way, sustainability efforts to shape and influence organisational practices using elements such as Environmental, Social, and Governance (ESG) protocols and digital skills can help organisations build on institutional activities that align with the SDG while enabling the transformational change in society for action and the change required to achieve these global goals (United Nations).



Figure 1.2: The 17 Sustainable Development Goals. Source: United Nations

Building on the urgency for climate action as highlighted by the IPCC and formalised in the Paris Agreement, the European Union has presented the European Green Deal and associated ESG regulatory frameworks to facilitate a coordinated transformation across sectors. Environmental, Social, and Governance (ESG) principles came from the financial sector, intended to guide investment toward sustainable initiatives. The term "ESG" was first publicly introduced by the UN in the 2004 UN report "Who Cares Wins," created by the UN Global Compact and UNEP Finance Initiative, which encouraged investors to consider environmental, social, and governance issues as well as financial returns (Corporate Governance Institute, 2024).

Three key regulations form the basis of the ESG framework in Europe:

1. Sustainable Finance Disclosure Regulation (SFDR) (Regulation EU 2019/2088): from 10 March 2021—requires financial market participants to disclose how sustainability risks and impacts are integrated into investment decisions, which helps to stop greenwashing and assist in redirecting capital towards sustainable assets (European Commission, n.d.).
2. EU Taxonomy Regulation (Regulation EU 2020/852): came into effect on 12 July 2020, as a component of the European Green Deal's Sustainable Finance Action Plan. The regulation provides a common classification system for determining which economic activities are environmentally sustainable and therefore eligible for green investment. The Taxonomy is based on six environmental objectives (for example, climate change mitigation, climate change adaptation, the circular economy, pollution prevention, water protection, and biodiversity) and requires that economic activities must not only significantly contribute to one objective, but also “do no significant harm” (DNSH) to the others. Thus, the regulation ensures that investments are consistent with the EU’s climate neutrality targets, while avoiding adverse unintended consequences (European Commission, n.d.) (European Commission, 2024).
3. Corporate Sustainability Reporting Directive (CSRD) (effective January 2023): requires standardised ESG reporting for a wide range of companies, tying disclosures to the Taxonomy's criteria (KeyESG, n.d.).

These policies create a powerful EU mechanism designed to integrate ESG transparency and accountability into finance and corporate sectors and turn the UN 2030 Agenda into action by directing both capital and corporate behaviour to drive sustainability, equity, and strong governance.

The European Union is painfully aware of the threats posed by climate change that stem from climate change and environmental degradation. The EU adopted the European Green Deal with the ambition of showcasing what a "new growth strategy" looks like, and in this case, the aim is to make Europe climate neutral by 2050, enable substantial economic growth across Europe through green technology, create sustainable industries, enhance sustainable transport systems,

and reduce air and water pollution while transforming all sectors in a socially just and inclusive way.

The European Green Deal serves as a guiding framework for the EU's transformation in all sectors, while simultaneously combining climate action with digital innovation and ESG principles. The advancement of ESG policy embraces international climate action goals associated with, for example, the Paris Agreement, while configuring the approach to the EU context. The Green Deal frames ESG-aligned strategies as critical across all sectors, requiring good governance to be applied consistently at the corporate level, while also promoting private-sector innovation and broad social impact. As specified before, digital innovation will act as a key enabler of sustainability. EU strategy underlines this when calling for businesses to provide the confidence, competences and means to digitalise and grow, establishing a digital capacity as part of a transition to green.(European Commission, 2019).



Figure 1.3: The European Green Deal. Source: <https://energica-h2020.eu/green-deal/>

The Figure 1.3 shows eight thematic areas reflecting the key work streams of the European Green Deal.

The Fit for 55 package consists of a set of proposals to amend existing EU legislation and implement new initiatives to align EU policies with the climate goals set out by the Council and the European Parliament. The Fit for 55 refers to the EU's target of cutting net greenhouse gas emissions by at least 55% by 2030. The proposed package of initiatives seeks to align existing

EU legislation with the 2030 target. The proposed package seeks to provide a cohesive, balanced framework for achieving EU climate targets, including:

- a. ensuring a fair and just transition
- b. maintaining and enhancing the ability of EU industry to innovate and compete fairly with economic operators from third countries
- c. supporting the EU's position as a global leader in the fight against climate change

(Renewable Carbon News, 2022).

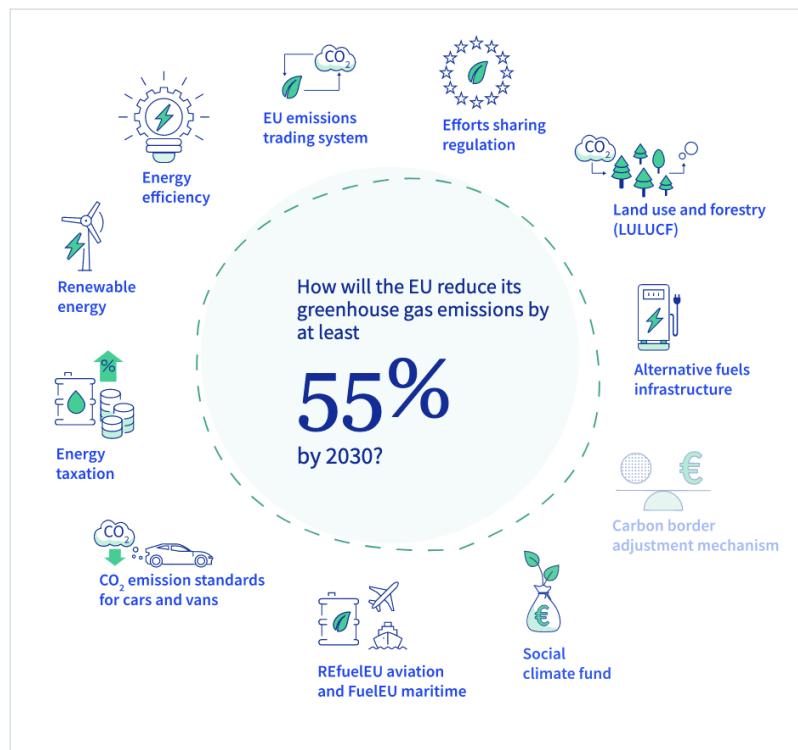


Figure 1.4: The Fit for 55 package. Source:
<https://renewable-carbon.eu/news/fit-for-55-the-eus-plan-for-a-green-transition/>

In July 2021, the Fit for 55 package was presented to the Council, and the Figure 1.4 depicts that it is currently being discussed in a number of policy areas, including environment, energy, transport and economic and financial affairs (Renewable Carbon News, 2022).

Given these global sustainability challenges, it is crucial to examine how specific sectors, such as the film industry, are responding.

1.2 Problem Statement

Against this backdrop, the film industry faces specific sustainability challenges. According to the IPCC, industrial activity accounts for approximately 45% of total global greenhouse gas emissions, making industries a primary driver of climate change and important to action to redesign or restructure for sustainable and just practices (IPCC, 2022).

The creative industries include design, music, events, and media, which may not conventionally see themselves as heavy polluters, but their ecological footprint is increasing. Research by Julie's Bicycle points to emissions as a result of travel, energy and materials usage in these industries, but they also provide an important opportunity to act on climate through storytelling and culture (Julie's Bicycle, 2022).

The film industry faces significant environmental and social challenges that must be addressed to contribute to a more sustainable and equitable future. While this field is widely recognised for its cultural influence and economic importance, it generates great ecological pressure. Extensive energy consumption, significant resource use and substantial waste production are characteristic of film crew activities from set-building through post-production. Another factor contributing to the industry's high carbon footprint is its reliance on carbon-intensive practices such as frequent travel for on-location filming and energy-intensive studio operations. Although there is growing concern and some efforts toward greener productions, there are often financial and operational constraints that hinder such improvements. The industry often remains far behind others in its response to global sustainability goals.

In addition to the environmental issues, the film industry also faces some deep-seated social and ethical issues. Working conditions are often precarious, characterised by long hours, job insecurity, and significant imbalances in pay and representation. Marginalised groups, specifically women, people of colour, and low-wage labourers in the industry, still experience systematic barriers, which restrict their access to equal opportunity. These structural inequalities further marginalise these groups, making them particularly vulnerable and limiting their advancement in an environment where equity is not guaranteed.

Participants in almost every other field now recognise the growing importance of sustainability and social responsibility in their practices. This comes from collective action geared to pass

laws directed at minimising damage to the environment and protecting workers. Moreover, consumers have begun to spend more on ethical products as awareness of corporate social issues has risen. This shift is also reflected in investment strategies that prioritize objectives beyond mere financial returns, seeking social and environmental impacts to derive positive change (Silva, 2022).

1.3 Objectives of the study

The purpose of this study is to investigate the sustainability evaluation frameworks in the film industry by using a participatory, mixed-methods approach to identify priority sustainability areas and relevant performance indicators.

Where ESG principles are guiding an increasing number of industries, their application in the highly fragmented and project-based industry of film proves very difficult and more restrictive. This paper explores if and how the frameworks may be appropriately translated and applied to a film production environment of independent producers, studios and cultural organisations.

To achieve the overall aim, the research will pursue the following specific objectives:

1. Undertake actual state analysis through case studies to assess current sustainability practices in film production.
2. Identify and validate collectively the priority sustainability areas through a comprehensive literature review while integrating ESG frameworks.
3. Implement a participatory method to capture stakeholder preferences for the sustainability areas.
4. Co-develop a preliminary and context-specific set of sustainability KPIs based on stakeholder preferences, to act as a foundation for future implementation and measurable progress.

1.4 Research questions

Accordingly, the study is guided by the following research questions:

1. In film production, what is the current status of ESG principles?

2. How can participatory approaches be used to identify and prioritise ESG principles in film production?
3. What key performance indicators (KPIs) can be co-developed with stakeholders to support actionable, measurable, and contextualised approaches to ESG assessment in the film industry?

1.5 Significance of the Study

This research is important because it helps industry stakeholders understand how the film sector can employ Environment, Social and Governance (ESG) principles to better align with broader sustainability goals. As accountability related to environmental and social issues becomes a priority for other sectors, there is a responsibility and opportunity for the film industry to lead by example. This study explores how industry staff can implement ESG concepts in decision-making processes and demonstrates a pathway towards a more sustainable and equitable industry. The study also identifies clear gaps in current ESG practices (for example, in areas such as transparency, representation and operations). Despite growing sustainability efforts in other sectors, the film industry lacks a standardised ESG framework and clear metrics for progress. This study identified practical indicators (KPIs) that are specific to the film industry and that aim to make ESG adoption tangible and measurable.

1.6 Thesis Structure Context

The remainder of this thesis is organised as follows. Chapter 2 provides a review of relevant literature and how these frameworks have been applied in the film industry, and highlights some knowledge gaps. Chapter 3 outlines the methodology, a case study approach, which involved participatory methods to develop a set of ESG performance indicators. Chapter 4 presents the results and stakeholder engagement activities. Chapter 5 concludes the thesis with a summary of major contributions, conclusions based on the research questions, and recommendations for future research and development pathways for sustainability evaluation in film production.

2. Chapter 2: Literature Review

This chapter reviews the literature on ESG (Environmental, Social, and Governance) frameworks and protocols in the film and entertainment sector. The chapter begins with definitions and frameworks of ESG. Before considering how these ESG principles relate to film production, first consider environmental principles related to carbon footprint and resource usage, then social principles like diversity and labour rights, and governance principles like accountability. The chapter also examines industry trends and developments globally, as well as case studies examining ESG incorporation in film and the entertainment sector, while also signalling gaps in knowledge around ESG implementation and potential future research directions.

2.1 ESG: Definition and Frameworks

ESG is a framework that helps stakeholders evaluate how an organisation is addressing risks and opportunities tied to environmental, social, and governance criteria (also referred to as ESG factors). According to the Corporate Finance Institute, ESG is a holistic concept involving more than just environmental issues, despite common misconceptions that equate ESG solely with green concerns.



Figure 2.1 ESG pillars. Source: Corporate Finance Institute (Peterdy, CFI 2025), [ESG \(Environmental, Social, & Governance\)](#)

Though the term ESG is most frequently applied in discussions about investment, it is relevant for all stakeholder groups, such as customers, suppliers, and employees, who are becoming more interested in the sustainability of an organisation's operations.

While ESG became widely known after appearing in a UN report in 2004, it was not until the late 2010s and into the 2020s that ESG became more strategic. ESG is now a well-established framework that comprises key components around Environmental and Social impacts, and Governance mechanisms needed to optimise stakeholder welfare (Peterdy, CFI 2025).

With increasing interest in sustainability, many different ESG reporting frameworks and standards have emerged, often referred to as ‘Alphabet Soup’ (for example, GRI, SASB, and CDSB) have become a necessary tool in an ESG context (Quantive, 2025). ESG reporting frameworks have been developed by a diverse range of organisations, including non-governmental organisations (NGOs), stock exchanges, global businesses, not-for-profit organisations, and governments. There may be hundreds of ESG frameworks. However, only around a dozen may be prominent. Typically, the frameworks prescribe the qualitative and quantitative metrics that a company would want to report and the format and frequency of reporting. Some are voluntary frameworks while others are mandated by governmental agencies.

The speed at which ESG metrics are managed is nothing short of remarkable. Much of this is in response to increasing investor and community interest, with many more organisations focused on improving their sustainability performance, on establishing ESG objectives and on reporting their performance. Thus, ESG has moved from the fringe to the centre. More importantly, organisations are required to report their ESG performance in ways that we have not previously seen. Ignoring ESG risks could subject companies to multiple negative impacts that range from shareholder activism at annual general meetings to divestment by asset managers. The increasing importance of ESG means organisations are reporting their ESG impact through an ever-growing range of different frameworks (IBM, 2025).

Whereas ESG frameworks furnish directional support and best practices, ESG standards innovators incite engagement based on benchmarks of ESG commitment that they must adhere to. These are representative of the quality of the ESG efforts and can be used by investors, rating agencies, and other stakeholders to assess the performance (Quantive, 2025).

ESG reporting frameworks provide ESG management benefits. The additional benefits of adopting ESG frameworks include:

- a. Staying aligned with stakeholder expectations: addressing ESG-minded stakeholder concerns to build trust.
- b. Regulatory compliance: anticipating and meeting emerging ESG-related regulations.
- c. Risk and opportunity management: identifying ESG risks and opportunities to support long-term business longevity.
- d. Standardising performance: using a common framework to benchmark ESG performance against peers.
- e. Competitive advantage: demonstrating commitment to sustainability can distinguish a company from competitors.
- f. Access to capital: appealing to investors focused on ESG factors can improve prospects (Quantive, 2025).

ESG serves as an abbreviation denoting environmental, social, and governance:

2.1.1. Environmental

Environmental considerations are associated with the impacts of a company on the environment and environmental risk mitigation measures according to ESG principles, such as direct and indirect greenhouse gas emissions, management stewardship of natural resources and sustainability as appropriate regarding physical climate risks (i.e. climate change, flooding and fires) (Peterdy, CFI 2025).

2.1.2. Social

The social pillar encompasses the company itself and its interactions with its stakeholders. Examples of stakeholder impacts to which a company will be assessed against could include Human Capital Management (HCM) metrics (e.g. a living wage, employee engagement), to the company's direct and indirect impacts on the geographical communities where it operates. A core component of ESG principles includes how social impacts have a reasonable expectation as well from the company beyond its own broader walls through its supply line to the company

at large, particularly in the developing world, which can involve less rigid environmental and labour metrics (Peterdy, CFI 2025).

2.1.3. Governance

Corporate governance is considered by a company as it relates to research into how a company is led and governed. ESG researchers are typically interested in how leadership and incentives intersect with stakeholder expectations of corporations, how the company relates with and respects shareholder rights, and what kinds of controls a company has to achieve transparency and accountability around leadership argument (Peterdy, CFI 2025).

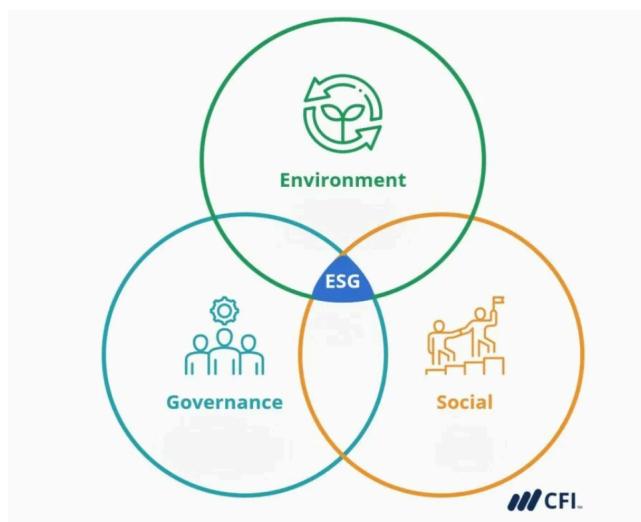


Figure 2.2 The ESG interconnection. Source: Corporate Finance Institute (Peterdy, CFI 2025), [ESG \(Environmental, Social, & Governance\)](#)

A few examples of environmental issues are climate change and emissions, stewardship of the natural environment (natural resources), and waste management (including recycling). Examples of social issues include human capital management, customer welfare, and community Insights related to the "S" in ESG (Social Issues) may also include DEI (diversity, equity, and inclusion). And for governance, examples may include board composition, executive compensation and pay equity, enterprise risk management (ERM), and bribery and corruption (Peterdy, CFI 2025).

2.2 ESG in the Context of the Entertainment and Film Industry

In recent years, films and documentaries have emerged as a tool for educating the public and developing knowledge and practice to mobilise awareness about critical international issues related to environmental safeguards, climate change, human rights violations, and equality for all identified groups. Although there have been instances where these films have spurred public action and encouraged government policy actions, the film industry itself faces increasing criticism for the significant impact it has on the environment. Specific to the film production process, film productions generate various pollutants, whether through greenhouse gas emissions, chemical waste, or air pollution, while being both messengers and agents of the environmental situation they are concerned with (Jayasinghe, 2025).

2.2.1 Environmental Impact of Film Production

- Carbon Footprint

The entertainment industry generates substantial carbon emissions. Recent analysis shows that a single big-budget film (“tentpole” production) can produce around 3,370 metric tons of CO₂, roughly equivalent to the annual energy use of 600+ American homes. Even smaller-budget films average about 391 metric tons. Across the industry, major sources of emissions include on-location fuels and air travel (Sax, 2024). This significant carbon footprint has increasingly come under scrutiny.

In response to such findings, industry bodies have begun to act. The report published by the British Film Institute (BFI) advocated for improved reporting criteria and has commenced advocating for the use of eco-consultants in the pre-planning stages of film production. With the publication of this report, many cinema businesses and Over The Top (OTT) media service providers_ streaming platforms that deliver content directly to the end-user via the Internet have begun pursuing sustainable practices by utilising ESG initiatives with the intent to manage their carbon emissions while ensuring a socially responsible and conscious connection with the audience. More recently, global film producers have also turned their attention towards pursuing ESG initiatives in the production process to support sustainable practices in the film industry (Jayasinghe, 2025). These efforts signal a growing intent within the industry to mitigate its environmental impact.

Environmental activists have raised concerns that many OTT platforms are also guilty of causing air pollution as a result of carbon emissions. Consequently, some of the leading OTT platforms like Netflix and Amazon Prime have executed several initiatives aligned with the ESG framework, including reducing waste on set, banning single-use plastics, recycling, sensitising cast and crew, measuring the environmental impact, implementing waste separation, and collaborating closely with local authorities and communities to achieve environmentally sustainable production practices. These initiatives demonstrate that the global cinema industry, OTT platforms, and studios are committed to aligning their production and distribution practices with ESG initiatives, with the intentions of achieving efficient resource utilisation, developing risk management measures, adapting to difficult circumstances, attracting and retaining talent, and developing confidence for everyone who has an invested interest in the industry. While the implementation of sustainable practices can enhance the perception of the sector and establish it as a significant player in the overall entertainment landscape, moving toward sustainable filmmaking is still particularly challenging. With limited funding and resources, shortfalls in infrastructure and challenges in technology, establishing a more sustainable way of filmmaking is still an issue. Yet these challenges are not only hurdles for the industry but will even provide avenues for innovation and growth (Jayasinghe, 2025).

Sustainability is significant to all industries, and the film industry is under growing scrutiny for its impact on the climate. The Sustainable Production Alliance (SPA) is a consortium of film, TV and streaming companies looking to make the overall entertainment industry more sustainable. The members of the consortium include Amazon Studios, Disney, Fox Corp, NBC Universal, Netflix, Sony Pictures, and WarnerMedia. SPA's report details an analysis of carbon emission factors relating to the production, including flights, housing, fuel and utilities. The primary contributor for each film company, small, medium and large productions, was fuel used by vehicle production and power generation (Spangler, 2021).

The report "Close Up Carbon Emissions of Film and Television Production" contains industry-wide production carbon footprint averages for SPA member companies for the years 2016 to 2019. The report examined the carbon footprint of production from 161 feature films and 266 TV series, all of which utilised PEAR, the Production Environmental Accounting

Report designed for the industry in partnership between SPA and the PGA Green committee of the Producers Guild of America Foundation (Spangler, 2021).

The report findings include:

TV Series: For scripted hour-long dramas, the carbon footprint of production was approximately 77 metric tons of CO₂ emissions per episode. A half-hour scripted single-camera show had a carbon footprint of approximately 26 metric tons per episode, and a half-hour scripted multi-camera show had an estimated carbon footprint of approximately 18 metric tons. The carbon footprint of unscripted shows was estimated to be approximately 13 metric tons (Spangler, 2021).

The report quantifies direct emissions, like those from fuel, and indirect emissions from purchased electricity, air travel and accommodations in considering its calculation. Fuel typically was the largest source of greenhouse-gas emissions on film and TV productions, accounting for 48%-56% of emissions for films and 58% for scripted TV dramas. The report follows Netflix's recent commitment to net-zero carbon emissions by the end of 2022, with original productions accounting for about half of Netflix's carbon footprint. The SPA announced it will update carbon emissions the same every two years, stating the organisation will explore and develop solutions to reduce environmental impact in film and television production (Spangler, 2021).

In the year 2020, Netflix estimated its total carbon footprint to be 1.13 million metric tons, which decreased from the total of 1.31 million metric tons in the previous year as a result of postponed production delays due to COVID-19. Roughly half of that carbon footprint was accounted for in the physical production of Netflix films and series, including third-party owned projects that were licensed as Originals. Around 45% can be attributed to its corporate operations (e.g. amount of office space rented) and purchased goods (e.g. marketing spend), and 5% to internet-based cloud providers like Amazon Web Services, and Netflix's Open Connect content delivery network (Spangler, 2021)

In the near future, Netflix is concentrating its immediate emissions reduction efforts on developing solutions for film and TV production practices that the rest of the industry might

adopt. Some of these solutions include using local crews rather than bringing in crews from other locations, using electric-powered vehicles instead of traditional gas vehicles, using more LED lights, and reducing the on-site use of diesel generators. Stewart gave two examples of Netflix's "decarbonization" initiatives through investments: The Lightning Creek Ranch project in Oregon, which is helping to protect North America's largest bunchgrass prairie, and the Kasigau Corridor REDD project in Kenya to protect some of the region's dryland forest. Netflix signed on to an initiative called DIMPACT, researching similar solutions and developing consensus around the measurement of the streaming footprint and other internet uses. DIMPACT was started at the University of Bristol, where they have developed a calculator tool to validate Netflix's estimate of an hour of streaming in 2020, producing well under 100g of CO₂ equivalent (similar to driving a gas-powered car a quarter of a mile) (Spangler, 2021).

For over ten years, there has been a movement among producers, streamers, and private industry to mitigate the industry's impact. In 2010, the Producers Guild of America Green committee and the Sustainable Production Alliance (SPA), an industry-led organisation aimed at reducing the environmental impact from the film and TV industry, developed the Green Production Guide, a sustainable production toolkit. The Environmental Media Association, a U.S. organisation that gives awards to environmental content as well as sustainable practices, developed the Green Seal program in 2004 as a way to recognise productions that reach a specified level of environmental sustainability. In the last few years, interest in the field has also grown as businesses have made a commitment to stricter climate targets (Sax, 2024).

A number of productions have reported successes in reducing their footprint. For example, an animated film collective behind *Loving Vincent* reused cardboard for set construction (instead of new wood), cutting resource use and easing recycling. Sony's blockbuster *The Amazing Spider-Man 2* (2014) implemented an array of green measures, hiring a sustainability manager, reusing nearly 50 tons of materials on set, and eliminating roughly 193,000 disposable water bottles, which not only reduced waste but also saved an estimated \$400,000 in production costs (Sax, 2024; Ashe, 2019). These cases demonstrate that sustainable production methods can align with efficiency and even financial benefits.

A part of the difficulty is obtaining accurate numbers on emissions in the first place. The 2004 action-drama *The Day After Tomorrow* made history by being one of the first films to place climate change at the centre of its narrative. But beyond the historical nature of the film, the film demonstrated environmental responsibility by being the first film to calculate and offset the 10,000 metric tons of carbon emitted during the film's production. Since then, emissions calculations have become more systematic, but emissions from the industry are almost entirely self-reported and voluntary, and rigorous data on the industry's actual emissions is still nonexistent. The best review on the industry's emissions is still a study from the University of California, Los Angeles, estimating that the industry produced on average around 15 million metric tons of CO₂ a year back in 2006 (UCLA Institute of the Environment, 2006).

-Resource Management (Ex, Energy, Water)

Scholars in film and media studies have begun to interrogate the industry's environmental footprint. Hiltunen and Rainio (2010), for instance, note an 'ecocritical turn' in film research around 2010, where attention shifted to the relationship between production processes and the natural world. Pietari Kääpä (2016) argued that media studies should view film industries as large consumers of natural resources, not just cultural producers. Nadia Bozak even suggests that 'embedded in every moving image is a complex set of environmental relations', underscoring how deeply entwined cinema is with material resource use. Similarly, Sonya Helgesson Ralevic recalls that the original definition of the greenhouse effect and the invention of film were nearly contemporaneous events, both taking place around the 1890s. Thus, they have been connected right from the beginning, to situate cinema culture within an interdisciplinary fossil fuel discourse opens a wide range of enquiries, including the material conditions for the film in the production, distribution and screening, which all showcase how the film is both directly and indirectly entangled with the fossil fuel economy.

Astikainen (2022) documents one of Finland's earliest experiments in sustainable filmmaking, the production of *Memory of Water* (2018). This project appointed the country's first sustainability coordinator for a film, who was involved from pre-production planning through post-filming recycling. The coordinator worked with each department (from set design to catering and transportation) to implement greener choices – using local locations and crew,

sourcing sustainable materials for sets and costumes, reducing travel and fuel use, and setting up on-set recycling, among other steps. The film's creative team even consulted with experts in water, energy, and sustainability to inform the story's futuristic depiction of resource scarcity, blending scientific realism with its narrative. *Memory of Water* became a pilot project that not only achieved a smaller environmental footprint but also led to broader impacts. It sparked industry conversations in Finland and resulted in the publication of the “Ekosetti” sustainable production guide for the audiovisual sector.



Figure 2.3 *Memory of Water*. Source: *Memory of Water* by Saara Sarela (Astikainen 2022)

-Example of Italian Frameworks

Beyond individual productions, entire frameworks have been developed to guide sustainable filmmaking. In Italy, for example, the Green Audiovisual Protocol (2023) provides a comprehensive ESG-based certification system for film, theatre, and live events. The Green Audiovisual Protocol's robust framework includes standardised guides and measurable dimensions to allow various event organisers, theatre productions, and audiovisual productions to build sustainable practices in their planning and design to actively decrease environmental impacts. The protocol provides a Green Audiovisual Certification that allocates points for productions in 7 areas of sustainability - energy usage, waste, materials, and communication, with individual actions rated based on their environmental significance and feasibility of implementation (within these areas, productions are credited with points based on their environmental significance and feasibility of implementation). Productions can receive one of these certifications when at least 30 points are earned. The certification system, influenced by international certification standards, such as ISO 14001 and ISO 20121, allows productions of every scale to take a flexible approach to achieving greener practices with impact potential. As

an example of ESG protocol usage for the culture-world, the Green Audiovisual Protocol is an example of Italy taking the initiative to better practice sustainability within the cinema, theatre and live entertainment sector (Green Audiovisual, 2023).

Another initiative, EcoMuvi, launched in 2013, offers an accredited sustainable production protocol specifically for audiovisual projects. Under EcoMuvi, productions work with an EcoMuvi Manager – a specialist embedded in the film crew – to implement practical criteria for improving environmental, social, and economic performance across all stages of production. Data on resource use (like generator hours, material reuse) are collected and audited, and if standards are met, the production earns an EcoMuvi certification (with levels such as “classic” or “excellence”). To date, EcoMuvi-certified projects have achieved, on average, a 53% sustainability score, with tangible results like displacing 6,524 hours of generator use and reusing 54% of materials on set. These frameworks indicate a growing institutionalisation of ESG practices in film

2.2.2 Social Impact:

The social component of ESG in the context of the film industry two areas have been particularly scrutinised, representation (both on-screen and behind the scenes) and fair labour practices. Recent discourse and studies reveal significant gaps in both areas, suggesting that the industry has room to improve its social sustainability profile.

-Diversity and Inclusion in Media Content and Workforce

High-profile events have highlighted Hollywood’s struggles with diversity. In both 2015 and 2016, the Academy Awards nominations included no Black actors in any of the four acting categories (lead or supporting) and no women in the directing category. This prompted the resurgence of the hashtag #OscarsSoWhite, reflecting public disgust and sparking calls for change. Similar criticism arose when the 2020 Golden Globe nominations completely shut out female directors, despite widely acclaimed films by women that year – a fact noted by commentators and even joked about by ceremony hosts (Rao, 2019; Pavich, 2022).

In the 78-year history of the Golden Globes up to that point, only five women had ever been nominated for Best Director, underscoring a systemic gender disparity. The trend is mirrored in

industry data, for example, of the top 100 grossing films in 2019, only 10.7% were directed by women – the highest in over a decade, yet still a stark imbalance (Pavich, 2022).

Key figures in the industry have spoken out, actress Natalie Portman sardonically pointed out the “all-male nominees” when presenting the Best Director award at the 2018 Oscars, and Time’s Up Foundation’s COO, Rebecca Goldman, condemned the persistent sidelining of women, especially women of colour, across the industry (Rao, 2019). These incidents and responses indicate a heightened awareness of racial and gender exclusion in film, pressuring institutions to broaden representation both on screen and behind the camera.

-Labour Rights and Fair Practices

Another component of social sustainability in the field, in conjunction with representation, is the fair treatment of workers in terms of pay and working conditions. For instance, in 2017, there was much discussion about the gender pay gap in Hollywood. Actor Mark Wahlberg was paid \$1.5 million for re-shoots on the film All the Money in the World in relation to a casting change in the film, while his co-star Michelle Williams, with a comparable level of talent, was paid less than \$1,000. Both were represented by the same talent agency, and Williams said she had limited knowledge of Wahlberg's pay. After the story came to light, which included Late Show host Jimmy Kimmel mentioning the pay gap in his Oscar monologue, Wahlberg eventually donated his pay to Time's Up Legal Defence Fund. The story became symbolic of the discussion to fortify awareness around equal pay for equal work in Hollywood. Previously, many actresses experienced the pay gap issue in silence, worrying that they would be considered "difficult" for speaking up. Now, actresses are starting to contest the issue vocally. Celebrities like Jennifer Lawrence, Meryl Streep, and Cate Blanchett are leading the way in support of pay equity (Pavich, 2022), and public attitudes have changed as well.

Overall, the social problems that the film industry faces – ranging from insufficient diversity and inclusion to inequitable labour practices – constitute some important issues that ESG efforts are designed to address. Rectifying these problems is not only about ethics and justice; it may also be seen as critical to the ongoing sustainability and credibility of the industry.

2.2.3 Governance Impact

As per Jayasinghe (2025), attaining ESG aims in the film industry needs supportive governance and public policy; governments might couple film development funding with environmental criteria, create industry-wide sustainability standards (e.g., waste disposal and energy use), provide incentives for enacting green practices (e.g., grants and tax credits), and even establish penalties for non-compliance with environmental sustainability measures. In addition to these measures and academic research, to assist with the sustainable design of cinema technologies, such initiatives are arguably necessary in helping movie-makers move toward climate-friendly filmmaking practices.

-Corporate Governance in Entertainment Studios

Corporate governance is established as the systems, practices and processes that are formally created and designed to regulate the systems of decision-making in a company. Corporate governance structures are created to achieve the interests of stakeholders in and around corporate life, including shareholders, employees, customers, creditors and society at large. More specifically, corporate governance captures the management and control mechanisms of the organisation or business. In general, corporate governance encompasses the legal and technical frameworks to ultimately govern the business effectively, efficiently and ethically with respect to legitimacy and transparency. The aim of corporate governance is to provide for the interests of all those impacted by the business decision-making processes, with the intention of ensuring accountability for responsible decisions that take into account ethical considerations and long-term sustainability (Borsa Italiana, 2025).

While numerous definitions of corporate governance exist, it is important to recognise that the modern corporation, as it is known today, is a fairly recent phenomenon in the long sweep of human history. While the corporate form emerged as a dominant form of business organisation to a greater degree in the late 19th century, it developed into a distinct form of business organisation that is greatly different from sole proprietorships and partnerships. Corporations have four characteristic features:

- a. Liability of investors is limited,

- b. Shares owned by investors are freely transferable,
- c. Corporations exist perpetually independently of changes in ownership,
- d. Corporations have centralised (professional) management, a separate body of individuals from the owners (Romano, 1993).

These characteristics have helped shape the modern economy and have given rise to the ability to operate large-scale enterprises, and with the development of corporate governance systems, are intended to ensure accountability, fairness, and long-term value creation.

Artero (2009) uses The Walt Disney Company as an example of a strong corporate governance system that links organisational governance to ESG principles and tackles risk. Disney's business diversification in five categories – Media Networks, Studio Entertainment, Parks and Resorts, Consumer Products and Interactive Media – allows the Disney brand to be managed through a centralised governance system, providing guidance and accountability for strategic direction across each division. The corporate governance system allows Disney to manage uncertainty and risk in a proactive way, taking formal actions through contracts, assuring regulatory compliance and a structured planning process for approaches to strategy. The combination of a formal corporate governance system allows Disney to identify risks before they happen and reduce their risk from many sources, such as macroeconomic fluctuations, rapidly changing consumer behaviour, disruptive technology and challenges to intellectual property and enhance the resilience and economic value of sovereignty.

Artero also highlights that Disney's governance model focuses on protecting intellectual property and stakeholder interests, which contributes to the general ESG agenda. Since a considerable part of Disney's value is in its intellectual property portfolio, governance at Disney thus ensures the protection of these assets through various means (licensing, cross-platform/brand content management, and compliance with different regulatory systems in each market). Additionally, Disney's board and management have historically straddled short-term performance and long-term sustainability by considering the needs of its various stakeholders (shareholders, employees, partners, consumers) while also ensuring accountability and ethical frameworks of decision-making. Thus, Disney is an exemplary case of strong

corporate governance ensuring effective risk management, sustainability in business practices, and stakeholder alignment in the international media industry (Artero, 2009).

-Transparency and Accountability

Considering its rising importance in many areas of social life, transparency has become more salient as a concept for the media. Beyond its role as a key descriptor of democratic and free societies, transparency also plays an important role in holding governments and other political figures accountable. It is even a core aspect of most policies and strategies governing the news media. Transparency has been billed as a popular response to challenges of media pluralism and declining trust in journalism (Karlsson, 2020), while still being a tool for inspecting and controlling how the media is owned (Figueira & Costa e Silva, 2023).

Transparency provides audiences with a basis to begin understanding the context of a film, which can prompt further critical consideration of the work, but also reiterates the separation between the creator and the content as a social and governance implication (Fiveable, 2025).

In Central, Eastern and Southern Europe, journalists are even less trusting of the idea of media transparency. Several Spanish and Italian journalists, along with their Romanian and Polish counterparts, believed that a requirement to publish corrections or make newsroom processes transparent and available online would harm the trust bond between journalism and audiences. Journalists from these four countries, as well as Jordan and Tunisia, reported that they worked for explicitly political-leaning media at a higher frequency than average, and therefore they felt committed to a particular political viewpoint, or were under pressure from the government (European Commission, 2014).

In film and media production, accountability compels individuals and organisations to explain or justify their actions, assume responsibility for their choices, and acknowledge the effects of those choices on individuals, audiences, and society. Film creators, as media professionals, have an ethical responsibility to think about the wide-ranging impact of their greater narrative, how filmic content can either serve to perpetuate or challenge existing social norms. This ethical obligation goes beyond simply storytelling and also acts as an ethical practice to ensure accurate representation of individuals and ethical production practices. Accountability also adheres to

ensuring both ethical decision-making processes are engaged in production, and that teams are aware of how to ethically influence public perceptions of social conversations (Fiveable, 2025).

The recent rise of social media adds an additional expectation for accountability in that there is a larger platform for our audiences to speak to. In real-time, audiences can shout out and hold accountability reflexively to the production team. The legal definitions of accountability will encourage both filmmakers and producers to stay accountable in certain ways. These mechanical dimensions of accountability need to make reference to some legislative concepts of accountability where copyrighted works and revenue would be subject to permission laws, privacy rights and advertising truth laws (Fiveable, 2025).

Transparency further develops accountability through creating an environment/space in which filmmakers are expected to articulate the process, intentions, and obstacles they encountered while making the work. Additionally, audiences can begin to establish trust in the filmmaker when they offer insight into how decisions are made and why, as well as explain certain decisions or directions taken in the work (Fiveable, 2025).

Governmental roles have an important responsibility in promoting government accountability and transparency in film and media through providing a legal scope, rules, and regulations to ensure that ethical practices take place and to protect the public good. When legislative acts are established as enforceable laws (e.g., copyright law, privacy rights law, and advertisements), governments can define what content media producers can make, which respects the rights of audiences and public societal values. The government can promote transparency and accountability by enforcing disclosure about the ownership, funding, and editorial of the media, so that audiences can see where vested interests may be hidden in the media in some way. The government develops the based legal environment, responsibility, and accountability for regulating ethical practices in television media, radio media, and even print media to some defined level. Overall, governments provide a responsibility, obligation, and enforcement strategy so that a positive ethical media production environment can develop and exist, which should lead to a more discerning, critical, and trust-developing media environment for audiences.

2.3 Contextual Applications of ESG in the Film Industry

There are numerous international examples that contextualise movement towards ESG in the film and media industries. While these examples were not studied as part of this research, they give context to more general trends in how the values associated with ESG are understood and interpreted in different contexts.

Garden Studios (London, UK) is a privately owned studio complex that has committed to environmental sustainability in its business approach since its inception in 2021. For instance, Garden Studios has received a "Very Good" rating on the Albert Sustainability Certification (a UK industry standard) and is a certified B Corp. The Head of Sustainability at Garden Studios indicates that the studio incorporates green practices (through initiatives such as Re-Set, which maximises the reuse of sets and props and diverts materials to community partners) into production planning. Garden's strategy is primarily operational because it includes elements like energy efficiency, waste reduction, supply-chain carbon neutralisation, and is internally determined based on certification processes and policies (Garden Studios, 2025). Garden Studios focuses extensively on collaboration (working with art directors, charities and vendors, with shared ESG goals), but it is an operational, private-sector-oriented, and location-based project rather than a public-academic capacity-building project.

Netflix (USA) has also folded ESG considerations into its global operations. Netflix's official ESG report states that the company is working to "modernise our operations and productions to be more efficient and sustainable" through a process of decarbonising its value chain and managing climate risk. The company has set long-term targets (e.g. to halve absolute emissions by 2030) and has invested in clean technologies for production. Netflix provides creators with support for sustainability themes on-screen. Because of Netflix's view of ESG as an internal corporate strategy, its operations realise value in large data centres, office efficiency, and sustainable production offices, while its social initiatives focus on diversity on camera, and content accountability with governance commitments (Netflix, 2022). Netflix's corporate ESG strategy is centralised and global. Netflix operates by top-down commitments and large-scale initiatives (e.g. industry net-zero pledges).

Likewise, Paramount Global (USA) publishes annual ESG/CSR reports and implements a broad sustainability strategy. Paramount expresses that the media/entertainment industry "is one of the most powerful forces that impact culture," and so their ESG activities include on-screen content, workforce diversity and sustainable production practices.

Their most recent report lists three pillars, On-Screen Content & Social Impact, Workforce & Culture, and Sustainable Production & Operations. Paramount measures and reports on its environmental footprints, such as emissions from filming, and stresses corporate accountability. For these multinational corporations, their ESG models are typically top-down (driven by corporate board agendas) and connected to global branding (Paramount Global, 2024). This bottom-up, place-based model is decidedly different from the ESG initiatives we have observed from the film and cultural industries overall and demonstrates that regional alliances can help operationalise educational initiatives for sustainability in film and culture.

2.3.1 Global Standards (EX, Green film production)

What does "Green Film" mean? A tool intended to help audiovisual producers work in an environmentally sustainable manner, and a brand certifying environmental sustainability for audiovisual productions, a network of organisations that collaborate together, to carry out strategies and tools for sustainable filming, and come together to develop sustainability-related training initiatives (Green Film, 2024).

How does Green Film work? Before the shoot, producers use a checklist to declare which environmental sustainability criteria from the Green Film rating system they would like to follow during the shoot. During the shoot, the production commits to comply with the declared criteria. The Verifying Body checks if the criteria are being complied with (Green Film, 2024).

After the shoot, the Verifying Body checks compliance with the environmental sustainability criteria declared by the production before starting the shoot. If the Verifying Body's check is positive, the production will receive the Green Film environmental sustainability certification issued by the Certifying Body, it promotes the green movement in an industry that has significant communicational power, It is an easy and trusted tool, It is a shared program that allows producers to go green while they are working in different territories, and when they do

co-productions. It allows Film Funds, Film Commissions, broadcasters or others to be a part of a coalition promoting a common approach to sustainability (Green Film, 2024).

2.4 Comparative Analysis of ESG Adoption in Different Markets

In the first decade of the 21st century, sustainability reporting clearly began to identify stability. This surge in sustainability reports coincided with reporting requirements increasing across the world by various governments and regulatory bodies, as companies were required to disclose their sustainability performance. However, reporting regulations and sustainable reporting were seen as absorbed by some investors, who started to consider sustainability as part of future-directed, long-term financial performance (Du Toit, 2024).

Developed countries often have more strict and achieving ESG regulations and disclosures. For example, the European domestic markets already have established elaborate ESG reporting standards, which lead to increased corporate responsibility and disclosure, while even the domestic markets of developing countries may not have the regulatory capacity to have consistent ESG reports and practices due to differences in institutional capability and levels of development (Singhania & Saini, 2021).

Research demonstrates that firms located in developed markets tend to perform better on multiple ESG dimensions than firms located in emerging markets. This discrepancy is often indicative of greater potential for ESG integration, and because they are subjected to investor pressure in developed markets. Nonetheless, some firms in emerging markets have demonstrated ESG practices worthy of commendation, as observed when they operated in jurisdictions with established ESG paradigms. There is the potential for firms to undergo better performance in jurisdictions with stricter ESG norms (Lozano & Martínez Ferrero, 2022).

2.5 Successful ESG Integration in Film Production

While suggesting that sustainable movies can generate cash and luck, there can be a great uncertainty in managing sustainable production. Based on this uncertainty in managing sustainable production, as explained before, Greenfilm.com from Italy created a rating system to assist filmmakers wishing to be environmentally friendly. Using the Greenfilm.com system will encourage producers to behave as sustainably as possible to the environment. The

audio-visual sector has a very strong power of communication and therefore should be leading the way in fostering respect for the environment (Meilani, 2021).

In April 2009, the Greater London Authority released a Green Screen Guide, a guide to encourage change and make a difference in the film industry. The Green Screen Guide highlights production, but it can be applied to the distribution, exhibition, or sales of films and programs. Green Screen Toronto published a handbook in 2009, which focuses on green practice in filmmaking, due to the impact the production phase of television series and film features has on the environment (Meilani, 2021).

Wearealbert.org or Albert, the screen industry authority on environmental sustainability, was incorporated in 2011 in the United Kingdom. Funding by industry allows them to develop a carbon calculator that calculates the environmental impact of screen art production. Albert was also efficient in compiling Resourceful information for the green supplier on their website. In addition as well as publishing sustainable production techniques, Albert has developed a sustainable production certification, meaning that a production that meets Albert's criteria will receive a one-star certification up to a three-star certification from Albert. 1917 is a film produced at a large scale with 12 key filming locations, engaged with a large workforce and tools, which produced a large carbon footprint. In the spirit of committing a green production, for example, the production team on 1917 attempted to avoid unnecessary flights by using train travel where possible, tried to use waste vegetable oil to fuel the generator, practised using reusable utensils and materials such as bamboo. 1917 was produced as the first feature film in the UK, evaluated on a range of criteria and went on to earn the highest award available for sustainable production from Albert and served as an inspiration to other productions (WeAreAlbert, 2020).

2.6 Gaps in Existing Research

Although interest in sustainable filmmaking has increased, there are still substantial gaps in the literature. First, there is limited empirical research on the effectiveness of ESG initiatives in the film industry – there are numerous guidelines and frameworks, but little research has been conducted on the extent to which these are followed, and little evidence showing their effectiveness in practice. Second, existing published research is often focused on environmental

issues (carbon emissions or sustainable production) and significantly less focused on the social and governance dimensions of ESG as it relates to film production companies, meaning that we still lack understanding of topics such as fair labour, diversity and inclusion in crews and leadership, and governance structures for sustainability. Third, many of the case studies and data published are from North American and European contexts, while there has been little research on the film industries of other countries (Chen et al., 2023), suggesting a geographic bias. This means that we need to be careful about how generalizable our findings are globally.

Lastly, there is a lack of an ESG framework that is specific to the film industry. While some industries have sustainability metrics that are specific to their industry, the film industry does not have a consensus on which indicators should be used to assess ESG performance. As a result, companies and productions may find it difficult to demonstrate progress or compare themselves to other productions. The purpose of this study is to start to fill that gap by identifying key performance indicators (KPIs) relevant to film production processes.

3. Chapter 3: Methodology

3.1 Methodology Framework

This methodology started with an internal literature review to identify key ESG issues and best practices in the cultural and audiovisual sectors. The literature review can be described as the conceptual basis of the INFO-SCC project that will be introduced in the case study section- a foundation on which a theoretical model for the identification of priority areas of intervention would be constructed.

The literature review consisted of studies, reports and industry guides and was instrumental to conceptualising what ESG mean within creative industries and how they are presently framed and implemented. From the literature review, the themes that included energy use, resource management, diversity and inclusion and transparency were extracted.

The literature review was not only considered as background information, but was actively and purposefully taken from the methodological component of the project into its strategic direction.

3.1.1 Construction of an ESG Survey Template

To aid the development of ESG-aligned strategies, a structured survey template was developed according to best practices for sustainability assessments. The survey solicited baseline dimensions and viewpoints from cultural and audiovisual organisations on their environmental, social, and governance practices.

3.1.2 Conducting Interviews

The semi-structured interviews were conducted with designated cultural and audiovisual organisations involved in the INFO-SCC project during the initial data collection, which had two purposes, to explore understandings of an institution's practice (related to sustainability) and how the organisation engages with some of the Sustainable Development Goals (SDGs). While the questions for the interview were guided by the survey template, we also made space to reflect on current challenges that came from first discussions with stakeholders and the reading of the media. For example, with respect to certification standards being written only for the cultural sector, cinema has the highest level of energy consumption in production, and little attention is paid to social inclusion in the cultural and creative sector.

3.1.3 Literature Review for the Selection of Areas of Intervention

The areas of intervention were identified through a two-pronged process, the internal literature review. The literature review pulled evidence from new studies, sustainability frameworks, and best practices specific to the cultural and audiovisual industries, in terms of ESG principles and guidelines that may have been operationalised in other comparable institutional settings. This was to ensure that the project's framework was established in relation to known sustainability practices and evidence-based methods.

The project team identified related and recurring themes when they worked through both process methods regarding environmental, social and governance.

This process yielded the strategic domains that represent relevant challenges and opportunities for sustainable transformation. The domains were prioritised and validated in participatory workshops with project stakeholders, guiding the next steps in the project, including the co-development of ESG Indicators and action plans.

3.1.4 Data Collection and Analysis

A SWOT analysis was undertaken as part of this project methodology to assess the internal resources and external factors affecting the transition to ESG (Environmental, Social, and Governance) practices in cultural and audiovisual organisations. SWOT analysis (or, as it is known, strengths, weaknesses, opportunities and threats) is a business strategy tool used for evaluating an organisation against its competitors. It is historically attributed to Albert Humphrey in the 1960s, but the attribution to Humphrey continues to be debated (Teoli, Sanvictores, & An, 2023).

The SWOT analysis allowed for a diagnostic framework to identify internal strengths and weaknesses (e.g. policies for sustainability currently in place, absence of technical skills), and external opportunities and threats (e.g. increased audience interest in sustainability content, underdeveloped certification standards in the cultural sector).

Along with the SWOT analysis, an Idea Canvas developed to collect and organise stakeholder sets of needs and expectations, and a Resulting Matrix to help structure and compare the information gathered using the various methods.

The SWOT framework created structure and guidance around the information from the survey and the interviews. For example, organisations that had previous experiences with energy efficiency were deemed strengths. However, a lack of ESG reporting and disjointed governance were examples of weaknesses. Growing EU support for sustainable cultural development (e.g. NextGenerationEU) was an example of an opportunity, while threats ranged from budgetary to a lack of regulatory cohesion across sectors.

These analyses directed the choice of areas of priority for intervention and informed the participation of the workshops, where stakeholders reflected on collective ESG challenges and identified focused areas for ongoing indicators.

3.1.5 Participative Method to Select the Priority of Areas of Intervention

The INFO-SCC project implemented a participatory methodology to identify ESG intervention priorities, defining them as an outcome of stakeholder engagement rather than as predetermined top-down priorities. Participatory approaches such as Playing Cards and World Café are useful methods for qualitative data collection because they are inclusive of diverse perspectives, foster inclusive dialogue, and support learning among stakeholders. As noted by Löhr, Weinhardt, and Sieber (2020), these methods also support capacity development, ownership, and collective agreement based on merit. Initially, in the first workshop, participants utilised Playing Cards to rank ESG domains. This participatory and reflective approach illuminated different variations of urgency and feasibility by sector, representing how stakeholder engagement helped shape context-specific sustainability priorities.

3.1.6 Selection of Fewer and More Specific Areas of Intervention

The World Café method was employed in the second workshop. The World Café is a structured conversational process that invites all the participants to engage in open conversations and share knowledge within a larger group (Brown & Isaacs, 2005). For the second workshop, the participants rotated around thematic tables about one or more of the identified intervention domains, encouraging a cross-pollination of ideas and a collaborative process of refinement.

In this phase, the goal was to whittle down the domains to a smaller number of strategic priorities to allow development of measurable Key Performance Indicators (KPIs). The core activities were:

- a. Discussion & synthesis: stakeholders at each table deliberated on the feasibility, the potential and ultimately the alignment to their ESG goals.
- b. Consensus building: through iterative feedback on summaries, the groups reached consensus for their own tables across several rounds.
- c. Reduction to core areas: the domains were distilled down to a smaller group of targeted intervention areas, representing balanced approaches to environmental, social, and governance criteria.

This process of discussion and synthesis has helped to ensure the final intervention areas are both ambitious and measurable, which will become the foundation of the INFO-SCC project, for which we are co-defining tailored ESG indicators for the cultural and film sector.

3.2 Case Study: INFO-SCC

The INFO-SCC project (Innovation and Training for a Green Transition in the Cultural and Film Sector) is a two-year, total EU-funded (NextGenerationEU/PNRR) project led by the Politecnico di Torino Green Team to help the cultural and film sector in Piedmont, Italy, to adopt sustainably. The objective of INFO-SCC is to co-develop and validate shared action plans for a sustainable transition of companies within culture, live entertainment and audiovisual production. By using a participatory, multi-disciplinary training programme, INFO-SCC mobilises expertise from different sectors of the economy (i.e. academia, industry, festivals, studios) to help participants understand principles of ESG practices. This project, specifically, helps to build capacity by facilitating innovation and education to film producers, festival organisers and cultural institutions by using Politecnico's Green Team expertise to create a methodologically structured approach to sustainable operations. INFO-SCC, alongside a companion initiative ESTE(Sustainable Events and Ecological Transition for Cultural Events), has revealed a national strategy to green the entertainment industry. INFO-SCC is focused on collaborative action, bringing together public and private sector partners to co-create environmental best practices (e.g. waste reduction, energy efficiency, eco-certification) in film and cultural production (Politecnico di Torino, 2024).

Involvement: The project aims to engage a wide variety of actors in the film industry. Collaborations with the Film Commission Torino Piemonte and the National Cinema Museum

will help strengthen ties with the sector, involving stakeholders and interested parties. The INFO-SCC consortium comprises six institutional partners who provide specific expertise to the different sectors outlined on their web pages:

1. O.D.S. – Operatori Doppiaggio e Spettacolo (Turin, Italy): A cooperative dedicated to audio dubbing and post-production. On FCTP's site, O.D.S. states that it "realises any kind of dubbing and soundtrack editing" for films, TV series, animation, documentaries and commercials, from translation and adaptations, to the recording of voices and editing and mixing of sound. In the INFO-SCC context, O.D.S. 's insights into the film sound chain and training (O.D.S. also offers courses on voice and acting) ensure that audio post-production practices are included in any sustainability training. Its participation locates the project in a practical film production location to highlight how dubbing studios can transform energy efficiency and low-waste workflows (Film Commission Torino Piemonte).
2. Film Commission Torino Piemonte (FCTP): The regional film commission (a non-profit foundation supported by the region of Piemonte and the city of Turin) whose purpose is to promote the region as a place for production. The stated purpose of the FCTP is to promote audiovisual projects in the Piemonte region by providing services, funding opportunities and promotion of locations. In the INFO-SCC project, FCTP acts as the institutional anchor and facilitator, it connects the project to local producers and venues, makes use of its networks (such as festivals, funding bodies and public agencies), and helps to integrate ESG action plans with pre-existing regional incentives and production support services. The Film Commission's role is important as it represents the regional, place-based paradigm of INFO-SCC, and provides assurance that plans for green transition will be coherent within Piemonte's film ecosystem and policies (Film Commission Torino Piemonte).
3. TorinoFilmLab (TFL): An International film and audiovisual incubator of the National Museum of Cinema (Turin). TorinoFilmLab is an international lab that is dedicated to supporting young talents from all over the world with their training, development, funding and distribution activities with a focus on getting their first and second feature films made. TFL has significant expertise in content development and in professional

education. In INFO-SCC, TFL will contribute its curriculum design knowledge and its pan-European network of filmmakers. It is contributing to integrating modules on sustainability, e.g. sustainable production practices for emerging filmmakers, into the lab's programme and mobilising its community to take on INFO-SCC's action plans to undertake sustainability in film. By engaging TorinoFilmLab, INFO-SCC is guaranteeing that training reaches new creators and that the sustainability of production becomes a default topic in workshops on film development (Museo Nazionale del Cinema).

4. Festival CinemAmbiente (Turin, Italy): An annual environmental film festival. According to CinemAmbiente's official site, it was founded by Gaetano Capizzi and is the most important Italian event dedicated to environmental films, and is a member of the international Green Film Network. It aims to screen films on environmental issues and develop eco-cinema. Within INFO-SCC, CinemAmbiente is contributing content expertise and outreach. It exemplifies a platform to present best-practice case studies, sustainability panels (as evidenced by its involvement with associated eco-talks), and to spread the desired aims and goals of the project to an extensive number of filmmakers and audiences. The project can take compliments and credibility from a film festival with a green mission and take advantage of a direct tie-in to storytelling and audience engagement with ecological issues (Festival CinemAmbiente).
5. Robin Studio: located in Turin, Italy, is an experiential creative studio concept that develops a variety of unique and innovative experiences in the environment of interactive exhibitions, projection mapping and has an emphasis on multimedia events. According to its website, Robin Studio describes it as being a young explorer of ideas that take extraordinary visual experience into the ordinary, in corporate videos, animation, and cultural projects. Robin Studio mainly works with museums and public events, and its immersive installations are often presented in stimulating, often unusual spatial environments (Robin Studio).
6. Alps Studios (Turin, Italy): is a private visual effects and animation studio that provides R&D and training to the sector, and states "we focus on providing high-quality services for the audiovisual entertainment industry from Animation to Production, R&D and

Learning, specialising in Visual Effects". Alps Studios contributes technical and educational capabilities (through its Alps Learning division) for informing sustainable digital production workflows in the context of INFO-SCC. The leadership of Alps Studios (co-founder Filippo Robino) is present at project workshops and connects their VFX and post-production expertise with the sustainability framework of the Green Team (Alps Studios).

INFO-SCC is the central case study of this research, not solely with respect to its local and participatory aspect, but because it is an applied and bottom-up model of ESG integration directly involving institutions and stakeholders.

My contribution to the INFO-SCC project was limited to the phase 1, phase 2 and early stages of phase 3 of the methodological process, which served as the basis for the future development of ESG action plans.

PHASE 1 Analysis of the current state	PHASE 2 Impact assessment tool	PHASE 3 Application and validation of the tool	PHASE 4 Operational strategies for sustainability	PHASE 5 Innovation of sustainability plans
Mapping alignment with the SDGs Framework.	Co-creation of a sustainability assessment tool with ESG approach .	Testing the self-assessment tool, adapting it to the needs of each organization.	Co-design and definition of sustainability projects for each organization.	Supporting the development of innovative sustainability plans, monitoring and evaluation.

Table 3.1: Phases of the INFO-SCC Project. Source: Politecnico di Torino-Green Team

1. Step 1: Interviews and Literature review (2024), during this phase, six institutional interviews were completed. I participated in two interviews, the interview with Film Commission Torino Piemonte on October 2, 2024, and the interview with Robin Studio on October 8, 2024. In addition to attending, I supported the re-arrangement and synthesis of the qualitative material, developing a coding structure that grouped recurring issues into coherent problem statements. I prepared a focused literature review on ESG assessment frameworks as well as relevant good practices in the cultural and creative sectors. This review provided the initial foundation for identifying a first set of candidate intervention areas for use in Workshop 1, specifically the Playing Cards prioritisation method.

2. Step 2: Analysis of the Current State (2024), While I was not yet officially part of the INFO-SCC project at its kick-off meeting in April 2024, I reviewed the products created as part of the meeting when I became part of the project. This involved careful review of the agenda, input from participants, and the Sustainable Development Goals (SDGs) identified to be prioritised in the kick-off meeting. My goal was to reconstruct and make sense of the original stakeholder preferences to check for consistency between what was determined in the early stages of the project and the instruments used for data collection in Phase 1. I then translated into a consistent design brief format, with an internal Idea Canvas, a table schematic that explained the problem space, value proposition, target user groups, data sources required, and anticipated pathways to decisions. I developed this Canvas to ensure stakeholder alignment around a shared conceptual model, to decrease ambiguity between qualitative findings and tool architecture, and to provide a traceable link from interview evidence to technical specifications of the instrument. By grounding intervention areas in the literature, we were starting Workshop 1 from an evidence-based position, rather than just a blank slate. Following on from this, we conducted a SWOT analysis developed from the responses received from semi-structured interviews with participating institutions. The SWOT analysis was designed to critically review internal strengths and weaknesses; and external opportunities and risks for each of the ESG areas, providing greater rigour to the prioritisation process.
3. Step 3: Definition of an Assessment Framework through Participatory Workshops (Late 2024 - 2025), I participated in both stakeholder workshops (November 24, 2024, and May 7, 2025), where I contributed to the group work but also helped with the participatory tools like card ranking and the World Café method, to help define ESG priority areas. In Workshop 1, I carried out the necessary calculations to convert the qualitative inputs into an initial priority score. In Workshop 2, I visualised the distribution of the scores through charts to assist in rank-ordering the candidate indicators, which supported validation and KPIs shortlisting.

Phases Remaining Beyond My Contribution:

Phase 4: Co-design of Operational Projects (2025 onward), based on Phases 1–3 validated priorities and initial KPIs, the project team will apply the outcomes to create operational sustainability projects at each participating institution. I will not contribute to Phase 4.

Phase 5: Sustainability Plans and Monitoring & Evaluation (2025-2026 onward), the project team will create institutional sustainability plans and a monitoring & evaluation architecture, including governance arrangements, data sharing frequencies, and data responsibilities. I will not contribute to Phase 5.

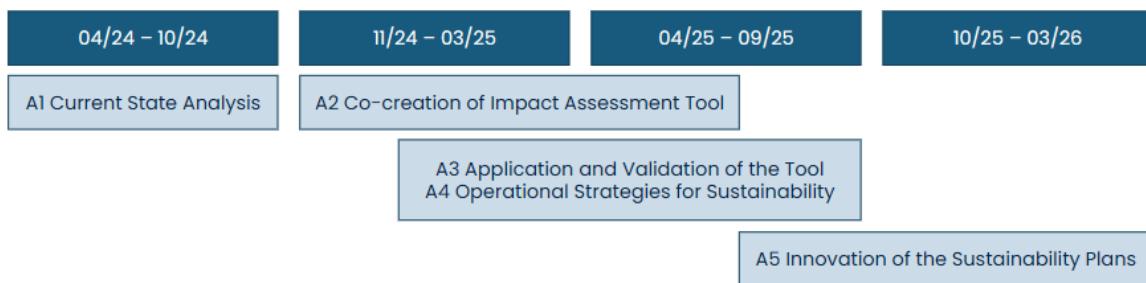


Table 3.2: Timeline. Source: Politecnico di Torino-Green Team

4. Chapter 4: Result

This chapter reports on the main findings from each phase of the research process, including the literature review, case study analysis, stakeholder engagement and co-development activity findings. The findings reflect both collaborative project work and individual contributions that informed the final sustainability evaluation framework.

4.1 Interviews and Literature Review

4.1.1 Survey Design

The survey utilised in the INFO-SCC project was established through a specific literature review developed by the research team. This review integrated the major frameworks, research literature, and best practices in ESG integration across both the cultural and creative sectors, with an emphasis on film production. The survey was subsequently drafted to evaluate institutional alignment with SDGs as well as the operational practices from environmental, social, and governance perspectives.

To improve relevance, the survey referenced existing sectoral tools such as Green Film, Green Audio Visual, EcoMuvi, and Albert BAFTA. They assisted in the question structure and informed it against reputable international sustainability standards. These sustainability tools allowed a coherent construction of the sections of the questionnaire linked to internationally recognised sustainability standards.

The completed survey process involved both quantitative (for example, scaled or multiple-choice) and qualitative (open-ended) questions to achieve a blend of statistical comparison with descriptive material. While I did not create the original surveys, I offered feedback on particular sections to enhance clarity and consistency with research purposes.

To ensure clarity and relevance, the survey items were drafted in an iterative process of:

- a. Topic identification: directed by the literature review and international sustainability frameworks.
- b. Question creation: balancing between closed format and open-ended based upon the type of data sought (numerical or interpretive).
- c. Structurally organising: grouping questions into sections where the questions are aligned within the ESG area and with the operations of festivals.

- d. Validation: reviewed even more so within the research team to ensure consistency, coverage, and alignment with deliverables of the project.

The survey grouped the questions around ten thematic areas to give a big-picture account of sustainable operations. The thematic areas included:

1. Governance of the institutions
2. Planning the sustainability of the entity
3. Energy management of the venues
4. Ordinary logistics management
5. Food and beverage management
6. Material management
7. Environmental management
8. Social sustainability and corporate responsibility
9. Communication
10. Technological, strategic, and long-term aspects

Each section focused on specific operational hurdles and opportunities to incorporate sustainability (e.g., renewables, diverting waste, inclusive governance, and future-focused strategic planning).

The layered structure of the survey was successful in capturing sustainability practices at the organisational-level, along with stakeholder perspectives. Its results informed the development of the intervention areas discussed in subsequent sections.

Section	Main Topics	Sample Questions	Question Type	Data Nature	Purpose/Objective
1. Governance of CinemAmbiente	Festival governance model, mission, structure, financial support	<ul style="list-style-type: none"> - Could you describe the governance model of the festival? - Who is the main financial supporter? 	Open-ended	Qualitative	To understand organizational governance, decision-making, and funding structure
2. Planning the Sustainability of the Entity	Sustainability plan, responsible figures, external experts, 4R's principles	<ul style="list-style-type: none"> - Is there an official Sustainability Plan? If yes, since when? - Has a Sustainability Manager been appointed? - Have external experts been consulted? - Does the plan include the 4Rs? 	Mixed: Yes/No + Open-ended	Qualitative & Quantitative	To assess existence, maturity, and depth of sustainability strategies
3. Energy Management of the Venues	Energy sources, renewable energy use, efficiency measures, water saving	<ul style="list-style-type: none"> - What are the energy sources used? - To what extent are venues powered by renewable energy? (scale) - Are LED lights/appliances used? - Are water-saving measures planned? 	Close-ended (multiple choice, scales) + Open-ended	Quantitative & Qualitative	To evaluate energy practices and future sustainability measures
4. Ordinary Logistics Management	Sustainable commuting for employees and collaborators	<ul style="list-style-type: none"> - Are measures in place to promote public transport, cycling, electric/hybrid vehicles? 	Open-ended (with examples)	Qualitative	To investigate sustainable logistics and mobility policies
5. Food & Beverage Management	Plastic-free practices, sustainable meals, coffee use	<ul style="list-style-type: none"> - Is water provision implemented with reusable systems? - Are agreements with sustainable restaurants in place? - Are vegetarian/vegan options available? - Is compostable coffee promoted? 	Mixed: Yes/No + Open-ended	Qualitative & Quantitative	To analyze sustainability in catering and consumption
6. Material Management	Use of recycled/certified materials, paper use, cleaning products, waste sorting	<ul style="list-style-type: none"> - Are recycled/Ecoclub-certified materials used? - Is paper use reduced? If used, is it certified? - Are cleaning products certified? - What types of waste are sorted? 	Mixed: Yes/No + Multiple choice + Open-ended	Quantitative & Qualitative	To assess circular economy practices and material sustainability
7. Environmental Management (Production Manager Role)	CO2 calculation & offsetting, transport of participants, screening alternatives, sponsors	<ul style="list-style-type: none"> - Has CO2 been calculated? How? - What transport is mainly used? - Are rail transport incentives adopted? - Since when are screenings online? - What sustainability criteria guide production selection? - Who are the sponsors and how are they chosen? 	Mixed: Close-ended + Open-ended	Quantitative & Qualitative	To evaluate environmental footprint, mitigation, and partner selection
8. Social Sustainability & Corporate Responsibility	Ethical code, organizational diversity, training, welfare, work-life balance, local projects	<ul style="list-style-type: none"> - Has an ethical code been adopted? - Gender/age composition of staff? - What training is provided? - Are welfare policies in place? - Are there work-life balance measures? - What is the role of local projects? 	Mixed: Yes/No + Open-ended + Descriptive	Quantitative & Qualitative	To explore social responsibility, diversity, and employee well-being
9. Communication	Internal and external sustainability communication	<ul style="list-style-type: none"> - What measures are taken to communicate sustainability? - What goals are set for awareness raising? 	Open-ended	Qualitative	To analyze communication strategies and awareness objectives
10. Technological Strategic, and Long-Term Aspects	Future sustainability goals, innovation, AI adoption	<ul style="list-style-type: none"> - Which aspects (environmental, social, governance) need most improvement? - Where do you see the festival in 10 years? - What is your opinion on AI in the creative industry? - Is AI already used? Plans for adoption? 	Mixed: Close-ended (selection) + Open-ended	Qualitative & Quantitative	To identify strategic vision, innovation practices, and technology/integration

Table 4.1: Survey Structure Based on CinemAmbiente Case Study. Source: Developed by Author

This table displays the design of the survey modified for the INFO-SCC project, which used CinemAmbiente as an example of the case study organisation. It was a relevant example for

customising the survey to implementable operations of film festivals. The table lays out ten sections of the survey for which data was collected in each of the areas aligned to ESG, including major topics, questions, question types, nature of data, and intended uses.

The layered structure of the survey was successful in capturing sustainability practices at the organisational level, along with stakeholder perspectives. Its results informed the development of the intervention areas discussed in subsequent sections.

4.1.2 Semi-Structured Interviews and Qualitative Data Collection

After developing the survey design, the research team conducted a series of semi-structured interviews with representatives from each institution participating in the study. By using a semi-structured approach, the researcher first followed the interviewer-guided questionnaire, while remaining flexible in order to go deeper if some topics emerged.

The interviews were conducted in person, depending on the respondent's availability. Each interview lasted from 50 minutes to an hour and was audio-recorded (with consent) to ensure the accuracy of transcription.

In our discussions, interviewees were encouraged to think about structural and creative barriers to sustainability identified as ethical gaps in governance and balance with personal workload. In the documentation of INFO-SCC, it was said that “there has to be a shift in thinking, an ethical turning, a turning of common sense, you can not separate sustainability from human action that has a natural rhythm”. These conversations were instrumental in establishing a basis for identifying common points of intervention afterwards and co-designing ESG tools for the sector.

The study provided background materials prior to the interviews, including a brief description of the study, an overview of the survey structure, and the primary thematic areas. This was done to ensure that each respondent would familiarise themselves with the content of the questions and could retrieve relevant information when answering them.

After conducting the interviews, each response was transcribed verbatim to prepare data for systematic analysis. The transcripts were subsequently de-identified when required to ensure

confidentiality. Each transcript was organised thematically, and according to the ten chapters of the survey, which enabled a combined analysis of qualitative and quantitative data.

4.1.3 Identification of Priority Intervention Areas

Based on the project-specific review of the literature and the coded interview responses from six institutions in Turin, a draft coding frame for the ESG interventions was developed and applied to the dataset. Topics were then screened against three criteria, recurrent amongst the institutions, relevant to each organisation's sustainability challenges, and could be clearly articulated and measured as auditable indicators. Duplicate items were collapsed, while topics that could not, based on the institutional data, be credibly measured were excluded. The final set consists of 12 intervention areas, which are evenly split across the ESG pillars and include the most recurrent, relevant, and measurable domains across the literature and institutional sources. (Author's contribution, the consolidated list was offered by the author based on this synthesis.)

Number	Priority Areas of Intervention	ESG Pillar	Explanation	Primary Metric (Unit of Measurement)
1	Measurement of corporate CO ₂ emissions and any compensation	E	Provides a benchmark for climate impacts, identifies pathways to reduce, offset only after avoid/reduce.	tCO ₂ /year, scope coverage (%)
2	Increase the share of energy from renewables	E	Reduces operational emissions from venues, offices, events, in alignment with science-based targets.	% of total kWh
3	Compliance with EU regulations and incentives	G	Diminishes regulatory risk, allows for access to funding, ensures compliance with CSRD and taxonomy, and state aid as relevant.	% compliant items, €/year (funding obtained)
4	Waste reduction and circular reuse of resources (water, energy, food)	E	Reduces resource intensity and cost; diverts waste away from landfill; enhances local circular economies.	kg waste/attendee, % diverted, £/attendee
5	Broaden and diversity training for staff and collaborators	S	Builds ESG literacy, safety, specificity, and green production skill set, while contributing to quality, retention.	hours FTE/year, % staff trained
6	Increase under-35 share and respect gender diversity	S	Contributes decent work and generational gender balance, expands talent pipeline.	% under-35, % by gender
7	Progressive engagement of new stakeholders/audiences	S	Increases Legitimacy, Accessibility, and Community Value, enhances co-creation from co-programming.	% first-time attendees, engagements/year
8	Improve work-life balance and wellbeing	S	Decreases burnout and incidents, increases retention and equity, particularly during times of peak events.	Index (0-100), % staff using flexibility
9	Preparation of an annual Social Report	G	Increases transparency regarding impacts, outcomes, and Stakeholder value enhances accountability.	Binary (Yes/No), coverage %
10	Gender diversity and balanced representation in management/boards	S/G	Ensures inclusiveness in decision-making and reduces governance bias, links decision-making to performance.	% of seats/roles
11	Official Sustainability Plan and Sustainability Lead	G	Turns intent into targets, timelines, and ownership, anchors continuous improvement.	Binary (Yes/No), % targets complete
12	Code of Ethics and Anti-Corruption (incl. suppliers)	G	Mitigates high integrity risks with grants, procurement, and sponsorship cascades integrity standards to vendors.	Binary (Yes/No), % suppliers covered

Table 4.2: Twelve ESG Intervention Areas. Source: Developed by Author

Table 4.2 presents the final 12 domains, their ESG classification, a short rationale for the significance of each domain operationally and then a primary metric (with unit) for each domain to guide the subsequent approach to KPI design and monitoring. This set was presented to stakeholders in Workshop 1 (Nov 2024) and was used to develop the Playing cards (SRF/SIMOS prioritisation), and it subsequently informed the shortlist of KPIs discussed in Workshop 2 (May 2025).

4.2 Collect and Analyse Data

A kickoff meeting in April 2024 accompanied the introduction of and communication of objectives for the project to institutional partners. It also initiated data collection on how each institution was aligned with the processes and policies of the SDGs. Preliminary outcome findings identify strong alignment towards SDG 4 Quality Education, SDG 7 Affordable and Clean Energy, and SDG 11 Sustainable Cities and Communities, with SDG 4 being a catalyst and connector for the others.

4.2.1 Thematic Analysis and Structured Synthesis through the Idea Canvas

The data from the interviews were organised according to the structure of the survey and analysed in a thematic grouping strategy. Each transcript was then examined descriptively, and answers were grouped according to the survey's 10 thematic sections, ensuring consistency between the analysis and survey framework.

Once the answers were organised, they were systematically compared across institutions, both to highlight similarities and differences as well as to signal unique revolutions. This comparative process enabled the identification of common strengths, weaknesses, and critical issues throughout each section.

As shown in Table 4.3, the qualitative interview responses were translated into a structured Idea Canvas. An Idea Canvas is a visual framework used in common innovation management or project design to help map key challenges, resources, stakeholders, and opportunities in a systematic and concise way. It facilitated the transformation of extensive narrative data into action-oriented data that can inform strategy and planning.

<p>A1 PROBLEMS</p> <ul style="list-style-type: none"> • Absence of forward-looking governance plans • Need to improve workload sustainability and work-life balance • High emissions and energy consumption in the film sector • Lack of shared standards for environmental sustainability certification in the film industry • Social planning: need to increase inclusion of people under 40 • Need to expand welfare measures 	<p>B1 SOLUTIONS</p> <ul style="list-style-type: none"> • Define a priority order for the institutions • Connect objectives to specific SDGs for a more targeted impact • Co-create an ESG self-assessment tool • Draft a standardized ESG protocol: develop a set of sustainable guidelines applicable to institutions 	<p>C1 STAKEHOLDERS</p> <ul style="list-style-type: none"> • CinemAmbiente, Torino Film Lab, ODS, Torino Film Commission, and Robin Studio, Alp studios • Participants in the courses and institutional programs • Public administrations (City, Region, Government) and the Ministry • Film industry operators • Civil society • Universities and research bodies • Sustainability consultants 	<p>D IMPACT ON SDGs</p>
<p>A2 CONTEXT</p> <ul style="list-style-type: none"> • Turin: a developed and active network in the film sector • The five institutions involved are linked to the film industry at various levels 	<p>B2 ACTIVITIES</p> <ul style="list-style-type: none"> • Co-creation and training workshops: educating stakeholders on ESG principles and their application • Monitoring and evaluation: constantly measuring ESG impact and adjusting strategies as needed 	<p>C2 RESOURCES</p> <ul style="list-style-type: none"> • Politecnico di Torino • Sustainability consultants • Funding for project implementation and research 	<p>1 SEGUIMENTO E AVVISTAMENTO </p> <p>4 ISTRUZIONE DI QUALITÀ </p> <p>5 PIANETA SENSIBILE </p> <p>7 ENERGIA PULITA E ACCESSIBILE </p> <p>8 LAVORO DI MIGRATORIO E CRESITA ECONOMICA </p> <p>9 IMPRESE, INNOVAZIONE E INFRASTRUTTURE </p> <p>10 INIZIATIVE DI DISINNOVAZIONE </p> <p>11 CITTÀ E COMUNITÀ SOSTENIBILI </p> <p>12 CONSUMO E PRODOTTIVITÀ RESPONSABILI </p> <p>13 LOTTA CONTRO IL CAMBIAMENTO CLIMATICO </p> <p>16 PACE, GIUSTIZIA E INTEGRITÀ SOCIALE </p> <p>17 PARTNERSHIP PER IL SVILUPPO SOSTENIBILE </p>
		<p>C3 DISSEMINATION</p> <ul style="list-style-type: none"> • Collaboration with other film commissions to define common standards • Informing all stakeholders 	

Table 4.3. Idea Canvas. Source: Developed by Author

The research applied the Idea Canvas to:

- a. Organise and summarise interview responses into specific categories.
- b. Document institutional needs, assets or resources, and areas of challenge within each of the ten main sections of the survey.

One single, synthesised Idea Canvas was generated from all institutions, creating a comparative perspective across the dataset. Importantly, the SDGs included in the Idea Canvas were cross-checked with those priorities identified during the Kick-off Meeting, with the point of assessment being inferences about the consistency of priorities and possible gaps between strategy and practice.

The visual display from the Idea Canvas provided an appealing method to represent complex findings, showing at a glance how institutions defined, prioritised, and implemented sustainability in their practices.

4.2.2 SDGs Salience Table and Resulting Matrix

As indicated in Table 4.4, to supplement the qualitative analysis using the interviews and the Idea Canvas, an Impact level table was generated by the research team to show the relative priorities of the SDGs that most closely align with the participating institutions. The table is a descriptive overview of how strongly each SDG and its targets are reflected in the organisation's observed activities and practices. The designations of low, medium and high impact were established analytically, and do not capture systemic interlinkages between targets, but rather the relevant salience of targets in existing operational contexts. This act served as a middle layer between the qualitative structuring of data (Idea Canvas) and the subsequent systematic mapping of interlinkages presented in the resulting matrix.

SDG	Target	Impact level (Low/ Medium/ High)
Goal 1 (No poverty)	No specific targets	-
Goal 4 (Quality education)	4.3, 4.4, 4.7, 4.b: Goal 4 represents one of the main focus areas of the institutions involved in the INFO-SCC project	High
Goal 5 (Gender equality)	5.1, 5.5, 5.b, 5.c: Goal 5 is particularly represented, but there is a need to prepare formal documents to attest to this commitment	High
Goal 7 (Affordable and clean energy)	7.2, 7.3: While there is commitment to energy efficiency in the venues, there is still room for more ambitious planning	Low
Goal 8 (Decent work and economic growth)	8.5, 8.6: The activities analyzed are key for training and job creation	Medium
Goal 9 (Industry, Innovation and infrastructure)	9.1, 9.4: The institutions show an advanced level of innovation, both technically and in terms of training courses.	High
Goal 10 (Reduced inequalities)	10.1; 10.6: In some cases, projects for including underrepresented populations have been initiated, but the overall numbers are still limited.	Low
Goal 11 (Sustainable cities and communities)	11.3; 11.6: The territorial aspect is highly present in some projects analyzed and represents a great social and environmental opportunity.	Medium
Goal 12 (Responsible consumption and production)	12.2, 12.3, 12.4, 12.5: All the institutions are implementing control and management measures for progressive consumption reduction.	Medium
Goal 13 (Climate action)	13.3: In particular with regard to awareness raising and information campaigns on climate change, different institutions are very active.	Medium
Goal 16 (Peace, justice, and strong institutions)	16.5, 16.6, 16.7, 16.b: The institutions are committed to greater transparency, but the need remains to formalize this commitment.	Low
Goal 17 (Partnerships for the goals)	17.6, 17.7: Through various international collaborations, the ideas promoted by the institutions strongly relate to sustainable development and a more inclusive and fair society.	Medium

Table 4.4. SDGs Salience Table. source: Politecnico di Torino-Green team

To further validate and deepen the project table, I constructed a Resulting Matrix using my own time to analyse interlinkages among SDGs targets. This analysis, created outside the original scope of the projects, aimed to assess whether the targets that are highlighted in the team table also served as system drivers (i.e., positively enabling other targets) or whether they were largely reliant on target progress elsewhere.

The project table will classify what is important, and the matrix system demonstrates how targets reinforce each other. There is more substantial evidentiary support for prioritisation.



Figure 4.1. JRC Enabling Approach. Source: [EnablingSDGs | KnowSDGs](https://know-sdgs.jrc.ec.europa.eu/enablingsdgs)

Data from the kick-off meeting, interviews and surveys to support an SDG target, which were selected pairwise interactions were rated through qualitative cross-impact logic based on the JRC Enabling SDGs approach (−3 strongly restricting, −2 moderately restricting, −1 weakly restricting, 0 no influence, +1 weakly promoting, +2 moderately promoting, +3 strongly promoting). Outbound and inbound sums identify drivers (high outbound) and dependents (high inbound).

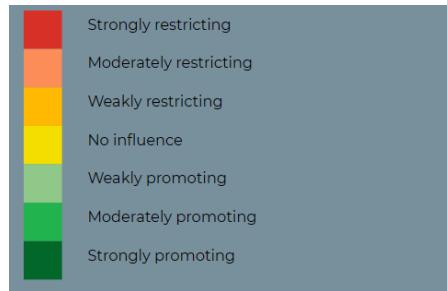


Figure 4.2 Legend–Cross-impact scoring scale (Resulting Matrix). Source: [EnablingSDGs | KnowSDGs](https://know-sdgs.jrc.ec.europa.eu/enablingsdgs)

The cross-impact matrix enables a qualitative depiction (using colours) while also providing a quantitative overview (using numerical values).

The numbers at the bottom of the column represent a target's outbound influence, or the combined amount that the target directly affects other targets. A larger number indicates that the target is a strong accelerator with the potential for multiple reinforcing impacts.

The numbers to the right side of each row show how much a target is influenced (inbound), or the total amount of the target's dependence or receptiveness to other targets' influence. A larger number means the target is quite dependent on progress elsewhere.

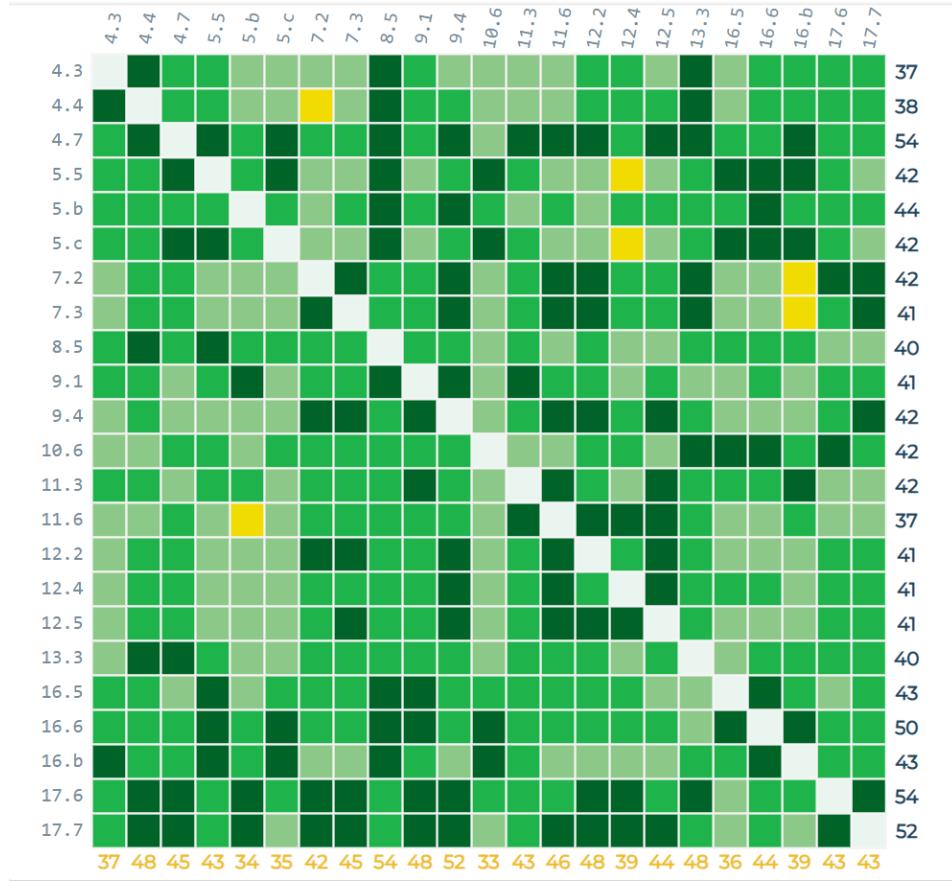


Figure 4.3. Resulting Matrix (SDG-Target Cross-Impact Heatmap). Source: Developed by Author

The matrix also allows the observation of directional asymmetries, in some cases, target A can lead to a strong promotion of target B, but target B will only weakly promote target A.

For example:

4.4 (skills for employment) → 4.7 (education for sustainable development) was coded as promoting moderately. This is because skill-oriented training systems can incorporate some sustainability content, but they are not always conceived with such a design at the fore.

In comparison, 4.7 → 4.4 was rated as strongly promoting, because when sustainability is embedded in education systems, sustainability will directly influence the skills and competencies employed in the workforce in ways that fully align with SDG 4.4.

These asymmetries stem from the causal structure of the SDG system. Enabling targets, such as education, gender equality, and governance, generate substantial outward impacts, as they create the conditions for systemic change. Technical outcome targets, such as waste reduction or emissions management, tend to have a different, weaker outward engagement, as they are, fundamentally, results that do not reach back to the enabling condition without intentional connection through some institutional or policy framework.

The salience ratings can be compared with the inbound scores from Figure 4.3, the resulting matrix (i.e. the dependence of each target on the progress for other targets) to check for concordance, flag divergences (e.g. a target may have a high dependence but low/medium salience), and implications for prioritisation and monitoring in the next step. The “Impact” corresponds to the project team's SDG Impact Table 4.3, which ranks the salience of each SDG target.

The most dependent target was SDG 4.7 (education for sustainable development) with an inbound score of 54 (Impact: High), reflecting very high alignment between salience and its dependence on enabling conditions (governance, decent work, partnerships). Similarly, SDG 17.6 (international cooperation/technology transfer) also scored 54 (Impact: Medium), revealing an incongruence that was operational across less salient than enabling systemic dependence suggested.

SDG 16.6 (effective, accountable institutions) scored 50 (Impact: Low), clearly demonstrating divergence as institutional capacity was not sufficiently emphasised, despite its potential to benefit from improvements elsewhere. SDG 5.b (ICTs for women's empowerment) scored 44 (Impact: High), which broadly aligns with its recognised strategic relevance.

However, SDG 7.2 (share of renewables) scored 42 (Impact: Low) to highlight structural dependence on financing and infrastructure that has not yet been met by practical salience, especially in venue-constrained settings. Also at 42, SDG 9.4 (infrastructure upgrades) (Impact: High) showed alignment between dependence and perceived priority.

SDG 10.6 (inclusive decision-making/voice) (Impact: Low) exhibited conceptual acknowledgement that has not yet been operationalised, and SDG 11.3 (participatory urban planning/cultural space) (Impact: Medium) indicated general consistency.

The SDG 12 cluster (12.2 to 12.5, resource efficiency, waste, circularity) scored 41 (Impact: Medium), which is in the range of moderate dependence on procurement practices and staff capacity.

Finally, SDG 8.5 (decent work and employment) and SDG 13.3 (climate education/awareness) both scored 40 (Impacts: Medium for both), notably, 8.5 also acted as a driver in the outbound analysis (and again, simply meaning it could enable other targets) in spite of its moderate inbound dependence.

The term outbound refers to a target's ability to generate progress towards the other targets. In the comparison of the outbound measure of the leverage point for each target and with reference to the project Impact Table 4.3, it can identify, confirm priority levers (high outbound, high salience), undervalued levers (high outbound, low/medium salience), and outcome-type targets better suited for tracking (low outbound, high salience).

SDG 8.5 (Decent work and employment), scored 54 with Medium Impact. This is an undervalued lever, while it was rated only medium salience, the outbound score is very high, meaning that improvements in fair contracts, workloads, and stable employment tend to unlock gains in other targets (for instance, training participation, procurement quality, organisational level performance, etc.).

SDG 9.4 (Upgrade infrastructure for sustainability) with outbound 52 and Impact High. This is a confirmed priority lever, the matrix and stakeholders acknowledge its significance. Investments into efficient facilities, equipment and digital/production infrastructure generate spillovers to various targets (energy efficiency, circularity, skills deployment).

SDG 16.5 (Reduce corruption/bribery) with outbound 36 and Impact that is reported as low-to-medium. With outbound influence reported as moderate, the integrity and controls around corruption generate reasonable, though not ultimate spillovers (for example, supplier compliance, trust, and inclusivity in decision making). The lower salience of the Impact Table

points to governance that is likely not sufficiently addressed and that has benefits beyond compliance.

SDG 10.6 (Accessibility of decision making/voice) with outbound 33 and Impact Low. This is on the low outbound end of the targets we considered. It seems more like an outcome to be tracked (for example, board diversity and participative processes) rather than a system lever. Progress is made in this outcome area with improved governance capacity and workforce conditions and not by compelling a change, leaving equity, inclusivity and access and social processes and systems unchanged.

To conclude, this section aimed to validate the project's salience ratings and to represent them in a usable prioritisation logic. By comparing the inbound (dependence) scores and the outbound (driving power) scores from the resulting matrix back to the Impact Table, descriptive notions of "importance" were formed into causal roles, which target anchor intervention because they are the ones propagating effects, and which should be tracked as outcomes because they are primarily receiving them. This dualistic view clarifies where emphasis was placed well, or under or over-stated, offering a transparent rationale for the final selection of priority domains, sequencing, and feasibility assumptions relied upon during the next steps of the project.

4.2.3 SWOT Analysis

A SWOT analysis was devised based on the literature review and the interview responses to synthesise the ESG practices of the institutions involved in the research. A full version of the literature review is included in the appendix.

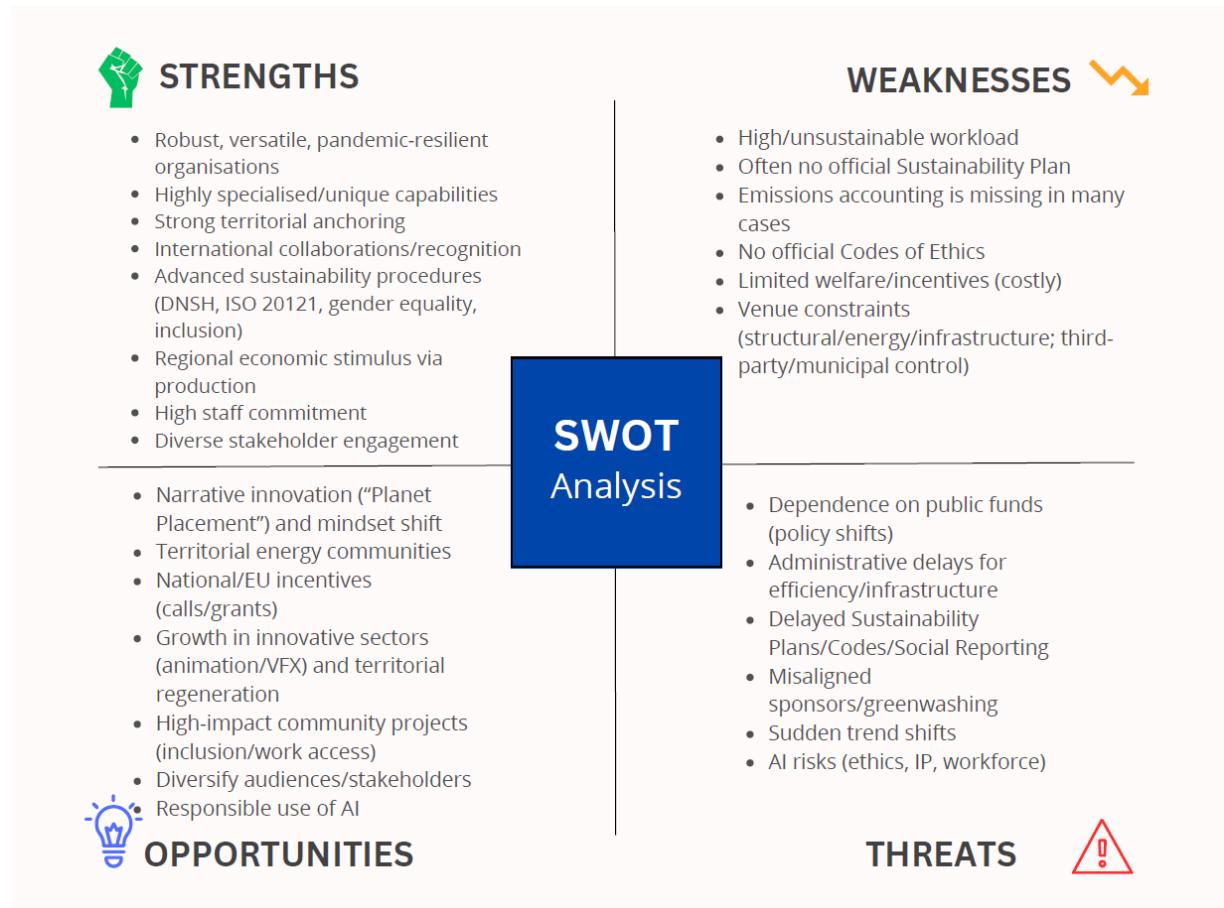


Figure 4.4: SWOT Analysis. Source: Developed by Author

Strengths

The strengths indicate a mature, mission-driven ecosystem. Organisations have resilience and adaptability (stress-tested in the pandemic), unique specialisation, and strong territorial anchoring, even while maintaining collaborative and reputational recognition internationally. In some identified cases, formalised protocols (DNSH, ISO 20121, gender equality and inclusion practices) are already established. These fundamental assets, coupled with an ability to draw productions, can result in measurable economic stimulant effects at the regional level. Internally, demonstrated commitment from staff and broad engagement of stakeholders (across types and ages) strengthen capacity for implementation.

Weaknesses

On the other hand, weaknesses expose governance and operational gaps that may prevent both growth and credibility, high and often unmanageable workloads, regular lack of formal Sustainability Plans and emissions accounting, lack of formal Codes of Ethics, and limited corporate welfare measures due to budget. Similar physical challenges at sites—especially at third-party or municipal sites where structures, energy, and infrastructure impose additional constraints—limit the organisation's direct ability to improve performance.

Opportunities

The opportunities are quite large and line up with existing policies and market windows, narrative intervention (e.g., Planet Placement) can shift perceptions and bring sustainability to the center without catastrophic framing, territory-based energy projects (energy communities) and national/EU funding channels can be sources of financing for decarbonization and efficiency, accused interruptions such as animation and VFX present high value return on growth and territorial regeneration through the attraction of foreign investment. High-impact community projects can shift cultural capital into inclusive employment pathways, and audience/stakeholder diversification and responsible AI adoption can move the dial on access, productivity and the ability to relate to stakeholders.

Threats

At the same time, threats highlight contextual risks that need proactive mitigation, dependence on public funding (regional/national/EU) for fiscal and policy operations exposes organizations to changes in political priorities, administrative delays can result in reduced efficiencies and slower infrastructure upgrades, procrastination on contributions to sustainability plans, codes of conduct, and social reporting increases compliance risks and reputational risk, sponsor misalignment and greenwashing threaten credibility, rapid volatility of trends and fashions presents a risk to programming and investments, and while AI is an opportunity, AI also raises risks around ethics, intellectual property, job loss, and technology lock-in.

4.3 Workshops 1 (November 24, 2024)

4.3.1 Playing Cards (SRF Method)

The Simos–Roy–Figueira (SRF) method was implemented in Workshop 1 for the assignment of criterion weights via a card sort process. Decision-makers rank the criteria cards from least to most important, and use the white (blank) cards in any gaps between adjacent ranks to indicate the strength of the gap in importance. The algorithm then transforms that ordinal information (order + gaps) into normalised numerical weights for the criteria. The revised procedure was formalised in Figueira & Roy (2002) and has been widely adopted in MCDA practice and instruction.

This method was selected because it is transparent and participatory, and can be understood easily by non-specialists using physical cards. Measures not only the order of priorities, but also the size of differences with the white cards, and develops easily-replicated, normalised weights for further quantitative analysis (e.g., ranking, sensitivity checks). These benefits are highlighted in SRF/Revised-Simos literature and training documents (Siskos & Tsotsolas, 2015).

Participants were presented with twelve coloured cards, each colour representing one of the priority interventions/decision criteria as identified earlier.

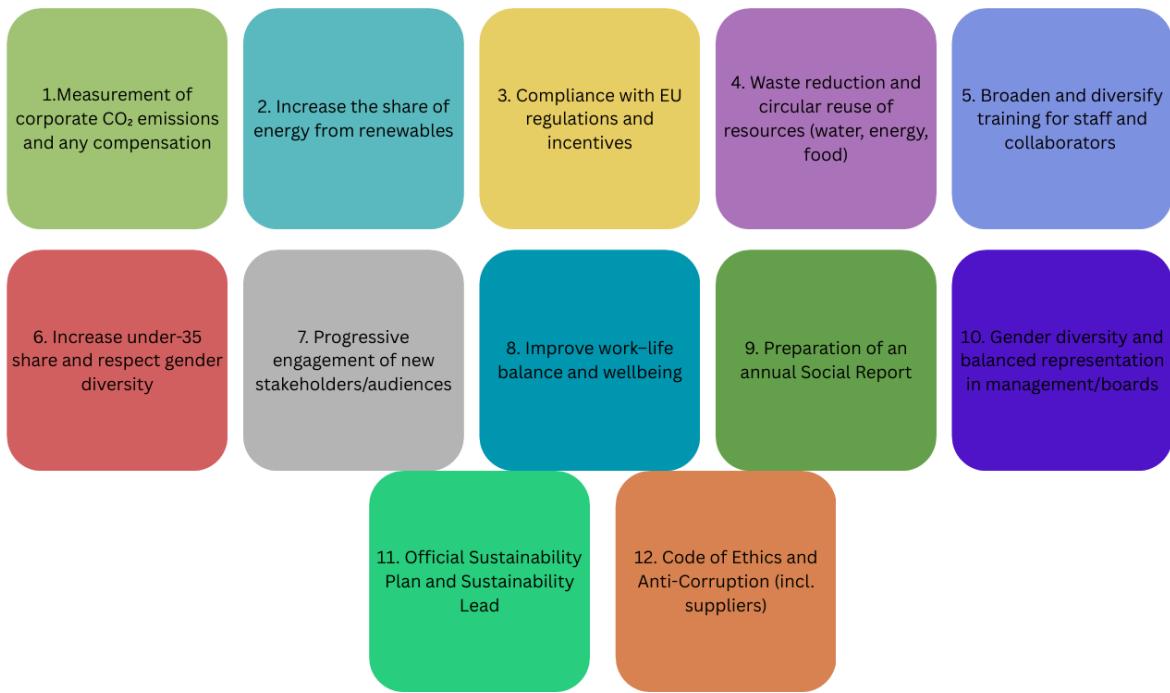


Figure 4.5: Twelve Coloured SRF Criteria before Ranking. Source: Developed by Author

The cards were arranged in order of least to most important based on the preferences of representatives of the institution. Ties (criteria that were judged equally important) were acknowledged with an equal number rank. To indicate how much more important one rank is than the next rank, the participants inserted white cards between ranks. No white card indicated no separation or minimum gap, one white card indicated a larger gap, two white cards indicated an even larger gap and so on. In the revised Simos procedure, these white cards convey the unit gap that the algorithm adjusts to develop ranks into weightings (ie, one white card is a larger gap away from no white).

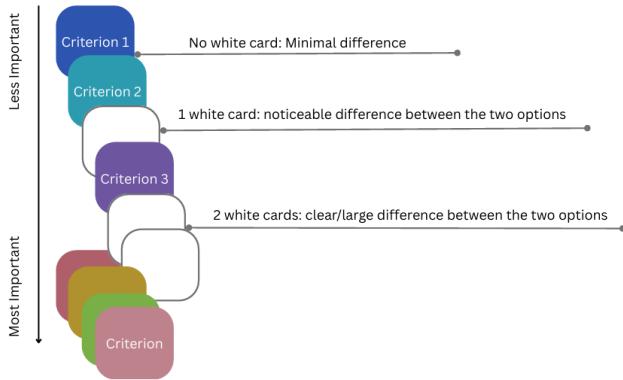


Figure 4.6: Sort the Criterion. Source: Developed by Author

The white cards can also demonstrate the intensity of one criterion over another by inserting white cards, based on the following logic in Table 4.5.

Number of White Cards	Difference in Terms of Importance	Distance
0	Weak importance	1 Time more importance
1	Moderate importance	2 Times more importance
2	Strong importance	3 Times more importance
3	Very strong importance	4 Times more importance
4	Extreme importance	5 Times more importance

Table 4.5: Importance Scale. Source: Developed by Author

As an example, the section presents the card-ordering results for two organisations (ODS and CinemAmbiente), the complete rankings of all the other organisations can be found in the Appendix.

As shown in Figure 4.7, the participants in the ODS subjected the twelve criteria displayed to a relative ranking of importance between adjacent criteria through the use of the SRF white-card gaps, according to their preferences. The most important was the Measurement of corporate CO₂ emissions and any compensation, followed by the Code of Ethics and Anti-Corruption (including suppliers). The less important was Progressive engagement of new stakeholders/audiences, a single white card separated it from the cluster of Renewable energy share, Waste and circular resources, Training, Under-35 and gender diversity, and Gender diversity in management/boards, which indicated some moderate step-up in importance.

Compliance with EU regulations/incentives and the Official Sustainability Plan and Sustainability Lead occupy a middle tier and do not display significant gaps.

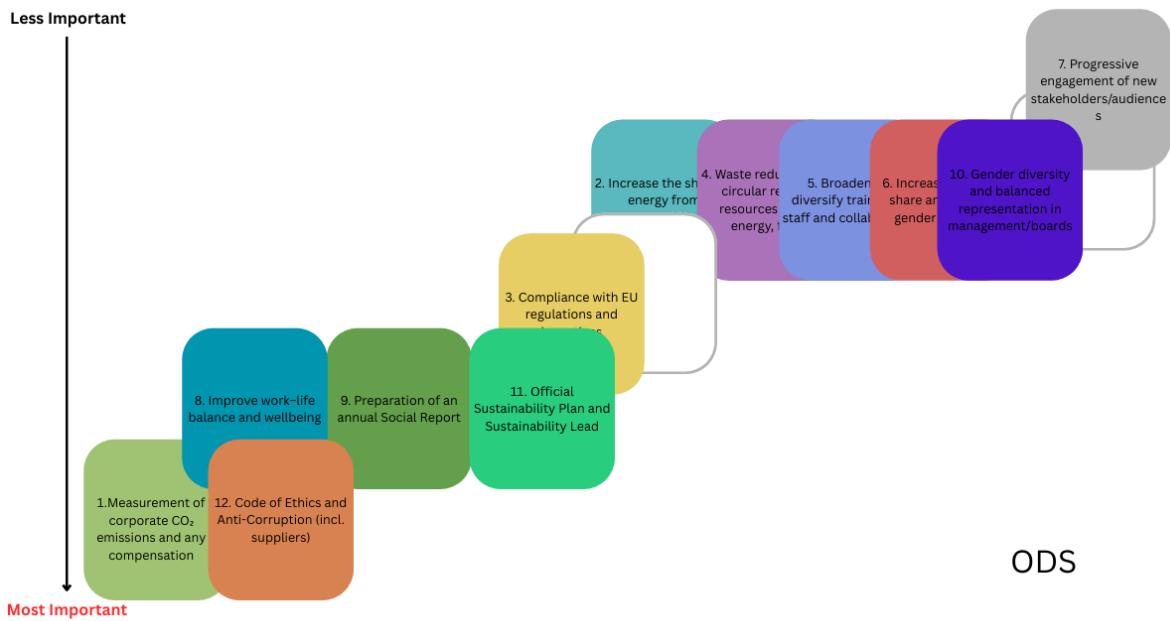


Figure 4.7: ODS-Final Ranking of Criteria. Source: Ordered by Institutions

As illustrated in Figure 4.8, participants in CinemAmbiente ranked the twelve criteria as follows, and also indicated relative importance in the form of white-card gaps in card pairs at the same point. Progressive engagement of new stakeholders/audiences and work-life balance and wellbeing were at the most important end, indicating a strong social/participatory emphasis. Circular waste and resources, training, Sustainability Plan and Lead, Code of Ethics and Anti-Corruption, and renewable energy share were in the centre; the white cards between some of these pairings (e.g., between work-life balance and circularity, and between renewables and CO₂ measurement) denote a moderate step-up in importance. CO₂ measurement/compensation, EU mandates and incentives, and gender diversity (workforce and leadership) were also following the centre tier, while the annual Social Report was deemed least important, signalling less salience for formal reporting in comparison to operational and social levers.

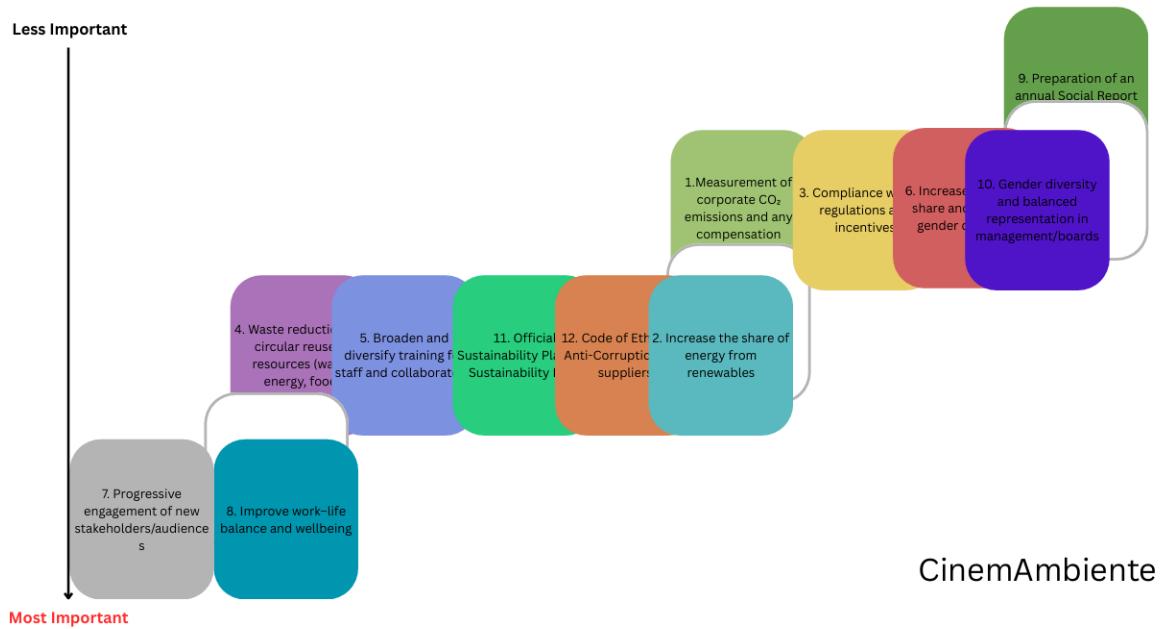


Figure 4.8: CinemAmbiente-Final Ranking of Criteria. Source: Ordered by Institutions

4.3.2 Implementation of the Playing Cards Result (SRF Normalisation)

Once each individual institution has finalised the playing cards ordering, the final ordering was copied into a table with the following columns, Rank, Domains of Intervention and White cards, Number of cards m , Position P , Non-normalised weight w_{nn} , Normalised weight w and Total. The Position column represents the contiguous integer positions occupied by that block. White cards were documented for transparency to the process, but excluded from any weight calculation. For any row that is a non-white card, the non-normalised weight is the average of its positions. The normalised weight of any row is its w_{nn} divided by the sum of all individual positions of all the non-white cards and then multiplied by 100. The Total column allocates the row's normalised weight to all cards in the row: $w \times m$. Totals across rows total 100.

For row i , with m_i cards occupying the positions $P_i = \{p_i, p_i + 1, \dots, p_i + m_i - 1\}$ (non-white):

$$w_{nn} = \frac{1}{m_i} \sum_{k \in P_i} k$$

$$S = \sum_{\text{all non-white } i} \sum_{k \in P_i} k$$

$$w_i = \frac{w_{nn,i}}{S} \times 100$$

$$Total_i = w_i \times m_i$$

By construction $\sum i Total_i = 100$.

The average of positions definition is used for w_{nn} which is equivalent to $pi + \frac{m_i - 1}{2}$, the denominator S is the sum of all positions, which 95 would be an example in this case.

To disclose all calculations, the complete Excel workbooks for all institutions are located in Appendix, where ODS and CinemAmbiente are shown as the worked example.

Rank	Domain of Interventions and White Cards	Number of Cards	Position	Non-normalised Weights	Normalised Weights	Total
1	7. Progressive engagement of new stakeholders/audiences	1	1	1	1.053	1.05
2	White card	1	2		0.00	0.00
3	5. Broaden and diversify training for staff and collaborators, 2. Increase the share of energy from renewables, 4. Waste reduction and circular reuse of resources (water, energy, food), 10. Gender diversity and balanced representation in management/boards, 6. Increase under-35 share and respect gender diversity.	5	3,4,5,6,7	5	5.263	26.32
4	White card	1	8		0.00	0.00
5	3. Compliance with EU regulations and incentives	1	9	9	9.474	9.47
6	8. Improve work-life balance and wellbeing, 9. Preparation of an annual Social Report, 11. Official Sustainability Plan and Sustainability Lead.	3	10, 11, 12	11	11.579	34.74
7	1. Measurement of corporate CO ₂ emissions and any compensation, 12. Code of Ethics and Anti-Corruption (incl. suppliers).	2	13, 14	13.5	14.211	28.42
	Sum	14	95			100.00

Table 4.6: SRF Weight Calculation from Playing Cards-ODS (Excel implementation). Source: Developed by Author

Rank	KPIs And White Cards	Number of Cards	Position	Non-normalised Weights	Normalised Weights	Total
1	9. Preparation of an annual Social Report	1	1	1	1.02	1.02
2	White card	1	2		0.00	0.00
3	1. Measurement of corporate CO ₂ emissions and any compensation, 3. Compliance with EU regulations and incentives, 6. Increase under-35 share and respect gender diversity, 10. Gender diversity and balanced representation in management/boards.	4	3,4,5,6	4.5	4.59	18.37
4	White card	1	7		0.00	0.00
5	4. Waste reduction and circular reuse of resources (water, energy, food), 5. Broaden and diversify training for staff and collaborators, 11. Official Sustainability Plan and Sustainability Lead, 12. Code of Ethics and Anti-Corruption (incl. suppliers), 2. Increase the share of energy from renewables.	5	8,9,10,11,12	10	10.20	51.02
6	White card	1	13		0.00	0.00
7	8. Improve work-life balance and wellbeing, 7. Progressive engagement of new stakeholders/audiences.	2	14,15	14.5	14.80	29.59
Sum		15	98			100.00

Table 4.7: SRF Weight Calculation from Playing Cards-CinemAmbiente (Excel implementation). Source: Developed by Author

All computations were completed by the author, weights were normalised to a total of 100 (the white-card gaps inform relative distances but are excluded from consideration as items).

4.3.3 Confirmation of Priority

After the participatory ranking of the intervention areas in Workshop 1, the project team generated a preliminary priority list. This step was necessary to affirm the collective opinion established during the first workshop (noting that many participants would likely have some degree of shared interaction with the different sectors) and to confirm sustainability goals as intended in the INFO-SCC project.

The confirmation step included the following:

- Data consolidation: the results of the Playing Cards exercise were linked together in an Excel tool, where it was now possible to do some quantitative comparison of the ranking assigned by each institution's stakeholder.
- Cross-reference: after clarifying and collating the prioritised rankings, the project assessed each of the rankings through the lens of operational feasibility in each of the stakeholders' institutions' context, and ESG alignment.
- Stakeholder feedback loop: the project opened a feedback loop with the partners to allow commentary for the prioritised list through follow-up communications. Stakeholders were asked to add clarification or modify the agreed-upon prioritised list if necessary before recommending next steps.

These steps provided additional assurances that the prioritised selections under the participatory ranking were not only a representation of a collective opinion, but they were also likely operationally feasible at each of the institutions. The project was able to eliminate misunderstanding about the stakeholders' rankings and create a legitimate base for further calibrating the domains of intervention prior to the second workshop.

4.4 Workshop 2 (May 7, 2025)

After Workshop 1 and playing cards estimations, the normalised weights from each domain in the six institutions were collated and averaged to create a cross-institution mean normalised weight. This process resulted in a single, integrated ranking that ranks the twelve domains in a descending order of average weight and provides an evidence-based baseline for members to discuss together, as shown in Table 4.8.

Domain of Interventions	Average Normalised Weight
7. Progressive engagement of new stakeholders/audiences	11,06
8. Improve work-life balance and wellbeing	9,68
11. Official Sustainability Plan and Sustainability Lead	9,45
9. Preparation of an annual Social Report	9,39
4. Waste reduction and circular reuse of resources (water, energy, food)	9,36
1. Measurement of corporate CO ₂ emissions and any compensation	9,06
12. Code of Ethics and Anti-Corruption (incl. suppliers)	8,88
3. Compliance with EU regulations and incentives	8,31
2. Increase the share of energy from renewables	8,23
5. Broaden and diversify training for staff and collaborators	7,71
10. Gender diversity and balanced representation in management/boards	5,43
6. Increase under-35 share and respect gender diversity	5,01

Table 4.8 Consolidated Ranking of the Twelve Intervention Domains (Average Normalised Weights).
Source: Developed by Author

Even though all six institutions used a standardised methodology (the SRF/Playing Cards), the interventions were rated differently for importance. Of course, each institution's rating was influenced by individual institutional prioritisation, resource capacity, operational role, and subjective interpretation of threshold sustainability concepts and ideals. For this reason, it was

not possible to arrive at a consistent or unified ranking of the 12 intervention areas. This heterogeneity can be seen in Figure 4.9 below which shows the variability in average normalised weights and score distribution between institutions, illustrating the lack of convergence of varied sustainability domains perceived importance.

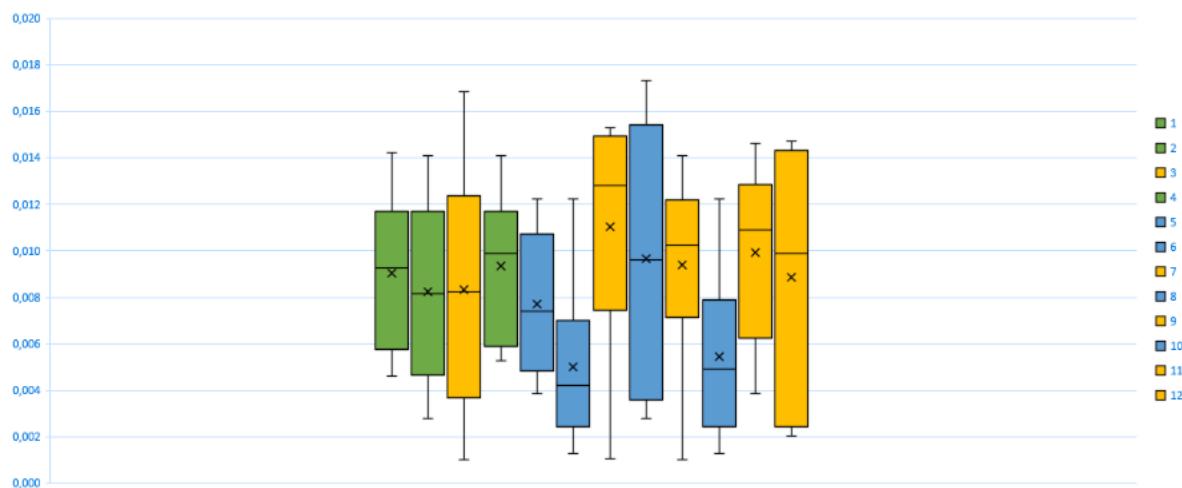


Figure 4.9. Heterogeneous Results. Source: Politecnico di Torino-Green Team

Therefore, it was decided to keep the three distinct areas (Environment, Social and Governance) and work on the areas that had received greater importance in each area. The following Table 4.9 shows the areas divided into the three areas with the weights resulting from the first workshop.

Environment		social	
4. Waste reduction and circular reuse of resources (water, energy, food)	9,36	8. Improve work-life balance and wellbeing	9,68
1. Measurement of corporate CO ₂ emissions and any compensation	9,06	5. Broaden and diversify training for staff and collaborators	7,71
2. Increase the share of energy from renewables	8,23	10. Gender diversity and balanced representation in management/boards	5,43
		6. Increase under-35 share and respect gender diversity	5,01
Governance			
7. Progressive engagement of new stakeholders/audiences	11,06		
11. Official Sustainability Plan and Sustainability Lead	9,45		
9. Preparation of an annual Social Report	9,39		
12. Code of Ethics and Anti-Corruption (incl. suppliers)	8,88		
3. Compliance with EU regulations and incentives	8,31		

Table 4.9 ESG Sections. Source: Developed by Author

The Workshop 2 was held on 7 May 2025 with the aim of developing the ESG assessment tool and validating a set of more specific and operational indicators and areas, common and shared by all participating entities.

The World Cafe method was employed in the workshop to ensure inclusive peer-to-peer deliberation, as well as cross-pollination of ideas to develop or refine the assessment tool and indicators. Three tables were identified, Environment, Social, Governance, and three integrated groups (people from different organisations) rotated through each table for approximately 15 minutes for a round of discussion. At each table, participants were asked to discuss the priority domains that emerged during Workshop 1, harmonise on the weighting in the synthesis exercise, review the proposed indicators, and provide suggestions for refinement or implementation. The goal was to harmonise on a common set of 4-5 KPIs for the common self-assessment tool.

Environment Table:

The discussion focused on CO₂ emissions as well as what constitutes green procurement. There appeared to be a consensus amongst participants that CO₂ accounting is the broadest proxy of environmental performance and an area where many organisations are already active, often with external certifiers or calculators, yet comparability and articulation of results remains difficult. In light, participants supported a graded/qualitative scale (eg, coverage of scopes, targets, progress against baseline).

Regarding green procurement, practices are not universally adopted nor consistent. It is considered the exchange of vendor lists and minimum criteria as a pragmatic way to scale impact. In relation to the decarbonisation pathway, participants recognised the limits of the organisation's infrastructure (e.g., energy systems in the venue, mobility options) in regard to the ultimate reduction that they could achieve.

Social Table:

Every organisation noted the need for urgency in work-life balance and well-being, but suggested varying preferences for implementation (i.e., sharing moments vs. clearer boundary-setting via time-tracking and Life-Design support). Burnout risk was a point of discussion, with particular concern in emotionally demanding roles, and interest in stress-risk

analysis and specific training with work-psychology experts. Other ideas suggested in the discussion included peer-to-peer training, language courses (especially English), reflection on gender issues, and mindful use of AI. More than a few suggested introducing a set number of hours weekly in training decided by the staff.

Governance Table:

Participants suggested the need for relevant, engaging training on ethical values and organisation, including issues (gender equality, transparency, cybersecurity, and anti-corruption) in face-to-face training and co-created development instead of a top-down approach. The absence of a dedicated role to manage sustainability and minimal resources around social issues were obstacles to the introduction of training. There was broad support for the introduction or strengthening of a Code of Ethics, ideally supported by an Ethics Committee that reviewed compliance and engagement. Lastly, participants suggested creating confidential reporting methods (including a physical help desk for reporting) that addressed harassment and other serious issues, with expectations for protection and follow-up.

4.4.1 Core KPI Set Selected in Workshop 2 (Environment, Social, Governance)

Based on the outcomes of Workshop 2, a consolidated set of core Key Performance Indicators (KPIs) was validated through stakeholder discussion and consensus-building.

Environment:

1. CO₂ Emissions (qualitative & quantitative), coverage of scopes and presence of targets with annual tCO₂e reported if available.

Unit: tCO₂e/year + qualitative scale.

2. Green Procurement coverage, percentage of spend/contracts that meet minimum sustainability standards.

Unit: % of annual procurement spend (or % of contracts) that meets the standards.

Social:

3. Work-Life Balance & Well-being, composite or index based on agreed items (e.g., completed stress-risk assessment, access to support, flexible arrangements in place).

Unit: index 0-100 (or % of items achieved).

4. Training coverage and intensity, type of training (incl. peer-to-peer training, languages, DEI, mindful AI) and level of staff engaged and time to train.

Unit: % of each staff trained each year, hours of training per FTE/year.

Governance:

5. Code of Ethics—adoption and adherence, formal adoption plus supplier extension and basic compliance checks.

Unit: Yes/No (adoption), % of covered suppliers, of compliance checks/year.

These indicators represent a concise but thorough set of metrics that refer to common priorities across institutions, while also being easy to use. They were agreed as the baseline for the sustainability self-assessment tool to be applied in future project phases.

5. Chapter 5: Conclusion

This thesis dealt with the integration of ESG (Environmental, Social, Governance) principles into the cultural and creative sectors through the co-development of a dedicated framework of sustainability indicators through a participatory approach. The research focused on six cultural institutions that were part of the INFO-SCC project, contributing through a staged methodology to inform the identification of the relevant sustainability domains for institutional practice, policy alignment, and operational constraints. While international ESG frameworks provided a useful starting point, this research recognised the necessity for the development of context-specific indicators that considered the complexity and diversity of cultural organisations.

In responding to the research inquiry, several principal contributions took shape. First, this research conducted a literature review and followed a thematic analysis of institutional practices to help identify the most frequent, measurable, and relevant areas of sustainability, defining twelve ESG areas of intervention across environmental, social, and governance aspects. Second, these areas were prioritised collaboratively through workshops that drew on decision-making tools like the SIMOS (Playing Cards) approach, uncovering the challenges and variances in preferences of stakeholders, ultimately leading to co-selection of a Core Set of ESG Key Performance Indicators (KPIs) that were both measurable, as well as reflective of the capacity of the institution.

This study provides both theoretical and practical contributions. In terms of theory, it demonstrates how ESG can be contextualised in creative industries, a sector that currently has no formal sustainability standards. In terms of practice, the outputs provide a scalable process and adaptable toolset for use by like-minded institutions that want to assess or implement ESG practices. The processes and outputs of this thesis provide a solid foundation for the future development stages of the INFO-SCC project (e.g., KPIs will form the baseline for tool development, pilot testing and eventual policy integration).

5.1 Future Development

Following up on the work that has been conducted in this thesis, the next stages of the INFO-SCC project present an opportunity to apply and operationalise the ESG indicators

established through this thesis. The selected KPIs and prioritised domains for intervention will form the basis of Phase 4, focusing on the co-design and the definition of customised sustainability strategies for participating institutions. In this phase, organisations will take the ESG priorities provided in the study and transform them into operational strategies, aligning their internal capabilities to measurable goals, and in order to do this, the indicators in this research study will present the foundations for developing institution-specific action plans that achieve relevance and comparability.

In Phase 5, the emphasis will shift to the development, implementation, and evaluation of institutional sustainability plans. This phase will test the applicability of the co-designed KPIs and assess the capacity of institutions to integrate these into their regular planning and monitoring practices. The insights from this thesis, including the observed differences in ESG prioritisation, as well as the use of innovative tools like the SIMOS method, will inform the approach to monitoring and feedback mechanisms. Moreover, the indicators selected here will feed directly into baseline measurements, enabling evaluation of progress and the refinement of institutional sustainability plans.

Future development will also benefit from more extensive academic and policy discussions surrounding cultural sustainability. As Duxbury et al. (2018) note, sustainability has to be embedded in cultural practice through more than metrics; the field needs a culture shift around value, impact and responsibility. The indicators in this thesis are technical in nature, however, they are situated within this wider shift, contributing to, as Soini and Birkeland (2013) put it, "the transformative cultural sustainability paradigm."

This thesis also suggests the necessity for more flexible tools with the ability to adapt to different levels of institutional maturity. In the future, these KPIs could potentially form the basis for the development of digital tools or dashboards capable of supporting data collection, benchmarking, and peer learning. As the project progresses towards its concluding stages, these outputs can be meaningful and contributing factors toward the overall long-term goal of creating an adaptable, replicable, and policy-pull sustainability framework for the cultural and creative industries.

5.2 Limitations

Even though this research has produced useful information, there are some limitations worth noting. First, the research was limited to a low number of institutions (six) within a specific region (Turin, Italy). Although it provided a richly descriptive and contextually embedded analysis, it may limit the ability to generalise the findings to other cultural and geographical contexts. Further research with a larger sample of institutions in a more varied context across multiple countries and scales (local, national, transnational) could serve to further validate and refine the ESG indicators presented.

Second, the methodology's participatory focus, particularly during workshops and interviews, was reliant on the willingness, time, and interpretative capacities of the stakeholders. Variability in engagement, institutional mandates, and familiarity with the ESG concepts affected the depth and consistency of stakeholder input. Ultimately, this created additional barriers to achieving consensus outcomes, as illustrated in the SRF/SIMOS methods, where consensus was not achieved at all times.

Third, time limited the project. While an iterative framework of five phases was proposed, only the first three were actualised in the timeframe of the research. Phases 4 and 5, which involve operational strategy development and innovation with sustainability planning, are envisioned for future implementation, but not fully actualised in the research timeframe. This does not limit the applicability of the ESG KPIs in immediate practical institutional uses, but sets up a strong future possibility of applying them.

In conclusion, although the resulting matrix and comparative SDG alignment tables provide a new contribution to analysis, their interpretation is still qualitative in nature. The lack of time_series data prevents a full assessment of the significance or evolution of ESG integration over time across institutions. Ongoing research should consider monitoring mechanisms, tracking data over time, and assessing effectiveness, adoption and progress.

5.3 Conclusive Remarks

The findings of this research suggest that it is feasible and worthwhile to turn high-level ESG principles into contextualised performance indicators for culture and film. By combining frameworks from the literature and stakeholder consultation, the research successfully derived

measurable sustainability intervention areas that connect an institutional context with the global goals for sustainability.

An important contribution is the independently developed Resulting Matrix, which sought to cross-reference stakeholder-prioritised SDG targets with impact evaluations that already existed to identify areas of both alignment and divergence. In combination with the Idea Canvas and impact mapping, this matrix provided descriptors that were visual and analytical tools to identify systemic gaps, shared values, and challenges particular to their contexts. These tools help us better understand how cultural institutions can transition from the rhetoric of sustainability to the explicit, operational tool of sustainability.

The findings show that although ESG principles are established at a global level, their adaptation to the cultural landscape must remain flexible, iterative, and participatory. The KPIs co-developed as a result of this study are not fixed instruments but ongoing and evolving parts of a sustainability framework that negotiates global accountability with local institutional realities.

List of References

Adam, I., Lai, S., Nelson, A., Wanless, A., & Yadav, K. (2023, November 9). *Emergency management and information integrity: A framework for crisis response*. Carnegie Endowment for International Peace.

<https://carnegieendowment.org/research/2023/11/emergency-management-and-information-integrity-a-framework-for-crisis-response>

Alps Studios. (n.d.). About. <https://www.alps-studios.com/about/>

Allwood, G. (2020). Mainstreaming gender and climate change to achieve a just transition to a climate-neutral Europe. *Journal of Common Market Studies*, 58(SI), 173–186. <https://doi.org/10.1111/jcms.13082>

Artero, J. P. (2009). *Corporate governance and risk identification in global media companies*. Ediciones Universidad de Navarra, S.A. (EUNSA)

Ashe, M. (2019). “With great power”: Spinning environmental worlds and ‘green’ production in *The Amazing Spider-Man 2*’s marketing. *Media Industries Journal*, 6(1). <https://www.mediaindustriesjournal.org/>

Astikainen, K. (2022, December 15). The learning curve – Memory of Water; Finland’s first attempt at sustainable film production. *Moving People and Images Journal*. <https://movingpeopleandimagesjournal.com/the-learning-curve-memory-of-water-finlands-first-attempt-at-sustainable-film-production/>

Bender, E. M., Gebru, T., McMillan-Major, A., & Mitchell, S. (2021). On the dangers of stochastic parrots: Can language models be too big? In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency*, Virtual Event, Canada, 3–10 March 2021.

Bozak, N. (2011). *The cinematic footprint: Lights, camera, natural resources*. Rutgers University Press

Borsa Italiana. (n.d.). Corporate governance. <https://www.borsaitaliana.it/borsa/glossario/corporate-governance.html>

Bose, S. (2020). Evolution of ESG reporting frameworks. In D. C. Esty & T. Cort (Eds.), *Values at work* (pp. 13–33). Palgrave Macmillan: Cham, Switzerland.

Brown, J., & Isaacs, D. (2005). *The World Café: Shaping our futures through conversations that matter*. Berrett-Koehler Publishers.

Buolamwini, J., & Gebru, T. (2018). *Gender shades: Intersectional accuracy disparities in commercial gender classification*. In *Proceedings of the Conference on Fairness, Accountability, and Transparency* (pp. 77–91), New York, NY, USA, 23–24 February.

Chen, Y., Jiang, Y., & Wang, Z. (2023). *Sustainable art production and consumption in Northeast Asia: A study on ESG management in film and TV industry*. Paper presented at the 6th International Conference on Research in Management. https://www.researchgate.net/publication/376025932_Sustainable_Art_Production_and_Consumption_in_Northeast_Asia_A_Study_on_ESG_Management_in_Film_and_TV_Industry

Clayton, S. (2024). *A social psychology of climate change: Progress and promise*. *British Journal of Social Psychology*, 63(4), 1535–1546. <https://doi.org/10.1111/bjso.12749>

Corporate Finance Institute. (2024). *SWOT analysis – How to perform one with examples*. <https://corporatefinanceinstitute.com/resources/management/swot-analysis/>

Corporate Governance Institute. (2024). *What is the history of ESG?* <https://www.thecorporategovernanceinstitute.com/insights/lexicon/what-is-the-history-of-esg/>

Du Toit, E. (2024). *Thirty years of sustainability reporting: Insights, gaps and an agenda for future research through a systematic literature review*. *Sustainability*, 16(23), 10750. <https://doi.org/10.3390/su162310750>

Eckhart, M. (2020). *Financial regulations and ESG investing: Looking back and forward*. In D. C. Esty & T. Cort (Eds.), *Values at work* (pp. 211–228). Palgrave Macmillan.

EcoMuvi. (n.d.). *Protocollo [Sustainable audiovisual production protocol]*. <https://www.ecomuvi.eu/protocollo/>

ENERGICA. (n.d.). *Green Deal*. <https://energica-h2020.eu/green-deal/>

Esty, D. C., & Cort, T. (Eds.). (2020). *Values at work: Sustainable investing and ESG reporting*. Palgrave Macmillan.

EU Technical Expert Group on Sustainable Finance. (2020). Taxonomy: Final report of the Technical Expert Group on Sustainable Finance. EU Technical Expert Group on Sustainable Finance.

European Commission. (2019). The European Green Deal. European Commission.

European Commission. (2024, May 29). Commission provides further clarifications on the EU taxonomy for sustainable economic activities.
https://finance.ec.europa.eu/news/commission-provides-further-clarifications-eu-taxonomy-sustainable-economic-activities-2024-11-29_en

European Commission. (2024, September 23). Creative Europe in 2025: Focus on green and digital transitions, on strengthening social and economic resilience.
<https://culture.ec.europa.eu/news/creative-europe-in-2025-focus-on-green-and-digital-transitions-on-strengthening-social-and-economic-resilience>

European Commission. (n.d.). Green transition. Reform Support.

https://reform-support.ec.europa.eu/what-we-do/green-transition_en

European Commission. (n.d.). Media accountability and transparency in Europe (MEDIAACT).
<https://cordis.europa.eu/project/id/244147/reporting>

European Commission. (n.d.). Sustainable Finance Disclosure Regulation (SFDR).
https://finance.ec.europa.eu/sustainable-finance/disclosures/sustainability-related-disclosure-financial-services-sector_en

European Commission. (n.d.-a). EU taxonomy for sustainable activities.
https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities_en

European Commission — CORDIS. (2014). Media Accountability and Transparency in Europe (MediaAct) – Reporting page. <https://cordis.europa.eu/project/id/244147/reporting>

European Environment Agency. (2019). Climate vulnerability in Europe.

Festival CinemAmbiente. (n.d.). Home. <https://www.festivalcinemambiente.it/en/>

Figueira, A., & Costa e Silva, E. (2023). A transparência como dimensão da qualidade: A propriedade dos média e os desafios da (in)visibilidade. Comunicação e Sociedade, 44, e 023021. [https://doi.org/10.17231/comsoc.44\(2023\).4708](https://doi.org/10.17231/comsoc.44(2023).4708)

Figueira, J., & Roy, B. (2002). Determining the weights of criteria in the ELECTRE-type methods with a revised Simos' procedure. European Journal of Operational Research, 139(2), 317–326. [https://doi.org/10.1016/S0377-2217\(01\)00370-8](https://doi.org/10.1016/S0377-2217(01)00370-8)

Film Commission Torino Piemonte. (n.d.). About FCTP. https://www.fctp.it/info_fctp.php

Film Commission Torino Piemonte. (n.d.). O.D.S. – Operatori Doppiaggio e Spettacolo. https://www.fctp.it/production_item.php?id=1091

Friedman, H. L., Heinle, M. S., & Luneva, I. (2023). A theoretical framework for ESG reporting to investors.

Garden Studios. (2025). Sustainability. <https://gardenstudios.io/sustainability/>

Global Sustainable Investment Alliance (GSIA). (2024). Global Sustainable Investment Review 2022 (PDF). Archived from the original on May 23, 2024. Retrieved May 23, 2024.

Green Audiovisual. (2023, September 1). Protocollo di sostenibilità ambientale per eventi, teatri e entertainment (Rev. 3). <https://www.greenaudiovisual.com>

Green Film. (2024). Green Film rating system – Edition 3. https://www.green.film/wp-content/uploads/2024/08/GreenFilm_RatingSystem_Edition_3_2024.pdf

Gürel, E., & Tat, M. (2017). SWOT analysis: A theoretical review. The Journal of International Social Research, 10(51), 994–1006. https://www.researchgate.net/publication/319367788_SWOT_Analysis_A_Theoretical_Review

Helms, M. M., & Nixon, J. (2010). Exploring SWOT analysis – Where are we now? Journal of Strategy and Management, 3(3), 215–251. <https://doi.org/10.1108/17554251011064837>

Hiltunen, K., & Rainio, M. (2022). Elokuvan ja median tutkijat ja tekijät luonto kysymysten äärellä. Lähikuva, 1–2/2022

Houser, K. A. (2019). *Can AI solve the diversity problem in the tech industry: Mitigating noise and bias in employment decision-making*. *Stanford Technology Law Review*, 22, 290.

IBM. (2025). *What are ESG frameworks?* IBM Think. <https://www.ibm.com/think/topics/esg-frameworks>

Intergovernmental Panel on Climate Change (IPCC). (2022). *Chapter 11: Industry (Working Group III Contribution to the Sixth Assessment Report)*.
<https://www.ipcc.ch/report/ar6/wg3/chapter/chapter-11/>

Jayasinghe, S. (2025, March 7). Cinema and the ESG initiative. *The Morning*.
<https://www.themorning.lk/articles/dLsvqHX0ShIL94sK0wbJ>

Julie's Bicycle. (2022). *Creative industries and the climate emergency: The path to net zero*.
<https://juliesbicycle.com/wp-content/uploads/2024/11/JB-PEC-Creative-Industries-and-the-Climate-Emergency-The-Path-to-Net-Zero-PEC-Research-Report.pdf>

Kaab, A., Sharifi, M., Mobli, H., Nabavi-Pelebaraie, A., & Chau, K.-W. (2019). *Combined life cycle assessment and artificial intelligence for prediction of output energy and environmental impacts of sugarcane production*. *Science of the Total Environment*, 664, 1005–1019.

Kääpä, P. (2016). *Environmental issues in Nordic media*. *Journal of Scandinavian Cinema*, 6(3)

Kangas, A., Duxbury, N., & De Beukelaer, C. (Eds.). (2018). *Cultural policies for sustainable development*. Routledge

Karlsson, M. (2020). *Dispersing the opacity of transparency in journalism*. *Journalism Studies*, 21(13), 1795–1814. <https://doi.org/10.1080/1461670X.2020.1790028>

KeyESG. (n.d.). *Your need-to-know summary of ESG regulations and frameworks*.
<https://www.keyesg.com/article/your-need-to-know-summary-of-esg-regulations-and-frameworks>

Löhr, K., Weinhardt, M., & Sieber, S. (2020). *The World Café is a participatory method for collecting qualitative data*. *International Journal of Qualitative Methods*, 19.
<https://doi.org/10.1177/1609406920916976>

Lozano, M. B., & Martínez-Ferrero, J. (2022). *Do emerging and developed countries differ in terms of sustainable performance?* *Research in International Business and Finance*, 62, 101688.
<https://doi.org/10.1016/j.ribaf.2022.101688>

Mansurov, T., Mammadov, R., & Mansurov, E. (2023). Fibre-optic sensor of the object perimeter protection system. <https://www.researchgate.net/publication/367411901>

Meilani, M. (2021). Sustainability and eco-friendly movement in movie production. IOP Conference Series: Earth and Environmental Science, 794(1), 012075. <https://doi.org/10.1088/1755-1315/794/1/012075>

Museo Nazionale del Cinema. (n.d.). TorinoFilmLab – Special projects. <https://www.museocinema.it/en/torinofilmLab-special-projects/torinofilmLab>

Netflix. (2022, April 28). 2022 inclusion report update. <https://about.netflix.com/news/2022-inclusion-report-update>

*Nižetić, S., Djilali, N., Papadopoulos, A., & Rodrigues, J. J. (2019). Smart technologies for the promotion of energy efficiency, utilisation of sustainable resources, and waste management. *Journal of Cleaner Production*, 231, 565–591.*

*Noble, S. U. (2018). *Algorithms of oppression: How search engines reinforce racism*. New York University Press: New York, NY, USA.*

*Panagiotopoulos, P., Barnett, J., Ziae Bigdeli, A., & Sams, S. (2016). Social media in emergency management. *Technological Forecasting and Social Change*, 111, 86–96. <https://doi.org/10.1016/j.techfore.2016.06.010>*

Paramount Global. (2024, October 4). Paramount releases 2023–2024 environmental, social, and governance (ESG) report. <https://www.stocktitan.net/news/PARA/paramount-releases-2023-2024-environmental-social-and-governance-esg-d68jpjh92e73.html>

Peterdy, K. (n.d.). ESG (Environmental, Social, & Governance). Corporate Finance Institute. <https://corporatefinanceinstitute.com/resources/esg/esg-environmental-social-governance/>

Politecnico di Torino. (2024, September 7). Sostenibilità nel mondo della cultura e dello spettacolo. <https://www.polito.it/ateneo/comunicazione-e-ufficio-stampa/comunicati-stampa/sostenibilita-nel-mondo-della-cultura-e-dello-spettacolo-il>

Politecnico di Torino – Green Team. (2024, October 31). Integrazione dei criteri ESG nell’industria cinematografica [PowerPoint presentation]

Politecnico di Torino – Green Team. (2024, November 25). Innovazione e formazione per una transizione green nel settore culturale e cinematografico [PowerPoint presentation]

Pavich, S. (2022, March 8). Film industry: Where is the justice? INKspire.
<https://inkspire.org/post/film-industry-where-is-the-justice/>

Quantive. (2025). What are ESG frameworks? How to choose the right one for your business.
<https://quantive.com/resources/articles/esg-frameworks>

Ralevic Helgesson, S. (2020). *Stuck in the truck: Oil dependency, acceleration, and the nature of catastrophe*. Stockholm University

Rao, S. (2019, December 9). *The Golden Globes didn't nominate any women for best director*. The Washington Post.
<https://www.washingtonpost.com/arts-entertainment/2019/12/09/golden-globes-didnt-nominate-any-women-best-director-or-screenplay-or-motion-picture/>

Renewable Carbon News. (2022, July 14). *Fit for 55: The EU's plan for a green transition*.
<https://renewable-carbon.eu/news/fit-for-55-the-eus-plan-for-a-green-transition/>

Robin Studio. (n.d.). Home. <https://robin.studio/en/>

Romano, R. (1993). *Public pension fund activism in corporate governance reconsidered*. *Columbia Law Review*, 93(4), 795–853

Sax, S. (2024, March 7). *Film and TV's carbon footprint is too big to ignore*. Time.
<https://time.com/6767943/sustainable-film-and-tv-production/>

Sætra, H. S. (2021). *A framework for evaluating and disclosing the ESG-related impacts of AI with the SDGs*. *Sustainability*, 13(8503). <https://doi.org/10.3390/su13158503>

SDG Compass. (2015). *SDG Compass: The guide for business action on the SDGs*. Global Reporting Initiative: Amsterdam, The Netherlands.

Silva, C. P. da. (2022). *ESG standards in Portugal – PSI companies case study*. Master's thesis, ISCTE Business School

Singhania, M., & Saini, N. (2021). *Institutional framework of ESG disclosures: Comparative analysis of developed and developing countries*. *Journal of Sustainable Finance & Investment*, 13(1), 516–559. <https://doi.org/10.1080/20430795.2021.1964810>

Siskos, E., & Tsotsolas, N. (2015). *Elicitation of criteria importance weights through the Simos method*. *European Journal of Operational Research*, 246(2), 543–553

Soini, K., & Birkeland, I. (2014). *Exploring the scientific discourse on cultural sustainability*. *Geoforum*, 51, 213–223

Spangler, T. (2021, March 30). *Netflix targets a net-zero carbon footprint by the end of 2022*. *Variety*. <https://variety.com/2021/digital/news/netflix-carbon-neutral-greenhouse-gas-2022-1234940620/>

Spangler, T. (2021, April 27). *Hollywood studios release carbon-emissions reports*. *Variety*. <https://variety.com/2021/film/news/sustainable-production-alliance-carbon-emissions-report-1234942580/>

Teoli, D., Sanvictores, T., & An, J. (2023). *SWOT analysis*. In *StatPearls*. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK537302/>

UCLA Institute of the Environment. (2006, November). *Sustainability in the motion picture industry*. University of California, Los Angeles

UNDP. (2022). *UNDP digital strategy 2022–2025: Abridged version*. https://digitalstrategy.undp.org/documents/Digital-Strategy-2022-2025-ABRIDGED-VERSION-PRINT_ENG_Interactive.pdf

United Nations. (2015). *Transforming our world: The 2030 agenda for sustainable development*. Division for Sustainable Development Goals: New York, NY, USA.

United Nations. (n.d.). *Climate crisis – A race we can win*. <https://www.un.org/en/un75/climate-crisis-race-we-can-win>

United Nations. (n.d.). *Sustainable development goals: 17 goals to transform our world*. <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

United Nations. (n.d.). *The 17 goals*. <https://sdgs.un.org/goals>

United Nations Environment Programme – Finance Initiative. (2022). Who Cares Wins – The Global Compact Connecting Financial Markets to a Changing World (PDF). Archived from the original on September 1, 2022. Retrieved May 21, 2022.

United Nations Framework Convention on Climate Change. (n.d.). The Paris Agreement.
<https://unfccc.int/process-and-meetings/the-paris-agreement>

Van Wynsberghe, A. (2021). Sustainable AI: AI for sustainability and the sustainability of AI. AI Ethics, 1–6.

Vinuesa, R., Azizpour, H., Leite, I., Balaam, M., Dignum, V., Domisch, S., Felländer, A., Langhans, S. D., Tegmark, M., & Nerini, F. F. (2020). The role of artificial intelligence in achieving the Sustainable Development Goals. Nature Communications, 11, 1–10.

WeAreAlbert. (2020, January 10). How big budget film 1917 achieved certification.
<https://wearealbert.org/2020/01/10/how-big-budget-film-1917-achieved-certification/>

World Bank. (n.d.). Social dimensions of climate change. Retrieved February 16, 2024, from
<https://www.worldbank.org/en/topic/social-dimensions-of-climate-change>

APPENDIX A

Literature Review for Selection Twelve Intervention Areas:

This literature review was developed internally by the INFO-SCC project in order to support the design of the ESG survey. This literature review is an annotated compilation of relevant academic sources, policy documents, and salient and applicable industry practices that deal with the application of Environmental, Social, and Governance (ESG) principles in the context of cultural and creative industries, with a focus on the film production sectors.

ESG (Environmental, Social, and Governance) factors are increasingly important in the media and entertainment industry, as they provide measurable ways to assess a company's impact on sustainability, social issues, and ethical governance. The term ESG gained significance in a 2004 report called "Who Cares Wins," which was a collaborative effort of financial institutions initiated by the United Nations (UN). ("Who Cares Wins," 2022) By 2023, the ESG movement had evolved from a UN corporate social responsibility initiative into a worldwide phenomenon, encompassing over US\$30 trillion in assets under management. ("Global Sustainable Investment Review 2022," 2024)

The film industry, in particular, faces unique challenges such as environmental sustainability on film sets, representation in storytelling, and adherence to ethical business practices. As awareness of climate change and social inequality grows, there is a rising interest from consumers, investors, and regulators in companies' environmental, social, and governance (ESG) initiatives. (Friedman, Heinle, & Luneva).

All large companies are now required to measure their environmental and social impact and provide transparency by reporting their activities. (Sætra, 2021) Artificial intelligence (AI) is now embedded in every part of modern life, coinciding with a growing emphasis on sustainability across all human endeavors. (Sætra, 2021)

The Sustainable Development Goals (SDGs) include objectives focused on environmental protection, social justice, as well as economic development, health, and employment. (Van Wynsberghe, 2021) The idea of sustainability may seem both intuitive and fairly simple. (Sætra, 2021) The origins of sustainability and the concept of sustainable development are often linked to the 1987 report *Our Common Future*, which was created by a United Nations (UN) commission led by Gro Harlem Brundtland.

Nowadays, the concept of sustainability in business and politics is increasingly associated with the Sustainable Development Goals (SDGs). These goals were introduced by the UN in the document titled *Transforming Our World: The 2030 Agenda for Sustainable Development*. (United Nations, 2015)

Although the SDGs are closely linked to various fundamental human rights, the two frameworks are distinct. The SDGs have a wider scope, encompassing what are known as the five P's: people, planet, prosperity, peace, and partnership. (United Nations, 2015) Although development and environmental protection are often seen as responsibilities of governments, the business and finance sectors are increasingly taking an active part in achieving the SDGs. (Sætra, 2021)

Environmental issues, including climate change, biodiversity loss, and pollution, are now widely acknowledged as significant challenges facing humanity. The unparalleled power and influence of leading technology companies draw both interest and scrutiny. (Sætra, 2021) Various companies across different regions encounter diverse requirements for disclosure and reporting, with ESG being the term most commonly used. (Esty & Cort, 2020)

Regarding financial regulation, the Securities and Exchange Commission (SEC) in the United States allows companies to decide what constitutes material information for disclosure, whereas European authorities are establishing mandatory requirements. (Eckhart, 2020)

The European Union's (EU) Green Deal, along with its sustainable finance initiative and associated taxonomy—a classification system for assessing the sustainability of different economic activities—demonstrates the seriousness with which European regulators approach ESG-related disclosures and risks. (European Commission, 2019; EU Technical Expert Group on Sustainable Finance, 2020)

Although the financial sector has the most established formal requirements, a clear trend across all sectors and businesses is emerging: stakeholders of various types are increasingly seeking information regarding the sustainability impacts and risks associated with business activities. (Sætra, 2021)

Initially, the SDGs were not designed as an ESG reporting framework; however, they are now being increasingly utilized for this purpose. (Bose, 2020) The GRI, UN Global Compact, and the World Business Council for Sustainable Development have collaboratively created the SDG Compass to assist in utilizing the SDGs for reporting and other business-related objectives (SDG Compass, 2015). A significant advantage of the SDG framework is its foundation and support from the UN, as well as its target audience, which is much wider than that of more business-specific standards and frameworks. Although other frameworks provide more detailed guidance through indicators and metrics tailored to the specific requirements of regulators and industries like finance, the SDGs represent the broader sustainability goals of the global business community, political entities, and civil society. This, along with its development in collaboration with the business and finance sectors, has made the SDGs a well-recognized and widely accepted tool. Since one of the main purposes of ESG reporting is to provide information and build trust between stakeholders and businesses, this aspect of the SDGs is a significant advantage. To begin their ESG reporting and disclosure process, a company could identify the various ways its activities have both positive and negative effects on the SDGs. When this mapping is combined with a materiality analysis, it would give the company a more comprehensive understanding of its ESG-related impacts, including those that might not be fully reflected in a WEF or GRI report, for instance. Another approach is to begin with the metrics, gather the necessary data (and only that data), and then assess whether the business meets various requirements and expectations. (Sætra, 2021)

AI systems facilitate the efficient analysis of Big Data, and this combination can be applied in various ways to potentially support the achievement of the SDGs. (Sætra, 2021) A simple example is the use of AI across all stages of an enterprise resource planning (ERP) system, improving production, optimizing human resource allocation, and enhancing financial decision-making. For instance, AI can boost energy efficiency, optimize resource use, and improve waste management. It can also predict energy and environmental impacts through product life cycle assessments, all of which contribute to more sustainable business practices, align with circular economy principles, and help reduce greenhouse gas emissions. (Nižetić et al., 2019; Kaab et al., 2019)

Vinuesa et al., suggest that AI can support 134 SDG targets and is particularly effective in advancing SDGs 1, 4, 6, 7, 9, 11, 14, and 15. (Vinuesa et al., 2020) Such analyses of AI's impacts do not align well with current debates in AI ethics, which focus on social, governance, and environmental challenges. For instance, using AI to address diversity issues by excluding humans from recruitment processes would draw serious concerns from those who highlight the inherent bias and human influence present in AI systems. (Houser, 2019; Noble, 2018; Buolamwini & Gebru, 2018; Bender et al., 2021)

Companies across industries are increasingly recognising the importance of sustainable and socially responsible practices, driven by both regulatory pressures and growing expectations around environmental and social standards. This shift isn't just about compliance; substantial evidence shows that businesses with strong ESG (Environmental,

Social, and Governance) practices tend to outperform their peers on critical financial measures, including stock price performance, earnings growth, return on equity, and credit ratings. As regulations evolve to minimise environmental impacts and protect workers, organisations that prioritise ESG not only contribute to broader social and environmental goals but also position themselves for stronger financial success in a competitive market.

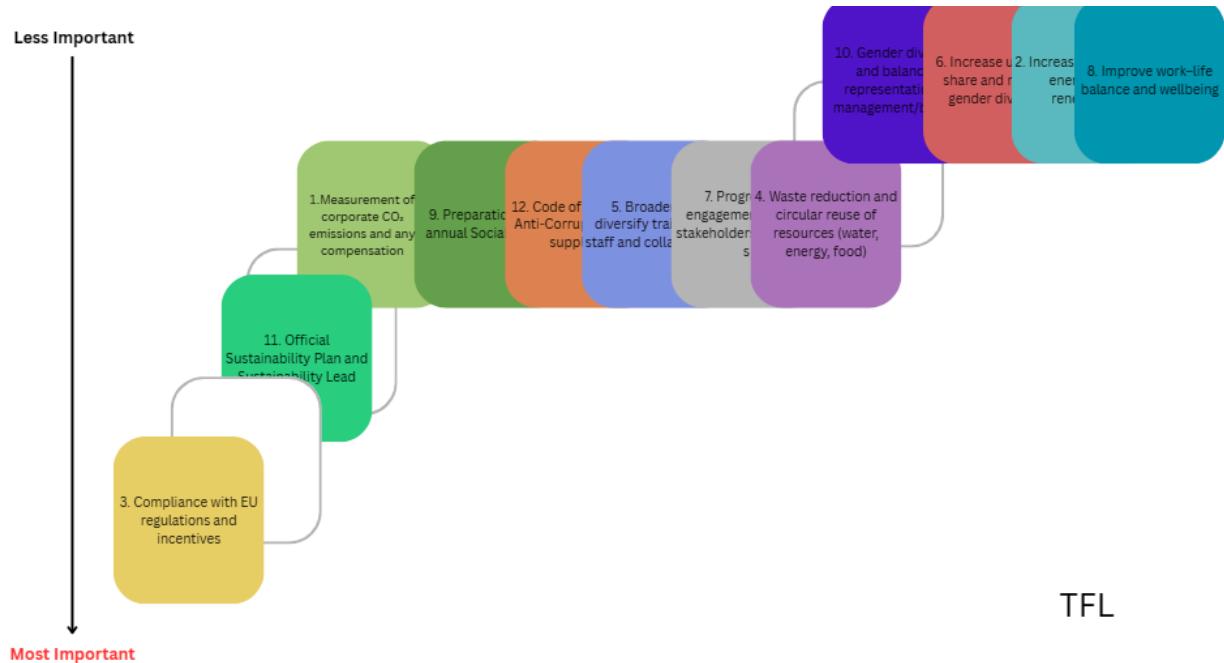
To broaden public understanding of ESG's effect on company performance, Gunnar Friede and colleagues (2015) reviewed approximately 2,200 studies published since 1970 to derive comprehensive and reliable conclusions. This analysis aimed to address the fragmented nature of existing information, creating a thorough and accessible overview. The results were promising for ESG advocates: about 90% of the studies identified a non-negative link between ESG criteria and company performance, with 63% showing a positive connection and only 8% indicating a negative relationship between ESG factors and financial outcomes.

Companies employ various frameworks to report on ESG issues, each tailored to specific needs (Bose, 2020). These frameworks vary by industry—for instance, a nuclear plant's reporting requirements differ from those of a paper factory—as well as by audience, as regulators, investors, and customers seek distinct information for their decisions. Differences also exist in methodologies and in the metrics that make up each reporting framework (Hopkins, 2005).

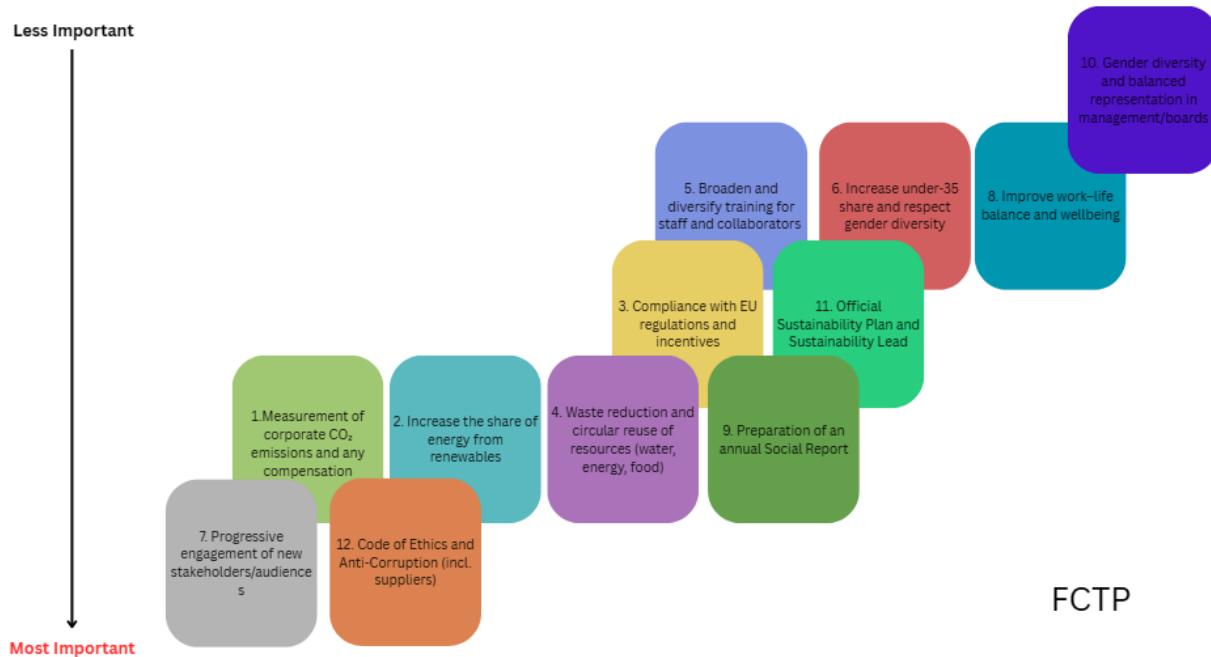
Bhuiyan et al. (2021) investigated traits common among firms with strong ESG performance and found that companies are generally more committed to ESG principles when they have a higher proportion of independent directors. Female leaders also tend to prioritise sustainable and socially beneficial initiatives. Additionally, companies that offer environmental bonuses for senior roles and have dedicated sustainability subcommittees tend to align closely with ESG best practices.

Garcia, Mendes-da-Silva, and Orsato (2017) explored a key external factor influencing companies with high ESG performance. In their study of 365 publicly listed firms across emerging markets, they found that companies in more sensitive industries tend to excel in meeting ESG standards. Sensitive industries are those frequently facing moral dilemmas, social and political scrutiny, or risks of environmental or societal harm—examples include sectors such as tobacco, alcohol, gambling, and adult entertainment.

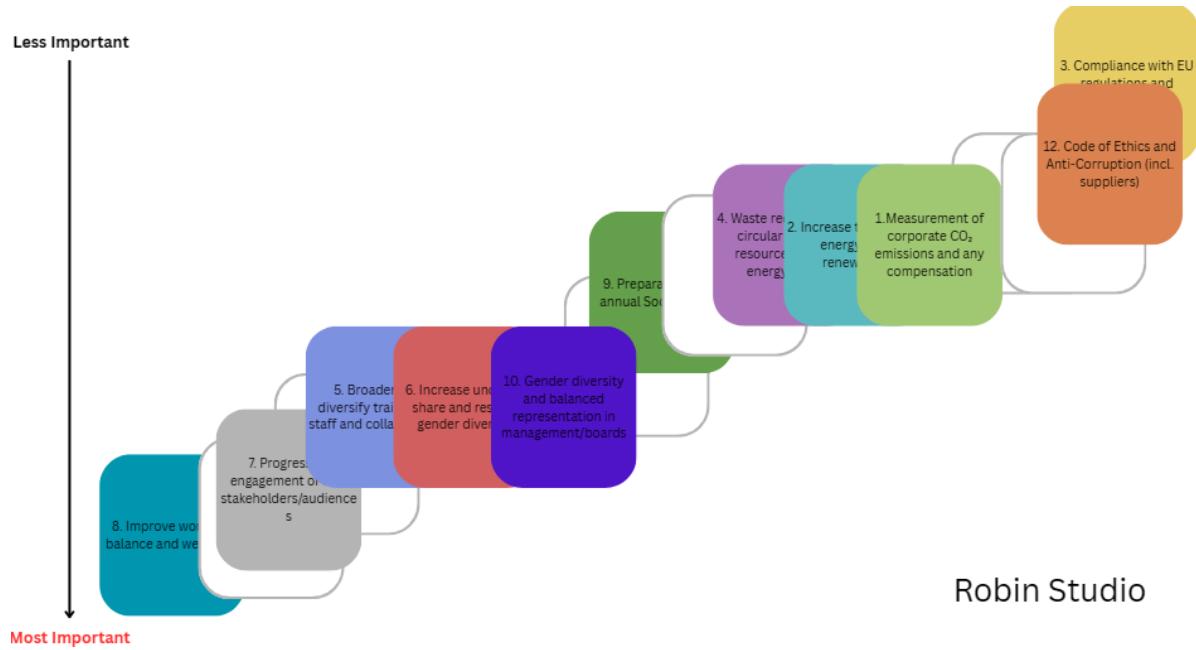
Regulations aimed at encouraging companies and governments to balance financial profit with meeting societal and environmental needs are not new; rather, they have evolved alongside the increasing awareness of ESG priorities (Alamillos & de Mariz, 2022).



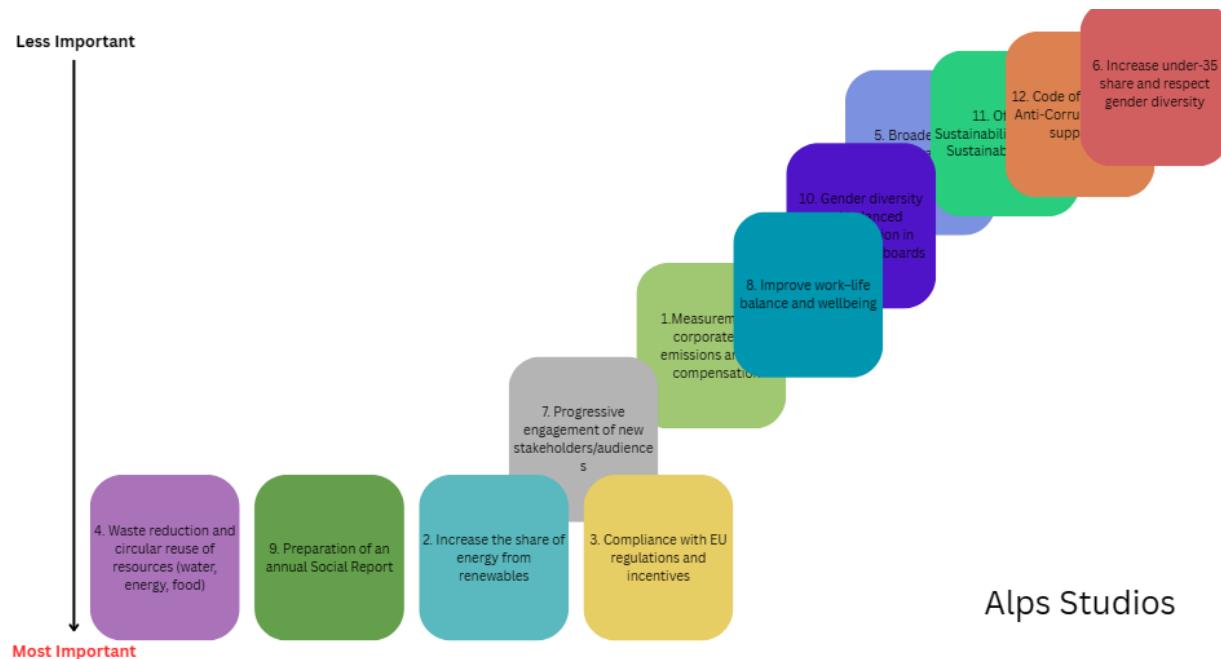
Rank	KPIs And White Cards	Number of Cards	Position	Non-normalised Weights	Normalised Weights	Total
1	10. Gender diversity and balanced representation in management/boards, 6. Increase under-35 share and respect gender diversity, 2. Increase the share of energy from renewables, 8. Improve work-life balance and wellbeing.	4	1,2,3,4	2.5	2.81	11.24
2	White card	1	5		0.00	0.00
3	1. Measurement of corporate CO ₂ emissions and any compensation, 9. Preparation of an annual Social Report, 12. Code of Ethics and Anti-Corruption (incl. suppliers), 5. Broaden and diversify training for staff and collaborators, 7. Progressive engagement of new stakeholders/audiences, 4. Waste reduction and circular reuse of resources (water, energy, food).	6	6,7,8,9,10,11	8.5	9.55	57.30
4	White card	1	12		0.00	0.00
5	11. Official Sustainability Plan and Sustainability Lead	1	13	13	14.61	14.61
6	White card	1	14		0.00	0.00
7	3. Compliance with EU regulations and incentives	1	15	15	16.85	16.85
Sum		15	89			100.00



Rank	KPIs And White Cards	Number of Cards	Position	Non-normalised Weights	Normalised Weights	Total
1	10. Gender diversity and balanced representation in management/boards	1	1	1	1.28	1.28
2	5. Broaden and diversify training for staff and collaborators, 6. Increase under-35 share and respect gender diversity, 8. Improve work-life balance and wellbeing.	3	2,3,4	3	3.85	11.54
3	3. Compliance with EU regulations and incentives, 11. Official Sustainability Plan and Sustainability Lead.	2	5,6	5.5	7.05	14.10
4	1. Measurement of corporate CO ₂ emissions and any compensation, 2. Increase the share of energy from renewables, 4. Waste reduction and circular reuse of resources (water, energy, food), 9. Preparation of an annual Social Report.	4	7,8,9,10	8.5	10.90	43.59
5	7. Progressive engagement of new stakeholders/audiences, 12. Code of Ethics and Anti-Corruption (incl. suppliers).	2	11,12	11.5	14.74	29.49
Sum		12	78			100.00



Rank	KPIs And White Cards	Number of Cards	Position	Non-normalised Weights	Normalised Weights	Total
1	3. Compliance with EU regulations and incentives	1	1	1	1.020	1.02
2	12. Code of Ethics and Anti-Corruption (incl. suppliers)	1	2	2	2.041	2.04
3	White card	2	3,4		0.000	0.00
4	4. Waste reduction and circular reuse of resources (water, energy, food), 2. Increase the share of energy from renewables, 1. Measurement of corporate CO ₂ emissions and any compensation.	3	5,6,7	6	6.122	18.37
5	White card	1	8		0.000	0.00
6	9. Preparation of an annual Social Report	1	9	9	9.184	9.18
7	White card	1	10		0.000	0.00
8	5. Broaden and diversify training for staff and collaborators, 6. Increase under-35 share and respect gender diversity, 10. Gender diversity and balanced representation in management/boards.	3	11,12,13	12	12.245	36.73
9	White card	1	14		0.000	0.00
10	7. Progressive engagement of new stakeholders/audiences	1	15	15	15.306	15.31
11	White card	1	16		0.000	0.00
12	8. Improve work-life balance and wellbeing	1	17	17	17.347	17.35
	Sum	17	98			100.00



Rank	KPIs And White Cards	Number of Cards	Position	Non-normalised Weights	Normalised Weights	Total
1	6. Increase under-35 share and respect gender diversity	1	1	1	1.282	1.28
2	12. Code of Ethics and Anti-Corruption (incl. suppliers)	1	2	2	2.564	2.56
3	11. Official Sustainability Plan and Sustainability Lead	1	3	3	3.846	3.85
4	5. Broaden and diversify training for staff and collaborators	1	4	4	5.128	5.13
5	10. Gender diversity and balanced representation in management/boards	1	5	5	6.410	6.41
6	8. Improve work-life balance and wellbeing	1	6	6	7.692	7.69
7	1. Measurement of corporate CO2 emissions and any compensation	1	7	7	8.974	8.97
8	3. Compliance with EU regulations and incentives, 7. Progressive engagement of new stakeholders/audiences.	2	8,9	8.5	10.897	21.79
9	4. Waste reduction and circular reuse of resources (water, energy, food), 9. Preparation of an annual Social Report, 2. Increase the share of energy from renewables.	3	10,11,12	11	14.103	42.31
	Sum	12	78			100.00